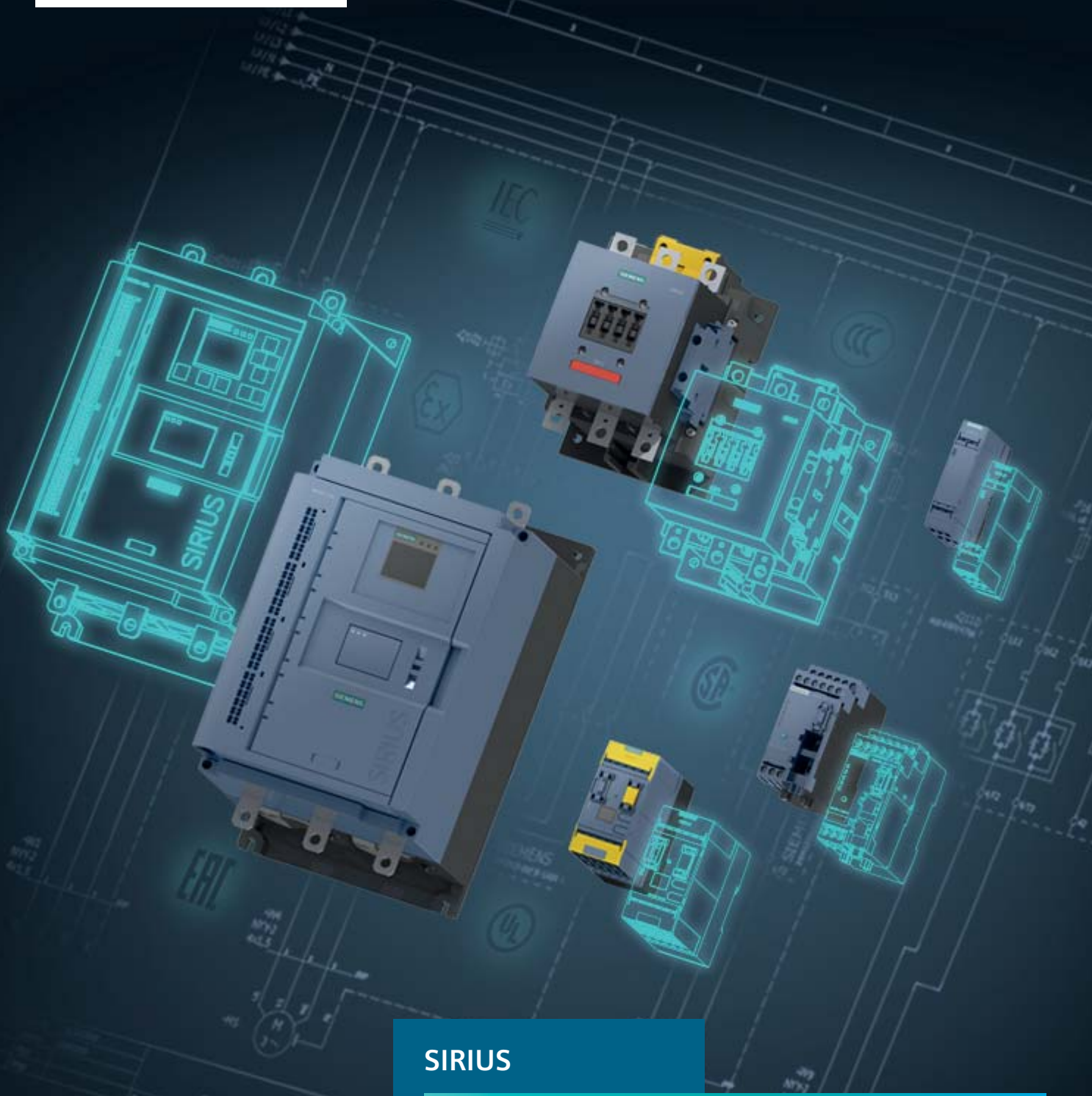


SIEMENS



SIRIUS

Industrial Controls

Catalog
IC 10

Edition
2019

siemens.com/sirius

Related catalogs

Industrial Communication SIMATIC NET

IK PI

E86060-K6710-A101-B8-7600



SIMATIC

Products for
Totally Integrated Automation

ST 70

E86060-K4670-A101-B6-7600



Low-Voltage Power Distribution and Electrical Installation Technology

SENTRON • SIVACON • ALPHA
Protection, Switching, Measuring and Monitoring
Devices, Switchboards and Distribution Systems

LV 10

PDF (E86060-K8280-A101-A8-7600)
Print (E86060-K8280-A101-A6-7600)

SIMOTICS GP, SD, XP, DP Low-Voltage Motors

Type series 1FP1, 1LE1, 1LE5, 1MB1 and 1PC1
Frame sizes 63 to 355
Power range 0.09 to 500 kW
E86060-K5581-A111-B2-7600

D 81.1

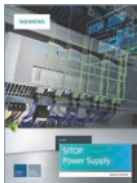


SITOP

SITOP
Power supply

KT 10.1

E86060-K2410-A101-B3-7600



SITRAIN

Training for Industry

www.siemens.com/sitrain


Miscellaneous

Products for Automation and Drives

CA 01

Interactive Catalog
Download
www.siemens.com/ca01download


Industry Mall

Information and Ordering Platform
on the Internet:
www.siemens.com/industrymall


Siemens TIA Selection Tool

for the selection, configuration and ordering of
TIA products and devices
www.siemens.com/tst


Information and Download Center

Digital versions of the catalogs are available
on the Internet
www.siemens.com/sirius/catalogs


Contact

Your personal contact can be found in our
Contacts Database at:
www.siemens.com/automation-contact


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Further information about industrial controls:
www.siemens.com/sirius

Technical Support

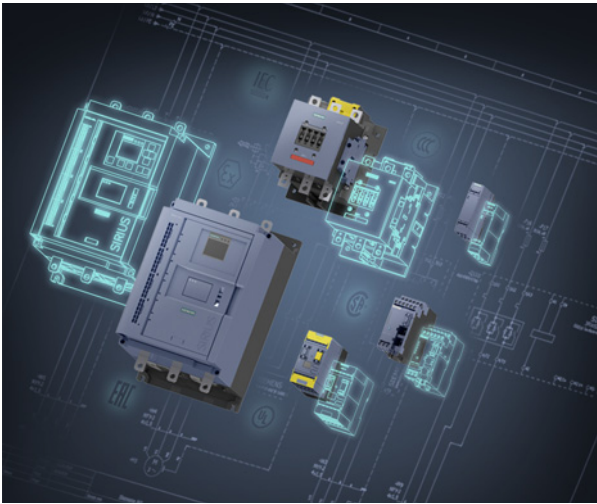
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Industrial Controls

SIRIUS



Catalog IC 10 · 2019

Invalid:

Catalog IC 10 · 2018

Catalog Abridged IC 10 A · 03/2017 3SU1 Pushbuttons and Indicator Lights

Catalog Abridged IC 10 A · 04/2018 SIRIUS 3RW Soft Starters

Refer to the Industry Mall for regular updates of this catalog:

www.siemens.com/industrymall

The products contained in this catalog can also be found in the Interactive Catalog CA 01.

Please check the instructions for the CA 01 Online Installer on www.siemens.com/automation/ca01 or contact your local Siemens branch.

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The products and systems described in this catalog are manufactured/distributed under application of a certified quality management system in accordance with EN ISO 9001 (for the Certified Registration Nos., see www.siemens.com/system-certificates/cp). The certificate is recognized by all IQNet countries.

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Industrial Controls

Ordering notes

Things you should know about Catalog IC 10

Catalog IC 10 contains all selection and order-relevant data.

Ordering notes

Ordering special versions

For ordering products that differ from the versions listed in the catalog, the article number specified in the catalog must be supplemented with "-Z"; the required features must be specified by means of the alphanumeric order codes or in plain text.

Small orders

When small orders are placed, the costs associated with order processing are greater than the order value. We recommend therefore that you combine several small orders. Where this is not possible, we unfortunately have to charge a processing supplement of € 20.00 to cover our costs for order processing and invoicing for all orders with a net goods value of less than € 250.00.

Standard delivery time (SD)

SD in days (d)

► Preferred type

X On request

Preferred types are available immediately from stock, i.e. are dispatched within 24 hours.

Normal quantities of the products are usually delivered within the specified time following receipt of your order at our branch.

In exceptional cases, the actual delivery time may differ from that specified.

The delivery times apply up to the ramp at Siemens AG (products ready for dispatch). The transport times depend on the destination and type of shipping. The standard transport time for Germany is one day.

The delivery times specified here represent the situation in October 2017. They are continuously optimized. For more up-to-the-minute information, please visit www.siemens.com/sirius/mall.

Price units (PU)

The price unit defines the number of units, sets or meters to which the specified price applies.

Packaging sizes (PS)

The packaging size defines the number, e.g. of units, sets or meters, contained in an outer packaging.

Only the quantity defined by the packaging size or a multiple thereof can be ordered.

For multi-unit and reusable packaging, see page 16/4.

Price groups (PG)

Each product is assigned to a price group.

Example

3RA2110-0FA15-1AP0

SD: 2 working days

PG: 41D

Order quantity 1 unit or a multiple thereof

3RV1901-0H

SD: Preferred type

PG: 41E

Order quantity 10 units or a multiple thereof

3SU1900-0AB71-0AB0

SD: 5 working days

PG: 41J

Order quantity 10 units or a multiple thereof

SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d					
2	3RA2110-0FA15-1AP0		1	1 unit	41D
►	3RV1901-0H		1	10 units	41E
5	3SU1900-0AB71-0AB0		100	10 units	41J

Dimensions

All dimensions in mm.

SIRIUS in the World Wide Web

The most important online services at a glance.



Industrial controls

Homepage

www.siemens.com/sirius



Information material available for downloading

Information and Download Center

www.siemens.com/sirius/catalogs



Industry Mall

Catalog and Ordering System

www.siemens.com/industrymall



Interactive Catalog on DVD

Product Catalog CA 01

www.siemens.com/automation/ca01



Configuring products and systems

Configurators

www.siemens.com/sirius/configurators



Mobile Media

Various apps available from Google Play or in the App Store

www.siemens.com/socialmedia



Siemens Industry Online Support – SIOS

Product Support

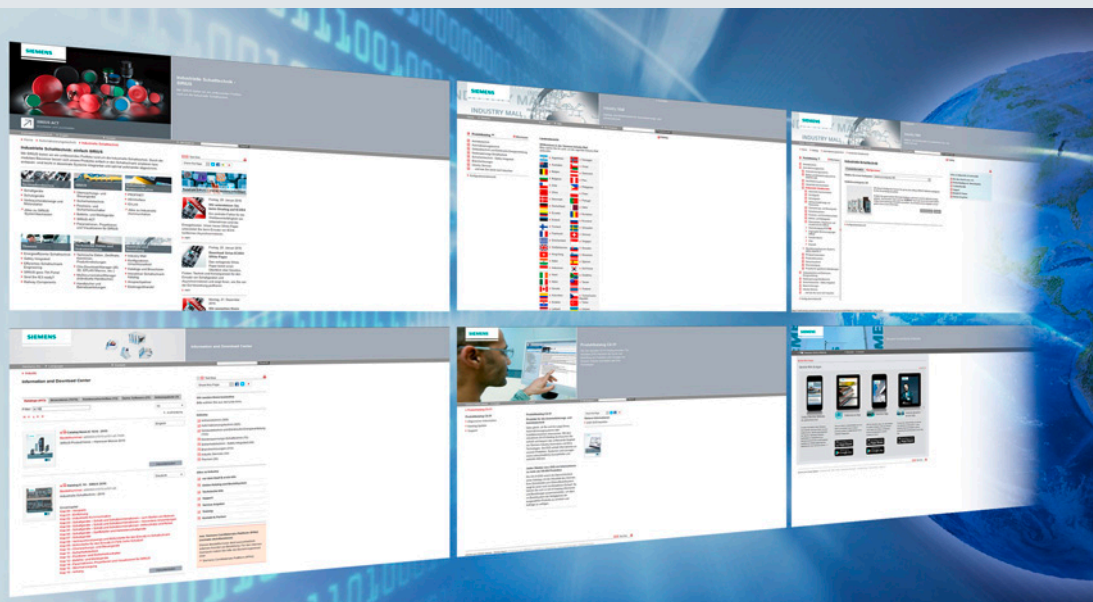
www.siemens.com/sirius/support



Siemens Industry Online Support App

More information on the Online Support App

www.siemens.com/support-app

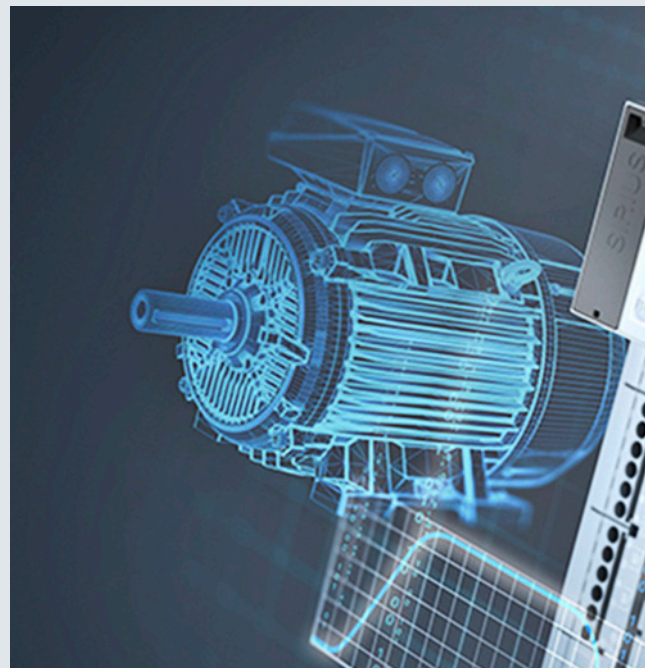


SIRIUS 3RW soft starters

As diverse as your tasks

The strong, harmonized portfolio of soft starters is suited to a wide range of applications thanks to comprehensive and specific functions.

Benefit from intelligent functions such as condition monitoring, automatic parameterization, pump cleaning and integrated braking functions, regardless of the industry you are in.



Strong portfolio

Comprehensive, coordinated soft starter portfolio for simple to demanding starting: Basic, General, High Performance

Efficient switching

Energy-efficient switching and mechanical protection of the drive train thanks to soft starter with hybrid switching technology

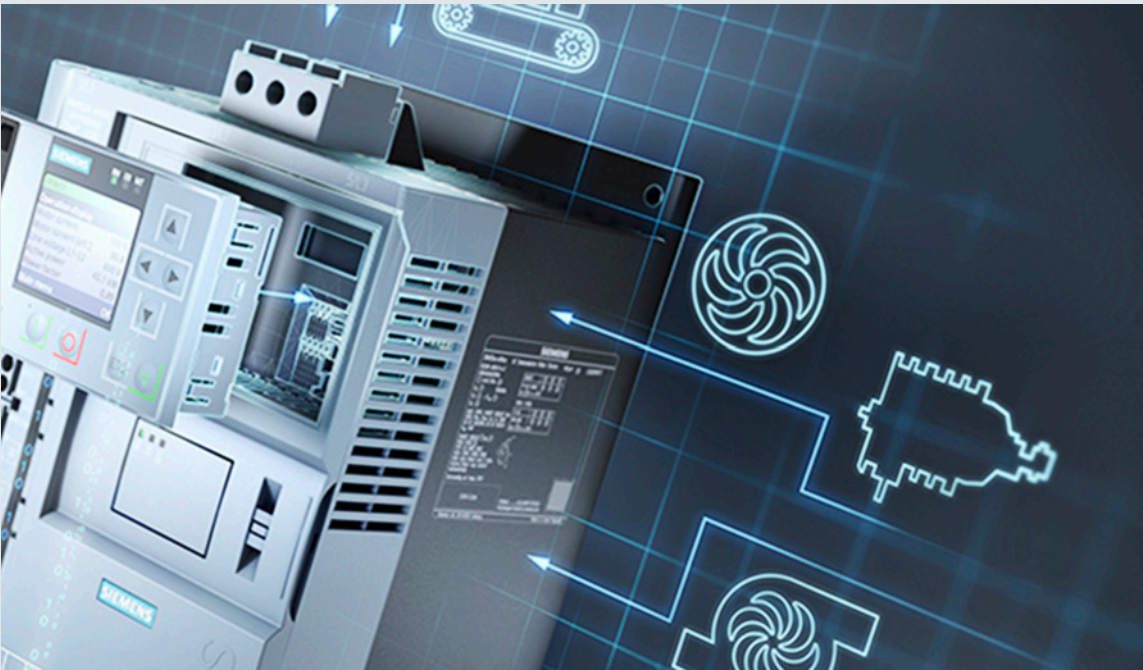
Intelligent use

Concentrated, application-specific functionality thanks to intelligent features such as automatic parameterization, pump cleaning and condition monitoring

Ready for the digital future

Support for digital engineering processes with tools and data. Data provision for local visualization or cloud-based analysis





SIRIUS 3RW

Strong, comprehensive portfolio with a wide range of possibilities thanks to a flexible design.

More information, see: [siemens.com/softstarters](https://www.siemens.com/softstarters)

Digitalization

The 3RW soft starters help you to realize the full potential of digitalization. This is particularly beneficial when it comes to economic efficiency.

Your application in focus



IC01_00555

Pump cleaning and pump stopping mode

The pump cleaning function prevents pumps from blocking, therefore, increasing your productivity and system availability. The pump stopping mode avoids mechanical loading in the piping system and extends the service life of the equipment.



IC01_00556

Electrical ruggedness

Due to the wide control voltage range from 110 to 250 V AC, soft starters have a high degree of electrical ruggedness. This guarantees reliable operation even in the event of falling voltages.



IC01_00557

Condition monitoring

The condition monitoring function supports optimal planning of maintenance work on bearings or seals, thereby maximizing availability.



IC01_00558

Automatic parameterization

Automatic parameterization simplifies the commissioning and operation of critical applications considerably, even in the case of highly dynamic load characteristics.



IC01_00559

Integrated braking functions

Intelligent functions such as soft starter braking ensure a fast and reliable stop without engineering and configuration work.



SIRIUS modular system

Efficiently combined.



More information, see:
www.siemens.com/sirius-modular-system

Modular design

Optimally matched and dimensioned products expandable with uniform accessories

Save space

Highest performance on the market based on installation size

Order pre-assembled

Ready-made and tested combinations with short-circuit strength up to 150 kA/400 V

Quick wiring

Comprehensive portfolio for spring-type terminals, function blocks for contactor assemblies for reversing and star-delta (wye-delta) starting as well as connectors

Efficient configuration

Configuration data and macros for integration into your CAE systems

Worldwide use

Fulfills all relevant standards and approvals worldwide, also for extreme conditions (e.g. safety, rail and shipping) and is IE3/IE4 ready

TIA Selection Tool

The right product in just a few clicks.



Prime reasons for the TIA Selection Tool



Quick, easy and secure

Components can be selected, configured and ordered quickly, easily and securely from the Siemens automation portfolio



Intelligent

Intelligent selection wizards check the compatibility of the configured components and enable error-free ordering



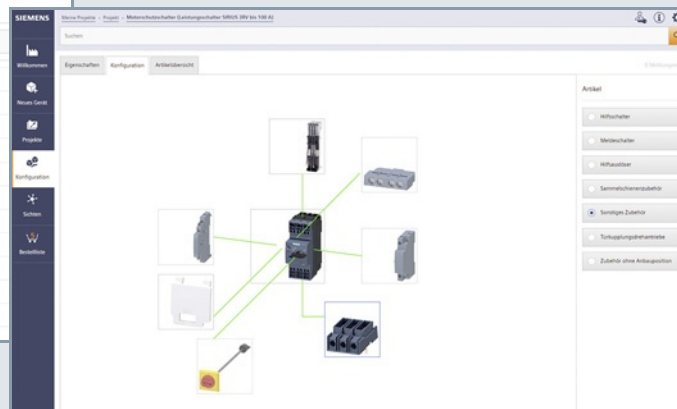
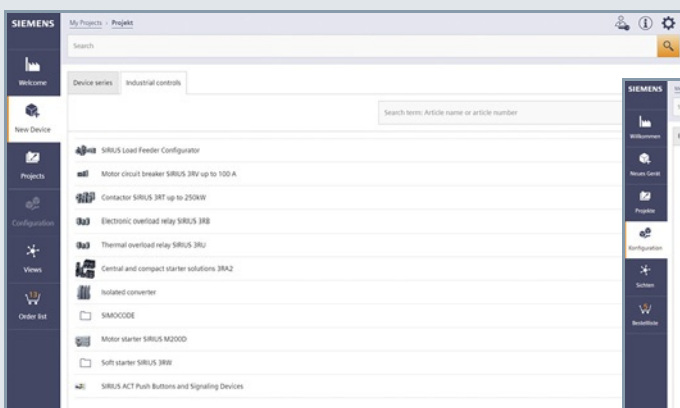
Clear

Required modules, devices and networks are automatically generated and clearly compared to one another



Time-saving

Time savings of 80% in design – thanks to ease of use and intelligent support



The TIA Selection Tool is a completely paperless solution.

Download it now:
www.siemens.com/tst

For more information, scan the QR code



Integrated Control Panels

The easy way to build the optimum control panel.

We offer practical support in mastering the typical challenges of control panel engineering through a harmonized product portfolio, tools and data for digitalization in engineering, and expert know-how.



Working together for simple and stress-free control panel design
Comprehensive support for all control panel applications

Want to save time and costs? With Integrated Control Panels, it's easy to optimize all aspects of control panel building for your industrial machines and plants. From preparation and dimensioning, design and construction, through to service and support – for greater competitiveness and long-term success.



Expert know-how
The faster route to the ideal control panel with practice-oriented expertise

We support you with exactly the right know-how to give you a competitive edge – both now and in the future. This includes applying standards and guidelines in day-to-day operations (e.g. UL 508A, IEC 60204-1) as well as efficient engineering and configuration.

- Workshops, web-based training courses and individual consulting on product and application topics
- Literature with practical tips and tricks, including: guidelines, product manuals, white papers



More information, see www.siemens.com/panelbuilding



Tools & data for digitalization in engineering

Maximum efficiency for control panel design

With a range of tools and data-based services, we support you with the digitalization of your business and enable the leverage of all the advantages this offers for control panel design: greater efficiency, flexibility and quality – in every process phase!

- Intelligent selection, dimensioning and design
www.siemens.com/simaris
www.siemens.com/tst
- Integrate data efficiently
www.siemens.com/cax



Harmonized product and system portfolio

Effective savings in control cabinet design

Harmonized product and system portfolio saves construction time. With our coordinated, integrated portfolio of products that includes automation technology, drive train components, industrial controls and matching control panel enclosures, we can reduce your engineering overhead and ensure the harmonious interaction of all devices. These are extensively tested, and are all certified and available for use worldwide – enabling you to remain flexible within the global business environment.

Digital Enterprise

The building blocks that ensure everything works together perfectly in the digital enterprise

Digitalization is already changing all areas of life and existing business models. It is placing greater pressure on industry while at the same time creating new business opportunities. Today, thanks to scalable solutions from Siemens, companies can already become a digital enterprise and ensure their competitiveness.



Industry faces tremendous challenges



Reduce time-to-market

Today manufacturers have to bring products to market at an ever-increasing pace despite the growing complexity of these products. In the past, a major manufacturer would push aside a small one, but now it is a fast manufacturer that overtakes a slow one.



Boost flexibility

Consumers want customized products, but at a price they would pay for a mass-produced item. That only works if production is more flexible than ever before.



Improve quality

To ensure a high level of quality while meeting legal requirements, companies have to establish closed quality loops and enable the traceability of products.



Boost efficiency

Today the product itself needs to be sustainable and environmentally friendly, while energy efficiency in production has become a competitive advantage.



Increase security

Increasing networking escalates the threat to production facilities of cyberattacks. Today more than ever, companies need suitable security measures.



The digital enterprise has already become a reality

To fully benefit from all the advantages of digitalization, companies first have to achieve complete consistency of their data. Fully digitally integrated business processes, including those of suppliers, can help to create a digital representation of the entire value chain. This requires

- the integration of industrial software and automation,
- expansion of the communication networks,
- security in automation,
- and the use of business-specific industrial services.

MindSphere

The cloud-based open IoT operating system from Siemens

With MindSphere, Siemens offers a cost-effective and scalable cloud platform as a service (PaaS) for the development of applications. The platform, designed as an open operating system for the Internet of Things, makes it possible to improve the efficiency of plants by collecting and analyzing large volumes of production data.

Totally Integrated Automation (TIA) Where digitalization becomes reality

Totally Integrated Automation (TIA) ensures the seamless transition from the virtual to the real world. It already encompasses all the necessary conditions for transforming the benefits of digitalization into true added value. The data that will form the digital twin for actual production is generated from a common base.

Digital Plant

Learn more about the digital enterprise for the process industry
www.siemens.com/digitalplant

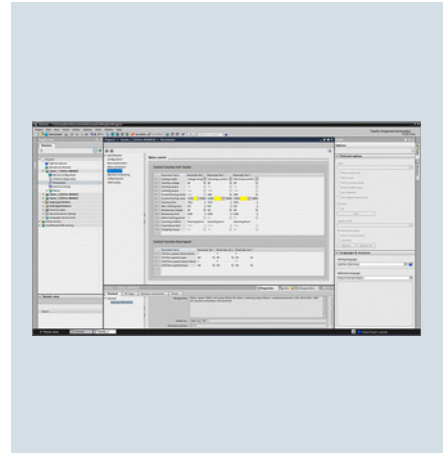
Digital Enterprise Suite

Learn more about the digital enterprise for the discrete industry
www.siemens.com/digital-enterprise-suite

Product highlights



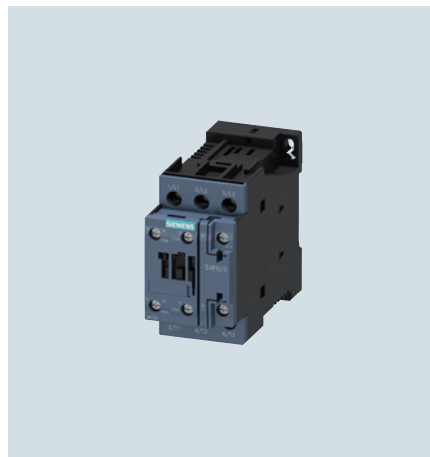
- **SIRIUS 3RW5 soft starters**
Can be flexibly deployed in many applications
- Article No.: 3RW55 and 3RW52
- From page 6/12 and from page 6/42



- **SIRIUS Soft Starter ES (TIA Portal), Version V15**
- Article No.: 3ZS1320-C...-0Y.5
- From page 14/5



- **3RT201 contactors, 3-pole, with integrated varistor, 3 to 7.5 kW, size S00**
- Article No.: 3RT201.-UB4.
- Page 3/60



- **3RT202 contactors, 3-pole, with varistor plugged into the front, 4 to 18.5 kW, size S0**
- Article No.: 3RT202.-DB40
- Page 3/64



- **3RV2 motor starter protectors/circuit breakers for motor and transformer protection, size S0**
- Article No.: 3RV2021-0-A10, 3RV2421-..A10
- Pages 7/29, 7/39



- **3RT10 and 3RT14 fail-safe contactors, 3-pole, for safety-oriented applications up to SIL CL 3, sizes S6 to S12**
- Article No.: 3RT10.-.S..., 3RT14.-.S...
- Pages 3/72 and 4/15



- **3RT1467 contactors for resistive loads (AC-1), 3-pole, 500 A, size S10**
- Article No.: 3RT1467-6..3.
- Pages 4/15, 4/16



- **3RT14 railway contactors with extended operating range, 3-pole, sizes S6 to S12**
- Article No.: 3RT14.-.2X.46-0LA2
- Page 4/58



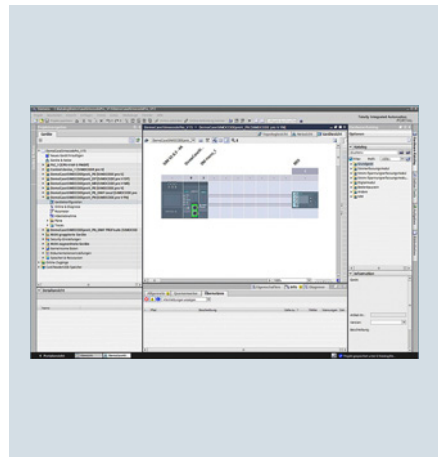
■ SIMOCODE pro 3UF7 control devices
SIMOCODE pro V PROFINET GP basic units

■ Article No.: 3UF7011-1A.00-
■ Page 10/16



■ SIMOCODE pro 3UF7 control devices
Current/voltage measuring modules for
dry-running protection in hazardous areas

■ Article No.: 3UF712-1.A01-0
■ Page 10/17



■ SIMOCODE ES (TIA Portal), Version V15

■ Article No.: 3ZS1322-C...-0Y..
■ From page 14/12



■ 3SE5 positioning and safety switches with M12
connector for connecting to SIMATIC ET 200eco

■ Article No.: 3SE5234-.....-1AE2, 3SE5114-.....-1AE3
■ From page 12/13



■ SIRIUS ACT pushbuttons and indicator lights
Modular system of commanding and signaling devices

■ Article No.: 3SU1
■ From page 13/5



■ AS-Interface compact distributors,
AS-Interface M12 feeders

■ Article No.: 3RK1901-2NN10, 3RK1901-2NR..
■ Pages 2/64, 2/89



■ 3RQ2 coupling relays
in industrial enclosure, 22.5 mm

■ Article No.: 3RQ2000-..W0.
■ From page 5/40



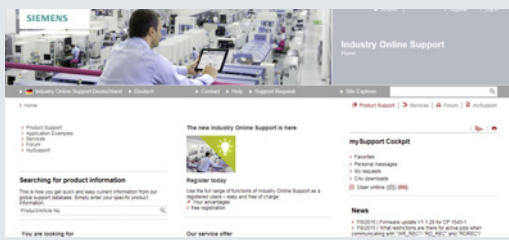
■ SITOP PSU8200 power supplies, SITOP PSU8600
power supply system with UPS8600

■ Article No.: 6EP3, 6EP4
■ Pages 15/8 ... 15/10



Technical Support

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Industry Online Support – get fast and up-to-date information online

<https://support.industry.siemens.com>

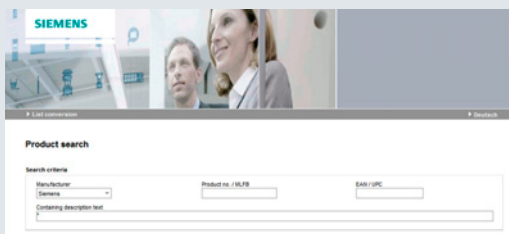
In Industry Online Support you will find FAQs, manuals, certificates, applications & tools, and much more



Support Request – the fast track to the experts

<https://support.industry.siemens.com/My/ww/en/requests>

Using the Support Request form in Online Support you can send your query directly to Technical Support.

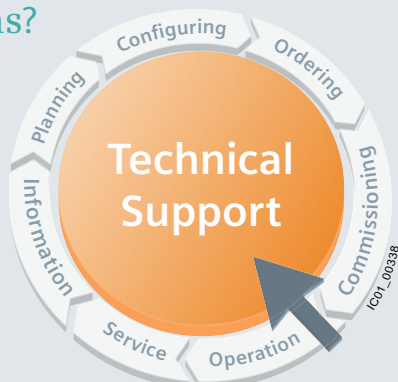


Conversion tool – the easy and efficient way to find successor products

www.siemens.com/sirius/conversion-tool

Any more questions?

Our experts are there to help you by telephone or e-mail with competent technical advice

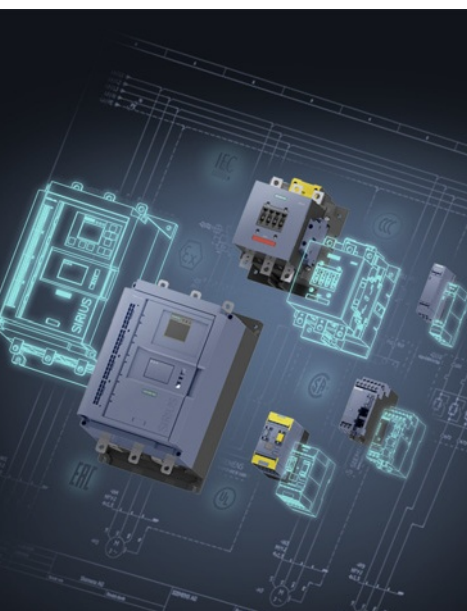


Competent and fast technical advice regarding:

- Product selection
- Conversion from old to new
- Competitor conversion
- Special versions
- Particular requirements
- Commissioning
- Operation

Support Request:
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Introduction



1/2	Energy-efficient controls SIRIUS brings down energy costs
1/3	Energy management with SIMATIC Energy Suite Integrated energy management
1/4	Systematic industrial safety technology SIRIUS Safety Integrated
1/7	IE3/IE4 ready SIRIUS controls for reliable switching and protection of IE3/IE4 motors
1/8	Innovative technology for saving energy Electronic starting with hybrid switching technology

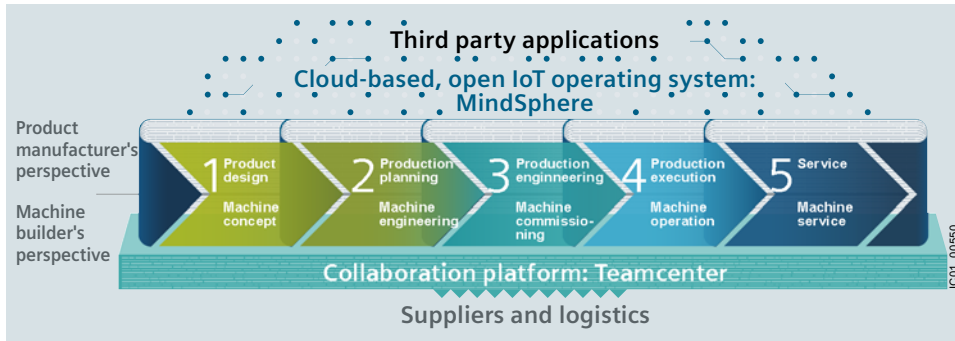
Introduction

Energy-Efficient Controls

SIRIUS brings down energy costs

Overview

Energy management in industry



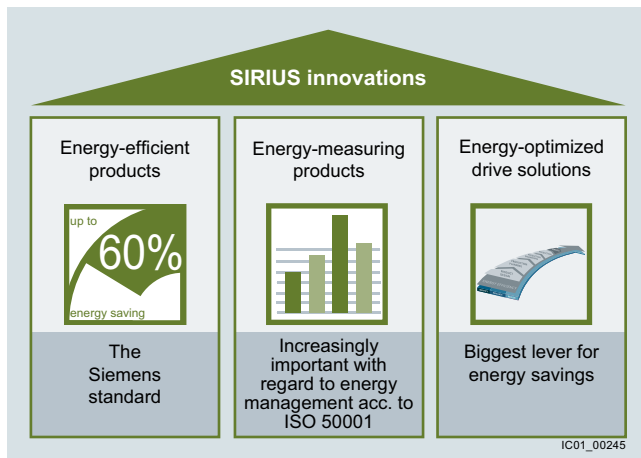
Overview of the energy management process

Energy-efficient production as a success factor

In order to harness energy potential, with our vast portfolio, we always maintain a clear view of the overall product development and production process. Because maximum energy efficiency in production can only be achieved through perfect interaction of all components.

That is why it is important to first create an awareness for existing energy-saving potential, recognize and assess opportunities for optimization through precise analysis. Finally, appropriate measures must be implemented.

With our full-range portfolio of energy-efficient drive solutions, automation and services, you too will reach maximum energy efficiency, higher productivity and lasting competitiveness in your company.



Three columns of energy efficiency with products from the SIRIUS modular system

Energy-efficient products – SIRIUS reduces power loss

SIRIUS controls (3RM motor starter, 3RR2 monitoring relay, 3RB3 overload relay, 3RT2 contactor, 3RW soft starter, 3RV2 motor starter protector/circuit breaker and 3RA6 compact starter) as well as the ET 200SP motor starters are characterized by extremely low intrinsic power loss. This not only lowers energy costs, but also reduces the amount of waste heat in the control cabinet. This then translates to a higher packing density and a reduction in the required cooling performance.

Energy-measuring products

Energy management can be instrumental in increasing plant productivity to bring about a significant improvement to the competitive ability of a company – in all industries.

Energy data acquisition represents an important component

Whether you are a plant operator, planner or machine manufacturer: Energy-efficient production is a challenge and an opportunity in equal measure.

of the overall energy data management process here. Through transparency right down to the loads, it is possible to identify and utilize potential energy savings.

With communication-capable SIRIUS switching devices you can acquire energy data from the drive train without any additional effort.

SIRIUS controls help you make energy flows visible.

Best drive solutions in terms of energy

In order to design processes for optimal energy efficiency, it is not enough to simply measure the energy flow and deploy energy-efficient products. The greatest lever for saving energy can be derived from closely examining the application.

For sample applications on the Internet, see www.siemens.com/sirius/energysaving.

SinaSave energy efficiency tool



Amortization calculator for energy-efficient drive systems

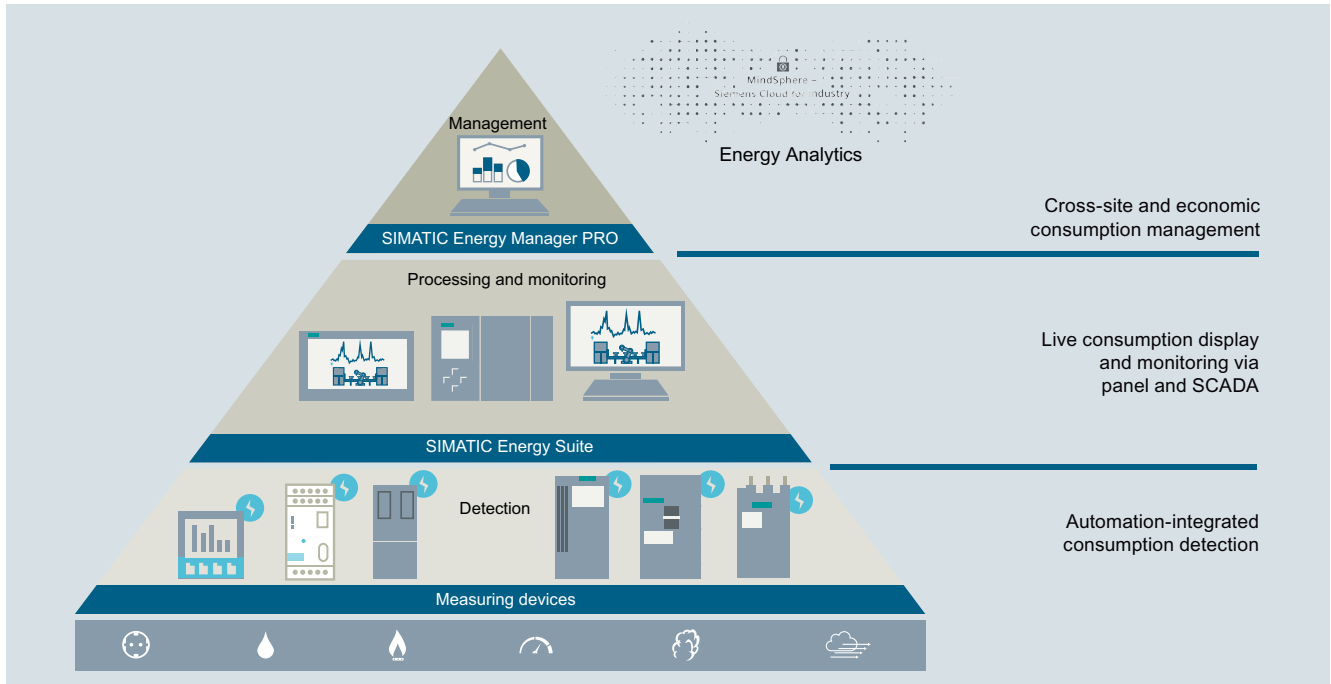
The SinaSave energy efficiency tool determines energy saving potential and amortization times based on your individual conditions of use and therefore offers practical assistance in making decisions about investments in energy-efficient technologies.

From SinaSave version 6.0 and higher, the drive systems to be compared and the relevant drive component parameters are displayed graphically. An additional expansion are the numerous comparison possibilities for different control types and comprehensive product combinations for drive solutions for pump and fan applications.

The product portfolio comprises not just SIRIUS controls, but also SIMOTICS motors and SINAMICS inverters and converters, thus offering a comprehensive range of comparison possibilities – according to your individual requirements.

For more information on the amortization calculator for energy-efficient drives, see www.siemens.com/sinasave.

Overview



SIMATIC Energy Suite

High energy consumption as well as automated production processes are typical for many industries.

If you want to keep control of your energy costs and already have an eye on the digital world of tomorrow, it's a good idea to equip your plant with integrated energy measuring technology, anchoring energy management into the production automation processes where the vast majority of energy is used.

SIMATIC Energy Suite as an integrated option for the TIA Portal efficiently links energy management with automation, thus creating energy transparency in the production system. Considerably simplified configuration of energy-measuring components from the SIMATIC, SENTRON, SINAMICS, SIRIUS and SIMOCODE product families²⁾ significantly reduces the configuration workload. Thanks to the integrated interface to the SIMATIC Energy Manager PRO¹⁾ or cloud-based Service Energy Analytics, you can seamlessly expand the recorded energy data to a cross-site energy management system.

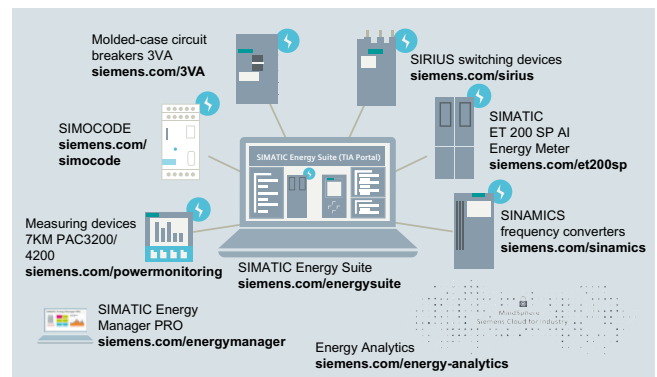
This also enables companies to fulfill all economic and energy management requirements – from purchasing of energy through planning to energy management.

The advantages at a glance:

- Automatic generation of energy management data
- Integration into the TIA Portal and the automation process
- Easy configuration

Highlights

- Simple and intuitive configuration instead of programming
- Automatic generation of the PLC energy program
- Easy integration of measuring components from the Siemens portfolio and other manufacturers
- Integrated into the TIA Portal and the automation process
- Archiving on WinCC Professional or PLC
- Seamless connection to Energy Manager PRO and Energy Analytics



Ready for
SIMATIC
Energy Suite

For more information on SIMATIC Energy Suite, see www.siemens.com/energysuite

¹⁾ SIMATIC Energy Manager PRO is the fully updated successor to SIMATIC B.Data

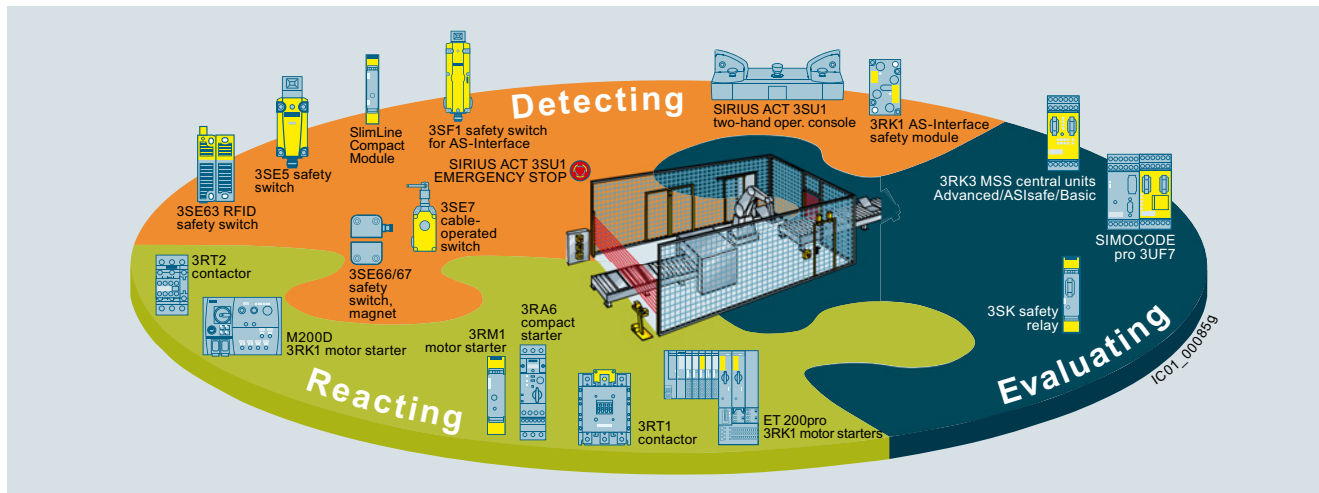
²⁾ Products from the SIMATIC, SENTRON, SINAMICS, SIRIUS and SIMOCODE product families. For details on the currently supported devices, see www.siemens.com/energysuite-hardware

Introduction

Systematic Industrial Safety Technology

SIRIUS Safety Integrated

Overview



Manufacturers and operators of machines must fulfill numerous requirements: reducing costs, improving productivity, and ensuring the safety of machines. The industrial safety technology from Siemens offers innovative, economical solutions for the functional safety of machinery.

Machine safety – compliance with directives

Before any machines or plants can be supplied or operated, they must meet the fundamental safety requirements of the EU Directives.

In order to ensure compliance with the European Machinery Directive, it is recommended that the suitably harmonized European standards EN 62061 or EN ISO 13849-1 should be applied. This gives manufacturers and operators legal certainty regarding compliance with both national regulations and the EC Directive and this is confirmed by the manufacturer of a machine with the CE marking.

The aim of safety technology is therefore to allow people, machines and the environment to be protected and statutory safety requirements to be satisfied.

The quick and easy way to safe machinery

In addition to the statutory regulations governing the protection of people there are also economic reasons for avoiding personal injury and the resulting down times, and for protecting both machinery and equipment from damage.

Safety Integrated benefits machine manufacturers and plant operators in many ways:

- Lower costs for hardware, assembly and engineering
- Higher availability thanks to faster diagnostics and fewer down times

At the same time, using modular safety concepts allows them to modernize their plants more easily and at lower cost.

Smart controls ensure the functional safety of machinery

Our SIRIUS Safety Integrated¹⁾ controls are a central element of the Siemens Safety Integrated concept, based on Totally Integrated Automation. Whether for reliable detecting, evaluating and reacting, our SIRIUS Safety Integrated controls (from page 1/5 onwards) provide cost-effective solutions for the safety of your machine or plant. Take the SIRIUS 3SK safety relays for example: They are modularly expandable, and can integrate compact motor starters such as the fail-safe SIRIUS 3RM1 very simply via the device connector (parameterization is performed easily with a screwdriver on the DIP switches or by drag and drop in the engineering software). Or the SIRIUS 3RK3 Modular Safety System: this provides a high degree of functionality as an autonomous safety control

downstream of a standard control, and makes smart safety solutions possible via AS-Interface.

The SIMOCODE pro modular motor management system combines all required protection, monitoring, safety and control functions for motor feeders. It can be connected to fail-safe controllers via PROFIBUS or PROFINET and shut down motors in emergency situations.

SIRIUS Safety Integrated uses fail-safe communication via standard fieldbus systems, such as ASIsafe via AS-Interface and PROFIsafe via PROFIBUS and PROFINET, to solve even networked safety tasks of greater complexity. This opens the door to flexible safety solutions for compact machines or large-scale plants – naturally compliant with current standards up to SIL 3/PL e.


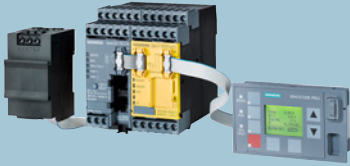







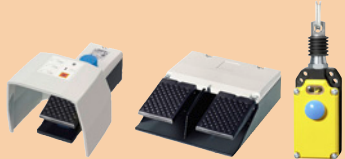
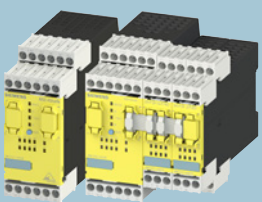

The first integrated ASIsafe connection to the distributed I/O system ensures even more consistency. With the SIMATIC AS-i F-Links, AS-i networks can be connected quite simply to safety controls via PROFIsafe via the SIMATIC ET 200SP. Particular highlights are the new contactors of sizes S6 to S12 with fail-safe control input, the SIRIUS ACT 3SU1 EMERGENCY STOP with PROFINET or PROFIsafe interface, and the fail-safe motor starters for the ET 200SP. With these products, seamless integration into fail-safe control systems is possible.

Your partner for machine and plant safety

With Safety Integrated, Siemens has provided the smart answer to constantly increasing requirements for the functional safety of a machine and for its cost-effectiveness and flexibility. Our comprehensive portfolio of safe controls, control technology and drive technology provides scalable solutions for precisely tailored safety concepts for protecting people, machines and the environment. Our products meet the current safety standards in the industry, including IEC, ISO, NFPA and UL.

As a partner for machine and plant safety, Siemens also supports users with examples of functions and up-to-date know-how concerning international standards and directives. In addition to the free TÜV-approved Safety Evaluation Tool for evaluating safety functions in accordance with EN 62061 and EN ISO 13849-1, requirements-based training is available on CE marking, functional safety and risk assessment, and on our Safety Integrated Products.

¹⁾ For more information, see www.siemens.com/safety-integrated. Application Manual "SIRIUS Safety Integrated", see <https://support.industry.siemens.com/cs/ww/en/view/81366718>.







Devices with safety functions					
Detecting		Evaluating		Reacting	
Product	Page	Product	Page	Product	Page
3SE position and safety switches  <p>Flexible thanks to modular design, suitable for offshore applications</p>	12/2	SIMOCODE pro 3UF7  <p>Fail-safe expansion modules DM-F Local and DM-F PROFIsafe, safe shutdown of motors up to SIL 3/PL e</p>	10/5	SIRIUS 3RM1 motor starters  <p>Compact, narrow and fail-safe hybrid motor starters in IP20 Easy configuration and low outlay for storage thanks to wide-setting range of the overload release</p>	8/85
3SE6 non-contact safety switches  <p>RFID switches and magnetically-operated switches, non-contact, vibration-resistant, wear-free, IP69 (K)/IP67</p>	12/4, 12/100	3SK safety relays  <p>Key modules of a consistent and cost-effective safety chain. Flexible thanks to input and output expansion units</p>	11/12	ET 200SP fail-safe motor starters  <p>Compact, fail-safe hybrid motor starters for the ET 200SP system</p>	8/95
3SU11 EMERGENCY STOP mushroom pushbuttons, 3SU18 two-hand operation console  <ul style="list-style-type: none"> • SIRIUS ACT two-hand operation console with user-friendly capacitive sensor keys • High level of flexibility due to direct integration of the SIRIUS ACT EMERGENCY STOP via standardized, fail-safe communication protocols (PROFIsafe, ASIsafe) 	13/22, 13/65, 13/114	3TK2810 safety relays  <p>Further modules of a consistent and cost-effective safety chain for fail-safe detection of standstill or speed</p>	11/27	ET 200pro Safety motor starters Solution PROFIsafe  <p>Communication-capable motor starters in high degree of protection IP65 Special safety modules enable the highest safety levels.</p>	9/3
3SE7 cable-operated switches, 3SE29, 3SE39 foot switches  <ul style="list-style-type: none"> • Foot switches with metal or plastic enclosure in degree of protection IP65 • Cable-operated switches with latching and positive-opening NC contacts, in degree of protection IP65 or IP67 	13/161, 13/165	3RK3 Modular Safety System (MSS)  <p>Freely parameterizable safety relay, high flexibility with up to nine additional expansion modules and fail-safe connection to AS-Interface</p>	11/30	3RT2 contactors (PLC/F-PLC output) 3RT1 contactors from 55 kW (F-PLC input)  <p>Optimum connection to the fail-safe controller as actuator in the safety chain Considerable simplification of the application in large power ranges thanks to F-PLC input on the 3RT1 contactors</p>	3/62, 3/72, 4/15

Introduction

Systematic Industrial Safety Technology


SIRIUS Safety Integrated

Devices with safety functions for AS-Interface

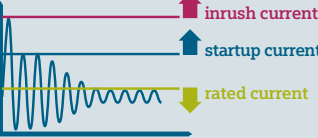
Detecting		Evaluating	Reacting
Product	Page	Product	Page
<p>Safety modules/EMERGENCY STOP mushroom pushbuttons</p> <ul style="list-style-type: none"> • K40F and K20F compact safety modules for use in the field 2/29  <ul style="list-style-type: none"> • SC17.5F SlimLine Compact safety modules for use in the control cabinet 2/29  <ul style="list-style-type: none"> • 3SU1 EMERGENCY STOP mushroom pushbuttons in the enclosure for AS-Interface 13/107  <p>Detection of safety-related signals via safe input slaves on the AS-Interface bus (field modules in IP67, control cabinet modules in IP20, EMERGENCY STOP mushroom pushbuttons in the enclosure with integrated ASIsafe slave in IP69)</p>		<p>CM AS-i Master ST, F-CM AS-i Safety ST for SIMATIC ET 200SP</p> <p style="text-align: right;">2/36, 2/40</p>  <p>Evaluation and processing of signals via a fail-safe SIMATIC or SINUMERIK control</p> <p>Simple combination of the CM AS-i master ST and F-CM AS-i Safety ST modules in one ET 200SP station results in a powerful, safety-related router between PROFINET (or PROFIBUS) and AS-Interface.</p>	<p>S45F SlimLine safety modules with safety outputs for the safe distributed disconnection of actuators</p> <p style="text-align: right;">2/30</p>  <p>Reaction by safe output modules on the AS-Interface bus or other SIMATIC F-DQ modules</p>
<p>3SF1 mechanical safety switches</p> <p style="text-align: right;">12/83</p>  <p>Flexible thanks to modular design, degree of protection up to IP69K, suitable for offshore applications</p>			

Overview

IE3/IE4-compliant motors

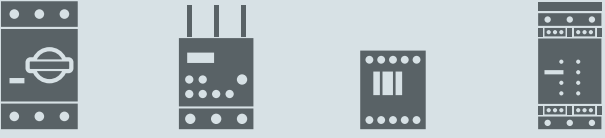


consume less energy




but are characterized by higher currents during starting

This is why we have optimized our SIRIUS controls for IE3/IE4 motors



For example



no false tripping during startup process

reliable switching capacity when using IE3/IE4 motors

IE3/IE4 ready

SIRIUS controls

Reliable switching and protection of motors at all times

Are you IE3/IE4 ready?
siemens.com/ie3ready

IC01_00482a

IE3/IE4 ready with SIRIUS controls

We are IE3/IE4 ready

IE3/IE4 motors have been mandatory for the power range from 0.75 to 375 kW for line operation in Europe since January 1, 2015.

From an electrical viewpoint, IE3/IE4 motors behave differently than less energy-efficient models – they are characterized by higher startup currents and modified dynamic behavior. This entails certain challenges for our controls.

The latest generation of SIRIUS controls has been fully optimized for IE3/IE4.

They avoid false tripping due to higher inrush currents of IE3/IE4 motors, offer optimized setting ranges for rated currents, and ensure reliable switching and protection in any situation – the best requirements for use of modern IE3/IE4 motors.

Highlights

- Comprehensive range of IE3/IE4 motors for every application
- Siemens offers expertise through extensive analysis of IE3/IE4 motors
- Optimized SIRIUS controls for use with IE3/IE4 motors

More information

- IE3/IE4 ready portal, see www.siemens.com/IE3ready
- Application Manual for controls with IE3/IE4 motors, see <https://support.industry.siemens.com/cs/ww/en/view/94770820>

All IE3/IE4 ready products are marked in the catalog with the symbol **IE3/IE4 ready**.

Introduction

Innovative Technology for Saving Energy

Electronic starting with hybrid switching technology

Overview

SIRIUS 3RV29 infeed system with 3RA2 load feeder and 3RM1 motor starter



Simple

Minimum wiring in the main and control circuits thanks to assembly option



Long service life

Hybrid switching technology uses benefits of relay and semiconductor technology

Compact

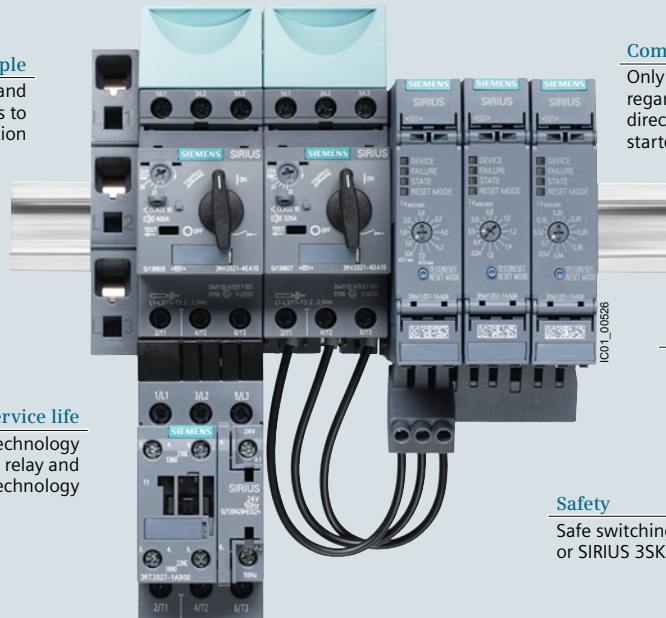
Only 22.5 mm wide, regardless of whether direct-on-line or reversing starter function

Economical

Thanks to low device variance due to wide setting range

Safety

Safe switching possible with F-CPU or SIRIUS 3SK safety relays



The hybrid switching technology uses low-wear semiconductor technology for switching the motor on and off, and in the operating phase it relies on energy-saving relay technology.

This ensures durability, especially with high frequency of operation, and thus significantly reduces maintenance costs and extends the life of the motor starters.

In addition, due to the hybrid switching technology, motor starters have lower electromagnetic interference emissions, enabling you to increase your plant availability.

Further energy savings are provided by the integrated electronic overload protection.

This causes a lower intrinsic power loss than comparable motor feeders with thermal overload protection.

In this way, you benefit from reduced heat generation and therefore lower cooling power. And that saves energy.

SIRIUS 3RW30, 3RW40, 3RW52 and 3RW55 soft starters



Long service life

Reduced mechanical and electrical load



Energy saving

Reduced temperature rise in the control cabinet thanks to bypass contacts

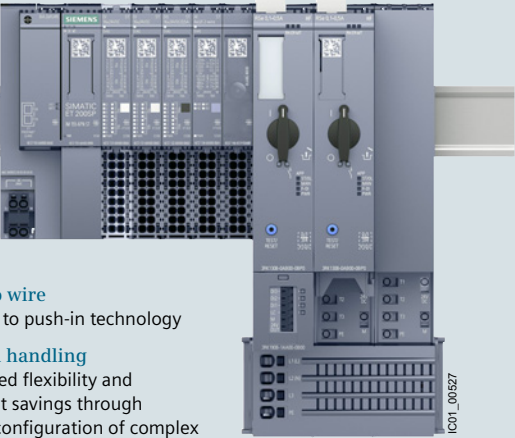
Compact

Space and cost savings thanks to compact design

Simple

Fast and easy commissioning





- + **Easy to wire**
 Thanks to push-in technology
- + **Option handling**
 Increased flexibility and efficient savings through single configuration of complex automation projects
- + **Reduced space requirements**
 50% slimmer than other distributed I/O systems
- + **Hybrid switching technology**
 Durable and energy saving, since relay contacts are not subject to loading when switched
- + **Power bus**
 Supply with power only once, then automatic setup with side-by-side mounting of multiple modules
- + **Quick stop and end position disconnection**
 Load switch off even at high speed – independent of central controller
- + **Quick installation**
 Hook in, slide into place and engage

Once it is installed and wired, you simply connect the ET 200SP motor starter to the controller in the TIA Portal ready for parameterization.

Highlights

Use of hybrid switching technology for:

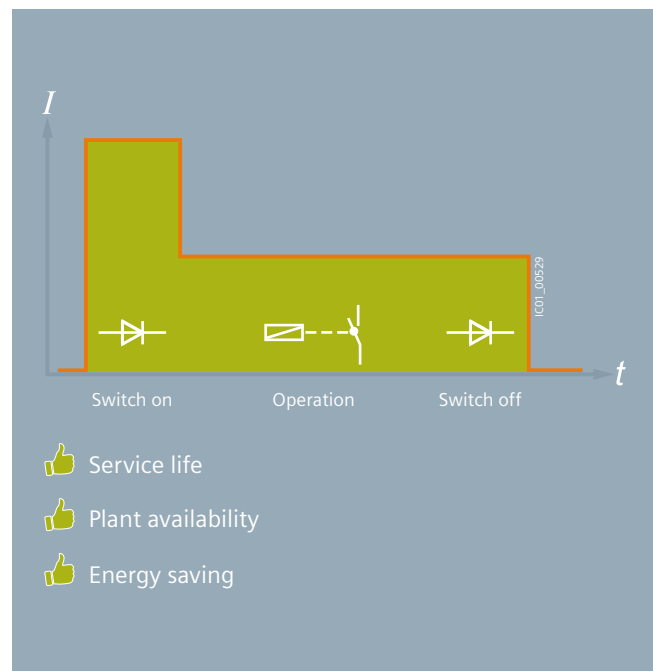
- SIRIUS 3RM1 motor starters
- ET 200SP motor starters
- SIRIUS soft starters

Fail-safe functionality for SIRIUS 3RM1 motor starters and ET 200SP:

- Maximum safety:
 Safety function up to SIL 3/PL e cat. 4

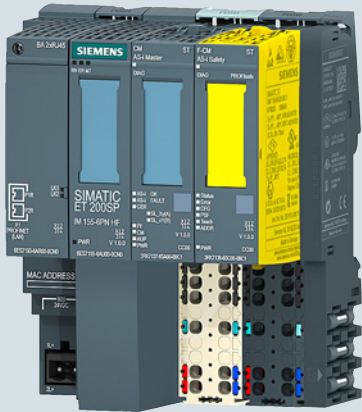
Additional benefits for SIRIUS 3RM1 motor starters:

- Using device connectors safety-related group shutdown with reduced wiring is possible
- Direct connection to the 3SK safety relay, without additional wiring



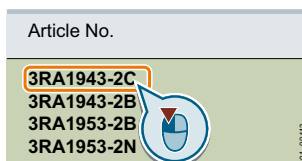
Introduction

Notes



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Or directly on the Internet, e.g.
www.siemens.com/product?3RA1943-2C

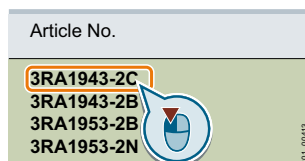
	Price groups	PG 212, 230, 250, 254, 255, 256, 41B, 41H, 41L, 42B, 42C, 42D, 42J, 5K1, 5K2, 5N3, 5W3
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2/13	IO-Link	
	AS-Interface	
	<u>Introduction</u>	
2/18	Communication overview	
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	AS-Interface specification	
2/20	- Specification V3.0	
2/21	- AS-i Power24V	
	<u>ASIsafe</u>	
2/22	Introduction	
2/40	F-CM AS-i Safety ST for SIMATIC ET 200SP	
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	Masters for SIMATIC ET 200	
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3/107	- SIRIUS 3RA27 function modules	
	Motor starters for use in the control cabinet	
8/56	- SIRIUS 3RA6 compact starters: 3RA61 direct-on-line starters, 3RA62 reversing starters	
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	- SIRIUS M200D motor starters for AS-Interface	
D 31.2 ¹⁾	SINAMICS G110M, SINAMICS G110D Distributed Inverters	
	SIRIUS ACT pushbuttons and indicator lights	
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¹⁾ See Catalog D 31.2.

	<u>Power supply units and data decoupling modules</u>		<u>Input modules</u>
2/78	AS-Interface power supply units	2/114	General data
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15/1	24 V power supply units		<u>Contactors and contactor assemblies</u>
2/81	S22.5 data decoupling modules	3/17	- SIRIUS 3RT contactors, 3-pole up to 250 kW
	Data decoupling modules for S7-1200	3/156	- SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW
2/83	- DCM 1271 data decoupling module	3/171	- SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW
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		1)	See Catalog ID 10.

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Overview

More information

Homepage, see www.siemens.com/as-interface

Industry Mall, see www.siemens.com/product?as-interface



AS-Interface

AS-Interface – the smart communication standard for universal connection of the field level to the control system

The AS-Interface (AS-i) – the Actuator-Sensor-Interface, to be more precise – is a smart bus system for the field level that connects all the sensors and actuators in the field to the higher-level control system more simply, flexibly and efficiently than any other.

The structure of a complex automation system is not always clear at first glance. The field level in particular, with its large numbers of devices with real-time requirements, needs a clear structure.

That is exactly what the AS-i fieldbus delivers: Via a simple two-wire cable – the yellow AS-i cable – in an AS-i network up to 62 bus nodes can be connected to the AS-i master and simultaneously supplied with power. The standard here is robust data transmission in a rugged environment with a high degree of protection for the AS-Interface.

AS-i = simple!	AS-i = flexible!	AS-i = efficient!
<ul style="list-style-type: none"> • Only one cable for data and energy • Time-saving assembly/installation • Engineering in the TIA Portal • User-friendly maintenance 	<ul style="list-style-type: none"> • Flexible topologies • Open standard • Expandability • Safety engineering 	<ul style="list-style-type: none"> • User-friendly addressing • Fast device replacement • Ruggedness and stability • Device and network diagnostics

IC01_00210

AS-i from Siemens has everything in its favor

- Complete AS-i product range for bus-based standard and safety technology from a single source
- System-wide integration of the AS-i devices into SIMATIC, SINUMERIK and the TIA Portal engineering framework
- Integration of ASIsafe applications into SIMATIC F controller safety programming
- Central configuration of standard and safety technology in the TIA Portal and in STEP7 Classic – just one engineering framework for controller, AS-i Master and safety
- Quick diagnostics of master and slave components via web browser, HMI or TIA Portal
- Planning, calculation and verification of the whole safety chain based on AS-i Safety in the Safety Evaluation Tool (TÜV-approved)
- Integration of lower-level AS-i networks into the PCS 7 process control system
- Global spare parts logistics, consulting and service

	Article No.	Page
<p>ASIsafe</p> <p>ASIsafe enables integration of safety-related components in an AS-Interface network, for example:</p> <ul style="list-style-type: none"> • EMERGENCY STOP pushbuttons • Protective door switches • Cable-operated switches • Other AS-i safety sensors <p>Your advantage: The simple wiring of AS-Interface is maintained.</p> <p>AS-i Master and AS-i Safety module for ET 200SP</p> <p>The CM AS-i Master ST and F-CM AS-i Safety ST modules are plugged into an ET 200SP configuration and connect an AS-i network, including safety-related inputs and outputs, with the controller.</p> <ul style="list-style-type: none"> • Single, double and multiple masters possible • Per CM AS-i Master ST module up to 496 DI / 496 DQ / 124 AI / 124 AQ possible • Per F-CM AS-i Safety ST module up to 31 safe input signals (two-channel) / 16 safe output channels possible • Configuring with TIA Portal or STEP 7 Classic • Plant-wide safety programming of the F-CPU via SIMATIC Distributed Safety/ Safety Advanced / F systems • Integrated diagnostics • No other programming tools required <p>Your advantage: Modular connection of fail-safe AS-i networks with system-wide programming in SIMATIC and SINUMERIK controllers.</p>	<p>6ES7</p>	<p>From 2/36</p>



AS-i Master and AS-i Safety module

Industrial Communication

Introduction

AS-Interface

ASIsafe (continued)



3RK3
Modular Safety System

Modular Safety System (MSS)

Supplementing the service-proven concept of safety monitors, the 3RK3 Modular Safety System offers, for example, the following functions for ASIsafe:

- Up to 50 enabling circuits including muting function
- Expandable fail-safe and non-fail-safe inputs/outputs
- Control of up to 12 ASIsafe outputs or 12 fail-safe independent switch-off groups
- Memory module for parameters, e.g. for device replacement
- Optional PROFIBUS interface for diagnostics and parameterization
- SIRIUS Safety ES, the intuitive graphic parameterization and diagnostics software
- AS-i Power24V capability

Your advantage: Easy to configure safety functions up to Category 4, PL e, SIL 3.

Article No.

Page

3RK3

From 2/24,
from 11/30



Safety monitor

AS-Interface safety monitors

- For monitoring safe stations and for linking AS-Interface inputs and outputs
- Ensures safe disconnection
- Available with one or two release circuits with two-channel configuration
- All versions with removable screw terminals or spring-type terminals
- All safety monitors in revised Version 3 with additional options
- Filtering out of brief single-channel interruptions in the sensor circuit with the expanded safety monitor Version 3
- Expanded safety monitor with integrated safe slave for controlling a distributed safe AS-i output or for safe coupling a safe signal from one AS-i network to another AS-i network
- ASIMON V3 Configuration software with graphic function diagram presentation

Your advantage: Easy to configure safety functions up to Category 4, PL e, SIL 3.

3RK1

2/28



K45F

AS-Interface safety modules

- Complete portfolio of ASIsafe modules
 - For connection of safety switches with contacts (e.g. position switches)
 - Degree of protection IP65/IP67 or IP20
 - Especially compact dimensions, with widths from 17.5 mm
 - Up to four safe inputs per module
 - Up to one safe output per module
 - Standard outputs are available on the module in addition
 - Up to Category 4, PL e, SIL 3
- Your advantage: Easy integration of safe signals both in the switching cabinet and in the field.

3RK1

From 2/29



SC17.5F



S45F SlimLine module,
safe AS-i output

SIRIUS 3SF1 mechanical safety switches for AS-Interface

- Plastic with degree of protection IP65 and metal with degree of protection IP66/IP67
- ASIsafe electronics integrated into the enclosure
- Available with separate actuator, with or without tumbler

Your advantage: Conventional wiring of safety functions no longer required.

3SF1

From 12/83



Safety switch

SIRIUS ACT EMERGENCY STOP mushroom pushbuttons for AS-Interface

- Degree of protection IP66/IP67/IP69K
- Metal or plastic version
- Connection of an EMERGENCY STOP device according to EN ISO 13850 to AS-Interface
- Safety-related AS-Interface module is snapped onto the commanding device from behind
- Can be used up to PL e, SIL 3





Your advantage: Easy direct connection of control elements to ASIsafe.

3SU14 modules
3SU18 enclosure

13/97, 13/113
13/107



EMERGENCY STOP
mushroom pushbutton
in enclosure

	Article No.	Page
Masters		
<p>The AS-Interface master connects SIMATIC control systems to AS-Interface. It automatically organizes the data traffic on the AS-Interface cable and handles not only signal processing, but also parameter setting, monitoring and diagnostics functions.</p> <p>Masters for SIMATIC S7</p> <p>AS-Interface master connections:</p> <ul style="list-style-type: none"> • CM 1243-2 for SIMATIC S7-1200 • CP 343-2P, CP 343-2 for SIMATIC S7-300 and ET 200M <p>Features:</p> <ul style="list-style-type: none"> • Connection of up to 62 AS-Interface slaves • Connection of up to 496 inputs and 496 outputs per master or AS-Interface network • Integrated analog value transmission • Simple configuration by adopting the actual configuration on the AS-Interface network • Easy operation in the input/output address area of the SIMATIC S7 comparable to standard I/O modules • Monitoring of the control supply voltage on the AS-Interface shaped cable <p>Your advantage: Easy connection to SIMATIC controllers.</p>	<p>3RK7 6GK7</p>	<p>From 2/32 From 2/34</p>
		
<p>CM 1243-2 for SIMATIC S7-1200</p>		
		
<p>CP 343-2, CP 343-2P for SIMATIC S7-300</p>		
<p>Masters for SIMATIC ET 200</p> <p><u>CM AS-i Master ST for SIMATIC ET 200SP</u></p> <ul style="list-style-type: none"> • Connection of up to 62 AS-Interface slaves per master • Connection of up to 496 inputs and 496 outputs per AS-Interface network • Integrated analog value transmission • Simple configuration by adopting the ACTUAL configuration on the AS-Interface network • Easy operation in the input/output address range of the SIMATIC (or other controller) comparable to standard I/O modules • Monitoring of the control supply voltage on the AS-Interface shaped cable • Integrated ground-fault monitoring <p>Your advantage: Easy connection of AS-i networks to distributed I/Os.</p>	<p>3RK7</p>	<p>From 2/36</p>
		
<p>CM AS-i Master ST for SIMATIC ET 200SP</p>		
<p><u>F-CM AS-i Safety ST for SIMATIC ET 200SP</u></p> <ul style="list-style-type: none"> • Monitoring of up to <ul style="list-style-type: none"> - 31 fail-safe AS-i input slaves per F-CM - 16 fail-safe AS-i outputs per F-CM • Transmission via PROFI-safe into the F-CPU for safety-related applications up to SIL 3 (IEC 61508/EN 62061)/PL e (EN ISO 13849-1) • As a result, these sensors become part of the "unlimited programming and data archiving" options of SIMATIC and of Safety Integrated. <p>Your advantage: Easy connection of fail-safe AS-i networks to the distributed I/Os.</p>	<p>3RK7</p>	<p>From 2/40</p>
		
<p>F-CM AS-i Safety ST for SIMATIC ET 200SP</p>		

Industrial Communication

Introduction

AS-Interface

Routers



DP/AS-i Link Advanced



DP/AS-Interface Link 20E



IE/AS-i Link PN IO

- Degree of protection IP20
- PROFIBUS slave or PROFINET IO device and AS-Interface master (single or double master in case of DP/AS-i Link Advanced and IE/AS-i Link PN IO)
- Connection of up to 62 AS-Interface slaves per AS-Interface network
- Connection of up to 496 digital inputs and 496 outputs per AS-i network, with doubling of the project data volume for double master versions
- Integrated ground-fault monitoring (in case of DP/AS-i Link Advanced and IE/AS-i Link PN IO)
- User-friendly local diagnostics and local startup by means of a full graphic display and control keys or through a web interface with a standard browser (in case of DP/AS-i Link Advanced and IE/AS-i Link PN IO)
- Integrated analog value transmission
- Configuring and uploading of AS-Interface configuration in STEP 7 possible
- User-friendly selection of AS-Interface slaves

Your advantage: Compact transition to PROFIBUS or PROFINET.

As an alternative to the IE/AS-i Link PN IO, a high-performance router can be set up between PROFINET and AS-Interface by combining the CM AS-i Master ST and F-CM AS-i Safety ST modules in an ET 200SP station (for safety-related applications), see pages 2/36 and 2/40.

Article No.	Page
3RK3, 6GK1	From 2/44

Slaves

Slaves contain the AS-Interface electronics and connection options for sensors and actuators in the field and in the control cabinet. A total of up to 62 slaves can be connected to one bus. The slaves then exchange their data in cyclic mode with a control module (master).

I/O modules for use in the field, high degree of protection

Digital I/O modules, IP67 – K60, K60R, K45 and K20

- Degree of protection IP65/IP67 or IP68/IP69K
- Modules available with up to degree of protection IP68/IP69K
- Connection sockets in M8/M12
- Up to eight inputs and four outputs
- A/B technology available
- Contacting protected against polarity reversal
- Standard rail mounting and wall mounting possible
- Mounting of the module on the base plate using just one screw
- Diagnostics LEDs

Your advantage: Reduction of mounting and startup times by up to 40%.



K20 digital module



K45 digital module



K60 digital module



K60 analog module

Analog I/O modules, IP67 – K60

- Degree of protection IP65/IP67
- Detects or transmits analog signals locally
- two-/four-channel
- Input modules for up to four sensors with current signal, with voltage signal or with thermal resistor
- Output modules for current or voltage
- Fast analog modules available for higher access speeds

Your advantage: Easy integration of analog values.

3RK1, 3RK2	From 2/55
3RK1	From 2/65

Slaves (continued)		Article No.	Page
 <p>SlimLine Compact SC17.5</p> <p>SlimLine Compact SC22.5</p>	<p>I/O modules for use in the control cabinet</p> <ul style="list-style-type: none"> Degree of protection IP20 No M12 plugs required for connection Especially narrow design for SlimLine Compact modules with widths of 17.5 mm and 22.5 mm Analog modules are also available Removable, finger-safe terminal blocks that cannot be inadvertently interchanged with the SlimLine Compact Modules Flat design of the flat modules for small control cabinets and confined conditions Connection with screw terminals or spring-type terminals Standard rail mounting and wall mounting possible Diagnostics LEDs <p>Your advantage: Modules enable space-saving use in control cabinets and small local control boxes.</p>	<p>3RG9, 3RK1, 3RK2</p>	<p>From 2/68</p>
 <p>F90 module</p>			
 <p>Flat module</p>			
 <p>Counter module</p>	<p>Modules with special functions</p> <p><u>Counter modules</u></p> <ul style="list-style-type: none"> Degree of protection IP20 For evaluation of pulses Connection with screw terminals or spring-type terminals <p>Your advantage: Evaluation of pulses which exceed even the clock frequency of AS-Interface.</p>	<p>3RK1</p>	<p>2/75</p>
 <p>Ground-fault detection module</p>	<p><u>Ground-fault detection modules</u></p> <ul style="list-style-type: none"> Degree of protection IP20 Display using LEDs Two signaling outputs <p>Your advantage: Automatic diagnostics of ground faults on AS-Interface</p>	<p>3RK1</p>	<p>2/76</p>
 <p>Overvoltage protection module</p>	<p><u>Overvoltage protection modules</u></p> <ul style="list-style-type: none"> Degree of protection IP67 Discharge through ground cable with oil-proof outer sheath Protection at transition of lightning protection zones <p>Your advantage: The AS-Interface overvoltage protection module protects downstream AS-Interface devices or individual sections in AS-Interface networks from conducted overvoltages.</p>	<p>3RK1</p>	<p>2/77</p>

Industrial Communication

Introduction

AS-Interface

Slaves (continued)



SIRIUS contactor
3RT203.-1NB30-0CCO



SIRIUS 3RA2712 function
module for AS-Interface



3RA61 compact starter



SIRIUS M200D motor
starter

Contactors and contactor assemblies

SIRIUS 3RT contactors, 3-pole up to 250 kW
SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW
SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

- Notable reduction of wiring in the control circuit
- Integrated mechanical interlocking
- Prevention of wiring errors in the main circuit

SIRIUS 3RA27 function modules for AS-Interface

- Connection of 3RT20 power contactors with communication capability, 3RA23 reversing contactor assemblies, and 3RA24 contactor assemblies for star-delta (wye-delta) starting to AS-Interface
- Reduction of control current wiring through plug-in design and integrated monitoring of circuit breaker/motor starter protector and contactor
- Reduced space requirement in the control cabinet through fewer digital inputs and outputs in the control system
- Easy configuration through operation of feeders instead of individual contactors
- Enhanced operational reliability and quick wiring thanks to spring-type connections
- Small number of variants through use of identical modules for size S00 to S3 contactors

Your advantage: Shortening of mounting and startup times.

Motor starters for use in the control cabinet

SIRIUS 3RA6 compact starters

3RA61 direct-on-line starters, 3RA62 reversing starters

- Degree of protection IP20
- Very compact load feeders with the integrated functionality of an electronic overload relay
- As direct-on line or reversing starters for motors up to 15 kW/400 V
- Easy expansion into a communication-capable load feeder using AS-i add-on modules
- On-site safe disconnection also possible using AS-i add-on modules
- Standardized integration of the loads in higher-level control systems using AS-i

Your advantage: Compact solution with minimum wiring outlay for actuating direct-on-line and reversing starters in the control cabinet.





Motor starters for use in the field, high degree of protection

SIRIUS M200D motor starters for AS-Interface

- High degree of protection IP65 for cabinet-free design
- As direct-on-line or reversing starters for motors up to 5.5 kW/400 V
- Mechanical or electronic switching for high switching frequencies
- Optional with manual operation and brake control
- Expanded diagnostics and parameterization possible through AS-Interface
- Easy and consistent integration in STEP 7 through AS-Interface

Your advantage: The correct solution for all simple applications in conveyor systems with spatially distributed drives.

Article No.	Page
3RT20 3RA23 3RA24	From 3/17 From 3/156 From 3/171
3RA2712	From 3/107
3RA6 3RA61 3RA62	From 8/56 8/66 8/67
3RK1	From 9/43

Slaves (continued)		Article No.	Page
 <p>SINAMICS G110M frequency inverter</p>	<p>SINAMICS G110M distributed inverters Wide power range from 0.37 to 4 kW</p> <ul style="list-style-type: none"> • Preconfigured with SIMOGEAR • Rugged, with IP65/IP66 degree of protection, up to 55 °C ambient temperature • Local commissioning via DIP switch, standard USB interface and potentiometer or Intelligent Operator Panel (IOP) • Integrated safety functions (STO locally via F-DI or via PROFIsafe) • Integrated, specific software functionality for conveyor systems <ul style="list-style-type: none"> - Quick stop function for fast reaction times to sensors - Limit switch functionality, e.g. for rotary table, corner transfer unit <p>Your advantage: The simple solution for compact drives with safety requirements in conveyor technology</p>	<p>6SL3517 power modules, 6SL3544 control units</p>	<p>Catalog D 31.2</p>
 <p>SINAMICS G110D frequency inverter</p>	<p>SINAMICS G110D distributed inverters High degree of protection IP65 for cabinet-free installation</p> <ul style="list-style-type: none"> • Wide power range from 0.75 to 7.5 kW • Easy commissioning and maintenance thanks to standardized plug-in connections for bus, energy and I/Os • Expanded diagnostics and parameterization through AS-Interface • Optional maintenance switch • Optional manual local operation • Same plugs used as for the M200D motor starter <p>Your advantage: Easy, consistent implementation of distributed system concepts thanks to scaling of SINAMICS G110D, SINAMICS G120D and SIRIUS M200D products.</p>	<p>6SL3511</p>	<p>Catalog D 31.2</p>
 <p>AS-Interface module</p>	<p>Commanding and signaling devices <u>SIRIUS ACT pushbuttons and indicator lights for AS-Interface</u></p> <ul style="list-style-type: none"> • Modular configuration based on individual specifications, or as enclosure with standard components • AS-Interface modules for base mounting or mounting in enclosure • Up to six command points for standard signals or EMERGENCY STOP • Degree of protection IP66/IP67/IP69K • Metal or plastic version • Indicator lights with integrated LED • Any change of equipment possible even after installation <p>Your advantage: Complete operating system with simple AS-Interface connection for your plant.</p>	<p>3SU14 modules 3SU18 enclosure</p>	<p>13/97, 13/113 From 13/107</p>
 <p>Signaling column</p>	<p><u>SIRIUS 8WD4 signaling columns</u></p> <ul style="list-style-type: none"> • Many optical and acoustic elements can be combined • Up to three signaling elements can be connected using an adapter element • With LEDs or incandescent lamps <p>Your advantage: Signaling columns for monitoring production sequences and for visual or acoustic warnings in emergency situations, with easy AS-Interface connection.</p>	<p>8WD4</p>	<p>From 13/167</p>

Industrial Communication

Introduction

AS-Interface

Power supply units and data decoupling modules

AS-Interface power supply units generate a controlled direct voltage of 30 V DC with high stability and low residual ripple in conjunction with data decoupling. They are an integral component of the AS-Interface network and enable the simultaneous transmission of data and energy on one cable.

In conjunction with data decoupling modules, AS-Interface can also be operated with standard power supply units.

AS-Interface power supply units

- With wide performance spectrum from 2.6 to 8 A
 - Degree of protection IP20
 - Separation of data and energy by means of the integrated data decoupling
 - UL/CSA approval means the power supplies can be used worldwide, 2.6 A version with output power restricted to max. 100 W (for Class 2 circuits in accordance with NEC)
 - Certified for global use
 - Integrated ground-fault and overload detection save the need for additional components and make applications reliable
 - Diagnostics memory, remote signaling and remote RESET allow fast detection of faults in the system
 - Ultra-wide input range enables single- and two-phase applications (8 A version)
- Your advantage: Optimum performance for each application.

Article No.	Page
3RX9	2/78
3RX9	From 2/79
6EP	From 15/1
3RK1	From 2/81
3RK7	From 2/83
3RX9	2/85



IP20, 3 A



IP20, 8 A



PSN130S
30 V DC, 8 A



SITOP PSU100M,
24 V DC, 20 A



S22.5 data decoupling
module



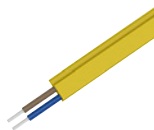
DCM 1271 data
decoupling module

Transmission media







AS-Interface shaped cables for connection of network stations

AS-Interface shaped cables

- No polarity reversal thanks to trapezoidal shape
 - Cables made of optimized material for different operating conditions
 - Special version according to UL CLASS 2 available
- Your advantage: Fast replacement and connection to AS-Interface by piercing method.



Shaped cable

System components and accessories		Article No.	Page
<p>Accessories comprise tools for mounting, installation and operating as well as individual components.</p> <p>Repeaters and extension plugs</p> <ul style="list-style-type: none"> Repeaters for extending the AS-Interface cable by 100 m per repeater Extension plug for extending the AS-Interface segment to max. 200 m Parallel switching of several repeaters possible (star configuration option) Maximum size increases (when combined) to more than 600 m Easy mounting IP67 module enclosure <p>Your advantage: Lower infrastructure costs, more possibilities of use and greater freedom for plant planning.</p>		<p>6GK1 repeater</p> <p>3RK1 extension plug</p>	<p>2/86</p> <p>2/87</p>
 <p>Repeater</p>  <p>Compact extension plug</p>			
 <p>Addressing unit for AS-Interface V 3.0</p>	<p>Addressing units</p> <ul style="list-style-type: none"> Reading out and adjusting the slave address 0 to 31 or 1A to 31A, 1B to 31B, with automatic addressing aid and prevention of double addresses Reading out the slave profile (IO, ID, ID2) and reading out and setting the ID1 code Input/output test when commissioning the slaves, on all digital and analog slaves according to AS-Interface specification V3.0, including safe input slaves and complex CTT2 slaves Display of the operational current in case of direct connection of an AS-i slave (measuring range from 0 to 150 mA) Storage of complete network configurations (profiles of all slaves) to simplify the addressing <p>Your advantage: Easiest way to address and test the slaves.</p>	3RK1	From 2/88
 <p>Analyzer</p>	<p>AS-Interface analyzer</p> <ul style="list-style-type: none"> Diagnostics units for completely checking the quality and function of an AS-Interface installation Transmission of collected data through an RS 232 interface to a PC, evaluation by software Easy and user-friendly operation Automatically generated test logs Advanced trigger functions enable exact analysis Process data can be monitored online In addition to digital I/O data it is possible to view analog values and safety slaves in data mode. <p>Your advantage: Preventative testing of an AS-Interface network is possible, recorded logs facilitate remote diagnostics.</p>	3RK1	From 2/90
 <p>M12 sealing cap</p>  <p>Cable terminating piece</p>	<p>Miscellaneous accessories</p> <p>Individual components such as sealing caps, cable adapters, distributors, M12 plugs and cables, AS-Interface System Manual, etc.</p>	3RK1, 3RT1, 3RX9, 6ES7	From 2/94

Industrial Communication

Introduction

AS-Interface

Diagnostics



Diagnostics for AS-Interface via HMI panel

The following diagnostics block with visualization via HMI or web browser for AS-Interface can be downloaded free of charge in the Industry Online Support Portal:

Diagnostics blocks

- For CM AS-i Master ST and F-CM AS-i Safety ST in ET 200SP, see <https://support.industry.siemens.com/cs/ww/en/view/109479103>
- For other Siemens AS-i master and links, see <https://support.industry.siemens.com/cs/ww/en/view/50897766>

Your advantage: Detailed diagnostic display for fast fault analysis and short downtimes – for easy integration into STEP 7 projects.

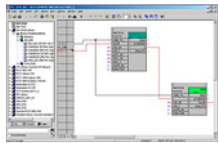
Article No.

Page

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Software



AS-Interface block library for PCS 7

AS-Interface block library for SIMATIC PCS 7

- Engineering and runtime software
- Easy connection of AS-Interface to PCS 7
- Engineering work reduced to positioning and connecting the blocks in the CFC
- No additional configuring steps required for connection to the PCS 7 Maintenance Station, diagnostics for the AS-i system optimally guaranteed

Your advantage: Easy connection of AS-Interface to PCS 7, little engineering and configuration.

3ZS1635

From 14/19

Connection methods



Screw terminals



Spring-type terminals,
spring-type terminals (push-in)

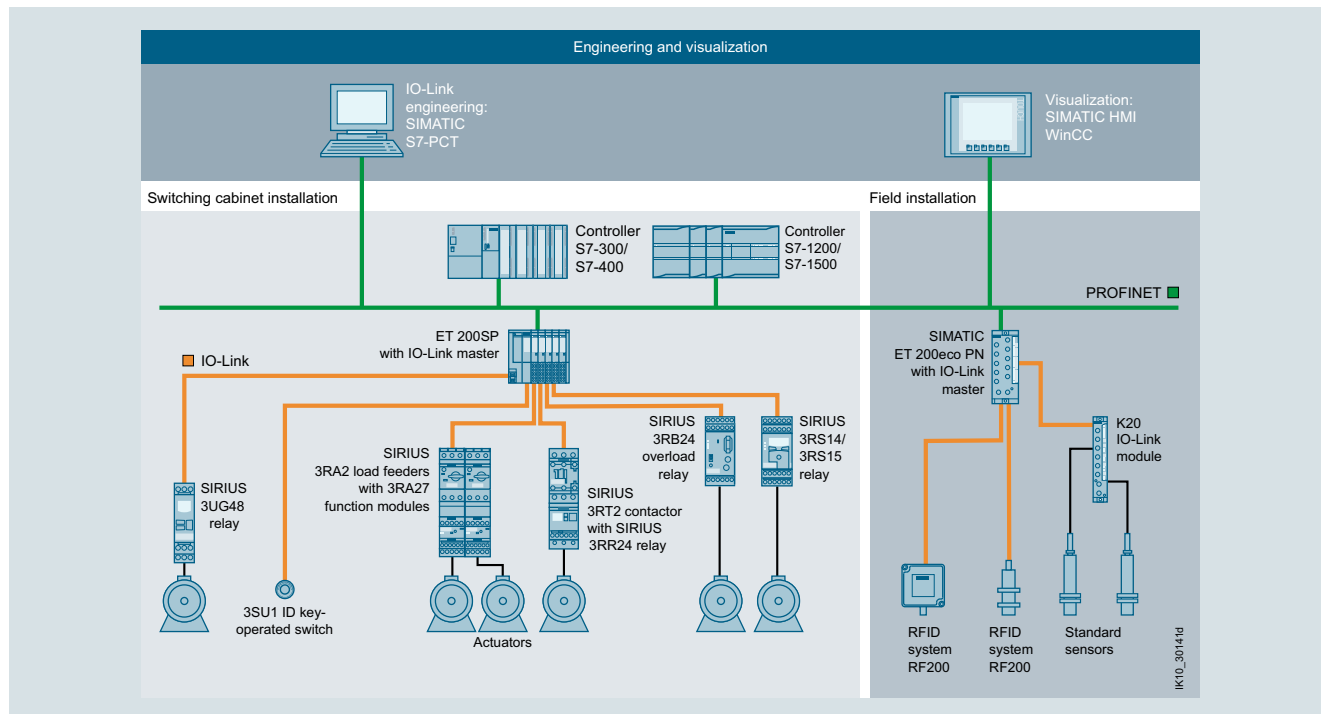


COMBICON connectors (plug-in screw terminals)

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Overview

More information

Homepage, see www.siemens.com/io-linkFor important topics at a glance, see
<https://support.industry.siemens.com/cs/ww/en/view/109737170>

Engineering and visualization

IO-Link – more than just another interface

IO-Link is an open communication standard for sensors and actuators – defined by the IO-Link Consortium.

IO-Link is a smart concept for the uniform connection of actuators and sensors to the control level by means of a low-cost point-to-point connection.

As an open interface, IO-Link can be integrated into all standard fieldbus and automation systems.

The IO-Link communication standard below fieldbus level enables central error diagnostics and localization down to actuator/sensor level, and facilitates both start up and maintenance by allowing parameter data to be dynamically changed directly from the application.

The increasing intelligence of field devices and their integration into automation as a whole now allows data to be accessed right down to the lowest field level. The result: greater plant availability and less engineering work.

Transparency in the process through IO-Link

High system availability and data transparency are market requirements that must also be met by the connecting of innovative control technology to a control system. A systematic diagnostics concept and efficient handling of parameter data are required for this purpose in automation.

With the aid of the IO-Link communication standard, a communication link is established between switchgear and controller, and this allows data to be exchanged efficiently. Based on a standard cable, it is therefore possible to integrate parameter, process and diagnostic data and measured values into the plant automation with ease. For example, the available diagnostic data allow potential errors to be detected quickly, thus avoiding lengthy plant down times.






As a consequence of their basic function, such as overload protection (SIRIUS 3RB24 electronic overload relays for IO-Link), many controls have measured values. The availability of these via IO-Link now allows conclusions to be drawn at an early stage concerning wear and tear in the application.






At the same time the option of parameterizing via IO-Link supports the device not just when parameters concerning operating time are changed, but also when the device is replaced. In the case of a spare part, for example, the parameters can be quickly transmitted to a new device via the communication system.

Industrial Communication

Introduction

IO-Link

		Article No.	Page
Masters			
The IO-Link master modules form the heart of the IO-Link system.			
 <p>SM 1278 4xIO-Link for SIMATIC S7-1200</p>	IO-Link master module for SIMATIC S7-1200 <u>SM 1278 4xIO-Link master</u>	6ES7	2/104
	<ul style="list-style-type: none"> IO-Link master as serial communication module with four ports (channels) according to IO-Link specification V1.1 Easy device exchange with automatic data recovery without engineering for IO-Link device Up to four IO-Link devices (3-wire connections) can be connected to each IO-Link master module Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device <p>Your advantage: Easy connection of IO-Link connections to the SIMATIC S7-1200.</p>		
 <p>CM 4xIO-Link for ET 200SP</p>	IO-Link master modules for ET 200SP <u>CM 4xIO-Link communication module</u>	6ES7	From 2/105
	<ul style="list-style-type: none"> IO-Link master as serial communication module with four ports (channels) according to IO-Link specification V1.1 Module replacement with automatic data recovery without engineering for IO-Link master and device Up to four IO-Link devices (3-wire connections) can be connected to each IO-Link master module. Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device <p>Your advantage: Easy connection of IO-Link connections to distributed I/Os.</p>		
 <p>IO-Link master module for ET 200pro</p>	IO-Link master module for ET 200pro <u>4 IO-Link HF electronic module</u>	6ES7	2/108
	<ul style="list-style-type: none"> IO-Link master as serial communication module with four ports (channels) according to IO-Link specification V1.1 Easy device exchange with automatic data recovery without engineering for IO-Link device Up to four IO-Link devices can be connected to each IO-Link master module Support of IO-Link Port Class B Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device <p>Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area.</p>		
 <p>6ES7148-6JA00-0AB0 6ES7148-6JD00-0AB0</p>	IO-Link master module for ET 200eco PN <u>ET 200eco PN IO-Link master</u>	6ES7	From 2/109
	<ul style="list-style-type: none"> 4 IO-L + 8 DI + 4 DQ 24 V DC/1.3 A <ul style="list-style-type: none"> Up to four IO-Link devices (IO-Link Port Class A) can be connected Up to eight standard sensors (8 DI) and up to four standard actuators (4 DQ) can be additionally connected Enclosure width 60 mm 4 IO-L <ul style="list-style-type: none"> Up to four IO-Link devices (IO-Link Port Class B) can be connected Enclosure width 30 mm <p>Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area.</p>		
 <p>CM IO-Link for ET 200AL</p>	IO-Link master module for ET 200AL <u>CM IO-Link communication module</u>	6ES7	From 2/111
	<ul style="list-style-type: none"> IO-Link master as serial communication module with four ports (channels) according to IO-Link specification V1.1 Easy device exchange with automatic data recovery without engineering for IO-Link device Up to four IO-Link devices can be connected to each IO-Link master module Support of IO-Link Port Class B Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd), automatic adjustment to the data transmission rate supported by the device <p>Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area.</p>		

	Article No.	Page
Input modules		
		IO-Link input modules make full use of the potential of IO-Link and are a more attractive solution economically than a direct sensor connection.
	K20 IO-Link modules	3RK5 From 2/114
	<ul style="list-style-type: none"> • Four or eight digital inputs • Degree of protection IP65/IP67 • Connection sockets in M8/M12 • Contacting protected against polarity reversal Your advantage: Reduction of mounting and startup times by up to 40%.	
Industrial controls		
		Starters and contactor assemblies for direct-on-line, reversing and star-delta (wye-delta) starting can be connected to IO-Link through function modules without any additional, complicated wiring.
	3RT20 3RA23 3RA24	From 3/17 From 3/156 From 3/171
	Contactor and contactor assemblies SIRIUS 3RT contactors, 3-pole up to 250 kW SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW <ul style="list-style-type: none"> • Notable reduction of wiring in the control circuit • Integrated mechanical interlocking • Prevention of wiring errors in the main circuit 	
	3RA2711	From 3/107
	SIRIUS 3RA27 function modules <ul style="list-style-type: none"> • Connection of 3RT20 power contactors with communication capability, 3RA23 reversing contactor assemblies, and 3RA24 contactor assemblies for star-delta (wye-delta) starting to IO-Link • Reduction of control current wiring through plug-in technology, feeder groups and integrated monitoring of circuit breaker/motor starter protector and contactor • Reduced space requirement in the control cabinet through fewer digital inputs and outputs in the control system • Simple user program through operation of feeders instead of individual contactors • Enhanced operational reliability and quick wiring thanks to spring-type connections • Can be flexibly combined with many automation solutions using the open, standardized IO-Link wiring system • Small number of variants through use of identical modules for size S00 to S3 contactors Your advantage: Shortening of mounting and startup times	
	3RB24	From 7/130
	Overload relays SIRIUS 3RB24 electronic overload relays for IO-Link for high-feature applications <ul style="list-style-type: none"> • Diagnostics and current value transmission via IO-Link • Current measuring modules (3RB29) for current values from 0.3 ... 630 A • Controlling direct-on-line, reversing and wye-delta starters via IO-Link in conjunction with contactors • Full motor protection through PTC connection Your advantage: Communication-capable overload relay enables remote diagnostics and preventative maintenance.	
	3RA6 3RA64 3RA65	From 8/56 8/68 8/69
	Motor starters for use in the control cabinet 3RA64, 3RA65 compact starters for IO-Link <ul style="list-style-type: none"> • Integrated functionality of a circuit breaker, contactor and electronic overload relay and various functions of optional mountable accessories • Can be used for direct starting of standard induction motors up to 32 A (approx. 15 kW/400 V) • Compact design offers enormous savings in space and wiring in the control cabinet • Low variance of devices thanks to wide setting ranges for the rated current and wide voltage ranges Your advantage: The diagnostics data of the process collected by the 3RA6 compact starter, e.g. short circuit, end of service life, limit position, etc., are not only indicated on the compact starter itself but also transmitted to the higher-level control system through IO-Link.	

Industrial Communication

Introduction

IO-Link

Industrial controls (continued)

Monitoring relays

SIRIUS 3RR24 monitoring relays for mounting onto 3RT2 contactors for IO-Link

- Monitoring relays for mounting onto 3RT2 contactors
- Parameterization and diagnostics via the display on the device or via IO-Link
- Adjustable warning and switch-off limit values and on/tripping delay times
- All current measured values available in the control system

Your advantage: Communication-capable monitoring relay enables remote diagnostics and preventative maintenance.

SIRIUS 3UG48 monitoring relays for stand-alone installation for IO-Link

- Monitoring of
 - Network (3UG481)
 - Voltage (3UG483)
 - Current (3UG4822)
 - Power factor and active current (3UG484)
 - Fault current (3UG4825)
 - Speed (3UG485)
- Parameterization and diagnostics via the display on the device or via IO-Link
- Adjustable warning and switch-off limit values and on/tripping delay times
- All current measured values available in the control system

Your advantage: Communication-capable monitoring relay enables remote diagnostics and preventative maintenance.

SIRIUS 3RS14, 3RS15 temperature monitoring relays for IO-Link

- Measuring the temperature of solids, liquids and gases
- Use of resistance sensors (3RS14) or thermocouples (3RS15)
- Parameterization and diagnostics via the display on the device or via IO-Link
- Adjustable warning and switch-off limit values and on/tripping delay times
- All current measured values available in the control system

Your advantage: Independent monitoring easily linked to the control system.

SIRIUS ACT pushbuttons and indicator lights

SIRIUS ACT 3SU1 ID key-operated switches for IO-Link

- Access system and selection system for four authorization levels
- Authentication of groups and persons
- Five ID keys with different coding
- Option for individual coding via IO-Link
- For installation in enclosures or fastening on front plate
- Electronic module for ID key-operated switches must be ordered separately.

Your advantage: Only authorized personnel can work on plants and machines.

SIRIUS ACT 3SU1 electronic modules for IO-Link

- Eight digital inputs and outputs possible
- DI and DQ freely selectable (programmable)
- Input and output functions parameterizable
- Connection system (push-in)
- For installation in enclosures or fastening on front plate

Your advantage: No wiring required if ordered in a 3SU1 enclosure via configurator.



SIRIUS 3RR24 monitoring relay



SIRIUS 3UG48 monitoring relay



SIRIUS 3RS14, 3RS15 temperature monitoring relay



SIRIUS ACT 3SU1 ID key-operated switch



SIRIUS ACT 3SU1 electronic module

RFID system

SIMATIC RF200 RFID system in the HF range



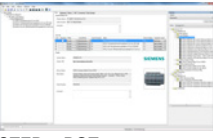
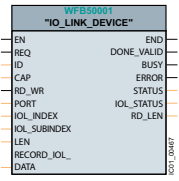
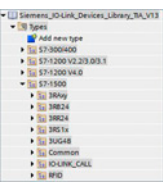
Products SIMATIC RF210R, SIMATIC RF220R, SIMATIC RF240R, SIMATIC RF250R, SIMATIC RF260R

- Simple identification tasks such as reading an ID number (UID)
- Reading of user data
- Writing of user data
- No RFID-specific programming, ideal for those new to RFID
- Simple connection via master modules for IO-Link, such as SIMATIC S7-1200, ET 200SP, ET 200pro, ET 200eco PN and ET 200AL
- Use with the tried and tested ISO 15693 transponders (MDS Dxxx)



RFID system for IO-Link

Article No.	Page
3RR24	From 10/70
3UG48	From 10/109
3RS14, 3RS15	From 10/143
3SU1	13/10
3SU1400	13/98, 13/113
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Software  STEP 7 PCT	--	2/102
 IO-Link device function block for TIA Portal	--	2/102
 "Siemens IO-Link Devices" block library	--	2/102

IODD files

These files provide the device description for IO-Link devices.

- Comprehensive IODD catalog of SIEMENS IO-Link devices
- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/ps/15851>

IODDfinder

The entire world of IO-Link under one roof

The IODDfinder is a service provided by the IO-Link community. It is a central cross-vendor database for descriptive files (IODDs). In addition, the platform provides an overview of the available IO-Link devices.

For more information, see <https://ioddfinder.io-link.com/#/>.

STEP 7 PCT (Port Configuration Tool)

Engineering software for configuring the IO-Link master modules for SIMATIC S7-1200, ET 200SP, ET 200pro, ET 200eco PN and ET 200AL

- Available as a stand-alone version or integrated into STEP 7 (V5.5 SP1 or later) and TIA (V12 or later)
- Engineering of the IO-Link devices connected to the master
- Monitoring of the process image of the IO-Link devices
- Open interface for importing further IODDs
- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/view/32469496>

IO-Link function blocks (IO-Link master and IO-Link device)

STEP 7 function block for easy acyclical data exchange in the user program

- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/view/82981502>

"Siemens IO-Link Devices" block library

This library provides function blocks and user-defined data types (UDTs) for all IO-Link devices from the Siemens portfolio. These blocks and UDTs standardize and simplify communication with IO-Link devices.

- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/view/90529409>

AS-Interface

Introduction

Communication overview

Overview

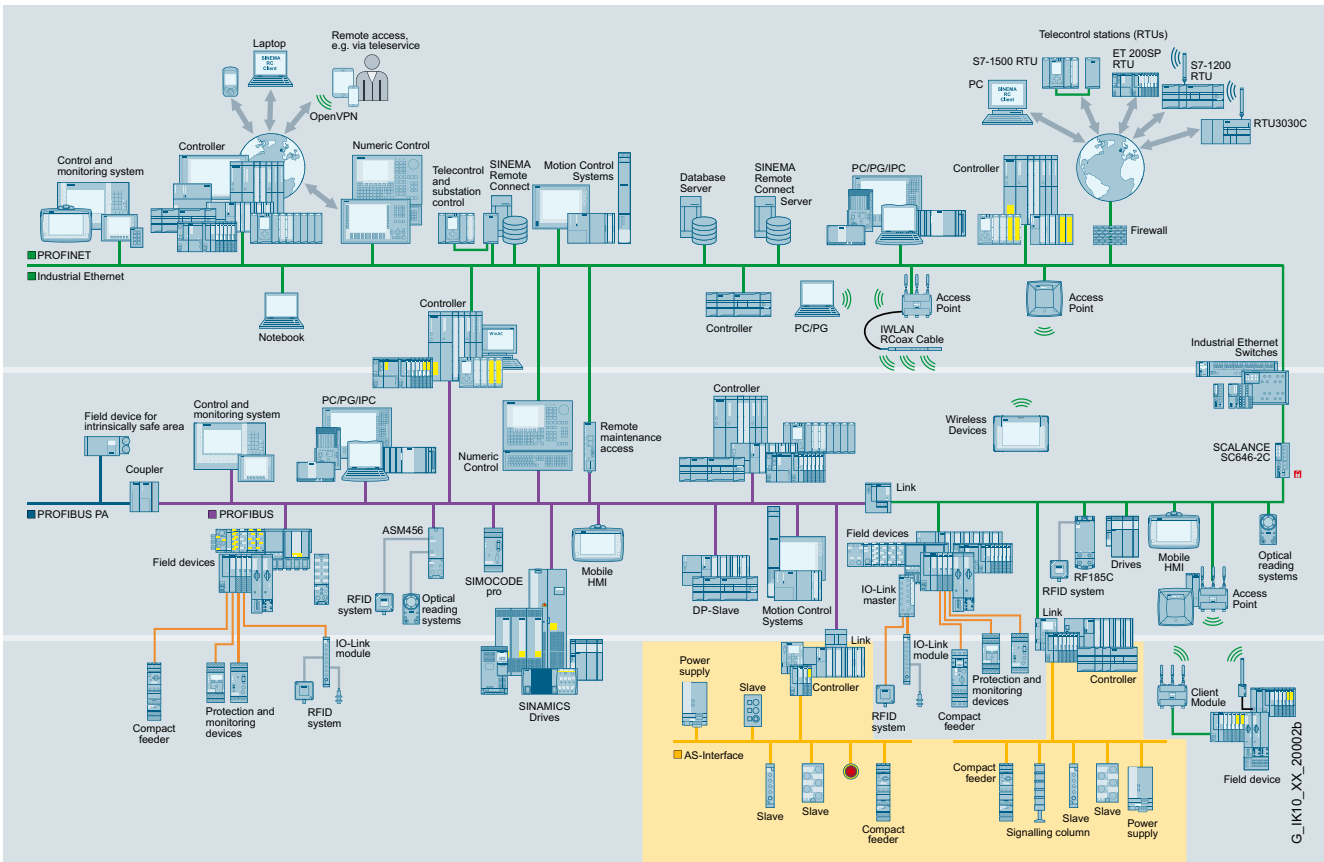
AS-Interface is an open, international standard according to EN 50295 and IEC 62026-2 for process and field communication. Leading manufacturers of actuators and sensors all over the world support the AS-Interface. Interested companies are provided with the electrical and mechanical specifications by the AS-Interface Association.

AS-Interface is a single master system. For automation systems from Siemens, there are communications processors (CPs), communications modules (CMs) and routers (links) that control the process or field communication as masters, and actuators and sensors that are activated as AS-Interface slaves.

More information

Homepage, see www.siemens.com/as-interface

Industry Mall, see www.siemens.com/product?as-interface



AS-Interface in the SIMATIC NET communications landscape

Benefits

An important characteristic of the AS-Interface technology is the use of a shared two-wire cable for data transmission and distribution of auxiliary power to the sensors and actuators. An AS-i power supply unit or alternatively a standard power supply unit that meets the requirements of the AS-Interface transmission method and has an external AS-i data decoupling module is used for the distribution of auxiliary power. The AS-Interface cable used for the wiring is mechanically coded and hence protected against polarity reversal and can be easily contacted by the insulation piercing method.

Elaborately wired control cables in the control cabinet and marshaling racks can be replaced by AS-Interface.

The AS-Interface cable can be connected to any points thanks to a specially developed cable and connection by the insulation piercing method.

With this concept you become extremely flexible and achieve high savings.

Application

I/O data exchange

The AS-i master automatically transfers the inputs and outputs between the controller and the digital and analog AS-Interface slaves. Slave diagnostics information is forwarded to the control system when required.

The latest AS-Interface masters according to the AS-Interface specification V3.0 support integrated analog value processing. This means that data exchange with analog AS-Interface slaves is just as easy as with digital slaves.

Command interface

In addition to I/O data exchange with binary and analog AS-Interface slaves, the AS-Interface masters can provide a number of other functions through the command interface.

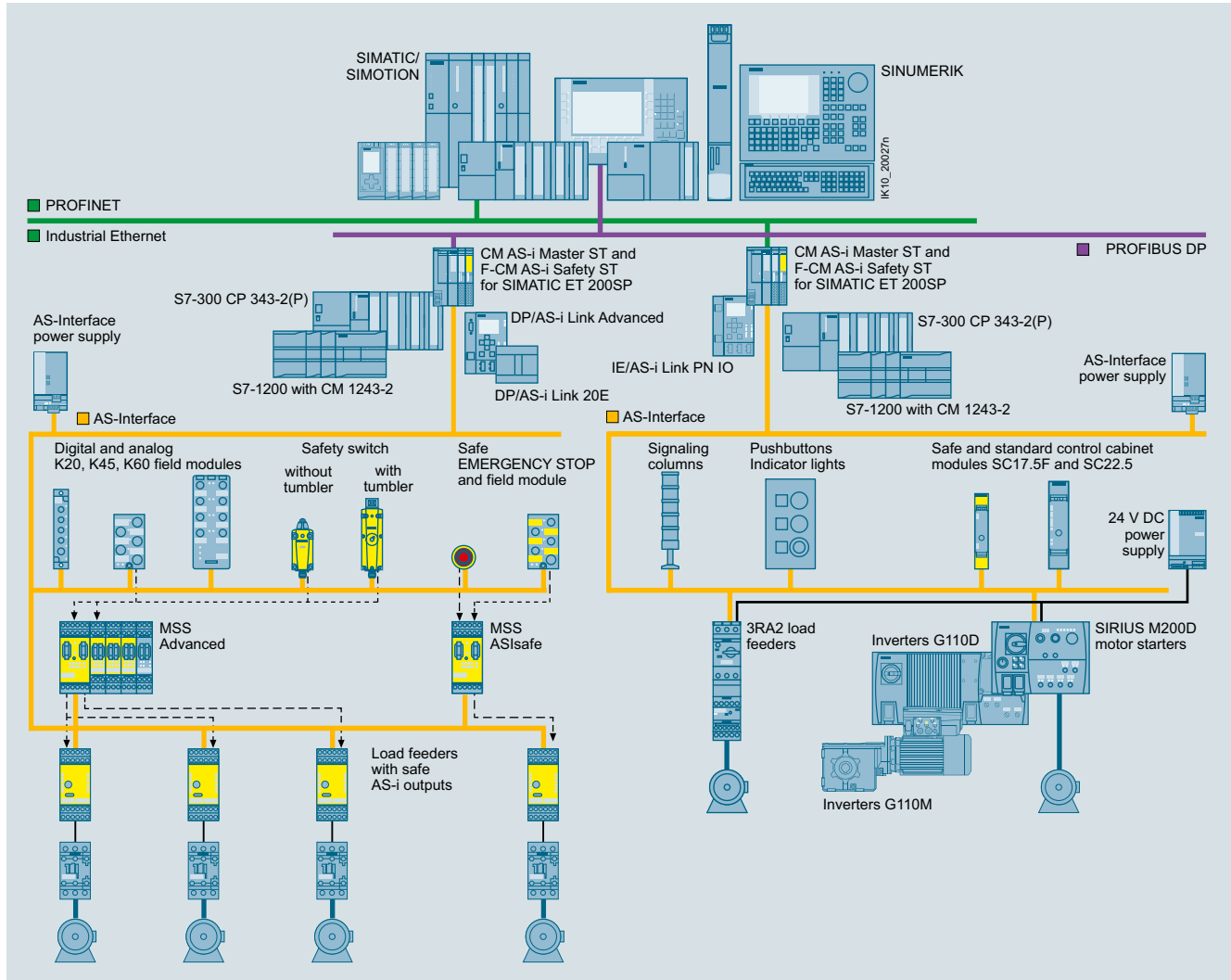
Hence it is possible, for example, for slave addresses to be issued, parameter values transferred or configuration information read out from user programs.

For more information, see <https://support.industry.siemens.com/cs/ww/en/view/51678777>.

Overview

To implement communication, the following components of a system installation are available:

- AS-i modules for central control units such as SIMATIC S7, ET 200M/ET 200SP distributed I/Os, or network transitions from PROFIBUS or PROFINET to AS-Interface
- AS-i power supply unit or alternatively a standard power supply unit in combination with an AS-i data decoupling module for the power supply to the slaves and sensors
- AS-Interface shaped cables
- Network components such as repeaters and extension plugs (cannot be used for AS-i Power24V)
- I/O modules (AS-i slaves) for connection of standard sensors/actuators
- Actuators and sensors with integrated AS-i slave
- Safe I/O modules (ASIsafe slaves) for transmitting safety-related data through AS-Interface
- Addressing device for setting slave addresses during commissioning



Example of a configuration with the system components

Features

Standard	EN 50295/IEC 62026-2	Maximum cycle time	<ul style="list-style-type: none"> • 5 ms in maximum configuration with 31 standard addresses • 10 ms in maximum configuration with 62 A/B addresses • Profile-specific for slaves with extended data, e.g. analog slaves
Topology	Line, star or tree structure (same as electrical wiring)	Number of stations per AS-Interface line	<ul style="list-style-type: none"> • Up to 62 slaves (A/B addressing) • Integrated analog value transmission
Transmission medium	Unshielded twisted pair (2 x 1.5 mm ²) for data and auxiliary power	Number of binary sensors and actuators	max. 496 DI / 496 DQ
Connection methods	Contacting of the AS-Interface cable by insulation piercing method	Access control	<ul style="list-style-type: none"> • Cyclic polling master/slave procedure • Cyclic data acceptance from host (PLC, PC)
Maximum cable length	<ul style="list-style-type: none"> • 100 m without repeater • 200 m with extension plug • 300 m with two repeaters in series connection • 600 m with extension plugs and two repeaters parallel switched Longer cable lengths also possible through parallel switching of more repeaters.	Error safeguard	Identification and repetition of faulty message frames

AS-Interface

Introduction

AS-Interface specification

Specification V3.0

Overview

Scope of AS-Interface specification V3.0

Maximum number of slaves			Number of digital inputs	Number of digital outputs
Digital	Analog	ASIsafe	DI	DQ
62	62	31	62 × 8 = 496	62 × 8 = 496

Basic data

- AS-Interface specification 3.0 describes a fieldbus system with an AS-i master and up to 62 AS-i slaves.
- Every AS-i slave with standard addressing occupies one AS-i address (1...31).
- Slaves with extended addressing divide an AS-i address into an A address (1A...31A) and a B address (1B...31B). Up to 62 A/B slaves can be connected accordingly to one AS-Interface network.
- Mixed operation of slaves with standard addressing and extended addressing (A/B slaves) is possible without difficulty. The AS-i master identifies automatically which type of slave is connected, so no special adjustments are required of the user.
- One digital AS-i slave typically has up to four digital inputs and four digital outputs.
- Transmission of the digital input/output data requires max. 5 ms cycle time for 31 slaves; for further values, see "Communication cycle".
- Integrated analog value transmission permits access to both analog values and digital values without the need for any special function blocks.

Communication cycle

Maximum cycle time (digital signals)

- 5 ms with 31 slaves
- 10 ms with 62 slaves
- Up to 20 ms for slaves with A/B address 4 DI / 4 DQ
- Up to 40 ms for slaves with A/B address 8 DI / 8 DQ

Each address is queried in max. 5 ms cycle time. If two A/B slaves are operated on one basic address (e.g. 12A and 12B), a maximum of 10 ms will be required to update the data of both slaves.

Slaves with A/B addressing transmit max. 4 DI / 3 DQ in one cycle.

Slaves with A/B addressing and 4 DI / 4 DQ transmit the output data in two consecutive cycles. The double transmission time of these outputs has no effect in typical applications. The transmission procedure is performed automatically by the AS-i master in accordance with AS-i specification V3.0. These slaves are identified in the selection data with addressing type A/B (spec. V3.0).

Slaves with a single A/B address and 8 DI / 8 DQ transmit the input and output data in four consecutive cycles. The transmission time of the inputs/outputs of these slaves increases accordingly. The transmission procedure is performed automatically by the AS-i master in accordance with AS-i specification V3.0.

The slaves offered by Siemens with 8 DI or 8 DI / 2 DQ use two AS-i addresses so that the time-consuming procedure is not needed and a fast data update is ensured.

All slave types can be mixed and used on a single AS-Interface network.

For more information, such as the addressing type used by the AS-Interface slave (standard or A/B address), see the "Selection and ordering data" for the relevant slave.

Available masters with the latest AS-Interface specification V3.0

- CM AS-i Master ST, F-CM AS-i Safety ST (ET 200SP)
- CM 1243-2 (S7-1200)
- CP 343-2P / CP 343-2 (S7-300 / ET 200M)
- DP/AS-i Link Advanced, DP/AS-Interface Link 20E
- IE/AS-i Link PN IO

More information

More information

System Manual "AS-Interface", see <https://support.industry.siemens.com/cs/ww/en/view/26250840>

Overview



AS-Interface data decoupling modules for AS-i Power24V
 Left: S22.5 data decoupling module,
 Right: DCM 1271 data decoupling module for SIMATIC S7-1200

Parallel wiring frequently dominates, above all, in applications with very few I/Os. AS-Interface can, however, also replace extensive parallel wiring in small applications at a favorable price.

AS-i Power24V enables an already existing standard 24 V DC power supply unit to be used for the AS-i network.

Data and power in the standard AS-Interface network

One of the great advantages of AS-Interface is the ability to convey not only data, but also the power needed for the connected slaves and sensors over the same unshielded two-conductor cable. This is owed to the service-proven AS-Interface power supply units which provide integrated data decoupling as well as overload and short-circuit protection and integrated ground-fault monitoring.

AS-i Power24V

Instead of the AS-Interface power supply unit (with 30 V output voltage and integrated data decoupling) the AS-i cable is supplied via a data decoupling module from a 24 V standard power supply unit. The communication technology of AS-Interface works at the same high level of quality with an operating voltage of both 30 V DC and 24 V DC.

	Key data of AS-i Power24V
Number of slaves	Up to 62 slaves and up to 31 safe slaves
Topology	Any
Range	Up to 50 m
Components	<ul style="list-style-type: none"> 24 V power supply unit with low residual ripple and limitation to max. 40 V AS-i Power24V-capable data decoupling with integrated ground-fault detection AS-i Power24V-capable masters, slaves and components

Requirements for operation of an AS-i Power24V network

- When 24 V power supply units are used, the maximum network range of 50 m must be observed to reach slaves and sensors with a sufficient level of voltage (at least 18 V).
- The power supply units must comply with the PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) standard, have a residual ripple of < 250 mV_{pp}, and must limit the output voltage to a maximum of 40 V in the event of a fault. We recommend SITOP power supplies, [see page 15/1 onwards](#).
- When used in conjunction with standard 24 V power supply units, each AS-Interface network requires AS-i Power24V-capable data decoupling, [see from page 2/81 onwards](#).
- For reliable operation of an AS-i network with 24 V voltage, it is important that the masters, slaves and other components are approved for AS-i Power24V. AS-i Power24V-capable AS-i components can also be used without restriction in standard 30 V AS-i networks.
- Use of repeaters or extension plugs in AS-i Power24V networks is not permitted.

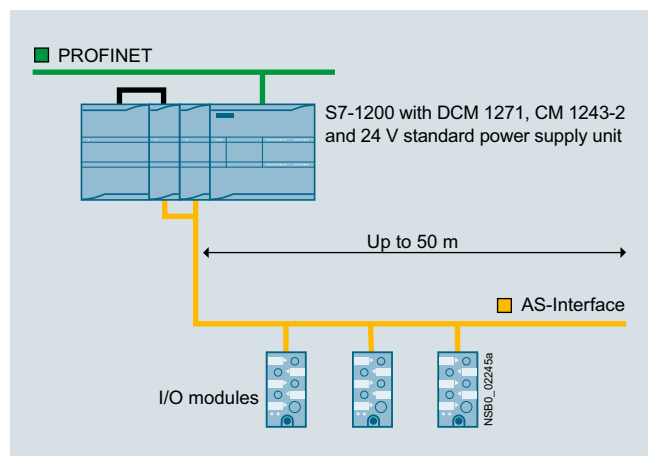
Benefits

In small control cabinets the AS-i power supply unit can be replaced by an AS-i data decoupling module that is connected to an existing 24 V power supply unit.

- The advantages of the AS-i communication system in terms of commissioning, maintenance and diagnostics can be fully exploited.
- If a double data decoupling module is used, two AS-i networks can be supplied.

Application

Configuration of an AS-i Power24V network



Configuration of an AS-i Power24V network with an AS-Interface DCM 1271 data decoupling module and S7-1200 (simple network)

More information

More information

For a complete overview of AS-i Power24V-capable devices currently available from Siemens, [see https://support.industry.siemens.com/cs/ww/en/view/42806066](#)

For details of AS-i Power24V, [see "AS-Interface" System Manual, https://support.industry.siemens.com/cs/ww/en/view/26250840](#)

AS-Interface

ASIsafe

Introduction

Overview

ASIsafe – Safety is included

ASIsafe enables the integration of safety-related components such as EMERGENCY STOP pushbuttons, protective door switches, cable-operated switches or other AS-i safety sensors in an AS-Interface network. These are fully compatible with the familiar AS-Interface components (masters, slaves, power supplies, repeaters, etc.) in accordance with IEC 62026-2 and are operated in conjunction with them on the yellow AS-Interface cable.

Tested safety

- Protective door switches
- Cable-operated switches
- Other AS-i safety sensors

The transmission method for safety-related signals is released for applications up to PL e according to EN ISO 13849-1 and up to SIL 3 (IEC 61508/EN 62061).

Higher-level control

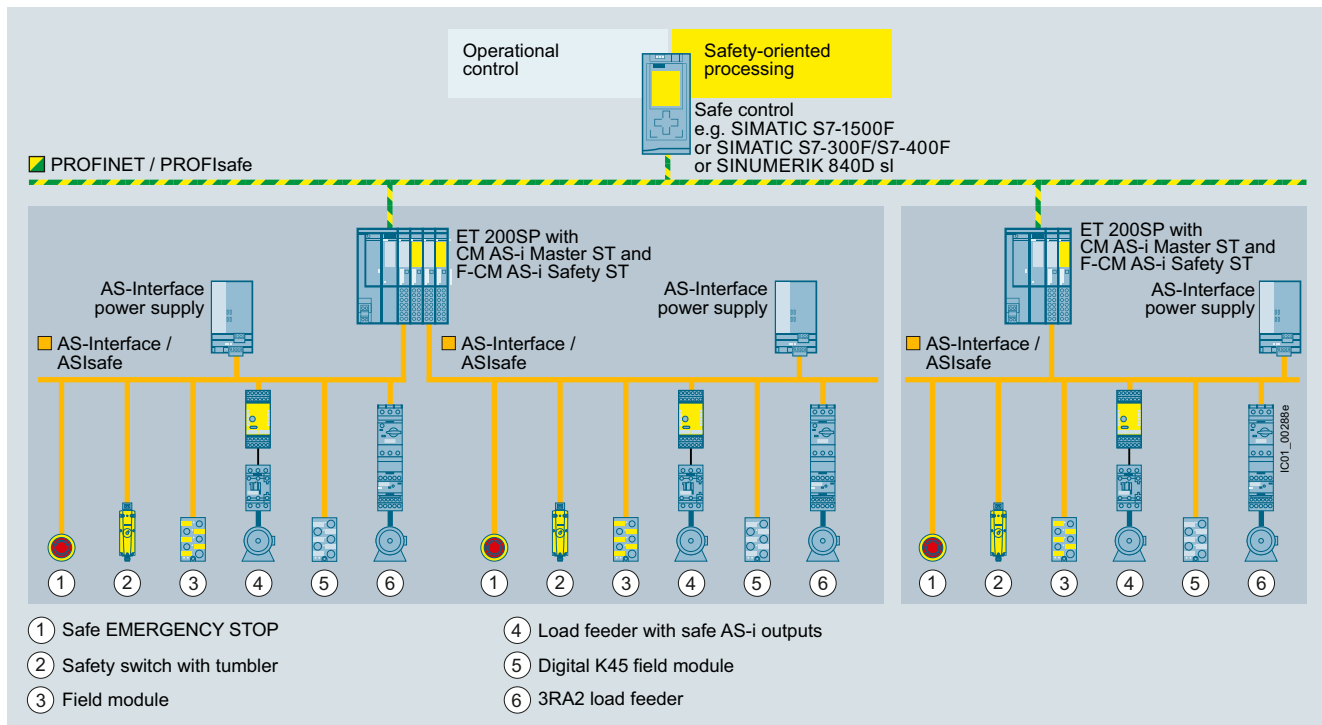
As usual, nodes on the AS-Interface bus are controlled in operation by the standard program of the higher-level SIMATIC (F) CPU or by a SINUMERIK control.

AS-i safety solution with F-CPU

Configuring safety functions

In order to implement safe functions, the information from the safe and standard nodes must be combined logically and further parameters set. The configuration of the safety functions depends on which safety solution is being used:

- AS-i safety solution with F-CPU:
In conjunction with the modular safety AS-i master, which is formed by combining the CM AS-i Master ST and F-CM AS-i Safety ST modules in an ET 200SP station, all safety functions and combinations are configured via STEP 7 and processed in the controller (F-CPU) by the fail-safe program.
- In the case of the AS-i safety solution with local evaluation by MSS:
In conjunction with the Modular Safety System all safety functions and combinations are configured using the SIRIUS Safety ES software and processed in the MSS central unit.



AS-Interface configuration with AS-i Master modules in the ET 200SP

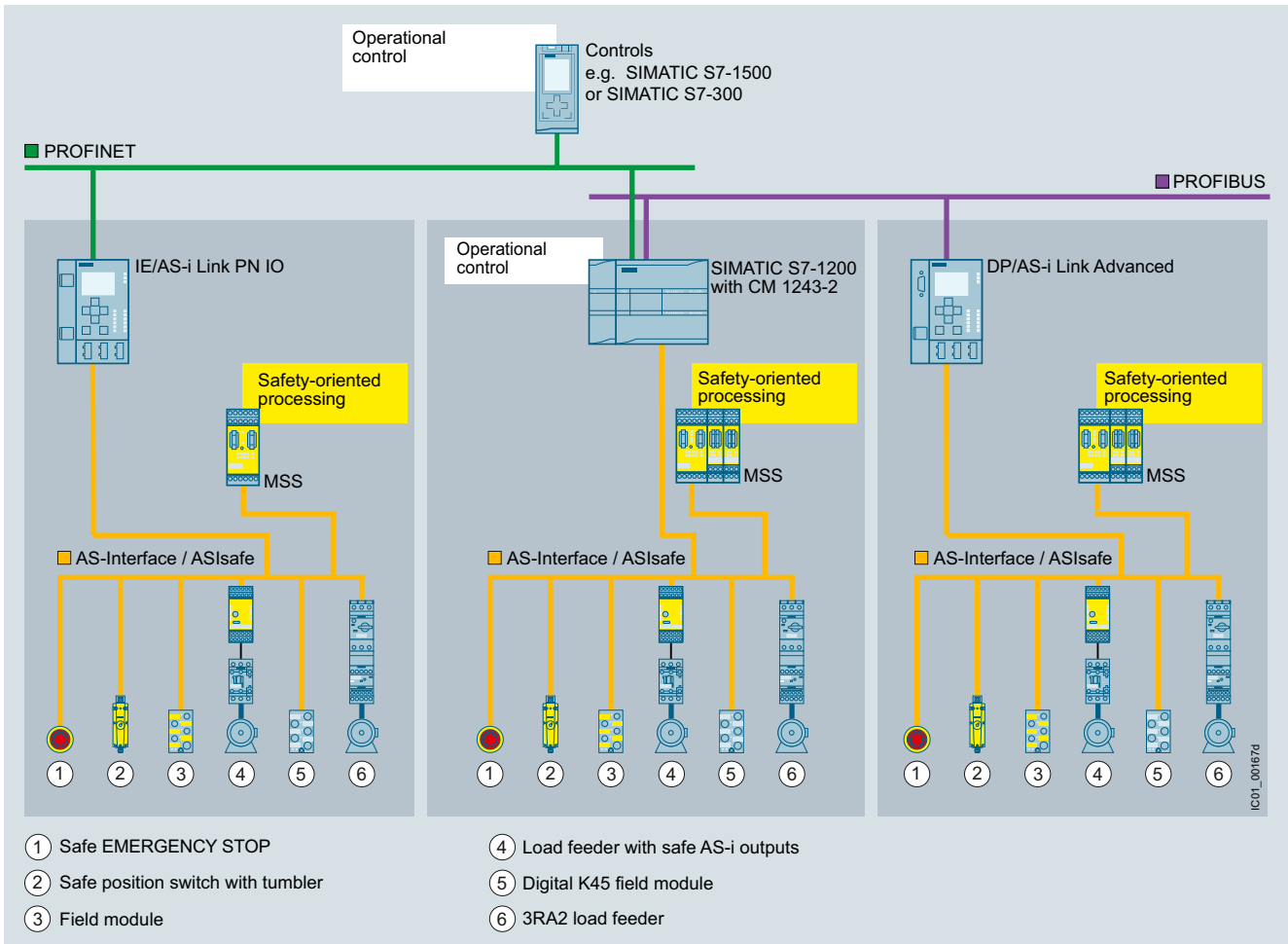
The AS-i communication modules in the ET 200SP facilitate the use of AS-Interface under fail-safe SIMATIC or SINUMERIK controllers.

The allocation of tasks is as follows:

- Acquisition of safety-related signals via safe input slaves on the AS-Interface bus.
Further signals can be detected through other F-DI modules of the SIMATIC.
- Evaluation and processing of signals via the fail-safe SIMATIC or SINUMERIK control
- Reacting by means of safety output modules on the AS-Interface bus or other SIMATIC F-DQ modules

Simple combination of the CM AS-i Master ST and F-CM AS-i Safety ST modules in one ET 200SP station results in a powerful, safety-oriented network transition between PROFINET (or PROFIBUS) and AS-Interface, which can be expanded further in a modular fashion with further I/O modules of the ET 200SP.

Using these design methods, it is possible to create configurations for virtually any application. Besides the single AS-i master, double, triple or generally multiple masters can be realized with or without fail-safe functionality.

AS-i safety solution with local evaluation by MSS**AS-Interface design with 3RK3 Modular Safety System (MSS)**

The local AS-i safety solution uses the 3RK3 Modular Safety System (MSS) for safety-related processing. In this case, one standard controller (i.e. no F-CPU) and one standard AS-i master are sufficient.

The allocation of tasks is as follows:

- Acquisition of safety-related signals via safe input slaves on the AS-Interface bus.
Further signals can be acquired via F-DI inputs of the central unit or the expansion modules of the MSS.

- Evaluation and processing of signals via the central unit of the MSS
- Reaction via safe output modules on the AS-Interface bus or via F-DQ outputs of the central unit or expansion modules of the MSS

Benefits

- Simple system structure thanks to standardized AS-Interface technique
- Safety-related and standard data on the same bus
- Existing systems can be expanded quickly and easily
- Optimum integration in TIA (Safety Diagnostics) and Safety Integrated
- Inclusion of the safety signals in the plant diagnostics, also on existing HMI panels
- Approved to PL e according to EN ISO 13849-1 or SIL 3 according to IEC 61508
- ASIsafe is certified by TÜV (Germany), NRTL (USA) and INRS (France)

Application

Integrated safety technology in the AS-Interface system can be used wherever EMERGENCY STOP buttons, safety gate

interlocks, safety switches, light grids and two-hand operation are installed.

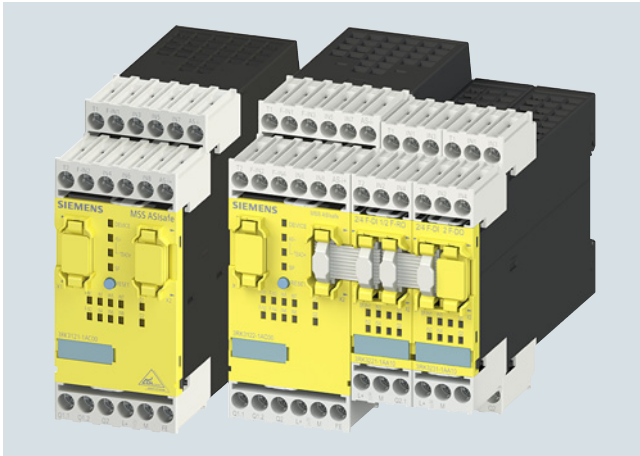
More information**More information**

For further information and typical circuit diagrams on safety engineering, see <https://support.industry.siemens.com/cs/ww/en/view/83150405>

AS-Interface ASIsafe

SIRIUS 3RK3 Modular Safety System

Overview



MSS ASIsafe basic (left) and
MSS ASIsafe extended with two expansion modules (right)

The Modular Safety System (MSS) is the centerpiece of ASIsafe Solution local. It allows a safety-related response to signals from the ASIsafe nodes connected in the AS-i network, such as safety input modules, EMERGENCY STOP pushbuttons or safety switches.

The MSS thus supports safety-related applications up to Category 4 according to EN ISO 13849-1 or SIL 3 according to EN 62061.

Safe disconnection takes place via the local safety outputs of the MSS or via the distributed safe AS-Interface outputs in the AS-Interface network.

The safety functions are configured within the MSS using the SIRIUS Safety ES software. The configuration can be transmitted directly in the MSS via the system interface with the aid of a PC cable or memory module. If the DP interface module is used, transmission via PROFIBUS DP is also possible.

The MSS supports a large number of different safety functions. These can be tailored to individual needs in the form of ready-made function blocks.

The safety functions supported include the following:

- EMERGENCY STOP
- Safety shutdown mat
- Protective door monitoring
- Protective door tumbler mechanism
- Approval switches
- Two-hand operator controls
- ESPE monitoring
- Muting
- Mode selector switches

Application

All the MSS that can be used for the AS-Interface bus support the same safety functions. Differences exist in the number of inputs/outputs and expansion modules that can be connected, and hence in the number of independent enabling circuits.

Several MSS can be used on the same AS-Interface bus.

AS-Interface is available in the following versions:

MSS ASIsafe basic

- A total of up to ten independent (two-channel) enabling circuits
 - Two of these enabling circuits via safety outputs integrated into the central unit
 - And another eight enabling circuits via ASIsafe, e.g. with distributed AS-i safety outputs

MSS ASIsafe extended

- A total of up to 20 independent (two-channel) enabling circuits
 - Two of these enabling circuits via safety outputs integrated into the central unit
 - In addition, up to eight enabling circuits via a maximum of two expansion modules
 - And another ten enabling circuits via ASIsafe, e.g. with distributed AS-i safety outputs

MSS Advanced

- A total of up to 50 independent (two-channel) enabling circuits
 - Two of these enabling circuits via safety outputs integrated into the central unit
 - In addition, up to 36 enabling circuits via a maximum of nine expansion modules
 - and another 12 enabling circuits via ASIsafe, e.g. with distributed AS-i safety outputs

Expandability

All versions above can be expanded by adding a DP interface module and a diagnostics module. In addition, various safety and non-safety expansion modules can be selected for the MSS, and these can be used in any combination.

For more information, [see from page 11/30 onwards](#).

Comparison of the three MSS versions

MSS 3RK3	ASIsafe basic	ASIsafe extended	Advanced
Number of independent (two-channel) enabling circuits	2 ... 10	2 ... 20	2 ... 50
Inputs	2 F-DI and 6 DI	4 F-DI and 4 DI (expandable)	8 F-DI (expandable)
Outputs	1 F-DO and 1 F-RO	1 F-DO and 1 F-RO (expandable)	
Number of expansion modules	--	Up to 2	Up to 9
Connection to ASIsafe			
Number of safe AS-i outputs	Up to 8	Up to 10	Up to 12
Number of safe AS-i inputs	Up to 31		

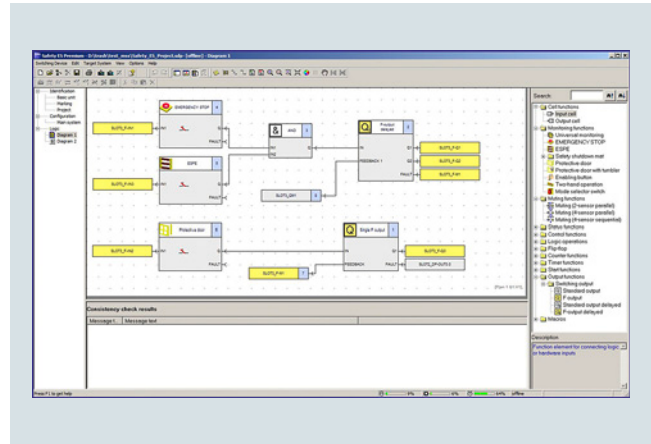
-- Not available

Software for startup, testing and diagnostics: SIRIUS Safety ES

SIRIUS Safety ES is the engineering software for configuration, startup and diagnostics of the 3RK3 Modular Safety System and the 3SK2 safety relays.

All function elements can be positioned using drag & drop. All functions – whether safety or logic functions – are available as blocks and can also be easily combined with one another.

SIRIUS Safety ES makes it possible to test the safety application by forcing. Outputs can be individually set in order to test in advance the reaction of the downstream safety function. In addition, the parameterization can be downloaded to the MSS via PROFIBUS. The integrated macro function allows you to compile a library of your own function elements for reuse in other projects. In addition, the parameterization software is suitable for use as a reliable diagnostics tool: the status of each element as well as the configuration as a whole can be viewed online.



SIRIUS Safety ES user interface showing the ISO diagram display

Selection and ordering data

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42B

Version	SD	Screw terminals	SD	Spring-type terminals
	d	Article No.	Price per PU	d Article No. Price per PU

Central units

 <p>3RK3121-1AC00 3RK3121-2AC00</p>	<p>3RK3 ASIsafe basic</p> <p>Central units for connecting to AS-Interface with safety-related inputs and outputs</p> <ul style="list-style-type: none"> • 2 safe inputs • 6 standard inputs • 1 two-channel relay output • 1 two-channel electronic output • Memory module 3RK3931-0AA00 is included in the scope of supply • No expansion modules can be connected 	2	3RK3121-1AC00	2	3RK3121-2AC00
 <p>3RK3122-1AC00 3RK3122-2AC00</p>	<p>3RK3 ASIsafe extended</p> <p>Central units for connecting to AS-Interface with safety-related inputs and outputs</p> <ul style="list-style-type: none"> • 4 safe inputs • 4 standard inputs • 1 two-channel relay output • 1 two-channel electronic output • Memory module 3RK3931-0AA00 is included in the scope of supply • Max. 2 expansion modules can be connected 	2	3RK3122-1AC00	2	3RK3122-2AC00
 <p>3RK3131-1AC10 3RK3131-2AC10</p>	<p>3RK3 Advanced</p> <p>Central units for connecting to AS-Interface with safety-related inputs and outputs</p> <ul style="list-style-type: none"> • 8 safe inputs • 1 two-channel relay output • 1 two-channel electronic output • Memory module 3RK3931-0AA00 is included in the scope of supply • Max. 9 expansion modules can be connected 	2	3RK3131-1AC10	2	3RK3131-2AC10

AS-Interface

ASIsafe

SIRIUS 3RK3 Modular Safety System



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 42B

Version	SD	Screw terminals	SD	Spring-type terminals	
	d	Article No.	Price per PU	Article No.	Price per PU

Expansion modules

 3RK3211-1AA10	 3RK3211-2AA10	4/8 F-DI Safety-related input modules • 8 inputs	2	3RK3211-1AA10	2	3RK3211-2AA10
 3RK3221-1AA10	 3RK3221-2AA10	2/4 F-DI 1/2 F-RO Safety-related input/output modules • 4 inputs • 2 single-channel relay outputs	2	3RK3221-1AA10	2	3RK3221-2AA10
 3RK3231-1AA10	 3RK3231-2AA10	2/4 F-DI 2 F-DO Safety-related input/output modules • 4 inputs • 2 two-channel electronic outputs	2	3RK3231-1AA10	2	3RK3231-2AA10
 3RK3251-1AA10	 3RK3251-2AA10	4/8 F-RO Safety-related output modules • 8 single-channel relay outputs	2	3RK3251-1AA10	2	3RK3251-2AA10
 3RK3242-1AA10	 3RK3242-2AA10	4 F-DO Safety-related output modules • 4 two-channel electronic outputs	2	3RK3242-1AA10	2	3RK3242-2AA10
 3RK3321-1AA10	 3RK3321-2AA10	8 DI Standard input module • 8 inputs	2	3RK3321-1AA10	2	3RK3321-2AA10
 3RK3311-1AA10	 3RK3311-2AA10	8 DQ Standard output module • 8 electronic outputs	2	3RK3311-1AA10	2	3RK3311-2AA10
 3RK3511-1BA10	 3RK3511-2BA10	DP interface PROFIBUS DP interface, 12 Mbps, RS 485, cyclic and acyclic data exchange	2	3RK3511-1BA10	2	3RK3511-2BA10

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
	d						
Connection cables (essential accessory)							
 3UF7932-0AA00-0	For connection of						
	Central units with expansion modules or interface module	Diagnostics modules with central unit or interface module					
	✓	✓	• Length 0.025 m (flat) ▶	3UF7930-0AA00-0	1	1 unit	42J
	--	✓	• Length 0.1 m (flat) ▶	3UF7931-0AA00-0	1	1 unit	42J
	--	✓	• Length 0.15 m (flat) NEW ▶	3UF7934-0AA00-0	1	1 unit	42J
	--	✓	• Length 0.3 m (flat) ▶	3UF7935-0AA00-0	1	1 unit	42J
	--	✓	• Length 0.5 m (flat) ▶	3UF7932-0AA00-0	1	1 unit	42J
	--	✓	• Length 0.5 m (round) ▶	3UF7932-0BA00-0	1	1 unit	42J
--	✓	• Length 1.0 m (round) ▶	3UF7937-0BA00-0	1	1 unit	42J	
--	✓	• Length 2.5 m (round) ▶	3UF7933-0BA00-0	1	1 unit	42J	
Operating and monitoring modules for 3RK3							
 3SK2611-3AA00	Diagnostics module	2	3SK2611-3AA00	1	1 unit	41L	
	For direct display of errors, e.g. of cross-circuits						
✓ Available -- Not available			Additional accessories for MSS, see page 11/40.				

More information

More information




Modular safety system (MSS), see from page 11/30 onwards
 SIRIUS Safety ES software, see from page 14/22 onwards

Manuals for the Modular Safety System (MSS), see
<https://support.industry.siemens.com/cs/ww/en/view/26493228>


AS-Interface ASIsafe

AS-Interface safety monitors

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
 3RK1105-1BE04-0CA0	Basic safety monitors					
	Version 3 With screw terminals, removable terminals, width 45 mm					
	• 1 enabling circuit (monitor type 1)	2	3RK1105-1AE04-0CA0	1	1 unit	42C
	• 2 enabling circuits (monitor type 2)	2	3RK1105-1BE04-0CA0	1	1 unit	42C
	Expanded safety monitors					
	Version 3 With screw terminals, removable terminals, width 45 mm					
	• 1 enabling circuit (monitor type 3)	2	3RK1105-1AE04-2CA0	1	1 unit	42C
	• 2 enabling circuits (monitor type 4)	2	3RK1105-1BE04-2CA0	1	1 unit	42C
	Expanded safety monitor with integrated safe slave					
	Version 3 With screw terminals, removable terminals, width 45 mm					
• 2 enabling circuits including control of a safe AS-i output/safe coupling (monitor type 6)	2	3RK1105-1BE04-4CA0	1	1 unit	42C	
	Basic safety monitors					
	Version 3 With spring-type terminals, removable terminals, width 45 mm					
	• 1 enabling circuit (monitor type 1)	2	3RK1105-1AG04-0CA0	1	1 unit	42C
	• 2 enabling circuits (monitor type 2)	2	3RK1105-1BG04-0CA0	1	1 unit	42C
	Expanded safety monitors					
	Version 3 With spring-type terminals, removable terminals, width 45 mm					
	• 1 enabling circuit (monitor type 3)	2	3RK1105-1AG04-2CA0	1	1 unit	42C
	• 2 enabling circuits (monitor type 4)	2	3RK1105-1BG04-2CA0	1	1 unit	42C
	Expanded safety monitor with integrated safe slave					
	Version 3 With spring-type terminals, removable terminals, width 45 mm					
• 2 enabling circuits including control of a safe AS-i output/safe coupling (monitor type 6)	2	3RK1105-1BG04-4CA0	1	1 unit	42C	

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
 3RK1901-5AA00	ASIsafe CD	2	3RK1802-2FB06-0GA1	1	1 unit	42C
	Included in the scope of supply:					
	• ASIMON V3 configuration software on CD ROM, for PC with Windows operating system					
	Cable sets	▶	3RK1901-5AA00	1	1 unit	42C
	Included in the scope of supply:					
• PC configuration cable for communication between PC (serial interface) and safety monitor, length approx. 1.50 m						
• Transfer cable between two safety monitors, length approx. 0.25 m						
Sealable covers	5	3RP1902	1	5 units	41H	
For securing against unauthorized configuration of the safety monitor						
Push-in lugs	5	3RP1903	1	10 units	41H	
For screw fixing						

Overview



AS-Interface safety modules: K45F (left), K20F (center) and SC17.5F (right)



S45F SlimLine module, safe AS-i output

Safety modules for AS-Interface (ASIsafe modules) are available for field use in degree of protection IP67 (K20F and K45F compact modules) and for the control cabinet (SC17.5F SlimLine Compact modules) in degree of protection IP20.

A very compact module with an optimum price/performance ratio is thus available for every application.

All modules for the connection of (mechanical) switches and safety sensors with contacts feature crossover monitoring of the connected sensor line.

AS-Interface safety modules

The following modules are available for selection:

K20F compact safety modules for operation in the field

Being only 20 mm wide, the K20F module is particularly well suited for applications where modules need to be arranged in the most confined of spaces. The K20F modules are connected to the AS-Interface with a round cable with M12 cable box instead of with the AS-Interface flat cable. This enables extremely compact installation. The flexibility of the round cable means that it can also be used on moving machine parts without any problems. The K20 modules are also ideal for such applications as their non-encapsulated design makes them particularly light in weight.

K45F compact safety modules for use in the field

The platform of the K45F modules covers the connection of ("mechanical") switches/safety sensors with contacts:

- K45F 2 F-DI: Two safety-related inputs in operation up to Category 2 according to EN ISO 13849-1. If Category 4 is required, a two-channel input is available on the module.
- K45F 2 F-DI / 2 DQ: There are also two standard outputs in addition to the safe inputs. Supplied from the yellow AS-i cable
- K45F 2 F-DI / 2 DQ U_{aux} : same as K45F 2 F-DI/2 DQ, but supplied from the black 24 V DC cable
- K45F 4 F-DI: Four safety-related inputs in operation up to Category 2, two for Category 4. Extremely compact double slave (uses two standard AS-i addresses)

SC17.5F SlimLine Compact safety modules with a width of just 17.5 mm for use in control cabinets and local control boxes

With a width of only 17.5 mm, the safe SlimLine Compact modules SC17.5F are ideal for space-saving use in a control cabinet. The modules have more than two safety inputs for connecting signals to ASIsafe networks in the control cabinet. For operation up to Category 2, both inputs can be separately assigned; if Category 4 is required, a two-channel input is available on the module.

There are also two module variants which have two standard outputs in addition to the two safety inputs. The outputs are supplied either from the yellow AS-Interface cable alone, or via auxiliary voltage from the black 24 V DC cable. The supply voltage is set via a slide switch on the rear of the device.

When using several modules, they can be connected simply via the optional device connector. This simplifies the wiring. The yellow AS-i bus cable and the 24 V DC auxiliary voltage U_{aux} then only need to be connected to one module.

AS-Interface ASIsafe

AS-Interface safety modules

S45F SlimLine safety modules with safety outputs for the safe distributed disconnection of actuators







With the S45F SlimLine safety module, a safe output signal of the ET 200SP module F-CM AS-i Safety ST can be used for distributed safety-related disconnection via ASIsafe.

To this end, the S45F module has a safety-related two-channel relay output. As an additional possibility the module offers normal switching of the output using an AS-i standard output bit.

The module has three digital inputs and two digital outputs for the additional connection of sensors and actuators. These can be used, among other things, for the required monitoring of downstream contactors of the feedback circuit.

The S45F module can also be controlled in a safety-related manner, for example by the modular 3RK3 ASIsafe/Advanced safety system. The module contains an AS-i slave for the non-safety-related inputs/outputs.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
K20F compact safety modules						
Slave addressing type: Standard address						
I/O type	U_{aux} 24 V					
2 F-DI	--	2	3RK1205-0BQ30-0AA3	1	1 unit	42C
K45F compact safety modules						
Slave addressing type: Standard address (modules supplied without mounting plate)						
I/O type	U_{aux} 24 V					
2 F-DI	--	▶	3RK1205-0BQ00-0AA3	1	1 unit	42C
4 F-DI ¹⁾	--	2	3RK1205-0CQ00-0AA3	1	1 unit	42C
2 F-DI / 2 DQ	--	5	3RK1405-0BQ20-0AA3	1	1 unit	42C
2 F-DI / 2 DQ	--	5	3RK1405-1BQ20-0AA3	1	1 unit	42C
SC17.5F SlimLine Compact safety modules						
Slave addressing type: Standard address						
I/O type	Outputs					
2 F-DI	--	2	3RK1205-0BE00-2AA2	1	1 unit	42C
			Screw terminals 			
			Spring-type terminals (push-in) 			
2 F-DI	--	2	3RK1205-0BG00-2AA2	1	1 unit	42C
			Screw terminals 			
2 F-DI / 2 DQ	U_{ASi}/U_{aux} supply selectable	2	3RK1405-2BE00-2AA2	1	1 unit	42C
			Spring-type terminals (push-in) 			
2 F-DI / 2 DQ	U_{ASi}/U_{aux} supply selectable	2	3RK1405-2BG00-2AA2	1	1 unit	42C
S45F SlimLine safety module (with safe AS-i output)						
I/O type	U_{aux} 24 V					
1 F-RQ / 3 DI / 2 DQ	✓	2	3RK1405-1SE15-0AA2	1	1 unit	42C
			Screw terminals 			
			Spring-type terminals (push-in) 			
1 F-RQ / 3 DI / 2 DQ	✓	2	3RK1405-1SG15-0AA2	1	1 unit	42C

✓ Available or possible

-- Not available or not possible

¹⁾ Module occupies two AS-Interface addresses












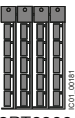
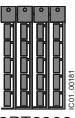

The existing SlimLine series of I/O modules for use in the control cabinet and local control boxes is being replaced by the new SlimLine Compact series. We recommend that these new devices are used in future.

For the conversion table, see page 2/72.

Note:

The previous SlimLine devices are still available for use as replacements in existing systems. As a result of the innovation, the new SlimLine Compact devices are not fully compatible in terms of either mechanical dimensions or electrical properties.

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for compact safety modules						
		K45 mounting plates For mounting K45F				
3RK1901-2EA00		<ul style="list-style-type: none"> For wall mounting For standard rail mounting 		1	1 unit	42C
				1	1 unit	42C
		Input bridges for K45F				
3RK1901-1AA00	2	<ul style="list-style-type: none"> Black version Red version 		1	1 unit	42C
	30			1	1 unit	42C
		AS-Interface sealing caps M12 For free M12 sockets				
3RK1901-1KA00				100	10 units	42C
		AS-Interface M12 sealing caps, tamper-proof For free M12 sockets				
3RK1901-1KA01	2			100	10 units	42C
Accessories for SlimLine Compact safety modules						
		Device connectors For the electrical connection of SlimLine Compact modules (connects AS-I bus cable and 24 V DC auxiliary power supply U_{aux} when using several SlimLine Compact modules)				
3RK1901-1YA00	2	<ul style="list-style-type: none"> Width 17.5 mm Width 22.5 mm 		1	1 unit	42C
3RK1901-1YA01	2			1	1 unit	42C
		Device termination connectors Required for the last module in the network				
3RK1901-1YA00	2	<ul style="list-style-type: none"> Width 17.5 mm Width 22.5 mm 		1	1 unit	42C
3RK1901-1YA01	2			1	1 unit	42C
		Removable terminals				
3ZY1121-2BA00		Screw terminals 				
	2	<ul style="list-style-type: none"> Screw terminals up to 2 x 1.5 mm² or 1 x 2.5 mm² - 2-pole - 4-pole 		1	6 units	41L
	2			1	6 units	41L
		Spring-type terminals (push-in) 				
	2	<ul style="list-style-type: none"> Push-In terminals up to 2 x 1.5 mm² - 2-pole - 4-pole 		1	6 units	41L
	2			1	6 units	41L
		Hinged cover NEW Replacement for SlimLine Compact module, without terminal labeling, width 17.5 mm, yellow				
3ZY1450-1BA00	2			1	1 unit	41H
		Push-in lugs for wall mounting Two lugs are required per device				
3ZY1450-1BA00	2			1	10 units	41L
		Coding pins for removable terminals For mechanical coding of the terminals				
3RT2900-1SB20	2			1	12 units	41L
		Blank labels Unit labeling plates ¹⁾				
3RT2900-1SB10	20	<ul style="list-style-type: none"> 10 mm x 7 mm, titanium gray 20 mm x 7 mm, titanium gray 		100	816 units	41B
3RT2900-1SB20	20			100	340 units	41B
		Tools for opening spring-type terminals				
3RA2908-1A	2	Screwdriver for SIRIUS devices with spring-type terminals 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated				
				1	1 unit	41B

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/16).

More information

More information

For the "SlimLine Compact Modules" Manual, see <https://support.industry.siemens.com/cs/ww/en/view/109481489>

AS-Interface

Masters

Masters for SIMATIC S7

CM 1243-2

Overview



CM 1243-2 communication module for S7-1200

The CM 1243-2 communication module is the AS-Interface master for the SIMATIC S7-1200 and has the following features:

- Connection of up to 62 AS-Interface slaves
- Integrated analog value transmission
- Supports all AS-Interface master functions in accordance with the AS-Interface specification V3.0
- Indication of the operating state on the front of the device displayed via LED
- Display of operating mode, AS-Interface voltage faults, configuration faults and peripheral faults via LED behind the front panel
- Compact enclosure in the design of the SIMATIC S7-1200
- Suitable for AS-i Power24V and for AS-Interface with 30 V voltage: A standard 24 V power supply unit can be used in combination with the optional DCM 1271 data decoupling module.
- Configuration and diagnostics via the TIA portal

Design

The CM 1243-2 communication module is positioned to the left of the S7-1200 CPU and linked to the S7-1200 via lateral contacts.

It has:

- Terminals for two AS-i cables (internally jumpered) via two screw terminals each respectively
- One terminal for connection to the functional ground
- LEDs for indication of the operating state and fault statuses of the connected slaves

The screw terminals (included in scope of supply) can be removed to facilitate installation.

Benefits

- More flexibility and versatility in the use of SIMATIC S7-1200 as the result of a significant increase in the number of digital and analog inputs/outputs available
- Very easy configuration and diagnostics of the AS-Interface via the TIA Portal (STEP 7 V11+SP2 or higher)
- Simple operation with AS-Interface power supply (see page 2/78) possible without restrictions.
- Alternatively: No need for the AS-i power supply unit with AS-i Power24V. The AS-Interface cable is supplied through an existing 24 V DC PELV power supply unit. For decoupling, the AS-i DCM 1271 data decoupling module is required, see "Accessories" and page 2/83.
- LEDs for indication of fault statuses for fast diagnostics
- Monitoring of AS-Interface voltage facilitates diagnostics

Function

The CM 1243-2 supports all specified functions of the AS-Interface specification V3.0.

The values of the digital AS-i slaves can be activated via the process image of the S7-1200. During configuration of the slaves in the TIA Portal, the values of the analog AS-i slaves can also be accessed directly in the process image.

It is also possible to exchange all data of the AS-i master and the connected AS-i slaves with the S7-1200 via the data record interface.

Changeover of the operating mode, automatic application of the slave configuration and the re-addressing of a connected AS-i slave can be implemented via the control panel of the CM 1243-2 in the TIA Portal.

The optional DCM 1271 data decoupling module (see page 2/33) has an integrated detection unit for detecting ground faults on the AS-Interface cable. The integrated overload protection also disconnects the AS-Interface cable if the drive current required exceeds 4 A. For more information on DCM 1271, see page 2/83.

Note on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

To configure CM 1243-2, you require STEP 7 V11 + SP2 or higher.

For STEP 7 V11 + SP2 or higher, the additional Hardware Support Package for CM 1243-2 is required. This is available via the Industry Online Support Portal, see <https://support.industry.siemens.com/cs/ww/en/view/72341852>.

The software enables user-friendly configuration and diagnostics of the AS-Interface master and any connected slaves.

Alternatively, you can also apply the AS-Interface ACTUAL configuration at the "touch of a button" via the control panel integrated in the TIA Portal/STEP 7.

When operated on an S7-1200 CPU with firmware version V4.0 or higher, the firmware version V1.1 (or higher) is required for the CM 1243-2.

Application



The CM 1243-2 is the AS-Interface master connection for the 12x CPUs of the SIMATIC S7-1200. Through connection to AS-Interface, the number of digital inputs and outputs available for the S7-1200 is greatly increased (max. 496 DI/496 DQ on the AS-Interface per CM).

The integrated analog value processing also makes the analog values available at the AS-Interface for the S7-1200. Up to 31 analog slaves with a standard address (each with up to four channels) or up to 62 analog slaves with an A/B address (each with up to two channels) are possible per CM.

Operating conditions

- The CM 1243-2 communication module exchanges data with the S7-1200 CPU with a cycle time of 10 ms.
- The AS-i cycle time depends on the AS-i bus capacity and is up to 5 ms in the case of 31 slaves addresses; for more information, see Manual "AS-i Master CM 1243-2 and AS-i DCM 1271 data decoupling module", <https://support.industry.siemens.com/cs/ww/en/view/57358958>.
- For calculation of the maximum switching frequency at inputs/outputs of AS-i slaves, these cycle times and the runtime of the user program must be added up.

Selection and ordering data

Version	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
 CM 1243-2 communication module <ul style="list-style-type: none"> • AS-Interface masters for SIMATIC S7-1200 • Corresponds to AS-Interface specification V3.0 • With screw terminals, removable terminals (included in the scope of supply) • Dimensions (W x H x D / mm): 30 x 100 x 75 	2	3RK7243-2AA30-0XB0	1	1 unit	42C



3RK7243-2AA30-0XB0

Note:

The CM 1243-2 communication module is available as a SIPLUS version under Article No. 6AG1243-2AA30-7XB0 in the extended temperature range (from -25 to 70 °C) and for use in harsh environmental conditions (coated according to environment standard IEC 60721).

For more information, see www.siemens.com/siplus-extreme.

Accessories

Version	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
 DCM 1271 data decoupling module <ul style="list-style-type: none"> • With screw terminals, removable terminals (included in the scope of supply) • Dimensions (W x H x D / mm): 30 x 100 x 75 Screw terminals (replacement) <ul style="list-style-type: none"> • 5-pole For AS-i master CM 1243-2 and AS-i DCM 1271 data decoupling module • 3-pole For AS-i DCM 1271 data decoupling module for connecting the power supply unit 	2	3RK7271-1AA30-0AA0	1	1 unit	42C
	5	3RK1901-3MA00	1	1 unit	42C
	5	3RK1901-3MB00	1	1 unit	42C

3RK7271-1AA30-0AA0

More information

More information

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/15750/man>

For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser; see <https://support.industry.siemens.com/cs/ww/en/view/61892138>.

AS-Interface

Masters

Masters for SIMATIC S7

CP 343-2P/CP 343-2

Overview



CP 343-2P/CP 343-2

The CP 343-2P communications processor is the AS-Interface master for the SIMATIC S7-300 and the ET 200M distributed I/O station, with user-friendly parameterizing options.

The CP 343-2 is the basic version of the module.

The CP 343-2P/CP 343-2 has the following characteristics:

- Connection of up to 62 AS-Interface slaves
- Integrated analog value transmission
- Support of all AS-Interface master functions in accordance with the AS-Interface specification V3.0
- Status displays of operating states and indication of the readiness for operation of connected slaves by means of LEDs in the front panel
- Fault indications (including AS-Interface voltage errors, configuration errors) by means of LEDs on the front plate.
- Compact enclosure in the design of the SIMATIC S7-300
- Suitable for AS-i Power24V (from product version 2 / firmware version 3.1) and for AS-Interface with 30 V voltage
- Additionally for CP 343-2P: Supports the configuration of the AS-Interface network with STEP 7 V5.2 and higher

Design

The CP 343-2P/CP 343-2 is connected like an I/O module to the S7-300. It has:

- Two terminal connections for connecting the AS-Interface cable directly.
- LEDs in the front panel for indicating the operating state and the readiness for operation of all connected and activated slaves
- Pushbuttons for switching over the master operating state and for adopting the existing ACTUAL configuration of the AS-i slave as the TARGET configuration

Function

The CP 343-2P/CP 343-2 supports all specified functions of the AS-Interface specification V3.0.

The CP 343-2P / CP 343-2 each occupy 16 bytes in the I/O address area of the SIMATIC S7-300. The digital I/O data of the standard slaves and A slaves is saved in this area. The digital I/O data of the B slaves and the analog I/O data can be accessed with the S7 system functions for read/write data records.

If required, master calls can be performed with the command interface, e.g. read/write parameters, read/write configuration.

For more information, see <https://support.industry.siemens.com/cs/ww/en/view/51678777>.

Note on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

All connected AS-Interface slaves are configured at the press of a button. No further configuration of the CP is required.

Additionally for CP 343-2P

The CP 343-2P also supports configuring of the AS-Interface network with STEP 7 V5.2 and higher. Specifying the AS-i configuration in HW-Config facilitates the setting of slave parameters and documentation of the plant. Uploading the ACTUAL configuration of an already configured AS-Interface network is also supported. The saved configuration cannot be overwritten at the press of a button and is therefore tamper-proof.

Benefits

- Shorter startup times through simple configuration at the press of a button
- Design of flexible machine-related structures using the ET 200M distributed I/O system
- Provides diagnostics of the AS-Interface network
- Well suited also for complex applications thanks to connection options for 62 slaves and integral analog value processing
- Reduction of standstill and servicing times in the event of a fault thanks to the LED indicators:
 - Status of the AS-Interface network
 - Slaves connected and their readiness for operation
 - Monitoring of the AS-Interface voltage
- Lower costs for stock keeping and spare parts inventory because the CP can be used for the SIMATIC S7-300 and also for the ET 200M
- Additionally for CP 343-2P: Improved plant documentation and support for service assignments thanks to a description of the AS-Interface configuration in the STEP 7 project
- Simple operation with AS-Interface power supply (see [page 2/78](#)) possible without restrictions.
- Alternatively: No need for the AS-i power supply unit with AS-i Power24V. The AS-Interface cable is supplied through an existing 24 V DC PELV power supply unit. An S22.5 AS-i data decoupling module (e.g. 3RK1901-1DE12-1AA0) is required for the decoupling, see [page 2/81](#).

Application



The CP 343-2P/CP 343-2 is the AS-Interface master connection for the SIMATIC S7-300 and the ET 200M.

Through connection to AS-Interface it is possible to access max. 248 DI/248 DQ per CP, using 62 A/B slaves with 4 DI/4 DQ each.



With the integrated analog value processing, it is easy to transmit analog signals. Up to 62 analog slaves with an A/B address (each with up to two channels) or up to 31 analog slaves with a standard address (each with up to four channels) are possible per CP.

The CP 343-2P is the further development of the CP 343-2 and contains its entire functionality. An existing STEP 7 user program for a CP 343-2 can thus be used without restrictions with a CP 343-2P. It is only in STEP 7 HW-Config that the two modules are configured differently, with the CP 343-2P offering additional options. This is why the CP 343-2P is recommended.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
 6GK7343-2AH11-0XA0		CP 343-2P communications processors				
		<ul style="list-style-type: none"> Device version with expanded configuration options for connection of SIMATIC S7-300 and ET 200M to AS-Interface Configuration of the AS-i network using the SET key or STEP 7 (V5.2 and higher) Without front plug Corresponds to AS-Interface specification V3.0 Dimensions (W x H x D/mm): 40 x 125 x 120 		1	1 unit	42C
 6GK7343-2AH01-0XA0		CP 343-2 communications processors				
		<ul style="list-style-type: none"> Basic version for connection of SIMATIC S7-300 and ET 200M to AS-Interface Configuration of the AS-i network using the SET key Without front plug Corresponds to AS-Interface specification V3.0 Dimensions (W x H x D/mm): 40 x 125 x 120 		1	1 unit	42C

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
		Front plug, 20-pole				
		<ul style="list-style-type: none"> With screw terminals  		1	1 unit	230
		<ul style="list-style-type: none"> With spring-type terminals  		1	1 unit	230

More information

More information

Manuals, see
<https://support.industry.siemens.com/cs/ww/en/ps/15754/man>

For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser, see
<https://support.industry.siemens.com/cs/ww/en/view/61892138>

AS-i block library for SIMATIC PCS 7 for easy connection of AS-Interface to PCS 7, see from page 14/19 onwards

AS-Interface

Masters

Masters for SIMATIC ET 200

CM AS-i Master ST for SIMATIC ET 200SP

Overview



CM AS-i Master ST for SIMATIC ET 200SP

The CM AS-i Master ST communication module is designed for use in the SIMATIC ET 200SP distributed I/O system and has the following features:

- Connection of up to 62 AS-Interface slaves
- Supports all AS-Interface master functions according to the AS-Interface specification V3.0
- User-friendly configuration with graphic display of the AS-i line in TIA Portal V12 or higher, or via GSD in other systems
- Supply via AS-Interface cable
- Suitable for AS-i Power24V and for AS-Interface with 30 V voltage
- Integrated ground-fault monitoring for the AS-Interface cable
- Through connection to AS-Interface, the number of digital inputs and outputs available for the control system is greatly increased (max. 496 DI/496 DQ on the AS-Interface per CM AS-i Master ST).
- Integrated analog value processing

ET 200SP distributed I/O system

The SIMATIC ET 200SP is a scalable and highly flexible distributed I/O system for connecting the process signals to a central control system via PROFIBUS or PROFINET.

Up to eight CM AS-i Master STs can be plugged into a SIMATIC ET 200SP with the IM 155-6 PN standard interface module.

More information, [see the SIMATIC ET 200SP Manual Collection](#).

Design

The CM AS-i Master ST module has an ET 200SP module enclosure with a width of 20 mm. A C0 type BaseUnit (BU) is required for use in the ET 200SP.

The communication module has LED indicators for diagnostics, operation, AS-i voltage and AS-i slave status and offers informative front-side module inscription for

- Plain-text marking of the module type and function class
- 2D matrix code (Article No. and serial number)
- Circuit diagram
- Color coding of the CM module type: Light gray
- Hardware and firmware version
- Complete article number

Function

The CM AS-i Master ST communication module supports all specified functions of the AS-Interface specification V3.0.

The input/output values of the digital AS-i slaves can be activated via the cyclic process image. The values of the analog AS-i slaves are accessible via the cyclic process image (firmware V1.1 or higher) or via data record transfer.

If required, master calls can be performed with the command interface, e.g. read/write parameters, read/write configuration.

Changeover of the operating mode, automatic application of the slave configuration and the re-addressing of a connected AS-i slave can be implemented via the control panel of the CM AS-i Master ST in STEP 7.

Expansions as from firmware version V1.1

For the implementation of modular machine concepts, the AS-i Slaves can be activated or deactivated via the PLC program (option handling). The configuration of AS-i slaves can be modified while being executed, thus enabling variable machine setups and tool changing with integrated input/output modules during ongoing operation. AS-i input/output modules can be added to the system without deactivating the controller.

An existing AS-i installation can be read into the STEP 7 hardware configuration and adapted and documented in the project. Analog values are transmitted via the cyclic process image, the length of which is adjustable and extendable up to 288 bytes (depending on the interface module (IM) used).

Diagnostic information is accessed via automatic alarm indications, via the process image or data record reading in the user program or in the STEP 7 engineering system in a graphical overview matrix. The transmission quality of the AS-i network can also be read out. To avoid configuration errors, duplicate addresses can be detected on the AS-i network.

The new functions are available with TIA Portal STEP 7 V13 SP1 or with STEP 7 V5.5 with HSP 2092 V3.0¹⁾. Configuration is possible with SIMATIC CPUs S7-300 up to S7-1500 and with a SINUMERIK 840D sl or other controller.

In the network view, the AS-i slaves' online diagnostics status can be displayed directly on the slaves (for S7-1500 CPUs with firmware version V2.0 or higher, with TIA Portal STEP 7 V14 or higher).

Note on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, [see www.siemens.com/industrialsecurity](http://www.siemens.com/industrialsecurity).

¹⁾ For HSP 2092, [see https://support.industry.siemens.com/cs/ww/en/view/23183356](https://support.industry.siemens.com/cs/ww/en/view/23183356).

Configuration

The following software is required for configuration of the CM AS-i Master ST module:

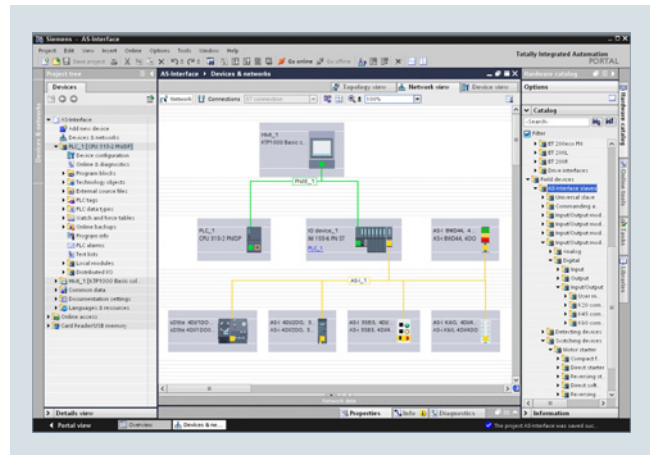
- STEP 7 (TIA Portal) V12 or higher or V13 SP1 or higher (for firmware V1.1) or
- STEP 7 (classic) V5.5 SP3 HF4 or higher with HSP 2092 or HSP 2092 V3.0 (for firmware V1.1) or
- the GSD file of the ET 200SP with STEP 7 or another engineering tool

STEP 7 enables user-friendly configuration and diagnostics of the AS-i master and any connected slaves.

Alternatively, you can also apply the AS-Interface ACTUAL configuration as the DESIRED configuration at the "touch of a button" via the control panel integrated in the TIA Portal or an optional expansion button. Configuration with the GSD file is possible only with the button.

The CM AS-i Master ST module occupies up to 288 input bytes and up to 288 output bytes in the I/O data of the ET 200SP station. The I/O assignment depends on the configuration in STEP 7.

Together with an ET 200SP CPU 1510SP/1512SP (firmware V1.8 or higher) or 1515SP PC, preprocessing of safe AS-i signals directly in the ET 200SP station and setting up of an independent AS-i Safety station without a higher-level CPU are possible (TIA Portal V13 SP1 Update 4 and higher).



Configuration of an AS-Interface network with CM AS-i Master ST via the TIA Portal

Benefits

The CM AS-i Master ST for ET 200SP communication module enables modular, simple and high-performance expansion of AS-interface networks via engineering in the TIA Portal.

Up to eight CM AS-i Master ST units can be plugged into one ET 200SP station with IM 155-6 PN Standard. The maximum configuration depends on the interface module used.

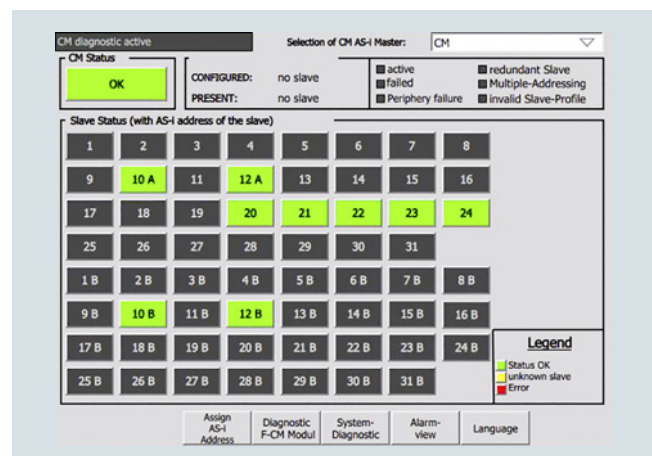
Multiple masters as well as single masters can thus be implemented in the ET 200SP depending on the number of modules.

Together with the interface module, a scalable PROFINET/AS-i Link or PROFIBUS/AS-i Link can be assembled.

Using STEP 7, the AS-i network is consistently configured and programmed with only one configuration tool.

The PRONETA PC program (for ET 200SP with PROFINET interface module) is available for convenient input/output testing during the commissioning of an AS-i network without a CPU; see www.siemens.com/proneta.

For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser, see <https://support.industry.siemens.com/cs/ww/en/view/109479103>.



CM AS-i Master ST diagnostics block

AS-Interface

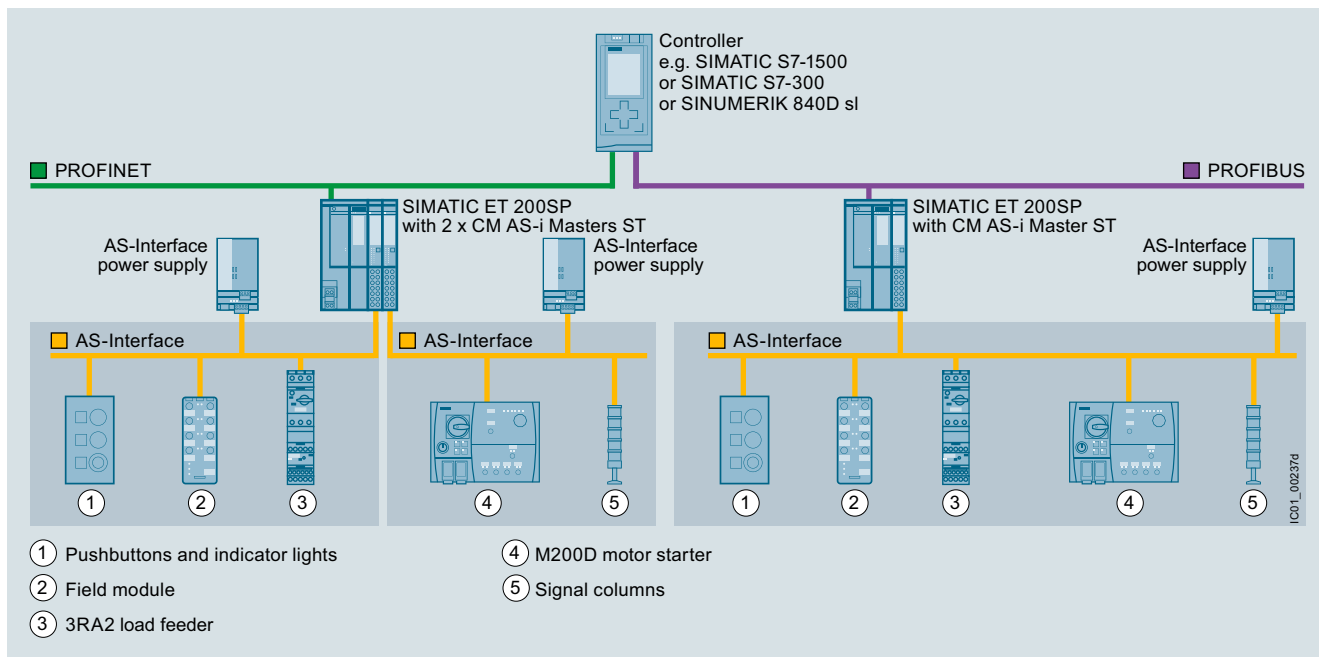
Masters

Masters for SIMATIC ET 200

CM AS-i Master ST for SIMATIC ET 200SP

Application

Configuration examples of AS-Interface networks with CM AS-i Master ST for SIMATIC ET 200SP



Configuration of AS-Interface networks under a SIMATIC ET 200SP

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
	2	3RK7137-6SA00-0BC1		1	1 unit	42C



3RK7137-6SA00-0BC1

CM AS-i Master ST communication module

- AS-Interface master for SIMATIC ET 200SP, can be plugged onto BaseUnit type C0
- Corresponds to AS-Interface specification V3.0
- Dimensions (W x H x D / mm): 20 x 73 x 58

Accessories

Version	SD	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG	
Article No.	Price per PU					
	d					
	X	BaseUnit BU20-P6+A2+4D • BaseUnit (light), BU type C0 • Suitable for the CM AS-i Master ST module • For connection of the AS-Interface cable to the CM AS-i Master ST • Start of an AS-i network, isolation of the AS-i voltage from the left-hand module	6ES7193-6BP20-0DC0	1	1 unit	255
6ES7193-6BP20-0DC0						
Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
	15	PROFINET interface module IM 155-6 PN Basic Max. 12 I/O modules, max. 32 bytes of I/O data per station • Including server module and 2 x RJ45 ports (supplied without RJ45 plug)	6ES7155-6AR00-0AN0	1	1 unit	255
6ES7155-6AR00-0AN0						
	15	PROFINET interface modules IM 155-6 PN Standard Max. 32 I/O modules, max. 256 bytes I/O data per station • Including server module and bus adapter 2 x RJ45 (supplied without RJ45 plug)	6ES7155-6AA01-0BN0	1	1 unit	255
6ES7155-6AA01-0BN0						
	15	• Including server module (Bus adapter must be ordered separately, see below)	6ES7155-6AU01-0BN0	1	1 unit	255
	15	PROFINET interface module IM 155-6 PN High Feature Max. 64 I/O modules, max. 1 440 bytes I/O data per station • IM 155-6 PN/2 High Feature IM with a bus adapter slot including server module and optional strain relief (bus adapter must be ordered separately, see below)	6ES7155-6AU01-0CN0	1	1 unit	255
6ES7155-6AU01-0CN0						
	15	• IM 155-6 PN/3 High Feature NEW 3-port IM with two bus adapter slots including server module and optional strain relief (bus adapter must be ordered separately, see below)	6ES7155-6AU30-0CN0	1	1 unit	255
	15	PROFINET interface module IM 155-6 PN High Speed Max. 30 I/O modules, max. 1 440 bytes I/O data per station • Including server module (BusAdapter must be ordered separately, see below)	6ES7155-6AU00-0DN0	1	1 unit	255
6ES7155-6AU00-0DN0						
	15	PROFIBUS interface module IM 155-6 DP High Feature Max. 32 I/O modules, max. 244 bytes I/O data per station • Including server module and PROFIBUS plug	6ES7155-6BA00-0CN0	1	1 unit	255
6ES7155-6BA00-0CN0						
	20	Bus adapters for PROFINET For connection of the Ethernet cable to the PROFINET IM 155-6 PN interface module • Connection 2 x RJ45 (supplied without RJ45 plug) • Connection 2 x FC (FastConnect)	6ES7193-6AR00-0AA0	1	1 unit	255
6ES7193-6AR00-0AA0						
	1	For more bus adapters with fiber optic cable connection, see Catalog IK PI or the Industry Mall.	6ES7193-6AF00-0AA0	1	1 unit	255
6ES7193-6AF00-0AA0						

More information

More information

SIMATIC ET 200SP Manual Collection, [see](https://support.industry.siemens.com/cs/ww/en/view/84133942)

Diagnostics blocks with visualization, [see](https://support.industry.siemens.com/cs/ww/en/view/109479103)

AS-i block library for SIMATIC PCS 7 for easy connection of AS-Interface to PCS 7, [see from page 14/19 onwards](#)

Released combinations of the AS-i modules for ET 200SP, [see](https://support.industry.siemens.com/cs/ww/en/view/103624653)

AS-Interface

Masters

Masters for SIMATIC ET 200

F-CM AS-i Safety ST for SIMATIC ET 200SP

Overview



F-CM AS-i Safety ST for SIMATIC ET 200SP

The F-CM AS-i Safety ST fail-safe communication module supplements an AS-Interface network without additional wiring to produce a safety-related AS-i network.

Important features:

- Fail-safe communication module for the ET 200SP
 - 31 fail-safe input channels in the process image
 - 16 fail-safe output channels in the process image
 - Certified up to SIL 3 (IEC 61508/EN 62061), PL e (EN ISO 13849-1)
 - Parameterization conforms with other fail-safe I/O modules of the ET 200SP
- The communication module supports PROFIsafe in PROFINET and PROFIBUS configurations. Can be used with fail-safe SIMATIC S7-300F / S7-400F CPUs and S7-1500F CPUs and also the fail-safe versions of the ET 200SP station with ET 200SP F-CPU 1510SP F/1512SP F (firmware V1.8 or higher) or 1515SP PC F.
- For reading up to 31 fail-safe AS-i input slaves
 - Two sensor inputs/signals for each fail-safe AS-i input slave
 - Adjustable evaluation of sensor signals: two-channel or 2 x single-channel
 - Integrated discrepancy evaluation in the case of two-channel signals
 - Integrated AND operation in the case of 2 x single-channel signals
 - Input delay can be parameterized
 - Startup test can be set
 - Sequence monitoring can be activated
- For control of up to 16 fail-safe AS-i output circuit groups
 - The output circuit groups are controlled independently of one another.
 - One output circuit group can act on one or more actuators (e.g. to switch drives simultaneously).
 - An actuator (e.g. a contactor) is interfaced via a fail-safe AS-i output module (e.g. safe SlimLine module S45F, Article No. 3RK1405-1SE15-0AA2, [see page 2/30](#)).
 - Simple fault acknowledgment via the process image
- Simple module replacement thanks to automatic importing of the safety parameters from the coding element
- Comprehensive diagnostic options
- Can be plugged onto type C1 or type C0 BaseUnits (BU)
- Informative automatic alarm indications (firmware V1.0.1 or higher)

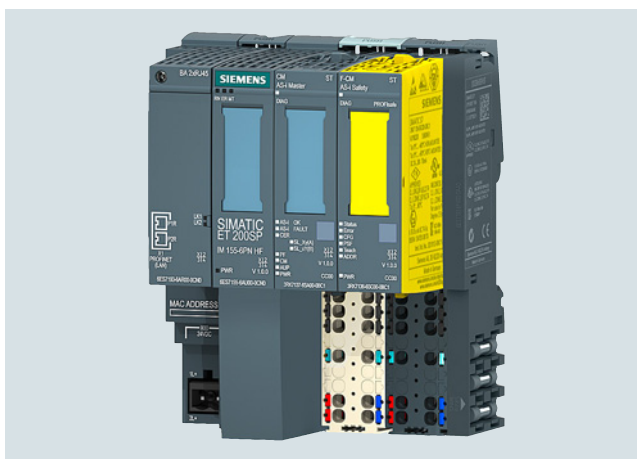
- Supply via AS-Interface voltage
- Eight LED indicators for diagnostics, operating state, fault indication and supply voltage
- Informative front-side module inscription
 - Plain-text marking of the module type and function class
 - 2D matrix code (Article No. and serial number)
 - Circuit diagram
 - Color coding of the CM module type: Light gray
 - Hardware and firmware version
 - Complete article number
- Optional labeling accessories
 - Labeling strips
 - Reference identification label

Design

The fail-safe F-CM AS-i Safety ST module has an ET 200SP module enclosure with a width of 20 mm.

One AS-i master according to the AS-i specification V3.0 and safe AS-i input slaves and/or safe AS-i output modules are needed for operation. The CM AS-i Master ST communication module (Article No. 3RK7137-6SA00-0BC1) is recommended as the AS-i master for the ET 200SP, [see from page 2/36 onwards](#).

Simple combination of the CM AS-i Master ST and F-CM AS-i Safety ST modules in one ET 200SP station results in a powerful, safety-oriented network transition between PROFINET (or PROFIBUS) and AS-Interface, which can be expanded further in a modular fashion.



Combination of an ET 200SP interface module, CM AS-i Master ST and F-CM AS-i Safety ST

With the digital and analog I/O modules of the ET 200SP, additional local inputs and outputs can be realized so as to ensure that the modular AS-i router complies precisely with customer requirements. Expansion variants for almost every application are possible thanks to the selection of standard and fail-safe I/O modules.

Besides the single AS-i master, double, triple or generally multiple masters can be realized with or without fail-safe functionality.

Supported BaseUnits

With the combination of the CM AS-i Master ST and F-CM AS-i Safety ST modules, the CM module is plugged onto a light type C0 BaseUnit and, immediately to the right of it, the F-CM module is plugged onto a dark type C1 BaseUnit. The AS-i cable is connected only on the light BaseUnit of the CM module.

Note on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

The following software is required for configuration of the F-CM AS-i Safety ST module:

- STEP 7 (TIA Portal) V13 and higher with HSP 0070¹⁾ and Safety Advanced V13.
STEP 7 V13 SP1 is required for connection to the S7-1500F. When configuring with STEP 7 V13 SP1, the latest version of HSP 0070 V2.0 (or higher) is an essential prerequisite. STEP 7 Safety V13 SP1 Update 4 and HSP 0070 V3.0 (or higher) are needed for configuration of the F-CM AS-i Safety ST module in an ET 200SP station with ET 200SP F-CPU 1510SP F / 1512SP F (firmware V1.8 or higher) or 1515SP PC F.

or

- STEP 7 (classic) V5.5 SP3 HF4 or higher with HSP 2093²⁾ and Distributed Safety V5.4 SP5 or F-Configuration Pack SP11 or SIMATIC S7 F/FH Systems

Configuration and programming are done entirely in the STEP 7 user interface. No additional configuration software is needed for commissioning.

Data management – together with all other configuration data of the SIMATIC – is realized completely in the S7 project.

The input and output channels are assigned to the process image automatically and manual linking via configuration blocks is not necessary.

Application

Thanks to use of the fail-safe module in the ET 200SP, it is possible to fulfill the safety-related application requirements in a manner that is integrated in the overall automation solution.

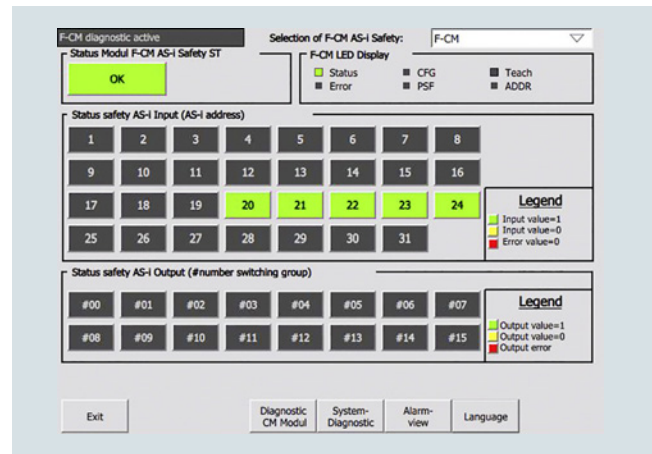
The safety functions required for fail-safe operation are integrated in the modules. Communication with the fail-safe SIMATIC S7 CPUs is realized via PROFIsafe.

The safety application is programmed in the SIMATIC S7 F-CPU with Distributed Safety/S7 F/FH Systems/Safety Advanced. The fail-safe input signals of the ASIsafe slave modules are read via the AS-i bus line and are combined with any chosen further signals in the fail-safe program.

If the F-CM AS-i Safety ST module is replaced, all necessary settings are automatically imported into the new module.

The F-CM AS-i Safety ST module occupies 16 input bytes and 8 output bytes in the I/O data of the ET 200SP station.

For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser, see <https://support.industry.siemens.com/cs/ww/en/view/109479103>.



Diagnostics block for F-CM AS-i Safety ST


- ¹⁾ HSP 0070, see <https://support.industry.siemens.com/cs/ww/en/view/72341852>.
- ²⁾ HSP 2093, see <https://support.industry.siemens.com/cs/ww/en/view/23183356>.

The fail-safe output signals can be output via safe SIMATIC output modules or also directly via AS-i – with the help of safe AS-i output modules, e.g. safe SlimLine S45F modules, Article No. 3RK1405-1SE15-0AA2 (see page 2/30). No special functions are required for this in the program.

Operation with SINUMERIK 840D sl is possible with SINUMERIK software version V4.7 SP2 HF1 or higher.


Together with an ET 200SP station with ET 200SP F-CPU 1510SP F/1512SP F (firmware V1.8 and higher) or 1515SP PC F, pre-processing of safe AS-i signals directly in the ET 200SP station is possible, as well as the configuration of an autonomous AS-i Safety station without a higher-level CPU.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
	2	3RK7136-6SC00-0BC1		1	1 unit	42C
F-CM AS-i Safety ST communication module <ul style="list-style-type: none"> Fail-safe module for SIMATIC ET 200SP, can be plugged onto BaseUnit type C1 (alternatively type C0) Operation requires an AS-i master, e.g. CM AS-i Master ST (see page 2/38) Can be used up to SIL 3 (IEC 62061/IEC 61508), PL e (EN ISO 13849-1) Coding element type H (included in scope of supply) Dimensions (W x H x D/mm): 20 x 73 x 58 						

3RK7136-6SC00-0BC1

Accessories

Version	SD	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
	d				
	X	6ES7193-6BP20-0BC1	1	1 unit	255
BaseUnit BU20-P6+A2+4B <ul style="list-style-type: none"> BaseUnit (dark), BU type C1 Suitable for the F-CM AS-i Safety ST fail-safe communication module Continuation of an AS-i network, connection with the AS-i voltage of the left-hand module 					
	1	6ES7193-6EH00-1AA0	1	5 units	256
Coding element type H (spare part) <ul style="list-style-type: none"> For the ET 200SP modules F-CM AS-i Safety ST and CM 4xIO-Link Packing unit 5 items 					

More accessories, see page 2/39.

More information

More information

SIMATIC ET 200SP Manual Collection, see <https://support.industry.siemens.com/cs/ww/en/view/84133942>
Diagnostics blocks with visualization, see <https://support.industry.siemens.com/cs/ww/en/view/109479103>

Released combinations of the AS-i modules for ET 200SP, see <https://support.industry.siemens.com/cs/ww/en/view/103624653>

AS-Interface Routers

DP/AS-i Link Advanced

Overview



DP/AS-i Link Advanced

PN	DP-M	DP-S	AS-i M		
		●	●		

The DP/AS-i Link Advanced is a compact router between PROFIBUS (DP slave) and AS-Interface, with the following features:

- Single and double AS-Interface master (according to AS-Interface specification V3.0) for connection of 62 AS-Interface slaves or 124 AS-Interface slaves (with a double master)
- Integrated analog value transmission
- Integrated ground-fault monitoring for the AS-Interface cable
- User-friendly local diagnostics and startup by means of a full graphic display and control keys or through a web interface with a standard browser on the PC screen
- Vertical integration (standard web interface) through Industrial Ethernet
- Supply voltage from the AS-Interface shaped cable or alternatively with 24 V DC (optional)
- Suitable for AS-i Power24V (from product version 4 / firmware version 2.2) and for AS-Interface with 30 V voltage
- Module exchange without entering the connection parameters (e.g. PROFIBUS address) using C-PLUG (optional)

Design

- Compact plastic enclosure in degree of protection IP20 for standard rail mounting
- COMBICON plug-in screw terminals
- Compact design:
 - Pixel graphics display in the front panel for detailed display of the operating state and readiness for operation of all connected AS-Interface slaves
 - 6 pushbuttons for starting up and testing the AS-Interface line directly on the DP/AS-i Link Advanced
 - LED indication of the operating state of PROFIBUS DP and AS-Interface
 - Integrated Ethernet port (RJ45 socket) for user-friendly start-up, diagnostics and testing of DP/AS-i Link Advanced through a web interface using a standard browser
- Small mounting depth thanks to recessed plug mounting
- Operation without fans and batteries

Functionality

Communications

The DP/AS-i Link Advanced enables a PROFIBUS DP master to cyclically access the I/O data of all the slaves of a lower-level AS-Interface segment.

The DP/AS-i Link Advanced occupies the following address space:

- As a single master: 32 bytes of input data and 32 bytes of output data in which the I/O data of the connected AS-Interface slaves (standard and A/B addressing) of an AS-i line is stored.
- As double master, double the number of bytes
- Optional additional I/O bytes for data from analog slaves

The size of the input/output image can be compressed so that only the actually required I/O address area is occupied in the system of the DP master. The integrated evaluation of analog signals is just as easy as access to digital values because the analog process data also lie directly in the I/O address area of the CPU.

PROFIBUS DP-V1 Masters also provide the option of triggering AS-Interface master calls over the acyclic PROFIBUS services (e.g. write parameters, amend addresses, read diagnostic values). Using an operating display in AS-i Link it is possible to fully commission the lower-level AS-Interface line even without a CPU.

DP/AS-i Link Advanced is equipped with an additional Ethernet port, which enables use of the integrated web server. The web server can be called up with any standard web browser (e.g. Internet Explorer) without additional software. It allows all diagnostics information, the set bus configuration and parameters and, if applicable, any adjustments to be displayed on the PC. Firmware updates are also possible using this port.

The optional C-PLUG supports module exchange without entering the connection parameters (PROFIBUS address etc.), keeping downtimes to a minimum in the event of a fault.

Diagnostics

The following diagnostics is possible using LEDs, the display and control keys, web interface or STEP 7:

- Operating state of the DP/AS-i Link Advanced
- Status of the link as a PROFIBUS DP slave
- Diagnostics of the AS-Interface network
- Message frame statistics
- Standard diagnostics pages in the web interface for fast diagnostics access through Ethernet using a standard browser
- For the use of the web interfaces no network settings are necessary on the PC (Zeroconf procedure)
- The reporting of diagnostic events is optionally possible via email or SNMP Trap. The integrated diagnostic buffer saves the events including time stamp

Note on security:

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For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

The DP/AS-i Link Advanced can be configured as follows:

- With STEP 7 (TIA Portal) V12 or higher or STEP 7 (classic) V5.4 or higher: In the case of STEP 7 configuration, the AS-Interface configuration can be uploaded in STEP 7. Furthermore, AS-Interface slaves can also be conveniently configured in HW-Config (slave selection dialog)
- By adopting the ACTUAL configuration of the AS-Interface on the display
- Alternatively DP/AS-i Link Advanced can be integrated into the engineering tool using the PROFIBUS GSD file (e.g. STEP 7 versions earlier than V5.4 or engineering tools from third-party suppliers)

Benefits

- Short startup times through simple configuration at the press of a button and testing of the AS-Interface line using the display or web interface
- Reduction of standstill and servicing times in the event of a slave failure thanks to user-friendly diagnostics using the display or web interface and through simple module exchange with the help of the C-PLUG exchange medium
- Reduced amount of engineering work thanks to user-friendly configuration of Siemens slaves using the slave catalog in HW-Config (STEP 7)
- Costs saved by the double AS-Interface master when large volumes of project data are involved
- Simple operation with AS-Interface power supply unit (see [page 2/78](#)) possible without restrictions, no additional operating voltage is required.
- Alternatively: No need for the AS-i power supply unit with AS-i Power24V. The AS-Interface cable is supplied through an existing 24 V DC PELV power supply unit. An S22.5 AS-i data decoupling module (e.g. 3RK1901-1DE12-1AA0) is required for the decoupling, see [page 2/81](#).
- For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser, see <https://support.industry.siemens.com/cs/ww/en/view/61892138>.

AS-Interface Routers

DP/AS-i Link Advanced

Application

The DP/AS-i Link Advanced is a PROFIBUS DP-V1 slave (according to IEC 61158/IEC 61784) and an AS-Interface master (based on AS-Interface specification V3.0 according to IEC 62026-2). It enables transparent data access to AS-Interface from PROFIBUS DP.

Exchanging data with the PROFIBUS DP master

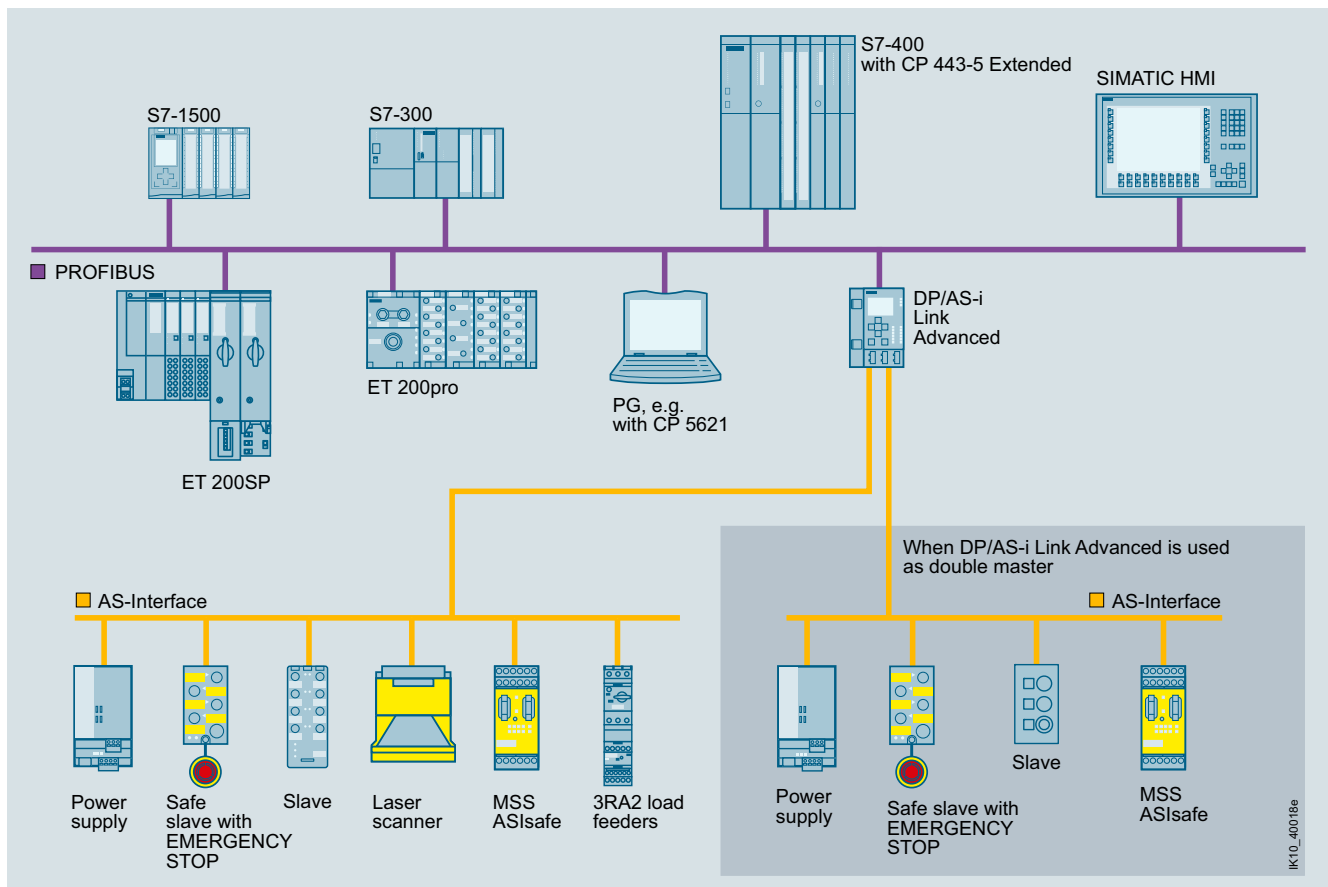
PROFIBUS DP masters (DP-V0) can exchange I/O data cyclically with the AS-Interface. DP masters with acyclic services (DP-V1) are additionally able to initiate AS-Interface master calls (e.g. reading/writing the AS-i configuration during normal operation). As such, the DP/AS-i Link Advanced is particularly well-suited for a distributed construction and for connection of a lower-level AS-Interface network.

Single master

For applications with typical volumes of project data, it is sufficient to use the DP/AS-i Link Advanced in its version as an AS-Interface single master. The single master can operate up to 248 DI / 248 DQ, using 62 A/B slaves with 4 DI / 4 DQ each.

Double master

The AS-Interface double master version of DP/AS-i Link Advanced is suitable for applications with large volumes of data. In this case, twice the volume of project data can be used on two AS-Interface lines running independently of each other. The double master can operate up to 496 DI / 496 DQ, using two AS-i networks each with 62 A/B slaves with 4 DI / 4 DQ each.



Integration of AS-Interface on PROFIBUS through DP/AS-i Link Advanced as single/double master

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

DP/AS-i Link Advanced



DP/AS-i Link Advanced

Router between PROFIBUS DP and AS-Interface; degree of protection IP20; including COMBICON plug-in screw terminals for connection of an AS-Interface cable (two AS-Interface cables for double masters) and the optional 24 V supply; corresponds to AS-Interface specification V3.0; dimensions (W x H x D/mm): 90 x 132 x 88.5

- Single master with display
- Double master with display

COMBICON connection



▶	6GK1415-2BA10	1	1 unit	42C
▶	6GK1415-2BA20	1	1 unit	42C

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

C-PLUG

Exchange medium for the simple exchange of devices in the event of a fault; for accommodating configuration and application data; can be used in SIMATIC NET products with a C-PLUG slot

1	6GK1900-0AB00	1	1 unit	5N3
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PROFIBUS FastConnect standard cable GP

FastConnect standard type with special design for fast installation, 2-core, shielded

1	6XV1830-0EH10	1	1 M	5K1
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PROFIBUS FastConnect RS 485 bus plug with diagonal cable outlet (35°)

With insulation displacement connection, the max. transmission rate is 12 Mbps, activatable terminating resistor is integrated

- Without PG connection socket
- With PG connection socket

1	6ES7972-0BA61-0XA0	1	1 unit	250
1	6ES7972-0BB61-0XA0	1	1 unit	250

PROFIBUS FastConnect stripping tool

Preset stripping tool for speedy stripping of PROFIBUS FastConnect bus cables

1	6GK1905-6AA00	1	1 unit	5K2
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IE FC RJ45 Plug 90

RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated insulation displacement contacts for connection of Industrial Ethernet FC installation cables; with 90° cable feeder

- 1 pack = 1 unit
- 1 pack = 10 units
- 1 pack = 50 units

1	6GK1901-1BB20-2AA0	1	1 unit	5K1
1	6GK1901-1BB20-2AB0	1	10 units	5K1
1	6GK1901-1BB20-2AE0	1	50 units	5K1

More information

More information

AS-i block library for SIMATIC PCS 7 for easy connection of AS-Interface to PCS 7, see from page 14/19 onwards

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/24507/man>

AS-Interface Routers

DP/AS-Interface Link 20E

Overview



DP/AS-Interface Link 20E manual

PN	DP-M	DP-S	AS-i M		
		●	●		

DP/AS-Interface Link 20E connects PROFIBUS DP to AS-Interface and has the following features:

- PROFIBUS DP slave and AS-Interface master
- Up to 62 AS-Interface slaves, each with four digital inputs and four digital outputs as well as analog slaves can be connected
- Integrated analog value transmission
- Supports all AS-Interface master functions according to the AS-Interface specification V3.0
- Supply from AS-Interface cable; hence no additional power supply required
- Suitable for AS-i Power24V (from product version 2 / firmware version 3.1) and for AS-Interface with 30 V voltage
- Supports uploading of the AS-Interface configuration in STEP 7 V5.2 and higher

Design

- Compact plastic enclosure in degree of protection IP20 for standard rail mounting
- LEDs in the front panel for indicating the operating state and functional readiness of all connected slaves
- Setting of PROFIBUS DP address is possible by pressing a button
- LED indication of the PROFIBUS DP slave address, PROFIBUS DP bus faults and diagnostics
- Two pushbuttons for switching over the operating state and for adopting the existing ACTUAL configuration as the TARGET configuration

Functionality

Communications

The DP/AS-Interface Link 20E enables a DP master to access all the slaves of an AS-Interface network.

The DP/AS-Interface Link 20E occupies a standard 32 bytes of input data and 32 bytes of output data in which the digital I/O data of the connected AS-Interface slaves (standard and A/B addressing) of an AS-i line is stored.

The size of the input/output image can be compressed so that only the actually required I/O address area is occupied in the system of the PROFIBUS DP master.

The analog I/O data can be accessed with the S7 system functions for read/write data records.

Configuration

The DP/AS-Interface Link 20E is configured as follows:

- With STEP 7 (TIA Portal) from V12 or STEP 7 (classic) from V5.1 SP2:
In the case of STEP 7 configuration, the AS-Interface configuration can be uploaded from STEP 7 V5.2. Furthermore, AS-Interface slaves from Siemens can also be conveniently configured in HW Config (slave selection dialog).
- By adopting the ACTUAL configuration of the AS-Interface by using the SET pushbutton on the front panel.
- Alternatively, DP/AS-Interface Link 20E can be integrated by means of the PROFIBUS GSD file in the engineering tool (e.g. for STEP 7 V5.1 and lower or for non-Siemens engineering tools).

Benefits

- Reduction of installation costs because the power is supplied entirely via the AS-Interface cable, which means that no additional power supply is required
- Short startup times thanks to easy configuration at the touch of a button
- The LED indicators help reduce downtime and service times if a slave fails
- Quick and easy commissioning by reading the AS-Interface configuration
- For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser, see <https://support.industry.siemens.com/cs/ww/en/view/61892138>.

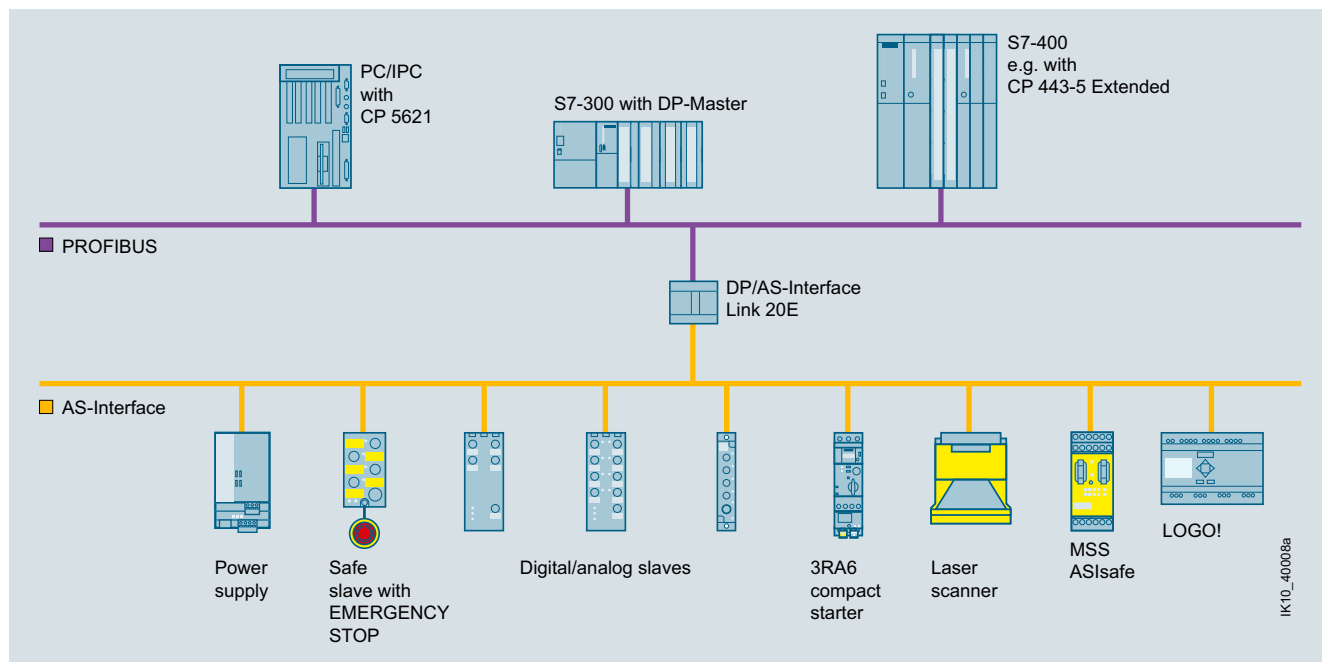
Application

The DP/AS-Interface Link 20E is a PROFIBUS DP slave (according to IEC 61158/IEC 61784) and an AS-Interface master (according to IEC 62026-2). It enables the AS-Interface to be operated on PROFIBUS DP.

Up to 248 DI / 248 DQ can be operated via the DP/AS-Interface Link 20E using 62 A/B slaves with 4 DI / 4 DQ each.

PROFIBUS DP masters (DP-V0) can exchange digital I/O data cyclically with the AS-Interface.

PROFIBUS DP masters with acyclic services (DP-V1) are additionally able to exchange analog I/O data and initiate AS-Interface master calls (e.g. reading/writing the AS-i configuration during normal operation).



Transition from PROFIBUS DP to AS-Interface using DP/AS-Interface Link 20E

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

DP/AS-Interface Link 20E



6GK1415-2AA10

Router between PROFIBUS DP and AS-Interface in degree of protection IP20; including screw terminals for connection of the AS-Interface cable; corresponds to AS-Interface specification V3.0; dimensions (W x H x D/mm): 90 x 80 x 60 (dimensions without fixing lugs)

Screw terminals						
▶ 6GK1415-2AA10				1	1 unit	42C

AS-Interface Routers

DP/AS-Interface Link 20E

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
PROFIBUS FC Standard Cable GP FastConnect standard type with special design for fast installation, 2-core, shielded	1	6XV1830-0EH10		1	1 M	5K1
PROFIBUS FastConnect bus plugs With insulation displacement connection, max. transmission rate 12 Mbps, activatable terminating resistor integrated						
• RS 485 bus plug with 90° cable feeder						
- Without PG connection socket	1	6ES7972-0BA52-0XA0		1	1 unit	250
- With PG connection socket	1	6ES7972-0BB52-0XA0		1	1 unit	250
• RS 485 bus plug with diagonal cable outlet (35°)						
- Without PG connection socket	1	6ES7972-0BA61-0XA0		1	1 unit	250
- With PG connection socket	1	6ES7972-0BB61-0XA0		1	1 unit	250
PROFIBUS FastConnect stripping tool Preset stripping tool for speedy stripping of PROFIBUS FastConnect bus cables	1	6GK1905-6AA00		1	1 unit	5K2

More information

More information

Manual "DP/AS-Interface Link 20E", see
<https://support.industry.siemens.com/cs/ww/en/view/5281638>

Overview



IE/AS-i Link PN IO
Single master (picture on left) and double master (picture on right)

PN	DP-M	DP-S	AS-i M		
●			●		

The IE/AS-i Link PN IO is a compact router between PROFINET and AS-Interface, with the following features:

- Single and double AS-Interface master (according to AS-Interface specification V3.0) for connection of 62 or 124 AS-Interface slaves (with a double master)
- Integrated analog value transmission
- Integrated ground-fault monitoring for the AS-Interface cable
- User-friendly local diagnostics and startup by means of a full graphic display and control keys or through a web interface with a standard browser on the PC screen
- Vertical integration (standard web interface) through Industrial Ethernet
- Supply via AS-Interface cable or with 24 V DC
- Suitable for AS-i Power24V and for AS-Interface with 30 V voltage
- Module exchange without entering the PROFINET connection parameters when using the C-PLUG (optional)
- Costs saved by the double AS-Interface master when large volumes of project data are involved

Note:

As an alternative to the IE/AS-i Link PN IO, a high-performance router can be set up between PROFINET and AS-Interface by combining the CM AS-i Master ST and F-CM AS-i Safety ST modules in an ET 200SP station (for safety-related applications), see pages 2/38 and 2/43.

Design

- Compact plastic enclosure in degree of protection IP20 for standard rail mounting
- COMBICON plug-in screw terminals
- Compact design
- Pixel graphics display in the front panel for detailed display of the operating state and readiness for operation of all connected AS-Interface slaves
- Six pushbuttons for starting up and testing the AS-Interface line directly on the IE/AS-i Link PN IO
- LED display of the operating state of PROFINET IO and AS-Interface
- Integrated 2-port switch (RJ45 socket) for connection to Industrial Ethernet
- Small mounting depth thanks to recessed plug mounting
- Operation without fans and batteries

FunctionalityCommunications

The IE/AS-i Link PN IO enables a PROFINET IO controller to cyclically access the I/O data of all the slaves of a lower-level AS-Interface segment. Also supported are the expanded slave types with higher I/O data volume according to AS-i specification V3.0.

The IE/AS-i Link PN IO occupies the following address space:

- As a single master with full expansion: 62 bytes of input data and 62 bytes of output data in which the I/O data of the connected AS-Interface slaves (standard and A/B addressing) of an AS-i line is stored.
- As double master, double the number of bytes
- Optional additional I/O bytes for data from analog slaves

The size of the input/output image can be compressed so that only the actually required I/O address area is occupied in the system of the IO controller.

The integrated evaluation of analog signals is just as easy as access to digital values because the analog process data also lie directly in the I/O address area of the CPU.

PROFINET IO controllers are additionally able to initiate AS-Interface master calls (e.g. to write parameters, change addresses, read diagnostic values) through the acyclic PROFINET services.

Using an operating display in AS-Interface Link it is possible to fully commission the lower-level AS-i line.

The IE/AS-i Link PN IO is equipped with two Ethernet ports, which are connected by an internal switch. With the Ethernet it is possible in addition to use the integrated web server. The web server can be called up with any standard web browser (e.g. Internet Explorer) without additional software. It enables the PC to present all diagnostics information and to display the set bus configuration and parameters as well as their adaptation where applicable. Firmware updates are also possible using this port.

The optional C-PLUG supports module replacement without manually entering the connection parameters (PROFINET device name), keeping downtimes to a minimum in the event of a fault.

AS-Interface Routers

IE/AS-i Link PN IO

Diagnostics

The following diagnostics is possible using the display and control keys, web interface or STEP 7:

- Operating state of the IE/AS-i Link PN IO
- State of the link as a PROFINET IO device
- Diagnostics of the AS-Interface network
- Message frame statistics
- Standard diagnostics pages in the web interface for fast diagnostics access through Ethernet using a standard browser
- Reporting of diagnostic events is optionally possible via e-mail or SNMP trap. The integrated diagnostic buffer saves the events including time stamp

Note on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Configuration

The IE/AS-i Link PN IO is configured as follows:

- With STEP 7 (TIA Portal) from V15 or STEP 7 (classic) from V5.4:
In the case of STEP 7 configuration, the AS-Interface configuration can be uploaded from STEP 7 V5.4 SP2. Furthermore, AS-Interface slaves from Siemens can also be conveniently configured in HW Config (slave selection dialog)
- Alternatively, IE/AS-i Link PN IO can be integrated by means of the PROFINET GSD file in the engineering tool (e.g. for TIA Portal versions earlier than V15 or for STEP 7 versions earlier than V5.4 SP2, or for non-Siemens engineering tools).

Benefits

- Short startup times through simple configuration at the press of a button and testing of the AS-Interface line using the display or web interface
- Reduction of standstill and servicing times in the event of a slave failure thanks to user-friendly diagnostics using the display or web interface
- Costs saved by the double AS-Interface master when large volumes of project data are involved
- Simple operation with AS-Interface power supply unit (see page 2/78) possible without restrictions, no additional operating voltage is required.
- Alternatively: No need for the AS-i power supply unit with AS-i Power24V. The AS-Interface cable is supplied through an existing 24 V DC PELV power supply unit. An S22.5 AS-i data decoupling module (e.g. 3RK1901-1DE12-1AA0) is required for the decoupling, see page 2/81.
- For diagnostics during ongoing operation, diagnostics blocks with clearly arranged visualization on the SIMATIC HMI panel are available or can be downloaded free of charge via a web browser, see <https://support.industry.siemens.com/cs/ww/en/view/61892138>.

Application

The IE/AS-i Link PN IO is a PROFINET IO device (according to IEC 61158/IEC 61784) and an AS-Interface master (based on AS-Interface specification V3.0 according to IEC 62026-2). It enables transparent data access to AS-Interface from PROFINET.

Exchanging data with PROFINET IO controllers

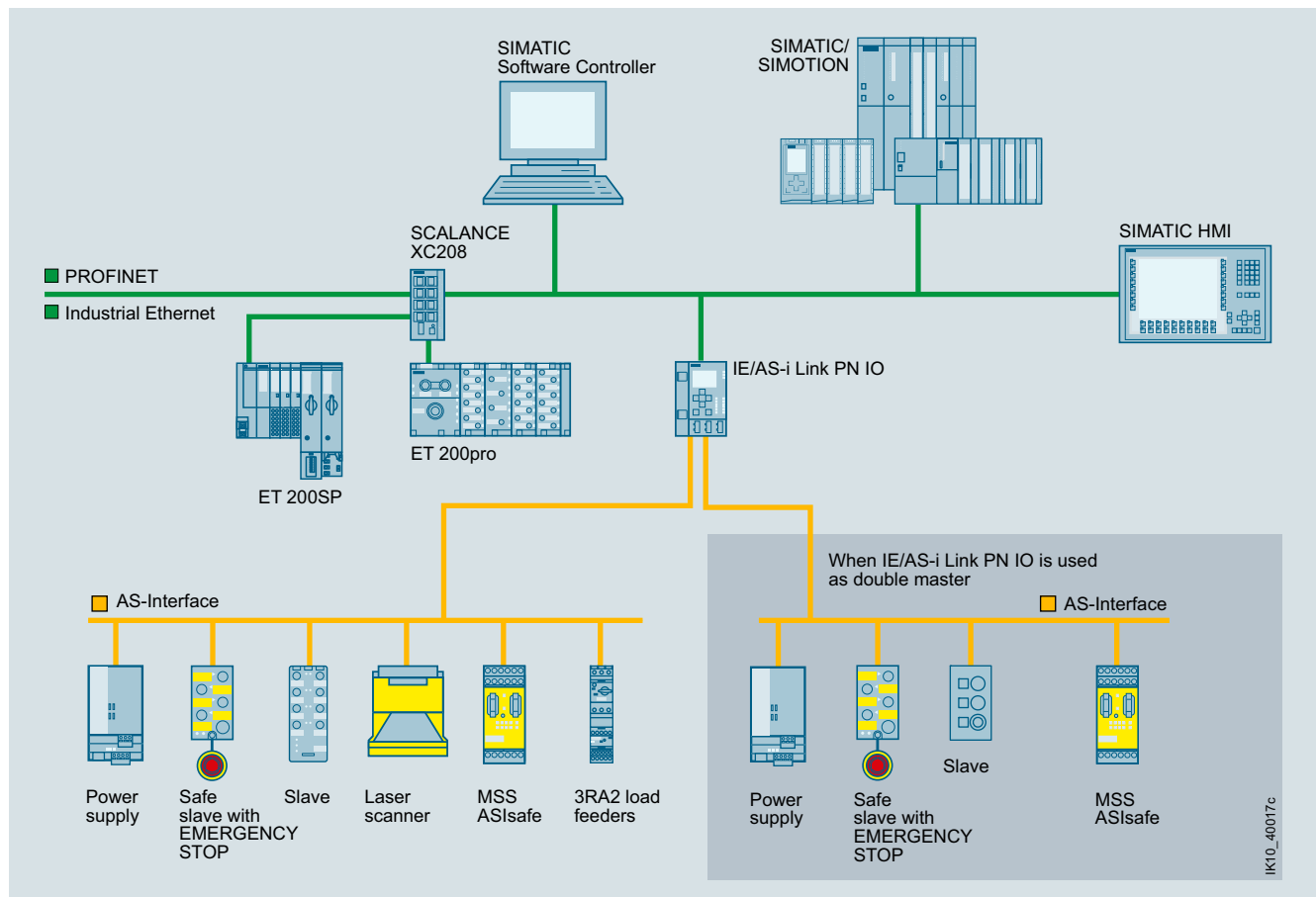
PROFINET IO controllers can exchange I/O data with AS-Interface in cyclic mode and can perform AS-i master calls in addition with acyclic services (e.g. reading/writing the AS-i configuration during normal operation). The IE/AS-i Link PN IO is therefore suitable for distributed configurations and for integrating a lower-level AS-Interface network.

Single master

The AS-i single master version of IE/AS-i Link PN IO is suitable for applications with typical volumes of data. The single master can operate up to 248 DI / 248 DQ, using 62 A/B slaves with 4 DI / 4 DQ each.

Double master

The AS-i double master version of IE/AS-i Link PN IO is suitable for applications with large volumes of data. In this case, twice the volume of project data can be used on two AS-i lines running independently of each other. The double master can operate up to 496 DI / 496 DQ, using two AS-i networks each with 62 A/B slaves with 4 DI / 4 DQ each.



Integration of AS-Interface on PROFINET through IE/AS-i Link PN IO as single/double master

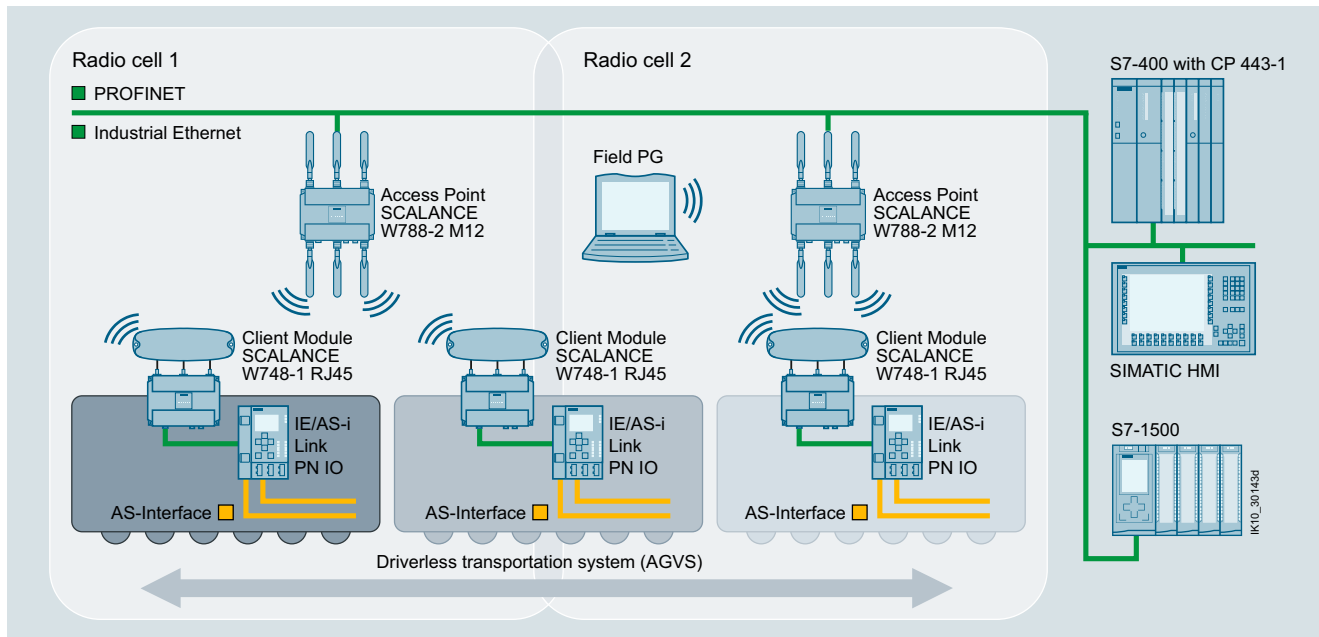
AS-Interface Routers

IE/AS-i Link PN IO

Wireless communication

Using an upstream IWLAN client module, e.g. SCALANCE W748-1 RJ45, an AS-Interface line can be integrated in the PROFINET world by wireless means.

Sample uses are applications which up to now have been performed with fault-prone tow chain or collector wire technology. Maintenance costs are thus reduced.



Wireless communication between Industrial Ethernet and AS-Interface components

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

IE/AS-i Link PN IO



IE/AS-i Link PN IO

Router between PROFINET and AS-Interface in degree of protection IP20; including COMBICON plug-in screw terminals for connecting an AS-Interface cable (two AS-Interface cables for a double master) and the optional 24 V supply; complies with AS-Interface specification V3.0; dimensions (W x H x D/mm): 90 x 132 x 88.5

- Single master with display
- Double master with display

COMBICON connection	
▶ 6GK1411-2AB10	1 1 unit 42C
▶ 6GK1411-2AB20	1 1 unit 42C

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
C-PLUG	1	6GK1900-0AB00		1 1 unit		5N3
Exchange medium for simple exchange of devices in the event of a fault; for accommodating configuration and application data; can be used in SIMATIC NET products with a C-PLUG slot						
IE FC RJ45 Plug 90	1	6GK1901-1BB20-2AA0		1 1 unit		5K1
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated insulation displacement contacts for connection of Industrial Ethernet FC installation cables; with 90° cable feeder						
• 1 pack = 1 unit	1	6GK1901-1BB20-2AB0		1 10 units		5K1
• 1 pack = 10 units	1	6GK1901-1BB20-2AE0		1 50 units		5K1
• 1 pack = 50 units	1					

More information

More information

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/15762/man>

AS-i block library for SIMATIC PCS 7 for easy connection of AS-Interface to PCS 7, see from page 14/19 onwards

Overview



K60



K45



K20

Three coordinated series of AS-Interface compact modules with digital and analog compact modules and a high degree of protection are available for use in the field:

- Series K60 (digital and analog)
- Series K45 (digital)
- Series K20 (digital)

All compact modules are characterized by particularly simple handling. The K60 and K45 modules are mounted with a mounting plate. The mounting plate is used to mount the AS-Interface flat cables and enables mounting on a wall or standard mounting rail.

The particularly narrow K20 modules are directly mounted without a mounting plate and connected to the AS-Interface using a round cable.

Connection types

For flexible connection of different sensors and actuators, the following PIN assignments are available on the I/O modules with M12 sockets:

Standard assignment

With the standard assignment, one sensor/actuator is connected per M12 socket. In this case the signal for the outputs is acquired at PIN4 while the signal for the inputs is acquired at PIN4 and PIN2. As the result, sensors can be connected directly to PIN2 and PIN4.

Y-assignment

With the Y-assignment, two sensors or two actuators can be connected to one M12 socket. In this case, both PIN4 and PIN2 are provided for one sensor signal and one actuator signal on each M12 socket.

Y-II assignment

The Y-II assignment offers the following options:

- Individual connection of a sensor/actuator to one M12 socket
- Connection of two sensors/actuators to one M12 socket as follows:
 - The signal of the first sensor/actuator is connected to PIN4 of the first socket.
 - The signal of the second sensor/actuator is connected to PIN2 of the first socket and to PIN4 of the second socket. In this case, the second socket is not required and is closed with a sealing cap.

Overview of digital compact modules

The following table provides an overview of the important features of the digital compact modules.

Version	K60	K45	K20
8 inputs/2 outputs	✓	--	--
8 inputs	✓	✓	--
4 inputs/4 outputs	✓	✓	✓
4 inputs/3 outputs	✓	--	--
4 inputs/2 outputs	✓	--	--
4 inputs	✓	✓	✓
2 inputs/2 outputs	--	✓	✓
4 outputs	✓	✓	✓
3 outputs	--	✓	--
AS-Interface connection	Flat cable / round cable	Flat cable	Round cable
I/O connection method	M12	M12/M8	M12/M8
Pin assignment	Standard/Y-II/Y	Standard/Y	Standard/Y
Degree of protection	IP65/IP67/IP68/IP69K	IP65/IP67	IP65/IP67
Addressing type A/B address	✓	✓	✓

✓ Available

-- Not available

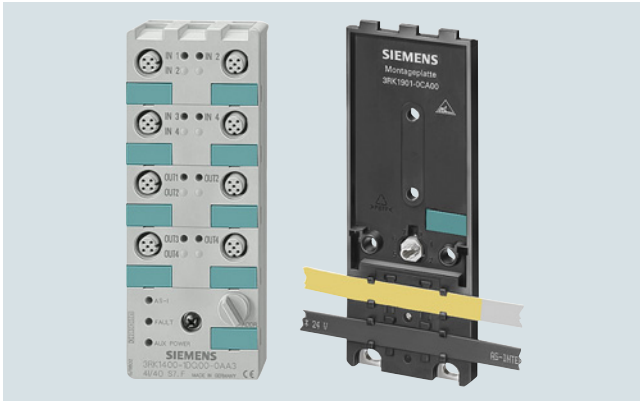
AS-Interface

Slaves

I/O Modules for Use in the Field, High Degree of Protection

Digital I/O modules, IP67 – K60

Overview



K60

The K60 digital AS-Interface compact modules are characterized by optimized handling characteristics and user-friendliness. They permit the mounting times and startup times of AS-Interface to be reduced by up to 40%.

Mounting and connection of the AS-Interface shaped cables

Assembly of the K60 modules is performed with a mounting plate which accommodates the AS-Interface shaped cables. Two different mounting plates are offered for

- Wall mounting
- Standard rail mounting

The mounting plate and the compact module are joined together by means of a screw, with simultaneous contacting of the AS-Interface cable by the service-proven insulation piercing method.

Addressing and connection of the sensors/actuators

Addressing of the K60 modules is performed using an addressing socket integrated in the compact module. The addresses can also be assigned after installation.

K60 modules with a maximum of four digital inputs and outputs

These compact modules contain the M12 standard connections for inputs and outputs. Using M12 standard plugs, a maximum of four sensors and four actuators can be connected to the compact module.

K60 compact modules with a maximum of eight digital inputs

These modules have eight digital inputs for connection through M12 plugs.

The module requires two AS-Interface addresses for processing all eight inputs. The addressing can thus be performed through a double addressing socket integrated in the module.

K60 data couplers

An AS-Interface data coupler has been added to the K60 compact module range. Integrated in this module are two AS-i slaves which are connected to two different AS-i networks. Each of the two integrated slaves has four virtual inputs and four virtual outputs. The bidirectional data transmission of four data bits between two AS-i networks is thus possible in a simple and cost-effective manner. The data coupler needs its own address in each AS-i network. The data coupler is supplied with power directly from the AS-i cable.

Each AS-i network works with a different cycle time depending on the number of stations. Hence two AS-i networks are not necessarily synchronous. For this reason, the AS-i data coupler can be used to transmit only standard data and no safety data.

AS-Interface

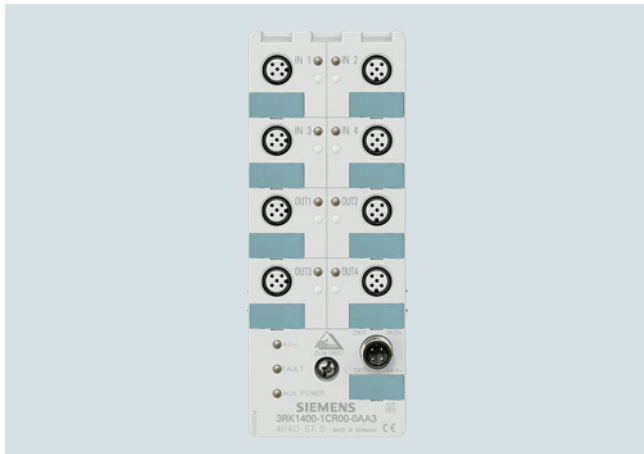
Slaves

I/O Modules for Use in the Field, High Degree of Protection

Digital I/O modules, IP68/IP69K – K60R

Overview

Operation in particularly harsh environments



K60R module in degree of protection IP68/IP69K

Modules with degree of protection IP67 cannot be used in areas exposed to permanently high levels of humidity, in applications with drilling emulsions and cutting oils or when cleaning with high-pressure cleaners. The answer for these applications is provided by the expansion of the K60 compact modules with the K60R module with degree of protection IP68/IP69K.

The K60R modules are connected instead of the AS-Interface flat cable using a round cable with M12 cable box. The AS-Interface bus cable and the 24 V DC auxiliary power supply are routed in this case in a shared round cable.

Degree of protection IP68 permits many new applications that were impossible with the former field modules with degree of protection IP67. In applications such as filling plants or machine tools, the K60R with degree of protection IP68 enables the module to be used directly in zones exposed to permanent loading by humidity. It is thus possible to make even more rigorous savings in wiring with AS-Interface. For more information on IP68 test conditions, see "IP68/IP69K tests" on page 2/59.

Cleaning with high-pressure cleaners, such as is regularly performed in the food and drinks industry for instance, is possible without difficulty (IP69K).

In applications with tow chains, many users rely on placing the AS-Interface bus cable in a round cable. With the K60R module, a round cable connection is possible for direct connection to a round cable. No adapter is required.

Mounting

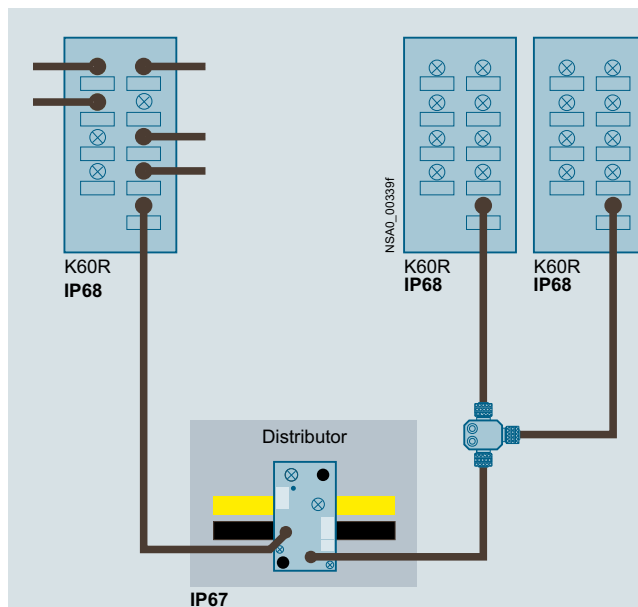
The same mounting plates are used as for the K60 modules. Instead of using flat cables, the K60R is connected using a 4-pole round cable with an M12 connection. With the K60R the mounting plate thus serves only as a fixture and ground terminal.

Addressing

Addressing is performed using the same socket as for the bus connection. Connecting the module to the addressing unit takes place over a 3-pole standard M12 cable.

When the mounting is finished, the module is connected with the addressing cable to the addressing unit and addressed. The addressing cable is then removed and the module connected to the bus cable.

Connection



K60R connection options

In the IP67 environment, the service-proven standard components are connected using flat cables. Spur lines are laid into the IP68 environment by means of an AS-Interface M12 feeder (3RK1901-2NR..). The module is connected with a round cable to an M12 cable box. For this purpose, the module has an M12 bus connection instead of the former addressing socket. The AS-Interface bus cable and the 24 V DC auxiliary voltage are routed together in a 4-pole round cable. There must be no ground conductor in this round cable. Connection to ground is made through the mounting plate.

In the IP68 environment, only cables with extruded M12 plugs may be used.

Please note the following conditions:

- The configuration guidelines for AS-Interface apply. For all M12 connecting cables, the maximum permissible current is limited to 4 A. The cross-section of these cables is just 0.34 mm². For connection of the K60R modules, the aforementioned M12 connecting cables can be used for the spur lines. The voltage drop caused by the ohmic resistance (approx. 0.11 Ω/m) must be taken into account.
- For round cable connections with shared AS-i and U_{aux} in a single cable, the following maximum lengths apply:
 - Per spur line from feeder to module: max. 5 m
 - Total of all round cable segments in an AS-Interface network: max. 20 m

IP68/IP69K tests

K60R modules were tested with the following tests:

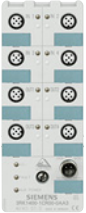
- Stricter test than IP67: 90 min at 1.8 m depth of water (IP67: 30 min at 1 m depth of water)
- Salt water test: Five months in salt water, 20 cm deep, at room temperature
- Test with particularly creepable oil: Five months completely under oil at room temperature
- Test with drilling emulsion: Five months at room temperature (components of the drilling emulsion: Anionic and non-ionic emulsifiers, paraffinic low-aromatic mineral oil, boric acid alkanolamines, corrosion inhibitors, oil content 40%)
- Test in oil bath (Excellence 416 oil) with alternating oil bath temperature: 130 cycles of 15 to 55 °C, two months
- Cleaning with a high-pressure cleaner according to IP69K: 80 to 100 bar, 10 to 15 cm distance, time per side > 30 s, water temperature 80 °C

To simulate requirements as realistically as possible, the modules were artificially aged prior to the tests by 15 temperature cycles of -25/+85 °C. During the test, the modules were connected to 3RX1 connecting cables. Unassigned connections were closed with 3RK1901-1KA00 sealing caps.





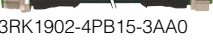
Note:

Sealing caps and M12 connections must be tightened with the correct torque.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
 <p>Digital I/O modules, IP68/IP69K – K60R</p> <ul style="list-style-type: none"> • 4 inputs/4 outputs • Width 60 mm • IP68/IP69K • Standard assignment • Current carrying capacity <ul style="list-style-type: none"> - 200 mA (inputs) - 2 A (outputs) • Slave addressing type: Standard address • Modules supplied without mounting plate <p>3RK1400-1CR00-0AA3</p>	2	3RK1400-1CR00-0AA3		1	1 unit	42C

AS-Interface**Slaves****I/O Modules for Use in the Field, High Degree of Protection****Digital I/O modules, IP68/IP69K – K60R****Accessories**

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
K60 mounting plates						
Suitable for all K60 and K60R compact modules						
<ul style="list-style-type: none"> • Wall mounting • Standard rail mounting 						
		▶ 3RK1901-0CA00		1	1 unit	42C
		▶ 3RK1901-0CB01		1	1 unit	42C
3RK1901-0CA00						
AS-Interface sealing caps M12						
For free M12 sockets						
		▶ 3RK1901-1KA00		100	10 units	42C
3RK1901-1KA00						
AS-Interface M12 feeders, current carrying capacity up to 4 A NEW						
For flat cable	For	Cable length	Cable end in feeder			
AS-i/U _{aux}	M12 socket	--	Not available	2	3RK1901-2NR20	1 1 unit 42C
AS-i/U _{aux}	M12 cable box	1 m	Not available	2	3RK1901-2NR21	1 1 unit 42C
AS-i/U _{aux}	M12 cable box	2 m	Not available	2	3RK1901-2NR22	1 1 unit 42C
						
3RK1901-2NR21						
AS-Interface M12 feeders, 4-fold, current carrying capacity up to 4 A						
For flat cable	For	Cable length	Cable end in feeder			
AS-i/U _{aux}	4-fold M12 socket, delivery includes mounting plate (for wall and standard rail mounting)	--	Not available	2	3RK1901-1NR04	1 1 unit 42C
						
3RK1901-1NR04						
M12 connecting cables						
<ul style="list-style-type: none"> • 3-pole • For addressing AS-i slaves with M12 bus connection • Cable length 1.5 m 						
		5	3RK1902-4PB15-3AA0	1	1 unit	42D
3RK1902-4PB15-3AA0						

Overview

Compact modules K45

The K45 series of compact modules supplements the large K60 compact modules which have a proven track record in industry. They are the logical consequence for rounding off the bottom end of the existing product range.

The acclaimed advantages of the existing K60 compact modules are fully emulated by the K45 modules. The K45 modules have a substantially smaller basic area and installation depth, however.

Yet in spite of these small dimensions all the modules have large labels and an integrated addressing socket.

Two mounting plates are offered for the K45 compact modules:

- Mounting plate for wall mounting
This has a hole pattern that is identical to that of the K60 compact modules. This means that K60 compact modules can be mounted together with K45 modules in an aligned arrangement. The shaped cables can be inserted in the recesses of the mounting plates where they cause no hindrance.
- Mounting plate for standard rail mounting

Connection of the AS-Interface shaped cables

The mounting plate and the compact module are joined together by means of a screw, with simultaneous contacting of the AS-Interface cable by the service-proven insulation piercing method.

Now, mounting the AS-Interface shaped cables is in fact easier than ever. The yellow and black AS-Interface shaped cable can be inserted into the mounting plates from the left or right regardless of the position of the coding lug. The correct polarity of the applied voltages is thus guaranteed.

Addressing and connection of the sensors/actuators

Addressing of the K45 compact modules is performed using an addressing socket integrated in the module. The addresses can be assigned even when mounted.

K45 modules with a maximum of four digital inputs and outputs

These compact modules contain up to four M12 standard connections or M8 standard connections for inputs and outputs. Using M12 or M8 standard plugs, a maximum of four sensors and four actuators can be connected to the compact module. Depending on the module, the sockets can be assigned in duplicate.

Pin assignment: Y – i.e. via a socket, two sensors or one sensor/one actuator are connected.

K45 modules with a maximum of eight digital inputs

These modules have eight digital inputs for connection through M12 plugs. The sockets have duplicate assignments. Pin assignment: Y – i.e. via a socket, two sensors or one sensor/one actuator are connected.

The module requires two AS-Interface addresses for processing all eight inputs. The addresses can be assigned through a double addressing socket integrated in the module.

AS-Interface

Slaves

I/O Modules for Use in the Field, High Degree of Protection

Digital I/O modules, IP67 – K45

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Digital I/O modules, IP67 – K45						
<ul style="list-style-type: none"> • PNP transistor • Width 45 mm • Current carrying capacity of the inputs: 200 mA • Modules supplied without mounting plate 						
Type	Current carrying capacity of outputs	Slave addressing type	Pin assignment	U_{aux} 24 V	Connection methods	
8 inputs ¹⁾	--	A/B	Y	--	M12	2 3RK2200-0DQ20-0AA3
4 inputs	--	Standard	Standard	--	M12	▶ 3RK1200-0CQ20-0AA3
		Standard	Standard	--	M8	▶ 3RK1200-0CT20-0AA3
		A/B	Standard	--	M12	▶ 3RK2200-0CQ20-0AA3
		A/B	Standard	--	M8	▶ 3RK2200-0CT20-0AA3
2 x 2 inputs	--	A/B	Y	--	M12	2 3RK2200-0CQ22-0AA3
2 inputs/ 2 outputs	2 A ²⁾	Standard	Standard	✓	M12	▶ 3RK1400-1BQ20-0AA3
2 x (1 input/ 1 output)	0.2 A	Standard	Y	--	M12	2 3RK1400-0GQ20-0AA3
4 x (1 input/ 1 output)	0.2 A	A/B (Spec. V3.0)	Y	--	M12	5 3RK2400-0GQ20-0AA3
	0.5 A	A/B (Spec. V3.0)	Y	✓	M12	5 3RK2400-1GQ20-1AA3
4 outputs	1 A	A/B (Spec. V3.0)	Standard	✓	M12	2 3RK2100-1CQ20-0AA3
3 outputs	1 A	A/B	Standard	✓	M12	▶ 3RK2100-1EQ20-0AA3
4 outputs	1 A	Standard	Standard	✓	M12	▶ 3RK1100-1CQ20-0AA3
2 outputs/ 2 inputs	2 A	A/B	Standard	✓	M12	2 3RK2400-1BQ20-0AA3

✓ Available

-- Not available

¹⁾ Module occupies two AS-Interface addresses²⁾ The typical current carrying capacity per output increases with version "E12" from 1.5 to 2 A (available since approx. 07/2003).

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
K45 mounting plates						
<ul style="list-style-type: none"> • For wall mounting • For standard rail mounting 						
		▶ 3RK1901-2EA00		1	1 unit	42C
		▶ 3RK1901-2DA00		1	1 unit	42C
Cable termination pieces						
		▶ 3RK1901-1MN00		1	10 units	42C
For sealing of open cable ends (shaped AS-Interface cable) in IP67						
AS-Interface sealing caps						
		▶ 3RK1901-1KA00		100	10 units	42C
		▶ 3RK1901-1PN00		100	10 units	42C



3RK1400-0GQ20-0AA3



3RK1901-2EA00



3RK1901-1MN00



3RK1901-1KA00



3RK1901-1PN00

Overview

Digital I/O modules, IP67 – K20

The K20 compact module series rounds off the AS-Interface compact modules with a particularly slim design and only 20-mm width. Thanks to its extremely compact dimensions, these modules are particularly suited for handling machine applications in the field of production engineering where modules need to be arranged in the smallest of spaces.

Robotics is yet another application area. The K20 modules are connected to the AS-Interface with a round cable with M12 cable box instead of with the AS-Interface flat cable. The AS-Interface bus cable and the 24 V DC auxiliary energy are routed in this case in a shared round cable. This enables extremely compact installation.

The flexibility of the round cable means that it can also be used on moving machine parts without any problems.

The K20 modules are also ideal for such applications as their non-encapsulated design makes them particularly light in weight.

In applications with tow chains, many users rely on placing the AS-Interface bus cable in a round cable. In this case, the K20 modules support direct connection to the round cable. No flat to round cable adapter is required.

The K20 compact module range includes standard AS-Interface modules, as well as an ASIsafe version for the connection of safety-related sensors, such as EMERGENCY STOP pushbuttons or protective door monitoring.

For particularly space-saving dimensions, the sensors and actuators are connected over M8 plug-in connectors. Alternatively, M12 connectors with Y-assignment can be used.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG			
Digital I/O modules, IP67 – K20									
Width 20 mm									
Type	Current carrying capacity of outputs	Slave addressing type	Pin assignment	Connection methods					
4 inputs	--	A/B	Standard	M8	2	3RK2200-OCT30-0AA3	1	1 unit	42C
	--	A/B	Y	M12	5	3RK2200-OCQ30-0AA3	1	1 unit	42C
2 inputs/ 2 outputs	1	A/B	Standard	M8	2	3RK2400-1BT30-0AA3	1	1 unit	42C
	1	A/B	Y	M12	2	3RK2400-1BQ30-0AA3	1	1 unit	42C
4 outputs	1	A/B (Spec. V3.0)	Standard	M8	2	3RK2100-1CT30-0AA3	1	1 unit	42C
4 inputs/ 4 outputs	1	Standard	Standard	M8	10	3RK1400-1CT30-0AA3	1	1 unit	42C
	1	A/B (Spec. V3.0)	Standard	M8	2	3RK2400-1CT30-0AA3	1	1 unit	42C
2 safe inputs	--	Standard	Y-II	M12	2	3RK1205-0BQ30-0AA3	1	1 unit	42C

3RK2200-
OCT30-0AA3



AS-Interface

Slaves

I/O Modules for Use in the Field, High Degree of Protection

Digital I/O modules, IP67 – K20

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-Interface sealing caps <ul style="list-style-type: none"> For free M12 sockets For free M8 sockets 						
	▶	3RK1901-1KA00		100	10 units	42C
	2	3RK1901-1PN00		100	10 units	42C
AS-Interface compact distributors, for AS-Interface flat cable <i>NEW</i> Current carrying capacity up to 8 A						
	2	3RK1901-2NN10		1	1 unit	42C
AS-Interface M12 feeders <ul style="list-style-type: none"> Degree of protection IP67 Current carrying capacity up to 2 A 						
						
For flat cable	For	Cable length	Cable end in feeder			
AS-i	M12 socket	--	Available	▶	3RX9801-0AA00	1 1 unit 42C
AS-Interface M12 feeders <i>NEW</i> <ul style="list-style-type: none"> Degree of protection IP67/IP68/IP69K Current carrying capacity up to 4 A 						
						
For flat cable	For	Cable length	Cable end in feeder			
AS-i	M12 socket	--	Not available	2	3RK1901-2NR10	1 1 unit 42C
AS-i	M12 cable box	1 m	Not available	2	3RK1901-2NR11	1 1 unit 42C
AS-i	M12 cable box	2 m	Not available	2	3RK1901-2NR12	1 1 unit 42C
						
AS-i/U _{aux}	M12 socket	--	Not available	2	3RK1901-2NR20	1 1 unit 42C
AS-i/U _{aux}	M12 cable box	1 m	Not available	2	3RK1901-2NR21	1 1 unit 42C
AS-i/U _{aux}	M12 cable box	2 m	Not available	2	3RK1901-2NR22	1 1 unit 42C
AS-Interface M12 feeders, 4-fold Current carrying capacity up to 4 A						
						
For flat cable	For	Cable length	Cable end in feeder			
AS-i/U _{aux}	4-fold M12 socket, delivery includes mounting plate (for wall and standard rail mounting)	--	Not available	2	3RK1901-1NR04	1 1 unit 42C
M12 Y-shaped coupler plugs For connection of two sensors to one M12 socket with Y-assignment						
	1	6ES7194-1KA01-0XA0		1	1 unit	250
M12 connecting cables <ul style="list-style-type: none"> 3-pole For addressing AS-i slaves with M12 bus connection Cable length 1.5 m 						
	5	3RK1902-4PB15-3AA0		1	1 unit	42D

Overview



K60 analog compact module

AS-Interface analog modules from the K60 compact series detect or issue analog signals locally. These modules are linked to the higher-level controller through an AS-Interface master according to specification V2.1 or specification V3.0.

The analog modules are divided into the following groups:

- Input modules for
 - Sensors with current sensor
 - Sensors with voltage signal
 - Sensors with thermal resistor
- Output modules for
 - Current actuators
 - Voltage actuators

The input modules according to profile 7.3/7.4 are available with two or four input channels. It is possible in addition to convert the two-channel module to using only one input channel, thus enabling very short times before the analog value is available. The conversion is effected by means of a jumper plug at socket 3. The transmission times achieved with analog modules according to Profile 7.A.9 are two times faster than those achieved with Profile 7.3/7.4. Operation is adjustable in this case, e.g. it is possible to choose with the ID1 code whether the module is operated with one or two channels.

The output modules are configured as two-channel modules as standard.

The input and output channels are electrically separated from the AS-Interface network. If sensors with a higher power requirement are to be connected, more power can be supplied through the auxiliary voltage as an alternative to the internal supply.

In the manual "AS-Interface Analog Modules Profile 7.3/Profile 7.A.9", the modules are presented in great detail along with their technical specifications and in-depth notes on operation. Sample function blocks round off the manual, [see "More information" on page 2/67](#).

Benefits

- Analog modules are just as easy to integrate in AS-Interface as digital modules
- Analog values can be easily detected and issued locally
- Preprocessing of the analog value transfer in the master enables rapid evaluation of the analog values
- Up to four values can be detected using one analog module
- Faster transmission and conversion of analog values thanks to the new option for switching to single-channel operation

In addition, specification V3.0 now also offers:

- A/B technology, now also with analog modules
- On average, double fast transmission times (only 3 or 4 cycles, depending on the resolution selected)
- Variable adjustable mode: 12-bit or 14-bit resolution, single-channel or two-channel, selectable via the ID1 code

AS-Interface**Slaves****I/O Modules for Use in the Field, High Degree of Protection****Analog I/O modules, IP67 – K60****Selection and ordering data**

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					



3RK1207-1BQ44-0AA3

Analog I/O modules, IP67 – K60, analog profile 7.3

- Slave addressing type: Standard address
- Width 60 mm
- Modules supplied without mounting plate

Inputs	Type	Measuring range		Article No.		PU	PS*	PG
1 or 2 inputs (selectable using jumper plug at socket 3)	Current	4 ... 20 mA or ± 20 mA (selectable) ¹⁾	2	3RK1207-1BQ40-0AA3		1	1 unit	42C
	Voltage	± 10 V or 1 ... 5 V (selectable)	2	3RK1207-2BQ40-0AA3		1	1 unit	42C
	Thermal resistance	Pt100 or Ni100 or 0 ... 600 Ω (selectable) ¹⁾	2	3RK1207-3BQ40-0AA3		1	1 unit	42C
4 inputs	Current	4 ... 20 mA or ± 20 mA (selectable)	2	3RK1207-1BQ44-0AA3		1	1 unit	42C
	Voltage	± 10 V or 1 ... 5 V (selectable)	10	3RK1207-2BQ44-0AA3		1	1 unit	42C
	Thermal resistance	Pt100 or Ni100 or 0 ... 600 Ω (selectable)	2	3RK1207-3BQ44-0AA3		1	1 unit	42C
Outputs	Type	Output range		Article No.		PU	PS*	PG
2 outputs	Current for 2-wire actuators	4 ... 20 mA or ± 20 mA or 0 ... 20 mA (selectable) ¹⁾	2	3RK1107-1BQ40-0AA3		1	1 unit	42C
	Voltage for 2-wire actuators	± 10 V or 0 ... 10 V or 1 ... 5 V (selectable)	2	3RK1107-2BQ40-0AA3		1	1 unit	42C



3RK2207-2BQ50-0AA3

Analog I/O modules, IP67 – K60, analog profile 7.A.9

- Slave addressing type: A/B (Spec. V3.0)
- Width 60 mm
- Modules supplied without mounting plate

Inputs	Type	Measuring range		Article No.		PU	PS*	PG
1 or 2 inputs (variably adjustable)	Current	4 ... 20 mA or ± 20 mA (selectable)	2	3RK2207-1BQ50-0AA3		1	1 unit	42C
	Voltage	± 10 V or 1 ... 5 V (selectable)	2	3RK2207-2BQ50-0AA3		1	1 unit	42C

¹⁾ Some modules are available in the extended temperature range (from -25 to 70 °C) and for use in difficult environmental conditions (coated according to environment standard IEC 60721).

Description	SIPLUS article number	Corresponds to module
SIPLUS AS-Interface 2AA, IP67	6AG1107-1BQ40-7AA3	3RK1107-1BQ40-0AA3
SIPLUS AS-Interface 2AI, IP67	6AG1207-1BQ40-7AA3	3RK1207-1BQ40-0AA3
SIPLUS AS-Interface 2AI, IP67	6AG1207-3BQ40-7AA3	3RK1207-3BQ40-0AA3





For more information, see www.siemens.com/siplus-extreme.

AS-Interface Slaves

I/O Modules for Use in the Field, High Degree of Protection

Analog I/O modules, IP67 – K60

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
 3RK1901-0CA00		K60 mounting plates				
		<ul style="list-style-type: none"> Wall mounting ▶ 3RK1901-0CA00 Standard rail mounting ▶ 3RK1901-0CB01 		1	1 unit	42C
		M12 sealing caps		100	10 units	42C
 3RK1901-1KA00						
		Sealing sets		100	5 units	42D
 3RK1902-0AR00	2	<ul style="list-style-type: none"> For K60 mounting plate and distributor Cannot be used for K45 mounting plate One set contains one straight and one shaped seal 				
		Jumper plugs		1	1 unit	42C
 3RK1901-1AA00	2	For changing over the two channel input modules				

More information

More information

For the Manual "AS-Interface Analog Modules Profile 7.3, Profile 7.A.9", see <https://support.industry.siemens.com/cs/ww/en/view/7643815>

AS-Interface

Slaves

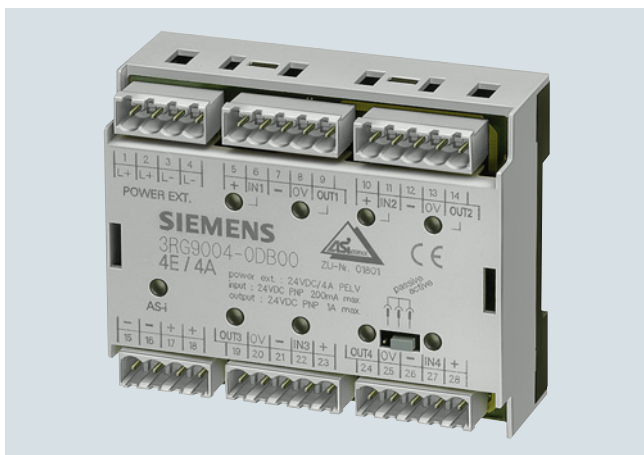
I/O Modules for Use in the Control Cabinet

Introduction

Overview



SC17.5F, SC17.5 and SC22.5 SlimLine Compact modules



F90 module



Flat module

For AS-Interface applications inside control cabinets, there are various module series for the most diverse requirements:

- SlimLine Compact – particularly slim design ideal for space-saving use in the control cabinet
- F90 module – particularly flat design for flat control boxes
- Flat module – special design for integration into customer-specific solutions

The existing SlimLine series of modules S22.5 and S45 are being replaced by the innovative new devices in the SlimLine Compact SC17.5, SC17.5F and SC22.5 series. The previous SlimLine modules are still available as replacements for existing systems.

Available versions

The following table provides an overview of the key features of the different series of control cabinet modules.

Feature	SlimLine Compact	F90 module	Flat module
Digital I/O	✓	✓	✓
Analog I/O	✓	--	--
Safe inputs	✓	--	--
Relay outputs	✓	--	--
Addressing method A/B address	✓	--	--
Mounting onto TH 35 standard mounting rail according to IEC 60715	✓	✓	--
Wall mounting using push-in lugs	✓	--	--
Integrated lugs for screw fixing	--	--	✓
Width in mm	17.5 or 22.5	90	80

✓ Available

-- Not available

Overview

SlimLine Compact modules



SC17.5 and SC22.5 SlimLine Compact modules with screw terminals

The AS-Interface module series for the control cabinet SlimLine Compact with degree of protection IP20 creates space in the cabinet and in distributed local control boxes. A width of just 17.5 mm or 22.5 mm ensures considerable space savings in the control cabinet.

The SlimLine Compact module series comprises not only digital and analog I/O modules but also ASIsafe modules with safe inputs. Digital outputs are available as electronic and relay outputs.

Sensors and actuators, as well as the AS-Interface bus cable, are connected by means of removable screw or push-in spring-type terminals. Device connectors available as accessories offer the possibility of looping through the AS-Interface bus cable and the 24 V DC power supply U_{aux} from one module to additional modules. This significantly simplifies the wiring, as the AS-Interface bus cable and U_{aux} only have to be connected to one device.



SlimLine Compact module SC22.5 with connector with screw terminals

All devices for the connection of 3-wire sensors offer the option of supplying the sensors either from the AS-Interface bus cable or alternatively from the 24 V DC voltage supply U_{aux} depending on the requirements of the particular application. A slide switch is used to make the selection. If supply via U_{aux} is selected, the wiring of the sensor terminals remains unchanged. This means that no external supply is required for the sensors.

All modules have LEDs on the front that provide diagnostic information and indicate the status of the module inputs and outputs. Devices with semiconductor outputs indicate the status of each output by means of a dual LED. Thus the status (on/off/overload) is displayed for each output. An addressing socket integrated at the front enables the module to be addressed also when it is installed. Integrated adapters permit mounting onto a standard mounting rail – either directly for the module or for the device connector. Alternatively, the modules can also be screw-mounted using push-in lugs (accessories). These lugs for screw fastening must be ordered separately.

AS-Interface

Slaves

I/O Modules for Use in the Control Cabinet

SlimLine Compact

Selection and ordering data

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 42C



More information

For the "SlimLine Compact Modules" Manual, see
<https://support.industry.siemens.com/cs/ww/en/view/109481489>


Version	Width	Inputs	Outputs	SD	Screw terminals	SD	Spring-type terminals (push-in)	
I/O type	mm			d	Article No.	Price per PU	Article No.	Price per PU

SC17.5 and SC22.5 digital SlimLine Compact modules

Slave addressing type: A/B address


	4 inputs	17.5	2-wire	--	2	3RK2200-0CE00-2AA2	2	3RK2200-0CG00-2AA2
		22.5	3-wire	--	2	3RK2200-2CE00-2AA2	2	3RK2200-2CG00-2AA2
	4 outputs	22.5	--	2A electronic	2	3RK2100-1CE00-2AA2	2	3RK2100-1CG00-2AA2
	4 inputs/ 2 outputs, relays	22.5	3-wire	Relay (change-over contact)	2	3RK2402-2ME00-2AA2	2	3RK2402-2MG00-2AA2
	4 inputs/ 4 outputs, relays	22.5	3-wire	Relay (NO contacts)	2	3RK2402-2CE00-2AA2	2	3RK2402-2CG00-2AA2
	4 inputs/ 4 outputs	22.5	3-wire	2A electronic	2	3RK2400-2CE00-2AA2	2	3RK2400-2CG00-2AA2

Slave addressing type: Standard address

	4 inputs/ 4 outputs	22.5	3-wire	2A electronic	2	3RK1400-2CE00-2AA2	2	3RK1400-2CG00-2AA2
---	------------------------	------	--------	---------------	---	---------------------------	---	---------------------------


SC22.5 analog SlimLine Compact modules

Slave addressing type: Standard address

	4 inputs	22.5	Voltage/ current selectable	--	2	3RK1207-0CE00-2AA2	2	3RK1207-0CG00-2AA2
			Thermal resistance	--	2	3RK1207-3CE00-2AA2	2	3RK1207-3CG00-2AA2
	2 outputs	22.5	--	Voltage/ current selectable	2	3RK1107-0BE00-2AA2	2	3RK1107-0BG00-2AA2

SC17.5F ASIsafe SlimLine Compact modules

Slave addressing type: Standard address

	2 safe inputs	17.5	For mechanical contacts	--	2	3RK1205-0BE00-2AA2	2	3RK1205-0BG00-2AA2
	2 safe inputs/ 2 standard outputs	17.5	For mechanical contacts	Electronic, U_{AS}/U_{aux} supply selectable	2	3RK1405-2BE00-2AA2	2	3RK1405-2BG00-2AA2

Accessories

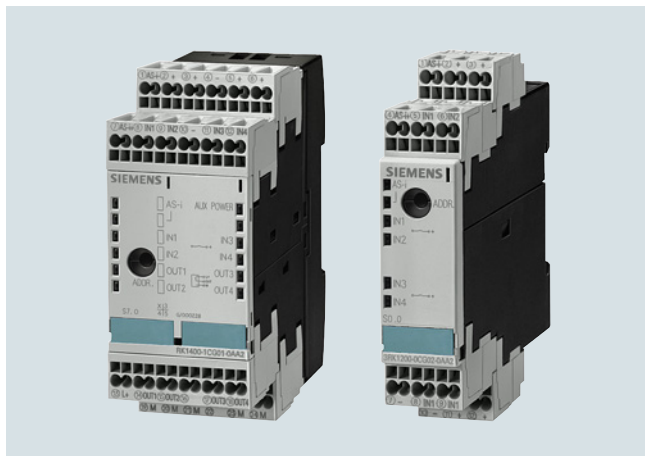
Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Device connectors						
For electrical connection of SlimLine Compact modules (connects AS-i bus cable and 24 V DC auxiliary power supply U_{aux} when using several SlimLine Compact modules)						
		• Width 17.5 mm	2	3RK1901-1YA00	1	1 unit 42C
		• Width 22.5 mm	2	3RK1901-1YA10	1	1 unit 42C
3RK1901-1YA00						
3RK1901-1YA10						
Device termination connectors						
Required for the last module in the network						
		• Width 17.5 mm	2	3RK1901-1YA01	1	1 unit 42C
		• Width 22.5 mm	2	3RK1901-1YA11	1	1 unit 42C
3RK1901-1YA01						
3RK1901-1YA11						
Removable terminals						
Screw terminals 						
		• Screw terminals up to 2 x 1.5 mm ² or 1 x 2.5 mm ²	2	3ZY1121-1BA00	1	6 units 41L
		- 2-pole	2	3ZY1141-1BA00	1	6 units 41L
		- 4-pole				
3ZY1121-2BA00						
Spring-type terminals (push-in) 						
		• Push-In terminals up to 2 x 1.5 mm ²	2	3ZY1121-2BA00	1	6 units 41L
		- 2-pole	2	3ZY1141-2BA00	1	6 units 41L
		- 4-pole				
Hinged cover ^{NEW}						
Replacement for SlimLine Compact module, without terminal labeling						
		• Width 17.5 mm	2	3ZY1450-1AA00	1	5 units 41H
		- Titanium gray for SC17.5	2	3ZY1450-1BA00	1	5 units 41H
		- Yellow for SC17.5F				
		• Width 22.5 mm	2	3ZY1450-1AB00	1	5 units 41H
		- Titanium gray for SC22.5				
3ZY1450-1BA00						
3ZY1450-1AB00						
Push-in lugs for wall mounting						
		Two lugs are required per device	2	3ZY1311-0AA00	1	10 units 41L
3ZY1311-0AA00						
Coding pins for removable terminals						
		For mechanical coding of the terminals	2	3ZY1440-1AA00	1	12 units 41L
3ZY1440-1AA00						
Blank labels						
Unit labeling plates ¹⁾						
		• 10 mm x 7 mm, titanium gray	20	3RT2900-1SB10	100	816 units 41B
		• 20 mm x 7 mm, titanium gray	20	3RT2900-1SB20	100	340 units 41B
3RT2900-1SB20						
Tools for opening spring-type terminals						
		Screwdriver for SIRIUS devices with spring-type terminals	2	3RA2908-1A	1	1 unit 41B
3RA2908-1A		3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated				

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/16).

AS-Interface Slaves I/O Modules for Use in the Control Cabinet

SlimLine Compact

More information



SlimLine modules S45 (picture on left) and S22.5 module (picture on right) with spring-type terminals

The existing SlimLine series of I/O modules for use in the control cabinet is being replaced by the new, innovative SlimLine Compact series. We recommend that these new devices are used in future.

The code conversion table indicates the best options for replacing the existing SlimLine devices with SlimLine Compact devices.

Note:




The previous SlimLine devices are still available for use as replacements in existing systems. As a result of the innovation, the new SlimLine Compact devices are not fully compatible in terms of either mechanical dimensions or electrical properties.

The code conversion table below links the existing SlimLine S22.5, S22.5F and S45 modules with the new SlimLine Compact SC17.5, SC17.5F and SC22.5 devices.

Code conversion table

S22.5, S22.5F and S45 SlimLine			Comparison type: SC17.5, SC17.5F and SC22.5 SlimLine Compact		
Screw terminals	Spring-type terminals	Version	Screw terminals	Spring-type terminals	Version
3RK1200-0CE00-0AA2	3RK1200-0CG00-0AA2	4 DI, 2-wire, standard address	3RK2200-0CE00-2AA2	3RK2200-0CG00-2AA2	4 DI, 2-wire, A/B address
3RK2200-0CE02-0AA2	3RK2200-0CG02-0AA2	4 DI, A/B address	3RK2200-2CE00-2AA2	3RK2200-2CG00-2AA2	4 DI, A/B address
3RK1200-0CE02-0AA2	3RK1200-0CG02-0AA2	4 DI, standard address			
3RK1400-0BE00-0AA2	3RK1400-0BG00-0AA2	2 DI / 2 DQ, standard address	3RK1400-2CE00-2AA2	3RK1400-2CG00-2AA2	4 DI / 4 DQ, standard address
3RK1402-0BE00-0AA2	3RK1402-0BG00-0AA2	2 DI / 2 DQ relay, standard address	3RK2402-2ME00-2AA2	3RK2402-2MG00-2AA2	4 DI / 2 DQ relay, A/B address
3RK1100-1CE00-0AA2	3RK1100-1CG00-0AA2	4 DQ, standard address	3RK2100-1CE00-2AA2	3RK2100-1CG00-2AA2	4 DQ, A/B address
3RK2400-1CE01-0AA2	3RK2400-1CG01-0AA2	4 DI / 4 DQ, A/B address	3RK2400-2CE00-2AA2	3RK2400-2CG00-2AA2	4 DI / 4 DQ, A/B address
3RK2400-1FE00-0AA2	3RK2400-1FG00-0AA2	4 DI / 3 DQ, A/B address			
3RK1400-1CE00-0AA2	3RK1400-1CG00-0AA2	4 DI / 4 DQ, 1A electronic, standard address	3RK1400-2CE00-2AA2	3RK1400-2CG00-2AA2	4 DI / 4 DQ, 2A electronic, standard address
3RK1400-1CE01-0AA2	3RK1400-1CG01-0AA2	4 DI / 4 DQ, 2A electronic, standard address			
3RK1402-3CE01-0AA2	3RK1402-3CG01-0AA2	4 DI / 4 DQ (sensor supply from U_{aux}), standard address	3RK2402-2CE00-2AA2	3RK2402-2CG00-2AA2	4 DI / 4 DQ relay, A/B address
3RK1402-3CE00-0AA2	3RK1402-3CG00-0AA2	4 DI / 4 DQ relay, standard address			
3RK1205-0BE00-0AA2	3RK1205-0BG00-0AA2	2 F-DI, standard address	3RK1205-0BE00-2AA2	3RK1205-0BG00-2AA2	2 F-DI, standard address
3RK1405-0BE00-0AA2	3RK1405-0BG00-0AA2	2 F-DI / 2 DQ, standard address (outputs supplied from U_{ASi})	3RK1405-2BE00-2AA2	3RK1405-2BG00-2AA2	2 F-DI / 2 DQ, standard address (supply U_{ASi}/U_{aux} selectable)
3RK1405-1BE00-0AA2	3RK1405-1BG00-0AA2	2 F-DI / 2 DQ, standard address (outputs supplied from U_{aux})			

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
 <p>F90 module</p> <ul style="list-style-type: none"> Slave addressing type: Standard address Width 90 mm With COMBICON version: Delivery without COMBICON plug 						
Type	Connection	Inputs	Outputs			
4 inputs/ 4 outputs	Screw 	2- and 3-wire PNP transistor	PNP transistor 1 A	5	3RG9002-0DB00	1 1 unit 42C
		2- and 3-wire PNP transistor	PNP transistor 2 A	5	3RG9002-0DA00	1 1 unit 42C
		2- and 3-wire PNP transistor floating	PNP transistor 2 A	5	3RG9002-0DC00	1 1 unit 42C
	Combicon ¹⁾ 	2- and 3-wire PNP transistor	PNP transistor 1 A	5	3RG9004-0DB00	1 1 unit 42C
		2- and 3-wire PNP transistor	PNP transistor 2 A	5	3RG9004-0DA00	1 1 unit 42C
		2- and 3-wire PNP transistor floating	PNP transistor 2 A	5	3RG9004-0DC00	1 1 unit 42C

¹⁾ Scope of supply does not include Combicon plug set 3RX9810-0AA00, this must be ordered separately, see "Accessories".

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
<p>COMBICON plug sets</p> <p>For 4I/4O modules with COMBICON connection; one set comprises:</p> <ul style="list-style-type: none"> 4 x 5-pole plug for connection Standard sensors/actuators 2 x 4-pole plug for AS-Interface and external auxiliary voltage 						
	5	3RX9810-0AA00		1	1 unit	42C

AS-Interface

Slaves

I/O Modules for Use in the Control Cabinet

Flat modules

Overview



Flat module 4I/4O

The flat module for the control cabinet in degree of protection IP20 has four inputs and four outputs.


The module is fitted at the front with an LED which indicates the module's status.

With the integrated lugs, the modules can be screwed on.

An integrated addressing socket enables the module to be addressed when it is installed.

Standard sensors/actuators and the AS-Interface cable can be connected using screw terminals.

Selection and ordering data

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
	2	3RK1400-0CE00-0AA3		1	1 unit 42C
 <p>Flat module 4I/4O Slave addressing type: Standard address</p> <ul style="list-style-type: none"> • 4 inputs/4 outputs • 200 mA for all I/Os 					

3RK1400-0CE00-0AA3

Overview



Counter module with spring-type terminals

The counter module is used to send hexadecimally coded count values (LSB=D0, MSB=D3) to a higher-level controller. The count value is increased by 1 for each valid count pulse at terminal 8. Beginning at 0, the module counts up to 15 and then begins again at 0. The controller adopts the current value and determines the number of pulses between two host invocations through subtraction from the previous value. The total number of count pulses is determined by adding these differences.

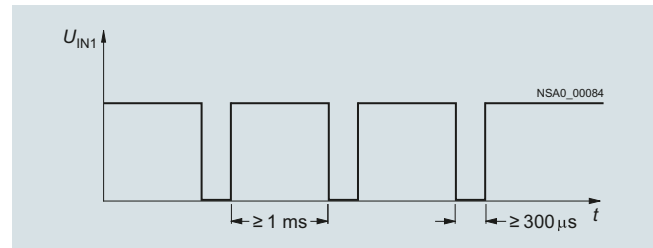
For the values sent to be unambiguous, no more than 15 count values are allowed between two host invocations or AS-Interface master invocations at terminal 8. The maximum permissible transmission frequency is calculated from these times:

$$f_{TRmax} = 15 / T_{max}$$

T_{max} : max. possible transmission time from the slave to the host

A further condition for the maximum frequency is the required pulse shape. For the counter to accept a pulse as valid, a Low must have been applied at the input for at least 300 μ s and a High for at least 1 ms.

This results in a maximum frequency of $f_{Zmax} = 1 / 1.3 \text{ ms} = 769 \text{ Hz}$ independently of the control system (see figure below).



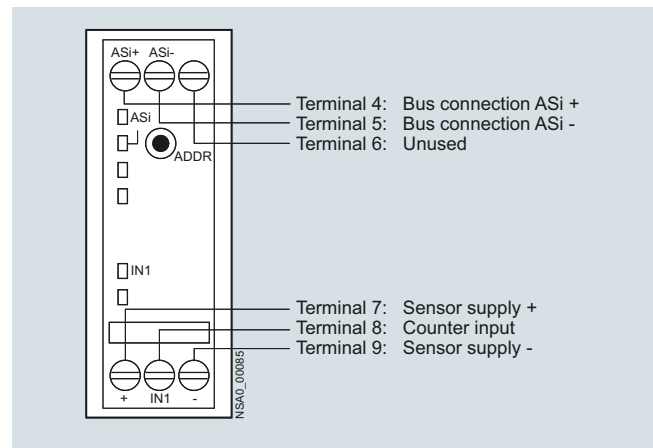
Maximum frequency for the counter module

If the time criterion stipulated in the figure is violated, the count value is rejected.

The counter is active only for the reset parameter P2 (default). The counter is deleted when P2 is set, and the incoming count pulses are not registered until after P2 is reset again.

Note:

A customized function block is necessary or must be programmed.



Counter module connection options

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
---------	----	-------------	--------------	-------------------	-----	----

Counter modules						
Slave addressing type: Standard address						
Width 22.5 mm						
• With screw terminals	10	3RK1200-0CE03-0AA2		1	1 unit	42C
• With spring-type terminals	10	3RK1200-0CG03-0AA2		1	1 unit	42C



3RK1200-0CE03-0AA2



3RK1200-0CG03-0AA2

AS-Interface

Slaves

Modules with Special Functions

Ground-fault detection modules**Overview**

Ground-fault detection module

"Ground faults in any control circuit must not lead to unintentional starting or potentially hazardous movements or prevent the machine from stopping." (IEC 60204-1 / VDE 0113-1).

The AS-Interface ground-fault detection module is used to meet these requirements. Using this module from the SlimLine series, ground faults in AS-Interface systems can be reliably detected and reported.

The following ground faults are detected:

- Ground fault from AS-i "+"
- Ground fault from AS-i "-"
- Ground fault from sensors and actuators that are supplied from the AS-Interface voltage.

Note:

Not suitable for AS-i Power24V.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Ground-fault detection modules						
Module does not require an AS-i address						
Width 22.5 mm						
<ul style="list-style-type: none"> • With screw terminals 	5	3RK1408-8KE00-0AA2		1	1 unit	42C
<ul style="list-style-type: none"> • With spring-type terminals 	5	3RK1408-8KG00-0AA2		1	1 unit	42C



3RK1408-8KE00-0AA2

Overview



AS-Interface overvoltage protection module

The AS-Interface overvoltage protection module (protection module) protects downstream AS-Interface devices or individual sections in AS-i networks from conducted overvoltages which can be caused by switching operations and remote lightning strikes. The location of the protection module forms the transition from zone 1 to 2/3 within the lightning protection zone concept. Direct lightning strikes must be coped with using additional protective measures at the transitions from lightning protection zone 0A to 1.

With the AS-Interface overvoltage protection module, it is now also possible to integrate AS-Interface in the overall overvoltage protection concept of a plant or machine.

The module has the same design and degree of protection (IP67) as the AS-Interface K45 compact modules. It is a passive module and as such does not need its own address on the AS-Interface network. The module can be used to protect the AS-Interface cable and the cable for the auxiliary voltage from overvoltage. Overvoltages are discharged through a ground cable with a green/yellow oil-proof outer sheath. This cable is fixed in the module and must be connected with low resistance to the system's ground.

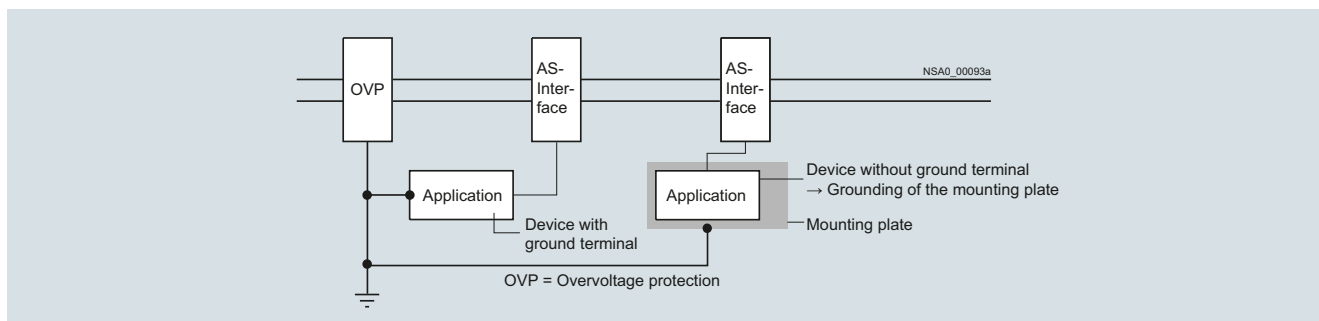
Rated discharge current I_{sn}

The rated discharge current is the peak value of a surge current of the form 8/20 μ s (microseconds), for which the protection module is designed in accordance with a specified test program. With an 8/20 waveform, 100% of the value is achieved after 8 μ s and 50% after 20 μ s.

Protection level U_p

The protection level of a protection module is the highest momentary value of the voltage at the terminals, established in individual tests and characterizes the capability of a protection module to limit overvoltages to a residual level.

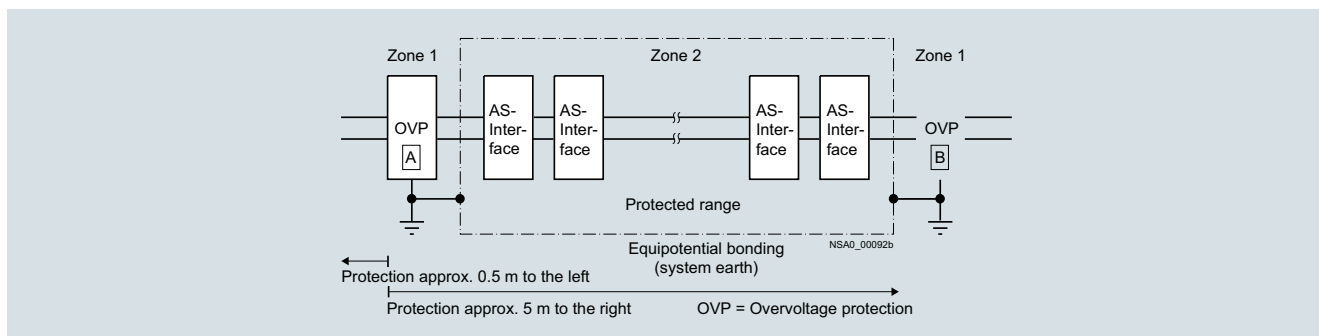
Configuration guidelines



The grounding of protection modules and the units to be protected must be effected through a shared grounding point.

If insulated devices are protected, their mounts must be included in the grounding points.

Sample application



Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
AS-Interface overvoltage protection module Module does not require an AS-i address Delivery includes mounting plate (for wall and standard rail mounting)	5	3RK1901-1GA01		1	1 unit	42C



* You can order this quantity or a multiple thereof. Illustrations are approximate

AS-Interface

Power Supply Units and Data Decoupling Modules

AS-Interface power supply units

Overview



AS-Interface power supply unit for 3 A

AS-Interface power supply units feed 30 V DC into the AS-Interface cable and supply the AS-Interface components. They include power-optimized data decoupling for the separation of communication signals and control supply voltage. As the result, AS-Interface is able to convey both data and power along a single line. The power supply units are resistant to overload and short circuits.

Dimensions

AS-Interface power supply units have compact dimensions in widths of 50/70/120 mm. No distances from other devices need to be observed when mounting the power supply units.

Features

- Higher rating: The power supply units deliver currents of 2.6 to 8 A.
- Integrated data decoupling: As the result, AS-Interface is able to convey both data and power along a single line.
- Integrated ground-fault detection: The power supply units perform the reliable detection and signaling of ground faults according to IEC 60204-1. The AS-Interface voltage can be disconnected automatically in the event of a ground fault.
- Integrated overload detection: An output overload is detected and reported over a diagnostics LED.
- Diagnostics memory: Any ground faults or overloads on the output side are stored in a diagnostics memory until the device is RESET.
- Remote RESET and remote signaling: Using relay contacts, a ground fault can be signaled and evaluated by a central controller and/or indicator light.
- Diagnostics LEDs: Three different LEDs indicate the status of the AS-Interface power supply locally at the power supply unit.
- Ultra-wide input range/two-phase connection: The ultra-wide input range of 120 to 500 V of the 8 A version means that the supply units can be used in virtually any network worldwide. In addition, this version dispenses with the need for an N conductor as the device can be connected directly between 2 phases of a network.
- Operation with 24 V DC: The 3 A power supply unit is also available as a version with a 24 V DC input. This power supply unit is suitable for use in battery-powered systems or in systems with UPS (uninterruptible power supply).
- Removable terminal blocks with spring-type connections: For easy exchanging of devices, each power supply unit has three removable terminal blocks: for the input side, for the output side and for Signal/RESET connections.

Benefits

- Complete solution for supplying AS-Interface networks while making full use of the maximum possible cable length per AS-i segment
- Only AS-i masters and AS-i slaves need to be connected to the AS-Interface cable in order to operate AS-Interface
- Compact, space-saving dimensions
- Reliable power supply even for large numbers of AS-Interface modules with a high power requirement
- Integrated ground-fault and overload detection saves the need for additional components and enhances safety
- Fast fault detection and reduced downtimes thanks to diagnostics memory, remote signaling and remote RESET
- Reduced downtimes as the result of removable terminal blocks which enable the fast exchanging of devices
- Ultra-wide input range of the 8 A version permits single-phase and two-phase operation and removes the need for an N conductor
- Can be used world-wide thanks to, for example, UL/CSA approval (UL 508)
- With the 2.6 A version, the output power is restricted to max. 100 W for use in Class 2 circuits in accordance with NEC (National Electrical Code)

Selection and ordering data

Version	SD	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		



3RX9501-0BA00



3RX9503-0BA00

AS-Interface power supply units, IP20

- AS-i single output 30 V DC
- With integrated ground-fault detection
- 2.6 A version with output power restricted to max. 100 W (for Class 2 circuits in accordance with NEC)
- Dimensions:
Width: 50 mm (2.6 A/3 A), 70 mm (5 A), 120 mm (8 A);
Height: 125 mm;
Depth: 125 mm

Output current	Input voltage		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
2.6 A/max. 100 W	120/230 V AC (selectable)	2	3RX9501-2BA00		1	1 unit	42C
3 A	120/230 V AC (selectable)	▶	3RX9501-0BA00		1	1 unit	42C
3 A	24 V DC	▶	3RX9501-1BA00		1	1 unit	42C
5 A	120/230 V AC (selectable)	▶	3RX9502-0BA00		1	1 unit	42C
8 A	120/230 ... 500 V AC (selectable)	▶	3RX9503-0BA00		1	1 unit	42C

Overview



PSN130S 30 V power supply units for 3 A, 4 A and 8 A

The PSN130S 30 V power supplies feed 30 V DC into the AS-Interface cable and supply the AS-Interface components, but do not include data decoupling. Data decoupling modules are needed in addition therefore to separate communication signals and control supply voltage, [see page 2/81 or 2/83](#).

The power supply units are resistant to overload and short circuits.

Dimensions

The 30 V power supply units have compact dimensions with widths of 50 and 70 mm. No distances from other devices need to be observed when mounting the power supply units.

Features

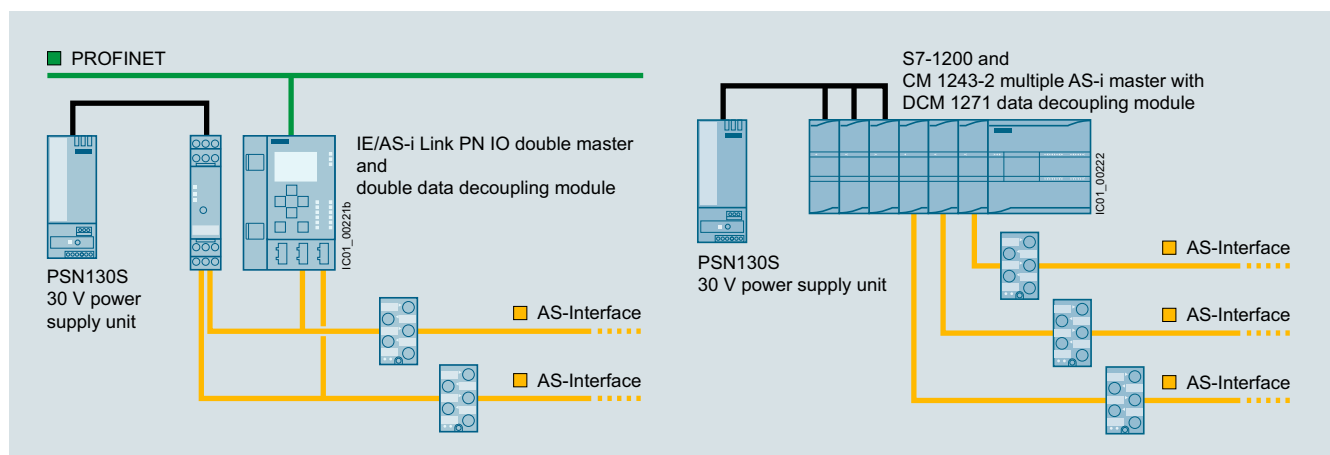
- Primary clocked power supply units for connection to a single-phase AC network
- Power for currents of 3 A, 4 A and 8 A
- The output voltage is floating, and resistant to short-circuits and no-load operation. If there is an overload, the output voltage is reduced or cut-off. After a short-circuit or overload, the devices start up again automatically.
- In the event of a device fault, the output voltage will be limited to max. 37 V.
- Modular installation devices in degree of protection IP20 and safety class I
- Diagnostics: With an output voltage > 26.5 V DC, the green LED (30V O.K.) is lit and the signaling contact 13-14 is closed.

Benefits

- Low-cost alternative solution for supplying AS-Interface networks while making full use of the maximum possible cable length per AS-i segment
- Cost advantage particularly for multiple networks
- Compact, space-saving dimensions
- Reliable power supply even for large numbers of AS-Interface modules with a high power requirement
- Can be used world-wide thanks to, for example, UL/CSA approval (UL 508)

Application

Configuration examples of AS-Interface networks with a 30 V power supply unit



Configuration of AS-Interface multiple networks with one PSN130S 30 V power supply unit (examples with schematic representation):

Left: Double network based on the S22.5 double data decoupling module and IE/AS-i Link PN IO double master

Right: Triple network based on the SIMATIC S7-1200 with DCM 1271 data decoupling modules and CM 1243-2 communication processors

AS-Interface

Power Supply Units and Data Decoupling Modules

30 V power supply units

Technical specifications

Version		3 A	4 A	8 A
Input data				
• Input voltage, rated value U_e	V AC	120/230 V, single-phase, automatic selection		
• Range of input voltage	V AC	85 ... 132/174 ... 264		
• Mains frequency	Hz	50/60		
• Power consumption at full load, typ.	W	103	139	270
Output data				
• Output voltage, rated value U_a	V DC	30		
• Residual ripple	mV _{SS}	< 150		
• Output current, rated value at -20 ... +60 °C	A	3	4	8
• Max. output current at +60 ... +70 °C	A	3	3	4
Degree of efficiency in rated conditions				
• Degree of efficiency	%	87	88	90
• Power loss, typ.	W	12	17	25
Protection and monitoring				
• Output overvoltage protection	V	< 37		
• Current limit, typ.	A	4	5.5	11
Safety				
• Primary/secondary electrical isolation		Output voltage PELV/SELV according to IEC 60950 and EN 50178		
• Protection class		I		
• Degree of protection		IP20		

Version		3 A	4 A	8 A
Approvals				
• UL		UL 508/CSA 22.2		
• Pollution degree		IEC 60950		
• Overvoltage category and electrical separation		EN 50178 and IEC 61558		
EMC				
• Emitted interference (class B)		IEC 61000-6-3		
• Line harmonics limit		IEC 61000-3-2		
• Interference immunity		IEC 61000-6-2		
Operating data				
Ambient temperature				
• Operation	°C	-20 ... +70		
• Transport/storage	°C	-40 ... +85		
Pollution degree				
		2		
Humidity class				
		Climate class according to DIN 50010, relative air humidity max. 100%, without condensation		
Dimensions and weight				
• Width	mm	50	50	70
• Height x depth	mm	125 x 126.5		
• Weight	kg	0.4	0.4	0.7

Selection and ordering data

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
<p>PSN130S 30 V DC power supply unit (without AS-i data decoupling)</p> <ul style="list-style-type: none"> • Output voltage 30 V DC • Dimensions: Width: 50 mm (3 A/4 A); 70 mm (8 A); Height: 125 mm; Depth: 126.5 mm 					
3RX9511-0AA00	2	3RX9511-0AA00		1	1 unit 42C
3RX9512-0AA00	2	3RX9512-0AA00		1	1 unit 42C
3RX9513-0AA00	2	3RX9513-0AA00		1	1 unit 42C

More information

More information

For operating instructions and other technical information, see <https://support.industry.siemens.com/cs/ww/en/view/64364000>

Overview



AS-Interface S22.5 double data decoupling module:
Screw terminal version (picture left),
Spring-type terminal version (picture right)

With the aid of the S22.5 data decoupling module, the AS-Interface network can also be supplied with 24 V DC or 30 V DC from a standard power supply unit and the transmission of data and power can be realized along one cable.

The combination of data decoupling modules and standard power supply units is therefore a cost-efficient alternative to the service-proven AS-Interface power supply units.

The quality of the data signals and the reliable operation of the AS-i network are not negatively affected as the result.

Features of the S22.5 data decoupling unit

- Degree of protection IP20
- Narrow design: 22.5 mm wide
- Version with screw or spring-type terminals
- Versions for single and double data decoupling
- Supply of several AS-i networks with a single power supply unit
- Operation with 24 V DC or 30 V DC, grounded or non-grounded
- Adjustable current limiting up to 2 x 4 A
- Integrated ground-fault detection with fault storage
- Diagnostics LEDs and signaling contacts
- RESET by button or remote RESET

Ground-fault detection

The integrated ground-fault detection works with a grounded and non-grounded supply: The connection of negative pole and ground (upstream from the data decoupling module) customary with 24 V DC power supplies is permitted. A ground fault to the negative or positive pole on the AS-Interface network (downstream from the data decoupling module) is detected and stored as a fault and will be signaled using LEDs and a relay contact.

Benefits

- Compatible expansion of the AS-Interface system
- An existing standard power supply unit with 24 V DC or 30 V DC can be used for supplying AS-i networks
- The AS-Interface system can also be used in tightly budgeted applications because no AS-Interface power supply unit needs to be purchased
- Applications benefit in addition from the advantages of a modern bus system:
 - High level of standardization
 - Additional diagnostics and maintenance information
 - Faster commissioning
- Easy and cost-efficient design of single and multiple networks is possible

Application

The AS-Interface data decoupling module is designed for AS-Interface networks with 30 V or 24 V supply (AS-i Power24V).

Operation of an AS-i network with the data decoupling module and a 30 V standard power supply unit is technically equivalent to the use of an AS-Interface power supply unit and offers the service-proven features of AS-Interface for all applications.

AS-Interface Power24V uses a 24 V power supply unit in conjunction with a data decoupling module and is particularly suitable for:

- Compact machines using AS-Interface input/output modules
- Applications in the control cabinet for AS-Interface integration of SIRIUS 3RT2 contactors using 3RA27 function modules

When using the double data decoupling module or other data decoupling units, several AS-Interface networks can be operated with a single power supply unit. This results in an additional cost advantage.

Note:

The power supply units must comply with the PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) standards, have a residual ripple of < 250 mV_{pp}, and in the event of a fault must limit the output voltage to a maximum of 40 V. We recommend SITOP power supplies (see page 15/1 onwards) or PSN130S 30 V power supplies (see page 2/79 onwards).

Note on AS-i Power24V:

The length of an AS-i Power24V network is restricted to 50 m in order to limit the voltage drop along the cable.

AS-i masters, AS-i slaves and the sensors and actuators supplied through the AS-i cable must be designed for the reduced voltage. Sensors and actuators for the standard voltage range of 10 to 30 V can be supplied with sufficient voltage.

Please also observe the requirements specified in "Extension of AS-i Power24V" for implementation of AS-i Power24V, see page 2/21.

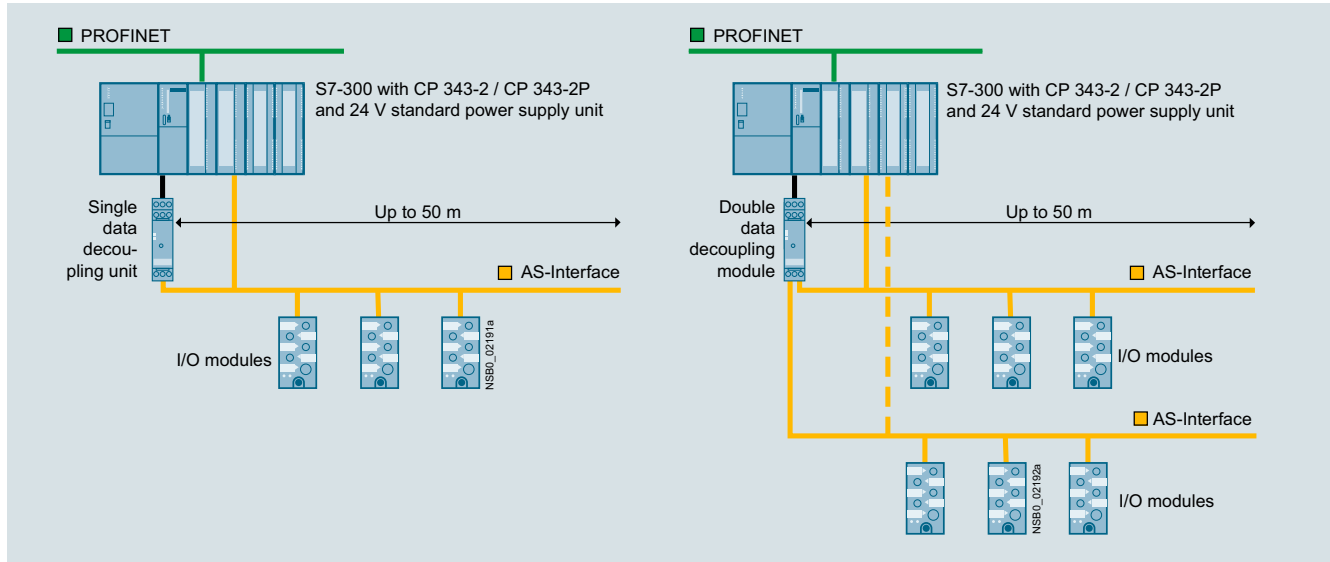
For more information on AS-i Power24V, see "AS-Interface System Manual", <https://support.industry.siemens.com/cs/ww/en/view/26250840>.

AS-Interface

Power Supply Units and Data Decoupling Modules



S22.5 data decoupling modules

Construction of an AS-i Power24V network with an AS-Interface S22.5 data decoupling module



Left: single network, right: Multiple network

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
S22.5 data decoupling modules						
With screw terminals, removable terminals, width 22.5 mm, height 101 mm, depth 115 mm						
<ul style="list-style-type: none"> • Single data decoupling module, 1 x 4 A • Double data decoupling module, 2 x 4 A 						
 3RK1901-1DE12-1AA0	2	3RK1901-1DE12-1AA0		1	1 unit	42C
	2	3RK1901-1DE22-1AA0		1	1 unit	42C
S22.5 data decoupling modules						
With spring-type terminals, removable terminals, width 22.5 mm, height 105 mm, depth 115 mm						
<ul style="list-style-type: none"> • Single data decoupling module, 1 x 4 A • Double data decoupling module, 2 x 4 A 						
 3RK1901-1DG12-1AA0	▶	3RK1901-1DG12-1AA0		1	1 unit	42C
	▶	3RK1901-1DG22-1AA0		1	1 unit	42C

Overview



DCM 1271 data decoupling module for SIMATIC S7-1200

With the aid of the DCM 1271 data decoupling module, the AS-Interface network can also be supplied with 24 V DC or 30 V DC from a standard power supply unit and the transmission of data and power can be realized along one cable.

The DCM 1271 data decoupling module has the same enclosure design as the S7-1200 module and is therefore ideal for combining with the CM 1243-2 AS-i master.

The DCM 1271 data decoupling module has no connection to the backplane bus of the SIMATIC S7-1200 and is not counted as a communication module when calculating the maximum configuration.

Features of the DCM 1271 data decoupling module

- Design: S7-1200, 30 mm wide, degree of protection IP20
- Detachable terminals (scope of supply)
- Single data decoupling
- Supply of several AS-i networks with a single power supply unit
- Operation with 24 V DC or 30 V DC, grounded or non-grounded
- Current limiting at 4 A
- Integrated ground-fault detection
- Diagnostics LEDs for ground faults and overloads
- Signaling contacts for ground-fault detection

Ground-fault detection

The integrated ground-fault detection works with a grounded and non-grounded supply: The connection of negative pole and ground (upstream from the data decoupling module) customary with 24 V DC power supplies is permitted. A ground fault to the negative or positive pole on the AS-Interface network (behind the data decoupling module) is identified and signaled via LED and a transistor output.

Benefits

- An existing standard power supply unit with 24 V DC or 30 V DC can be used for supplying AS-i networks
- The AS-Interface system can also be used in tightly budgeted applications because no AS-Interface power supply unit needs to be purchased
- Applications in addition from the advantages of a modern bus system:
 - High level of standardization
 - Additional diagnostics and maintenance information
 - Faster commissioning

Application

The AS-Interface data decoupling module is designed for AS-Interface networks with 30 V or 24 V supply (AS-i Power24V).

Operation of an AS-i network with the data decoupling module and a 30 V standard power supply unit is technically equivalent to the use of an AS-Interface power supply unit and offers the service-proven features of AS-Interface for all applications.

AS-i Power24V uses a 24 V power supply unit in conjunction with a data decoupling module and is particularly suitable for

- Compact machines using AS-Interface input/output modules
- Applications in the control cabinet for AS-Interface integration of SIRIUS 3RT2 contactors using 3RA27 function modules

Note:

The power supply units must comply with the PELV (Protective Extra Low Voltage) or SELV (Safety Extra Low Voltage) standards, have a residual ripple of < 250 mV_{pp}, and in the event of a fault must limit the output voltage to a maximum of 40 V. We recommend SITOP power supplies (see page 15/1 onwards) or PSN130S 30 V power supplies (see page 2/79 onwards).

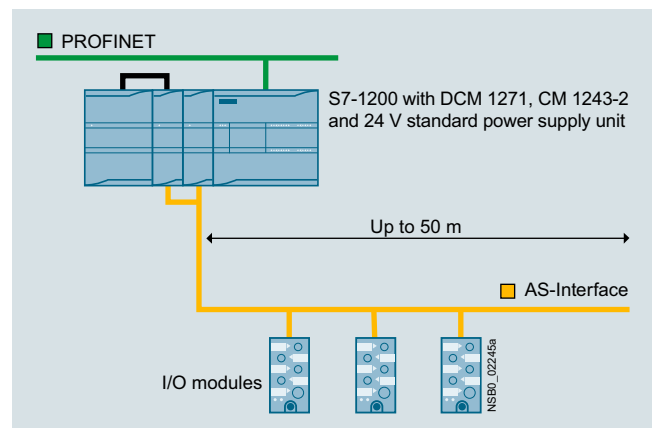
Note on AS-i Power24V:

The length of an AS-i Power24V network is restricted to 50 m in order to limit the voltage drop along the cable.

AS-i masters, AS-i slaves and the sensors and actuators supplied through the AS-i cable must be designed for the reduced voltage. Sensors and actuators for the standard voltage range of 10 to 30 V can be supplied with sufficient voltage.



Please also observe the requirements specified in "Extension of AS-i Power24V" for implementation of AS-i Power24V, see page 2/21.

For more information on AS-i Power24V, see "AS-Interface System Manual", <https://support.industry.siemens.com/cs/ww/en/view/26250840>.





Configuration of an AS-i Power24V network with DCM 1271 AS-Interface data decoupling unit

AS-Interface**Power Supply Units and Data Decoupling Modules****Data Decoupling Modules for S7-1200****DCM 1271 data decoupling module****Selection and ordering data**

Version	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
 3RK7271-1AA30-0AA0		DCM 1271 data decoupling module			
	2	<ul style="list-style-type: none"> With screw terminals, removable terminals (included in the scope of supply) Dimensions (W x H x D/mm): 30 x 100 x 75 3RK7271-1AA30-0AA0	1	1 unit	42C

Accessories

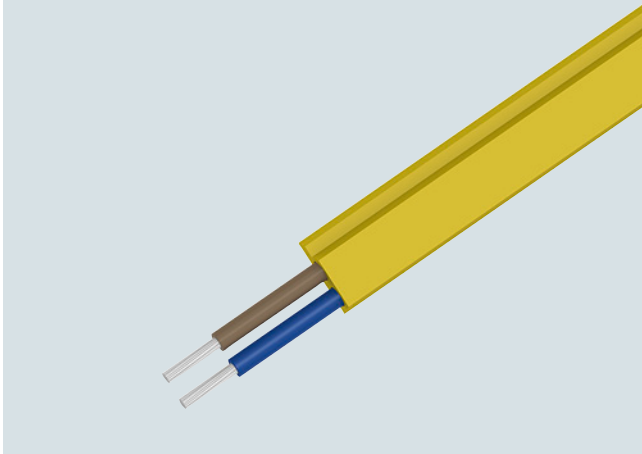
Version	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
 3RK7243-2AA30-0XB0		Screw terminals (replacement)			
	5	<ul style="list-style-type: none"> 5-pole for AS-i master CM 1243-2 and AS-i DCM 1271 data decoupling module 3RK1901-3MA00	1	1 unit	42C
	5	<ul style="list-style-type: none"> 3-pole For AS-i DCM 1271 data decoupling module for connecting the power supply unit 3RK1901-3MB00	1	1 unit	42C
	2	CM 1243-2 communication module <ul style="list-style-type: none"> AS-Interface masters for SIMATIC S7-1200 Corresponds to AS-Interface specification V3.0 With screw terminals, removable terminals (included in the scope of supply) Dimensions (W x H x D/mm): 30 x 100 x 75 see also from page 2/32 onwards 3RK7243-2AA30-0XB0	1	1 unit	42C

More information**More information**

More information on AS-i Power24V, see System Manual "AS-Interface", <https://support.industry.siemens.com/cs/ww/en/view/26250840>

Manual for AS-i master CM 1234-2 and AS-i DCM 1271 data decoupling module, see <https://support.industry.siemens.com/cs/ww/en/view/57358958>

Overview



AS-Interface shaped cable

The actuator-sensor interface – the networking system used for the lowest field area – is characterized by very easy mounting and installation. A new connection method was developed specially for AS-Interface.

The stations are connected using the AS-Interface cable. This two-wire AS-Interface shaped cable has a trapezoidal shape, thus ruling out polarity reversal.

Connection is effected by the insulation piercing method. In other words, male contacts pierce the shaped AS-Interface cable and make reliable contact with the two wires. Cutting to length and stripping are superfluous. Consequently, AS-Interface stations (e.g. I/O modules, intelligent devices) can be connected in the shortest possible time and exchanging devices is quick.

To enable use in the most varied ambient conditions (e.g. in an oily environment), the AS-Interface cable is available in different materials (rubber, TPE, PUR).

For special applications it is also possible to use an unshielded standard round cable H05VV-F 2 x 1.5 mm² according to AS-i specification. With AS-Interface, data and energy for the sensors (e.g. proximity switches) and actuators (e.g. indicator lights) are transmitted over the yellow AS-Interface cable.

The black AS-Interface cable must be used for actuators with a 24 V DC supply (e.g. solenoid valves) and a high power requirement.

Suitable for operation in tow chains

The use of the AS-Interface shaped cables with TPE and PUR outer sheath was checked in a tow chain test with the following conditions:

Chain length	m	6
Travel	m	10
Bending radius	mm	75
Travel speed	m/s	4
Acceleration	m/s ²	4
Number of cycles		10 million
Duration of test		approx. 3 years (11 000 cycles per day)

After termination of the 10 million cycles only slight wear was visible due to the lugs of the tow chain. No damage to the cores and core insulation could be detected.

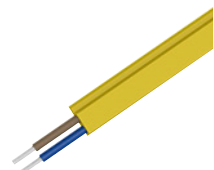
Note:

When using a tow chain, the cables must be installed in such a way that they are not subject to tensile forces. On no account may the cables be twisted, but they must be routed flat through the tow chain.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

AS-Interface shaped cables



3RX90...-0AA00

Material	Color	Quantity	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rubber	Yellow (AS-Interface)	100 m roll	2	3RX9010-0AA00		1	1 unit	42C
	Yellow (AS-Interface)	1 km drum	5	3RX9012-0AA00		1	1 unit	42C
	Black (24 V DC)	100 m roll	2	3RX9020-0AA00		1	1 unit	42C
	Black (24 V DC)	1 km drum	5	3RX9022-0AA00		1	1 unit	42C
TPE	Yellow (AS-Interface)	100 m roll	2	3RX9013-0AA00		1	1 unit	42C
	Yellow (AS-Interface)	1 km drum	5	3RX9014-0AA00		1	1 unit	42C
	Black (24 V DC)	100 m roll	2	3RX9023-0AA00		1	1 unit	42C
	Black (24 V DC)	1 km drum	5	3RX9024-0AA00		1	1 unit	42C
TPE special version according to UL Class 2	Yellow (AS-Interface)	100 m roll	5	3RX9017-0AA00		1	1 unit	42C
	Black (24 V DC)	100 m roll	5	3RX9027-0AA00		1	1 unit	42C
PUR	Yellow (AS-Interface)	100 m roll	2	3RX9015-0AA00		1	1 unit	42C
	Yellow (AS-Interface)	1 km drum	5	3RX9016-0AA00		1	1 unit	42C
	Black (24 V DC)	100 m roll	2	3RX9025-0AA00		1	1 unit	42C
	Black (24 V DC)	1 km drum	5	3RX9026-0AA00		1	1 unit	42C

AS-Interface

System Components and Accessories

Repeaters

Overview



AS-Interface repeater

The AS-Interface repeater is used to extend the AS-Interface cable.

- In its basic version, an AS-i network comprises one segment with a maximum cable length of 100 m. An extension plug (see page 2/87) can be used to increase the cable length for a segment to a maximum of 200 m.
- If this is insufficient, however, you can use one or more repeaters
- A repeater adds an extra segment to an existing segment. The extra segment can have a cable length of up to 100 m (without extension plug) or up to 200 m (with an extension plug in the extra segment)
- Each segment requires a separate AS-i power supply unit
- Electrical separation of the two AS-Interface shaped cable lines
- Slaves can be used on both sides of the repeater
- The additional power supply can increase the current infeed for slaves/sensors and lower the voltage drop on the AS-i cable
- Separate display of the correct AS-Interface voltage for each segment
- Installed in K45 module enclosure IP67 with mounting plate
- Easy mounting

Benefits

- More possibilities of use and greater freedom for plant planning through extension of the AS-Interface network
- Reduced downtime and servicing times in the event of a fault thanks to separate display of the correct AS-Interface voltage for each side

Design of an AS-Interface network with repeaters

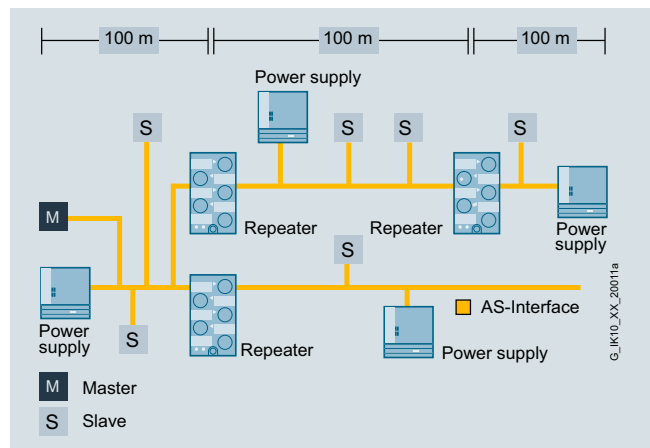
- Parallel switching of several repeaters possible (star configuration)
- Combination of series and parallel switching possible

The following conditions apply:

- When used without an extension plug no more than two repeaters are permitted between AS-i master and slave (repeaters connected in series)
- When used with an extension plug no more than one repeater is permitted between AS-i master and slave

In safety-related applications the following also applies:

- When used without an extension plug, no more than two repeaters are permitted between evaluation unit (e.g. MSS ASIsafe Modular Safety System, F-CM AS-i Safety ST for ET 200SP) and ASIsafe input slave or safe output module.
- When used with an extension plug, no more than one repeater is permitted between the evaluation unit (e.g. MSS ASIsafe Modular Safety System, F-CM AS-i Safety ST for ET 200SP) and ASIsafe input slave or safe output module.



Design of an example AS-Interface network with repeaters (without extension plug)

Note:

The AS-Interface repeater is not suitable for AS-i Power24V networks. It is recommended for use in AS-Interface networks with AS-Interface power supply units (e.g. 3RX9501-0BA00).

Application

The repeater is used to extend the AS-Interface network. In this case there are AS-Interface slaves and one AS-Interface power supply unit on each side of the repeater.

In the case of a line topology with two repeaters and three extension plugs, the maximum possible size of the AS-Interface network is 600 m, see example configuration with extension plug on page 2/87.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
	5	6GK1210-0SA01		1	1 unit	42C



6GK1210-0SA01

Repeaters for AS-Interface

For cable extension, scope of supply includes mounting plate (for wall and standard rail mounting), module does not require an AS-i address

Overview



AS-Interface extension plug compact

With the extension plug it is possible to double the cable length possible in an AS-Interface segment from 100 to 200 m.

Only one power supply unit is needed to supply power to the slaves on the up to 200 m long segment.

The extension plug compact can be installed directly onto an AS-i shaped cable. A separate M12 feeder, as was required for earlier extension plug versions, is no longer required with extension plug compact.

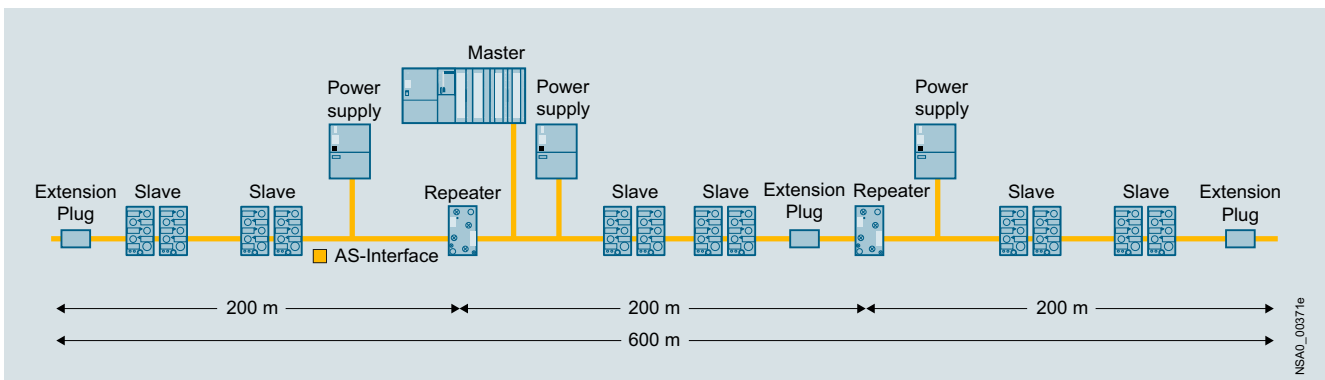
Design of an AS-Interface segment with an extension plug

To construct an AS-Interface segment with a cable length of more than 100 m and up to a maximum of 200 m, the extension plug is installed in a radius of around ± 10 m at the point of the network that is furthest from the power supply unit. The extension plug is not allowed to be used in AS-Interface networks smaller than 100 m. As with all AS-Interface networks, any network structure (line, tree, star) is possible when using the extension plug. Only one extension plug is required per 200 m segment even with a tree or star structure.

Note:


The AS-i bus cable must not terminate in the extension plug compact. The AS-Interface shaped cable can be terminated by means of a cable terminating piece to provide degree of protection IP67 where required, see "Miscellaneous accessories" on page 2/95.

The AS-Interface extension plug is not suitable for AS-i Power24V networks.



Maximum network size with repeaters and extension plug (master at center of network)

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
 AS-Interface Extension Plug Compact	2	3RK1901-1MX02		1	1 unit	42C
<ul style="list-style-type: none"> • Doubling of the cable length to 200 m per AS-Interface segment • With direct connection to AS-Interface shaped cable • Module does not require an AS-i address 						

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
 Cable terminating piece	▶	3RK1901-1MN00		1	10 units	42C
For sealing of open cable ends (shaped AS-Interface cable) in IP67						

AS-Interface System Components and Accessories

Addressing units

Overview



The innovated addressing unit for AS-Interface of the AS-i specification V3.0

The addressing unit is used to assign an address during commissioning to each AS-Interface slave. The device detects a connected slave module or a complete AS-i network and displays the found module in the LCD display. Each address can be individually set using the Up/Down keys. By turning the rotary switch, further commissioning functions are selected intuitively. The innovative device has been adapted to the current AS-i specification V3.0 and can now also handle the I/O data of the latest slaves.

Functionality

- Reading out and adjusting the slave address 0 to 31 or 1A to 31A, 1B to 31B, with automatic addressing aid and prevention of double addresses
- Reading out the slave profile (IO, ID, ID2)
- Reading out and adjusting the ID1 code
- Input/output test when commissioning the slaves: Read input signals and write outputs with all digital and analog slaves according to AS-Interface specification V3.0, including safe input slaves and complex CTT2 slaves
- Measuring the voltage on the AS-Interface cable (measuring range from 2 to 35 V)
- Display of the operational current in case of direct connection of an AS-i slave (measuring range from 0 to 150 mA)
- Storage of complete network configurations (profiles of all slaves) to simplify the addressing
- Adjusting the slave parameters for commissioning
- Reading out the identification and diagnostics of CTT2 slaves
- Reading out the code table of safe input slaves (ASISafe)


Note:

For operation of the addressing unit on an AS-Interface cable with connected power supply unit, the following applies: The AS-Interface addressing unit is suitable for standard AS-i networks and AS-i Power24V networks (min. operational voltage on the AS-Interface cable 19 V).






Benefits

- Increased power supply to the slaves to 150 mA
- Better utilization of the battery capacity thanks to improved circuitry
- Support for the current AS-i specification V3.0
- Expanded display for simultaneously displaying input and output states
- Clearly recognizable display of status of digital inputs/outputs in binary format (0/1), optionally also available as hexadecimal values
- Intuitive display of analog data either as decimal, hexadecimal or as a percentage (e.g. 100% corresponds to input/output value 20 mA)
- I/O data of complex slaves (CTT2 profile) can be displayed
- Decoded display of the input data of safe input slaves, including code table
- Simplification of the operating steps when setting the slave address with automatic read back of the set address
- Addressing cable, ready for operation even without screwing in tight into the M12 socket, thus faster availability of the addressing unit
- Proven compact housing with smooth keys and rotary switch
- Connection of standard AS-i networks possible with 30 V as well as Power24V networks
- Complex slaves with high operating currents can be addressed without external supply
- Longer operating time by automatic shutdown after approx. 5 minutes (or approx. 1 minute when data exchange is active) after last operation
- Can be used with all types of digital and analog slaves
- Comprehensive and fast input/output test of plants, even for A/B slaves with 4 DI / 4 DQ and current analog modules with an A/B address
- Faster and more reliable commissioning of the AS-Interface modules
- One-hand operation possible, with unique selection of the functions
- Connection via M12 socket (pin 1: ASI+; Pin 3: ASI-; pins 2, 4, 5: not used)
- Universal applicability for all AS-i networks

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
 3RK1904-2AB02	2	3RK1904-2AB02		1	1 unit	42C
AS-Interface addressing unit V3.0 <ul style="list-style-type: none"> • For AS-Interface modules and sensors and actuators with integrated AS-Interface according to AS-i specification V3.0 • for setting the AS-i address of slaves with standard addresses, and slaves with extended addressing mode (A/B slaves) • With input/output test function and many other commissioning functions • Battery operation with four type AA batteries (IEC LR6, NEDA 15) • Degree of protection IP40 • Dimensions (W x H x D) mm: 84 x 195 x 35 • Scope of supply: <ul style="list-style-type: none"> - Addressing unit with 4 batteries - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5 m 						

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
	d						
 3RK1902-4PB15-3AA0		Addressing cable, with M12 plug to M12 socket¹⁾ • For addressing slaves with M12 connection, e.g. K20 or K60R modules or light curtains • Length 1.5 m, 3-pole, 3 x 0.34 mm ²	5	3RK1902-4PB15-3AA0	1	1 unit	42D
 3RX9801-0AA00		AS-Interface M12 3RX feeder • Transition of AS-Interface cable to a standard round cable • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable • Current carrying capacity up to 2 A	▶	3RX9801-0AA00	1	1 unit	42C
 3RK1901-2NR10		AS-Interface M12 3RK feeder <i>NEW</i> • AS-Interface cable transition without U_{aux} , with M12 socket • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable	2	3RK1901-2NR10	1	1 unit	42C
 3RK1902-4HB50-5AA0		M12 cable plug²⁾ • Extruded M12 plug (angled cable feeder 90°), other cable end open • Length: 5 m, 5-pole, color: Black	5	3RK1902-4HB50-5AA0	1	1 unit	42D
 3RK1902-4BA00-5AA0		M12 plug straight²⁾ • For screw fixing, 5-pole screw terminal, max. 0.75 mm ² • A-coded, max. 4 A	5	3RK1902-4BA00-5AA0	1	1 unit	42D
		Addressing cable, with M12 plug to addressing plug (hollow plug)³⁾ • Included in the scope of supply of the addressing unit • Length 1.5 m		Z236A			

¹⁾ Not included in scope of supply of the 3RK1904-2AB02 addressing unit.

²⁾ For connecting the addressing unit to an AS-i network via AS-Interface M12 feeder, a connecting cable (M12 plug to M12 plug) must be produced and requires the following wiring:
- M12 cable plug: Pin 1 / core brown ↔ M12 plug: Pin 1
- M12 cable plug: Pin 3 / core blue ↔ M12 plug: Pin 3
- Pin 2, 4, 5 not connected.

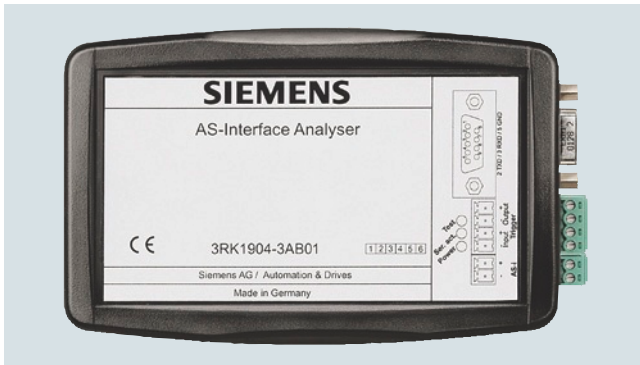
³⁾ Can only be ordered from GMC-I Messtechnik GmbH, see "External partners", page 16/16.

AS-Interface

System Components and Accessories

Analyzer

Overview



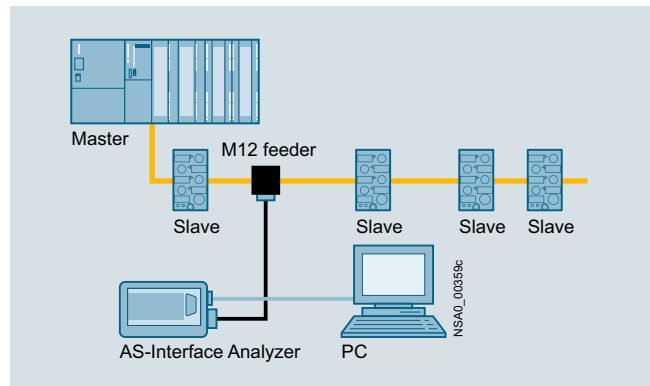
AS-Interface analyzer

The AS-Interface analyzer is used to test AS-Interface networks. Installation errors, e.g. loose contacts or EMC interference under extreme loads, can be revealed by this device.

Thanks to the easy-to-use software the user can assess the quality of complete networks even if he lacks detailed specialist knowledge of AS-Interface. In addition it is an easy matter with the AS-Interface analyzer to create test logs from the records produced, thus providing documentation for startups and service assignments.

For advanced AS-Interface users there are trigger functions for detailed diagnostics.

Connection



Connection of AS-Interface analyzer to PC and AS-Interface network

The AS-Interface analyzer follows the communication on the AS-Interface network as a passive station. The unit is supplied simultaneously from the AS-Interface cable.

This analyzer interprets the physical signals on the AS-Interface network and records the communication.

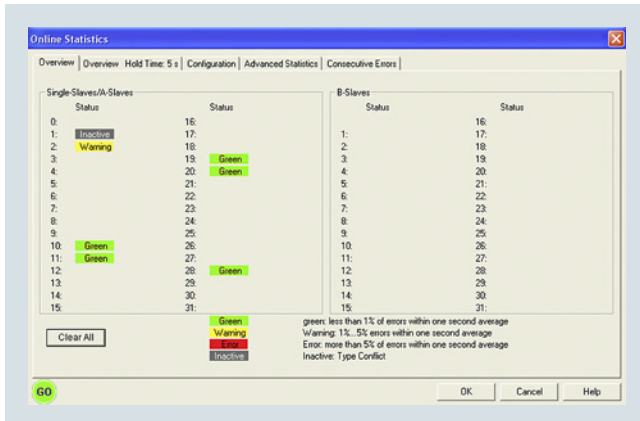
The data thus obtained is transferred through an RS 232 interface to a PC such as a notebook, for evaluation with the supplied diagnostics software.

Benefits

- Simple and user-friendly operation enables diagnostics of AS-Interface networks without help from specialists
- Speedy troubleshooting thanks to intuitive display in statistics mode
- Test logs provide verification of the state and quality of the installation for service and approval
- Recorded logs facilitate remote diagnostics by technical support
- Comprehensive trigger functions enable exact analysis
- Process data can be monitored online

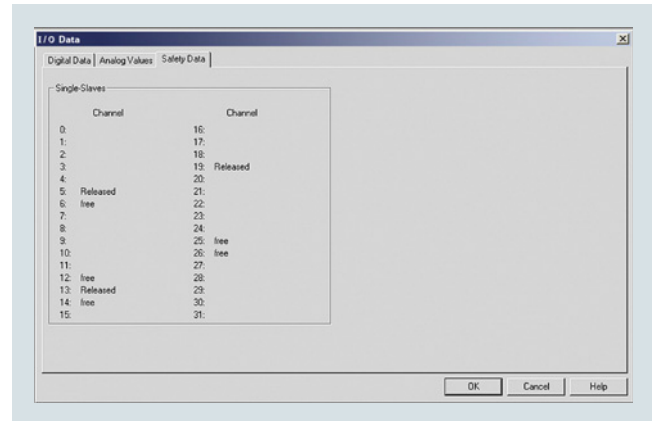
Application

Online statistics

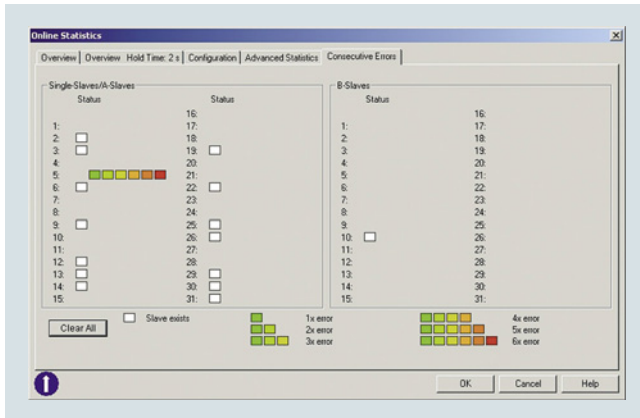


Online statistics, overview

Data mode



Presentation of the I/O data: Safety data



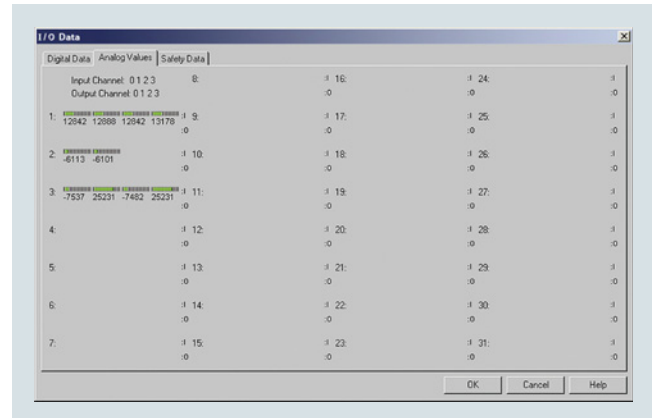
Online statistics, details, e.g. here a fault on slave 5

This mode provides a quick overview of the existing AS-Interface system. The error rates are displayed per slave in a traffic-light function (green, yellow, red).

The bus configuration and the currently transmitted data of the slaves are shown in a well arranged presentation.

With the expanded statistics function, it is possible to determine the error rates as the number of transmitted or faulty bus message frames.

The bundle error overview shows in steps how many multiple repetitions of message frames occurred in order to enable a selective and look-ahead assessment of the transmission quality.



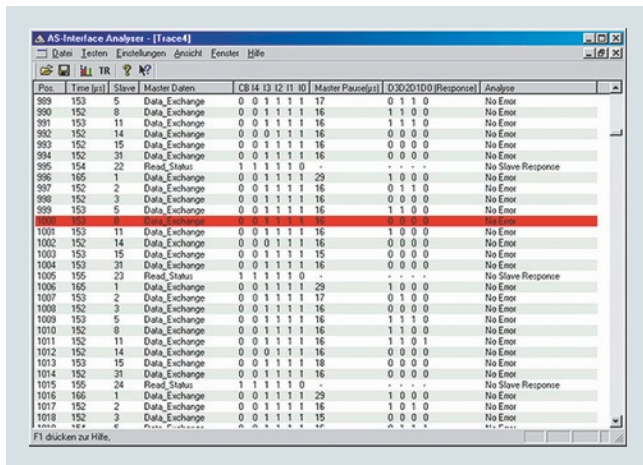
Presentation of the I/O data: Analog values

In this mode, the analyzer shows not only the digital input/output values but also the current analog values and the input status of the safety slaves.

AS-Interface System Components and Accessories

Analyzer

Trace mode



Presentation of message frames in trace mode

The presentation of message frames in the style of a classic fieldbus analyzer is indispensable for complex troubleshooting. Extensive trigger functions and recording and viewing filters are available for this purpose. An external trigger input and trigger output round off the scope of functions in order to find even the most difficult errors.

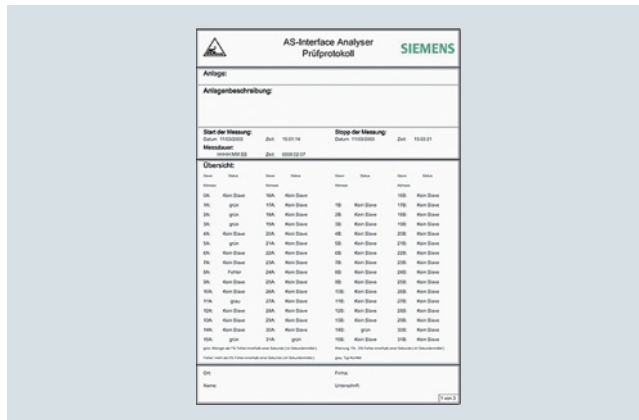
For troubleshooting in connection with ASIsafe applications, changes of status in the code tables of safety slaves are identified and assessed.

The AS-i analyzer can be used with an AS-i master in accordance with AS-Interface specification V3.0 or a predecessor version.

The analyzer does not automatically decode the process values for type CTT2 - CTT5 AS-i slaves. As for other slave types, the message frames are recorded and evaluated in the statistics. If required, decoding can also be performed by the user manually.

More information, see <https://support.industry.siemens.com/cs/ww/en/view/109746763>.

Test log



Example of a test log

The recorded data of the online statistics are easy to output and document using a test log. Verification of the state of the plant can thus be provided for approvals or service assignments.

The integrated measurement assistant records the bus signals for a variable duration, thereby triggering creation of an automatic test log. A standardized quality test of AS-i plants is thus possible.

Note:

The AS-Interface analyzer is suitable for standard AS-i networks and AS-i Power24V networks (min. operating voltage 20 V).

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						






3RK1904-3AB01

AS-Interface analyzer

- For testing AS-Interface systems
- For troubleshooting and service assignments in installations and networks with AS-Interface systems
- Dimensions (W x H x D): 145 x 30 x 92 mm
- Scope of supply:
 - AS-Interface analyzer
 - RS 232 cable for connecting to a PC
 - USB-to-serial/RS 232 adapter
 - Screwdriver
 - Magnetic adhesive tape for fastening the analyzer to metal surfaces
 - Service case with foam insert, dimensions (W x H x D/mm): approx. 260 x 70 x 200
 - Diagnostic software (CD-ROM) for PC with Windows operating system

2		3RK1904-3AB01		1	1 unit	42C
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Accessories










Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RX9801-0AA00	d	3RX9801-0AA00		1	1 unit	42C
AS-Interface M12 3RX feeder <ul style="list-style-type: none"> • Transition of shaped AS-Interface cable to a standard round cable • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable • Current carrying capacity up to 2 A • Degree of protection IP67 						
 3RK1901-2NR10	2	3RK1901-2NR10		1	1 unit	42C
AS-Interface M12 3RK feeder NEW <ul style="list-style-type: none"> • AS-Interface cable transition without U_{aux}, with M12 socket • Insulation piercing method for connection of AS-Interface cable • M12 socket for connection of standard round cable • Max. 4 A • Degree of protection IP67/IP68/IP69K 						
 3RK1902-4HB50-5AA0	5	3RK1902-4HB50-5AA0		1	1 unit	42D
M12 cable plugs <ul style="list-style-type: none"> • PUR cable, 5-pole • Length 5 m • Color black • Extruded M12 plug (angled cable feeder 90°), other cable end open 						

AS-Interface System Components and Accessories

Miscellaneous accessories

Selection and ordering data

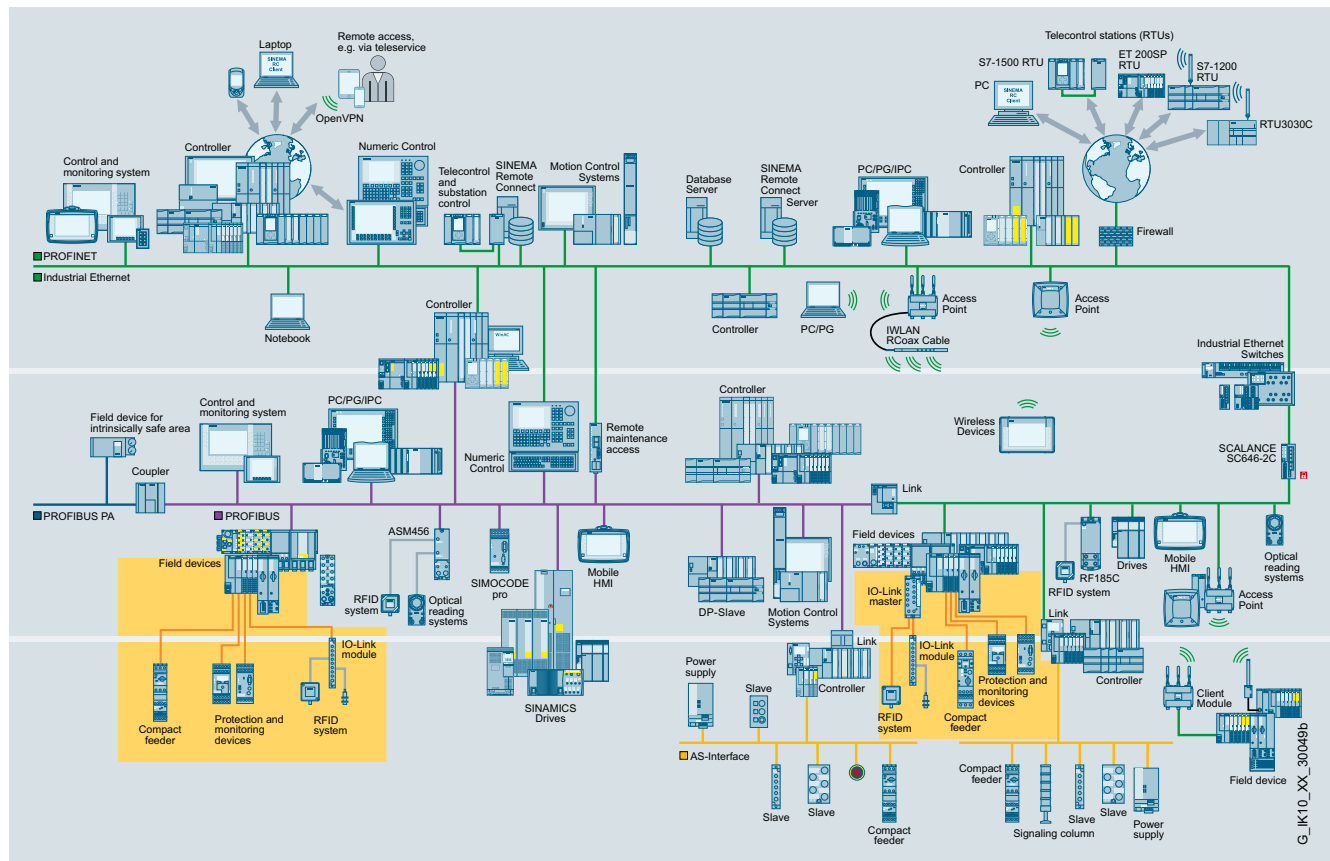
Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
 3RK1901-2NN10	2	3RK1901-2NN10		1	1 unit	42C
AS-Interface compact distributors, for AS-Interface flat cable NEW						
<ul style="list-style-type: none"> • Current carrying capacity up to 8 A • Degree of protection IP67/IP68/IP69K 						
 3RX9801-0AA00						
AS-Interface M12 3RX feeder						
<ul style="list-style-type: none"> • Degree of protection IP67 • Current carrying capacity up to 2 A 						
For flat cable	For	Cable length	Cable end in feeder			
AS-i	M12 socket	--	Available	▶	3RX9801-0AA00	1 1 unit 42C
 3RK1901-2NR10						
AS-Interface M12 3RK feeder NEW						
<ul style="list-style-type: none"> • Degree of protection IP67/IP68/IP69K • Current carrying capacity up to 4 A 						
For flat cable	For	Cable length	Cable end in feeder			
AS-i	M12 socket	--	Not available	2	3RK1901-2NR10	1 1 unit 42C
AS-i	M12 cable box	1 m	Not available	2	3RK1901-2NR11	1 1 unit 42C
AS-i	M12 cable box	2 m	Not available	2	3RK1901-2NR12	1 1 unit 42C
AS-i/U _{aux}	M12 socket	--	Not available	2	3RK1901-2NR20	1 1 unit 42C
AS-i/U _{aux}	M12 cable box	1 m	Not available	2	3RK1901-2NR21	1 1 unit 42C
AS-i/U _{aux}	M12 cable box	2 m	Not available	2	3RK1901-2NR22	1 1 unit 42C
 3RK1901-1NR04						
AS-Interface M12 feeders, 4-fold						
<ul style="list-style-type: none"> • Degree of protection IP67 • Current carrying capacity up to 4 A 						
For flat cable	For	Cable length	Cable end in feeder			
AS-i/U _{aux}	4-fold M12 socket, delivery includes mounting plate (for wall and standard rail mounting)	--	Not available	2	3RK1901-1NR04	1 1 unit 42C
 6ES7194-1KA01-0XA0						
M12 Y-shaped coupler plugs						
For connection of two sensors to one M12 socket with Y-assignment						
	1	6ES7194-1KA01-0XA0		1	1 unit	250

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-Interface sealing caps						
For free M12 sockets						
						
3RK1901-1KA00						
						
3RK1901-1KA01						
						
3RK1901-1PN00						
						
3RK1901-1MD00						
AS-Interface M20 seals						
	2	3RK1901-1MD00		100	10 units	42C
• For AS-Interface cable, shaped						
• For insertion in M20 glands						
Cable adapters for flat cables						
Connection of AS-Interface cable to metric gland with insulation piercing method						
• Continuation using standard cable						
	5	3RK1901-3QM00		1	1 unit	42C
	5	3RK1901-3QM10		1	1 unit	42C
• Continuation using pins						
	10	3RK1901-3QM01		1	1 unit	42C
	5	3RK1901-3QM11		1	1 unit	42C
Cable clips for cable adapters						
	5	3RK1901-3QA00		100	10 units	42C
3RK1901-3QA00						
Cable terminating piece						
		3RK1901-1MN00		1	10 units	42C
3RK1901-1MN00						
Mounting plates						
• K45						
		3RK1901-2EA00		1	1 unit	42C
		3RK1901-2DA00		1	1 unit	42C
• K60, suitable for all K60 compact modules						
		3RK1901-0CA00		1	1 unit	42C
3RK1901-2EA00		3RK1901-0CB01		1	1 unit	42C
						
3RK1901-0CA00						

Overview

IO-Link is an open communication standard for sensors and actuators – defined by the PROFIBUS User Organization (PNO). IO-Link technology is based on the point-to-point connection of sensors and actuators to the control system.

Parameter and diagnostics data are transmitted in addition to the cyclic operating data for the connected sensors/actuators. The simple, unshielded three-wire cable customary for standard sensors is used for this purpose.



IO-Link in the SIMATIC NET communications landscape

Benefits

Engineering

- Standardized, open system for greater flexibility (non-Siemens IO-Link devices can be integrated in engineering)
- Uniform, transparent configuring and programming through integrated engineering (SIMATIC STEP 7)
- Unassigned SIMATIC function blocks for easy parameterization, diagnostics and read-out of measured values
- Efficient engineering thanks to pre-integration into SIMATIC HMI
- Low error rate in CAD circuit diagram design as a result of reduced control current wiring

Installation and commissioning

- Faster assembly with minimized error rate as a result of reduced control current wiring
- Less space required in the control cabinet
- Low-cost circuitry where there are several feeders by making full use of existing components

Operation and maintenance

- High transparency in the system right down to field level and integration into power management systems
- Reduction in downtimes and maintenance times thanks to system-wide diagnostics and faster fault correction
- Support of predictive maintenance
- Shorter changeover times, even for field devices, by means of parameter and recipe management

Application

IO-Link can be used in the following main applications:

- Easy connection of complex IO-Link sensors/actuators with a large number of parameters and diagnostic data to the control system
- Replacement of sensor boxes for connecting binary sensors with the IO-Link input modules optimized in terms of cabling
- Optimized cable connection of switching devices to the control system
- Simple transmission of energy values from the device to the control system for integration into a user program or power management

In these cases, all the diagnostics data is transmitted to the higher-level control system through IO-Link. The parameter settings can be changed during operation.

Integration in STEP 7

Integration of the device configuration in the STEP 7 environment guarantees:

- Quick and easy engineering
- Consistent data storage
- Quick localization and rectification of faults

IO-Link Introduction

System components

Overview

More information

Homepage, see www.siemens.com/io-link

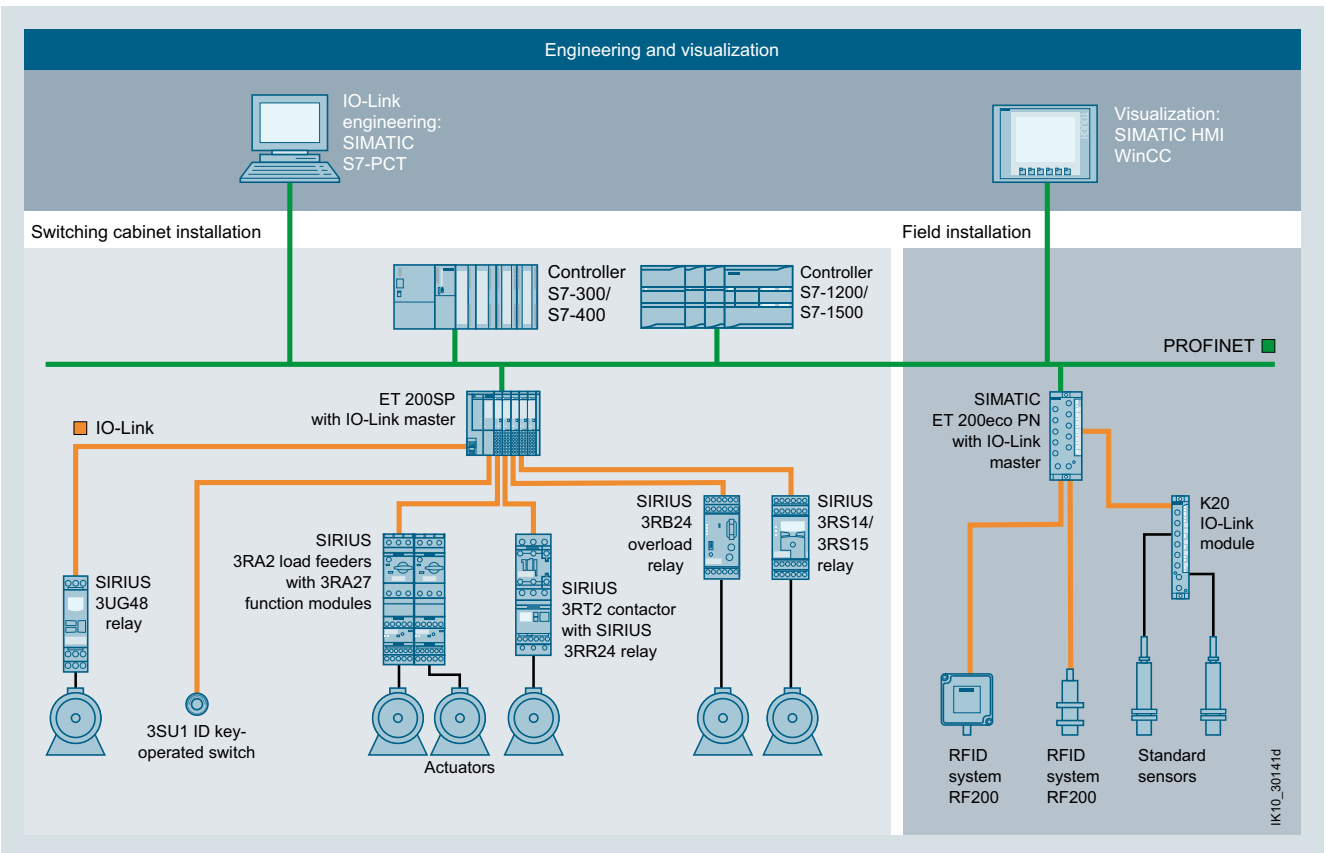
For important topics at a glance, see <https://support.industry.siemens.com/cs/ww/en/view/109737170>



IO-Link product family

To implement communication, a system installation has the following main components:

- An IO-Link master
- One or more IO-Link devices, such as sensors (e.g. RFID systems), actuators or combinations thereof
- A standard 3-wire sensor/actuator cable



Example of a configuration with the system components

IO-Link compatibility

IO-Link ensures compatibility between IO-Link-capable modules and standard modules as follows:

- IO-Link sensors can generally be operated both on IO-Link modules (masters) and standard input modules.
- IO-Link sensors/actuators as well as today's standard sensors/actuators can be used on IO-Link masters.
- If conventional components are used in the IO-Link system, then of course only the standard functions are available at this point.

Analog signals

Another advantage of IO-Link technology is that analog signals are already digitized in the IO-Link sensor itself and are digitally transmitted via IO-Link communication. As the result, faults are prevented and there is no extra cost for cable shielding.

Enhancement with IO-Link input modules

IO-Link compatibility also permits connection of standard sensors/actuators, i.e. conventional sensors/actuators can also be connected to IO-Link. This is particularly cost-effective with the IO-Link input modules, which allow several sensors to be connected at one time via a cable to the controller.

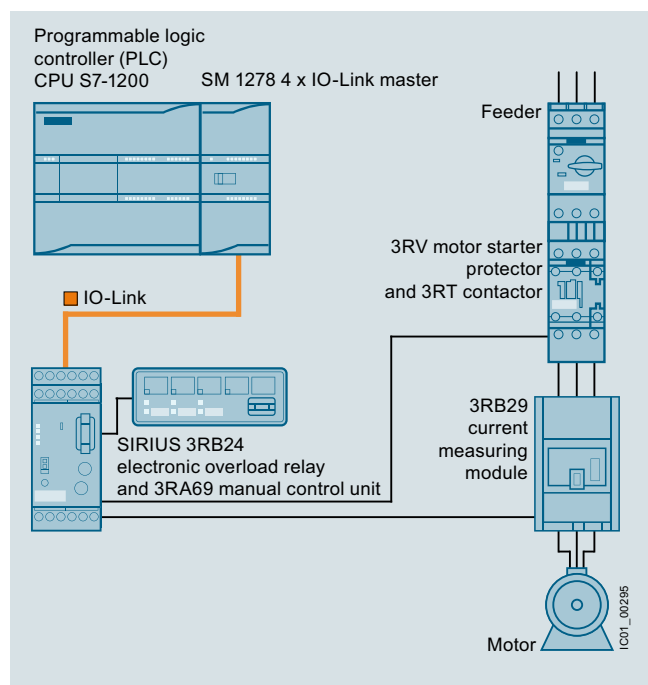
Overload relays

A starter combination, for example, consists of one or more SIRIUS 3RT contactors and one 3RB24 electronic overload relay for IO-Link plus its 3RB29 current measuring module.

3RB24 overload relays with IO-Link are basically designed to provide current-dependent protection for loads against inadmissibly high temperature rises due to overload, phase asymmetry or phase failure.

Direct-on-line starters can, therefore, as shown in the image, be connected to the control system via IO-Link without much wiring. Remote control of connected contactors, current value transmission and immediate remote fault diagnosis are just some examples of the large number of functions that can be implemented with this device.

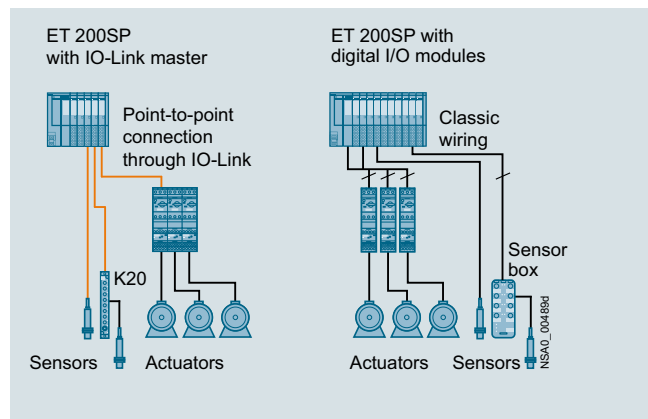
It is also possible to directly address a drive on-site via IO-Link using the optional hand-held device.



Connection of an IO-Link-capable overload relay to a SIMATIC S7-1200 controller

Load feeders and motor starters

Through IO-Link it is possible to control not only sensors but also actuators in the form of load feeders and motor starters.



Possibilities for connecting load feeders and motor starters to IO-Link or in the conventional way

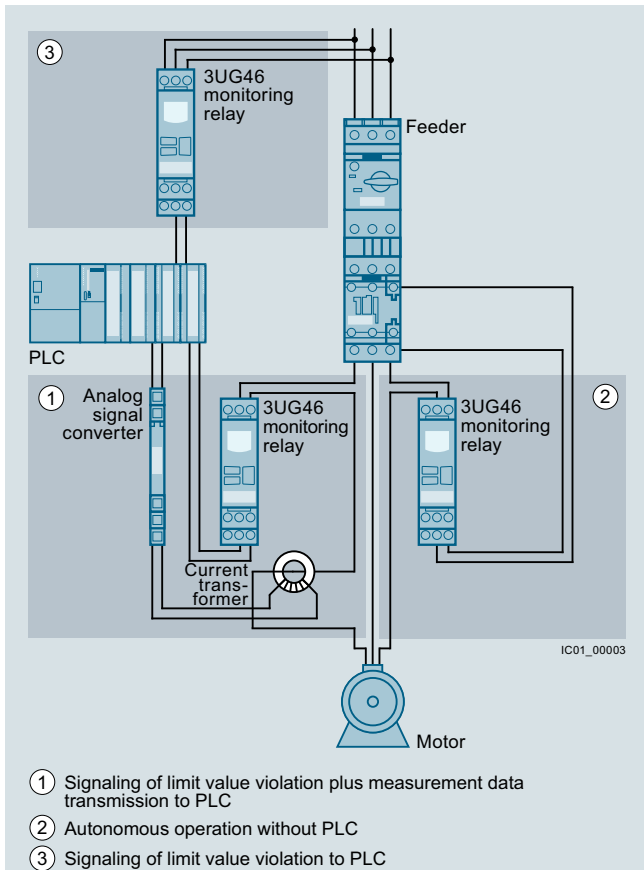
IO-Link Introduction

System components

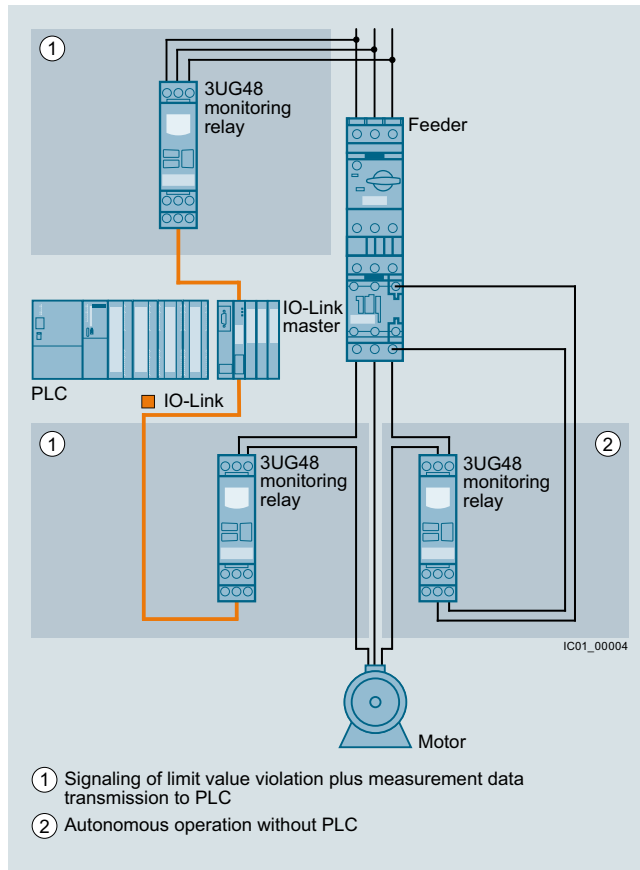
Monitoring relays

By using monitoring relays with IO-Link it is now possible to send data that has already been recorded and evaluated in the devices directly to the controller. This avoids the use of duplicated sensors.

2



Possibilities for interfacing conventional 3UG46 monitoring relays (in comparison with 3UG48)

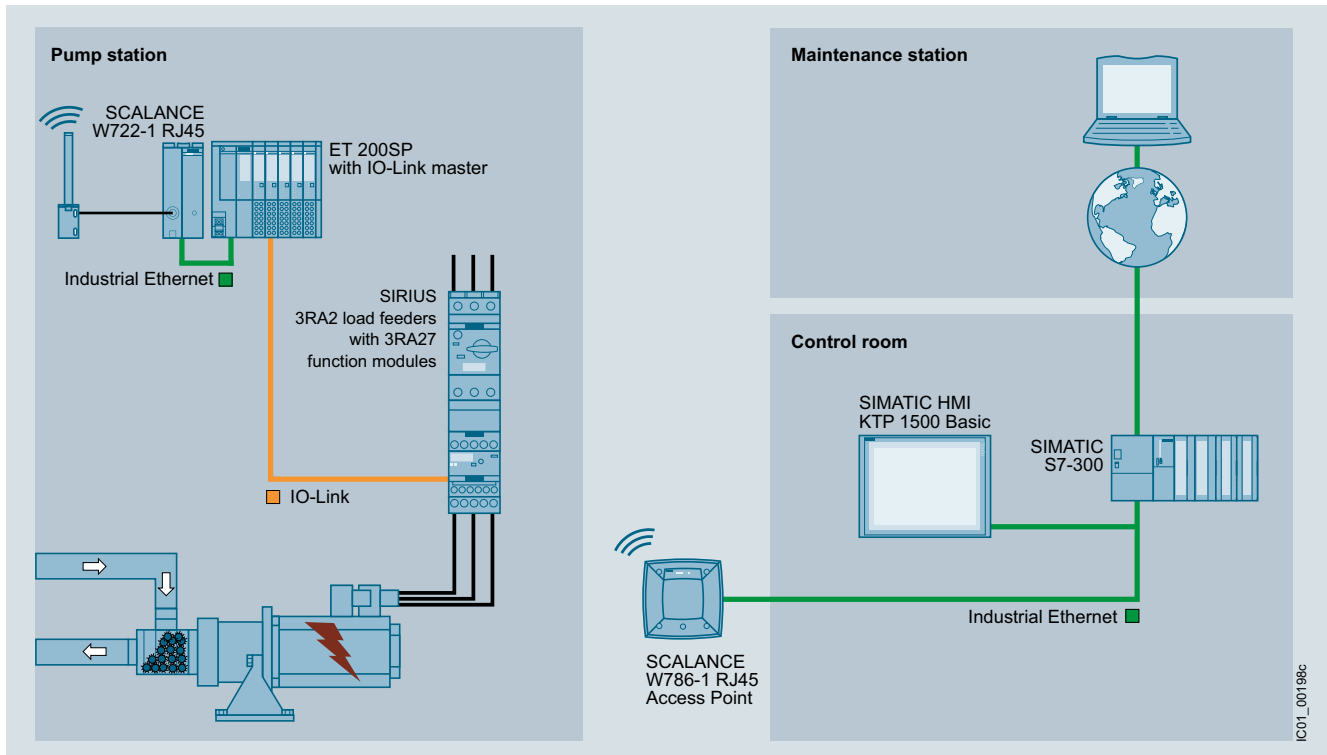


Possibilities of interfacing 3UG48 monitoring relays for IO-Link

Wireless communication

Using an upstream IWLAN client module, such as SCALANCE W722-1 RJ45, allows IO-Link to be integrated into the PROFINET world via a distributed I/O. Possible uses include acting as an alternative to fault-prone cable carrier or collector wire technology.

The individual diagnostics options offered by the various IO-Link devices provide greater transparency for the production process. Just like the parameter data for a device, these diagnostics data can be evaluated remotely using the possibilities offered by SIMATIC. This supports remote maintenance down to the lowest level in the field.



Wireless communication between Industrial Ethernet and IO-Link components

IO-Link components**IO-Link masters****Masters**

SM 1278 4xIO-Link for S7-1200

- IO-Link master module for S7-1200
- SM 1278 4xIO-Link signal module, [see from page 2/104 onwards](#)
- IO-Link master module for ET 200SP
- CM 4xIO-Link communication module, [see from page 2/105 onwards](#)
- IO-Link master module for ET 200pro
- 4 IO-Link HF electronic module, [see page 2/108](#)
- IO-Link master module for ET 200eco PN
- IO-Link master 4 IO-L + 8DI + 4DQ 24 V DC/1.3 A
- IO-Link master 4 IO-L
- [See page 2/109 onwards](#)
- IO-Link master module for ET 200AL
- CM IO-Link communication module, [see from page 2/111 onwards](#)

IO-Link devices**Detection with IO-Link****IO-Link input modules**

K20 input module

- K20 input module
- 4 inputs, M12 connections
- 8 inputs, standard M8 connections
- [See page 2/115](#)

IO-Link devices (continued)**Switching with IO-Link****Contactors and contactor assemblies**

SIRIUS 3RA2711 function modules for IO-Link

- SIRIUS 3RT contactors, 3-pole up to 250 kW, [see page 3/17 onwards](#)
- SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW, [see page 3/156 onwards](#)
- SIRIUS 3RA24 contactor assemblies for wye-delta starting, up to 90 kW, [see page 3/171 onwards](#)
- SIRIUS 3RA27 function modules
- For direct-on-line, reversing, and star-delta (wye-delta) starting with IO-Link connection, [see page 3/107 onwards](#)

Motor starters for use in the control cabinet

SIRIUS 3RA64 direct-on-line starter

- SIRIUS 3RA64, 3RA65 compact starters for IO-Link
- 3RA64 direct-on-line starters, [see page 8/68](#)
- 3RA65 reversing starters, [see page 8/69](#)
- Infeed system for 3RA6, [see page 8/78 onwards](#)
- Accessories, [see page 8/70 onwards](#)

Contactors with IO-Link**Overload relays**

SIRIUS 3RB24 overload relays

- SIRIUS 3RB24 electronic overload relays for IO-Link
- Evaluation modules
- Current measuring modules from 0.3 to 630 A
- Controlling direct-on-line, reversing and star-delta starters via IO-Link in conjunction with contactors
- Full motor protection
- Diagnostics and current value transmission via IO-Link
- [See page 7/130 onwards](#)

IO-Link Introduction

System components

IO-Link devices (continued)



SIRIUS 3RR24 monitoring relays



SIRIUS 3UG48 monitoring relays



SIRIUS 3RS14 temperature monitoring relay



SIRIUS ACT 3SU1 ID key-operated switches



SIRIUS ACT 3SU1 electronic module

Monitoring with IO-Link

SIRIUS 3RR24 monitoring relays for mounting onto 3RT2 contactors for IO-Link

- Monitoring of current, phase failure, open circuit and phase sequence
- Designed for mounting on 3RT2 contactors
- Terminal supports for stand-alone installation for separate mounting

See page 10/70 onwards

SIRIUS 3UG48 monitoring relays for stand-alone installation for IO-Link

- Monitoring the supply system, voltage, current, power factor and active current, residual current or speed depending on device design
- On/tripping delay time can be adjusted

See page 10/109 onwards

SIRIUS 3RS14, 3RS15 temperature monitoring relays for IO-Link

- Temperature monitoring with connected sensors
- Two limit values, can be adjusted separately

See page 10/143 onwards

Actuating and indicating with IO-Link

SIRIUS ACT 3SU1 ID key-operated switches for IO-Link

- Access system and selection system for four authorization levels
- Authentication of groups and persons
- Five ID keys with different coding
- Option for individual coding via IO-Link
- For installation in enclosures or fastening on front plate
- Electronic module for ID key-operated switches must be ordered separately

See page 13/10

SIRIUS ACT 3SU1 electronic modules for IO-Link

- Eight digital inputs and outputs possible
- DI and DQ freely selectable (programmable)
- Input and output functions parameterizable
- Connection system (push-in)
- For fastening on front plate, see page 13/98
- For installation in enclosure, see page 13/113

IO-Link RFID systems



RFID system for IO-Link

SIMATIC RF200 RFID system in the HF range

Products SIMATIC RF210R, SIMATIC RF220R, SIMATIC RF240R, SIMATIC RF250R, SIMATIC RF260R

- Simple identification tasks such as reading an ID number (UID)
- Reading of user data
- Writing of user data
- No RFID-specific programming, ideal for those new to RFID
- Simple connection via master modules for IO-Link, such as SIMATIC S7-1200, ET 200SP, ET 200pro, ET 200eco PN and ET 200AL
- Use with the tried and tested ISO 15693 transponders (MDS xxx)

See Catalog ID 10

IO-Link Device Description (IODD)

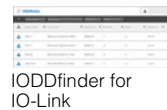


IODD files for IO-Link

IODD files

These files provide the device description for IO-Link devices.

- Comprehensive IODD catalog of SIEMENS IO-Link devices
- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/ps/15851>



IODDfinder for IO-Link

IODDfinder

The entire world of IO-Link under one roof

The IODDfinder is a service provided by the IO-Link community. It is a central cross-vendor database for descriptive files (IODDs). In addition, the platform provides an overview of the available IO-Link devices.

For more information, see <https://ioddfinder.io-link.com/#/>.

IO-Link software

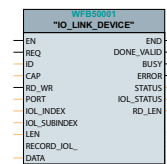


STEP 7 PCT

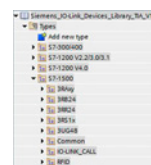
STEP 7 PCT (Port Configuration Tool)

Engineering software for configuring the IO-Link master modules for SIMATIC S7-1200, ET 200SP, ET 200pro, ET 200eco PN and ET 200AL

- Available as a stand-alone version or integrated into STEP 7 (V5.5 SP1 or later) and TIA (V12 or later)
- Engineering of the IO-Link devices connected to the master
- Monitoring of the process image of the IO-Link devices
- Open interface for importing further IODDs
- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/view/32469496>



IO-Link device function block



"Siemens IO-Link Devices" block library

IO-Link function blocks (IO-Link device and IO-Link master)

STEP 7 function block for easy acyclical data exchange in the user program

- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/view/82981502>

"Siemens IO-Link Devices" block library

This library provides function blocks and user-defined data types (UDTs) for all IO-Link devices from the Siemens portfolio. These blocks and UDTs standardize and simplify communication with IO-Link devices.

- Freely available for download from Industry Online Support, see <https://support.industry.siemens.com/cs/ww/en/view/90629409>

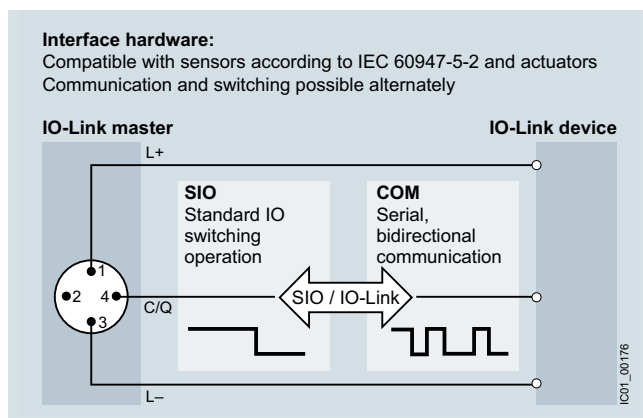
Overview**Principles of the IO-Link specification**

According to the IO-Link specification, communication functions as follows:

- Transmission takes place via an unshielded three-wire cable no more than 20 m long, of the kind normally used for standard sensors
- Digital communication from 0 to 24 V on the so-called C/Q cable
- Most of the values transmitted are measured values from the sensors
- The sensors and actuators are described by the IO Device Description (IODD)
- As a matter of principle, one IO-Link device can be connected to one IO-Link port of the master (point-to-point connection)
- The transmission rates between IO-Link master and the devices are as follows:
 - Via COM1: 4 800 Bd
 - Via COM2: 38 400 Bd
 - Via COM3: 230 400 Bd
- The average cycle time is 2 ms for the reading/writing of 16 data bits at a transmission rate of 38 400 Bd

IO-Link protocol

The IO-Link protocol supports both the Standard IO mode (SIO) and the IO-Link communication mode (COM).



The structure of the protocol and its message frames depends on the types of data to be transmitted.

Data types

The IO-Link specification makes a distinction between the following data types:

Process data

The process data of the devices are transferred cyclically in a data frame, with the process data width defined by the device. Process data of 0 to 32 bytes are possible per device (input and output in each case). The consistency width of the transmission is not fixed and therefore depends on the master.

Value status

Each port has a value status (PortQualifier). The value status indicates whether the process data are valid or invalid. The value status can be transferred cyclically with the process data.

Device data

Device data can be parameters, identification data and diagnostics information. Device data replacement is acyclic and in response to an inquiry from the IO-Link master. Device data can be written into the device (Write) and also read from the device (Read).

Events

When an event occurs, the device sends a signal to the master to report that an event is active. The master then reads out the event. Events can be fault messages (e.g. short-circuit) and warnings/maintenance data (e.g. contamination, overheating). Fault messages are transferred from the device via the IO-Link master to the controller or HMI. The IO-Link master can also transfer events and states. Events include, for example, cable break or communication breakdown.

Device parameters and events are sent independently of the cyclic transmission of process data. The transmissions do not affect or impair each other.

Data storage

As of specification V1.1, a data storage concept has been created for IO-Link. In this concept, the IO-Link device initiates storage of its data on a higher-level parameter server. In the event that a device is replaced, the parameter server can restore the original parameterization. It is therefore possible to replace the devices without re-parameterization.

The IO-Link master contains the parameter server. The parameter server can also be implemented centrally in the PLC or in a system server. In this case the data must be downloaded to the control system by means of the function blocks provided.

IO-Link masters

The IO-Link master is the interface to higher-level control systems. The IO-Link master presents itself to the fieldbus as a normal fieldbus node, and is integrated into the appropriate network configurator via the relevant device description (GSD file).

IO Device Description (IODD)

The IO Device Description (IODD) has been defined to provide a full, transparent description of system characteristics as far as the IO-Link device.

The IODD contains information on communication characteristics, device parameters, identification, process and diagnostics data, and is supplied by the manufacturer. The design of the IODD is the same for all devices from all manufacturers, and is always presented in the same way by the IODD Interpreter Tools. This therefore ensures that the handling is the same for all IO-Link devices, whatever the manufacturer.

New in IO-Link specification V1.1

The IO-Link specification is currently available in Version 1.1, and standardized in accordance with IEC 61131-9.

Specification V1.1 offers the following new features compared with the previous specification V1.0:

- Transmission of up to 32 bytes of process data in one cycle
- Parameter server function

IO-Link Masters

IO-Link Master Module for S7-1200

SM 1278 4xIO-Link master

Overview



SM 1278 4xIO-Link master

Module for connecting up to four IO-Link devices in accordance with the IO-Link specification V1.1. The IO-Link parameters are configured by means of the Port Configuration Tool (PCT) with version V3.2 and higher.

Application

The SM 1278 module enables an exchange of data with up to four external IO-Link devices through one three-wire cable each or four standard actuators or standard encoders. Control can be flexibly adapted to the communication partners using the comprehensive parameter assignment options. Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

Design

- Expansion limits
 - Cable length: Max. 20 m
 - Max. 32 bytes of input data and 32 bytes of output data per port
 - Max. 32 bytes of input data and 32 bytes of output data per module

LED displays

- DIAG: Operating state display (green/red) of the module
- C1..C4: Port status display (green) for ports 1, 2, 3 and 4
- Q1..Q4: Channel status display (green) for ports 1, 2, 3 and 4
- F1..F4: Port error display (red) for ports 1, 2, 3 and 4

Depending on the CPU type used, up to 8 SM 1278 units can be used on one S7-1200 CPU.

Function

Supported functions

- I&M identification data
- Firmware update
- SIO Mode (standard IO mode)
- IO-Link parameter assignment with the S7-PCT interface configuration tool, TIA Portal from V13 and an S7-1200 CPU V4.0 or higher

Supported data transmission rates

- COM1 (4.8 kBd)
- COM2 (38.4 kBd)
- COM3 (230.4 kBd)

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						



6ES7278-4BD32-0XB0

SM 1278 4xIO-Link master signal module

For connecting up to four IO-Link devices in accordance with the IO-Link specification V1.1

1 **6ES7278-4BD32-0XB0** 1 1 unit 212

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						



6ES7292-1AG30-0XA0

Terminal block (spare part)

With 7 screws, zinc-plated; 4 units

1 **6ES7292-1AG30-0XA0** 1 4 units 212

Overview



CM 4xIO-Link communication module

- CM 4xIO-Link communication module
Serial communication module for connecting up to four IO-Link devices in accordance with the IO-Link specification V1.0 and V1.1. The IO-Link parameters are configured by means of the Port Configuration Tool (PCT) with version V3.0 and higher.
- Time-based IO
Time-based IO ensures that signals are output with a precisely defined response time. By combination of inputs and outputs, products passing by, for example, can be measured exactly or liquids can be perfectly dosed.
- Supported data transmission rates
 - COM1 (4.8 kBd)
 - COM2 (38.4 kBd)
 - COM3 (230.4 kBd)

- Expansion limits
 - Cable length: Max. 20 m
 - Max. 32 bytes of input data and 32 bytes of output data per port
 - Max. 144 bytes of input data and 128 bytes of output data per module
- ET 200SP system functions supported
 - Exchange of IO-Link device parameters (V1.1 devices only) and of IO-Link master parameters without a PG including automatic backup recovery without an engineering tool by means of redundant parameter storage on the e-coding element
 - Reparameterization during ongoing operation
 - I&M identification data
 - Firmware update
 - PROFlenergy
- Can be plugged onto type A0 BaseUnits (BU) with automatic e-coding
- LED displays
 - DIAG: Operating state display (green/red) of the module
 - C1..C4: Port status display (green) for ports 1, 2, 3 and 4
 - Q1..Q4: Channel status display (green) for ports 1, 2, 3 and 4
 - F1..F4: Port error display (red) for ports 1, 2, 3 and 4
 - PWR: Supply voltage display (green)
- Informative front-side module inscription
 - Plain-text marking of the module type and function class
 - 2D matrix code (Article No. and serial number)
 - Connection diagram
 - CM module class color coding: Silver
 - Hardware and firmware version
 - Complete article number
- Optional accessories
 - Labeling strips
 - Reference identification label
 - Color-coded label with color code CC04
- Optional system-integrated shield connection

CM 4xIO-Link overview

Communication module	Article number	CC code	BU type	PU
CM 4xIO-Link	6ES7137-6BD00-0BA0	CC04	A0	1

Overview of BaseUnits

BaseUnit	Article number	CC codes for process terminals	CC codes for AUX terminals	PU
BU type A0 • New load group (light) • 16 process terminals • With 10 AUX terminals	6ES7193-6BP20-0DA0	CC01 to CC05	CC71 to CC73	1
BU type A0 • New load group (light) • 16 process terminals • With 10 AUX terminals	6ES7193-6BP20-2DA0	CC01 to CC05	CC71 to CC73	10
BU type A0 • New load group (light) • 16 process terminals • Without AUX terminals	6ES7193-6BP00-0DA0	CC01 to CC05	--	1
BU type A0 • New load group (light) • 16 process terminals • Without AUX terminals	6ES7193-6BP00-2DA0	CC01 to CC05	--	10
BU type A0 • Load group forwarding (dark) • 16 process terminals • With 10 AUX terminals	6ES7193-6BP20-0BA0	CC01 to CC05	CC71 to CC73	1
BU type A0 • Load group forwarding (dark) • 16 process terminals • With 10 AUX terminals	6ES7193-6BP20-2BA0	CC01 to CC05	CC71 to CC73	10
BU type A0 • Load group forwarding (dark) • 16 process terminals • Without AUX terminals	6ES7193-6BP00-0BA0	CC01 to CC05	--	1
BU type A0 • Load group forwarding (dark) • 16 process terminals • Without AUX terminals	6ES7193-6BP00-2BA0	CC01 to CC05	--	10

IO-Link Masters

IO-Link Master Module for ET 200SP

CM 4xIO-Link

Application

- The CM 4x IO-Link communication module enables an exchange of data with up to 4 external IO-Link devices through one three-wire cable each.
- Control can be flexibly adapted to the communication partners using the comprehensive parameter assignment options.
- Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

Design

Supported BaseUnits (BU)

All BUs of the A0 type are available for the CM 4x IO-Link communication module.

Load group formation

A light BU isolates the self-establishing internal voltage buses (P1, P2, AUX), thus opening a new load group. A load group's supply voltage must be fed in on this load group's light BU.

A dark BU passes on the supply voltage of the adjacent light BU on the left through the self-establishing voltage buses P1, P2 and AUX. Therefore, a supply again is only necessary at the following light BU on the right. Setting of a further light BU is always necessary if

- a new load group is to be formed (for example, to isolate the supply voltage from module groups) or
- the maximum simultaneously required current of the load group exceeds the permissible limit of 10 A.

Color coding of terminals

The potentials at the terminals of the BaseUnit are defined by the inserted I/O module. To avoid wiring errors, the terminals' potentials can be optionally identified by module-specific color-coded labels. The color-coded label matching the relevant I/O module is defined by the I/O module's color code CCxx. This color code is also printed onto the front of the module.

The color-coded label with the color code CC04 must be used for the "CM 4x IO-Link" communication module.

In the case of BaseUnits with the additional ten internally jumpered AUX terminals, these can also be color-coded with color-coded labels. Color-coded labels are available in red, blue and yellow-green for the ten AUX terminals.

Labeling

Labeling strips

Labeling strips can be inserted into the front of the interface or I/O modules and can be labeled individually via STEP 7, macros, etc. A special additional support is not required. They can be replaced easily with the component as necessary.

Reference identification labels

Reference identification labels enable easy equipment identification (e.g. in accordance with EN 81346). They are simply plugged onto the required component (interface module, I/O modules and BaseUnits) and can thus be replaced easily with the component, whenever required.


The following labeling components are available for selection:

- Film labeling strips, light gray, roll with 500 strips, pre-perforated, for thermal transfer roll printer
- Film labeling strips, yellow, roll with 500 strips, pre-perforated, for thermal transfer roll printer
- Cardboard labeling strips (180 g/m²), light gray, ten A4 sheets of 100 strips each, pre-perforated, for laser printer
- Cardboard labeling strips (180 g/m²), yellow, ten A4 sheets of 100 strips each, pre-perforated, for laser printer
- Reference identification labels, white, ten mats of 16 plates each, for thermal transfer card printer or labels

System-integrated shield connection

A shield terminal that can be fitted quickly and easily is available for space-saving and EMC-optimized connection of cable shields. It consists of a shield connection element and a shield terminal that can be plugged onto the BaseUnit for each module. Low-impedance connection to functional ground (DIN rail) is carried out by the user without additional wiring.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
	X	6ES7137-6BD00-0BA0		1	1 unit	255
<p>CM 4xIO-Link V1.1 Standard communication module</p> <ul style="list-style-type: none"> • Serial communication module for connecting up to 4 IO-Link devices, time-based IO, BU type A0, color code CC04 						





6ES7137-6BD00-0BA0

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Accessories

Usable type A0 BaseUnits

	BU15-P16+A10+2D BU type A0; BaseUnit (light) with 16 process terminals (1...16) to the module and additionally 10 internally jumpered AUX terminals (1 A to 10 A); for beginning a new load group (max. 10 A)						
	<ul style="list-style-type: none"> • 1 unit • 10 units 	X	6ES7193-6BP20-0DA0		1	1 unit	255
		X	6ES7193-6BP20-2DA0		1	10 units	255
6ES7193-6BP20-0DA0							
	BU15-P16+A0+2D BU type A0; BaseUnit (light) with 16 process terminals to the module; for beginning a new load group (max. 10 A)						
	<ul style="list-style-type: none"> • 1 unit • 10 units 	X	6ES7193-6BP00-0DA0		1	1 unit	255
		X	6ES7193-6BP00-2DA0		1	10 units	255
6ES7193-6BP00-0DA0							
	BU15-P16+A10+2B BU type A0; BaseUnit (dark) with 16 process terminals (1...16) to the module and additionally 10 internally jumpered AUX terminals (1 A to 10 A); for load group continuation						
	<ul style="list-style-type: none"> • 1 unit • 10 units 	X	6ES7193-6BP20-0BA0		1	1 unit	255
		X	6ES7193-6BP20-2BA0		1	10 units	255
6ES7193-6BP20-0BA0							
	BU15-P16+A0+2B BU type A0; BaseUnit (dark) with 16 process terminals to the module; for load group continuation						
	<ul style="list-style-type: none"> • 1 unit • 10 units 	X	6ES7193-6BP00-0BA0		1	1 unit	255
		X	6ES7193-6BP00-2BA0		1	10 units	255
6ES7193-6BP00-0BA0							
	Reference identification label	1	6ES7193-6LF30-0AW0		1	10 units	255
	10 sheets of 16 labels, for printing with thermal transfer card printer or plotter						
	Labeling strips						
	500 labeling strips on roll, light gray, for inscription with thermal transfer roll printer	1	6ES7193-6LR10-0AA0		1	1 unit	255
	500 labeling strips on roll, yellow, for inscription with thermal transfer roll printer	1	6ES7193-6LR10-0AG0		1	1 unit	255
	1 000 labeling strips DIN A4, light gray, card, perforated, for inscription with laser printer	1	6ES7193-6LA10-0AA0		1	1 unit	255
	1 000 labeling strips DIN A4, yellow, card, perforated, for inscription with laser printer	1	6ES7193-6LA10-0AG0		1	1 unit	255
	Color-coded labels						
	Color code CC04, for 16 push-in terminals, BU type A0, A1, gray (terminals 1 to 8), red (terminals 9 to 12), blue (terminals 13 to 16); 10 units	1	6ES7193-6CP04-2MA0		1	10 units	255
	Color code CC71, for 10 AUX terminals, BU type A0, yellow/green (terminals 1 A to 10 A); 10 units	1	6ES7193-6CP71-2AA0		1	10 units	255
	Color code CC72, for 10 AUX terminals, BU type A0, red (terminals 1 A to 10 A); 10 units	1	6ES7193-6CP72-2AA0		1	10 units	255
	Color code CC73, for 10 AUX terminals, BU type A0, blue (terminals 1 A to 10 A); 10 units	1	6ES7193-6CP73-2AA0		1	10 units	255
Spare parts							
	Electronic coding element type H	1	6ES7193-6EH00-1AA0		1	5 units	256
	Pack containing 5 units; included in the scope of supply of the CM 4x IO-Link module						

IO-Link Masters

IO-Link Master Module for ET 200pro

IO-Link master modules

Overview



4 IO-Link HF electronic module

- 45-mm-wide 4 IO-Link HF electronic module
- 4 IO-Link ports acc. to IO-Link specification V1.1
- Port class B
- The IO-Link parameters are configured using the Port Configuration Tool (S7-PCT), version V3.4 and higher

Application

The 4 IO-Link HF electronic module enables the exchange of data with up to 4 IO-Link devices.


Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

Design

The 4 IO-Link HF electronic module is used together with the CM IO-LK 4 X M12 P connection module. Sensors and actuators are integrated using commercially available 3- or 5-pin M12 plugs on the CM IO-Link 4 X M12 P.

IO-Link devices (e.g. sensors) with a class A port are interconnected by means of a 3-wire cable. IO-Link devices that require an additional supply voltage and have a class B port (e.g. actuators) are interconnected by means of a 5-wire cable.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
 4 IO-Link HF electronic modules	1	6ES7147-4JD00-0BA0		1	1 unit	250
<ul style="list-style-type: none"> • 4 IO-Link ports acc. to IO-Link specification V1.1 • Port class B • High Feature • Channel diagnostics • Including bus module • Connection module must be ordered separately 						

6ES7147-4JD00-0BA0

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
CM IO-Link 4 X M12 P connection modules	1	6ES7194-4CA20-0AA0		1	1 unit	250
4 M12 sockets for connection of IO-Link devices to ET 200pro 4 IO-Link HF electronic module						
Module labeling plates	1	6ES7194-4HA00-0AA0		1	500 units	250
For color coding of CM IOs in the colors white, red, blue and green; pack of 100						
M12 sealing caps	▶	3RX9802-0AA00		100	10 units	42C
For protection of unused M12 terminals on ET 200pro						

Overview



ET 200eco PN IO-Link master modules

The ET200eco PN IO-Link master modules belong to the ET 200eco PN compact block I/O device family and are distinguished by the following features:

- Compact block I/O devices for connection of IO-Link devices and connection to the PROFINET bus system
- Design without a control cabinet in IP67 degree of protection with M12 connection system
- Very rugged and resistant encapsulated metal enclosure
- Compact module in an enclosure width of 30 mm or 60 mm
- PROFINET connection: 2 x M12 and automatic PROFINET addressing
- 100 MBit/s data transmission rate
- LLDP neighborhood detection without PG
- Supply and load voltage connection: 2 x M12
- Channel-exact diagnostics

Application

IO-Link enables easy integration of sensors and actuators from different manufacturers. ET200eco PN IO-Link master modules enable an exchange of data with up to 4 IO-Link devices. Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

With a high degree of protection, ruggedness and small dimensions, the IO-Link master modules are especially well-suited for use at the machine level in confined spaces. They have adjustable parameters and diagnostic functions

and can therefore be flexibly adapted to individual process requirements.

The following IO-Link masters are available:

- Compact module in an enclosure width of 30 mm for connecting up to 4 IO-Link devices in accordance with the IO-Link specification V1.0 and V1.1 and Port Class B
- Compact module in an enclosure width of 60 mm for connecting up to 4 IO-Link devices in accordance with the IO-Link specification V1.0 and port class A and an additional 8 digital inputs and 4 digital outputs.



Design

The IO-Link master modules have a screw mounting hole at the front and side, and can be mounted in any position. As a result, they are extremely flexible to install on either a level surface or on aluminum mounting rails using sliding blocks.

ET 200eco PN IO-Link masters are compact modules with M12 connection technology.

Two load power supplies (4 A each) are available that can be used by the compact module or also be looped through to another compact module (line topology). PROFINET is connected via an M12 connection and can be looped through to a further PROFINET device. The maximum cable length to the IO-Link device is 20 m.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
ET 200eco PN IO-Link master						
 6ES7148-6JA00-0AB0	1	6ES7148-6JA00-0AB0		1	1 unit	250
• 4 IO-L + 8 DI + 4 DQ, 24 V DC/1.3 A; 8 x M12, degree of protection IP67, enclosure width 60 mm; for connecting up to 4 IO-Link devices according to IO-Link specification V1.0 and port Class A as well as 8 digital inputs and 4 digital outputs						
 6ES7148-6JD00-0AB0	1	6ES7148-6JD00-0AB0		1	1 unit	250
• 4 IO-L 4 x M12, degree of protection IP67, enclosure width 30 mm; for connecting up to 4 IO-Link devices according to IO-Link specification V1.0 and V1.1 and port Class B						

IO-Link Masters

IO-Link Master Module for ET 200eco PN

ET 200eco PN IO-Link master

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Voltage distributor	1	6ES7148-6CB00-0AA0		1	1 unit	250
Voltage distributor PD 24 V DC; 1 X 7/8", 4 X M12						
Terminal block	1	6ES7194-6CA00-0AA0		1	1 unit	250
For ET 200eco PN, 10 A insulation displacement terminations						
Replacement fuses	1	6ES7194-6HB00-0AA0		1	10 units	250
For terminal block, 10 units						
Mounting rail	1	6ES7194-6GA00-0AA0		1	1 unit	250
0.5 m						
Profile screw	1	6ES7194-6MA00-0AA0		1	50 units	250
For the mounting rail, 50 units						
Sealing caps	▶	3RK1901-1KA00		100	10 units	42C
M12 for IP67 modules, 10 units						
Labels	15	3RT1900-1SB10		100	816 units	41B
10 mm x 7 mm, pastel turquoise, 816 units						
PROFINET M12 connection plug, can be pre-assembled						
IE FC M12 plug PRO, can be pre-assembled						
• 1 unit	1	6GK1901-0DB20-6AA0		1	1 unit	5K1
• 8 units	1	6GK1901-0DB20-6AA8		1	8 units	5K1
PROFINET M12 plug-in cables						
Pre-assembled connecting cables with 2 M12 plugs (D-coded), in various lengths:						
• 0.3 m	1	6XV1870-8AE30		1	1 unit	5K1
• 0.5 m	1	6XV1870-8AE50		1	1 unit	5K1
• 1.0 m	1	6XV1870-8AH10		1	1 unit	5K1
• 1.5 m	1	6XV1870-8AH15		1	1 unit	5K1
• 2.0 m	1	6XV1870-8AH20		1	1 unit	5K1
• 3.0 m	1	6XV1870-8AH30		1	1 unit	5K1
• 5.0 m	1	6XV1870-8AH50		1	1 unit	5K1
• 10.0 m	1	6XV1870-8AN10		1	1 unit	5K1
• 15.0 m	1	6XV1870-8AN15		1	1 unit	5K1
M12 connection plug for 24 V DC load supply						
Connection socket for 24 V DC incoming supply; 4-pole, A-coded, 3 units						
	1	6GK1907-0DC10-6AA3		1	3 units	5W3
Connector for loop-through of 24 V DC; 4-pole, A-coded, 3 units						
	1	6GK1907-0DB10-6AA3		1	3 units	5W3
M12 power connector cables						
Pre-assembled power connector cables with M12 box and plug, 4 x 0.75 mm ² on both sides, in various lengths:						
• 0.3 m	1	6XV1801-5DE30		1	1 unit	5K2
• 0.5 m	1	6XV1801-5DE50		1	1 unit	5K2
• 1.0 m	1	6XV1801-5DH10		1	1 unit	5K2
• 1.5 m	1	6XV1801-5DH15		1	1 unit	5K2
• 2.0 m	1	6XV1801-5DH20		1	1 unit	5K2
• 3.0 m	1	6XV1801-5DH30		1	1 unit	5K2
• 5.0 m	1	6XV1801-5DH50		1	1 unit	5K2
• 10.0 m	1	6XV1801-5DN10		1	1 unit	5K2
• 15.0 m	1	6XV1801-5DN15		1	1 unit	5K2
M12 Y-cables						
For double connection of I/Os by means of a single-cable on ET 200, 5-pole						
	1	6ES7194-6KA00-0XA0		1	1 unit	250

Overview



CM IO-Link communication module

- 30-mm-wide CM IO-Link communication module
- For connecting up to 4 IO-Link devices in accordance with the IO-Link specification V1.0 and V1.1 and Port Class B
- The IO-Link parameters are configured by means of the Port Configuration Tool S7-PCT with version V3.2 and higher.

Application

The CM IO-Link communication module supports data exchange between up to four IO-Link devices.

IO-Link devices (e.g. sensors) with a class A port are interconnected by means of a 3-wire cable. IO-Link devices that require an additional supply voltage and have a class B port (e.g. actuators) are interconnected by means of a 5-wire cable.

Since IO-Link is compatible with standard sensors, commercially available sensors compliant with IEC 61131 Type 1 can also be operated on the IO-Link master.

The 30-mm-wide I/O modules are ideally suited for use in extremely confined spaces. They have adjustable parameters and diagnostic functions and can therefore be flexibly adapted to individual process requirements.

The following IO-Link masters are available:

- CM 4xIO-Link communication modules, 4XM12

Design

The I/O modules have a screw mounting hole at the front and side, and can be mounted in any position. As a result, they are extremely flexible to install on either a level surface or on aluminum mounting rails using sliding blocks.

The CM IO-Link communication module features:

- A backplane bus connection (Ethernet connection) with M8 connection system for connection to an interface module or other I/O modules
- A power supply connection with M8 connection system with loop-through
- LED display for port status
- LED display for channel status in SIO mode
- LED display for module status (DIAG)

- LED display for load voltage 2L+ (PWR)
- Labeling plates for channel, module and slot identification
- Integrated cable tie holder
- Meaningful module inscription on front panel:
 - Plain text marking of module type
 - Interface marking
 - LED label
- Meaningful module inscription on side panel:
 - Article number, function level and FW version
 - 2D matrix code (Article No. and serial number)
 - Pin assignments of all interfaces

Labeling plates for channel, module and slot identification are supplied with the modules. These labeling plates can be inscribed using commercially available inscription machines.

Function

- IO-Link master according to IO-Link specification V1.1
- 4 ports, Class B type
- Supported data transmission rates
 - COM1 (4.8 kBd)
 - COM2 (38.4 kBd)
 - COM3 (230.4 kBd)
- Expansion limits
 - Cable length: max. 20 m
 - Max. 32 bytes of input data and 32 bytes of output data per port
 - Max. 32 bytes of input data and 32 bytes of output data per module
- Automatic backup of device parameters when the IO-Link device is replaced (V1.1 devices only)
- Reparameterization during ongoing operation
- Standardized display and diagnostics concept:
 - Port status display (port activated or deactivated, green LED)
 - Channel status display for signal state in SIO mode (green LED)
 - Module status display (DIAG, red/green LED)
 - Display for monitoring the load voltage 2L+ (PWR, green LED)
- Supported functions:
 - Detailed module diagnostics and diagnostic interrupt
 - Identification and maintenance data IMO ... IM3
 - Firmware update
 - PROFlenergy

IO-Link Masters

IO-Link Master Module for ET 200AL

CM IO-Link

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					



6ES7147-5JD00-0BA0

CM IO-Link	15	6ES7147-5JD00-0BA0		1	1 unit	254
CM 4X IO-Link, 4XM12; for the connection of up to 4 IO-Link devices according to IO-Link specification V1.0 and V1.1 and port Class B						

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Bus cable for backplane bus (ET connection)

4-pole, shielded

- Pre-assembled on both sides, 2 M8 plugs

- Length 0.19 m
- Length 0.3 m
- Length 1 m
- Length 2 m
- Length 5 m
- Length 10 m
- Length 15 m



6ES7194-2L...0AA0

- Pre-assembled on both sides, 2 M8 angular plugs

- Length 0.3 m
- Length 1 m
- Length 2 m
- Length 5 m
- Length 10 m
- Length 15 m



6ES7194-2L...0AB0

- Pre-assembled on one side, 1 M8 plug

- Length 2 m
- Length 5 m
- Length 10 m
- Length 15 m



6ES7194-2L...0-0AC0

M8 power cable

4-pole

- Pre-assembled on both sides, M8 plug and M8 socket

- Length 0.19 m
- Length 0.3 m
- Length 1 m
- Length 2 m
- Length 5 m
- Length 10 m
- Length 15 m



6ES7194-2L...1AA0

- Pre-assembled on both sides, M8 angular plug and M8 angular socket

- Length 0.3 m
- Length 1 m
- Length 2 m
- Length 5 m
- Length 10 m
- Length 15 m







6ES7194-2L...1AB0

- Pre-assembled on one side, one M8 socket

- Length 2 m
- Length 5 m
- Length 10 m
- Length 15 m



6ES7194-2L...0-1AC0

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 6ES7194-2AB00-0AA0	d	6ES7194-2AB00-0AA0		1	1 unit	254
M8 plug for Ethernet connection 4-pole, shielded						
 6ES7194-2AA00-0AA0	1	6ES7194-2AA00-0AA0		1	1 unit	254
M8 power plug						
	1	6ES7194-2AC00-0AA0		1	1 unit	254
• Male contact insert, 4-pole						
• Female insert, 4-pole						
 6ES7194-2KA00-0AA0	1	6ES7194-2KA00-0AA0		1	1 unit	254
Ethernet connection Fast Connect Stripping Tool Stripping tool for stripping the Ethernet connection bus cable						
 6ES7194-2BA00-0AA0	1	6ES7194-2BA00-0AA0		1	1 unit	254
Labeling plates 10 x 5 mm, RAL 9016, 5 frames with 40 labels each						

More information

More information

Brochures

Information material for downloading free of charge from the Internet at:
<http://www.siemens.com/simatic/printmaterial>.

IO-Link Input Modules

General data

Overview



IO-Link input modules

Using IO-Link technology, it is basically possible to connect standard sensors to IO-Link masters. However, connecting standard sensors directly to the IO-Link master does not exploit the full potential of IO-Link.

The solution lies in the technology of the IO-Link modules. Their use is a more economically attractive solution in comparison to the direct connection of a sensor.

The IO-Link input module technology enhances IO-Link via a pure point-to-point cable connection towards decentralized structures. The maximum cable length of an IO-Link connection between an IO-Link module and an IO-Link master is 20 m. The use of sensor boxes with accordingly complex and error-prone wiring is no longer necessary.

Transmission of parameter and diagnostic signals

The IO-Link input modules also offer the possibility of transmitting parameters and diagnostic signals. This enables for example the inputs of modules to be parameterized as NC contacts or NO contacts through IO-Link. An overload or short-circuit in the sensor supply is signaled to the control system through the IO-Link master.

M8 and M12 terminals

M8 and M12 terminals are available for connecting the sensors. Connection to the IO-Link master is made using a standard M12 connecting cable.

Benefits

Benefits of using IO-Link input modules:

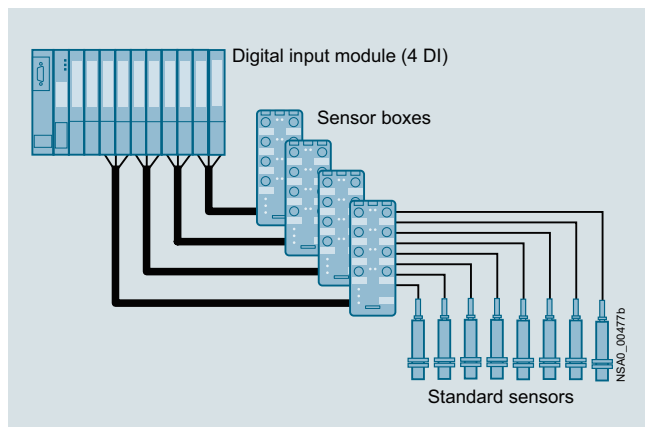
- Economical use of innovative IO-Link technology also for binary sensors
- Optimum use of all ports of the IO-Link master
- Connection of several binary sensors/actuators to one port of the IO-Link master, hence low-cost connection also of binary sensors/actuators to the control system through IO-Link
- Reduction of digital input modules in the peripheral station
- Use of parameters also for binary sensors (e.g. NC contacts, NO contacts and input delay can be parameterized)
- Reduction of cabling and hence less risk of wiring errors by dispensing with sensor boxes
- Expansion toward distributed structures using pure point-to-point wiring
- Easy and elegant integration of sensors within a radius of 20 m around an IO-Link master, e.g. in an ET 200 station
- Possibility of transmitting parameter and diagnostic signals (e.g. sensor supply overload)
- Can also be used in harsh ambient conditions thanks to a very compact design and degree of protection IP67

Application

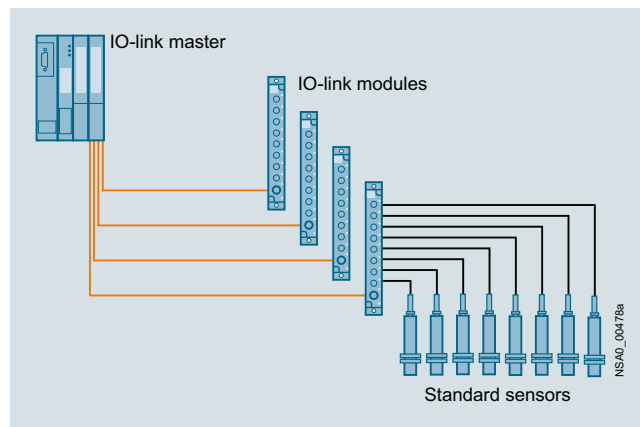
IO-Link input modules are particularly used where sensor boxes had previously been used for the connection of binary sensors.

Application example:

Replacement of sensor boxes by using IO-Link input modules





Former technology with sensor boxes







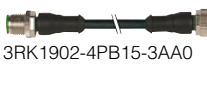



Technology with IO-Link input modules

Selection and ordering data

Type	Pin assignment	Connection	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
K20 IO-Link modules								
	Y	M12	5	3RK5010-0BA10-0AA0		1	1 unit	42C
	Standard	M8	5	3RK5010-0CA00-0AA0		1	1 unit	42C

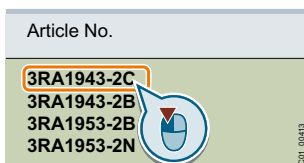
Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Sealing caps						
	▶	3RK1901-1KA00		100	10 units	42C
	2	3RK1901-1PN00		100	10 units	42C
Control cable, assembled at one end						
		Angular M12 plug for screw fixing, 4-pole, 4 x 0.34 mm ² , A-coded, black PUR sheath, max. 4 A				
• Cable length 5 m	5	3RK1902-4GB50-4AA0		1	1 unit	42D
M12 socket, angled						
	5	3RK1902-4CA00-4AA0		1	1 unit	42D
For screw mounting, 4-pole screw terminals, max. 0.75 mm ² , A-coded, max. 4 A						
M12 plug						
		For screw mounting, 5-pole screw terminals, max. 0.75 mm ² , A-coded, max. 4 A				
• Straight	5	3RK1902-4BA00-5AA0		1	1 unit	42D
• Angled	5	3RK1902-4DA00-5AA0		1	1 unit	42D
Control cable, assembled at one end						
		Angular M12 plug for screw fixing, 5-pole, 5 x 0.34 mm ² , A-coded, black PUR sheath, max. 4 A				
• Cable length 1.5 m	5	3RK1902-4HB15-5AA0		1	1 unit	42D
• Cable length 5 m	5	3RK1902-4HB50-5AA0		1	1 unit	42D
• Cable length 10 m	5	3RK1902-4HC01-5AA0		1	1 unit	42D
Control cable, assembled at both ends						
		Straight M12 plug, straight M12 socket, for screw fixing, 3-pole, 3 x 0.34 mm ² , A-coded, black PUR sheath, max. 4 A				
• Cable length 1.5 m	5	3RK1902-4PB15-3AA0		1	1 unit	42D
M12 Y-shaped coupler plugs						
	1	6ES7194-1KA01-0XA0		1	1 unit	250
For connection of two sensors to one M12 socket with Y-assignment						

Switching Devices – Contactors and Contactor Assemblies – for Switching Motors

**clickable**

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.



Or directly on the Internet, e.g.
www.siemens.com/product?3RA1943-2C

Price groups

PG 41A, 41B, 41E, 41H, 42F

3/2

Introduction**Power contactors for switching motors**

3/8 General data

3/17 [SIRIUS 3RT contactors, 3-pole up to 250 kW **NEW**](#)

Accessories and spare parts for [SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays](#)

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Accessories and spare parts for [SIRIUS 3RT12 and 3TF6 vacuum contactors](#)

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3/142 [3TF2 miniature contactors, 3-pole](#)3/150 [Accessories for 3TF2 miniature contactors](#)3/152 [3TG10 power relays/miniature contactors](#)**Reversing contactor assemblies**

3/156 SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

3/167 Reversing contactor assemblies consisting of SIRIUS 3RT1 contactors, up to 250 kW

Contactor assemblies for star-delta (wye-delta) starting

3/171 SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

3/184 Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Note:

Conversion tool, e.g. from 3RT10 to 3RT20, [see www.siemens.com/sirius/conversion-tool](http://www.siemens.com/sirius/conversion-tool)

Switching Devices – Contactors and Contactor Assemblies

Power Contactors for Switching Motors

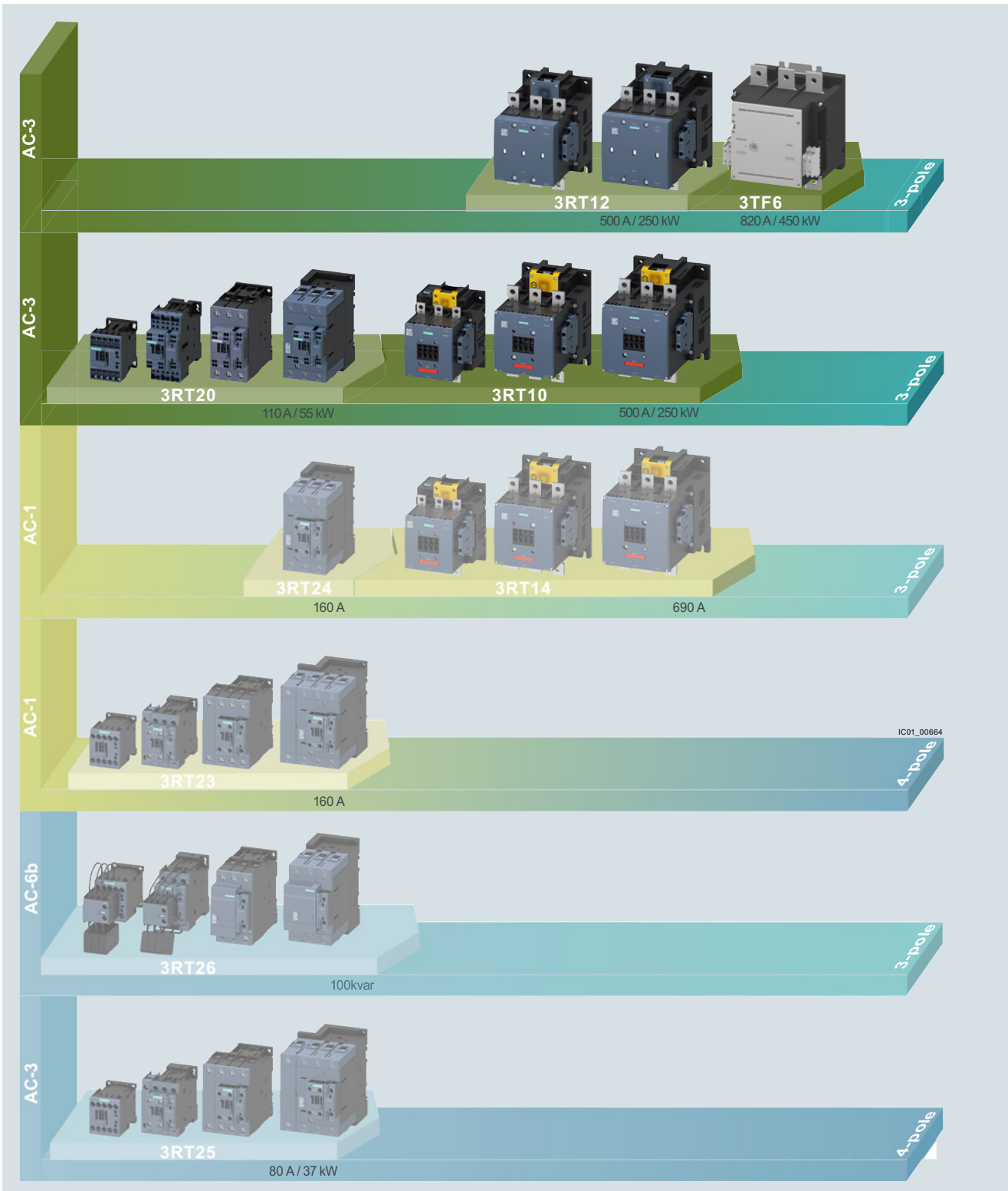
Introduction

Overview

More information

Homepage, see www.siemens.com/sirius
 Industry Mall, see www.siemens.com/product?3RT_3TK_3TC

Conversion tool, e.g. from 3RT10 to 3RT20, see www.siemens.com/sirius/conversion-tool
 TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/TSTWeb/?kmat=Contactor>



Overview of the 3RT and 3TF contactors

Switching Devices – Contactors and Contactor Assemblies

Power Contactors for Switching Motors

Introduction



Size		S00				S0					
Type		3RT201				3RT202					
3RT20 contactors											
Type		3RT2015	3RT2016	3RT2017	3RT2018	3RT2023	3RT2024	3RT2025	3RT2026	3RT2027	3RT2028
AC, DC operation		(p. 3/55, 3/60 ... 3/63)				(p. 3/56, 3/57, 3/64 ... 3/66, 3/68)					
AC-3											
$I_{th}/AC-3/400\text{ V}$	A	7	9	12	16	9	12	17	25	32	38
400 V	kW	3	4	5.5	7.5	4	5.5	7.5	11	15	18.5
230 V	kW	1.5	2.2	3	4	2.2	3	4	5.5	7.5	11
690 V	kW	4	5.5	5.5	7.5	7.5	7.5	11	11	18.5	18.5
1 000 V	kW	--	--	--	--	--	--	--	--	--	--
AC-4 (at $I_{th} = 6 \times I_e$)											
400 V	kW	3	4	4	5.5	4	5.5	7.5	7.5	11	11
400 V (200 000 operating cycles)	kW	1.15	2	2	2.5	2	2.6	3.5	4.4	6	6
AC-1 (40 °C, ≤ 690 V)											
I_e	A	18	22	22	22	40	40	40	40	50	50
Accessories for contactors											
Auxiliary switch blocks	<ul style="list-style-type: none"> On front Lateral 	3RH29, 3RA28	(p. 3/94 ... 3/101)			3RH29, 3RA28	(p. 3/94 ... 3/101)				
		3RH29	(p. 3/98)			3RH29	(p. 3/98)				
Function modules	<ul style="list-style-type: none"> Direct-on-line starting, star-delta (wye-delta) starting IO-Link, AS-Interface 	3RA281.	(p. 3/106)			3RA281.	(p. 3/106)				
		3RA271.-.AA00	(p. 3/107, 3/108)			3RA271.-.AA00	(p. 3/107, 3/108)				
Surge suppressors		3RT2916	(p. 3/103, 3/104)			3RT2926	(p. 3/103, 3/104)				
3RU2 and 3RB3 overload relays											
3RU thermal overload relays		3RU2116	0.11 ... 16 A (p. 7/92)			3RU2126	1.8 ... 40 A (p. 7/92)				
3RB electronic overload relays		3RB3016, 3RB3113	0.1 ... 16 A (p. 7/105 ... 7/107)			3RB3026, 3RB3123	0.1 ... 40 A (p. 7/105 ... 7/107)				
<ul style="list-style-type: none"> For standard applications For High-Feature applications 		3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1	0.3 ... 25 A (p. 7/140)			3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1	0.3 ... 25 A (p. 7/140)				
3RV20 motor starter protectors											
Motor starter protectors		3RV2011	0.11 ... 16 A (p. 7/28)			3RV2021	0.45 ... 40 A (p. 7/29)				
Link modules		3RA1921, 3RA2911	(p. 7/56)			3RA2921	(p. 7/56)				
3RA23 reversing contactor assemblies											
Complete units	Type	3RA2315	3RA2316	3RA2317	3RA2318	--	3RA2324	3RA2325	3RA2326	3RA2327	3RA2328
		(p. 3/163)				(p. 3/164)					
400 V	kW	3	4	5.5	7.5		5.5	7.5	11	15	18.5
Assembly kits, etc.		3RA2913-2AA.				(p. 3/110)					
Function modules		3RA271.-.BA00				(p. 3/107)					
3RA24 contactor assemblies for star-delta (wye-delta) starting											
Complete units	Type	3RA2415	3RA2416	3RA2417		3RA2423	3RA2425	3RA2426			
		(p. 3/180)				(p. 3/181)					
400 V	kW	5.5	7.5	11		11	15/18.5	22			
Assembly kits/wiring modules		3RA2913-2BB.				(p. 3/111)					
Function modules		3RA271.-.CA00				(p. 3/107)					

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/6.

Switching Devices – Contactors and Contactor Assemblies

Power Contactors for Switching Motors

Introduction



Size
Type

S2
3RT203

S3
3RT204

3RT20 contactors

Type		3RT2035	3RT2036	3RT2037	3RT2038	3RT2045	3RT2046	3RT2047
AC, DC operation		(p. 3/58, 3/67, 3/69)				(p. 3/59, 3/67, 3/70)		
AC-3								
I_n /AC-3/400 V	A	40	50	65	80	80	95	110
400 V	kW	18.5	22	30	37	37	45	55
230 V	kW	11	15	18.5	22	22	22	30
690 V	kW	22	22	37	45	55	75	90
1 000 V	kW	--	--	--	--	37	37	37
AC-4 (at $I_a = 6 \times I_e$)								
400 V	kW	18.5	22	30	37	37	45	55
400 V (200 000 operating cycles)	kW	11.6	12.6	14.7	15.8	17.9	22	24.3
AC-1 (40 °C, ≤ 690 V)								
I_e	A	60	70	80	90	125	130	130

Accessories for contactors

Auxiliary switch blocks	<ul style="list-style-type: none"> On front Lateral 	3RH29, 3RA28 3RH29	(p. 3/94 ... 3/101) (p. 3/98)	3RH29, 3RA28 3RH29	(p. 3/94 ... 3/101) (p. 3/98)
Function modules	<ul style="list-style-type: none"> Direct-on-line starting IO-Link, AS-Interface 	3RA283. 3RA271.-.AA00	(p. 3/106) (p. 3/107, 3/108)	3RA283. 3RA271.-.AA00	(p. 3/106) (p. 3/107, 3/108)
Surge suppressors		3RT2936	(p. 3/103, 3/104)	3RT2936 ¹⁾ , 3RT2946	(p. 3/103, 3/104)
Terminal covers		3RT2936-4EA2	(p. 3/118)	3RT2946-4EA2	(p. 3/118)

3RU2 and 3RB overload relays

3RU thermal overload relays		3RU2136	11 ... 80 A	(p. 7/93)	3RU2146	28 ... 100 A	(p. 7/93)
3RB electronic overload relays		3RB3036, 3RB3133	12.5 ... 80 A	(p. 7/105 ... 7/107)	3RB3046, 3RB3143	12.5 ... 115 A	(p. 7/105 ... 7/107)
<ul style="list-style-type: none"> For standard applications For High-Feature applications 		3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2JG1	10 ... 100 A	(p. 7/128, 7/136) (p. 7/140)	3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2JG1	10 ... 100 A	(p. 7/128, 7/136) (p. 7/140)

3RV20 motor starter protectors

Motor starter protectors		3RV2031, 3RV2032	9.5 ... 80 A	(p. 7/30)	3RV2041, 3RV2042	28 ... 100 A	(p. 7/30)
Link modules		3RA2931		(p. 7/56)	3RA1941		(p. 7/56)

3RA23 reversing contactor assemblies

Complete units	Type	3RA2335	3RA2336	3RA2337	3RA2338	3RA2345	3RA2346	3RA2347
400 V	kW	18.5	22	30	37	37	45	55
Assembly kits/wiring modules		3RA2933-2AA. (p. 3/110)				3RA2943-2AA. (p. 3/110)		
Function modules		3RA271.-.BA00 (p. 3/107)				3RA271.-.BA00 (p. 3/107)		
Mechanical interlocks		3RA2934-2B (p. 3/114)				3RA2934-2B (p. 3/114)		

3RA24 contactor assemblies for star-delta (wye-delta) starting

Complete units	Type	3RA2434	3RA2435	3RA2436	3RA2437	3RA2444	3RA2445	3RA2446
400 V	kW	22/30	37	45	55	55	75	90
Assembly kits/wiring modules		3RA2933-2BB./-2C (p. 3/111)				3RA2943-2BB./-2C (p. 3/111)		
Function modules		3RA271.-.CA00 (p. 3/107)				3RA271.-.CA00 (p. 3/107)		

¹⁾ From product version E03 onwards, 3RT2936-1B/-1E surge suppressors can be used for 3RT2.4 contactors. When using an AC/DC coil, the surge suppressor is already integrated in the electronics.

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/6.

Switching Devices – Contactors and Contactor Assemblies

Power Contactors for Switching Motors

Introduction



Size	S6			S10			S12			
Type	3RT105			3RT1.6			3RT1.7			
3RT10 contactors · 3RT12 vacuum contactors										
Type	3RT1054	3RT1055	3RT1056	3RT1064	3RT1065	3RT1066	3RT1075	3RT1076		
AC, DC operation	(p. 3/71 ... 3/73)			(p. 3/71 ... 3/73)			(p. 3/71 ... 3/73)			
Type	--	--	--	3RT1264	3RT1265	3RT1266	3RT1275	3RT1276		
				(p. 3/135)			(p. 3/135)			
AC-3										
I_e /AC-3/400 V	A	115	150	185	225	265	300	400	500	
400 V	kW	55	75	90	110	132	160	200	250	
230 V	kW	37	45	55	55	75	90	132	160	
690 V	3RT10/3RT12 kW	110	132	160	200	250	250	400	400/500	
1 000 V	3RT10/3RT12 kW	75	90	90	90/315	132/355	132/400	250/560	250/710	
AC-4 (at $I_a = 6 \times I_e$)										
400 V	kW	55	75	90	110	132	160	200	250	
400 V	3RT10/3RT12 kW	29	38	45	54/78	66/93	71/112	84/140	98/161	
(200 000 operating cycles)										
AC-1 (40 °C, ≤ 690 V)										
I_e	3RT10/3RT12 A	160	185	215	275/330	330	330	430/610	610	
3RT14 AC-1 contactors										
Type	3RT1456	(p. 4/15, 4/16)			3RT1466	(p. 4/15, 4/16)		3RT1476	(p. 4/15, 4/16)	
I_e /AC-1/40 °C/≤ 690 V	A	275				400			690	
Accessories for contactors										
Auxiliary switch blocks	• On front • Lateral	3RH19, 3RT1926							(p. 3/97, 3/102) (p. 3/99, 3/100)	
Surge suppressors		3RT1956-1C (RC element)							(p. 3/104)	
Terminal covers		3RT1956-4EA.			(p. 3/118)		3RT1966-4EA.			
							(p. 3/118)			
Box terminal blocks		3RT1955-4G, 3RT1956-4G			(p. 3/116)		3RT1966-4G			
							(p. 3/116)			
3RB2 overload relays										
3RB electronic overload relays										
• For standard applications		3RB2056	50 ... 200 A	(p. 7/117, 7/118)	3RB2066	55 ... 250 A or 160 ... 630 A	(p. 7/117, 7/118)			
		3RB2153	50 ... 200 A	(p. 7/119)	3RB2163	55 ... 250 A or 160 ... 630 A	(p. 7/119)			
• For High-Feature applications		3RB22, 3RB23 and 3RB24	(p. 7/128) (p. 7/136)		3RB22, 3RB23 and 3RB24	(p. 7/128) (p. 7/136)				
		with current measuring module 3RB2956-2TH2	(p. 7/140)		with current measuring module 3RB2966-2WH2	(p. 7/140)				
		20 ... 200 A			63 ... 630 A					
3RV10 molded case motor starter protectors										
Molded case motor starter protectors		3RV1063	40 ... 200 A	(p. 7/75)	3RV1073	160 ... 400 A	(p. 7/75)	3RV1083	252 ... 630 A (p. 7/75)	
Reversing contactor assemblies¹⁾										
Complete units	Type	--								
400 V	kW	55	75	90	110	132	160	200	250	
Assembly kits/wiring modules		3RA1953-2A			(p. 3/110)		3RA1963-2A		(p. 3/110)	
							3RA1973-2A		(p. 3/110)	
Mechanical interlocks		3RA1954-2A								
		(p. 3/114)								
Contactor assemblies for star-delta (wye-delta) starting¹⁾										
Complete units	Type	--								
400 V	kW	--								
Assembly kits/wiring modules		3RA1953-2B			(p. 3/112)		3RA1963-2B		(p. 3/112)	
							3RA1973-2B		(p. 3/112)	

¹⁾ Contactor assemblies for customer assembly:
 - Reversing contactor assemblies, see pages 3/168 to 3/170,
 - Contactor assemblies for star-delta (wye-delta) starting, see pages 3/185 to 3/190.

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/6.

Switching Devices – Contactors and Contactor Assemblies

Power Contactors for Switching Motors

Introduction



Size **14**
Type **3TF6**

3TF68/3TF69 vacuum contactors

Type	3TF68 (p. 3/136, 3/137)	3TF69 (p. 3/136, 3/137)
------	-----------------------------------	-----------------------------------

AC-3

I_e /AC-3/400 V	A	630	820
400 V	kW	335	450
230 V	kW	200	260
690 V	kW	600	800
1 000 V	kW	600	800

AC-4 (at $I_a = 6 \times I_e$)

400 V	kW	355	400
400 V	kW	168	191
(200 000 operating cycles)			

AC-1 (40 °C, ≤ 690 V)

I_e	A	700	910
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Accessories for contactors

Auxiliary switch blocks

• Lateral	3TY7561	(p. 3/138)
-----------	----------------	------------

Surge suppressors

	3TX7572	(p. 3/139)
--	----------------	------------

Terminal covers	3TX7686, 3TX7696	(p. 3/139)
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3RB2 overload relays

3RB electronic overload relays

• For standard applications	3RB2066, 3RB2163	55 ... 250 A or 160 ... 630 A	(p. 7/117, 7/118) (p. 7/119)	3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1 with 3UF series transformer up to 820 A	(p. 7/128, 7/136) (p. 7/140)
• For High-Feature applications	3RB22, 3RB23 and 3RB24 with current measuring module 3RB2966-2WH2	63 ... 630 A	(p. 7/128, 7/136) (p. 7/140)		

3RV10 molded case motor starter protectors

Molded case motor starter protectors	3RV1083	252 ... 630 A	(p. 7/75)
--------------------------------------	----------------	---------------	-----------

Reversing contactor assemblies

Complete units	Type	--
400 V	kW	335
Assembly kits/wiring modules	3TX7680-1A	(Industry Mall)
Mechanical interlocks	3TX7686-1A	(Industry Mall)

Contactor assemblies for star-delta (wye-delta) starting

Complete units	Type	--
400 V	kW	630
Assembly kits/wiring modules	3TX7680-1B	(Industry Mall)

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/6.

Switching Devices – Contactors and Contactor Assemblies

Power Contactors for Switching Motors

Introduction



Size --
Type 3TG10

3TG10 power relays/miniature contactors

Type **3TG10**
Number of main contacts 4
AC, DC operation (p. 3/152)

AC-1

I_e at 400 V 55 °C **A** **20**

P at 400 V **kW** **13**

At 230 V kW 7.5

AC-2 and AC-3

I_e up to 400 V A 8.4





P at 400 V **kW** **4**

Connection methods

The contactors are available with screw terminals (box terminals or flat connectors) or with spring-type terminals.

Devices of the 3TF2 series are also available for connection with flat connectors and solder pin connectors.

The 3TG10 power relays/miniature contactors are available with screw terminals or flat connectors.

-  Screw terminals
-  Spring-type terminals
-  Flat connectors
-  Solder pin connections

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Use of 3RT contactors, 3RT and 3TF vacuum contactors, reversing contactor assemblies, and contactor assemblies for star-delta (wye-delta) starting with IE3/IE4 motors

Note:

For the use of 3RT contactors, 3RT and 3TF vacuum contactors, reversing contactor assemblies and contactor assemblies for star-delta (wye-delta) starting in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, [see Application Manual](#).

For more information, [see page 1/7](#).

SUVA-certified safety contactors

We offer special safety contactors for use in safety-related applications. They have NC contacts with mirror contact function and they have SUVA certification. This means they have non-removable auxiliary switch blocks and cannot be operated manually. They thus comply with all requirements for use in safety applications.

Power Contactors for Switching Motors

General data

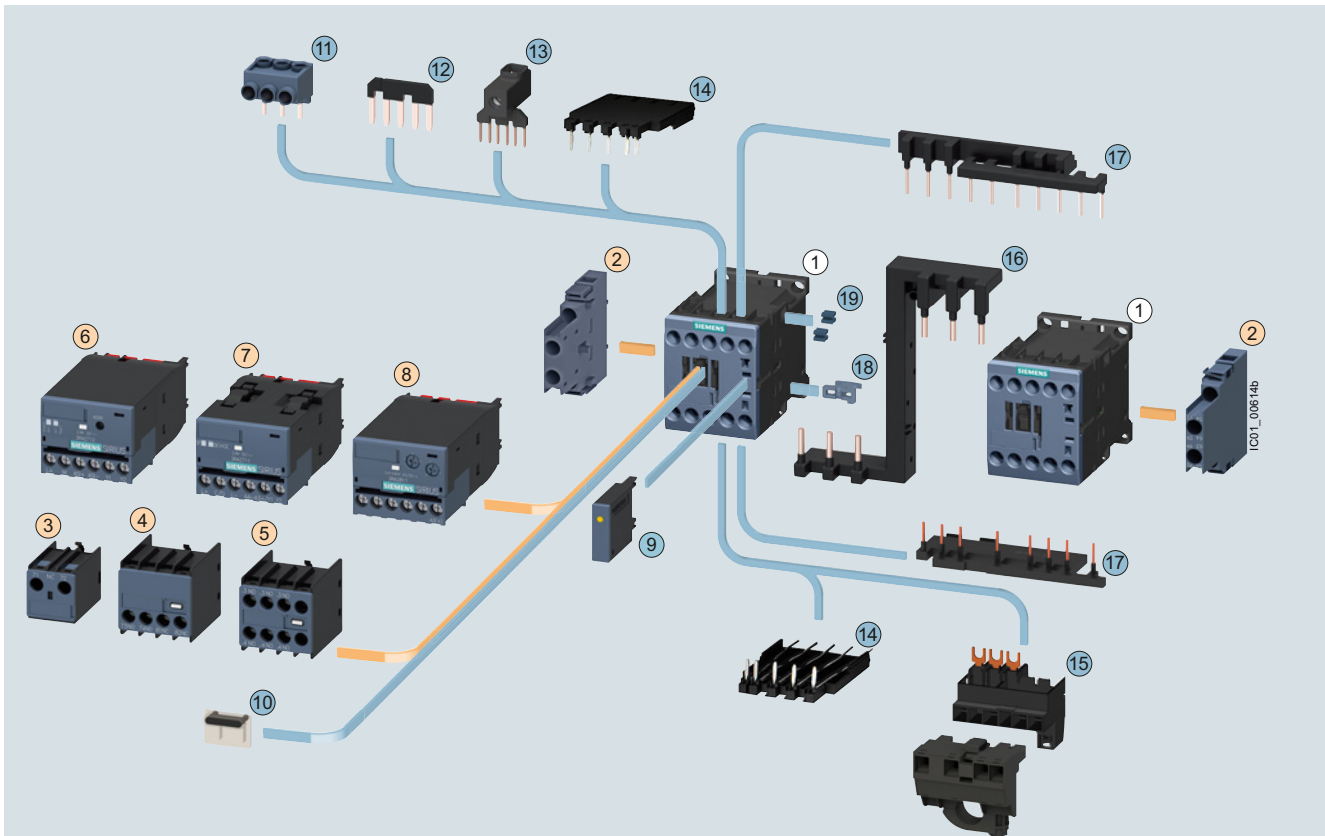
Overview

The SIRIUS family of controls

The SIRIUS modular system with its components for the switching, starting, protection and monitoring of motors and industrial systems stands for the fast, flexible and space-saving construction of control cabinets.

3RT2.1 contactors · Size S00 with mountable accessories

The figure shows the version with screw terminals



① Contactor, size S00

② 2-pole auxiliary switch block, laterally mountable

③ 1-pole auxiliary switch block, for snapping onto the front cable entry from the top

④ 2-pole auxiliary switch block, for snapping onto the front cable entry from the bottom

⑤ 4-pole auxiliary switch block, for snapping onto the front

⑥ 3RA27 function module for AS-Interface, direct-on-line starting

⑦ 3RA27 function module for IO-Link, direct-on-line starting

⑧ 3RA28 function module

⑨ Surge suppressor with/without LED

⑩ Cover, sealable

⑪ Three-phase feeder terminal

⑫ Star jumper, 3-pole, without connecting terminal

⑬ Link for paralleling, 3-pole, with connecting terminal

⑭ Solder pin adapter

⑮ Connection module (adapter and connector) for contactors with screw-type connection

⑯ Safety main current connector for two contactors

Assembly kit 3RA2913-2AA1 comprising:

⑰ Wiring modules on the top and bottom for connecting the main, auxiliary and control current paths, electrical interlock¹⁾ included, can be broken off (NC contact interlock)

⑱ Mechanical interlocks²⁾

⑲ Two connecting clips for two contactors²⁾

● For contactors

● For contactors and coupling contactors

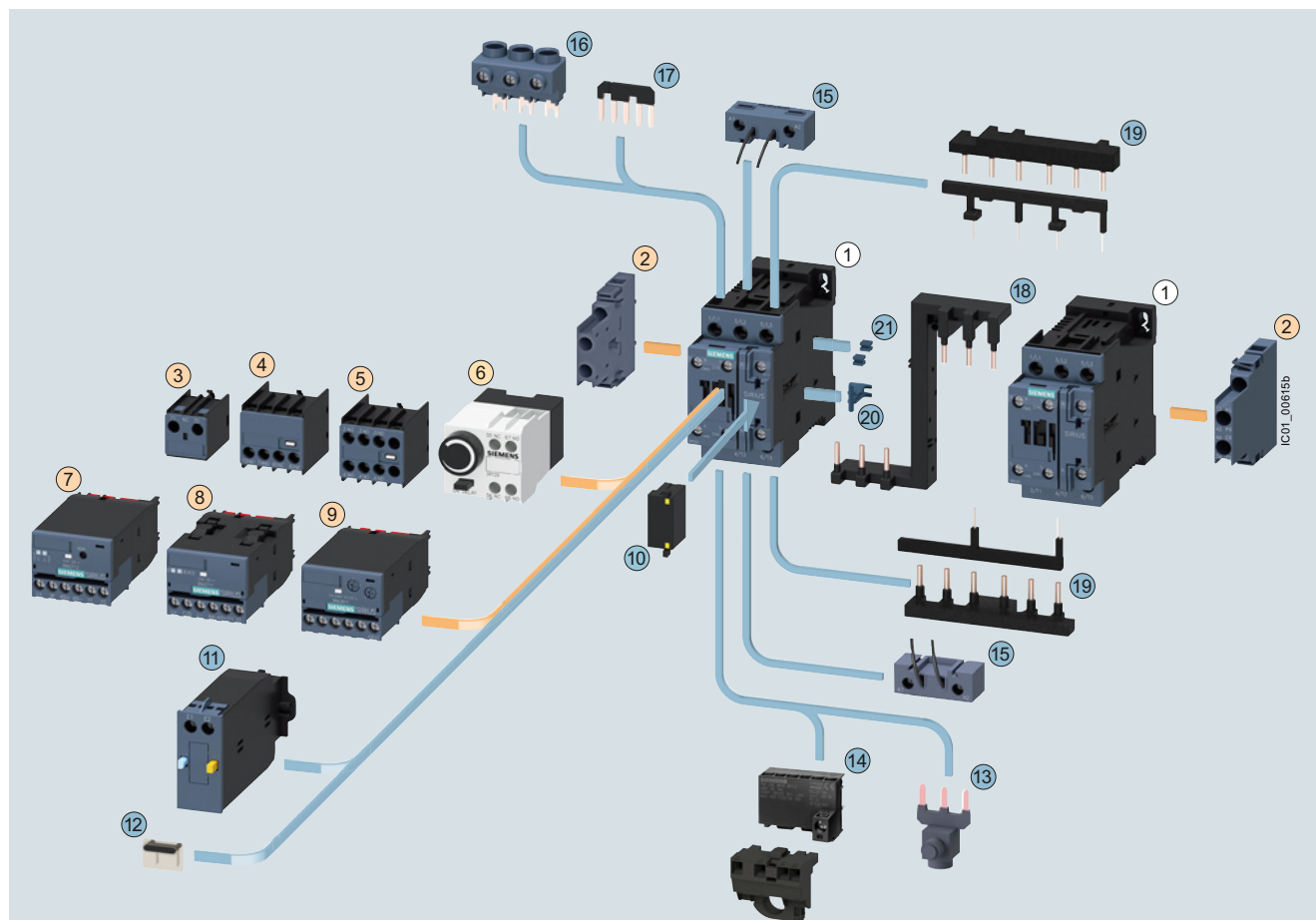
¹⁾ 3RT201. contactors with one NC contact in the basic unit are required for the electrical interlock. An additional NO contact is required for momentary-contact operation.

²⁾ The parts ⑱ and ⑲ can only be ordered together as 3RA2912-2H mechanical connectors.

Accessories and spare parts, see pages 3/76 to 3/125.

3RT2.2 contactors - Size S0 with mountable accessories

The figure shows the version with screw terminals



① Contactor, size S0

- ② 2-pole auxiliary switch block, laterally mountable
- ③ 1-pole auxiliary switch block, for snapping onto the front cable entry from the top
- ④ 2-pole auxiliary switch block, for snapping onto the front cable entry from the bottom
- ⑤ 4-pole auxiliary switch block, for snapping onto the front cable entry from the bottom
- ⑥ Pneumatically delayed auxiliary switch block
- ⑦ 3RA27 function modules for AS-Interface, direct-on-line starting
- ⑧ 3RA27 function modules for IO-Link, direct-on-line starting
- ⑨ 3RA28 function modules
- ⑩ Surge suppressor with/without LED
- ⑪ Mechanical latching block
- ⑫ Cover, sealable

- ⑬ Link for paralleling, 3-pole, with connecting terminal
- ⑭ Connection module (adapter and plug) for contactors with screw-type connection
- ⑮ Coil terminal module, on the top and bottom
- ⑯ Three-phase feeder terminal
- ⑰ Link for paralleling (star jumper), 3-pole, without connecting terminal
- ⑱ Safety main current connector for two contactors

Assembly kit 3RA2923-2AA1

comprising:

- ⑲ Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included (NC contact interlock)
- ⑳ Mechanical interlocks¹⁾
- ㉑ Two connecting clips for two contactors¹⁾

○ For contactors

○ For contactors and coupling contactors

¹⁾ The parts ⑳ and ㉑ can only be ordered together as 3RA2922-2H mechanical connectors.

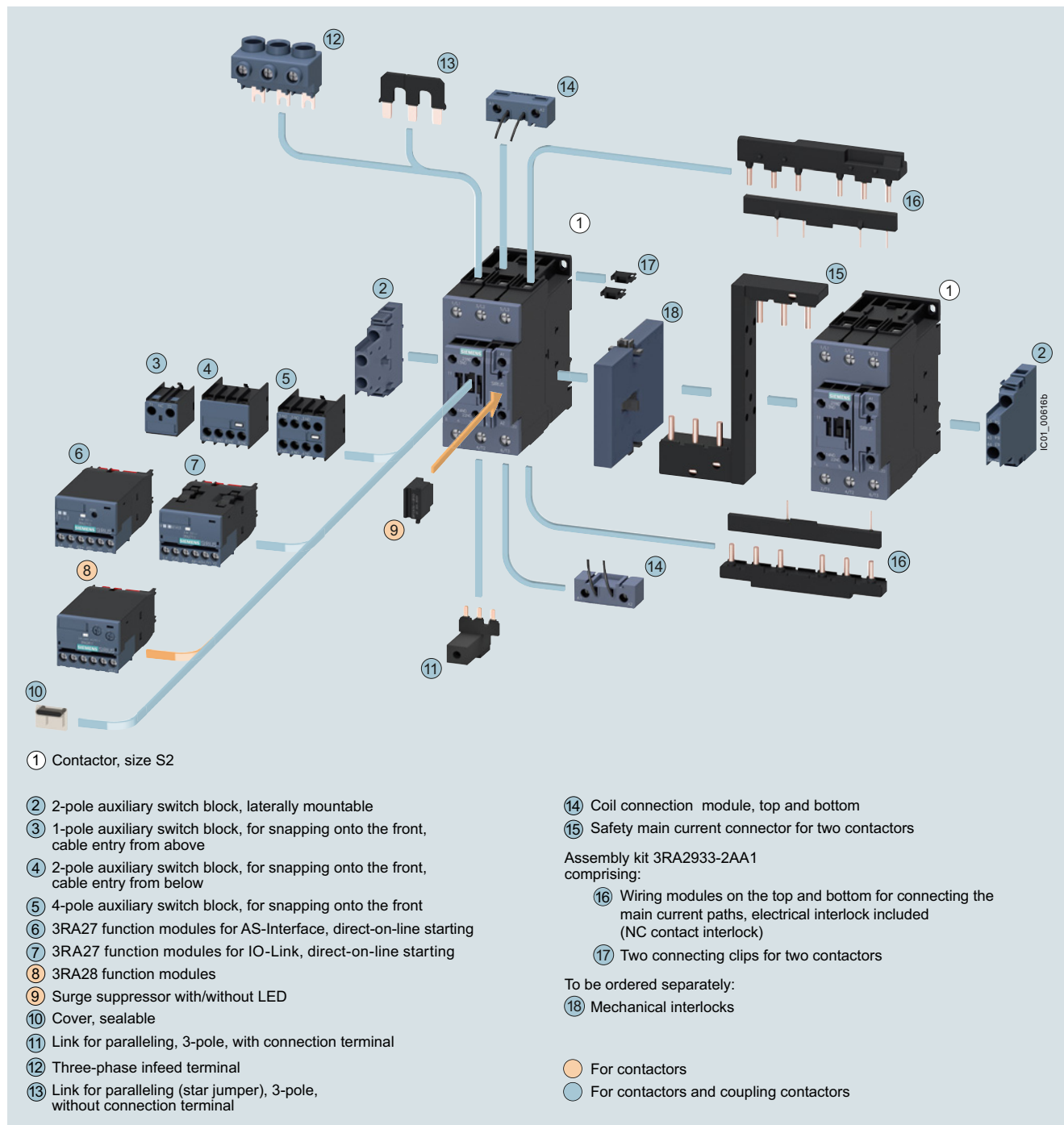
Accessories and spare parts, see pages 3/76 to 3/125.

Power Contactors for Switching Motors

General data

3RT2.3 contactors · Size S2 with mountable accessories

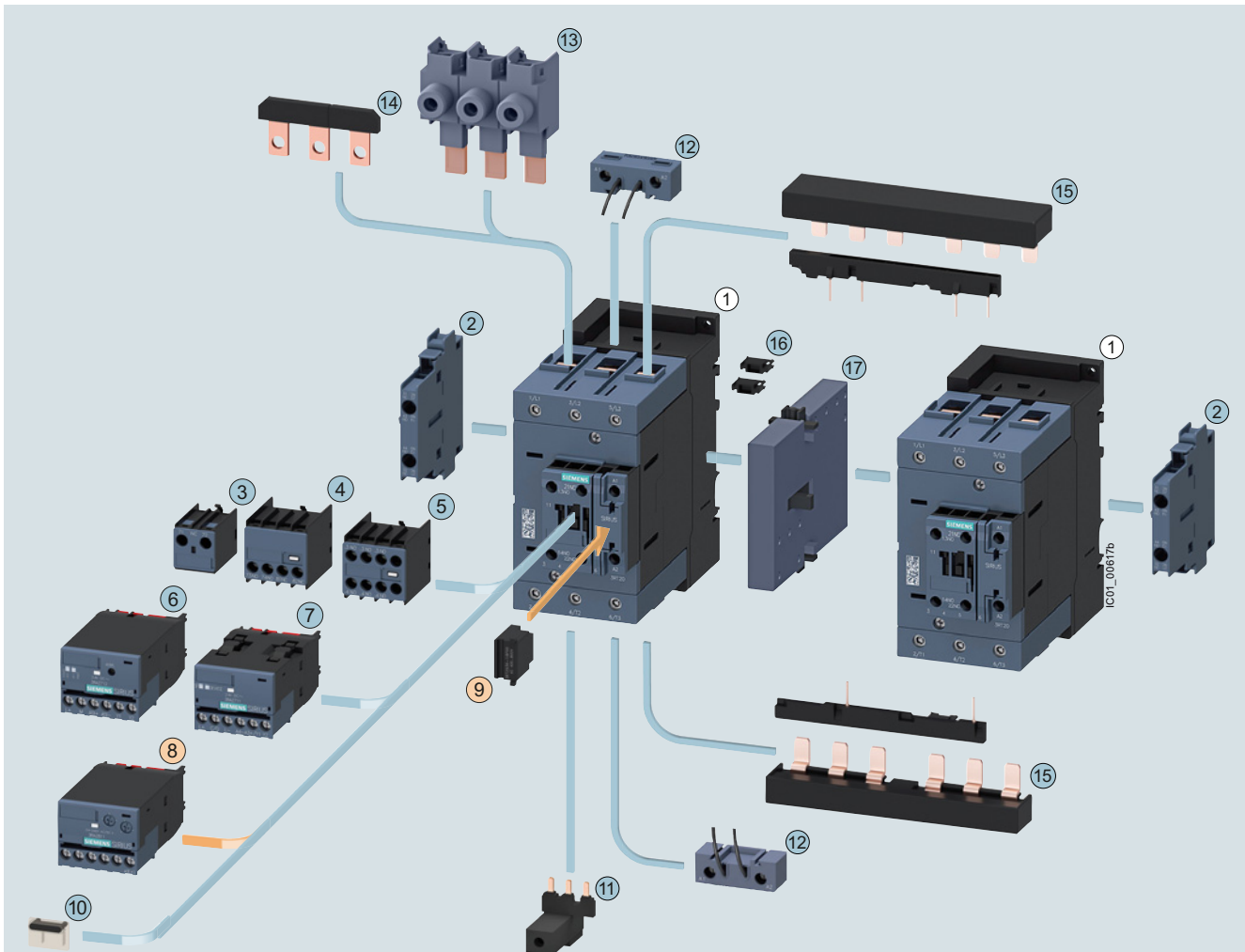
The figure shows the version with screw terminals



Accessories and spare parts, see pages 3/76 to 3/125.

3RT2.4 contactors - Size S3 with mountable accessories

The figure shows the version with screw terminals



① Contactor, size S3

- ② 2-pole auxiliary switch block, laterally mountable
- ③ 1-pole auxiliary switch block, for snapping onto the front, cable entry from above
- ④ 2-pole auxiliary switch block, for snapping onto the front, cable entry from below
- ⑤ 4-pole auxiliary switch block, for snapping onto the front
- ⑥ 3RA27 function modules for AS-Interface, direct-on-line starting
- ⑦ 3RA27 function modules for IO-Link, direct-on-line starting
- ⑧ 3RA28 function modules
- ⑨ Surge suppressor with/without LED
- ⑩ Cover, sealable

- ⑪ Links for paralleling, 3-pole, with connection terminal
- ⑫ Coil connection module, top and bottom
- ⑬ Single-phase infeed terminals (3 units)
- ⑭ Links for paralleling (star jumper), 3-pole without connecting terminal

Assembly kit 3RA2943-2AA1 comprising:

- ⑮ Wiring modules on the top and bottom for connecting the main, auxiliary and control current paths, electrical interlock¹⁾ included, interruptible (NC contact interlock)
- ⑯ Two connectors for two contactors

To be ordered separately:

- ⑰ Mechanical interlock

○ For contactors

● For contactors and coupling contactors

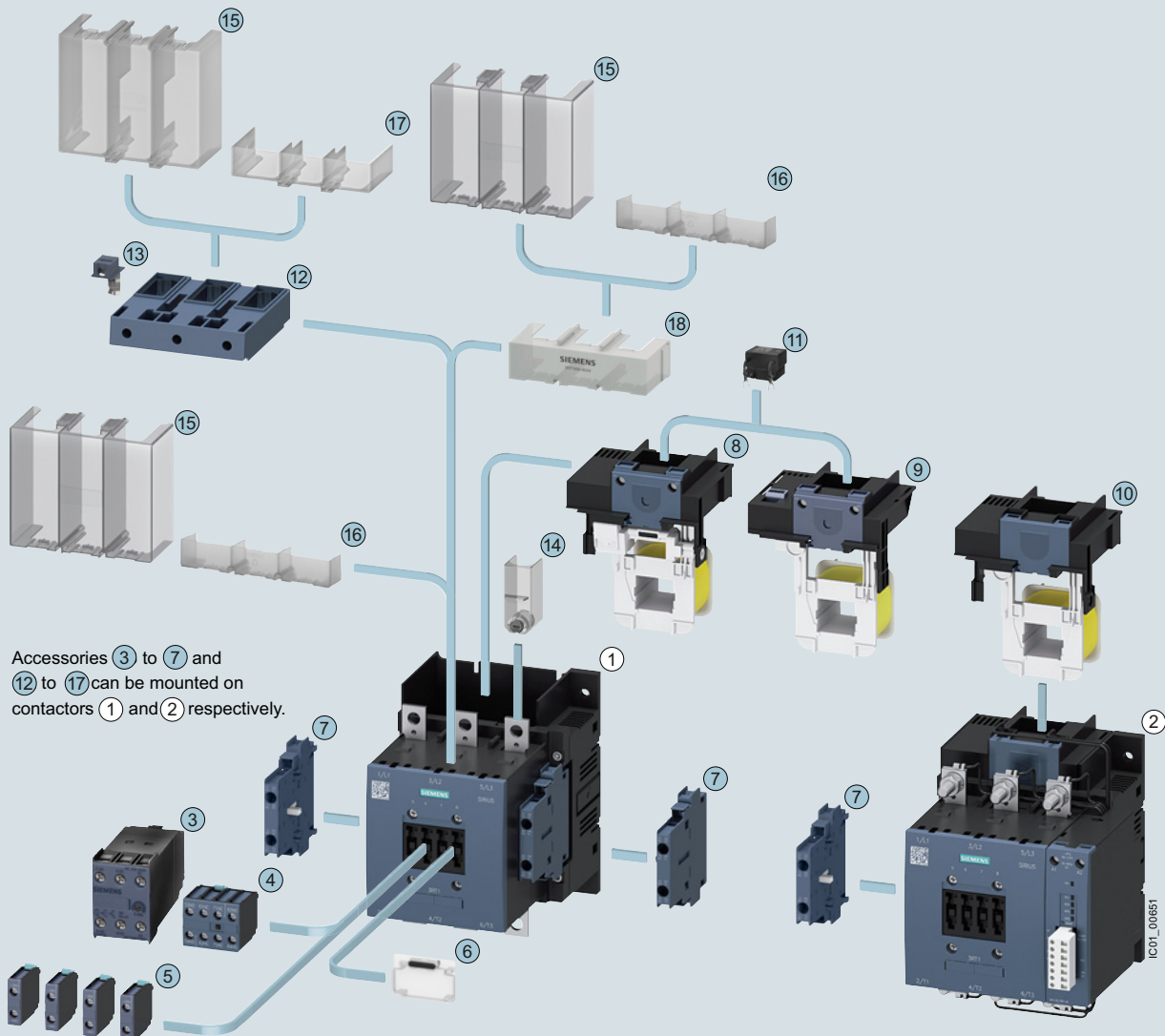
¹⁾ 3RT201. contactors with one NC contact in the basic unit are required for the electrical interlock. An additional NO contact is required for momentary-contact operation.

Accessories and spare parts, see pages 3/76 to 3/125.

Power Contactors for Switching Motors

General data

3RT105 and 3RT145 contactors · Size S6 with mountable accessories



Accessories ③ to ⑦ and ⑫ to ⑰ can be mounted on contactors ① and ② respectively.

- ① 3RT105 and 3RT145 air-break contactors, size S6 (version without withdrawable coil)
- ② 3RT105.-P and 3RT145.-P air-break contactors with solid-state operating mechanism and remaining lifetime indicator, size S6 (version with withdrawable coil and laterally mountable add-on module)

Can be mounted on the front of contactors ① and ②

- ③ 3RT1926: Auxiliary switch block, electronically delayed (ON-delay or OFF-delay or star-delta (wye-delta) start)
- ④ 3RH192: 4-pole auxiliary switch block
- ⑤ 3RH192: 1-pole auxiliary switch block (max. four can be snapped on)
- ⑥ 3RT1926-4MA10: Cover, sealable

Can be mounted on the side of contactors ① and ②

- ⑦ 3RH192: 2-pole auxiliary switch block

Can be inserted in top of contactors

- ⑧ 3RT1955-5A.3.: Withdrawable coil, standard operating mechanism
- ⑨ 3RT1955-5N.3.: Withdrawable coil, solid-state operating mechanism
- ⑩ 3RT1955-5P.3.: Withdrawable coil, solid-state operating mechanism and remaining lifetime indicator

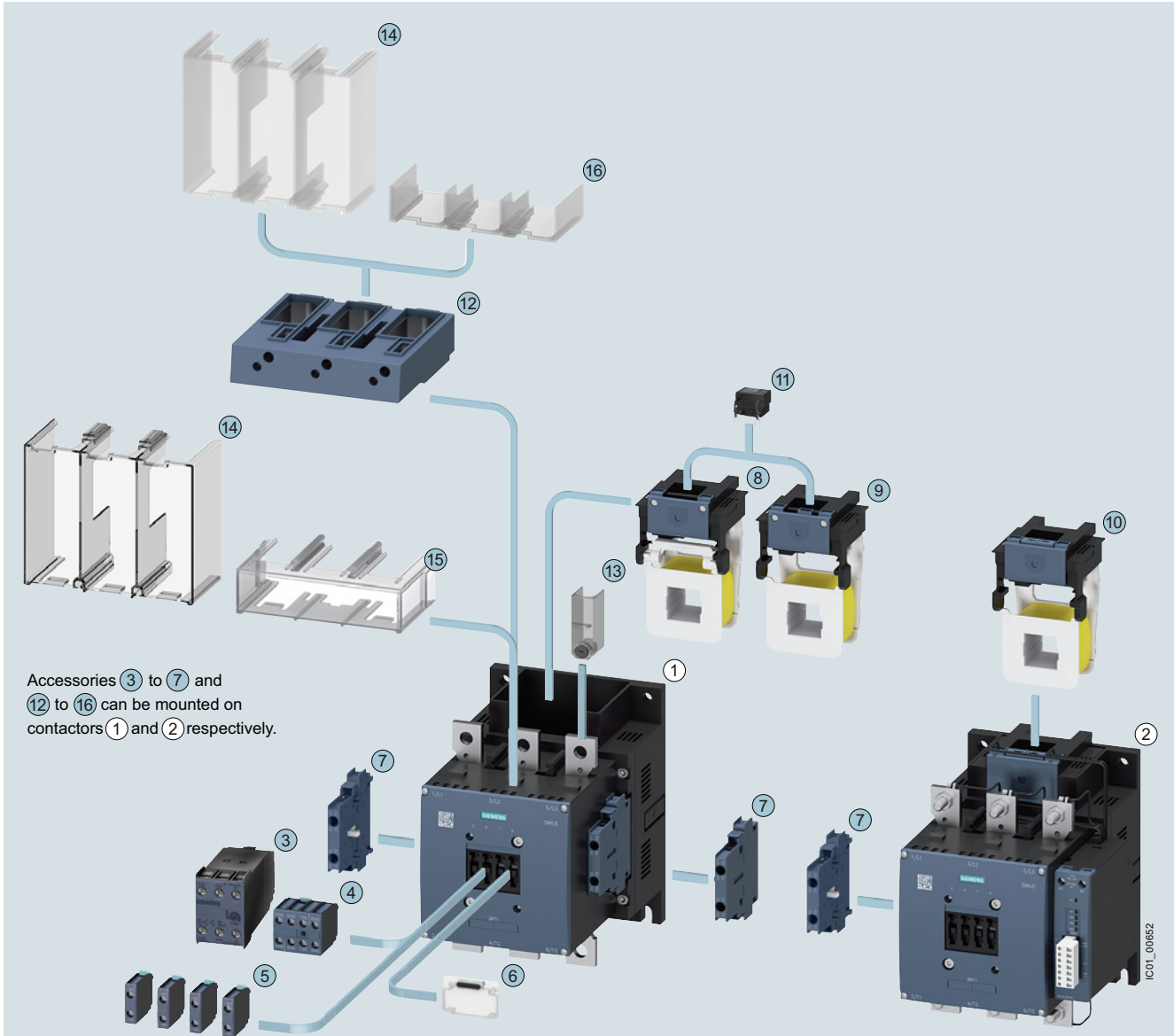
Can be plugged onto the top of contactor operating mechanisms ⑧ and ⑨

- ⑪ 3RT1956-1C: Surge suppressor (RC element)

Can be mounted at the top or bottom on busbars or box terminals of contactors ① and ②

- ⑫ 3RT1956-4G: Box terminal block
- ⑬ 3TX7500-0A: Auxiliary terminal, 1-pole
- ⑭ 3TX6526-3B: Terminal cover (can be screwed on), covers one busbar connection
- ⑮ 3RT1956-4EA1: Terminal cover for busbar connection and on box terminal
- ⑯ 3RT1956-4EA3: Terminal cover for busbar connection
- ⑰ 3RT1956-4EA2: Terminal cover on box terminal
- ⑱ 3RT1956-4EA4: Terminal cover for busbar connection, covers ⑮, ⑯ and ⑱ can be mounted

Accessories and spare parts, see pages 3/76 to 3/125.

3RT106 and 3RT146 contactors · Size S10 with mountable accessories

Accessories ③ to ⑦ and ⑫ to ⑯ can be mounted on contactors ① and ② respectively.

- ① 3RT106 and 3RT146 air-break contactors, size S10 (version without withdrawable coil)
- ② 3RT106.-P and 3RT146.-P air-break contactors with solid-state operating mechanism and remaining lifetime indicator, size S10 (version with withdrawable coil and laterally mountable add-on module)

Can be mounted on the front of contactors ① and ②

- ③ 3RT1926: Auxiliary switch block, electronically delayed (ON-delay or OFF-delay or star-delta (wye-delta) start)
- ④ 3RH192: 4-pole auxiliary switch block
- ⑤ 3RH192: 1-pole auxiliary switch block (max. four can be snapped on)
- ⑥ 3RT1926-4MA10: Cover, sealable

Can be mounted on the side of contactors ① and ②

- ⑦ 3RH192: 2-pole auxiliary switch block

Can be inserted in top of contactors

- ⑧ 3RT1965-5A.3.: Withdrawable coil, standard operating mech.
- ⑨ 3RT1965-5N.3.: Withdrawable coil, solid-state operating mech.
- ⑩ 3RT1965-5P.3.: Withdrawable coil, solid-state operating mech. and remaining lifetime indicator

Can be plugged onto top of contactor operating mechanisms ⑧ and ⑨

- ⑪ 3RT1956-1C: Surge suppressor (RC element)

Can be mounted at the top or bottom on busbars or box terminals of contactors ① and ②

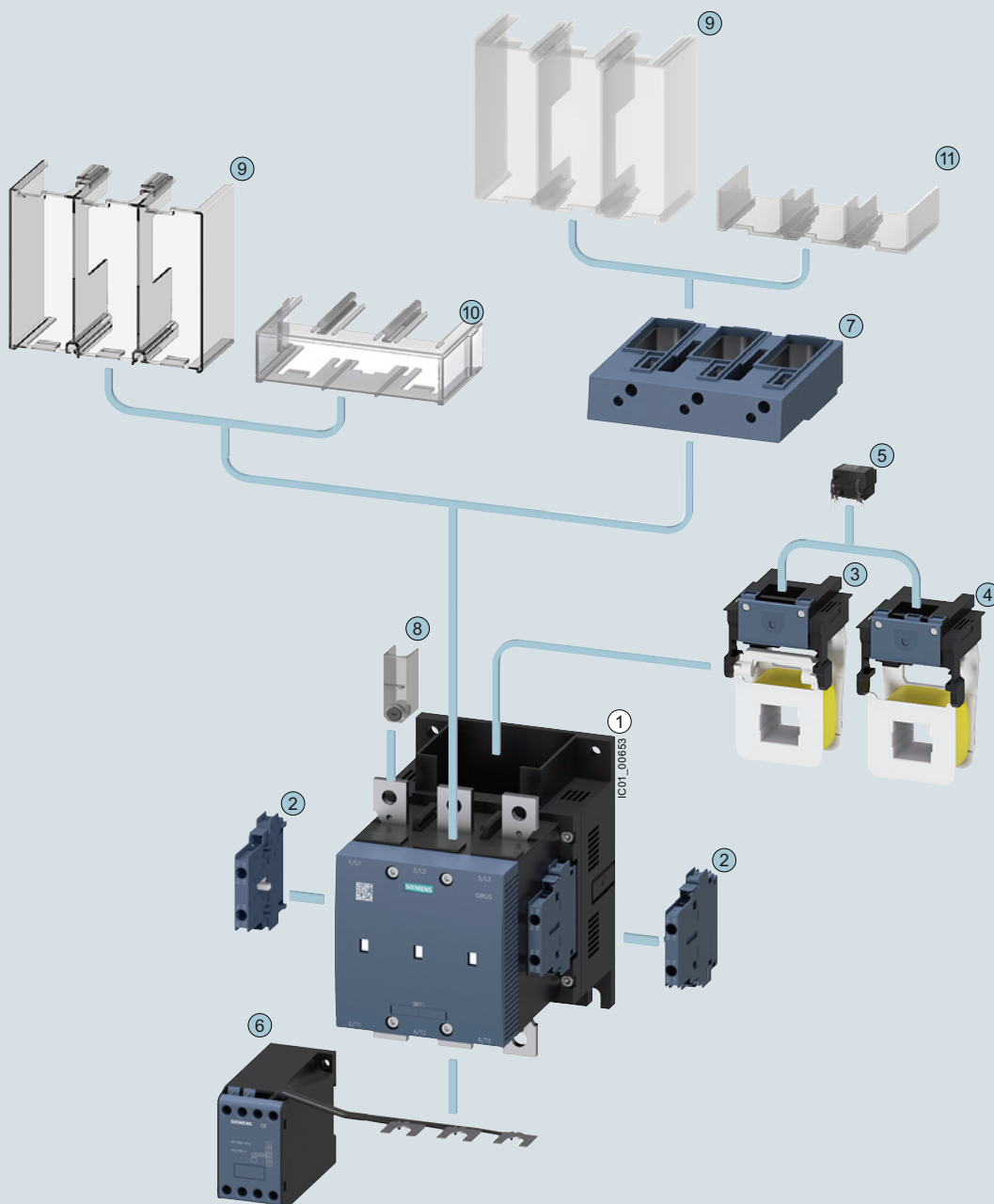
- ⑫ 3RT1966-4G: Box terminal block
- ⑬ 3TX6546-3B: Terminal cover (can be screwed on), covers one busbar connection
- ⑭ 3RT1966-4EA1: Terminal cover for busbar connection and on box terminal
- ⑮ 3RT1966-4EA3: Terminal cover for busbar connection
- ⑯ 3RT1966-4EA2: Terminal cover on box terminal

Accessories and spare parts, see pages 3/76 to 3/125.

Power Contactors for Switching Motors

General data

3RT126 vacuum contactors · Size S10 with mountable accessories



- ① 3RT126 vacuum contactor, size S10
(version without withdrawable coil)

Can be mounted on side of contactor

- ② 3RH192: 2-pole auxiliary switch block

Can be inserted in top of contactor

- ③ 3RT1966-5A.3.: Withdrawable coil, standard operating mechanism
④ 3RT1966-5N.3.: Withdrawable coil, solid-state operating mechanism

Can be plugged onto top of contactor operating mechanisms

- ⑤ 3RT1956-1C: Surge suppressor (RC element)

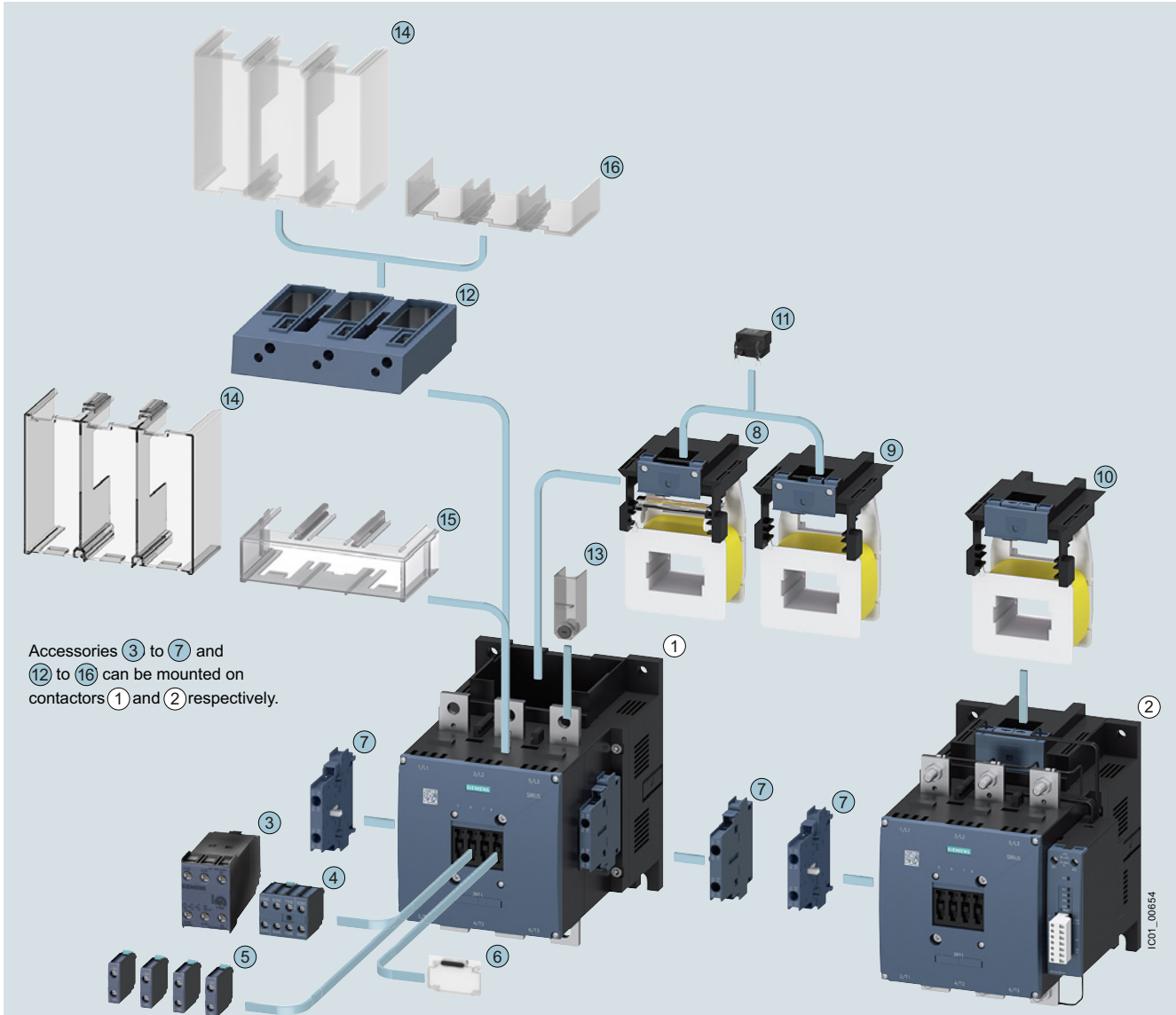
Can be mounted at bottom on busbars

- ⑥ 3RT1966-1PV.: Main current path surge suppression module

Can be mounted on the top or bottom on busbars or box terminals

- ⑦ 3RT1966-4G: Box terminal block
⑧ 3TX6546-3B: Terminal cover (can be screwed on), covers one busbar connection
⑨ 3RT1966-4EA1: Terminal cover for busbar connection and on box terminal
⑩ 3RT1966-4EA3: Terminal cover for busbar connection
⑪ 3RT1966-4EA2: Terminal cover on box terminal

Accessories and spare parts, see pages 3/76 to 3/125 and 3/138 to 3/141.

3RT107 and 3RT147 contactors · Size S12 with mountable accessories

Accessories ③ to ⑦ and ⑫ to ⑯ can be mounted on contactors ① and ② respectively.

- ① 3RT107 and 3RT147 air-break contactors, size S12 (version without withdrawable coil)
 - ② 3RT107.-P and 3RT147.-P air-break contactors with solid-state operating mechanism and remaining lifetime indicator, size S12 (version with withdrawable coil and laterally mountable add-on module)
- Can be mounted on the front of contactors ① and ②**
- ③ 3RT1926: Auxiliary switch block, electronically delayed (ON-delay or OFF-delay or star-delta (wye-delta) start)
 - ④ 3RH192: 4-pole auxiliary switch block
 - ⑤ 3RH192: 1-pole auxiliary switch block (max. four can be snapped on)
 - ⑥ 3RT1926-4MA10: Cover, sealable
- Can be mounted on the side of contactors ① and ②**
- ⑦ 3RH192: 2-pole auxiliary switch block

Can be inserted in top of contactors

- ⑧ 3RT1975-5A.3.: Withdrawable coil, standard operating mech.
- ⑨ 3RT1975-5N.3.: Withdrawable coil, solid-state operating mech.
- ⑩ 3RT1975-5P.3.: Withdrawable coil, solid-state operating mech. and remaining lifetime indicator

Can be plugged onto top of contactor operating mechanisms ⑧ and ⑨

- ⑪ 3RT1956-1C: Surge suppressor (RC element)

Can be mounted at the top or bottom on busbars or box terminals of contactors ① and ②

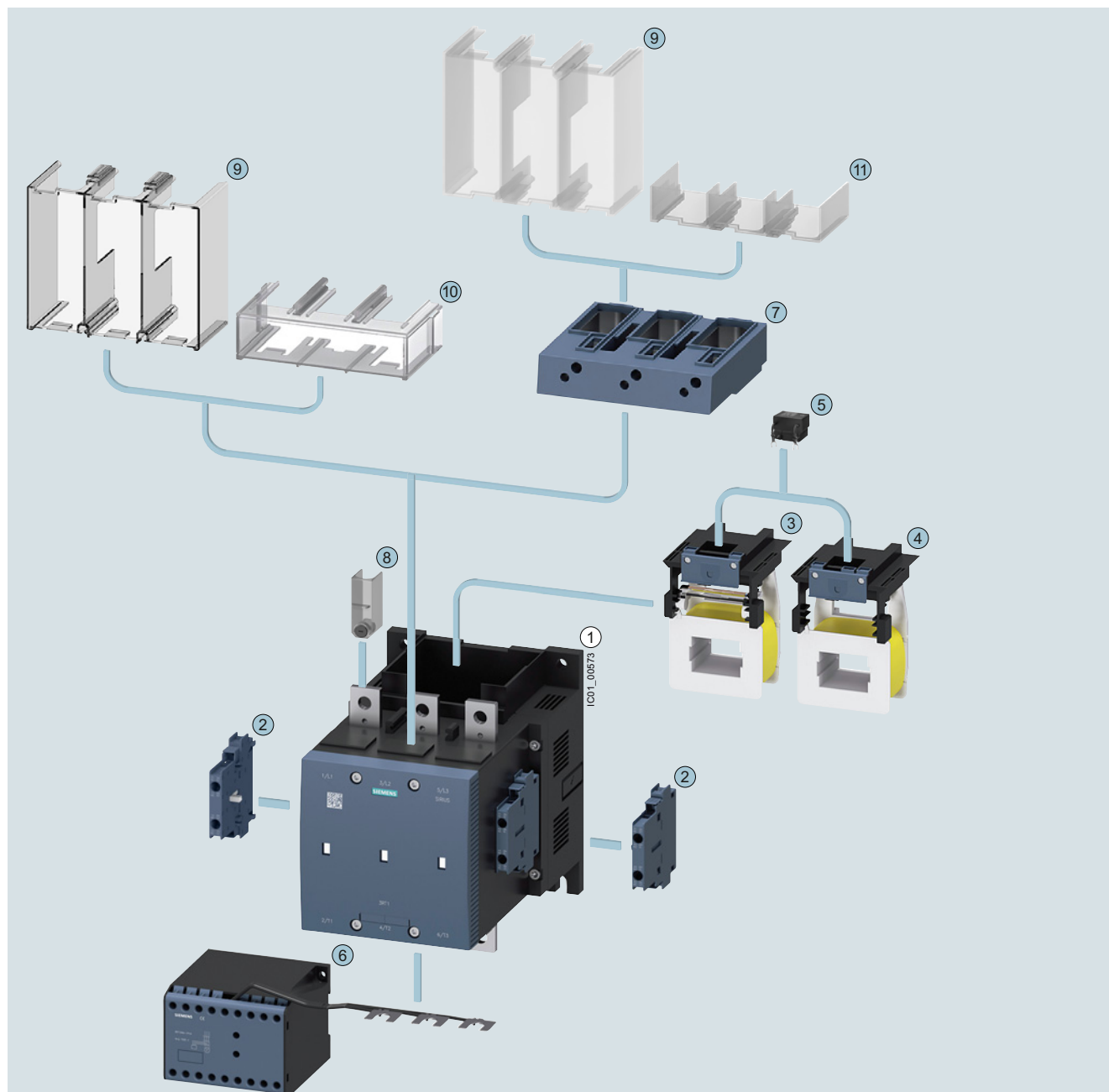
- ⑫ 3RT1966-4G: Box terminal block
- ⑬ 3TX6546-3B: Terminal cover (can be screwed on), covers one busbar connection
- ⑭ 3RT1966-4EA1: Terminal cover for busbar connection and on box terminal
- ⑮ 3RT1966-4EA3: Terminal cover for busbar connection
- ⑯ 3RT1966-4EA2: Terminal cover on box terminal

Accessories and spare parts, see pages 3/76 to 3/125.

Power Contactors for Switching Motors

General data

3RT127 vacuum contactors · Size S12 with mountable accessories



- ① 3RT127 Vacuum contactor, size S12
(version without withdrawable coil)

Can be mounted on the side of contactor

- ② 3RH192: 2-pole auxiliary switch block

Can be inserted in top of contactors

- ③ 3RT1955-5A.3.: Withdrawable coil, standard operating mechanism
④ 3RT1955-5N.3.: Withdrawable coil, solid-state operating mechanism

Can be plugged onto the top of contactor operating mechanisms

- ⑤ 3RT1956-1C: Surge suppressor (RC element)

Can be mounted at bottom on busbars

- ⑥ 3RT1966-1PV.: Main current path surge suppression module

Can be mounted at the top or bottom on busbars or box terminals

- ⑦ 3RT1956-4G: Box terminal block
⑧ 3TX6526-3B: Terminal cover (can be screwed on), covers one busbar connection
⑨ 3RT1956-4EA1: Terminal cover for busbar connection and on box terminal
⑩ 3RT1956-4EA3: Terminal cover for busbar connection
⑪ 3RT1956-4EA2: Terminal cover on box terminal

Accessories and spare parts, see pages 3/76 to 3/125 and 3/138 to 3/141.

Overview

Version	Size	Ratings of three-phase motors at 50 Hz and 400 V kW	Connection methods		Type	Page
			Screw terminals	Spring-type terminals		
Power contactors for switching motors						
AC operation						
Basic unit	S00	3 ... 7.5	✓	✓	3RT201.-A.0.	3/55
• With permanently mounted auxiliary switch block (SUVA-certified safety contactor)			✓	✓	3RT201.-...P04-3MA0	3/55
Basic unit	S0	4 ... 18.5	✓	✓	3RT202.-A.00	3/56
• With removable mounted auxiliary switch block			✓	✓	3RT202.-A.04	3/57
• With permanently mounted auxiliary switch block (SUVA-certified safety contactor)			✓	✓	3RT202.-CL24-3MA0	3/57
Basic unit	S2	18.5 ... 37	✓	✓	3RT203.-A.00	3/58
• With removable mounted auxiliary switch block			✓	--	3RT203.-1A.04	3/58
• With permanently mounted auxiliary switch block			✓	✓	3RT203.-CL24-3MA0	3/58
Basic unit	S3	37 ... 55	✓	✓	3RT20.-A.00	3/59
• With removable mounted auxiliary switch block			✓	--	3RT204.-1A.04	3/59
• With permanently mounted auxiliary switch block			✓	--	3RT204.-1CL24-3MA0	3/59
DC operation						
Basic unit	S00	3 ... 7.5	✓	✓	3RT201.-B.4.	3/60
• With integrated coil circuit			✓	✓	3RT201.-B.4.	3/60
• With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and integrated coil circuit (diode)			✓	✓	3RT201.-B.44-3MA0	3/61
• With voltage tap-off			✓	✓	3RT201.-BB4.-0CC0	3/61
Basic unit	S0	4 ... 18.5	✓	✓	3RT202.-B.40	3/64
• With coil circuit plugged into front			✓	✓	3RT202.-B.40	3/64
• With removable mounted auxiliary switch block			✓	✓	3RT202.-BB44	3/64
• With permanently mounted auxiliary switch block (SUVA-certified safety contactor)			✓	✓	3RT202.-B.44-3MA0	3/65
• With voltage tap-off			✓	✓	3RT202.-BB40-0CC0	3/65
DC operation for direct control from the PLC (coupling relays)						
Basic unit						
• With and without integrated coil circuit	S00	3 ... 5.5	✓	✓	3RT201.-...B.4.	3/62, 3/63
• With integrated coil circuit	S0	4 ... 15	✓	✓	3RT202.-KB40	3/66
	S2	18.5 ... 37	✓	✓	3RT203.-KB40	3/67
	S3	37 and 45	✓	✓	3RT204.-KB40	3/67
AC/DC operation (50/60 Hz AC or DC)						
Basic unit with integrated coil circuit	S0	5.5 ... 18.5	✓	✓	3RT202.-N.30	3/68
Basic unit with integrated coil circuit	S2	18.5 ... 37	✓	✓	3RT203.-N.30	3/69
• With removable mounted auxiliary switch block			✓	--	3RT203.-1N.34	3/69
• With permanently mounted auxiliary switch block			✓	✓	3RT203.-NB34-3MA0	3/69
• With voltage tap-off			✓	✓	3RT203.-NB30-0CC0	3/69
Basic unit with integrated coil circuit	S3	37 ... 55	✓	✓	3RT204.-N.30	3/70
• With removable mounted auxiliary switch block			✓	--	3RT204.-1N.34	3/70
• With permanently mounted auxiliary switch block			✓	✓	3RT204.-NB34-3MA0	3/70
• With voltage tap-off			✓	✓	3RT204.-NB30-0CC0	3/70
Basic unit with <u>standard operating mechanism</u>	S6 ... S12	55 ... 250	✓ ¹⁾	✓	3RT10.-A.36	3/71
Basic unit with <u>solid-state operating mechanism</u> with the option of control via a separate 24 V DC control signal input						
• Fail-safe control signal input for safety-related applications up to SIL CL 3	S6 ... S12	55 ... 250	✓ ¹⁾	--	3RT10.-S.36	3/72
• Standard control signal input			✓ ¹⁾	✓	3RT10.-N.36	3/73
• Standard control signal input, with remaining lifetime indication (RLT)			✓ ¹⁾	--	3RT10.-P.35	3/73

-- Version not possible

✓ Version possible

¹⁾ Connection method:

- Main circuit: Busbar connection (optionally with box terminals),
- Auxiliary/control circuit: Screw terminals or spring-type terminals.

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW



Contactors with screw terminals: 3RT2 (sizes S00 to S3) and 3RT1 (sizes S6 to S12)

3RT contactors, sizes S00 to S12

Our power range:

- Contactors for switching motors:
 - Size S00: 3RT201 up to 7.5 kW
 - Size S0: 3RT202 up to 18.5 kW
 - Size S2: 3RT203 up to 37 kW
 - Size S3: 3RT204 up to 55 kW
 - Sizes S6 to S12: 3RT10 up to 250 kW
- For vacuum contactors for switching motors, [see page 3/126 onwards](#):
 - Sizes S10 and S12: 3RT12 up to 250 kW
 - Size 14: 3TF6 up to 450 kW

Standards

IEC/EN 60947-1,
IEC/EN 60947-4-1,
IEC/EN 60947-5-1 (auxiliary switches)

Ambient conditions

If the devices are used in ambient conditions which deviate from common industrial conditions (IEC 60721-3-3 "Stationary Use, Weather-Protected"), information must be obtained about possible restrictions with regard to the reliability and endurance of the device and possible protective measures. In this case contact our Technical Support:
<https://support.industry.siemens.com/My/ww/en/requests>

Auxiliary contact complement

- Size S00: an auxiliary contact is integrated in the basic device.
- Sizes S0 to S3: the basic units contain two integrated auxiliary contacts (1 NO + 1 NC).
All basic units, with the exception of coupling relays in sizes S00 and S0, can be expanded using auxiliary switch blocks, [see page 3/88 for the permitted selection of auxiliary switches](#).
- Sizes S6 to S12: These contactors are supplied with two laterally mounted auxiliary switch blocks. The fitting of auxiliary switches is possible on the front and on the side (the 3RT12 vacuum contactor is an exception: only lateral fitting of auxiliary switches is possible here).

For detailed information about the fitting of auxiliary switches, [see pages 3/88 to 3/93](#).

Contact reliability

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT contactors or 3RH contactor relays should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Connection methodsMain circuit

- Sizes S00 and S0: screw or spring-type terminals, spring-type terminals with convenient plug-in design for device connectors
- Sizes S2 and S3: screw terminals with box terminal; direct connection to the connecting bar possible with cable lugs for S3 when the box terminal is removed.
- Sizes S6 to S12: screw terminals with connecting bars that the cables can be connected to using either cable lugs or flexible or rigid busbars. Alternatively, box terminals are available as accessories.

Auxiliary/control circuit

- Sizes S00 to S12: Screw or spring-type terminals

Electromagnetic compatibility (EMC)

The 3RT contactors fulfill the requirements for environment category A.

Note:

When the contactors are used in an environment with frequency converters, the configuration notes in the Manual must be observed, see "More information" page 3/23.

Short-circuit protection

Short-circuit protection of contactors without overload relays, see "Technical specifications":

- For 3RT2 contactors, see pages 3/28, 3/34, 3/38 and 3/43
- For 3RT1 contactors, see page 3/48

Refer to the configuration manuals for details of short-circuit protection of contactors with overload relays or of load feeders, see "More information" on page 3/23.

For fuseless assembly of motor feeders consisting of 3RV2 motor starter protector and 3RT2 contactor, selection guides are available, see "SIRIUS 3RA2 load feeders" from page 8/4 onwards.

Motor protection3RT2 contactors

For protection against overload, 3RU2 thermal overload relays (see page 7/92 onwards) or 3RB3 electronic overload relays (see page 7/105 onwards) can be mounted on the 3RT2 contactors.

3RT1 contactors

For protection against overload, 3RB2 electronic overload relays (see page 7/117 onwards) can be mounted on the 3RT1 contactors.

Plant and application monitoring

For monitoring and measuring in the application, 3RR2 monitoring relays can be mounted on the 3RT2 contactors (see page 10/62).

Ratings of three-phase motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

The power rating specifications of the contactors in kW (in accordance with IEC 60947-4-1, Table G) are guide values for 4-pole standard motors at 50 Hz AC and specified voltage (e.g. 400 V). The actual starting and rated data of the motor to be switched must be considered when selecting the units. The motor current, motor protection device and the permissible contactor current according to the utilization category must be aligned with each other.

Surge suppression

3RT contactors supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (assembly of diode and Zener diode for short break times) for damping opening surges in the coil, see from page 3/103 onwards.

- Size S00: the surge suppressors are plugged onto the front of the contactors here. Space is provided for them next to a snap-on auxiliary switch block.
- Sizes S0 and S3: the surge suppressors can be plugged onto the front of the devices. In the case of size S3 contactors, surge suppressors can only be used as from product version E03.
- Sizes S6 to S12: Exchangeable operating mechanisms with integrated coil circuit (varistor)

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (for details, see the relevant manual → "More information" on page 3/23).

Contactors with voltage tap-off3RT2 contactors

The size S00 to S3 contactors with voltage tap-off are special versions for mounting the SIRIUS 3RA27 function modules for connection to the control system via IO-Link or AS-Interface (see from page 3/80 onwards).

Without a function module, these contactors can be used like the standard versions.

For more information on IO-Link and AS-Interface, see "Industrial Communication", from page 2/1 onwards.

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Operating mechanism types

3RT2 contactors

3RT2 contactors are available as standard versions with AC or DC operating mechanisms or as versions with a wide-range solid-state operating mechanism and a universal actuating voltage (AC or DC operation possible).

DC coupling contactors with reduced power consumption are also ideally suited for connection to the controller.

With an operating range between 0.8 to $1.1 \times U_s$, control takes place via the control supply voltage connection A1 - A2 as is typically the case.

3RT1 contactors

The following control and/or actuator versions are available in sizes S6 to S12:

- Standard operating mechanism with economy circuit for AC and DC operation (switchover from closing coil to holding coil)
- Solid-state operating mechanisms
Overvoltage damping of the operating mechanism coil is already integrated in the electronics for contactors with solid-state operating mechanisms. The operating mechanisms are powered via a supply voltage with an operating range from 0.8 to $1.1 \times U_s$, optionally also controlled depending on the chosen mode of operation. Alternatively, control is via the separate 24 V DC control signal input. Various rated voltage ranges for AC/DC control are available.

The following versions are available:

- With two operating modes: Direct control or via CPU input
- As above, but additionally with remaining lifetime indication (RLT)
- With fail-safe PLC input for simplification of safety applications (without mode of operation selection)

Solenoid coils/drive units

3RT2 contactors

Coil replacement is possible for sizes S0 to S3.

3RT1 contactors

The operating mechanisms for 3RT10...A/-N/-P contactors are removable and can be replaced simply by unlocking and pulling them out.

NOTICE: Removal or changing of the operating mechanism is not permitted for 3RT10...S contactors with fail-safe control.

Safety applications

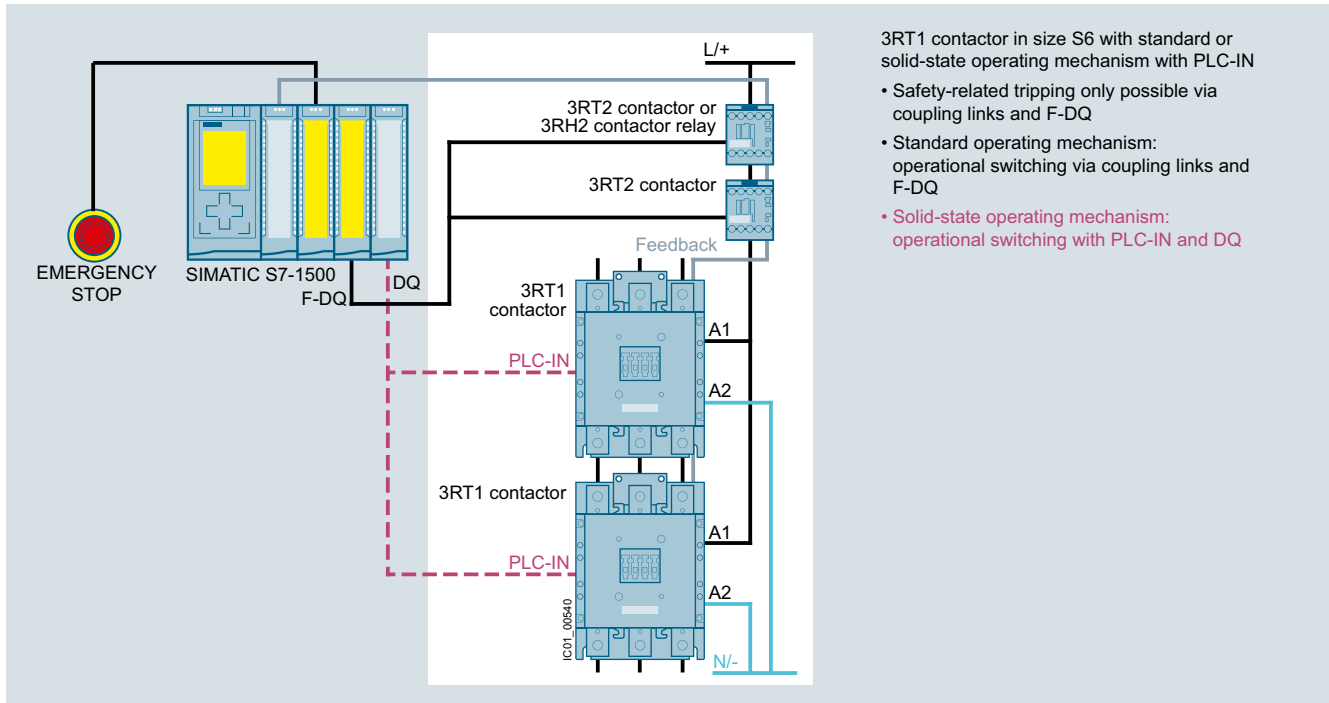
Contactors are a significant part of safety-related applications. They are generally the actuators that perform the switching operation leading to the safe disconnection of the corresponding application or system.

While contactors with smaller power ratings can be connected directly to the outputs of fail-safe controllers, implementing

safety-related applications with standard contactors with higher power is much more complicated and elaborate because of the necessary coupling links. Due to their fail-safe control input, the special versions provide a much simpler way of doing this.

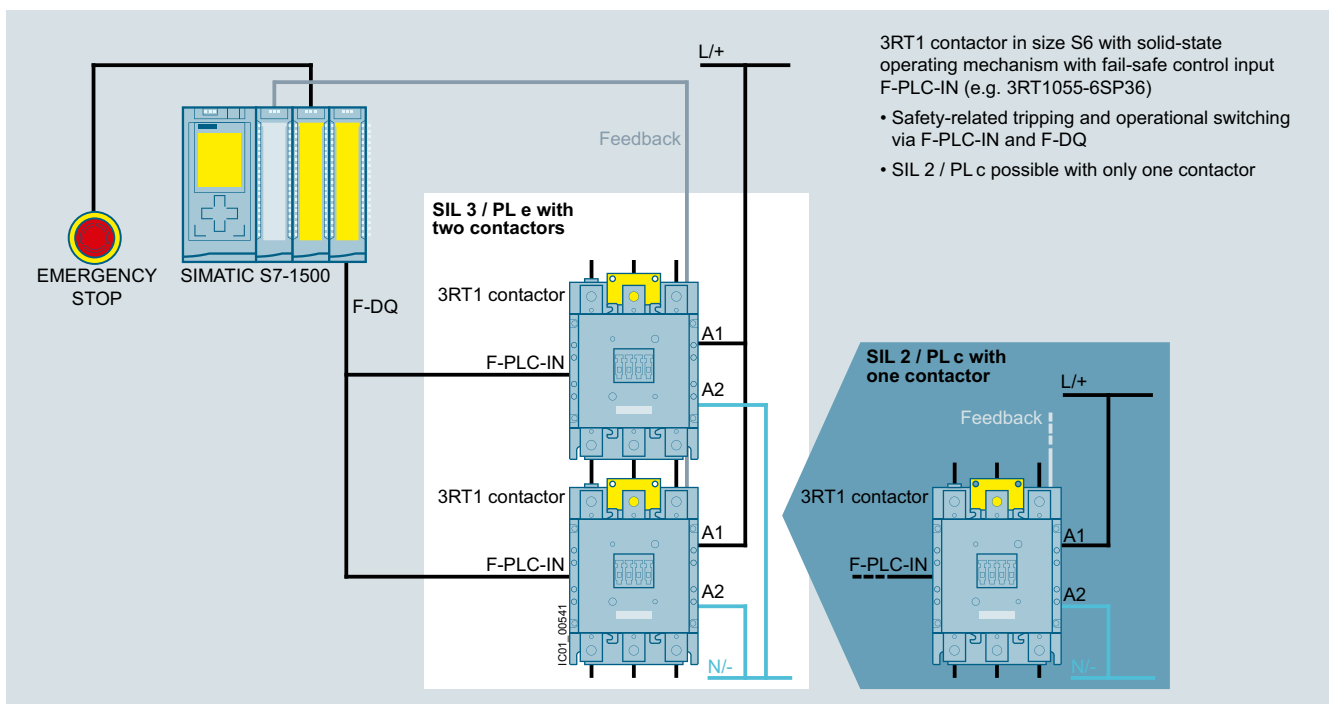
For more information on safety systems, see from page 11/1 onwards.

Example for SIL 2 and SIL 3 / PL e application - previously:



Application with safety-related disconnection with standard contactors

Example for SIL 3 / PL e (left-hand side) and SIL 2 / PL c (right-hand side) Application - new:



Application with safety-related disconnection with contactors with fail-safe control



Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Contactors for special applications

- SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole, [see from page 4/6 onwards](#)
- SIRIUS 3RT20 and 3RT10 contactors with an extended application range, 3-pole (for rail applications), [see from page 4/52 onwards](#)

Article No. scheme

Product versions		Article number									
SIRIUS power contactors		3RT2 □ □ □ - □ □ □ □ □ - □ □ □ □									
Device type	e.g. 0 = 3-pole motor contactor	□	□	□	□	□	□	□	□	□	□
Size of the contactor	e.g. 4 = S3	□	□	□	□	□	□	□	□	□	□
Power dependent on size	e.g. 5 = 37 kW in the case of S3	□	□	□	□	□	□	□	□	□	□
Type of electrical connection	e.g. 1 = screw terminals (main and auxiliary circuits)	□	□	□	□	□	□	□	□	□	□
Operating range/solenoid coil circuit	e.g. A = AC standard/without coil circuit	□	□	□	□	□	□	□	□	□	□
Rated control supply voltage	e.g. P0 = 230 V AC, 50 Hz	□	□	□	□	□	□	□	□	□	□
Auxiliary switches	e.g. 0 = in the case of S3: 1 NO + 1 NC integrated	□	□	□	□	□	□	□	□	□	□
Special version		□	□	□	□	□	□	□	□	□	□
Example		3RT2 0 4 5 - 1 A P 0 0									

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16134/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16134/faq>

System Manual "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>
 Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", see <https://support.industry.siemens.com/cs/ww/en/view/60306557>
 Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>
 Configuration Manual "Load Feeders – Configuring the SIRIUS Modular System", see <https://support.industry.siemens.com/cs/ww/en/view/39714188>
 Configuration Manual "Configuring SIRIUS Innovations UL", see <https://support.industry.siemens.com/cs/ww/en/view/53433538>

Type	Contactors			
	3RT2		S3	3RT1
Size	S00 to S2		S3	S6 to S12
Rated data of the auxiliary contacts				
According to IEC/EN 60947-5-1				
Data applies to integrated auxiliary contacts and conventional contacts in the auxiliary switch blocks				
Rated insulation voltage U_i (pollution degree 3)	V	690	1 000 (3RT2...-0CC0: 690)	--
• For laterally mountable auxiliary switch blocks	V	690	690	500
• For front mountable auxiliary switch blocks	V	690	690	690
Conventional thermal current I_{th} = rated operational current $I_e/AC-12$	A	10		
AC load				
Rated operational current $I_e/AC-15/AC-14$				
• For rated operational voltage U_e	Up to 230 V	A	10 ¹⁾	6
	400 V	A	3	6
	500 V	A	2	3
	690 V	A	1	2
				1 ²⁾
DC load				
Rated operational current $I_e/DC-12$				
• For rated operational voltage U_e	24 V	A	10	10
	60 V	A	6	6
	110 V	A	3	3
	125 V	A	2	2
	220 V	A	1	1
	440 V	A	0.3	0.3
	600 V	A	0.15	0.15 ²⁾
Rated operational current $I_e/DC-13$				
• For rated operational voltage U_e	24 V	A	10 ¹⁾	10 ³⁾
	60 V	A	2	2
	110 V	A	1	1
	125 V	A	0.9	0.9
	220 V	A	0.3	0.3
	440 V	A	0.14	0.14
	600 V	A	0.1	0.15 ²⁾
Contact reliability at 17 V, 1 mA Acc. to IEC/EN 60947-5-4	Frequency of contact faults < 10 ⁻⁸ i. e. < 1 fault per 100 million operating cycles			

¹⁾ 3RH22, 3RH29, 3RT2...-...4, 3RT2...-...6: $I_e = 6$ A at AC-15/AC-14 and DC-13.

²⁾ For laterally mountable auxiliary switch blocks, only the rated operational voltages up to 500 V apply.

³⁾ For laterally mountable auxiliary switch blocks, DC-13/at 24 V: max. 6 A.

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type
Size

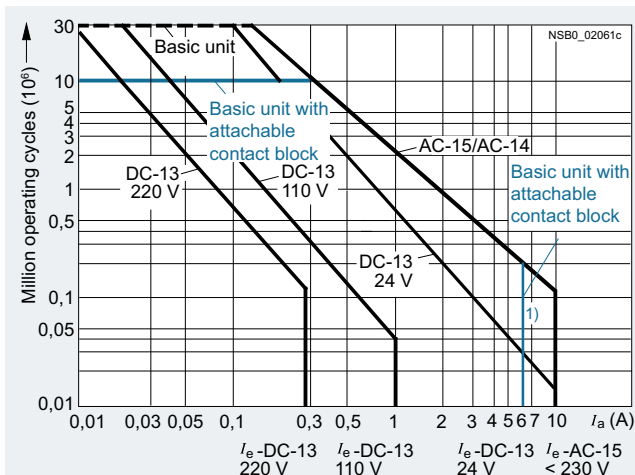
3RT contactors
S00 to S12

Contact endurance of the auxiliary contacts

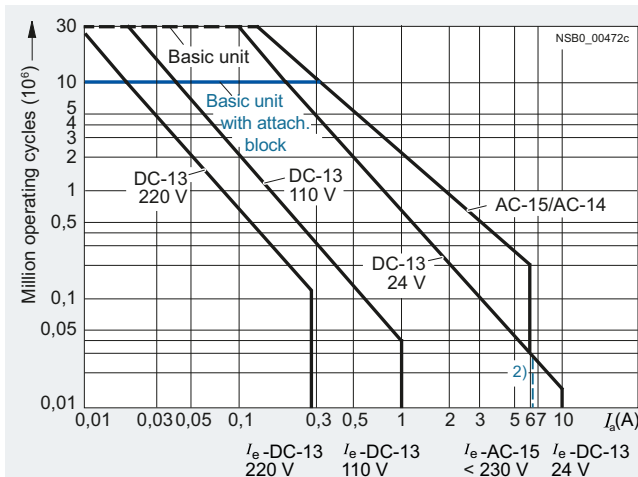
It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The contact endurance is mainly dependent on the breaking current.

Sizes S00 to S3



Sizes S6 to S12



¹⁾ 3RH22, 3RH29, 3RT2...-...4, 3RT2...-...6: $I_e = 6$ A at AC-15/AC-14 and DC-13, 3RT2.4: $I_e = 6$ A at AC-15/AC-14.

²⁾ For laterally mountable auxiliary switch blocks, DC-13/at 24 V: Max. 6 A.

³⁾ For laterally mountable auxiliary switch blocks, only the rated operational voltages up to 500 V apply.

Type
Size

3RT2 contactors
S00 and S0

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching resistive and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking 6 times the rated operational current) and is intended for a contact endurance of approximately 200 000 operating cycles.

If a shorter contact endurance is sufficient, the rated operational current $I_e/AC-4$ can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

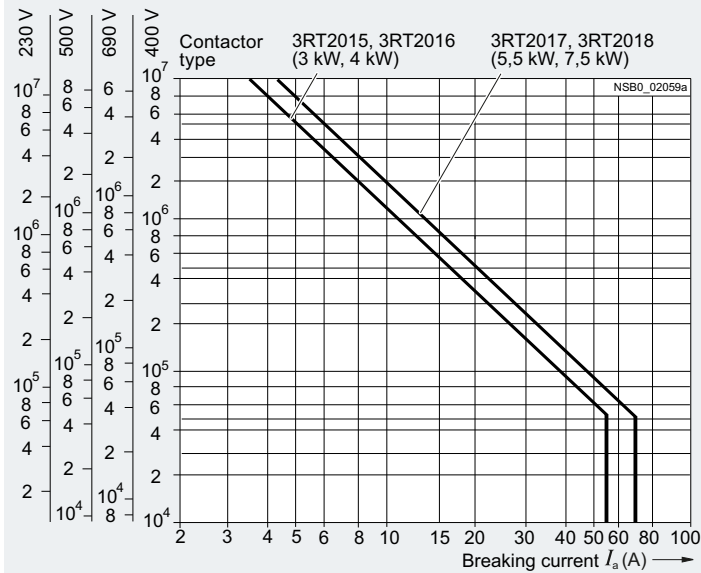
$$X = \frac{A}{1 + \frac{C}{100} \left(\frac{A}{B} - 1 \right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching ($I_a = \text{multiple of } I_e$) in operating cycles
- C Inching operations as a percentage of total switching operations

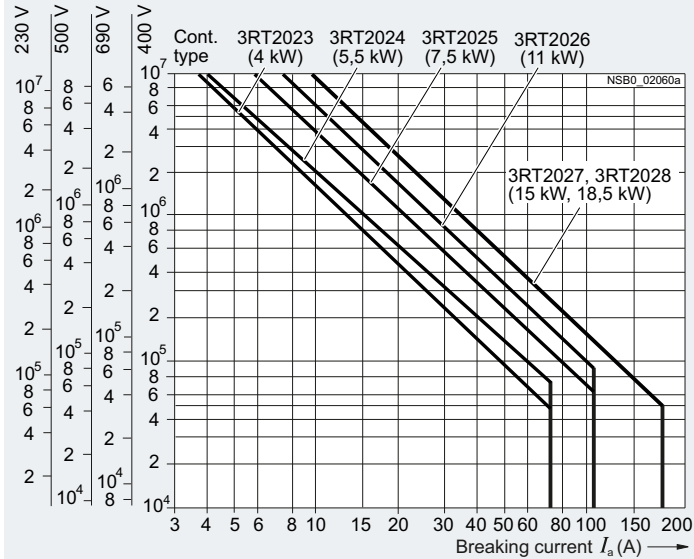
Size S00

Operating cycles at



Size S0

Operating cycles at



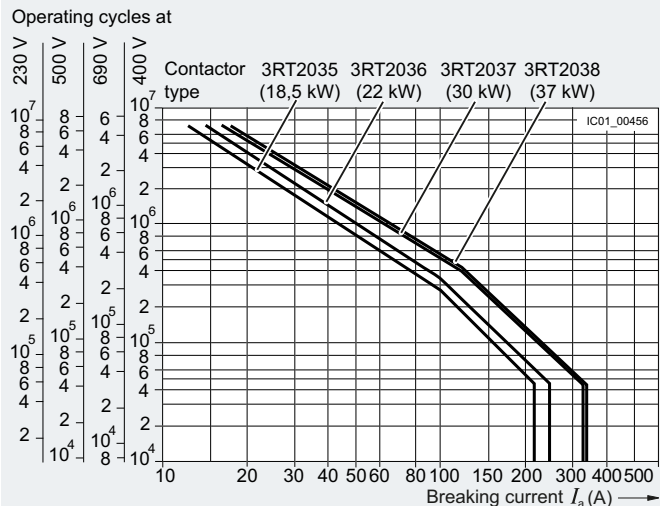
Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

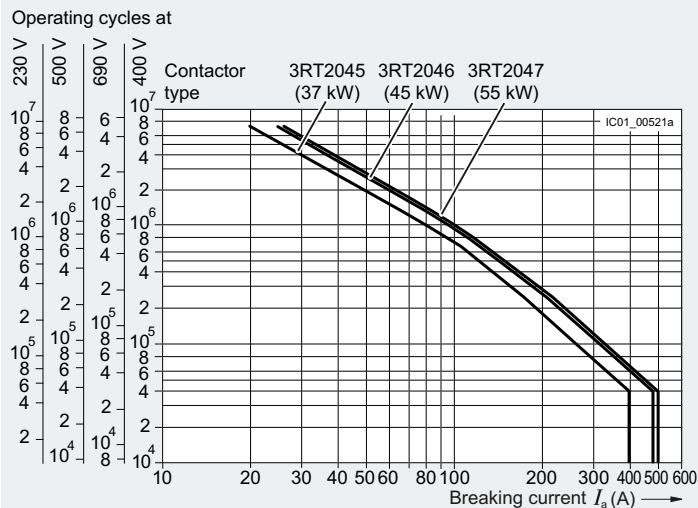
Type **3RT contactors**
 Size **S2 to S12**

Contact endurance of main contacts
 (continued)

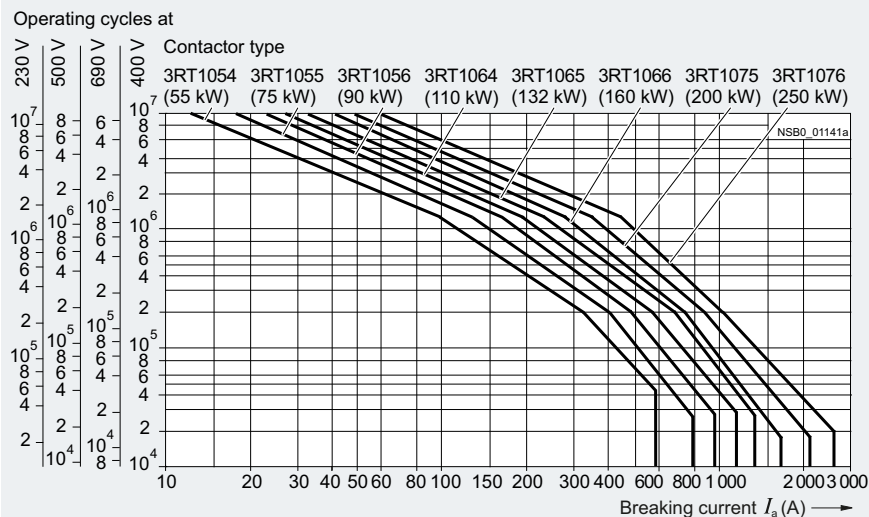
Size S2

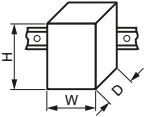
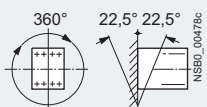



Size S3



Sizes S6 to S12



		Contactors		
		3RT2015, 3RT2016	3RT2017, 3RT2018	
		S00		
Type				
Size				
General data				
Dimensions (W x H x D)				
<ul style="list-style-type: none"> Basic unit <ul style="list-style-type: none"> Screw terminals Spring-type terminals Basic unit with mounted auxiliary switch block <ul style="list-style-type: none"> Screw terminals Spring-type terminals Basic unit with mounted function module or solid-state time-delayed auxiliary switch block <ul style="list-style-type: none"> Screw terminals Spring-type terminals 		mm	45 x 58 x 73	
			mm	45 x 70 x 73
			mm	45 x 58 x 117
			mm	45 x 70 x 121
			mm	45 x 58 x 147
			mm	45 x 70 x 147
Permissible mounting position				
The contactors are designed for operation on a vertical mounting surface.				
Upright mounting position		 Special version required		
Mechanical endurance				
• Basic unit	Operating cycles	30 million		
- With mounted auxiliary switch block	Operating cycles	10 million		
- with solid-state compatible auxiliary switch block	Operating cycles	5 million		
Electrical endurance		For contact endurance of the main contacts, see page 3/25 .		
Rated insulation voltage U_i (pollution degree 3)	V	690		
Rated impulse withstand voltage U_{imp}				
• Auxiliary circuit	kV	6		
• Main circuit	kV	6		
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N	V	400		
Mirror contacts				
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.				
• 3RT2.1. (removable auxiliary switch block)		Yes, this applies to both the basic unit as well as to between the basic unit and the mounted auxiliary switch block according to IEC 60947-4-1, Appendix F		
• 3RH2919-.NF.. solid-state compatible auxiliary switch blocks		No mirror contact for size S00		
Ambient temperature				
• During operation	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Degree of protection acc. to IEC 60529				
• On front		IP20 (screw terminals and spring-type terminals)		
• Connecting terminal		IP20 (screw terminals and spring-type terminals)		
Touch protection acc. to IEC 60529				
Finger-safe (screw terminals and spring-type terminals)				
Shock resistance				
• Rectangular pulse				
	- AC operation	g/ms	6.7/5 and 4.2/10	
- DC operation	g/ms	6.7/5 and 4.2/10	7.3/5 and 4.7/10 7.3/5 and 4.7/10	
• Sine pulse				
	- AC operation	g/ms	10.5/5 and 6.6/10	
- DC operation	g/ms	10.5/5 and 6.6/10	11.4/5 and 7.3/10 11.4/5 and 7.3/10	







Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type Size	Contactors		
	3RT2015, 3RT2016 S00	3RT2017, 3RT2018	
Short-circuit protection			
Main circuit			
<ul style="list-style-type: none"> Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC/EN 60947-4-1 			
- Type of coordination "1"	A	35	50
- Type of coordination "2"	A	20	25
- Weld-free (test conditions acc. to IEC 60947-4-1)	A	10	
<ul style="list-style-type: none"> Miniature circuit breaker (up to 230 V) with C characteristic Short-circuit current 1 kA, type of coordination "1" 	A	10	
Auxiliary circuit			
Short-circuit test according to IEC/EN 60947-5-1			
<ul style="list-style-type: none"> With fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1$ kA 	A	10	
<ul style="list-style-type: none"> With 230 V miniature circuit breaker, C characteristic with short-circuit current $I_k = 400$ A 	A	6	
Short-circuit protection for contactors with overload relays		See Configuration Manual for load feeders	
Short-circuit protection for fuseless load feeders		See 3RA2 load feeders on page 8/4 onwards	
Control			
Solenoid coil operating range			
<ul style="list-style-type: none"> AC operation 	50 Hz 60 Hz	0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s	
<ul style="list-style-type: none"> DC operation 	Up to 50 °C Up to 60 °C	0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)			
<ul style="list-style-type: none"> AC operation, 50/60 Hz, standard version 			
- Closing	VA	27/24.3	37/33
- P.f.		0.8/0.75	
- Closed	VA	4.2/3.3	5.7/4.4
- P.f.		0.25/0.25	
<ul style="list-style-type: none"> AC operation, 50 Hz, for USA/Canada 			
- Closing	VA	26.4	36
- P.f. for closing		0.81	0.8
- Closed	VA	4.4	5.9
- P.f. for closed		0.24	
<ul style="list-style-type: none"> AC operation, 60 Hz, for USA/Canada 			
- Closing	VA	31.7	43
- P.f. for closing		0.81	0.8
- Closed	VA	4.8	6.5
- P.f. for closed		0.25	
<ul style="list-style-type: none"> DC operation (closing = closed) 	W	4	
Permissible residual current of the electronics (with 0 signal)			
<ul style="list-style-type: none"> AC operation 		< 3 mA x (230 V/ U_s) ¹⁾	< 4 mA x (230 V/ U_s) ¹⁾
<ul style="list-style-type: none"> DC operation 		< 10 mA x (24 V/ U_s) ¹⁾	
Operating times for 1.0 x U_s²⁾			
Total break time = Opening delay + Arcing time			
<ul style="list-style-type: none"> AC operation 			
- Closing delay	ms	9.5 ... 24	9 ... 22
- Opening delay	ms	4 ... 14	4.5 ... 15
<ul style="list-style-type: none"> DC operation 			
- Closing delay	ms	35 ... 50	
- Opening delay	ms	7 ... 12	
<ul style="list-style-type: none"> Arcing time 	ms	10 ... 15	

¹⁾ The 3RT2916-1GA00 additional load module is recommended for higher residual currents, see page 3/120.

²⁾ The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; suppression diode +1 to 5 ms; varistor +2 to 5 ms).

Type	Coupling contactors		
Size	3RT201.-.HB4.	3RT201.-.JB4.	3RT201.-.KB4.
S00			
Control			
Solenoid coil operating range	0.7 ... 1.25 x U_s		
Power consumption of the solenoid coils (for cold coil) Closing = Closed	At U_s 24 V DC W	2.8	
Permissible residual current of the electronics (with 0 signal)	< 6 mA x (24 V/ U_s)		
Upright mounting position	On request		
Overvoltage configuration of the solenoid coil	No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times			
• Closing delay			
- ON-delay NO	ms	35 ... 60	
- OFF-delay NC	ms	25 ... 40	
• Opening delay			
- ON-delay NO	ms	7 ... 20	38 ... 65
- OFF-delay NC	ms	20 ... 30	55 ... 75
			7 ... 20
			20 ... 30
Type	Coupling contactors		
Size	3RT201.-1MB4.-0KT0	3RT201.-1VB4.	3RT201.-1SB4.
S00			
Control			
Solenoid coil operating range	0.85 ... 1.85 x U_s		
Power consumption of the solenoid coils (for cold coil) Closing = Closed	At U_s 24 V DC W	1.6	
Permissible residual current, upright mounting position	On request		
Overvoltage configuration of the solenoid coil	No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times			
• Closing delay			
- ON-delay NO	ms	25 ... 90	
- OFF-delay NC	ms	15 ... 80	
• Opening delay			
- ON-delay NO	ms	5 ... 20	20 ... 80
- OFF-delay NC	ms	10 ... 30	30 ... 90
			5 ... 20
			10 ... 30

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type Size	Contactors					
	3RT2015 S00	3RT2016	3RT2017	3RT2018		
Rated data of the main contacts						
Load rating with AC						
Utilization category AC-1, switching resistive loads						
• Rated operational currents I_e	At 40 °C up to 690 V At 60 °C up to 690 V	A A	18 16	22 20		
• Rated power for AC loads ¹⁾ P.f. = 0.95 (at 60 °C)	230 V 400 V 690 V	kW kW kW	6 10.5 18	7.5 13 22		
• Minimum conductor cross-section for loads with I_e	At 40 °C At 60 °C	mm ² mm ²	2.5 2.5	4		
Utilization categories AC-2 and AC-3						
• Rated operational currents I_e	Up to 400 V 440 V 500 V 690 V	A A A A	7 7 6 4.9	9 9 7.7 6.7	12 11 9.2 8.9	16 14 12.4 8.9
• Rated power for slipring or squirrel-cage motors at 50 Hz and 60 Hz	At 230 V 400 V 690 V	kW kW kW	1.5 3 4	2.2 4 5.5	3 5.5	4 7.5 7.5
Thermal load capacity	10 s current	A	56	72	96	128
Power loss per conducting path	At I_e /AC-3	W	0.42	0.7	1.24	2.2
Utilization category AC-4 (at $I_a = 6 \times I_e$)²⁾						
• Maximum values						
- Rated operational current I_e	Up to 400 V	A	6.5	8.5		11.5
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	Up to 400 V	kW	3	4		5.5
• The following applies to a contact endurance of about 200 000 operating cycles:						
- Rated operational currents I_e	Up to 400 V 690 V	A A	2.6 1.8	4.1 3.3		5.5 4.4
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 230 V 400 V 690 V	kW kW kW	0.67 1.15 1.15	1.1 2 2.5		1.5 2.5 3.5

¹⁾ Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

²⁾ The data applies to 3RT2516 and 3RT2517 contactors (2 NO + 2 NC) up to a rated operational voltage of 400 V only.

Type	Contactors			
Size	3RT2015		3RT2016 to 3RT2018	
S00				
Rated data of the main contacts (continued)				
Load rating with DC				
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)				
• Rated operational currents I_e (at 60 °C)				
- 1 conducting path	Up to 24 V	A	15	20
	60 V	A	15	20
	110 V	A	1.5	2.1
	220 V	A	0.6	0.8
	440 V	A	0.42	0.6
	600 V	A	0.42	0.6
- 2 conducting paths in series	Up to 24 V	A	15	20
	60 V	A	15	20
	110 V	A	8.4	12
	220 V	A	1.2	1.6
	440 V	A	0.6	0.8
	600 V	A	0.5	0.7
- 3 conducting paths in series	Up to 24 V	A	15	20
	60 V	A	15	20
	110 V	A	15	20
	220 V	A	15	20
	440 V	A	0.9	1.3
	600 V	A	0.7	1
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)				
• Rated operational currents I_e (at 60 °C)				
- 1 conducting path	Up to 24 V	A	15	20
	60 V	A	0.35	0.5
	110 V	A	0.1	0.15
	220 V	A	--	
	440 V	A	--	
	600 V	A	--	
- 2 conducting paths in series	Up to 24 V	A	15	20
	60 V	A	3.5	5
	110 V	A	0.25	0.35
	220 V	A	--	
	440 V	A	--	
	600 V	A	--	
- 3 conducting paths in series	Up to 24 V	A	15	20
	60 V	A	15	20
	110 V	A	15	20
	220 V	A	1.2	1.5
	440 V	A	0.14	0.2
	600 V	A	0.14	0.2
Switching frequency				
Switching frequency z in operating cycles/hour				
Contactors without overload relays				
• No-load switching frequency	AC/DC	1/h	10 000	
• Switching frequency z during rated operation ¹⁾				
- $I_e/AC-1$	At 400 V	1/h	1 000	
- $I_e/AC-2$	At 400 V	1/h	750	
- $I_e/AC-3$	At 400 V	1/h	750	
- $I_e/AC-4$	At 400 V	1/h	250	
Contactors with overload relays				
• Mean value		1/h	15	

¹⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U' :
 $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

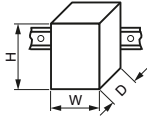
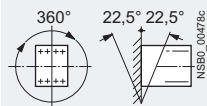

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type	Contactors	
Size	3RT2015 to 3RT2018	
S00		
Conductor cross-sections		
Main conductors, auxiliary conductors and coil terminals (1 or 2 conductors can be connected)		
<ul style="list-style-type: none"> • Solid or stranded 	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ ; max. 2 x 4
<ul style="list-style-type: none"> • Finely stranded with end sleeve (DIN 46228-1) 	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
<ul style="list-style-type: none"> • AWG cables, solid or stranded 	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾ ; 2 x 12
<ul style="list-style-type: none"> • Terminal screw 		M3 (for Pozidriv size 2; Ø 5 ... 6)
<ul style="list-style-type: none"> • Tightening torque 	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)
Main conductors, auxiliary conductors and coil terminals²⁾ (1 or 2 conductors can be connected)		
<ul style="list-style-type: none"> • Operating devices 	mm	3.0 x 0.5
<ul style="list-style-type: none"> • Solid or stranded 	mm ²	2 x (0.5 ... 4)
<ul style="list-style-type: none"> • Finely stranded with end sleeve (DIN 46228-1) 	mm ²	2 x (0.5 ... 2.5)
<ul style="list-style-type: none"> • Finely stranded without end sleeve 	mm ²	2 x (0.5 ... 2.5)
<ul style="list-style-type: none"> • AWG cables, solid or stranded 	AWG	2 x (20 ... 12)
Auxiliary conductors for front and laterally mounted auxiliary switches²⁾ (1 or 2 conductors can be connected)		
<ul style="list-style-type: none"> • Operating devices 	mm	3.0 x 0.5
<ul style="list-style-type: none"> • Solid or stranded 	mm ²	2 x (0.5 ... 2.5)
<ul style="list-style-type: none"> • Finely stranded with end sleeve (DIN 46228-1) 	mm ²	2 x (0.5 ... 1.5)
<ul style="list-style-type: none"> • Finely stranded without end sleeve 	mm ²	2 x (0.5 ... 2.5)
<ul style="list-style-type: none"> • AWG cables, solid or stranded 	AWG	2 x (20 ... 14)

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

²⁾ Max. external diameter of the conductor insulation: 3.6 mm.
On spring-type terminals with conductor cross-sections $\leq 1 \text{ mm}^2$ an insulation stop must be used, [see page 3/121](#).

Type Size	Contactors	
	3RT2023 to 3RT2025 S0	3RT2026 to 3RT2028
General data		
Dimensions (W x H x D)		
AC operation		
• Basic unit		
- Screw terminals	mm	45 x 85 x 97
- Spring-type terminals	mm	45 x 102 x 97
• Basic unit with mounted auxiliary switch block		
- Screw terminals	mm	45 x 85 x 141
- Spring-type terminals	mm	45 x 102 x 145
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch block		
- Screw terminals	mm	45 x 85 x 171
- Spring-type terminals	mm	45 x 102 x 171
DC operation		
• Basic unit		
- Screw terminals	mm	45 x 85 x 107
- Spring-type terminals	mm	45 x 102 x 107
• Basic unit with mounted auxiliary switch block		
- Screw terminals	mm	45 x 85 x 151
- Spring-type terminals	mm	45 x 102 x 155
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch block		
- Screw terminals	mm	45 x 85 x 181
- Spring-type terminals	mm	45 x 102 x 181
Permissible mounting position		
The contactors are designed for operation on a vertical mounting surface.		
Upright mounting position		
	Special version required, also applies for 3RT202.-K.40 coupling contactors	
Mechanical endurance		
• Basic unit and basic unit with mounted auxiliary switch block	Operating cycles	10 million
• Basic unit with solid-state compatible auxiliary switch block	Operating cycles	5 million
Electrical endurance	For contact endurance of the main contacts, see page 3/25.	
Rated insulation voltage U_i (pollution degree 3)	V	690
Rated impulse withstand voltage U_{imp}		
• Auxiliary circuit	kV	6
• Main circuit	kV	6
Protective separation between the coil and the main contacts (acc. to IEC 60947-1, Appendix N)	V	400
Mirror contacts		
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.		
• Integrated auxiliary switches	Yes, acc. to IEC 60947-4-1, Appendix F	
• 3RT2.2. (removable auxiliary switch block)	Yes, acc. to IEC 60947-4-1, Appendix F	
Permissible ambient temperature		
• During operation	°C	-25 ... +60
• During storage	°C	-55 ... +80
Degree of protection acc. to IEC 60529		
• On front	IP20 (screw terminals and spring-type terminals)	
• Connecting terminal	IP20 (screw terminals and spring-type terminals)	
Touch protection acc. to IEC 60529	Finger-safe (screw terminals and spring-type terminals)	
Shock resistance		
• Rectangular pulse		
- AC operation	g/ms	7.5/5 and 4.7/10
- DC operation	g/ms	10/5 and 7.5/10
• Sine pulse		
- AC operation	g/ms	11.8/5 and 7.4/10
- DC operation	g/ms	15/5 and 10/10
		8.3/5 and 5.3/10
		13.5/5 and 8.3/10

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW


Type	Contactors			
Size	3RT2023 to 3RT2025	3RT2026	3RT2027, 3RT2028	
S0				
Short-circuit protection				
Main circuit				
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC/EN 60947-4-1	A	63	100	125
- Type of coordination "1"	A	25	35	50
- Type of coordination "2"	A	10	16	
- Weld-free (test conditions acc. to IEC 60947-4-1)	A	25	32	40
• Miniature circuit breaker with C characteristic (short-circuit current 3 kA, type of coordination "1")	A	25		
Auxiliary circuit				
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection at $I_k \leq 1$ kA)	A	10		
• 230 V miniature circuit breaker, C characteristic (short-circuit current $I_k < 400$ A)	A	10		
Short-circuit protection for contactors with overload relays	See Configuration Manual for load feeders			
Short-circuit protection for fuseless load feeders	See 3RA2 load feeders, from page 8/4 onwards			

Type	Contactors				
Size	3RT2023 to 3RT2025	3RT2026 to 3RT2028	3RT202.-.NB3	3RT202.-.NF3	3RT202.-.NP3
S0					
Control					
Type of operating mechanism		AC or DC		AC/DC	
Solenoid coil operating range		AC/DC		0.8 ... $1.1 \times U_s^{(1)}$	
				0.7 ... $1.3 \times U_s^{(2)}$	
Power consumption of the solenoid coils (for cold coil and $1.0 \times U_s$)					
• AC operation, 50 Hz, standard version					
- Closing	VA	65	77	6.6	11.9
- P.f.		0.82		0.98	
- Closed	VA	7.6	9.8	1.9	1.6
- P.f.		0.25		0.86	0.79
• AC operation, 50/60 Hz, standard version					
- Closing	VA	68/67	81/79	6.6/6.7	11.9/12.0
- P.f.		0.72/0.74		0.98/0.98	
- Closed	VA	7.9/6.5	10.5/8.5	1.9/2.0	1.6/1.8
- P.f.		0.25/0.28		0.86/0.82	0.79/0.74
• AC operation, 50 Hz, for USA/Canada					
- Closing	VA	65	77	--	
- P.f.		0.82	0.82	--	
- Closed	VA	7.6	9.8	--	
- P.f.		0.25	0.28	--	
• AC operation, 60 Hz, for USA/Canada					
- Closing	VA	73	87	--	
- P.f.		0.76		--	
- Closed	VA	7.2	9.4	--	
- P.f.		0.28		--	
• DC operation (closing = closed)	W	5.9/5.9		5.9/1.4	10.2/1.3
Permissible residual current of the electronics (with 0 signal)					
• AC operation	mA	< 6 mA x (230 V/ U_s)		< 7 mA x (230 V/ U_s)	
• DC operation	mA	< 16 mA x (24 V/ U_s)			
Operating times at $1.0 \times U_s^{(3)}$					
• AC operation					
- Closing delay	ms	10 ... 18	10 ... 17	65 ... 80	50 ... 70
- Opening delay	ms	4 ... 16		30 ... 45	35 ... 45
• DC operation					
- Closing delay	ms	55 ... 80		60 ... 80	56 ... 70
- Opening delay	ms	16 ... 17		30 ... 45	35 ... 45
• Arcing time	ms	10			

¹⁾ Coil operating range
- At 50 Hz: 0.8 to $1.1 \times U_s$
- At 60 Hz: 0.85 to $1.1 \times U_s$.

²⁾ The following applies to $U_{s \max} = 280$ V: Upper limit = $1.1 \times U_{s \max}$.

³⁾ The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2x to 6x).

		Coupling contactors 3RT202.-.KB4. S0	
Type			
Size			
Control			
Solenoid coil operating range		0.7 ... 1.25 x U_s	
Power consumption of the solenoid coils (for cold coil) Closing = Closed		At U_s 24 V DC W	4.5
Permissible residual current of the electronics (with 0 signal)		< 10 mA x (24 V/ U_s)	
Overvoltage configuration of the solenoid coil		Built-in varistor  U	
Operating times			
• Closing delay			
- ON-delay NO		ms	65 ... 90
- OFF-delay NC		ms	55 ... 80
• Opening delay			
- ON-delay NO		ms	19 ... 21
- OFF-delay NC		ms	25 ... 31

		Contactors 3RT2023 3RT2024 3RT2025 3RT2026 3RT2027 3RT2028 S0						
Type								
Size								
Rated data of the main contacts								
Load rating with AC								
Utilization category AC-1, switching resistive loads								
• Rated operational current I_e		At 40 °C up to 690 V A	40				50	
		At 60 °C up to 690 V A	35				42	
• Rated power for AC loads ¹⁾ P.f. = 0.95 (at 60 °C)		230 V kW	13.3				15.5	
		400 V kW	23				27.5	
		690 V kW	40				47.5	
• Minimum conductor cross-section for loads with I_e		At 40 °C mm ²	10					
		At 60 °C mm ²	10					
Utilization categories AC-2 and AC-3								
• Rated operational currents I_e		Up to 400 V A	9	12	17	25	32	38
		440 V A	9	12	17	22	32	35
		500 V A	9	12	17	18	32	
		690 V A	9		13		21	
• Rated power for slipring or squirrel-cage motors at 50 Hz and 60 Hz		At 230 V kW	2.2	3	4	5.5	7.5	11
		400 V kW	4	5.5	7.5	11	15	18.5
		690 V kW	7.5		11		18.5	
Thermal load capacity		10 s current A	80	110	150	200	260	304
Power loss per conducting path		At I_e /AC-3 W	0.4	0.5	0.9	1.6	2.7	3.8
Utilization category AC-4 (for $I_a = 6 \times I_e$)								
• Maximum values:								
- Rated operational current I_e		Up to 400 V A	8.5	12.5	15.5		22	
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz		At 400 V kW	4	5.5	7.5		11	
• The following applies to a contact endurance of about 200 000 operating cycles:								
- Rated operational currents I_e		Up to 400 V A	4.1	5.5	7.7	9	12	
		690 V A	3.3	5.5	7.7	9	12	
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz		At 110 V kW	0.5	0.73	1	1.2	1.6	
		230 V kW	1.1	1.5	2	2.5	3.4	
		400 V kW	2	2.6	3.5	4.4	6	
		690 V kW	2.5	4.6	6	7.7	10.3	

¹⁾ Industrial furnaces and electric heaters with resistance heating, etc.
(increased power consumption on heating up has been taken into account).

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type Size	Contactors	
	3RT2023 to 3RT2025	3RT2026 to 3RT2028
Rated data of the main contacts (continued)		
Load rating with DC		
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)		
• Rated operational currents I_e (at 60 °C)		
- 1 conducting path	Up to 24 V A	35
	60 V A	20
	110 V A	4.5
	220 V A	1
	440 V A	0.4
	600 V A	0.25
- 2 conducting paths in series	Up to 24 V A	35
	60 V A	35
	110 V A	35
	220 V A	5
	440 V A	1
	600 V A	0.8
- 3 conducting paths in series	Up to 24 V A	35
	60 V A	35
	110 V A	35
	220 V A	35
	440 V A	2.9
	600 V A	1.4
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)		
• Rated operational currents I_e (at 60 °C)		
- 1 conducting path	Up to 24 V A	20
	60 V A	5
	110 V A	2.5
	220 V A	1
	440 V A	0.09
	600 V A	0.06
- 2 conducting paths in series	Up to 24 V A	35
	60 V A	35
	110 V A	15
	220 V A	3
	440 V A	0.27
	600 V A	0.16
- 3 conducting paths in series	Up to 24 V A	35
	60 V A	35
	110 V A	35
	220 V A	10
	440 V A	0.6
	600 V A	0.6
Switching frequency		
Switching frequency z in operating cycles/hour		
Contactors without overload relays		
• No-load switching frequency	AC 1/h	5 000
	DC 1/h	1 500
• Switching frequency z during rated operation ¹⁾		
- $I_e/AC-1$	At 400 V 1/h	1 000
- $I_e/AC-2$	At 400 V 1/h	1 000
- $I_e/AC-3$	At 400 V 1/h	1 000
- $I_e/AC-4$	At 400 V 1/h	300
Contactors with overload relays		
• Mean value	1/h	15

¹⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U' :
 $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

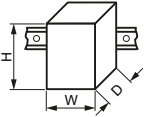
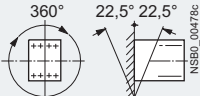

Type Size	Contactors 3RT2023 to 3RT2028 S0	
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm ²	2 x (1 ... 2.5) ¹⁾ ; 2 x (2.5 ... 10) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (1 ... 2.5) ¹⁾ ; 2 x (2.5 ... 6) ¹⁾ ; 1 x 10
• AWG cables, solid or stranded	AWG	2 x (16 ... 12) ¹⁾ ; 2 x (14 ... 8) ¹⁾
• Terminal screws - Tightening torque	Nm	M4 (for Pozidriv size 2; Ø 5 ... 6) 2 ... 2.5 (18 ... 22 lb.in)
Auxiliary conductors (1 or 2 conductors connectable)		
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾
• Terminal screws - Tightening torque	Nm	M3 (for Pozidriv size 2; Ø 5 ... 6) 0.8 ... 1.2 (7 ... 10.3 lb.in)
Main conductors²⁾ (1 or 2 conductors can be connected)		
• Operating devices	mm	3.0 x 0.5
• Solid or stranded	mm ²	2 x (1 ... 10)
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (1 ... 6)
• Finely stranded without end sleeve	mm ²	2 x (1 ... 6)
• AWG cables, solid or stranded	AWG	2 x (18 ... 8)
Auxiliary conductors²⁾ (1 or 2 conductors can be connected)		
• Operating devices		3.0 x 0.5
• Solid or stranded	mm ²	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5)
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)



¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

²⁾ Max. external diameter of the conductor insulation: 3.6 mm.
On spring-type terminals with conductor cross-sections ≤ 1 mm² an insulation stop must be used, see page 3/121.

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type Size	Contactors			
	3RT2035	3RT2036	3RT2037	3RT2038
General data				
Dimensions (W x H x D)				
<ul style="list-style-type: none"> Basic unit - Screw/spring-type terminals 		mm	55 x 114 x 130	
<ul style="list-style-type: none"> Basic unit with mounted auxiliary switch block - Screw terminals - Spring-type terminals 		mm	55 x 114 x 174	
<ul style="list-style-type: none"> Basic unit with mounted function module or solid-state time-delayed auxiliary switch block - Screw/spring-type terminals 		mm	55 x 114 x 204	
Permissible mounting position				
The contactors are designed for operation on a vertical mounting surface.				
Upright mounting position				
NSB0_00477a Special version required				
Mechanical endurance				
<ul style="list-style-type: none"> Basic units and basic units with mounted auxiliary switch block 	Operating	10 million cycles		
<ul style="list-style-type: none"> Basic units with solid-state compatible auxiliary switch block 	Operating	5 million cycles		
Electrical endurance				
Rated insulation voltage U_i (pollution degree 3)		V	690	
For contact endurance of the main contacts, see page 3/26 .				
Rated impulse withstand voltage U_{imp}				
<ul style="list-style-type: none"> Auxiliary circuit 	kV	6		
<ul style="list-style-type: none"> Main circuit 	kV	6		
Protective separation between the coil and the main contacts (acc. to IEC 60947-1, Appendix N)		V	400	
Mirror contacts				
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.				
<ul style="list-style-type: none"> Integrated auxiliary switches 	Yes, acc. to IEC 60947-4-1, Appendix F			
<ul style="list-style-type: none"> 3RT2.3. (removable auxiliary switch block) 	Yes, acc. to IEC 60947-4-1, Appendix F			
Permissible ambient temperature				
<ul style="list-style-type: none"> During operation 	°C	-25 ... +60		
<ul style="list-style-type: none"> During storage 	°C	-55 ... +80		
Degree of protection acc. to IEC 60529				
<ul style="list-style-type: none"> On front 	IP20			
<ul style="list-style-type: none"> Connecting terminal 	IP00 (for higher degree of protection, use additional terminal covers)			
Touch protection acc. to IEC 60529		Finger-safe for vertical touching from the front		
Shock resistance				
<ul style="list-style-type: none"> Rectangular pulse - AC operation - DC operation 	<i>g/ms</i>	11.8/5 and 7.4/10		
	<i>g/ms</i>	7.7/5 and 4.5/10		
<ul style="list-style-type: none"> Sine pulse - AC operation - DC operation 	<i>g/ms</i>	18.5/5 and 11.6/10		
	<i>g/ms</i>	12/5 and 7/10		
Short-circuit protection				
Main circuit				
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC/EN 60947-4-1				
- Type of coordination "1"	A	160	250	
- Type of coordination "2"	A	80	125	160
- Weld-free (test conditions acc. to IEC 60947-4-1)	A	16	25	50
Auxiliary circuit				
<ul style="list-style-type: none"> Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection at $I_k \leq 1$ kA) 	A	10		
<ul style="list-style-type: none"> 230 V miniature circuit breaker, C characteristic (short-circuit current $I_k < 400$ A) 	A	10		
Short-circuit protection for contactors with overload relays		See Configuration Manual for load feeders		
Short-circuit protection for fuseless load feeders		See 3RA2 load feeders, from page 8/4 onwards		

Type Size	Contactors 3RT203.-A... S2		3RT203.-N.3.	Coupling contactors 3RT203.-KB4.
Control				
Type of operating mechanism		AC	AC/DC	DC
Solenoid coil operating range				
• AC operation ¹⁾		0.8 ... 1.1 x U _s	--	--
• AC/DC operation ¹⁾		--	0.8 ... 1.1 x U _s	--
• DC operation		--	--	0.8 ... 1.2 x U _s
Power consumption of the solenoid coils (for cold coil and 1.0 x U _s)				
• AC operation, 50 Hz, standard version				
- Closing	VA	190	--	
- P.f.		0.72	--	
- Closed	VA	16	--	
- P.f.		0.37	--	
• AC operation, 50/60 Hz, standard version				
- Closing	VA	210/188	--	
- P.f.		0.69/0.65	--	
- Closed	VA	17.2/16.5	--	
- P.f.		0.36/0.39	--	
• AC operation, 60 Hz, for USA/Canada				
- Closing	VA	212	--	
- P.f.		0.67	--	
- Closed	VA	18.5	--	
- P.f.		0.37	--	
• AC/DC operation				
- Closing for AC operation	VA	--	40	--
- P.f.		--	0.95	--
- Closed for AC operation	VA	--	2	--
- P.f.		--	0.95	--
• DC operation				
- Closing for DC operation	W	--	23 ²⁾	21.5
- Closed for DC operation	W	--	1	1
Permissible residual current of the electronics (with 0 signal)				
• AC/DC operation	mA	--	< 20	--
• DC operation	mA	--	--	< 20
Overvoltage configuration of the solenoid coil		--	Built-in varistor 	Built-in varistor 
Operating times at 0.7 ... 1.25 x U_s³⁾ Total break time = Opening delay + Arcing time				
• DC operation				
- Closing delay	ms	--	--	45 ... 60
- Opening delay	ms	--	--	35 ... 55
Operating times at 1.0 x U_s³⁾				
• AC operation				
- Closing delay	ms	12 ... 22	35 ... 80	--
- Opening delay	ms	10 ... 18	30 ... 55	--
• DC operation				
- Closing delay	ms	--	35 ... 80	35 ... 80
- Opening delay	ms	--	30 ... 55	30 ... 55
• Arcing time	ms	10 ... 20	--	--

¹⁾ Coil operating range
- At 50 Hz: 0.8 to 1.1 x U_s
- At 60 Hz: 0.85 to 1.1 x U_s.

²⁾ In the case of AC/DC coils, increased starting currents (2.6 A on average) occur during the first 200 ms. For direct control from a PLC, we therefore recommend special coupling contactors with adapted power consumption. The connection of one 3RT203.-KB4. coupling contactor is possible per PLC output port with an output current of 2 A, see page 3/67.

³⁾ The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2x to 6x).

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type Size	Contactors				
	3RT2035 S2	3RT2036	3RT2037	3RT2038	
Rated data of the main contacts					
Load rating with AC					
Utilization category AC-1, switching resistive loads					
• Rated operational current I_e	At 40 °C up to 690 V A At 60 °C up to 690 V A	60 55	70 60	80 70	90 80
• Rated power for AC loads ¹⁾ P.f. = 0.95 (at 60 °C)	230 V kW 400 V kW 690 V kW	23 39 68	26 46 79	30 53 91	34 59 102
• Minimum conductor cross-section for loads with I_e	At 40 °C mm ² At 60 °C mm ²	16 16	25	25	35
Utilization categories AC-2 and AC-3					
• Rated operational currents I_e	Up to 400 V A 440 V A 500 V A 690 V A	40 40 40 24	50 50 50	65 65 65 47	80 80 80 58
• Rated power for slipping or squirrel-cage motors at 50 Hz and 60 Hz	At 230 V kW 400 V kW 690 V kW	11 18.5 22	15 22	18.5 30 37	22 37 45
Thermal load capacity	10 s current A	400	420	520	640
Power loss per conducting path	At $I_e/AC-3$ W	2.2	4	3.8	5.7
Utilization category AC-4 (for $I_a = 6 \times I_e$)					
• Maximum values					
- Rated operational current I_e	Up to 400 V A	35	41	55	
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 400 V kW	18.5	22	30	
• The following applies to a contact endurance of about 200 000 operating cycles:					
- Rated operational currents I_e	Up to 400 V A 690 V A	22 18.5	24 20	28 22	30 24
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 110 V kW 230 V kW 400 V kW 690 V kW	3.2 6.7 11.6 16.8	3.5 7.3 12.6 18.2	4.1 8.5 14.7 20	4.3 9.1 15.8 21.8

¹⁾ Industrial furnaces and electric heaters with resistance heating, etc.
(increased power consumption on heating up has been taken into account).

Type Size	Contactors			
	3RT2035 S2	3RT2036	3RT2037	3RT2038
Rated data of the main contacts (continued)				
Load rating with DC				
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)				
• Rated operational currents I_e (at 60 °C)				
- 1 conducting path	Up to 24 V A	55		
	60 V A	23		
	110 V A	4.5		
	220 V A	1		
	440 V A	0.4		
	600 V A	0.25		
- 2 conducting paths in series	Up to 24 V A	55		
	60 V A	45		
	110 V A	45		
	220 V A	5		
	440 V A	1		
	600 V A	0.8		
- 3 conducting paths in series	Up to 24 V A	55		
	60 V A	55		
	110 V A	55		
	220 V A	45		
	440 V A	2.9		
	600 V A	1.4		
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)				
• Rated operational currents I_e (at 60 °C)				
- 1 conducting path	Up to 24 V A	35		
	60 V A	6		
	110 V A	2.5		
	220 V A	1		
	440 V A	0.1		
	600 V A	0.06		
- 2 conducting paths in series	Up to 24 V A	55		
	60 V A	45		
	110 V A	25		
	220 V A	5		
	440 V A	0.27		
	600 V A	0.16		
- 3 conducting paths in series	Up to 24 V A	55		
	60 V A	55		
	110 V A	55		
	220 V A	25		
	440 V A	0.6		
	600 V A	0.35		
Switching frequency				
Switching frequency z in operating cycles/hour				
Contactors without overload relays				
• No-load switching frequency	AC 1/h	5 000		
	AC/DC 1/h	1 500		
• Switching frequency z during rated operation ¹⁾				
- $I_e/AC-1$	At 400 V 1/h	1 200	1 000	800
- $I_e/AC-2$	At 400 V 1/h	750	600	400
- $I_e/AC-3$	At 400 V 1/h	1 000	800	700
- $I_e/AC-4$	At 400 V 1/h	300	250	200
Contactors with overload relays				
• Mean value	1/h	15		

¹⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U:
 $z' = z \cdot (I_e/I') \cdot (U_e/U)^{1.5} \cdot 1/h.$

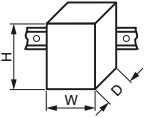
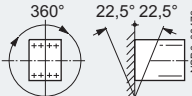

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type	Contactors	
Size	3RT2035 to 3RT2038	
S2		
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm ²	2 x (1 ... 35) ¹⁾ ; 1 x (1 ... 50) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (1 ... 25) ¹⁾ ; 1 x (1 ... 35) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (18 ... 2) ¹⁾ ; 1 x (18 ... 1) ¹⁾
• Terminal screws		Pozidriv size 2; Ø 5 ... 6
- Tightening torque	Nm	3 ... 4.5 (27 ... 40 lb.in)
Auxiliary conductors and control conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾
• Terminal screws		M3 (for Pozidriv size 2; Ø 5 ... 6)
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)
Auxiliary and control conductors²⁾ (1 or 2 conductors can be connected)		
• Operating devices	mm	3.0 x 0.5
• Solid or stranded	mm ²	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5)
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)



¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

²⁾ Max. external diameter of the conductor insulation: 3.6 mm.
On spring-type terminals with conductor cross-sections $\leq 1 \text{ mm}^2$ an insulation stop must be used, [see page 3/121](#).

Type Size	Contactors		
	3RT2045 S3	3RT2046	3RT2047
General data			
Dimensions (W x H x D)		mm	70 x 140 x 152
<ul style="list-style-type: none"> Basic unit <ul style="list-style-type: none"> Screw/spring-type terminals Basic unit with mounted auxiliary switch block <ul style="list-style-type: none"> Screw terminals Spring-type terminals 	mm	70 x 140 x 196	
	mm	70 x 140 x 200	
<ul style="list-style-type: none"> Basic unit with mounted function module or solid-state time-delayed auxiliary switch block <ul style="list-style-type: none"> Screw/spring-type terminals 	mm	70 x 140 x 226	
Permissible mounting position	The contactors are designed for operation on a vertical mounting surface.		
			
Upright mounting position		Special version required	
Mechanical endurance			
<ul style="list-style-type: none"> Basic units and basic units with mounted auxiliary switch block 	Operating	10 million	cycles
<ul style="list-style-type: none"> Basic units with solid-state compatible auxiliary switch block 	Operating	5 million	cycles
Electrical endurance	For contact endurance of the main contacts, see page 3/26 .		
Rated insulation voltage U_i (pollution degree 3)	V	1 000 (3RT20...-...-0CC0: 690)	
Rated impulse withstand voltage U_{imp}			
<ul style="list-style-type: none"> Auxiliary circuit 	kV	6	
<ul style="list-style-type: none"> Main circuit 	kV	8	
Protective separation between the coil and the main contacts (acc. to IEC 60947-1, Appendix N)	V	690	
Mirror contacts	A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.		
<ul style="list-style-type: none"> Integrated auxiliary switches 	Yes, acc. to IEC 60947-4-1, Appendix F		
<ul style="list-style-type: none"> 3RT2.4. (removable auxiliary switch block) 	Yes, acc. to IEC 60947-4-1, Appendix F		
Permissible ambient temperature			
<ul style="list-style-type: none"> During operation 	°C	-25 ... +60	
<ul style="list-style-type: none"> During storage 	°C	-55 ... +80	
Degree of protection acc. to IEC 60529			
<ul style="list-style-type: none"> On front 	IP20		
<ul style="list-style-type: none"> Connecting terminal 	IP00 (for higher degree of protection, use additional terminal covers)		
Touch protection acc. to IEC 60529	Finger-safe for vertical touching from the front		
Shock resistance			
<ul style="list-style-type: none"> Rectangular pulse <ul style="list-style-type: none"> AC operation DC operation 	g/ms	10.3/5 and 6.7/10	
	g/ms	6.7/5 and 4.0/10 (3RT204...KB40: 6.3/5 and 3.6/10)	
<ul style="list-style-type: none"> Sine pulse <ul style="list-style-type: none"> AC operation DC operation 	g/ms	16.3/5 and 10.5/10	
	g/ms	10.6/5 and 6.3/10 (3RT204...KB40: 9.8/5 and 5.6/10)	
Short-circuit protection			
Main circuit			
<ul style="list-style-type: none"> Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC/EN 60947-4-1 <ul style="list-style-type: none"> Type of coordination "1" Type of coordination "2" Weld-free (test conditions acc. to IEC 60947-4-1) 	A	250	
	A	160	160
	A	On request	200
Auxiliary circuit			
<ul style="list-style-type: none"> Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection at $I_k \leq 1$ kA) 	A	10	
<ul style="list-style-type: none"> 230 V miniature circuit breaker, C characteristic (short-circuit current $I_k < 400$ A) 	A	10	
Short-circuit protection for contactors with overload relays	See Configuration Manual for load feeders		
Short-circuit protection for fuseless load feeders	See 3RA2 load feeders, from page 8/4 onwards		

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type		Contactors		Coupling contactors
Size		3RT204.-A...	3RT204.-N.3.	3RT204.-KB4.
Control				
Type of operating mechanism				
		AC	AC/DC	DC
Solenoid coil operating range				
• AC operation ¹⁾		0.8 ... 1.1 x U_s	--	--
• AC/DC operation ¹⁾		--	0.8 ... 1.1 x U_s	--
• DC operation		--	--	0.8 ... 1.2 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)				
• AC operation, 50 Hz, standard version				
- Closing	VA	296	--	--
- P.f.		0.61	--	--
- Closed	VA	19	--	--
- P.f.		0.38	--	--
• AC operation, 50/60 Hz, standard version				
- Closing	VA	348/296	--	--
- P.f.		0.62/0.55	--	--
- Closed	VA	25/18	--	--
- P.f.		0.35/0.41	--	--
• AC operation, 60 Hz, for USA/Canada				
- Closing	VA	326	--	--
- P.f.		0.62	--	--
- Closed	VA	22	--	--
- P.f.		0.38	--	--
• AC/DC operation				
- Closing for AC operation	VA	--	163	--
- P.f.		--	0.95	--
- Closed for AC operation	VA	--	3.1	--
- P.f.		--	0.95	--
• DC operation				
- Closing for DC operation	W	--	76 ²⁾	25
- Closed for DC operation	W	--	1.8	0.9
Permissible residual current of the electronics (with 0 signal)				
• AC/DC operation	mA	--	< 20	--
• DC operation	mA	--	--	< 20
Overvoltage configuration of the solenoid coil				
		--	Built-in varistor 	Built-in varistor 
Operating times at 0.8 ... 1.2 x U_s ³⁾				
Total break time = Opening delay + Arcing time				
• DC operation				
- Closing delay	ms	--	--	50 ... 70
- Opening delay	ms	--	--	38 ... 57
Operating times at 1.0 x U_s ³⁾				
• AC operation				
- Closing delay	ms	15 ... 25	50 ... 70	--
- Opening delay	ms	11 ... 20	38 ... 57	--
• DC operation				
- Closing delay	ms	--	50 ... 70	--
- Opening delay	ms	--	38 ... 57	--
• Arcing time	ms	10 ... 20	--	--

¹⁾ Coil operating range

- At 50 Hz: 0.8 to 1.1 x U_s
- At 60 Hz: 0.85 to 1.1 x U_s .

²⁾ In the case of AC/DC coils, increased starting currents (2.6 A on average) occur during the first 200 ms. For direct control from a PLC, we therefore recommend special coupling contactors with adapted power consumption. The connection of one 3RT204.-KB4. coupling contactor is possible per PLC output port with an output current of 2 A, see page 3/67.

³⁾ The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2x to 6x).

Type Size	Contactors		
	3RT2045 S3	3RT2046	3RT2047
Rated data of the main contacts			
Load rating with AC			
Utilization category AC-1, switching resistive loads			
• Rated operational current I_e	At 40 °C up to 690 V A At 60 °C up to 690 V A	125 105	130 110
• Rated power for AC loads ¹⁾ P.f. = 0.95 (at 60 °C)	230 V kW 400 V kW 690 V kW	40 69 119	42 72 125
• Minimum conductor cross-section for loads with I_e	At 40 °C mm ² At 60 °C mm ²	50 35	
Utilization categories AC-2 and AC-3			
• Rated operational currents I_e	Up to 400 V A 500 V A 690 V A 1 000 V A	80 80 58 30	95 95 78 110 98
• Rated power for slipring or squirrel-cage motors at 50 Hz and 60 Hz	At 230 V kW 400 V kW 690 V kW 1 000 V kW	22 37 55 37	22 45 75 30 55 90
Thermal load capacity	10 s current A	760	880
Power loss per conducting path	At I_e /AC-3 W	5.3	6.6 7.9
Utilization category AC-4 (for $I_a = 6 \times I_e$)			
• Maximum values			
- Rated operational current I_e	Up to 400 V A	66	80 97
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 400 V kW	37	45 55
• The following applies to a contact endurance of about 200 000 operating cycles:			
- Rated operational currents I_e	Up to 400 V A 690 V A	34 24	42 30 46 36
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 110 V kW 230 V kW 400 V kW 690 V kW	4.9 10.4 17.9 21.8	6.1 12 22 27.4 6.7 14 24.3 32.9

¹⁾ Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type Size	Contactors		
	3RT2045 S3	3RT2046	3RT2047
Rated data of the main contacts (continued)			
Load rating with DC			
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)			
• Rated operational currents I_e (at 60 °C)			
- 1 conducting path	Up to 24 V A	100	
	60 V A	60	
	110 V A	9	
	220 V A	2	
	440 V A	0.6	
	600 V A	0.4	
- 2 conducting paths in series	Up to 24 V A	100	
	60 V A	100	
	110 V A	100	
	220 V A	10	
	440 V A	1.8	
	600 V A	1.0	
- 3 conducting paths in series	Up to 24 V A	100	
	60 V A	100	
	110 V A	100	
	220 V A	80	
	440 V A	4.5	
	600 V A	2.6	
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)			
• Rated operational currents I_e (at 60 °C)			
- 1 conducting path	Up to 24 V A	40	
	60 V A	6	
	110 V A	2.5	
	220 V A	1	
	440 V A	0.15	
	600 V A	0.06	
- 2 conducting paths in series	Up to 24 V A	100	
	60 V A	100	
	110 V A	100	
	220 V A	7	
	440 V A	0.42	
	600 V A	0.16	
- 3 conducting paths in series	Up to 24 V A	100	
	60 V A	100	
	110 V A	100	
	220 V A	35	
	440 V A	0.8	
	600 V A	0.35	
Switching frequency			
Switching frequency z in operating cycles/hour			
Contactors without overload relays			
• No-load switching frequency	AC 1/h	5 000	
	AC/DC 1/h	1 000	
• Switching frequency z during rated operation ¹⁾			
- $I_e/AC-1$	At 400 V 1/h	900	
- $I_e/AC-2$	At 400 V 1/h	400	350
- $I_e/AC-3$	At 400 V 1/h	1 000	850
- $I_e/AC-4$	At 400 V 1/h	300	250
Contactors with overload relays			
• Mean value	1/h	15	200

¹⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U:
 $z' = z \cdot (I_e/I') \cdot (U_e/U)^{1.5} \cdot 1/h.$

Type Size	Contactors 3RT2045 to 3RT2047 S3	
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		
• Solid	mm ²	2 x (2.5 ... 16) ¹⁾
• Stranded	mm ²	2 x (6 ... 16) ¹⁾ ; 2 x (10 ... 50) ¹⁾ ; 1 x (10 ... 70) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (2.5 ... 35) ¹⁾ ; 1 x (2.5 ... 50) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (10 ... 1/0) ¹⁾ ; 1 x (10 ... 2/0) ¹⁾
• Terminal screws - Tightening torque	Nm	Hexagon socket, size 4 4.5 ... 6 (40 ... 53 lb.in)
Auxiliary conductors and control conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾
• Terminal screws - Tightening torque	Nm	M3 (for Pozidriv size 2; Ø 5 ... 6) 0.8 ... 1.2 (7 ... 10.3 lb.in)
Auxiliary and control conductors²⁾ (1 or 2 conductors can be connected)		
• Operating devices	mm	3.0 x 0.5
• Solid or stranded	mm ²	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5)
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 16)
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.</p> </div> <div style="width: 45%;"> <p>²⁾ Max. external diameter of the conductor insulation: 3.6 mm. On spring-type terminals with conductor cross-sections ≤ 1 mm² an insulation stop must be used, see page 3/121.</p> </div> </div>		

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type	Contactors					
	3RT1054	3RT1055, 3RT1056	3RT1064 to 3RT1066	3RT1075	3RT1076	
Size	S6		S10	S12		
General data						
Dimensions (W x H x D)						
<ul style="list-style-type: none"> Basic unit Basic unit with mounted auxiliary switch block 			mm	120 x 172 x 170	145 x 210 x 202	160 x 214 x 225
			mm	120 x 172 x 217	145 x 210 x 251	160 x 214 x 271
Permissible mounting position						
The contactors are designed for operation on a vertical mounting surface.						
Mechanical endurance		Operating cycles	10 million			
Electrical endurance		For contact endurance of the main contacts, see page 3/26 .				
Rated insulation voltage U_i (pollution degree 3)		V	1 000			
Rated impulse withstand voltage U_{imp}						
• Auxiliary circuit		kV	6			
• Main circuit		kV	8			
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		V	690			
Mirror contacts		Yes, acc. to IEC 60947-4-1, Appendix F				
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.						
Permissible ambient temperature						
• During operation		°C	-25 ... +60			
• During storage		°C	-55 ... +80			
Degree of protection acc. to IEC 60529						
• On front	IP00 (IP20 with box terminal/cover)					
• Connecting terminal	IP00 (for higher degree of protection, use additional terminal covers)					
Touch protection acc. to IEC 60529		Finger-safe for vertical touching from the front with cover				
Shock resistance						
• Rectangular pulse		g/ms	8.5/5 and 4.2/10			
• Sine pulse		g/ms	13.4/5 and 6.5/10			
Electromagnetic compatibility (EMC)		See page 3/19				
Short-circuit protection						
Main circuit						
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC/EN 60947-4-1						
• Type of coordination "1"	A	355	500	630		
• Type of coordination "2"	A	315	400	500		
• Weld-free	A	80	160	250	315	
Auxiliary circuit						
Short-circuit test						
• With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1	A	10				
• With miniature circuit breakers with C characteristic with short-circuit current $I_k = 400$ A	A	10				
Short-circuit protection for contactors with overload relays		See Configuration Manual for load feeders				

Type Size	Contactors				
	3RT105. S6	3RT106. S10	3RT107. S12		
Control					
Operating range of the solenoid operating mechanism	AC/DC	0.8 x $U_{s \text{ min}}$... 1.1 x $U_{s \text{ max}}$			
Power consumption of the solenoid operating mechanism (with cold coil and rated range $U_{s \text{ min}}$... $U_{s \text{ max}}$)					
• Standard operating mechanism (3RT10...-A)					
- AC operation	Closing at $U_{s \text{ min}}$ Closing at $U_{s \text{ max}}$ Closed at $U_{s \text{ min}}$ Closed at $U_{s \text{ max}}$	VA/p.f. VA/p.f. VA/p.f. VA/p.f.	250/0.9 300/0.9 4.8/0.8 5.8/0.8	490/0.9 590/0.9 5.6/0.9 6.7/0.9	700/0.9 830/0.9 7.6/0.9 9.2/0.9
- DC operation	Closing at $U_{s \text{ min}}$ Closing at $U_{s \text{ max}}$ Closed at $U_{s \text{ min}}$ Closed at $U_{s \text{ max}}$	W W W W	300 360 4.3 5.2	540 650 6.1 7.4	770 920 8.5 10
• Solid-state operating mechanism (3RT10...-N/-P/-S)					
- AC operation	Closing at $U_{s \text{ min}}$ Closing at $U_{s \text{ max}}$ Closed at $U_{s \text{ min}}$ Closed at $U_{s \text{ max}}$	VA/p.f. VA/p.f. VA/p.f. VA/p.f.	190/0.8 280/0.8 3.5/0.6 4.8/0.6	400/0.8 530/0.8 5.5/0.5 8.5/0.4	560/0.8 750/0.8 5.6/0.5 9/0.4
- DC operation	Closing at $U_{s \text{ min}}$ Closing at $U_{s \text{ max}}$ Closed at $U_{s \text{ min}}$ Closed at $U_{s \text{ max}}$	W W W W	250 320 2.1 2.8	440 580 2.8 3.4	600 800 3 3.6
PLC control input acc. to IEC 60947-1					
• Solid-state operating mechanism (3RT10...-N/-P/-S)					
• Rated voltage	V DC	24			
• Operating range	V DC	17 ... 30			
• Power consumption	mA	≤ 30			
• Recovery time after mains failure, typical (applicable only for fail-safe version 3RT10...-S)	s	2			
Operating times for rated range $U_{s \text{ min}}$... $U_{s \text{ max}}$ (Total break time = Opening delay + Arcing time)					
• Standard operating mechanism (3RT10...-A)					
	Closing delay	ms	25 ... 50	35 ... 50	50 ... 70
	Opening delay	ms	40 ... 60	50 ... 80	70 ... 100
• Solid-state operating mechanism					
- Actuated via A1/A2 (3RT10...-N/-P)	Closing delay	ms	100 ... 120	110 ... 130	125 ... 150
	Opening delay	ms	80 ... 100		
- Actuated via PLC input (3RT10...-N/-P)	Closing delay	ms	40 ... 60	50 ... 65	65 ... 80
	Opening delay	ms	80 ... 100		
- Actuated via F-PLC input (3RT10...-S)	Closing delay	ms	60 ... 75		
	Opening delay	ms	115 ... 130		
• Arcing time		ms	10 ... 15		

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type Size	Contactors							
	3RT1054 S6	3RT1055	3RT1056	3RT1064 S10	3RT1065	3RT1066	3RT1075 S12	3RT1076
Rated data of the main contacts								
Load rating with AC								
Utilization category AC-1								
Switching resistive loads								
• Rated operational currents I_e								
- At 40 °C up to 690 V	A	160	185	215	275	330	430	610
- At 60 °C up to 690 V	A	140	160	185	250	300	400	550
- At 60 °C up to 1 000 V	A	80	90	100		150	200	
• Rated power for AC loads ¹⁾ with p.f. = 0.95 (at 60 °C)								
- At 230 V	kW	53	60	70	94	113	151	208
- At 400 V	kW	92	105	121	164	197	263	362
- At 500 V	kW	115	131	152	205	246	329	452
- At 690 V	kW	159	181	210	283	340	454	624
- At 1 000 V	kW	131	148	165	164	246	329	
• Minimum conductor cross-section for loads with I_e								
- At 40 °C	mm ²	70	95		150	185	2 x 150	2 x 185
- At 60 °C	mm ²	50	70	95	120	185	240	2 x 185
Utilization categories AC-2 and AC-3								
• Rated operational currents I_e								
- Up to 500 V	A	115	150	185	225	265	300	400
- At 690 V	A	115	150	170	225	265	280	400
- At 1 000 V	A	53	65		68	95		180
• Rated power for slipring or squirrel-cage motors at 50 Hz and 60 Hz								
- At 230 V	kW	37	50	61	73	85	97	132
- At 400 V	kW	64	84	104	128	151	171	231
- At 500 V	kW	81	105	132	160	189	215	291
- At 690 V	kW	113	146	167	223	265	280	400
- At 1 000 V	kW	75	90			132		250
Thermal load capacity, 10 s current	A	1 100	1 300	1 480	1 800	2 400		3 200
Power loss per main conducting path At $I_e/AC-3/500 V$	W	7	9	13	17	18	22	35
Utilization category AC-4 (for $I_a = 6 \times I_e$)								
Maximum values:								
• Rated operational current I_e								
- Up to 400 V	A	97	132	160	195	230	280	350
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz								
- At 400 V	kW	55	75	90	110	132	160	200
The following applies to a contact endurance of about 200 000 operating cycles:								
• Rated operational currents I_e								
- Up to 500 V	A	54	68	81	96	117	125	150
- Up to 690 V	A	48	57	65	85	105	115	135
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz								
- At 230 V	kW	16	20	25	30	37	40	48
- At 400 V	kW	29	38	45	54	66	71	85
- At 500 V	kW	37	47	57	67	82	87	105
- At 690 V	kW	48	55	65	82	102	112	133






¹⁾ Industrial furnaces and electric heaters with resistance heating, etc.
(increased power consumption on heating up has been taken into account).

Type Size	Contactors						
	3RT1054 S6	3RT1055, 3RT1056	3RT1064 S10	3RT1065	3RT1066	3RT1075 S12	3RT1076
Rated data of the main contacts (continued)							
Load rating with DC							
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)							
• Rated operational currents I_e (at 60 °C)							
- 1 conducting path	Up to 24 V A	160	200	300		400	
	60 V A	160	200	300		330	
	110 V A	18		33			
	220 V A	3.4		3.8			
	440 V A	0.8		0.9			
	600 V A	0.5		0.6			
- 2 conducting paths in series	Up to 24 V A	160	200	300		400	
	60 V A	160	200	300		400	
	110 V A	160	200	300		400	
	220 V A	20		300		400	
	440 V A	3.2		4			
	600 V A	1.6		2			
- 3 conducting paths in series	Up to 24 V A	160	200	300		400	
	60 V A	160	200	300		400	
	110 V A	160	200	300		400	
	220 V A	160	200	300		400	
	440 V A	11.5		11			
	600 V A	4		5.2			
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)							
• Rated operational currents I_e (at 60 °C)							
- 1 conducting path	Up to 24 V A	160	200	300		400	
	60 V A	7.5		11			
	110 V A	2.5		3			
	220 V A	0.6					
	440 V A	0.17		0.18			
	600 V A	0.12		0.125			
- 2 conducting paths in series	Up to 24 V A	160	200	300		400	
	60 V A	160	200	300		400	
	110 V A	160	200	300		400	
	220 V A	2.5					
	440 V A	0.65					
	600 V A	0.37					
- 3 conducting paths in series	Up to 24 V A	160	200	300		400	
	60 V A	160	200	300		400	
	110 V A	160	200	300		400	
	220 V A	160	200	300		400	
	440 V A	1.4					
	600 V A	0.75					
Switching frequency							
Switching frequency z in operating cycles/hour							
Contactors without overload relays							
• No-load switching frequency							
- Standard operating mechanism	3RT10...-A	1/h	2 000				
- Solid-state operating mechanism	3RT10...-N/-P	1/h	1 000				
	3RT10...-S	1/h	1 000			500	
• Switching frequency z during rated operation ¹⁾							
- 3RT10...-A standard operating mechanism and	$I_e/AC-1$ at 400 V	1/h	800		750	800	750
	$I_e/AC-2$ at 400 V	1/h	400	300	250		200
3RT10...-N/-P solid-state operating mechanism	$I_e/AC-3$ at 400 V	1/h	1 000	750	500		200
	$I_e/AC-4$ at 400 V	1/h	130				420
- 3RT10...-S solid-state operating mechanism	$I_e/AC-1$ at 400 V	1/h	750		500		200
	$I_e/AC-2$ at 400 V	1/h	400	300	250		200
	$I_e/AC-3$ at 400 V	1/h	750		500		200
	$I_e/AC-4$ at 400 V	1/h	130				170
Contactors with mounted overload relay							
• Mean value		1/h	60				

¹⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U :
 $z' = z \cdot (I_e/I') \cdot (U_e/U)^{1.5} \cdot 1/h$.

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type	Contactors		
Size	3RT105. S6	3RT106. S10	3RT107. S12
Conductor cross-sections			
Main conductors (1 or 2 conductors can be connected)			
 Screw terminals			
With mounted box terminals	Type	3RT1955-4G (55 kW)	3RT1956-4G
<ul style="list-style-type: none"> Terminal screws Tightening torque 	Nm	M10 (hexagon socket, A/F 4)	M12 (hexagon socket, A/F 5)
	lb.in	10 ... 12	20 ... 22
		90 ... 110	180 ... 195
Front clamping point connected			
	<ul style="list-style-type: none"> Finely stranded with end sleeve (DIN 46228-1) Finely stranded without end sleeve Stranded AWG cables, solid or stranded Ribbon cable conductors (number x width x thickness) 	mm ² 16 ... 70 mm ² 16 ... 70 mm ² 16 ... 70 AWG 6 ... 2/0 mm Min. 3 x 9 x 0,8, max. 6 x 15,5 x 0,8	16 ... 120 16 ... 120 16 ... 120 6 ... 250 kcmil Min. 3 x 9 x 0,8, max. 10 x 15,5 x 0,8
			70 ... 240 70 ... 240 95 ... 300 3/0 ... 600 kcmil Min. 6 x 9 x 0,8, max. 20 x 24 x 0,5
Rear clamping point connected			
	<ul style="list-style-type: none"> Finely stranded with end sleeve (DIN 46228-1) Finely stranded without end sleeve Stranded AWG cables, solid or stranded Ribbon cable conductors (number x width x thickness) 	mm ² 16 ... 70 mm ² 16 ... 70 mm ² 16 ... 70 AWG 6 ... 2/0 mm Min. 3 x 9 x 0,8, max. 6 x 15,5 x 0,8	16 ... 120 16 ... 120 16 ... 120 6 ... 250 kcmil Min. 3 x 9 x 0,8, max. 10 x 15,5 x 0,8
			120 ... 185 120 ... 185 120 ... 240 250 ... 500 kcmil Min. 6 x 9 x 0,8, max. 20 x 24 x 0,5
Both clamping points connected (minimum cross-section 16 mm ²)			
	<ul style="list-style-type: none"> Finely stranded with end sleeve (DIN 46228-1) Finely stranded without end sleeve Stranded AWG cables, solid or stranded Ribbon cable conductors (number x width x thickness) 	mm ² Max. 1 x 50, 1 x 70 mm ² Max. 1 x 50, 1 x 70 mm ² Max. 1 x 50, 1 x 70 AWG Max. 2 x 1/0 mm Max. 2 x (6 x 15,5 x 0,8)	Max. 1 x 95, 1 x 120 Max. 1 x 95, 1 x 120 Max. 1 x 95, 1 x 120 Max. 2 x 3/0 Max. 2 x (10 x 15,5 x 0,8)
			Min. 2 x 50, max. 2 x 185 Min. 2 x 50, max. 2 x 185 Min. 2 x 70, max. 2 x 240 Min. 2 x 2/0, max. 2 x 500 kcmil Max. 2 x (20 x 24 x 0,5)
Busbar connections			
Connecting bar (max. width)	mm	17	25
Cable lug connection			
<ul style="list-style-type: none"> Finely stranded with cable lug¹⁾²⁾ Stranded with cable lug¹⁾²⁾ AWG cables, solid or stranded Terminal screws Tightening torque 	mm ² 16 ... 95 mm ² 25 ... 120 AWG 4 ... 250 kcmil Nm M8 x 25 (A/F 13) lb.in 10 ... 14 90 ... 124	50 ... 240 70 ... 240 2/0 ... 500 kcmil M10 x 30 (A/F 17) 14 ... 24 124 ... 210	
Auxiliary conductors (1 or 2 conductors connectable)			
<ul style="list-style-type: none"> Solid Finely stranded with end sleeve (DIN 46228-1) AWG cables, solid or stranded Terminal screws Tightening torque 	mm ² 2 x (0,5 ... 1,5) ³⁾ ; 2 x (0,75 ... 2,5) ³⁾ ; max. 2 x (0,75 ... 4) ³⁾ mm ² 2 x (0,5 ... 1,5) ³⁾ ; 2 x (0,75 ... 2,5) ³⁾ AWG 2 x (18 ... 14) Nm M3 (Pozidriv size 2) lb.in 0,8 ... 1,2 7 ... 10,3		
Auxiliary conductors⁴⁾ (1 or 2 conductors connectable)			
 Spring-type terminals			
<ul style="list-style-type: none"> Operating devices Solid Finely stranded with end sleeve (DIN 46228-1) Finely stranded without end sleeve AWG cables, solid or stranded 	mm ² 2 x (0,25 ... 2,5) mm ² 2 x (0,25 ... 1,5) mm ² 2 x (0,25 ... 2,5) AWG 2 x (24 ... 14)	3,0 x 0,5; 3,5 x 0,5	

¹⁾ 3RT105.: When using cable lugs according to EN 46235, use the 3RT1956-4EA1 terminal cover for conductor cross-sections from 95 mm² to keep the phase clearance, see page 3/118.

²⁾ 3RT106. and 3RT107.: When connecting cable lugs according to DIN 46234 for conductor cross-sections larger than 240 mm² and according to DIN 46235 for conductor cross-sections larger than 185 mm², the 3RT1966-4EA1 terminal cover is required to maintain phase separation, see page 3/118.

³⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

⁴⁾ Max. external diameter of the conductor insulation: 3,6 mm. With conductor cross-sections ≤ 1 mm² an "insulation stop" must be used, see page 3/121.

Data for North America

Type Size	Contactors			
	3RT2015 S00	3RT2016	3RT2017	3RT2018
and rated data				
Rated operational voltage	V AC	600		
Uninterrupted current , at 40 °C, open and enclosed	A	20		
Maximum horsepower ratings (from and approved values)				
• Rated power for three-phase motors at 60 Hz	At 200 V hp 230 V hp 460 V hp 575 V hp	1.5 2 3 5	2 3 5 7.5	3 5 7.5 10
Short-circuit protection (contactor)				
• Class J fuse (values for RK5 fuses available on request)	A	60		
• Circuit breakers in accordance with UL 489 ("Inverse Time Breakers")	A	50		
• Combination motor controllers, type E acc. to UL 508 and UL 60947-4-1		3RV2.1 or 3RV2.2		

Type Size	Contactors						
	3RT2023 S0	3RT2024	3RT2025	3RT2026	3RT2326-.....-4AA0	3RT2027 3RT2028	
and rated data							
Rated operational voltage	V AC	600					
Uninterrupted current , at 40 °C, open and enclosed	A	30					42
Maximum horsepower ratings (from and approved values)							
• Rated power for three-phase motors at 60 Hz	At 200 V hp 230 V hp 460 V hp 575 V hp	2 3 5 7.5	3 7.5 10	5 10 15	5 7.5 15	3 5 10 15	10 10 20 25
Short-circuit protection (contactor)							
• Class J fuse (values for RK5 fuses available on request)	A	125					150
• Circuit breakers in accordance with UL 489 ("Inverse Time Breakers")	A	70					100
• Combination motor controllers, type E acc. to UL 508 and UL 60947-4-1	At 480 V Type At 600 V Type	3RV202					

Type Size	Contactors							
	3RT2035 S2	3RT2036, 3RT2336-.....-4AA0	3RT2037	3RT2038	3RT2045 S3	3RT2046	3RT2047	
and rated data								
Rated operational voltage	V AC	600						
Uninterrupted current , at 40 °C, open and enclosed	A	55	60	80	90	62	77	99
Maximum horsepower ratings (from and approved values)								
• Rated power for three-phase motors at 60 Hz	At 200/208 V hp 230/240 V hp 460/480 V hp 575/600 V hp	10 15 30 40	15 40 50	20 20 50	25 25 60	25 30 60 60	30 30 75 75	40 100
Short-circuit protection (contactor)								
• RK5 fuse	A	150	200	250		300	350	
• Combination motor controllers, type E acc. to UL 508 and UL 60947-4-1	Type	3RV203			3RV204			

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

		Contactors							
		3RT1054	3RT1055	3RT1056	3RT1064	3RT1065	3RT1066	3RT1075	3RT1076
Size		S6			S10			S12	
Ⓢ and Ⓣ rated data									
Rated operational voltage	V AC	600							
Uninterrupted current , at 40 °C, open and enclosed	A	140	195		250	330		400	540
Maximum horsepower ratings (from Ⓢ and Ⓣ approved values)									
• Rated power for three-phase motors at 60 Hz	At 200 V hp	40	50	60		75	100	125	150
	230 V hp	50	60	75		100	125	150	200
	460 V hp	100	125	150		200	250	300	400
	575 V hp	125	150	200		250	300	400	500
Short-circuit protection	More information, see Certificate of Compliance for the individual devices . For the dimensioning of load feeders, see Configuration Manual .								

		Contactors			
		3RT201	3RT202 to 3RT204		3RT105 to 3RT107
Type		S00	S0 to S3		S6 to S12
Size		Integrated or mountable auxiliary switch block	Integrated		Mountable auxiliary switch block
Ⓢ and Ⓣ rated data of the auxiliary contacts					
Rated voltage	V AC	600			
Switching capacity		A 600, Q 600	A 600, P 600		A 600, Q 600
• Uninterrupted current at 240 V AC	A	10			

IE3/IE4 ready SIRIUS 3RT contactors, 3-pole up to 250 kW

Selection and ordering data

AC operation 

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT201.-1A...



3RT201.-2A...



3RT201.-1AP04-3MA0



3RT201.-2AP04-3MA0

Rated data		Auxiliary contacts	Rated control supply voltage U_s	SD	Screw terminals	SD	Spring-type terminals
AC-2 and AC-3, t_U : 60 °C	Operational current I_e up to 400 V	Ident. No.	50/60 Hz AC		Article No.	Price per PU	Article No.
AC-1, t_U : 40 °C	Ratings of three-phase motors at 50 Hz and 400 V	Version					Price per PU
	Operational current I_e up to 690 V	NO NC					
A	kW	A	V	d			

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

7	3	18	10	1	--	24 110 230	▶	3RT2015-1AB01 3RT2015-1AF01 3RT2015-1AP01	▶	3RT2015-2AB01 3RT2015-2AF01 3RT2015-2AP01
			01	--	1	24 110 230	▶	3RT2015-1AB02 3RT2015-1AF02 3RT2015-1AP02	▶	3RT2015-2AB02 3RT2015-2AF02 3RT2015-2AP02
9	4	22	10	1	--	24 110 230	▶	3RT2016-1AB01 3RT2016-1AF01 3RT2016-1AP01	▶	3RT2016-2AB01 3RT2016-2AF01 3RT2016-2AP01
			01	--	1	24 110 230	▶	3RT2016-1AB02 3RT2016-1AF02 3RT2016-1AP02	▶	3RT2016-2AB02 3RT2016-2AF02 3RT2016-2AP02
12	5.5	22	10	1	--	24 110 230	▶	3RT2017-1AB01 3RT2017-1AF01 3RT2017-1AP01	▶	3RT2017-2AB01 3RT2017-2AF01 3RT2017-2AP01
			01	--	1	24 110 230	▶	3RT2017-1AB02 3RT2017-1AF02 3RT2017-1AP02	▶	3RT2017-2AB02 3RT2017-2AF02 3RT2017-2AP02
16	7.5	22	10	1	--	24 110 230	▶	3RT2018-1AB01 3RT2018-1AF01 3RT2018-1AP01	▶	3RT2018-2AB01 3RT2018-2AF01 3RT2018-2AP01
			01	--	1	24 110 230	▶	3RT2018-1AB02 3RT2018-1AF02 3RT2018-1AP02	▶	3RT2018-2AB02 3RT2018-2AF02 3RT2018-2AP02
With permanently mounted auxiliary switch block (SUVA-certified safety contactor)										
7	3	18	22	2	2	230	2	3RT2015-1AP04-3MA0	5	3RT2015-2AP04-3MA0
9	4	22	22	2	2	230	2	3RT2016-1AP04-3MA0	5	3RT2016-2AP04-3MA0
12	5.5	22	22	2	2	230	2	3RT2017-1AP04-3MA0	5	3RT2017-2AP04-3MA0
16	7.5	22	22	2	2	230	▶	3RT2018-1AP04-3MA0	5	3RT2018-2AP04-3MA0
With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and varistor plugged into the front										
7	3	18	22	2	2	230	5	3RT2015-1CP04-3MA0	5	3RT2015-2CP04-3MA0
9	4	22	22	2	2	230	5	3RT2016-1CP04-3MA0	5	3RT2016-2CP04-3MA0
12	5.5	22	22	2	2	230	5	3RT2017-1CP04-3MA0	5	3RT2017-2CP04-3MA0
16	7.5	22	22	2	2	230	5	3RT2018-1CP04-3MA0	5	3RT2018-2CP04-3MA0

Other voltages according to page 3/74 on request.

Accessories and spare parts, see pages 3/76 to 3/125.

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

AC operation



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT202-1A.00



3RT202-2A.00

Rated data		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals 	SD	Spring-type terminals 	
AC-2 and AC-3, t_u : 60 °C	AC-1, t_u : 40 °C	Ident. No.	Version	50 Hz AC		Article No.	Price per PU	Article No.	Price per PU
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and 400 V								
A	kW	A	NO NC	V	d				

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

9	4	40	11	1	1	24 110 230	▶ ▶ ▶	3RT2023-1AB00 3RT2023-1AF00 3RT2023-1AP00	2 2 ▶	3RT2023-2AB00 3RT2023-2AF00 3RT2023-2AP00
12	5.5	40	11	1	1	24 110 230	▶ ▶ ▶	3RT2024-1AB00 3RT2024-1AF00 3RT2024-1AP00	2 2 ▶	3RT2024-2AB00 3RT2024-2AF00 3RT2024-2AP00
17	7.5	40	11	1	1	24 110 230	▶ ▶ ▶	3RT2025-1AB00 3RT2025-1AF00 3RT2025-1AP00	2 2 ▶	3RT2025-2AB00 3RT2025-2AF00 3RT2025-2AP00
25	11	40	11	1	1	24 110 230	▶ ▶ ▶	3RT2026-1AB00 3RT2026-1AF00 3RT2026-1AP00	2 2 ▶	3RT2026-2AB00 3RT2026-2AF00 3RT2026-2AP00
32	15	50	11	1	1	24 110 230	▶ ▶ ▶	3RT2027-1AB00 3RT2027-1AF00 3RT2027-1AP00	2 2 ▶	3RT2027-2AB00 3RT2027-2AF00 3RT2027-2AP00
38	18.5	50	11	1	1	24 110 230	▶ ▶ ▶	3RT2028-1AB00 3RT2028-1AF00 3RT2028-1AP00	2 2 2	3RT2028-2AB00 3RT2028-2AF00 3RT2028-2AP00

Other voltages [according to page 3/74](#) on request.

Accessories and spare parts, [see pages 3/76 to 3/125](#).

IE3/IE4 ready

SIRIUS 3RT contactors, 3-pole up to 250 kW

AC operation 

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



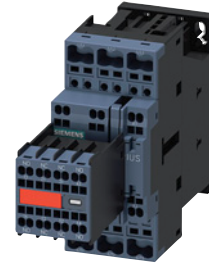
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
3RT202.-2A.04



3RT202.-1CL24-3MA0



3RT202.-2CL24-3MA0

Rated data		Auxiliary contacts	Rated control supply voltage	SD	Screw terminals	SD	Spring-type terminals
AC-2 and AC-3, t_j : 60 °C	AC-1, t_j : 40 °C	Ident. No.	U_s				
Operational current I_e up to 400 V	Operational current I_e up to 690 V	Version	50 Hz AC		Article No.	Price per PU	Article No.
400 V		 					Price per PU
A	A	NO NC V		d			d

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

With removable mounted auxiliary switch block

9	4	40	22	2	2	24 230	5	3RT2023-1AB04 3RT2023-1AP04	5	3RT2023-2AB04 3RT2023-2AP04
12	5.5	40	22	2	2	24 110 230	5 5 5	3RT2024-1AB04 3RT2024-1AF04 3RT2024-1AP04	5 5 2	3RT2024-2AB04 3RT2024-2AF04 3RT2024-2AP04
17	7.5	40	22	2	2	24 110 230	5 5 5	3RT2025-1AB04 3RT2025-1AF04 3RT2025-1AP04	5 5 2	3RT2025-2AB04 3RT2025-2AF04 3RT2025-2AP04
25	11	40	22	2	2	24 110 230	5 5 5	3RT2026-1AB04 3RT2026-1AF04 3RT2026-1AP04	5 5 2	3RT2026-2AB04 3RT2026-2AF04 3RT2026-2AP04
32	15	50	22	2	2	24 110 230	5 5 5	3RT2027-1AB04 3RT2027-1AF04 3RT2027-1AP04	5 5 2	3RT2027-2AB04 3RT2027-2AF04 3RT2027-2AP04
38	18.5	50	22	2	2	24 110 230	5 5 5	3RT2028-1AB04 3RT2028-1AF04 3RT2028-1AP04	5 5 2	3RT2028-2AB04 3RT2028-2AF04 3RT2028-2AP04

With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and varistor permanently plugged into the front

9	4	40	22	2	2	230	5	3RT2023-1CL24-3MA0	5	3RT2023-2CL24-3MA0
12	5.5	40	22	2	2	230	2	3RT2024-1CL24-3MA0	5	3RT2024-2CL24-3MA0
17	7.5	40	22	2	2	230	5	3RT2025-1CL24-3MA0	5	3RT2025-2CL24-3MA0
25	11	40	22	2	2	230	5	3RT2026-1CL24-3MA0	5	3RT2026-2CL24-3MA0
32	15	50	22	2	2	230	5	3RT2027-1CL24-3MA0	5	3RT2027-2CL24-3MA0
38	18.5	50	22	2	2	230	5	3RT2028-1CL24-3MA0	5	3RT2028-2CL24-3MA0

Other voltages according to page 3/74 on request.

Accessories and spare parts, see pages 3/76 to 3/125.

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

AC operation

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT203-1A.00



3RT203-3A.00







3RT203-1A.04



3RT203-1CL24-3MA0



3RT203-3CL24-3MA0

Rated data		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals 	SD	Spring-type terminals 	
AC-2 and AC-3, t_i : 60 °C	AC-1, t_i : 40 °C	Ident. No.	Version	50 Hz AC		Article No.	Price per PU	Article No.	Price per PU
Operational current I_e up to 400 V	Operational current I_e up to 690 V		 						
400 V	400 V		NO NC	V	d				
A	A								
kW									

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S2

40	18.5	60	11	1	1	24 110 230	▶	3RT2035-1AB00 3RT2035-1AF00 3RT2035-1AP00	2 5 ▶	3RT2035-3AB00 3RT2035-3AF00 3RT2035-3AP00
50	22	70	11	1	1	24 110 230	▶	3RT2036-1AB00 3RT2036-1AF00 3RT2036-1AP00	5 5 ▶	3RT2036-3AB00 3RT2036-3AF00 3RT2036-3AP00
65	30	80	11	1	1	24 110 230	▶	3RT2037-1AB00 3RT2037-1AF00 3RT2037-1AP00	5 5 ▶	3RT2037-3AB00 3RT2037-3AF00 3RT2037-3AP00
80	37	90	11	1	1	24 110 230	▶	3RT2038-1AB00 3RT2038-1AF00 3RT2038-1AP00	2 2 ▶	3RT2038-3AB00 3RT2038-3AF00 3RT2038-3AP00
With removable mounted auxiliary switch block										
40	18.5	60	22	2	2	24 110 230	▶	3RT2035-1AB04 3RT2035-1AF04 3RT2035-1AP04		-- -- --
50	22	70	22	2	2	24 110 230	▶	3RT2036-1AB04 3RT2036-1AF04 3RT2036-1AP04		-- -- --
65	30	80	22	2	2	24 110 230	▶	3RT2037-1AB04 3RT2037-1AF04 3RT2037-1AP04		-- -- --
80	37	90	22	2	2	24 110 230	▶	3RT2038-1AB04 3RT2038-1AF04 3RT2038-1AP04		-- -- --
With permanently mounted auxiliary switch block and varistor permanently plugged into the front										
40	18.5	60	22	2	2	230	5	3RT2035-1CL24-3MA0	5	3RT2035-3CL24-3MA0
50	22	70	22	2	2	230	5	3RT2036-1CL24-3MA0	5	3RT2036-3CL24-3MA0
65	30	80	22	2	2	230	5	3RT2037-1CL24-3MA0	5	3RT2037-3CL24-3MA0
80	37	90	22	2	2	230	5	3RT2038-1CL24-3MA0	5	3RT2038-3CL24-3MA0

Other voltages [according to page 3/74](#) on request.

Accessories and spare parts, [see pages 3/76 to 3/125](#).

IE3/IE4 ready

SIRIUS 3RT contactors, 3-pole up to 250 kW

AC operation 

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT204.-1A.00







3RT204.-1A.04



3RT204.-1CL24-3MA0



3RT204.-3A.00

Rated data		Auxiliary contacts	Rated control supply voltage	SD	Screw terminals	SD	Spring-type terminals
AC-2 and AC-3, t_u : 60 °C	AC-1, t_u : 40 °C	Ident. No.	U_s				
Operational current I_e up to 400 V	Operational current I_e up to 690 V	Version	50 Hz AC		Article No.	Price per PU	Article No.
Ratings of three-phase motors at 50 Hz and 400 V		 					Price per PU
A	A	NO NC V		d			

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

80	37	125	11	1	1	24 110 230	2 2 1	3RT2045-1AB00 3RT2045-1AF00 3RT2045-1AP00	5 5 2	3RT2045-3AB00 3RT2045-3AF00 3RT2045-3AP00
95	45	130	11	1	1	24 110 230	2 2 1	3RT2046-1AB00 3RT2046-1AF00 3RT2046-1AP00	5 5 2	3RT2046-3AB00 3RT2046-3AF00 3RT2046-3AP00
110	55	130	11	1	1	24 110 230	5 5 1	3RT2047-1AB00 3RT2047-1AF00 3RT2047-1AP00	5 5 5	3RT2047-3AB00 3RT2047-3AF00 3RT2047-3AP00
With removable mounted auxiliary switch block										
80	37	125	22	2	2	24 110 230	5 2 2	3RT2045-1AB04 3RT2045-1AF04 3RT2045-1AP04		-- -- --
95	45	130	22	2	2	24 110 230	5 2 2	3RT2046-1AB04 3RT2046-1AF04 3RT2046-1AP04		-- -- --
110	55	130	22	2	2	24 110 230	5 5 5	3RT2047-1AB04 3RT2047-1AF04 3RT2047-1AP04		-- -- --
With permanently mounted auxiliary switch block and varistor permanently plugged into the front										
80	37	125	22	2	2	230	5	3RT2045-1CL24-3MA0		--
95	45	130	22	2	2	230	5	3RT2046-1CL24-3MA0		--
110	55	130	22	2	2	230	5	3RT2047-1CL24-3MA0		--

Other voltages [according to page 3/74](#) on request.

Accessories and spare parts, [see pages 3/76 to 3/125](#).

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

DC operation



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT201.-1B...



3RT201.-2B...

Rated data		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 		
AC-2 and AC-3, t_U : 60 °C	Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and 400 V	AC-1, t_U : 40 °C	Operational current I_e up to 690 V	Ident. No.	Version	DC	Article No.	Price per PU	Article No.	Price per PU
A	kW	A			NO	NC	V	d		d	

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

7	3	18	10	1	--	24	▶	3RT2015-1BB41	▶	3RT2015-2BB41	
			01	--	1	24	▶	3RT2015-1BB42	▶	3RT2015-2BB42	
9	4	22	10	1	--	24	▶	3RT2016-1BB41	▶	3RT2016-2BB41	
			01	--	1	24	▶	3RT2016-1BB42	▶	3RT2016-2BB42	
12	5.5	22	10	1	--	24	▶	3RT2017-1BB41	▶	3RT2017-2BB41	
			01	--	1	24	▶	3RT2017-1BB42	▶	3RT2017-2BB42	
16	7.5	22	10	1	--	24	▶	3RT2018-1BB41	▶	3RT2018-2BB41	
			01	--	1	24	▶	3RT2018-1BB42	▶	3RT2018-2BB42	
With integrated coil circuit (varistor) NEW											
7	3	18	10	1	--	24	▶	3RT2015-1UB41	▶	3RT2015-2UB41	
			01	--	1	24	▶	3RT2015-1UB42	▶	3RT2015-2UB42	
9	4	22	10	1	--	24	▶	3RT2016-1UB41	▶	3RT2016-2UB41	
			01	--	1	24	▶	3RT2016-1UB42	▶	3RT2016-2UB42	
12	5.5	22	10	1	--	24	▶	3RT2017-1UB41	▶	3RT2017-2UB41	
			01	--	1	24	▶	3RT2017-1UB42	▶	3RT2017-2UB42	
16	7.5	22	10	1	--	24	▶	3RT2018-1UB41	▶	3RT2018-2UB41	
			01	--	1	24	▶	3RT2018-1UB42	▶	3RT2018-2UB42	
With integrated coil circuit (diode)¹⁾											
7	3	18	10	1	--	24	▶	3RT2015-1FB41	▶	3RT2015-2FB41	
			01	--	1	24	▶	3RT2015-1FB42	▶	3RT2015-2FB42	
9	4	22	10	1	--	24	▶	3RT2016-1FB41	▶	3RT2016-2FB41	
			01	--	1	24	▶	3RT2016-1FB42	▶	3RT2016-2FB42	
12	5.5	22	10	1	--	24	▶	3RT2017-1FB41	▶	3RT2017-2FB41	
			01	--	1	24	▶	3RT2017-1FB42	▶	3RT2017-2FB42	
16	7.5	22	10	1	--	24	▶	3RT2018-1FB41	▶	3RT2018-2FB41	
			01	--	1	24	▶	3RT2018-1FB42	▶	3RT2018-2FB42	

¹⁾ When using contactors with IE3/IE4 motors, use contactors fitted with varistors instead of diodes. For more information about dimensioning and configuring, see page 3/7.

Other voltages according to page 3/74 on request.

Accessories and spare parts, see pages 3/76 to 3/125.

IE3/IE4 ready SIRIUS 3RT contactors, 3-pole up to 250 kW

DC operation 

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT201.-1BB44-3MA0



3RT201.-2BB44-3MA0



3RT201.-1BB4.-0CC0



3RT201.-2BB4.-0CC0

Rated data		Auxiliary contacts	Rated control supply voltage U_s	SD	Screw terminals	SD	Spring-type terminals	
AC-2 and AC-3, t_u : 60 °C	Operational current I_e up to 400 V	Ident. No.	DC		Article No.	Price per PU	Article No.	Price per PU
Ratings of three-phase motors at 50 Hz and 400 V	Operational current I_e up to 690 V	Version						
A	400 V kW	NO NC V		d				

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00**With permanently mounted auxiliary switch block (SUVA-certified safety contactor)**

7	9	12	16	3	4	5.5	7.5	18	22	2	2	24	2	3RT2015-1BB44-3MA0	2	3RT2015-2BB44-3MA0
▶	▶															

With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and integrated coil circuit (diode)¹⁾

7	9	12	16	3	4	5.5	7.5	18	22	2	2	24	2	3RT2015-1FB44-3MA0	2	3RT2015-2FB44-3MA0

With voltage tap-off (only available with 24 V DC coils)

7	9	12	16	3	4	5.5	7.5	18	22	10	01	1	--	24	▶ <th>3RT2015-1BB41-0CC0</th> <th>▶ <th>3RT2015-2BB41-0CC0</th> </th>	3RT2015-1BB41-0CC0	▶ <th>3RT2015-2BB41-0CC0</th>	3RT2015-2BB41-0CC0

¹⁾ When using contactors with IE3/IE4 motors, use contactors fitted with varistors instead of diodes. For more information about dimensioning and configuring, see page 3/7.

Other voltages according to page 3/74 on request.

Accessories and spare parts, see pages 3/76 to 3/125.

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

DC operation for direct control from the PLC **==**

- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC/F-PLC outputs
- Cannot be extended with auxiliary switch blocks

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT201.-1.B4.



3RT201.-2.B4.

Rated data		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals		SD	Spring-type terminals	
AC-2 and AC-3, t_U : 60 °C	AC-1, t_U : 40 °C	Ident. No.	Version	DC		Article No.	Price per PU		Article No.	Price per PU
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and up to 400 V	Operational current I_e up to 690 V		V	d			d		
A	kW	A								

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

Diode, varistor or RC element, attachable

(no auxiliary switch blocks can be mounted)

Operating range **0.7 ... 1.25 x U_s** ,

power consumption of the solenoid coils **2.8 W** at 24 V

7	3	18	10	1	--	24	5	3RT2015-1HB41	5	3RT2015-2HB41
			01	--	1	24	5	3RT2015-1HB42	5	3RT2015-2HB42
9	4	22	10	1	--	24	5	3RT2016-1HB41	5	3RT2016-2HB41
			01	--	1	24	2	3RT2016-1HB42	5	3RT2016-2HB42
12	5.5¹⁾	22	10	1	--	24	5	3RT2017-1HB41	5	3RT2017-2HB41
			01	--	1	24	▶	3RT2017-1HB42	5	3RT2017-2HB42

Operating range **0.85 ... 1.85 x U_s** ,

power consumption of the solenoid coils **1.6 W** at 24 V

7	3	18	10	1	--	24	5	3RT2015-1MB41-0KT0	5	3RT2015-2MB41-0KT0
			01	--	1	24	5	3RT2015-1MB42-0KT0	5	3RT2015-2MB42-0KT0
9	4	22	10	1	--	24	5	3RT2016-1MB41-0KT0	5	3RT2016-2MB41-0KT0
			01	--	1	24	5	3RT2016-1MB42-0KT0	5	3RT2016-2MB42-0KT0
12	5.5¹⁾	22	10	1	--	24	5	3RT2017-1MB41-0KT0	5	3RT2017-2MB41-0KT0
			01	--	1	24	5	3RT2017-1MB42-0KT0	5	3RT2017-2MB42-0KT0

With integrated coil circuit (diode)¹⁾

(no auxiliary switch blocks can be mounted)

Operating range **0.7 ... 1.25 x U_s** ,

power consumption of the solenoid coils **2.8 W** at 24 V

7	3	18	10	1	--	24	2	3RT2015-1JB41	2	3RT2015-2JB41
			01	--	1	24	2	3RT2015-1JB42	5	3RT2015-2JB42
9	4	22	10	1	--	24	▶	3RT2016-1JB41	5	3RT2016-2JB41
			01	--	1	24	2	3RT2016-1JB42	5	3RT2016-2JB42
12	5.5¹⁾	22	10	1	--	24	2	3RT2017-1JB41	5	3RT2017-2JB41
			01	--	1	24	5	3RT2017-1JB42	5	3RT2017-2JB42

Operating range **0.85 ... 1.85 x U_s** ,

power consumption of the solenoid coils **1.6 W** at 24 V

7	3	18	10	1	--	24	5	3RT2015-1VB41	5	3RT2015-2VB41
			01	--	1	24	5	3RT2015-1VB42	5	3RT2015-2VB42
9	4	22	10	1	--	24	5	3RT2016-1VB41	5	3RT2016-2VB41
			01	--	1	24	5	3RT2016-1VB42	5	3RT2016-2VB42
12	5.5¹⁾	22	10	1	--	24	5	3RT2017-1VB41	5	3RT2017-2VB41
			01	--	1	24	5	3RT2017-1VB42	5	3RT2017-2VB42

¹⁾ When using contactors with IE3/IE4 motors, use contactors fitted with varistors instead of diodes. In the case of 5.5 kW coupling contactors of size S00, use 5.5 kW coupling contactors of size S0, see page 3/66. For more information about dimensioning and configuring, see page 3/7.

Other voltages according to page 3/74 on request.

Accessories and spare parts, see pages 3/76 to 3/125.

IE3/IE4 ready SIRIUS 3RT contactors, 3-pole up to 250 kW

DC operation for direct control from the PLC 

- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC/F-PLC outputs
- Cannot be extended with auxiliary switch blocks



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT201.-1.B4.



3RT201.-2.B4.

Rated data		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 	
AC-2 and AC-3, t_i : 60 °C	Ratings of three-phase motors at 50 Hz and up to 400 V	AC-1, t_i : 40 °C	Operational current I_e up to 690 V	Ident. No.	Version	DC	Article No.	Price per PU	Article No.	Price per PU
A	kW	A		NO	NC	V	d		d	

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00**With integrated coil circuit (suppressor diode)¹⁾**

(no auxiliary switch blocks can be mounted)

Operating range **0.7 ... 1.25 x U_s** ,power consumption of the solenoid coils **2.8 W** at 24 V

7	3	18	10 01	1 --	-- 1	24 24	2 2	3RT2015-1KB41 3RT2015-1KB42	2 ▶	3RT2015-2KB41 3RT2015-2KB42
9	4	22	10 01	1 --	-- 1	24 24	2 2	3RT2016-1KB41 3RT2016-1KB42	2 2	3RT2016-2KB41 3RT2016-2KB42
12	5.5¹⁾	22	10 01	1 --	-- 1	24 24	2 2	3RT2017-1KB41 3RT2017-1KB42	▶ ▶	3RT2017-2KB41 3RT2017-2KB42
Operating range 0.85 ... 1.85 x U_s , power consumption of the solenoid coils 1.6 W at 24 V										
7	3	18	10 01	1 --	-- 1	24 24	5 5	3RT2015-1SB41 3RT2015-1SB42	5 5	3RT2015-2SB41 3RT2015-2SB42
9	4	22	10 01	1 --	-- 1	24 24	5 5	3RT2016-1SB41 3RT2016-1SB42	5 5	3RT2016-2SB41 3RT2016-2SB42
12	5.5¹⁾	22	10 01	1 --	-- 1	24 24	5 5	3RT2017-1SB41 3RT2017-1SB42	5 5	3RT2017-2SB41 3RT2017-2SB42

¹⁾ When using contactors with IE3/IE4 motors, use contactors fitted with varistors instead of diodes. In the case of 5.5 kW coupling contactors of size S00, use 5.5 kW coupling contactors of size S0, see page 3/66. For more information about dimensioning and configuring, see page 3/7.

Other voltages according to page 3/74 on request.

Accessories and spare parts, see pages 3/76 to 3/125.

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

DC operation

Suitable for solid-state PLC/F-PLC outputs

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT202.-1B.40





3RT202.-2B.40



3RT202.-1B.44




3RT202.-2B.44

Rated data		Auxiliary contacts	Rated control supply voltage U_s	SD	Screw terminals 	SD	Spring-type terminals 
AC-2 and AC-3, t_i : 60 °C	AC-1, t_i : 40 °C	Ident. No.	DC		Article No.		Article No.
Operational current I_e up to 400 V	Operational current I_e up to 690 V	Version			Price per PU		Price per PU
A	A	NO NC	V	d		d	

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

9	4	40	11	1	1	24	▶	3RT2023-1BB40	▶	3RT2023-2BB40
12	5.5	40	11	1	1	24 220	▶ 5	3RT2024-1BB40 3RT2024-1BM40	▶ 5	3RT2024-2BB40 3RT2024-2BM40
17	7.5	40	11	1	1	24 220	▶ 5	3RT2025-1BB40 3RT2025-1BM40	▶ 5	3RT2025-2BB40 3RT2025-2BM40
25	11	40	11	1	1	24 220	▶ 5	3RT2026-1BB40 3RT2026-1BM40	▶ 5	3RT2026-2BB40 3RT2026-2BM40
32	15	50	11	1	1	24 220	▶ 5	3RT2027-1BB40 3RT2027-1BM40	▶ 5	3RT2027-2BB40 3RT2027-2BM40
38	18.5	50	11	1	1	24 220	▶ 5	3RT2028-1BB40 3RT2028-1BM40	▶ 5	3RT2028-2BB40 3RT2028-2BM40
With coil circuit (varistor) plugged into front 										
9	4	40	11	1	1	24	5	3RT2023-1DB40	5	3RT2023-2DB40
12	5.5	40	11	1	1	24	5	3RT2024-1DB40	5	3RT2024-2DB40
17	7.5	40	11	1	1	24	5	3RT2025-1DB40	5	3RT2025-2DB40
25	11	40	11	1	1	24	5	3RT2026-1DB40	5	3RT2026-2DB40
32	15	50	11	1	1	24	5	3RT2027-1DB40	5	3RT2027-2DB40
38	18.5	50	11	1	1	24	5	3RT2028-1DB40	5	3RT2028-2DB40
With coil circuit plugged into front (diode assembly)										
9	4	40	11	1	1	24	2	3RT2023-1FB40	▶	3RT2023-2FB40
12	5.5	40	11	1	1	24	▶	3RT2024-1FB40	▶	3RT2024-2FB40
17	7.5	40	11	1	1	24	▶	3RT2025-1FB40	▶	3RT2025-2FB40
25	11	40	11	1	1	24	▶	3RT2026-1FB40	▶	3RT2026-2FB40
32	15	50	11	1	1	24	▶	3RT2027-1FB40	▶	3RT2027-2FB40
38	18.5	50	11	1	1	24	▶	3RT2028-1FB40	▶	3RT2028-2FB40
With removable mounted auxiliary switch block										
9	4	40	22	2	2	24	▶	3RT2023-1BB44	▶	3RT2023-2BB44
12	5.5	40	22	2	2	24	▶	3RT2024-1BB44	▶	3RT2024-2BB44
17	7.5	40	22	2	2	24	▶	3RT2025-1BB44	▶	3RT2025-2BB44
25	11	40	22	2	2	24	▶	3RT2026-1BB44	▶	3RT2026-2BB44
32	15	50	22	2	2	24	▶	3RT2027-1BB44	▶	3RT2027-2BB44
38	18.5	50	22	2	2	24	▶	3RT2028-1BB44	▶	3RT2028-2BB44

Other voltages according to page 3/74 on request.

Accessories and spare parts, see pages 3/76 to 3/125.

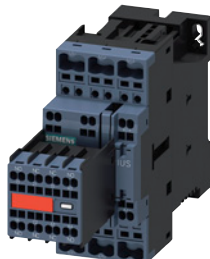
IE3/IE4 ready SIRIUS 3RT contactors, 3-pole up to 250 kW

DC operation 

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



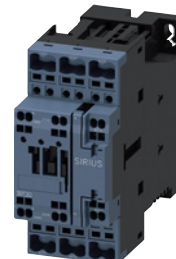
3RT202.-1.B44-3MA0





3RT202.-2.B44-3MA0



3RT202.-1BB40-0CC0



3RT202.-2BB40-0CC0

Rated data		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 	
AC-2 and AC-3, t_j : 60 °C	Operational current I_e up to 400 V	AC-1, t_j : 40 °C	Operational current I_e up to 690 V	DC		Article No.	Price per PU		Article No.	Price per PU
	400 V									
A	kW	A			d			d		

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and coil circuit permanently plugged into the front (varistor)

12	5.5	40	22	2	2	24	2	3RT2024-1DB44-3MA0	5	3RT2024-2DB44-3MA0
17	7.5	40	22	2	2	24	5	3RT2025-1DB44-3MA0	5	3RT2025-2DB44-3MA0
25	11	40	22	2	2	24	5	3RT2026-1DB44-3MA0	5	3RT2026-2DB44-3MA0
32	15	50	22	2	2	24	5	3RT2027-1DB44-3MA0	5	3RT2027-2DB44-3MA0

With permanently mounted auxiliary switch block (SUVA-certified safety contactor) and coil circuit permanently plugged into the front (diode assembly)

9	4	40	22	2	2	24	2	3RT2023-1FB44-3MA0	5	3RT2023-2FB44-3MA0
12	5.5	40	22	2	2	24	5	3RT2024-1FB44-3MA0	5	3RT2024-2FB44-3MA0
17	7.5	40	22	2	2	24	5	3RT2025-1FB44-3MA0	5	3RT2025-2FB44-3MA0
25	11	40	22	2	2	24	5	3RT2026-1FB44-3MA0	5	3RT2026-2FB44-3MA0
32	15	50	22	2	2	24	5	3RT2027-1FB44-3MA0	5	3RT2027-2FB44-3MA0
38	18.5	50	22	2	2	24	5	3RT2028-1FB44-3MA0	5	3RT2028-2FB44-3MA0

With voltage tap-off

9	4	40	11	1	1	24	5	3RT2023-1BB40-0CC0	5	3RT2023-2BB40-0CC0
12	5.5	40	11	1	1	24	5	3RT2024-1BB40-0CC0	5	3RT2024-2BB40-0CC0
17	7.5	40	11	1	1	24	5	3RT2025-1BB40-0CC0	5	3RT2025-2BB40-0CC0
25	11	40	11	1	1	24	5	3RT2026-1BB40-0CC0	5	3RT2026-2BB40-0CC0
32	15	50	11	1	1	24	5	3RT2027-1BB40-0CC0	5	3RT2027-2BB40-0CC0
38	18.5	50	11	1	1	24	5	3RT2028-1BB40-0CC0	5	3RT2028-2BB40-0CC0

Other voltages according to page 3/74 on request.

Accessories and spare parts, see pages 3/76 to 3/125.

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

DC operation for direct control from the PLC

- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC/F-PLC outputs
- Cannot be extended with auxiliary switch blocks



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT202-1KB40



3RT202-2KB40

Rated data		Auxiliary contacts	Rated control supply voltage U_s	SD	Screw terminals 	SD	Spring-type terminals 	
AC-2 and AC-3, t_u : 60 °C	Ratings of three-phase motors at 50 Hz and	Ident. No.	DC		Article No.	Price per PU	Article No.	Price per PU
Operational current I_e up to 400 V	400 V	Version						
A	kW	NO NC	V	d				

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

With integrated coil circuit (varistor)

(no auxiliary switch blocks can be mounted)

Operating range **0.7 ... 1.25 x U_s** ,
 power consumption of the solenoid coils **4.5 W** at 24 V

9	4	40	11	1	1	24	▶	3RT2023-1KB40	▶	3RT2023-2KB40
12	5.5	40	11	1	1	24	▶	3RT2024-1KB40	5	3RT2024-2KB40
17	7.5	40	11	1	1	24	▶	3RT2025-1KB40	2	3RT2025-2KB40
25	11	40	11	1	1	24	▶	3RT2026-1KB40	2	3RT2026-2KB40
32	15	50	11	1	1	24	▶	3RT2027-1KB40	5	3RT2027-2KB40

Other voltages [according to page 3/74](#) on request.

Accessories and spare parts, [see pages 3/76 to 3/125](#).

IE3/IE4 ready SIRIUS 3RT contactors, 3-pole up to 250 kW

DC operation for direct control from the PLC 

- Coupling contactors with adapted power consumption
- Suitable for solid-state PLC/F-PLC outputs with 2 A

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT203.-1KB40





3RT203.-3KB40



3RT204.-1KB40



3RT204.-3KB40

Rated data		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 	
AC-2 and AC-3, t_U : 60 °C		AC-1, t_U : 40 °C		DC	SD	Article No.	Price per PU	SD	Article No.	Price per PU
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and 400 V	Operational current I_e up to 690 V	Ident. No.							
A	kW	A		V	d			d		
			NO	NC						

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S2**With integrated coil circuit (varistor)**

Operating range $0.8 \dots 1.2 \times U_s$,
 closing power of the solenoid coils **21.5 W** at 24 V

40	18.5	60	11	1	1	24	▶	3RT2035-1KB40	X	3RT2035-3KB40
50	22	70	11	1	1	24	▶	3RT2036-1KB40	X	3RT2036-3KB40
65	30	80	11	1	1	24	▶	3RT2037-1KB40	X	3RT2037-3KB40
80	37	90	11	1	1	24	▶	3RT2038-1KB40	5	3RT2038-3KB40

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3**With integrated coil circuit (varistor)**

Operating range $0.8 \dots 1.2 \times U_s$,
 closing power of the solenoid coils **25 W** at 24 V

80	37	125	11	1	1	24	2	3RT2045-1KB40	2	3RT2045-3KB40
95	45	130	11	1	1	24	2	3RT2046-1KB40	2	3RT2046-3KB40

Other voltages [according to page 3/74](#) on request.

Accessories and spare parts, [see pages 3/76 to 3/125](#).

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

AC/DC operation

- Extended operating range of the solenoid coil 0.7 to 1.3 x U_s
- Reduced power consumption when closing and in the closed state



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT202.-1N.30



3RT202.-2N.30

Rated data		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 	
AC-2 and AC-3, t_{ij} : 60 °C	Ratings of three-phase motors at 50 Hz and 400 V	AC-1, t_{ij} : 40 °C	Operational current I_e up to 690 V	50/60 Hz AC or DC		Article No.	Price per PU		Article No.	Price per PU
A	kW	A		V	d			d		

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

With integrated coil circuit (varistor)

Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and 400 V	Operational current I_e up to 690 V	Ident. No.	Version	Rated control supply voltage U_s	SD	Article No.	Price per PU	Article No.	Price per PU
12	5.5	40	11	1 1	21 ... 28 95 ... 130 200 ... 280	▶ 2 2	3RT2024-1NB30 3RT2024-1NF30 3RT2024-1NP30	5 5 2	3RT2024-2NB30 3RT2024-2NF30 3RT2024-2NP30	
17	7.5	40	11	1 1	21 ... 28 95 ... 130 200 ... 280	2 2 2	3RT2025-1NB30 3RT2025-1NF30 3RT2025-1NP30	5 5 2	3RT2025-2NB30 3RT2025-2NF30 3RT2025-2NP30	
25	11	40	11	1 1	21 ... 28 95 ... 130 200 ... 280	▶ 2 5	3RT2026-1NB30 3RT2026-1NF30 3RT2026-1NP30	2 5 5	3RT2026-2NB30 3RT2026-2NF30 3RT2026-2NP30	
32	15	50	11	1 1	21 ... 28 95 ... 130 200 ... 280	2 2 2	3RT2027-1NB30 3RT2027-1NF30 3RT2027-1NP30	2 5 5	3RT2027-2NB30 3RT2027-2NF30 3RT2027-2NP30	
38	18.5	50	11	1 1	21 ... 28 95 ... 130 200 ... 280	5 5 2	3RT2028-1NB30 3RT2028-1NF30 3RT2028-1NP30	5 5 5	3RT2028-2NB30 3RT2028-2NF30 3RT2028-2NP30	

Other voltages [according to page 3/74](#) on request.

Accessories and spare parts, [see pages 3/76 to 3/125](#).

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

AC/DC operation

- Extended operating range of the solenoid coil 0.8 to 1.1 x U_s
- Reduced power consumption when closing and in the closed state

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B





3RT204.-1N.30

3RT204.-3N.30

3RT204.-1N.34

3RT204.-1NB34-3MA0

3RT204.-3NB34-3MA0

Rated data		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 	
AC-2 and AC-3, t_u : 60 °C	Operational current I_e up to 400 V	AC-1, t_u : 40 °C	Operational current I_e up to 690 V	50/60 Hz AC or DC		Article No.	Price per PU		Article No.	Price per PU
A	kW	A		NO NC V	d			d		

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

With integrated coil circuit (varistor)

80	37	125	11	1	1	20 ... 33	2	3RT2045-1NB30	2	3RT2045-3NB30
						83 ... 155	5	3RT2045-1NF30	5	3RT2045-3NF30
						175 ... 280	5	3RT2045-1NP30	5	3RT2045-3NP30
95	45	130	11	1	1	20 ... 33	2	3RT2046-1NB30	2	3RT2046-3NB30
						83 ... 155	5	3RT2046-1NF30	5	3RT2046-3NF30
						175 ... 280	5	3RT2046-1NP30	5	3RT2046-3NP30
110	55	130	11	1	1	20 ... 33	2	3RT2047-1NB30	2	3RT2047-3NB30
						83 ... 155	5	3RT2047-1NF30	5	3RT2047-3NF30
						175 ... 280	5	3RT2047-1NP30	5	3RT2047-3NP30
With removable mounted auxiliary switch block and integrated coil circuit (varistor)										
80	37	125	22	2	2	20 ... 33	5	3RT2045-1NB34		--
						83 ... 155	5	3RT2045-1NF34		--
						175 ... 280	5	3RT2045-1NP34		--
95	45	130	22	2	2	20 ... 33	5	3RT2046-1NB34		--
						83 ... 155	5	3RT2046-1NF34		--
						175 ... 280	5	3RT2046-1NP34		--
110	55	130	22	2	2	20 ... 33	5	3RT2047-1NB34		--
						83 ... 155	5	3RT2047-1NF34		--
						175 ... 280	5	3RT2047-1NP34		--
With permanently mounted auxiliary switch block and integrated coil circuit (varistor)										
80	37	125	22	2	2	20 ... 33	5	3RT2045-1NB34-3MA0	5	3RT2045-3NB34-3MA0
95	45	130	22	2	2	20 ... 33	5	3RT2046-1NB34-3MA0	5	3RT2046-3NB34-3MA0
110	55	130	22	2	2	20 ... 33	5	3RT2047-1NB34-3MA0	5	3RT2047-3NB34-3MA0
With voltage tap-off and integrated coil circuit (varistor)										
80	37	125	11	1	1	20 ... 33	5	3RT2045-1NB30-OCC0	5	3RT2045-3NB30-OCC0
95	45	130	11	1	1	20 ... 33	5	3RT2046-1NB30-OCC0	5	3RT2046-3NB30-OCC0
110	55	130	11	1	1	20 ... 33	5	3RT2047-1NB30-OCC0	5	3RT2047-3NB30-OCC0

Other voltages according to page 3/74 on request.

Accessories and spare parts, see pages 3/76 to 3/125.

Power Contactors for Switching Motors



SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

AC/DC operation

- Solid-state operating mechanism (with integrated varistor) with fail-safe control input for safety-related applications to SIL CL 3
- 24 V DC control signal input, e.g. for control via the fail-safe output module of a controller (F-PLC) or safety relay
- Attainable Safety Integrity Level (SIL):
 - With one contactor: SIL CL 2 acc. to IEC 62061 or PL c acc. to ISO 13849-1
 - With two contactors in series: SIL CL 3 acc. to IEC 62061 or PL e acc. to ISO 13849-1
- Version with removable lateral auxiliary switches or permanently mounted auxiliary switches and additional approval according to SUVA (on request)
- For screw fixing
- Auxiliary and control conductors: Screw or spring-type terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washer and nut is enclosed.

For more information on safety systems, see from page 11/1 onwards.



Size	Rated data according to IEC 60947-4-1 AC-3, t_i : 60 °C Operational current I_e up to	Ratings of three-phase motors at 50 Hz and up to	Auxiliary contacts, lateral	Version	Rated control supply voltage U_s	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
	500 V	400 V		 	50/60 Hz AC or DC		Article No.		Price per PU		
	A	kW	NO	NC	V	d					

Solid-state operating mechanism

With two removable laterally mounted auxiliary switches

S6	115	55	2	2	96 ... 127 200 ... 270	5	3RT1054-6SF36 3RT1054-6SP36	1	1 unit	41B
	150	75	2	2	96 ... 127 200 ... 277	5	3RT1055-6SF36 3RT1055-6SP36	1	1 unit	41B
	185	90	2	2	96 ... 127 200 ... 277	5	3RT1056-6SF36 3RT1056-6SP36	1	1 unit	41B
S10	225	110	2	2	96 ... 127 200 ... 277	5	3RT1064-6SF36 3RT1064-6SP36	1	1 unit	41B
	265	132	2	2	96 ... 127 200 ... 277	5	3RT1065-6SF36 3RT1065-6SP36	1	1 unit	41B
	300	160	2	2	96 ... 127 200 ... 277	5	3RT1066-6SF36 3RT1066-6SP36	1	1 unit	41B
S12	400	200	2	2	96 ... 127 200 ... 277	5	3RT1075-6SF36 3RT1075-6SP36	1	1 unit	41B
	500	250	2	2	96 ... 127 200 ... 277	5	3RT1076-6SF36 3RT1076-6SP36	1	1 unit	41B

With two permanently laterally mounted auxiliary switches

S6	115	55	2	2	96 ... 127 200 ... 270	5	3RT1054-6SF36-3PA0 3RT1054-6SP36-3PA0	1	1 unit	41B
	150	75	2	2	96 ... 127 200 ... 277	5	3RT1055-6SF36-3PA0 3RT1055-6SP36-3PA0	1	1 unit	41B
	185	90	2	2	96 ... 127 200 ... 277	5	3RT1056-6SF36-3PA0 3RT1056-6SP36-3PA0	1	1 unit	41B
S10	225	110	2	2	96 ... 127 200 ... 277	5	3RT1064-6SF36-3PA0 3RT1064-6SP36-3PA0	1	1 unit	41B
	265	132	2	2	96 ... 127 200 ... 277	5	3RT1065-6SF36-3PA0 3RT1065-6SP36-3PA0	1	1 unit	41B
	300	160	2	2	96 ... 127 200 ... 277	5	3RT1066-6SF36-3PA0 3RT1066-6SP36-3PA0	1	1 unit	41B
S12	400	200	2	2	96 ... 127 200 ... 277	5	3RT1075-6SF36-3PA0 3RT1075-6SP36-3PA0	1	1 unit	41B
	500	250	2	2	96 ... 127 200 ... 277	5	3RT1076-6SF36-3PA0 3RT1076-6SP36-3PA0	1	1 unit	41B

Accessories and spare parts, see pages 3/76 to 3/125.

IE3/IE4 ready SIRIUS 3RT contactors, 3-pole up to 250 kW

AC/DC operation

- Operating mechanism with integrated coil circuit (varistor)
- For screw fixing
- Auxiliary and control conductors: Screw or spring-type terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washer and nut is enclosed.

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



Size	Rated data	AC-1, t_{ij} : 40 °C	Auxiliary contacts, lateral	Rated control supply voltage U_s	SD	Screw terminals	SD	Spring-type terminals	
	AC-2 and AC-3, t_{ij} : 60 °C	Operational current I_e up to	Version	50/60 Hz AC or DC		Article No.	Price per PU	Article No.	Price per PU
	500 V	400 V	NO NC						
	A	kW							

Solid-state operating mechanism

With 24 V DC control signal input
 e.g. for control by PLC

Size	115	55	75	110	160	2	2	96 ... 127 200 ... 277	5	3RT1054-6NF36 3RT1054-6NP36	5	3RT1054-2NF36 3RT1054-2NP36
S6	150	75	90	132	185	2	2	96 ... 127 200 ... 277	5	3RT1055-6NF36 3RT1055-6NP36	5	3RT1055-2NF36 3RT1055-2NP36
	185	90	110	160	215	2	2	96 ... 127 200 ... 277	5	3RT1056-6NF36 3RT1056-6NP36	5	3RT1056-2NF36 3RT1056-2NP36
	S10	225	110	160	200	275	2	2	96 ... 127 200 ... 277	5	3RT1064-6NF36 3RT1064-6NP36	5
S10	265	132	160	250	330	2	2	96 ... 127 200 ... 277	2	3RT1065-6NF36 3RT1065-6NP36	5	3RT1065-2NF36 3RT1065-2NP36
	300	160	200	250	330	2	2	96 ... 127 200 ... 277	5	3RT1066-6NF36 3RT1066-6NP36	5	3RT1066-2NF36 3RT1066-2NP36
	S12	400	200	250	400	430	2	2	96 ... 127 200 ... 277	5	3RT1075-6NF36 3RT1075-6NP36	5
S12	500	250	355	400	610	2	2	96 ... 127 200 ... 277	2	3RT1076-6NF36 3RT1076-6NP36	5	3RT1076-2NF36 3RT1076-2NP36

For 24 V DC control signal input · with indication of remaining lifetime (RLT)
 e.g. for control by PLC

Size	115	55	75	110	160	1	1	96 ... 127 200 ... 277	5	3RT1054-6PF35 3RT1054-6PP35	---
S6	150	75	90	132	185	1	1	96 ... 127 200 ... 277	5	3RT1055-6PF35 3RT1055-6PP35	---
	185	90	110	160	215	1	1	96 ... 127 200 ... 277	5	3RT1056-6PF35 3RT1056-6PP35	---
	S10	225	110	160	200	275	1	1	96 ... 127 200 ... 277	5	3RT1064-6PF35 3RT1064-6PP35
S10	265	132	160	250	330	1	1	96 ... 127 200 ... 277	5	3RT1065-6PF35 3RT1065-6PP35	---
	300	160	200	250	330	1	1	96 ... 127 200 ... 277	5	3RT1066-6PF35 3RT1066-6PP35	---
	S12	400	200	250	400	430	1	1	96 ... 127 200 ... 277	5	3RT1075-6PF35 3RT1075-6PP35
S12	500	250	355	400	610	1	1	96 ... 127 200 ... 277	5	3RT1076-6PF35 3RT1076-6PP35	---

Other voltages according to page 3/75 on request.

Accessories and spare parts, see pages 3/76 to 3/125.

Power Contactors for Switching Motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Options

Rated control supply voltages for 3RT20 contactors, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type	3RT201, 3RH2	3RT202	3RT203	3RT204
	Size	S00	S0	S2	S3
Sizes S00 to S3					
AC operation¹⁾					
Solenoid coils for 50 Hz (exception: Size S00: 50 Hz and 60 Hz ²⁾)					
24 V AC		B0	B0	B0	B0
42 V AC		D0	D0	D0	D0
48 V AC		H0	H0	H0	H0
110 V AC		F0	F0	F0	F0
230 V AC		P0	P0	P0	P0
240 V AC		U0	U0	U0	U0
400 V AC		V0	V0	V0	V0
Solenoid coils for 50 Hz and 60 Hz²⁾					
24 V AC		B0	C2	C2	C2
42 V AC		D0	D2	D2	D2
48 V AC		H0	H2	H2	H2
110 V AC		F0	G2	G2	G2
220 V AC		N2	N2	N2	N2
230 V AC		P0	L2	L2	L2
Solenoid coils (for USA and Canada³⁾)					
50 Hz	60 Hz				
110 V AC	120 V AC	K6	K6	K6	K6
220 V AC	240 V AC	P6	P6	P6	P6
Solenoid coils (for Japan)					
50/60 Hz⁴⁾	60 Hz⁵⁾				
100 V AC	110 V AC	G6	G6	G6	G6
200 V AC	220 V AC	N6	N6	N6	N6
400 V AC	440 V AC	R6	R6	R6	R6
DC operation¹⁾					
12 V DC		A4	A4	--	--
24 V DC		B4	B4	--	--
42 V DC		D4	D4	--	--
48 V DC		W4	W4	--	--
60 V DC		E4	E4	--	--
110 V DC		F4	F4	--	--
125 V DC		G4	G4	--	--
220 V DC		M4	M4	--	--
230 V DC		P4	P4	--	--

Examples

AC operation	3RT2023-1A P00	Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC.
	3RT2023-1A G20	Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC.
DC operation	3RT2025-2B B40	Contactor with spring-type terminals; for rated control supply voltage 24 V DC.
	3RT2025-2B G40	Contactor with spring-type terminals; for rated control supply voltage 125 V DC.

¹⁾ For deviating coil voltages and operating ranges of sizes S00 and S0, a SITOP 24 V DC power supply with wide-range input can be used for the coil control, see page 15/1 onwards.

²⁾ Coil operating range
- At 50 Hz: 0.8 to $1.1 \times U_s$,
- At 60 Hz: 0.85 to $1.1 \times U_s$.

³⁾ Coil operating range
- Size S00:
At 50 Hz: 0.85 to $1.1 \times U_s$,
at 60 Hz: 0.8 to $1.1 \times U_s$
- Sizes S0 to S3: at 50 Hz and 60 Hz: 0.8 to $1.1 \times U_s$.

⁴⁾ Coil operating range

- Size S00:
At 50/60 Hz: 0.85 to $1.1 \times U_s$
- Size S0:
at 50 Hz: 0.8 to $1.1 \times U_s$;
at 60 Hz: 0.85 to $1.1 \times U_s$.

⁵⁾ Coil operating range at 60 Hz: 0.8 to $1.1 \times U_s$.

Rated control supply voltage	Contactor type	3RT202.-N	Rated control supply voltage	Contactor type	3RT203.-N	3RT204.-N
$U_{s \min} \dots U_{s \max}^{1)}$	Size	S0	$U_{s \min} \dots U_{s \max}^{1)}$	Size	S2	S3
Sizes S00 to S3						
AC/DC operation (50/60 Hz AC or DC)						
21 ... 28 V AC/DC		B3	20 ... 33 V AC/DC		B3	B3
95 ... 130 V AC/DC		F3	48 ... 80 V AC/DC		E3	E3
200 ... 280 V AC/DC ²⁾		P3	83 ... 155 V AC/DC		F3	F3
			175 ... 280 V AC/DC		P3	P3

¹⁾ Coil operating range
- Size S0: $0.7 \times U_{s \min}$ to $1.3 \times U_{s \max}$
- Sizes S2 and S3: $0.8 \times U_{s \min}$ to $1.1 \times U_{s \max}$.

²⁾ The following applies to S0 and $U_{s \max} = 280$ V: Upper limit = $1.1 \times U_{s \max}$.

Rated control supply voltages for 3RT10 contactors, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage	Contactor type	3RT105.-A, 3RT106.-A, 3RT107.-A	Rated control supply voltage	Contactor type	3RT105.-N, 3RT106.-N, 3RT107.-N	3RT105.-P, 3RT105.-S, 3RT106.-P, 3RT106.-S, 3RT107.-P, 3RT107.-S
$U_{s \min} \dots U_{s \max}$	Sizes	S6 to S12	$U_{s \min} \dots U_{s \max}$	Sizes	S6 to S12	

Sizes S6 to S12**AC/DC operation (50/60 Hz AC or DC) and operating range $0.8 \times U_{s \min} \dots 1.1 \times U_{s \max}$** **Standard operating mechanism**

23 ... 26 V AC/DC	B3
42 ... 48 V AC/DC	D3
110 ... 127 V AC/DC	F3
200 ... 220 V AC/DC	M3
220 ... 240 V AC/DC	P3
240 ... 277 V AC/DC	U3
380 ... 420 V AC/DC	V3
440 ... 480 V AC/DC	R3
500 ... 550 V AC/DC	S3
575 ... 600 V AC/DC	T3

Solid-state operating mechanism

21 ... 27,3 V AC/DC	B3	--
96 ... 127 V AC/DC	F3	F3
200 ... 277 V AC/DC	P3	P3

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

General data

Overview

Extensive accessories and spare parts are available for SIRIUS 3RT power contactors and SIRIUS 3RH2 contactor relays.

These components are easily fitted to the contactors without the use of any tools according to requirements.

Overview graphics with mountable accessories:

- 3RT2 contactors, see pages 3/8 to 3/11
- 3RT10, 3RT12 and 3RT14 contactors, see pages 3/12 to 3/16
- 3RH2 contactor relays, see page 5/4

More information

TIA Selection Tool Cloud (TST Cloud), see
<https://mall.industry.siemens.com/spice/TSTWeb/?kmat=Contactor>

Version	For contactors 3RT2, sizes S00 to S3; 3RH2, size S00	3RT10, 3RT12, 3RT14; sizes S6 to S12	Selection and ordering data Page
Accessories for 3RT contactors and 3RH2 contactor relays			
Auxiliary switch blocks			
Instantaneous	3RH29.1	3RH19.1	3/88 ... 3/100
Delayed			
• Pneumatic time-delay auxiliary switch blocks	3RT2926-2P.1	--	3/101
• Solid-state time-delay auxiliary switch blocks	3RA2813, 3RA2814, 3RA2815	3RT1926-2E/-2F/-2G	3/101, 3/102
Surge suppressors			
• Without LED	3RT29.6-1B/-1C/-1D/-1E	3RT1956-1C	3/103, 3/104
• With LED	3RT29.6-1J/-1L/-1M	--	3/104
Modules for contactor control			
Coupling links for control by PLC	3RH29.4-.GP11	--	3/105
3RA28 function modules			
• For direct on-line starting: ON delay or OFF-delay	3RA2811, 3RA2812, 3RA2831, 3RA2832	--	3/106
• For star-delta (weye-delta) starting	3RA2816	--	3/106
3RA27 function modules for IO-Link or AS-Interface			
• For direct-on-line, reversing or star-delta (weye-delta) starting	3RA271.-.A/B/C	--	3/107, 3/108
Mechanical latching blocks	3RT2926-3A.31	--	3/109
OFF-delay devices for contactors with AC/DC and DC operation	3RT2916-2B.01	--	3/109
Link modules			
Link modules from motor starter protector to contactor	3RA.9.1	--	7/56
Safety main current connectors for two contactors	3RA29.6-1A	--	3/110
Assembly kits			
• For reversing contactor assemblies	3RA29.3-2AA.	3RA19.3-2A	3/110
• For contactor assemblies for star-delta (weye-delta) starting	3RA29.-.2BB., 3RA29.3-2C	3RA1953-3G, 3RA19.3-2./-3.	3/111, 3/112
Single wiring modules	3RA.9.3-3.A.	3RA19.3-3.	3/113
Star jumpers (links for paralleling), 3-pole	3RT.9.6-4BA3.	3RT19.6-4BA31	3/113
Mechanical interlock kits for two contactors	3RA29.2-2H	--	3/114
Mechanical interlocks for contactor assemblies	3RA2934-2B	3RA1954-2.	3/114
Mechanical connectors for contactor assemblies	3RA29.2-2.	3RA1932-2D	3/114
Terminal modules/adapters			
Links for paralleling for main circuits	3RT.9.6-4BB.1	--	3/115
Single-phase infeed terminals	3RA2943-3L	--	3/116
Three-phase infeed terminals	3RA2913-3K, 3RV29.5-5A.	--	3/116
• With increased clearances and creepage distances	3RV2935-5E	--	3/116
Three-phase busbars	3RV1915-1AB	--	3/116
Terminal blocks for connecting auxiliary conductors to main terminals			
• Box terminal blocks	--	3RT19.-.4G	3/116
• Box terminal for auxiliary conductor connection, 1-pole	--	3TX7500-0A	3/116
• Auxiliary terminals, 3-pole	3RT2946-4F	--	3/116
Solder pin adapters for mounting contactors on printed circuit boards	3RT1916-4KA.	--	3/117
Coil connection modules for connections from top or from bottom	3RT2926-4R.1.	--	3/117
Motor feeder connectors for contactors with screw terminals			
• Adapters for contactors	3RT19.6-4RD01	--	3/117
• Motor feeder connector	3RT1900-4RE01	--	3/117

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

General data

Version	For contactors 3RT2, sizes S00 to S3; 3RH2, size S00	3RT10, 3RT12, 3RT14; sizes S6 to S12	Selection and ordering data Page
Accessories for 3RT contactors and 3RH2 contactor relays (continued)			
Covers			
Terminal covers	3RT1946-4EA1, 3RT29.6-4EA.	3RT1956-4EA., 3RT1966-4EA., 3TX65.6-3B	3/118
Sealable covers	3RT2916-4MA10	3RT1926-4MA10	3/118
Miscellaneous accessories			
Base plates			
• For reversing contactor assemblies	--	3RT19.2-2A	3/119
• For contactor assemblies for star-delta (wye-delta) starting	3RA29.2-2F	3RA19.2-2.	3/119
Adapters for screw fixing	3RT1926-4P	--	3/119
EMC suppression modules	3RT2916-1P . .	--	3/119
Additional load modules	3RT2916-1GA00	--	3/120
LED modules for displaying contactor operation	3RT2926-1QT00	3RT1926-1QT00	3/120
Control kit	3RT29.6-4MC00	--	3/120
Insulation stop for securely holding back the conductor insulation for conductors up to 1 mm²	3RT2916-4JA02	3RT1916-4JA02	3/121
Tools for opening spring-type terminals	3RA2908-1A	3RA2908-1A	3/121
Blank labels	3RT2900-1SB.0	3RT1900-1S..0	3/121
Spare parts for 3RT2 contactors			
Solenoid coils	3RT29...5...1	--	3/122, 3/123
Withdrawable coils	--	3RT19...5....	3/124
Contacts with fixing parts	3RT29...6.	3RT19...6.	3/125
Arc chambers	--	3RT19...7.	3/125

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Overview

Auxiliary switches

The auxiliary switches can be designed as positively driven contacts in 3RH contactor relays or also as mirror contacts in the case of 3RT power contactors.

For more information on positively driven operation and mirror contacts, see Manual → "More information", page 3/83, and in the selection and ordering data from page 3/88 onwards.

Solid-state time-delay auxiliary switch blocks for mounting on 3RT2 contactors and 3RH2 contactor relays

See pages 3/83 and 3/101

The 3RA28 solid-state time-delay auxiliary switches which can be mounted onto the contactor are designed for applications in the range from 24 to 240 V AC/DC (wide voltage range). Both the electrical and mechanical connection are made by simple snapping on and locking.

The time-delay auxiliary switch is supplied with power directly by two plug-in contacts through the coil terminals of the contactor, in parallel with A./A2.

A protection circuit (varistor) is integrated in each module.

A sealable cover is available to protect against careless adjustment of the set times.

Note:

Mounting more auxiliary switches to the contactor is not permitted.

Surge suppressors

- Without LED (also for spring-type terminals)
Sizes S00 to S3, see page 3/103
- With LED (also for spring-type terminals)
Sizes S00 to S3, see page 3/104

All 3RT2 contactors and 3RH2 contactor relays can be retrofitted with RC elements or varistors for damping opening surges in the coil. Diodes or diode assemblies (comprising noise suppression diodes and Zener diodes for short break times) can be used.

The surge suppressors are plugged onto the front of size S00 contactors. Space is provided for them next to a snap-on auxiliary switch block.

Varistors, RC elements or diode assemblies can be plugged onto the front of size S0 to S3 contactors.

Coupling contactors are supplied either without overvoltage damping or with a suppressor diode, varistor or diode connected as standard, according to the version.

Note:

The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assemblies 2x to 6x; varistor +2 to 5 ms).

Coupling links for control by PLC

See pages 3/85 and 3/105

- Operation with 24 V DC
- Operating range 17 to 30 V
- Low power consumption of 0.5 W
- An LED indicates the switching state.

The 3RH2924-1GP11 coupling link has an integrated surge suppressor (varistor) for the contactor coil being switched and is mounted onto the size S0 contactor coil via a coil connection module.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays

See pages 3/86 and 3/106

Simply by being plugged in place, the SIRIUS function modules enable different functionalities required for the assembly of starters to be realized in the feeder. The function modules and wiring kits thus help to reduce the wiring work within the feeder practically to zero.

SIRIUS function modules for direct-on-line starting

The electronic timing relays which can be mounted onto the contactor are available in these versions:

- Sizes S00 and S0 for applications in the range from 24 to 240 V AC/DC (wide voltage range)
- Sizes S2 and S3 for applications in either the range from 24 to 90 V AC/DC or 90 to 240 V AC/DC

Both the electrical and mechanical connection are made by simple snapping on and locking.

A protection circuit (varistor) is integrated in each module.

The electronic timing relay with semiconductor output uses two contact legs to actuate the contactor underneath by means of a semiconductor after the set time t has elapsed.

The switching state feedback is performed by a mechanical switching state indicator (plunger). In addition, the auxiliary switches in the contactors are freely accessible and can be used for feedbacks to the control system or for signal lamps.

A sealable cover is available to protect against careless adjustment of the set times.

The snap-on *function modules for direct-on-line starting* are used above all for realizing timing functions independently of the control system.

With the OFF-delay variant of the timing relay it is possible for example for the fan motor for cooling a main drive to be switched off with a delay so that sufficient cooling after operation is guaranteed; the programmer of the control system does not need to worry about such technical details of the plant.

The ON-delay timing relays enable for example the time-delayed starting of several drives so that the summation starting current does not rise too high, which could result in voltage failure.

The use of snap-on *function modules for direct-on-line starting* results in the following advantages:

- Reduction of control current wiring
- Prevention of wiring errors
- Reduction of testing costs
- Implementation of timing functions independently of the control system
- Less space required in the control cabinet compared to a separate timing relay
- No additive protection circuit required (varistor integrated)

Assembly of reversing starters

We offer ready-made wiring kits for the assembly of reversing starters. Use of these wiring kits offers further advantages, see page 3/162.

SIRIUS function modules for star-delta (wye-delta) starting

Both interlocking and timing functions are required for the assembly of star-delta (wye-delta) starters. With the function modules for star-delta (wye-delta) starting and the matching link modules for the main circuit, these starters can be assembled easily and with absolutely no errors.

The entire sequence in the control circuit is integrated in the snap-on modules. This covers:

- An adjustable star time t from 0.5 to 60 s
- A non-adjustable dead interval of 50 ms
- Electrical contacting of the contactors by means of coil pick-off (contact legs)
- Feedback of the switching state at the contactor using a mechanical switch position indicator (plunger)
- Electrical interlocking between the contactors

These modules do not require their own terminals and can therefore be used for contactors with both screw and spring-type terminals in all the sizes S00 to S3. To start the star-delta (wye-delta) starter, only the first of the three contactors (line contactor) is actuated, like in the case of a direct-on-line starter. All other functions then take place inside the individual modules.

This also offers advantages if the timing function was previously implemented in a controller, as it again results in a significant reduction in the number of PLC outputs, the programming work and the wiring outlay.

The kits for the main circuit include the mechanical interlock, the star jumper, the wiring modules at the top and at the bottom, and the required connectors or connecting clips.

A protection circuit (varistor) is integrated in the basic module.

The *function modules for star-delta (wye-delta) starting* are mostly used where current-limiting measures for starting a drive are required and a high level of availability is essential at the same time. This technology has been used with success for several decades and has the additional advantage of requiring relatively little know-how. Through the use of function modules, the assembly work with simple standard components is even easier and absolutely error-free.

The use of *function modules for star-delta (wye-delta) starting* results in the following advantages:

- Operation solely through the line contactor A1/A2 – no further control current wiring needed
- Prevention of wiring errors
- Reduction of testing costs
- Integrated electrical interlocking saves costs and prevents errors
- Less space needed in the control cabinet compared to using a separate timing relay
- Adjustable starting in star mode from 0.5 to 60 s
- Independent of the contactor's control supply voltage (24 to 240 V AC/DC)
- Varistor integrated – no additive protection circuit required
- Mechanically coded assembly enables easy configuration and reliable wiring
- Fewer versions – one module kit for screw and spring-type connection and for all the contactor sizes S00 to S3
- Mechanical interlocking (with wiring kit for the main circuit)

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

SIRIUS 3RA27 function modules for IO-Link or AS-Interface for mounting on 3RT2 contactors

See pages 3/87 and 3/107

The SIRIUS 3RA27 function modules enable the assembly of starters and contactor assemblies for direct-on-line, reversing and star-delta (wye-delta) starting without any additional, complicated wiring of the individual components. They include the key control functions required for the particular feeder, e.g. timing and interlocking, and can be connected to the control system via either IO-Link or AS-Interface.

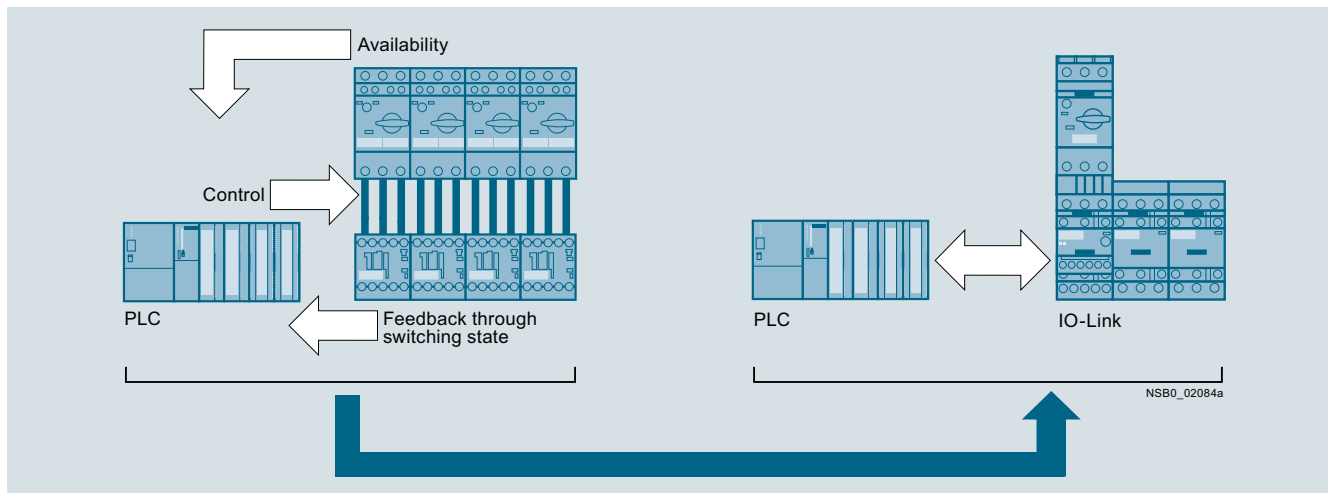
The electrical and mechanical connection to the contactor is established by snapping on and locking the respective modules. An additive protection circuit for the individual contactors can be dispensed with completely because a varistor is integrated in the modules. Feedback from the contactor contacts is performed with Hall sensors which provide reliable feedback concerning the switching state even under extremely dusty conditions.

The starters are connected to the higher-level control system through IO-Link, with the possibility of connecting up to four starters as a group to one port of the IO-Link master, or optionally via AS-Interface, Specification V2.1 or higher, in A/B technology. As a result, up to 62 starters can be connected to one master and the address is entered in the normal manner with an addressing unit.

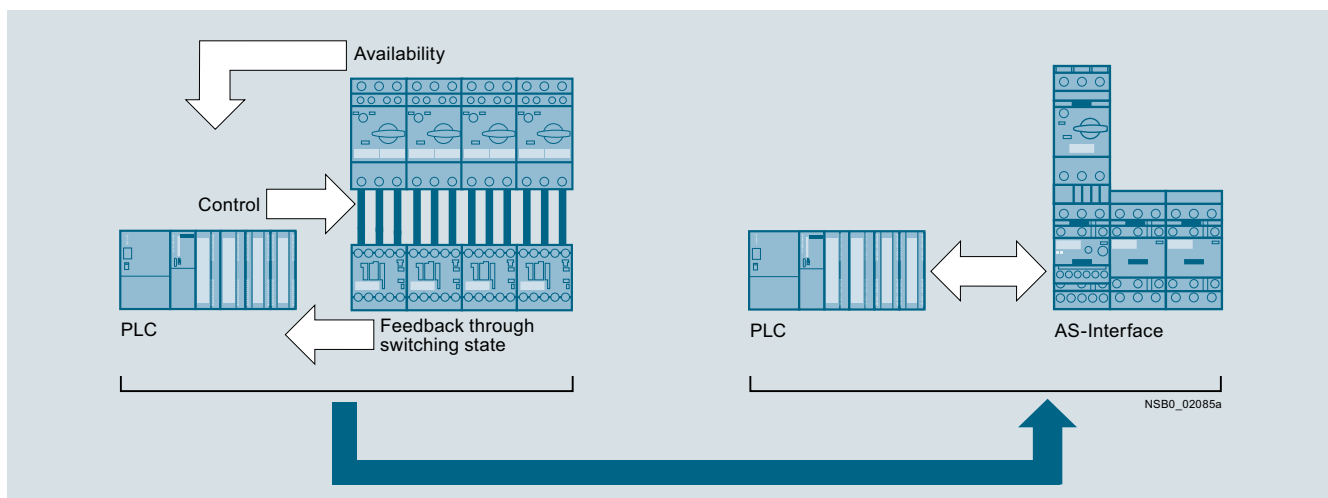
Through this type of connection to the control system, a maximum of wiring is saved. In the case of AS-Interface, the wiring amounts to the control supply voltage and the two individual wires for AS-Interface.

The following essential signals are thus transmitted:

- Availability of the feeder in response to an indirect inquiry from the motor starter protector/circuit breaker
- Starter control
- Feedback concerning the switching state of the starter



Signal transmission through IO-Link



Signal transmission through AS-Interface

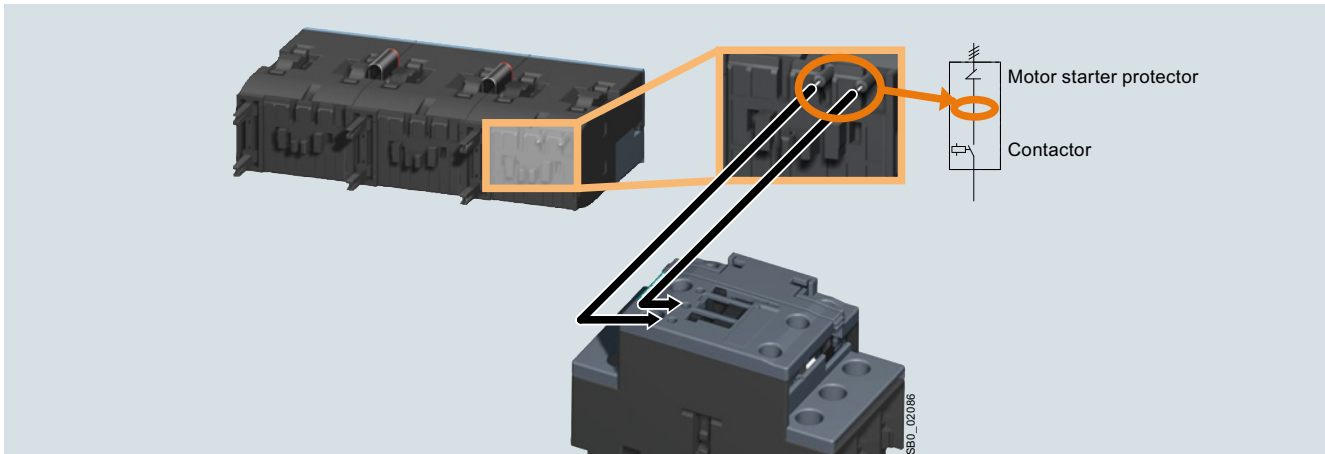
Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

The inquiry from the motor starter protector/circuit breaker does not take place through additive wiring between the auxiliary switch and the module but by means of a voltage inquiry at the contactor input.

This requires special versions of the contactors with voltage tap-off (see pages 3/61, 3/65, 3/69 and 3/70).



Availability signal through voltage tap-off

The following benefits result from the use of SIRIUS 3RA27 function modules:

- Reduction of control current wiring. In the case of IO-Link to no more than three cables for four feeders.
- Elimination of testing costs and wiring errors
- Reduction of configuration work
- Parameter server functionality
- Integration in TIA means unambiguous IO-Link diagnostics if a fault occurs

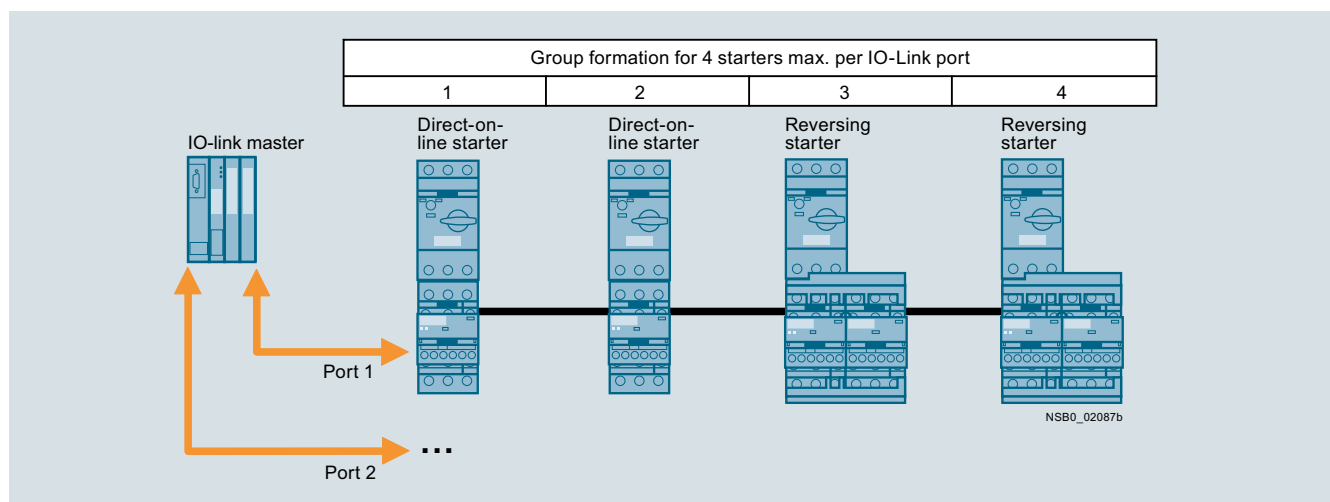
- Dispensing with IO modules saves space in the control cabinet
- All essential timing and interlocking functions for reversing duty and star-delta (wye-delta) starting are integrated
- No additive protection circuit required

For more information on IO-Link and AS-Interface, see "Industrial Communication", from page 2/1 onwards.

SIRIUS 3RA2711 function modules for IO-Link for mounting on 3RT2 contactors

By grouping up to four starters, it is possible to connect up to 16 starters to one master of the ET 200SP or S7-1200. In this case all the signals of the individual controls are made available directly in the process image of the input through only three individual wires per starter group. If the same potential is present

at the ET 200SP or S7-1200 master and at the switching devices, the wiring can be reduced further by connecting the supply voltage of the contactor coils to the communication wires via jumpers.



Group formation with IO-Link

In case of a malfunction, the corresponding error signals are also sent directly to the PLC in acyclic mode. This is in addition to transmission of the switching signals and status signals.

Possible error signals:

- Switching element defective
- No main voltage (motor starter protector tripped)
- No control supply voltage
- Limit position on the right/on the left
- Manual mode
- Process image fault

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

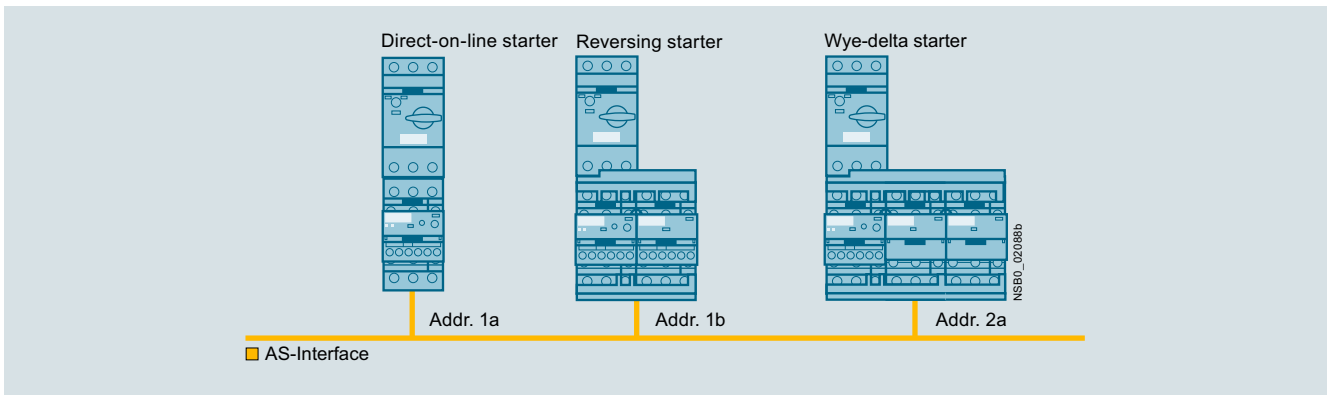
Accessories

This easy integration of the starters in the TIA world does not limit the flexibility in the field in the least. For example, all function modules have special terminals in order to enable direct local disconnection. These terminals can be connected for example to a position switch. The input interrupts the voltage supply to the contactor coil directly, i.e. without going through the PLC. These terminals are jumpered in the as-delivered state.

Local manual operation of the complete starter group is also straightforward using a hand-held device. The latter is easily connected to the last starter and can be built into the front panel of the control cabinet if required. This offers significant advantages particularly for commissioning.

SIRIUS function modules with IO-Link are used above all in machines and plants in which there are several motor feeders in one control cabinet. Using IO-Link, the connection of these feeders to the automation level is easy, quick and error-free. And with IO modules no longer needed, the width of the PLC is far smaller.

SIRIUS 3RA2712 function modules for AS-Interface for mounting on 3RT2 contactors



Topology with AS-Interface

This easy integration of the starters in the TIA world does not limit the flexibility in the field in the least. For example, all function modules have special terminals in order to enable direct local disconnection. These terminals can be connected for example to a position switch. The input interrupts the voltage supply to the contactor coil directly, i.e. without going through the PLC. These terminals are jumpered in the as-delivered state.

SIRIUS function modules with AS-Interface are recommended above all in machines and plants requiring easy connection of several different sensors and actuators both inside and outside the control cabinet to the higher-level control system. And with IO modules no longer needed, the width of the PLC is far smaller.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Technical specifications

More information

TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/TSTWeb/?kmat=Contactor>

Technical specifications

• For SIRIUS 3RT2 contactors and SIRIUS 3RH2 contactor relays, see <https://support.industry.siemens.com/cs/ww/en/ps/16208/td>

• For SIRIUS 3RT1 contactors, see <https://support.industry.siemens.com/cs/ww/en/ps/16209/td>

FAQs

• For SIRIUS 3RT2 contactors and SIRIUS 3RH2 contactor relays, see <https://support.industry.siemens.com/cs/ww/en/ps/16208/faq>

• For SIRIUS 3RT1 contactors, see <https://support.industry.siemens.com/cs/ww/en/ps/16209/faq>

System Manual, see "SIRIUS – System Overview", <https://support.industry.siemens.com/cs/ww/en/view/60311318>

Manual, see "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", <https://support.industry.siemens.com/cs/ww/en/view/60306557>



Solid-state time-delay auxiliary switch blocks for mounting on 3RT201 to 3RT204 (sizes S00 to S3) and 3RH2 contactor relays (size S00)

Type		3RA2813	3RA2814	3RA2815
Function		ON-delay	OFF-delay with control signal	OFF-delay without control signal
General data				
Dimensions (basic unit with mounted solid-state time-delay auxiliary switch block)		See 3RT2 contactors (pages 3/27, 3/33, 3/38, 3/43) and 3RH2 contactor relays (page 5/7)		
Rated insulation voltage U_i Pollution degree 3, overvoltage category III	V AC	300		
Rated impulse withstand voltage U_{imp}	kV AC	4		
Permissible ambient temperature				
• During operation	°C	-25 ... +60		
• During storage	°C	-40 ... +80		
Degree of protection acc. to IEC 60529		IP20		
Shock resistance Half-sine acc. to IEC 60068-2-27	g/ms	15/11		
Vibration resistance acc. to IEC 60068-2-6	Hz/mm	10 ... 55/0.35		
Electromagnetic compatibility (EMC)		IEC 61000-6-2, IEC 61000-6-4, IEC 61812-1, IEC 60947-4-1		
Overvoltage protection		Varistor integrated		
Permissible mounting position		Any (for the mounting position of 3RT2 contactors, see pages 3/27, 3/33, 3/38, 3/43; for the mounting position of 3RH2 contactor relays, see page 5/6)		
Control				
Operating range of excitation		0.85 ... 1.1 x U_s , 0.95 ... 1.05 times the rated frequency		
Rated power	W	1		
• Power consumption at 230 V AC, 50 Hz	VA	2		
Recovery time	ms	150		
Minimum ON period	ms	--	35	200
Setting accuracy , typ., with reference to upper limit of scale		± 15 %		
Repeat accuracy , max.		± 1 %		
Load side				
Rated operational currents I_e				
• AC-15 at 24 ... 250 V, 50 Hz	A	3		
• DC-13	A	1		
- At 24 V	A	0.2		
- At 125 V	A	0.1		
- At 250 V	A	0.1		
Mechanical endurance	Operating cycles	10 x 10 ⁶		
Electrical endurance at AC-15, 250 V, 3 A	Operating cycles	100 000		
Switching frequency for load				
• With I_e at 230 V AC	1/h	2 500		
• With 3RT2 contactor at 230 V AC	1/h	2 500		
Residual current , max.	mA	--		
Voltage drop , max., with conducting output	VA	--		
Short-circuit protection				
• Fuse links, operational class gG: DIAZED, type 5SB	A	4		

Power Contactors for Switching Motors


Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Type		3RA2813	3RA2814	3RA2815
Function		ON-delay	OFF-delay with control signal	OFF-delay without control signal
Conductor cross-sections				
Connection type (1 or 2 conductors can be connected)		 Screw terminals		
• Solid	mm ²	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)		
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)		
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)		
• Terminal screws		M3 (for standard screwdriver size 2 or Pozidriv 2)		
• Tightening torque	Nm	0.8 ... 1.2		
Connection type (1 or 2 conductors can be connected)		 Spring-type terminals		
• Solid	mm ²	2 x (0.25 ... 1.5)		
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.25 ... 1.5)		
• Finely stranded without end sleeve	mm ²	2 x (0.25 ... 1.5)		
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)		
• Operating devices	mm	3.0 x 0.5		

Solid-state time-delay auxiliary switch blocks, for snapping onto 3RT1 contactors

Type		3RT1926-2E, 3RT1926-2F, 3RT1926-2G
Sizes		S6 to S12
General data		
Dimensions (W x H x D)	mm	45 x 26 x 50
Rated insulation voltage U_i	V AC	250
Pollution degree 3, Overvoltage category III acc. to IEC 60664-1		
Permissible ambient temperature		
• During operation	°C	-25 ... +60
• During storage	°C	-40 ... +80
Degree of protection acc. to IEC 60529		
Terminals		IP20
Shock resistance Half-sine acc. to IEC 60068-2-27	g/ms	15/11
Vibration resistance acc. to IEC 60068-2-6	Hz/mm	10 ... 55/0.35
Electromagnetic compatibility (EMC)		
Permissible mounting position		Any (see 3RT1 contactors, page 3/48)
Control		
Operating range of excitation		0.85 ... 1.1 x U_s , 0.95 ... 1.05 times the rated frequency
Rated power	W	2
Power consumption at 230 V AC, 50 Hz	VA	4
Recovery time	ms	150
Minimum ON period	ms	200 (with OFF-delay)
Setting accuracy , typ. with reference to upper limit of scale	%	± 15
Repeat accuracy , max.	%	± 1



Type		3RT1926-2E, 3RT1926-2F, 3RT1926-2G
Sizes		S6 to S12
Load side		
Rated operational currents I_e		
• AC-15, 230 V, 50 Hz	A	3
• DC-13, 24 V	A	1
• DC-13, 110 V	A	0.2
• DC-13, 230 V	A	0.1
Short-circuit protection		
Fuse links, operational class gG: DIAZED, type 5SB	A	4
Mechanical endurance	Operating cycles	10 x 10 ⁶
Switching frequency for load		
• With I_e at 230 V AC	1/h	2 500
• With 3RT2016 contactor at 230 V AC	1/h	5 500
Conductor cross-sections		
Connection type (1 or 2 conductors can be connected)		 Screw terminals
• Solid	mm ²	2 x (0.5 ... 1.5), 2 x (0.75 ... 4)
• Finely stranded with end sleeve	mm ²	2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)
• Terminal screws		M3
• Tightening torque	Nm	0.8 ... 1.2

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Coupling links for control by PLC

Type		3RH2924-1GP11	3RH2914-GP11
Mounting on contactors of size		S0	S00 to S3
General data			
Standards		IEC 60947	
Rated insulation voltage U_i (pollution degree 3)	V	300	
Protective separation between coil and contacts Acc. to IEC 60947-1, Appendix N	V AC	Up to 300	
Degree of protection acc. to IEC 60529		IP20	
Permissible ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-40 ... +80	
Control side			
Rated control supply voltage U_s	V DC	24	
Operating range	V DC	17 ... 30	
Power consumption at U_s	W	0.5	
Nominal current input	mA	20	
Release voltage	V	≥ 4	
Function display		Yellow LED	
Protection circuit		Varistors	
Load side			
Mechanical endurance	Operating cycles	20 million	10 million
Electrical endurance at I_e	Operating cycles	0.1 million	
Switching frequency	1/h	5 000	
Make-time	ms	Approx. 7	
Break-time	ms	Approx. 4	
Bounce time	ms	Approx. 2	
Contact material		AgSnO ₂	
Switching voltage	V AC/DC	24 ... 250	
Rated operational current I_e			
• AC-15/AC-14 at 230 V	A	3	
• DC-13 at 230 V	A	0.1	
Permissible residual current of the electronics (with 0 signal)	mA	2.5	
Conductor cross-sections			
Connection type (1 or 2 conductors can be connected)		 Screw terminals	
• Solid	mm ²	2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5)	
• Terminal screws		M3	
Connection type (1 or 2 conductors can be connected)		 Spring-type terminals	
• Solid	mm ²	--	2 x (0.25 ... 1.5)
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	--	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve	mm ²	--	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	--	2 x (24 ... 16)
• Operating devices	mm	--	3.0 x 0.5

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays



Type	3RA2811	3RA2831	3RA2812	3RA2832	3RA2816
Mounting on contactors of size	S00, S0	S2, S3	S00, S0	S2, S3	S00 to S3
Function	For direct-on-line starting				For star-delta (wye-delta) starting
	ON-delay		OFF-delay with control signal		
General data					
Dimensions (basic unit with mounted function module)					
See 3RT2 contactors (pages 3/27, 3/33, 3/38, 3/43) and 3RH2 contactor relays (page 5/7)					
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III	V AC	300			
Rated impulse withstand voltage U_{imp}	kV AC	4			
Overvoltage protection	Varistor integrated				
Recovery time	ms	50			150
Minimum ON period	ms	--		35	--
Setting accuracy Typ. With reference to upper limit of scale	± 15 %				
Repeat accuracy Max.	± 1 %				
Degree of protection acc. to IEC 60529	IP20				
Permissible ambient temperature					
• During operation	°C	-25 ... +60			
• During storage	°C	-40 ... +80			
Shock resistance Half-sine acc. to IEC 60068-2-27	g/ms	15/11			
Vibration resistance acc. to IEC 60068-2-6	Hz/mm	10 ... 55/0.35			
Electromagnetic compatibility (EMC)	IEC 61000-6-2, IEC 61000-6-4, IEC 61812-1, IEC 60947-4-1				
Permissible mounting position	Any (for the mounting position of 3RT2 contactors, see pages 3/27, 3/33, 3/38, 3/43; for the mounting position of 3RH2 contactor relays, see page 5/6)				
Control side					
Operating range of excitation	0.85 ... 1.1 x U_s , 0.95 ... 1.05 times the rated frequency				
Rated power	W	1			
• Power consumption at 230 V AC, 50 Hz	VA	1			2
Load side					
Mechanical endurance	Operating cycles	100 x 10 ⁶			10 x 10 ⁶
Electrical endurance	Operating cycles	100 000			
• With 3RT2028 contactor	Operating cycles	100 000			--
• At AC-15, 250 V, 3 A	Operating cycles	--			100 000
Switching frequency for load					
• With I_g at 230 V AC	1/h	2 500			--
• With 3RT2 contactor at 230 V AC	1/h	2 500			--
Residual current Max.	mA	5		--	--
Voltage drop Max. With conducting output	VA	3.5		--	--
DIAZED fuse protection Operational class gG	A	--			4
Conductor cross-sections					
Connection type (1 or 2 conductors can be connected)					
⊕ Screw terminals					
• Solid	mm ²	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)			
• Terminal screws		M3 (for standard screwdriver size 2 or Pozidriv 2)			
• Tightening torque	Nm	0.8 ... 1.2			
⊙ Spring-type terminals					
• Operating devices	mm	3.0 x 0.5			
• Solid	mm ²	2 x (0.25 ... 1.5)			
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.25 ... 1.5)			
• Finely stranded without end sleeve	mm ²	2 x (0.25 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)			

Power Contactors for Switching Motors



Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

3RA27 function modules for IO-Link for mounting on 3RT2 contactors

Type		3RA2711	
General data			
Dimensions		See 3RT2 contactors: pages 3/27, 3/33, 3/38 and 3/43	
Suitable for IO-Link masters acc. to specification		1.1	
Permissible ambient temperature			
• During operation	Acc. to IEC 60947-1	°C	-25 ... +60
• During storage	Acc. to IEC 60721-3-1	°C	-40 ... +80
• During transport	Acc. to IEC 60721-3-2	°C	-40 ... +80
Degree of protection		IP20	
Operating voltage U_{Hi}		V DC	24 ± 20 %
Max. length of the cables for the input Y1-Y2		Acc. to EN 50295	m
Electromagnetic compatibility (EMC)		IEC 61000-6-2, IEC 61000-6-4, IEC 60947-4-1	
Conductor cross-sections			
Connection type (1 or 2 conductors can be connected)		 Screw terminals	
• Solid	mm ²	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)	
• Terminal screws		M3 (for standard screwdriver Ø 6 mm or Pozidriv 2)	
• Tightening torque of the terminal screws	Nm	0.8 ... 1.2	
Connection type (1 or 2 conductors can be connected)		 Spring-type terminals	
• Operating devices	mm	3.0 x 0.5	
• Solid	mm ²	2 x (0.25 ... 1.5)	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.25 ... 1.5)	
• Finely stranded without end sleeve	mm ²	2 x (0.25 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)	

3RA27 function modules for AS-Interface for mounting on 3RT2 contactors

Type		3RA2712	
General data			
Dimensions		See 3RT2 contactors: pages 3/27, 3/33, 3/38 and 3/43	
Slave type		A/B slave	
Suitable for AS-i masters acc. to specification		2.1 or higher	
AS-i slave profile IO.ID.ID2		7.A.E	
ID1 code (factory setting)		7	
Permissible ambient temperature			
• During operation	Acc. to IEC 60947-1	°C	-25 ... +60
• During storage	Acc. to IEC 60721-3-1	°C	-40 ... +80
• During transport	Acc. to IEC 60721-3-2	°C	-40 ... +80
Degree of protection		IP20	
Operational voltage			
• AS-Interface	V	26.5 ... 31.6	
• AUX PWR 24 V DC	V	24 ± 20 %	
Current consumption, max.			
• AS-Interface	mA	30	
• AUX PWR			
- Maximum pick-up/hold current	Size S00	mA	200/200
	Size S0	mA	300/300
	Size S2	mA	1 300/50
	Size S3	mA	4 000/70
Max. length of the cables for the input Y1-Y2		According to EN 50295	m
Electromagnetic compatibility (EMC)		IEC 61000-6-2, IEC 61000-6-4, IEC 60947-4-1	
Conductor cross-sections			
Connection type (1 or 2 conductors can be connected)		 Screw terminals	
• Solid	mm ²	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)	
• Terminal screws		M3 (for standard screwdriver Ø 6 mm or Pozidriv 2)	
• Tightening torque of the terminal screws	Nm	0.8 ... 1.2	
Connection type (1 or 2 conductors can be connected)		 Spring-type terminals	
• Operating devices	mm	3.0 x 0.5	
• Solid	mm ²	2 x (0.25 ... 1.5)	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.25 ... 1.5)	
• Finely stranded without end sleeve	mm ²	2 x (0.25 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)	

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Auxiliary switch blocks, instantaneous

Selection and ordering data

Auxiliary switch: Terminal designations and identification numbers for auxiliary contacts

Terminal designations

The terminal designations are 2-digit, e.g. 13, 14, 21, 22:

- Tens digit: Sequence digit
 - Related terminals have the same sequence digit
- Units digit: Function digit
 - 1-2 for normally closed contacts (NC)
 - 3-4 for normally open contacts (NO)

Identification numbers

The identification number indicates the number and type of the auxiliary contacts, e.g. 40, 31, 22, 13:

- 1st digit: number of normally open contacts (NO)
- 2nd digit: number of normally closed contacts (NC)

Examples:

- 31 = 3 NO + 1 NC
- 40 = 4 NO

Selection aid for mountable auxiliary switch blocks for power contactors and contactor relays

The auxiliary switch blocks of the 3RH29 series for mounting on the front and side can be used for 3RT2 power contactors as well as for 3RH2 contactor relays.

The possible combinations of basic unit and mounted auxiliary switch block can be found in the tables, [see the following pages](#).

Where the columns and lines intersect (blue and green in the example) you will find the identification number for the combination of basic unit (column) and auxiliary switch block (line).

Additional auxiliary switch blocks		3-pole contactors		
Article number	Auxiliary contacts	3RT201	3RT201	3RT202 to 3RT204
	Version	S00	S00	S0 to S3
	NO NC	10	01	11
		2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.
According to EN 50012¹⁾				

Auxiliary switch blocks without NO contacts					
3RH2911-□HA01	-- 1		11	02	12
3RH2911-□HA02	-- 2		12	03	13
3RH2911-□HA03	-- 3		13	04	14
3RH2911-□FA04	-- 4		14	--	--
Auxiliary switch blocks with 1 NO contact					
3RH2911-□HA10	1 --		20	11	21

1 For screw terminals
2 For spring-type terminals

¹⁾ Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

Example 1

Basic unit: 3-pole 3RT2017 motor contactor with 1 NO
Required: 1 NO + 4 NC (Ident. No. 14)
Result: 3RH2911-FA04 auxiliary switch block

Example 2

Basic unit: 3-pole 3RT2023 motor contactor with 1 NO + 1 NC
Required: 1 NO + 4 NC (Ident. No. 14)
Result: Auxiliary switch block 3RH2911-HA03










	Example 1	Example 2
Type	3RT20 motor contactor, S00 with 1 NO	3RT20 motor contactor, S0 with 1 NO + 1 NC
Sequence digit	2. 3. 4. 5.	3. 4. 5. 6.
Type	Auxiliary switch blocks with 4 NC, 3RH2911-FA04	Auxiliary switch blocks with 3 NC, 3RH2911-HA03
Function digit	.1 .1 .1 .1 .2 .2 .2 .2	.1 .1 .1 .2 .2 .2
Combination	3RT20 motor contactor, S00 with aux. switch block	3RT20 motor contactor, S0 with aux. switch block
Terminal designation	13 21 31 41 51 14 22 32 42 52	13 21 31 41 51 14 22 32 42 52
Result	Ident. No. 14	Ident. No. 14

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Auxiliary switch blocks, instantaneous




Additional auxiliary switch blocks		3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts Version	S00 3RT201	S0 to S3 3RT202, 3RT203, 3RT204, 3RT244	S00 3RT231	3RT251	S0 to S3 3RT232, 3RT233, 3RT234	3RT252, 3RT253, 3RT254	S00 3RH21, 3RH24			
	NO NC	10	01	11	--	--	11	11	40E	31E	22E
											
		2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.			1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8.
		According to EN 50012 ¹⁾			According to EN 50012 ¹⁾				According to EN 50011 ¹⁾		

Auxiliary switch blocks, front





Without NO contact

3RH2911-□HA01	--	1		11	02	12	01	01	12	12	41X	32X	23X
3RH2911-□HA02	--	2		12	03	13	02	02	13	--	42E	33X	24
3RH2911-□HA03	--	3		13	04	14	03	--	--	--	43	34	--
3RH2911-□FA04	--	4		14	--	--	--	--	--	--	44E	--	--



With 1 NO contact

3RH2911-□HA10	1	--		20	11	21	10	10	21	21	50E	41E	32E
3RH2911-□HA11	1	1		21	12	22	11	11	22	22	51X	42X	33X
3RH2911-□HA12	1	2		22	13	23	12	12	23	--	52	43	34
3RH2911-□HA13	1	3		23	14	24	13	--	--	--	53X	44X	--

With 2 NO contacts

3RH2911-□HA20	2	--		30	21	31	20	20	31	31	60E	51X	42X
3RH2911-□HA21	2	1		31	22	32	21	21	32	32	61	52	43
3RH2911-□HA22	2	2		32	23	33	22	22	33	--	62X	53	44X
3RH2911-□FA22	2	2		32	23	33	22	22	33	--	62X	53	44X

With 3 NO contacts

3RH2911-□HA30	3	--		40	31	41	30	30	41	41	70	61	52
3RH2911-□HA31	3	1		41	32	42	31	31	42	42	71X	62X	53X

With 4 NO contacts

3RH2911-□FA40	4	--		50	41	51	40	40	51	51	80E	71X	62X
----------------------	---	----	---	----	----	----	----	----	----	----	------------	------------	------------

¹⁾ Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.



Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Auxiliary switch blocks, instantaneous

Additional auxiliary switch blocks		3-pole contactors			4-pole contactors				Contactor relays			
Article number	Auxiliary contacts Version	S00 3RT201	S0 to S3 3RT202, 3RT203, 3RT204, 3RT244	S00 3RT231	3RT251	S0 to S3 3RT232, 3RT233, 3RT234	3RT252, 3RT253, 3RT254	S00 3RH21, 3RH24				
	NO NC	S00	S0 to S3	S00		S0 to S3		40E	31E	22E		
		2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.		1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8.	5. 6. 7. 8.	5. 6. 7. 8.
		According to EN 50005			According to EN 50005				According to EN 50005			

Auxiliary switch blocks, front (continued)

With make-before-break¹⁾

3RH2911-□FB11	1	1		21	12	22	11	11	22	22	51	42	33
3RH2911-□FB22	2	2		32	23	33	22	22	33	--	62	53	44
3RH2911-□FC22	2	2		32	23	33	22	22	33	--	62	53	44

Complete inscription with terminals from top or bottom

3RH2911-1AA10	1	--		20	11	21	10	10	21	21	50	41	32
3RH2911-1BA10	1	--		20	11	21	10	10	21	21	50	41	32
3RH2911-1AA01	--	1		11	02	12	01	01	12	12	41	32	23
3RH2911-1BA01	--	1		11	02	12	01	01	12	12	41	32	23
3RH2911-1LA11	1	1		21	12	22	11	11	22	22	51	42	33
3RH2911-1MA11	1	1		21	12	22	11	11	22	22	51	42	33
3RH2911-1LA20	2	--		30	21	31	20	20	31	31	60	51	42
3RH2911-1MA20	2	--		30	21	31	20	20	31	31	60	51	42


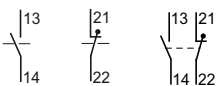
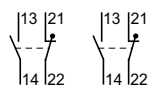
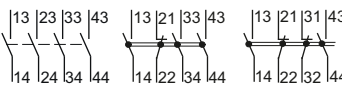
¹⁾ Contacts with make-before-break have no mirror contact function.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays


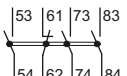
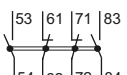
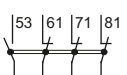
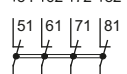
Accessories

Auxiliary switch blocks, instantaneous


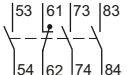
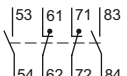
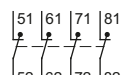
Additional auxiliary switch blocks		3-pole contactors			4-pole contactors				Contactor relays									
Article number	Auxiliary contacts Version	S00			S0 to S3				S00									
		3RT201			3RT202, 3RT203, 3RT204, 3RT244				3RT231 3RT251				3RT232, 3RT252, 3RT253, 3RT254			3RH21, 3RH24		
	NO NC	10 01 11			-- -- 11 11				40E 31E 22E									
																		
		2. 3. 4. 5. 5. 6. 7. 8.			3. 4. 5. 6.				1. 2. 3. 4. 1. 2. 3. 4. 3. 4. 5. 6. 3. 4. 5. 6.				5. 6. 7. 8. 5. 6. 7. 8. 5. 6. 7. 8.					
		According to EN 50005			According to EN 50005				According to EN 50011¹⁾									

Auxiliary switch blocks, front (continued)

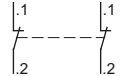
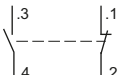

With complete inscription (for contactor relays)²⁾

3RH2911-□GA40	4 --		--	--	--	--	--	--	--	80E	--	--
3RH2911-□GA31	3 1		--	--	--	--	--	--	--	71E	--	--
3RH2911-□GA22	2 2		--	--	--	--	--	--	--	62E	--	--
3RH2911-□GA13	1 3		--	--	--	--	--	--	--	53E	--	--
3RH2911-□GA04	-- 4		--	--	--	--	--	--	--	44E	--	--

Complete inscription

3RH2911-□XA40-0MA0	4 --		50	41	51	40	40	51	51	80E	71X	62X
3RH2911-□XA31-0MA0	3 1		41	32	42	31	31	42	42	71E	62X	53
3RH2911-□XA22-0MA0	2 2		32	23	33	22	22	33	--	62E	53	44X
3RH2911-□XA04-0MA0	-- 4		14	--	--	--	--	--	--	44E	--	--

Solid-state compatible

3RH2911-□NF02	-- 2		12	03	13	02	02	13	--	42	33	24
3RH2911-□NF11	1 1		21	12	22	11	11	22	22	51	42	33
3RH2911-□NF20	2 --		30	21	31	20	20	31	31	60	51	42

¹⁾ Combinations according to EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.










²⁾ For selection and ordering data, see page 3/96.

Power Contactors for Switching Motors













Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays




Accessories

Auxiliary switch blocks, instantaneous

Additional auxiliary switch blocks		3-pole contactors			4-pole contactors				Contactor relays		
Article number	Auxiliary contacts Version	S00 3RT201	S0 to S3 3RT202, 3RT203, 3RT204, 3RT244		S00 3RT231	3RT251	S0 to S3 3RT232, 3RT252, 3RT233, 3RT253, 3RT234, 3RT254		S00 3RH21		
	NO NC	10	01	11	--	--	11	11	40E	31E	22E
											
		2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8.	5. 6. 7. 8.	5. 6. 7. 8.
		According to EN 50012¹⁾			According to EN 50012¹⁾				According to EN 50011¹⁾		

Lateral auxiliary switch blocks (continued)


For sizes S00 to S3		Left	Right										
3RH2921-□DA20	2 --			41	32	42	31	31	--	--	--	--	--
+ 3RH2921-□DA11	1 1												
3RH2921-□DA20	2 --			32	23	33	22	22	--	--	--	--	--
+ 3RH2921-□DA02	-- 2												
3RH2921-□DA11	1 1			23	14	24	13	--	--	--	--	--	--
+ 3RH2921-□DA02	-- 2												

For contactor relays ²⁾		Left											
3RH2921-□DA02	-- 2		--	--	--	--	--	--	--	--	42Z	33X	24
3RH2921-□DA11	1 1		--	--	--	--	--	--	--	--	51X	42X	33X
3RH2921-□DA20	2 --		--	--	--	--	--	--	--	--	60Z	51X	42X

Solid-state compatible

For size S00		Left	Right										
3RH2911-2DE11	1 1			21	--	--	11	11	--	--	--	--	--
3RH2911-2DE11	1 1			32	--	--	22	22	--	--	--	--	--
+ 3RH2911-2DE11	1 1												

For sizes S00 to S3		Left	Right										
3RH2921-□DE11	1 1			21	12	22	11	11	22	22	--	--	--
3RH2921-□DE11	1 1			32	23	33	22	22	--	--	--	--	--
+ 3RH2921-□DE11	1 1												

For contactor relays ²⁾		Left											
3RH2921-2DE11	1 1		--	--	--	--	--	--	--	--	51X	42X	33X

¹⁾ Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

²⁾ Without positively driven operation.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RH2911-1HA22



3RH2911-2HA22

For contactors/ contactor relays ¹⁾	Auxiliary contacts Version	SD	Screw terminals		SD	Spring-type terminals	
			Article No.	Price per PU		Article No.	Price per PU
Type	NO NC	d			d		

Auxiliary switch blocks for snapping onto the front

Sizes S00 to S3

3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4	--	1		▶	3RH2911-1HA01	▶	3RH2911-2HA01
3RH21, 3RH24	--	2		▶	3RH2911-1HA02	▶	3RH2911-2HA02
	--	3		▶	3RH2911-1HA03	▶	3RH2911-2HA03
	1	--		▶	3RH2911-1HA10	▶	3RH2911-2HA10
	1	1		▶	3RH2911-1HA11	▶	3RH2911-2HA11
	1	2		▶	3RH2911-1HA12	▶	3RH2911-2HA12
	1	3		▶	3RH2911-1HA13	▶	3RH2911-2HA13
	2	--		▶	3RH2911-1HA20	▶	3RH2911-2HA20
	2	1		▶	3RH2911-1HA21	▶	3RH2911-2HA21
	2	2		▶	3RH2911-1HA22	▶	3RH2911-2HA22
	3	--		▶	3RH2911-1HA30	▶	3RH2911-2HA30
	3	1		▶	3RH2911-1HA31	▶	3RH2911-2HA31

¹⁾ For detailed information on use, see page 3/89.

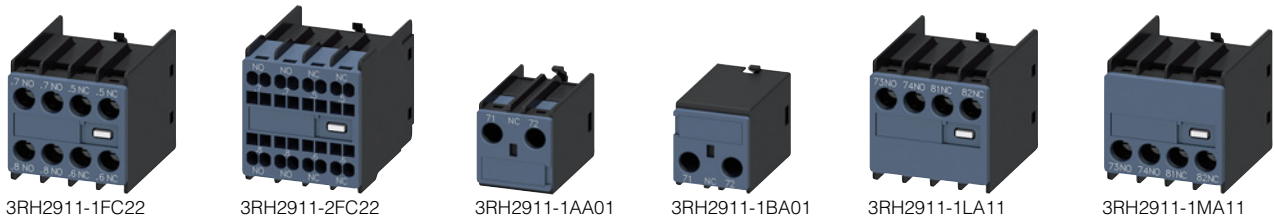
Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



For contactors/ contactor relays ¹⁾	Connections Position	Auxiliary contacts Version	SD	Screw terminals	SD	Spring-type terminals
Type		 NO NC NO NC	d	Article No. Price per PU	d	Article No. Price per PU

Auxiliary switch blocks for snapping onto the front

Sizes S00 to S3

3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4	--	4	--	--	--		▶ 3RH2911-1FA40	▶ 3RH2911-2FA40
3RH21, 3RH24	--	2	2	--	--		▶ 3RH2911-1FA22	▶ 3RH2911-2FA22
	--	--	4	--	--		▶ 3RH2911-1FA04	▶ 3RH2911-2FA04
	--	--	--	1	1		▶ 3RH2911-1FB11	▶ 3RH2911-2FB11
	--	1	1	1	1		▶ 3RH2911-1FB22	▶ 3RH2911-2FB22
	--	--	--	2	2		▶ 3RH2911-1FC22	▶ 3RH2911-2FC22

1- and 2-pole auxiliary switch blocks, cable entry from top or bottom

3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4	Top	1	--	--	--		▶ 3RH2911-1AA10	--
	Bottom	1	--	--	--		▶ 3RH2911-1BA10	--
3RH21, 3RH24	Top	--	1	--	--		▶ 3RH2911-1AA01	--
	Bottom	--	1	--	--		▶ 3RH2911-1BA01	--
	Top	1	1	--	--		▶ 3RH2911-1LA11	--
	Bottom	1	1	--	--		▶ 3RH2911-1MA11	--
	Top	2	--	--	--		▶ 3RH2911-1LA20	--
	Bottom	2	--	--	--		▶ 3RH2911-1MA20	--

¹⁾ For detailed information on use, see pages 3/89 and 3/90.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RH2911-1GA22



3RH2911-2GA22

For contactor relays ¹⁾	Contactor relay with auxiliary switch block Ident. No.	Auxiliary contacts Version	SD	Screw terminals	SD	Spring-type terminals
Type		NO NC	d	Article No. Price per PU	d	Article No. Price per PU

Auxiliary switch blocks for snapping onto the front

Size S00

Blocks for the assembly of contactor relays with 8 contacts

Ident. No.	80E	71E	62E	53E	44E
3RH2140, 3RH2440, Ident. No. 40E	4 --	3 1	2 2	1 3	-- 4

▶	3RH2911-1GA40	▶	3RH2911-2GA40
▶	3RH2911-1GA31	▶	3RH2911-2GA31
▶	3RH2911-1GA22	▶	3RH2911-2GA22
▶	3RH2911-1GA13	▶	3RH2911-2GA13
▶	3RH2911-1GA04	▶	3RH2911-2GA04

¹⁾ For detailed information on use, see page 3/91.

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RH2911-1XA22-0MA0



3RH2911-2XA22-0MA0

For contactors/ contactor relays ¹⁾	Auxiliary contacts Version	SD	Screw terminals	SD	Spring-type terminals
Type	NO NC	d	Article No. Price per PU	d	Article No. Price per PU

Auxiliary switch blocks for snapping onto the front

Sizes S00 to S3

3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4	4 --		▶	3RH2911-1XA40-0MA0	▶	3RH2911-2XA40-0MA0
3RH21, 3RH24	3 1		▶	3RH2911-1XA31-0MA0	▶	3RH2911-2XA31-0MA0
	2 2		▶	3RH2911-1XA22-0MA0	▶	3RH2911-2XA22-0MA0
	-- 4		▶	3RH2911-1XA04-0MA0	5	3RH2911-2XA04-0MA0

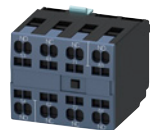
¹⁾ For detailed information on use, see page 3/91.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RH1921-1XA22-0MA0

3RH1921-2XA22-0MA0

3RH1921-1CA10

3RH1921-1CD10

3RH1921-2CA10

3RH1921-2CA01

For contactors	Auxiliary contacts		SD	Screw terminals		SD	Spring-type terminals	
	Ident. No.	Version		Article No.	Price per PU		Article No.	Price per PU
Type			d			d		

Auxiliary switch blocks for snapping onto the front

Sizes S6 to S12

4-pole auxiliary switch blocks

• According to EN 50012

3RT1.5 ... 3RT1.7	22	2	2	--	--		5	3RH1921-1XA22-0MA0	20	3RH1921-2XA22-0MA0
----------------------	----	---	---	----	----	--	---	--------------------	----	--------------------

1-pole auxiliary switch blocks

• According to EN 50005 and EN 50012

3RT1.5 ... 3RT1.7	10	1	--	--	--			3RH1921-1CA10		3RH1921-2CA10
	01	--	1	--	--			3RH1921-1CA01		3RH1921-2CA01
	10	--	--	1	--			3RH1921-1CD10		--
	01	--	--	--	1			3RH1921-1CD01		--

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RH2911-1DA02



3RH2911-2DA02

For contactors ¹⁾	Auxiliary contacts Version	SD	Screw terminals		SD	Spring-type terminals	
			Article No.	Price per PU		Article No.	Price per PU
Type	NO NC	d	d	d	d	d	d

Laterally mountable auxiliary switch blocks, mounting on the right and/or on the left, 2-pole

Size S00

			Left	Right				
3RT2.1	--	2			2	3RH2911-1DA02	2	3RH2911-2DA02
	1	1			2	3RH2911-1DA11	2	3RH2911-2DA11
	2	--			2	3RH2911-1DA20	2	3RH2911-2DA20

Sizes S0 to S3

			Left	Right				
3RT2.1 3RT2.2 ²⁾ 3RT2.3 ³⁾ 3RT2.4 ³⁾	--	2			2	3RH2921-1DA02	2	3RH2921-2DA02
	1	1			2	3RH2921-1DA11	2	3RH2921-2DA11
	2	--			2	3RH2921-1DA20	2	3RH2921-2DA20

¹⁾ For detailed information on use, see pages 3/92 and 3/93.

²⁾ With 3RT232. and 3RT252. contactors, mountable only on the right.

³⁾ 3RH2921-1DA.. lateral auxiliary switch blocks can only be mounted on 3RT26 capacitor contactors of sizes S2 and S3.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RH1921-1DA11



3RH1921-1JA11



3RH1921-1EA02



3RH1921-1KA02



3RH1921-2DA11

For contactors	Auxiliary contacts	SD	Screw terminals	SD	Spring-type terminals
	Version				
Type	NO NC	d	Article No.	d	Article No.
			Price per PU		Price per PU

Lateral auxiliary switch blocks, mounting on left or right, 2-pole

Sizes S6 to S12

	Left	Right		
1st auxiliary switch block				
• According to EN 50012				
3RT1.5 ... 3RT1.7	1 1		▶ 3RH1921-1DA11	▶ 3RH1921-2DA11
• According to EN 50005				
3RT1.5 ... 3RT1.7	2 --		▶ 3RH1921-1EA20	▶ 3RH1921-2EA20
	1 1		▶ 3RH1921-1EA11	--
	-- 2		▶ 3RH1921-1EA02	▶ 3RH1921-2EA02
2nd auxiliary switch block				
• According to EN 50012				
3RT1.5 ... 3RT1.7	1 1		▶ 3RH1921-1JA11	▶ 3RH1921-2JA11
• According to EN 50005				
3RT1.5 ... 3RT1.7	2 --		▶ 3RH1921-1KA20	20 3RH1921-2KA20
	1 1		▶ 3RH1921-1KA11	--
	-- 2		▶ 3RH1921-1KA02	20 3RH1921-2KA02

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Auxiliary switch blocks, instantaneous

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RH2911-1NF..



3RH2911-2NF..



3RH2911-2DE11



3RH1921-2JE11

For contactors/ contactor relays ¹⁾	Size	Contacts Version	SD	Screw terminals	SD	Spring-type terminals
Type		NO NC	d	Article No.	Price per PU	Article No. Price per PU

Solid-state compatible auxiliary switch blocks, 2-pole

- For operation in dusty atmospheres
- For solid-state circuits with rated operational currents $I_o/AC-14$ and DC-13 from 1 ... 300 mA at 3 ... 60 V
- Hard gold-plated contacts
- Laterally mountable auxiliary switches and auxiliary switches for snapping onto the front for 3RT2 contactors, sizes S0 to S3, are designed as mirror contacts according to IEC 60947-4-1, Appendix F.

Auxiliary switch blocks for snapping onto the front

3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4	3RH21, 3RH24	Size	Contacts	SD	Article No.	Article No.
		S00 ... S3	-- 2		2 3RH2911-1NF02	2 3RH2911-2NF02
			1 1		▶ 3RH2911-1NF11	▶ 3RH2911-2NF11
			2 --		▶ 3RH2911-1NF20	▶ 3RH2911-2NF20

Lateral auxiliary switch blocks, mounting on the right and/or on the left, acc. to EN 50012

		Auxiliary switch block			
		Left	Right		
3RT2.1	S00	1	1		-- 2 3RH2911-2DE11
3RT2.2, 3RT2.3, 3RT2.4	S0 ... S3	1	1		-- 2 3RH2921-2DE11
		1st auxiliary switch block			
		Left	Right		
3RT1.5 ... 3RT1.7	S6 ... S12	1	1		▶ 3RH1921-2DE11
		2nd auxiliary switch block			
		Left	Right		
3RT1.5 ... 3RT1.7	S6 ... S12	1	1		▶ 3RH1921-2JE11

¹⁾ For detailed information on use, see pages 3/91 and 3/93.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays


Accessories

Auxiliary switch blocks, delayed

Selection and ordering data

For contactors	Time setting range t	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
Type	s	d	Article No.		Price per PU		

Pneumatic time-delay auxiliary switch blocks for mounting on 3RT2 contactors

Size S0							
Auxiliary contacts 1 NO and 1 NC¹⁾							
ON-delay							
	3RT202	0.1 ... 30	10	3RT2926-2PA01	1	1 unit	41B
		0.1 ... 30 ²⁾	X	3RT2926-2PA01-OMT0	1	1 unit	41B
		1 ... 60	10	3RT2926-2PA11	1	1 unit	41B
		1 ... 60 ²⁾	X	3RT2926-2PA11-OMT0	1	1 unit	41B
OFF-delay							
3RT2926-2P...	3RT202	0.1 ... 30	10	3RT2926-2PR01	1	1 unit	41B
		0.1 ... 30 ²⁾	X	3RT2926-2PR01-OMT0	1	1 unit	41B
		1 ... 60	10	3RT2926-2PR11	1	1 unit	41B
		1 ... 60 ²⁾	X	3RT2926-2PR11-OMT0	1	1 unit	41B

¹⁾ In addition to these, no other auxiliary contacts are permitted.

²⁾ Certificate for furnaces according to EN 50156-1 on request.

Technical specifications, [see Manual](#).

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B



3RA2813-1FW10



3RA2813-2AW10

For contactors	Rated control supply voltage U_s ¹⁾	Time setting range t	Output/ auxiliary contacts	SD	Screw terminals	⊕	SD	Spring-type terminals	⊕
Type	V	s		d	Article No.	Price per PU	d	Article No.	Price per PU

Solid-state time-delay auxiliary switch blocks²⁾ for mounting onto 3RT2 contactors and 3RH2 contactor relays

Sizes S00 to S3

The electrical connection between the solid-state time-delay auxiliary switch and the contactor or contactor relay underneath is established automatically when it is snapped on and locked.

ON-delay

(varistor integrated)

3RT2 ³⁾⁴⁾ , 3RH21 ³⁾ , 3RH24	24 ... 240 AC/DC	0.05 ... 100 (1, 10, 100 selectable)	1 CO	2	3RA2813-1AW10	2	3RA2813-2AW10
			1 NO + 1 NC	2	3RA2813-1FW10	2	3RA2813-2FW10

OFF-delay with control signal

(varistor integrated)

3RT2 ³⁾⁴⁾ , 3RH21 ³⁾ , 3RH24	24 ... 240 AC/DC	0.05 ... 100 (1, 10, 100 selectable)	1 CO	2	3RA2814-1AW10	2	3RA2814-2AW10
			1 NO + 1 NC	2	3RA2814-1FW10	2	3RA2814-2FW10

OFF-delay without control signal⁵⁾

(varistor integrated)

3RT2 ³⁾⁴⁾ , 3RH21 ³⁾ , 3RH24	24 ... 240 AC/DC	0.05 ... 100 (1, 10, 100 selectable)	1 CO	2	3RA2815-1AW10	2	3RA2815-2AW10
			1 NO + 1 NC	2	3RA2815-1FW10	2	3RA2815-2FW10

¹⁾ AC voltage values apply for 50 Hz and 60 Hz.

²⁾ The solid-state time-delay auxiliary switch blocks are also available as 3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays, [see page 3/106](#).

³⁾ Cannot be fitted onto coupling relays and coupling contactor relays.

⁴⁾ From product version E04 onwards, 3RA281. solid-state time-delayed auxiliary switch blocks can be used for 3RT2.4 contactors.

⁵⁾ Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact change-over to the correct setting.

Technical specifications, [see page 3/83](#).

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays
Accessories

Auxiliary switch blocks, delayed

For contactors	Auxiliary contacts	Rated control supply voltage U_s ¹⁾	Time setting range t	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
Type	V	s	d	Article No.	Price per PU				

Solid-state time-delay auxiliary switch blocks for mounting on 3RT1 contactors

Sizes S6 to S12



3RT1926-2...

ON-delay²⁾									
3RT10, 3RT14	1 NO + 1 NC	24 AC/DC	0.05 ... 1	▶ 10	3RT1926-2EJ11	1	1 unit	41H	
			0.5 ... 10	▶ 2	3RT1926-2EJ21	1	1 unit	41H	
	100 ... 127 AC	0.05 ... 1	▶ 15	3RT1926-2EJ31	1	1 unit	41H		
			0.5 ... 10	▶ 10	3RT1926-2EC11	1	1 unit	41H	
		5 ... 100	▶ 10	3RT1926-2EC21	1	1 unit	41H		
			▶ 10	3RT1926-2EC31	1	1 unit	41H		
200 ... 240 AC	0.05 ... 1	▶ 5	3RT1926-2ED11	1	1 unit	41H			
		0.5 ... 10	▶ 5	3RT1926-2ED21	1	1 unit	41H		
	5 ... 100	▶ 5	3RT1926-2ED31	1	1 unit	41H			
OFF-delay without control signal²⁾³⁾									
3RT10, 3RT14	1 NO + 1 NC	24 AC/DC	0.05 ... 1	▶ 5	3RT1926-2FJ11	1	1 unit	41H	
			0.5 ... 10	▶ 5	3RT1926-2FJ21	1	1 unit	41H	
			5 ... 100	▶ 5	3RT1926-2FJ31	1	1 unit	41H	
	100 ... 127 AC/DC	0.05 ... 1	▶ 5	3RT1926-2FK11	1	1 unit	41H		
			0.5 ... 10	▶ 5	3RT1926-2FK21	1	1 unit	41H	
		5 ... 100	▶ 5	3RT1926-2FK31	1	1 unit	41H		
200 ... 240 AC/DC	0.05 ... 1	▶ 5	3RT1926-2FL11	1	1 unit	41H			
		0.5 ... 10	▶ 2	3RT1926-2FL21	1	1 unit	41H		
	5 ... 100	▶ 2	3RT1926-2FL31	1	1 unit	41H			
Star-delta (wye-delta) starting (varistor integrated)²⁾									
3RT10, 3RT14	1 NO delayed + 1 NO instantaneous, dead time 50 ms	24 AC/DC	1.5 ... 30	▶	3RT1926-2GJ51	1	1 unit	41H	
		100 ... 127 AC	1.5 ... 30	▶	3RT1926-2GC51	1	1 unit	41H	
		200 ... 240 AC	1.5 ... 30	▶	3RT1926-2GD51	1	1 unit	41H	

¹⁾ The AC voltages are valid for 50 Hz and 60 Hz.

²⁾ Connecting terminals A1 and A2 for the control supply voltage of the solid-state time-delay auxiliary switch must be connected to the associated contactor by means of connecting cables.

³⁾ Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact change-over to the correct setting.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Surge suppressors

Selection and ordering data

For contactors	Version	Rated control supply voltage $U_s^{(1)}$		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	V DC	d					

Surge suppressors without LED (also for spring-type terminals)

Size S00



For plugging onto the front side of the contactors (with or without auxiliary switch blocks)

For contactors	Version	Rated control supply voltage $U_s^{(1)}$		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	V DC	d					
3RT2.1, 3RH2	Varistors	24 ... 48	24 ... 70	▶	3RT2916-1BB00		1	1 unit	41B
		48 ... 127	70 ... 150	▶	3RT2916-1BC00		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT2916-1BD00		1	1 unit	41B
		240 ... 400	--	▶	3RT2916-1BE00		1	1 unit	41B
		400 ... 600	--	2	3RT2916-1BF00		1	1 unit	41B
3RT2.1, 3RH2	RC elements	24 ... 48	24 ... 70	▶	3RT2916-1CB00		1	1 unit	41B
		48 ... 127	70 ... 150	▶	3RT2916-1CC00		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT2916-1CD00		1	1 unit	41B
		240 ... 400	--	2	3RT2916-1CE00		1	1 unit	41B
		400 ... 600	--	2	3RT2916-1CF00		1	1 unit	41B
3RT2.1, 3RH2	Noise suppression diodes	--	12 ... 250	▶	3RT2916-1DG00		1	1 unit	41B
3RT2.1, 3RH2	Diode assemblies (diode and Zener diode) for DC operation	--	12 ... 250	▶	3RT2916-1EH00		1	1 unit	41B

Size S0



For plugging onto the front side of the contactors (before installing the auxiliary switch block)

For contactors	Version	Rated control supply voltage $U_s^{(1)}$		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	V DC	d					
3RT2.2	Varistors²⁾	24 ... 48	24 ... 70	▶	3RT2926-1BB00		1	1 unit	41B
		48 ... 127	70 ... 150	▶	3RT2926-1BC00		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT2926-1BD00		1	1 unit	41B
		240 ... 400	--	▶	3RT2926-1BE00		1	1 unit	41B
		400 ... 600	--	2	3RT2926-1BF00		1	1 unit	41B
3RT2.2	RC elements	24 ... 48	24 ... 70	▶	3RT2926-1CB00		1	1 unit	41B
		48 ... 127	70 ... 150	▶	3RT2926-1CC00		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT2926-1CD00		1	1 unit	41B
		240 ... 400	--	2	3RT2926-1CE00		1	1 unit	41B
		400 ... 600	--	2	3RT2926-1CF00		1	1 unit	41B
3RT2.2	Diode assemblies for DC operation	--	24	▶	3RT2926-1ER00		1	1 unit	41B
		--	30 ... 250	▶	3RT2926-1ES00		1	1 unit	41B

Sizes S2 and S3



For plugging onto the front side of the contactors (before installing the auxiliary switch block)

For contactors	Version	Rated control supply voltage $U_s^{(1)}$		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	V DC	d					
3RT2.3, 3RT2.4	Varistors²⁾³⁾	24 ... 48	--	▶	3RT2936-1BB00		1	1 unit	41B
		48 ... 127	--	▶	3RT2936-1BC00		1	1 unit	41B
		127 ... 240	--	▶	3RT2936-1BD00		1	1 unit	41B
		240 ... 400	--	5	3RT2936-1BE00		1	1 unit	41B
		400 ... 600	--	5	3RT2936-1BF00		1	1 unit	41B
3RT2.3	RC elements	24 ... 48	24 ... 70	▶	3RT2936-1CB00		1	1 unit	41B
		48 ... 127	70 ... 150	▶	3RT2936-1CC00		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT2936-1CD00		1	1 unit	41B
		240 ... 400	--	5	3RT2936-1CE00		1	1 unit	41B
		400 ... 600	--	5	3RT2936-1CF00		1	1 unit	41B
3RT2.4	RC elements	24 ... 48	24 ... 70	5	3RT2946-1CB00		1	1 unit	41B
		48 ... 127	70 ... 150	5	3RT2946-1CC00		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT2946-1CD00		1	1 unit	41B
		240 ... 400	--	5	3RT2946-1CE00		1	1 unit	41B
		400 ... 600	--	5	3RT2946-1CF00		1	1 unit	41B
3RT2.3, 3RT2.4	Diode assemblies³⁾ for DC operation	--	24	▶	3RT2936-1ER00		1	1 unit	41B
		--	30 ... 250	5	3RT2936-1ES00		1	1 unit	41B

¹⁾ Can be used for AC operation for 50/60 Hz. Other voltages on request.

²⁾ The varistor is already integrated on the AC/DC contactors.

³⁾ Surge suppressors 3RT2936-1B/-1E can be used for 3RT2.4 contactors as from product version E03.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays
Accessories

Surge suppressors

For con- tactors	Version	Rated control supply voltage U_s ¹⁾		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		AC operation	DC operation						
Type		V AC	V DC	d					

Surge suppressors without LED

Sizes S6 to S12



3RT1956-1C.00

For connecting to withdrawable coil for contactors with

- Standard operating mechanisms 3RT1...-A...
- Solid-state operating mechanisms 3RT1...-N...

RC elements



	24 ... 48	24 ... 70
3RT1.5 ...	48 ... 127	70 ... 150
3RT1.7	127 ... 240	150 ... 250
	240 ... 400	--
	400 ... 600	--

Screw terminals



Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT1956-1CB00		1	1 unit	41B
3RT1956-1CC00		1	1 unit	41B
3RT1956-1CD00		1	1 unit	41B
3RT1956-1CE00		1	1 unit	41B
3RT1956-1CF00		1	1 unit	41B

Spring-type terminals



For con- tactors	Version	Rated control supply voltage U_s ¹⁾		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	V DC						
3RT1.5 ...	RC elements	24 ... 48	24 ... 70	▶	3RT1956-1CB02		1	1 unit	41B
3RT1.7		48 ... 127	70 ... 150	▶	3RT1956-1CC02		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT1956-1CD02		1	1 unit	41B
		240 ... 400	--	▶	3RT1956-1CE02		1	1 unit	41B
		400 ... 600	--	▶	3RT1956-1CF02		1	1 unit	41B

¹⁾ Can be used for AC operation for 50/60 Hz. Other voltages on request.

For con- tactors	Version	Rated control supply voltage U_s ¹⁾		Power consumption P of LED at U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		AC operation	DC operation							
Type		V AC	V DC	mW	d					

Surge suppressors with LED (also for spring-type terminals)

Size S00



3RT2916-1J.00

For plugging onto the front side of the contactors (with or without auxiliary switch blocks)

Varistors

	24 ... 48	12 ... 24	10 ... 120
3RT2.1, 3RH2	48 ... 127	24 ... 70	20 ... 470
	127 ... 240	70 ... 150	50 ... 700
	--	150 ... 250	160 ... 950

Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT2916-1JJ00		1	1 unit	41B
3RT2916-1JK00		1	1 unit	41B
3RT2916-1JL00		1	1 unit	41B
3RT2916-1JP00		1	1 unit	41B

Noise suppression diodes

	24 ... 70	20 ... 470
3RT2.1, 3RH2	50 ... 150	50 ... 700
	150 ... 250	160 ... 950

Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT2916-1LM00		1	1 unit	41B
3RT2916-1LN00		1	1 unit	41B
3RT2916-1LP00		1	1 unit	41B

Size S0



3RT2926-1MR00

For plugging onto the front side of the contactors (before installing the auxiliary switch block)

Varistors

	24 ... 48	12 ... 24	10 ... 120
3RT2.2	48 ... 127	24 ... 70	20 ... 470
	127 ... 240	70 ... 150	50 ... 700

Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT2926-1JJ00		1	1 unit	41B
3RT2926-1JK00		1	1 unit	41B
3RT2926-1JL00		1	1 unit	41B

Diode assemblies

	24	20 ... 470
3RT2.2		

Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT2926-1MR00		1	1 unit	41B

Sizes S2 and S3



3RT2936-1JJ00

For plugging onto the front side of the contactors (before installing the auxiliary switch block)

Varistors²⁾

	24 ... 48	12 ... 24	10 ... 120
3RT2.3, 3RT2.4	48 ... 127	24 ... 70	20 ... 470
	127 ... 240	70 ... 150	50 ... 700

Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT2936-1JJ00		1	1 unit	41B
3RT2936-1JK00		1	1 unit	41B
3RT2936-1JL00		1	1 unit	41B

¹⁾ Can be used for AC operation for 50/60 Hz. Other voltages on request.

²⁾ From product version E03 onwards, 3RT2936 surge suppressors can be used for 3RT2.4 contactors.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays






Accessories

Modules for contactor control

Selection and ordering data

For contactors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		d					

Coupling links for control by PLC

		Screw terminals 			
Size S0		For mounting onto the coil terminals of the contactors (for contactors with screw terminals only) With LED for the switching state and with integrated varistor for damping opening surges			
 3RH2924-1GP11	3RT2.2	▶	3RH2924-1GP11	1	1 unit 41B
Sizes S00 to S3		For mounting on the front side of contactors with AC, DC or AC/DC operation • 24 V DC control, 17 ... 30 V DC operating range			
 3RH2914-1GP11	3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4 3RH2	5	3RH2914-1GP11	1	1 unit 41B
		Spring-type terminals 			
 3RH2914-2GP11	3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4 3RH2	5	3RH2914-2GP11	1	1 unit 41B

Technical specifications, [see page 3/85](#).

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Modules for contactor control

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B

More information

Manual "SIRIUS – SIRIUS 3RA28 function modules for mounting on 3RT2 contactors", see <https://support.industry.siemens.com/cs/ww/en/view/60279150>.



3RA2811-2CW10



3RA2812-1DW10



3RA2816-0EW20

For contactors	Size	Version	Rated control supply voltage U_s ¹⁾	Time setting range t	SD	Screw terminals	SD	Spring-type terminals	
Type			V AC/DC	s	d	Article No.	Price per PU	Article No.	Price per PU

3RA28 function modules for mounting on 3RT2 contactors and 3RH2 contactor relays

For direct-on-line starting

3RT2.1 ²⁾ , 3RT2.2 ²⁾ , 3RH21 ²⁾ , 3RH24	S00, S0	ON-delay Two-wire design, varistor integrated	24 ... 240	0.05 ... 100 (1, 10, 100; selectable)	2	3RA2811-1CW10	2	3RA2811-2CW10
3RT2.3 ²⁾ , 3RT2.4 ²⁾³⁾	S2, S3	The electrical connection between the function module and the contactor underneath is established automatically when it is snapped on and locked.	24 ... 90 90 ... 240	0.05 ... 100 (1, 10, 100; selectable)	2 2	3RA2831-1DG10 3RA2831-1DH10	2 2	3RA2831-2DG10 3RA2831-2DH10
3RT2.1 ²⁾ , 3RT2.2 ²⁾ , 3RH21 ²⁾ , 3RH24	S00, S0	OFF-delay with control signal, varistor integrated	24 ... 240	0.05 ... 100 (1, 10, 100; selectable)	2	3RA2812-1DW10	2	3RA2812-2DW10
3RT2.3 ²⁾ , 3RT2.4 ²⁾³⁾	S2, S3	The electrical connection between the function module and the contactor underneath is established automatically when it is snapped on and locked.	24 ... 90 90 ... 240	0.05 ... 100 (1, 10, 100; selectable)	2 2	3RA2832-1DG10 3RA2832-1DH10	2 2	3RA2832-2DG10 3RA2832-2DH10

For star-delta (wye-delta) starting

3RT2.1, 3RT2.2, 3RT2.3 ²⁾ , 3RT2.4 ²⁾⁴⁾	S00 ... S3	Varistor integrated Comprising one basic module and two coupling modules The electrical connection between the function module and the contactor assembly is established automatically by snapping on and plugging in the connecting cables.	24 ... 240	0.5 ... 60 (10, 30, 60; selectable)	2	3RA2816-0EW20	2	3RA2816-0EW20
--	------------	---	------------	---	---	----------------------	---	----------------------

Accessories

3RA28	S00 ... S3	Cover, sealable			2	3RA2910-0	2	3RA2910-0
-------	------------	------------------------	--	--	---	------------------	---	------------------

- 1) AC voltage values apply for 50 Hz and 60 Hz.
- 2) Cannot be fitted onto coupling relays and coupling contactor relays.
- 3) From product version E03 onwards, 3RA283. function modules can be used for 3RT2.4 contactors.
- 4) From product version E04 onwards, 3RA2816 function modules can be used for 3RT2.4 contactors.

Technical specifications, see page 3/86.

Assembly of reversing starters

We offer ready-made wiring kits for the assembly of reversing starters. Use of these wiring kits offers further advantages, see page 3/162.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Modules for contactor control

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B

More information

Manual "SIRIUS – SIRIUS 3RA2711 Function Modules for IO-Link", see <https://support.industry.siemens.com/cs/ww/en/view/39319600>

Manual "SIRIUS – SIRIUS 3RA2712 Function Modules for AS-Interface", see <https://support.industry.siemens.com/cs/ww/en/view/39318922>



For con- tactors	Size	Version	SD	Screw terminals		SD	Spring-type terminals	
				Article No.	Price per PU		Article No.	Price per PU
Type			d			d		
SIRIUS 3RA27 function modules for direct-on-line starting								
3RT201	S00	IO-Link connection	2	3RA2711-1AA00	2	3RA2711-2AA00		
...	...	includes one module connector for creating an IO-Link group						
3RT204 ¹⁾	S3	AS-Interface connection	2	3RA2712-1AA00	2	3RA2712-2AA00		
SIRIUS 3RA27 function modules for reversing starting²⁾								
3RT201	S00	IO-Link connection	2	3RA2711-1BA00	2	3RA2711-2BA00		
...	...	comprising one basic and one coupling module and an additional module connector ³⁾ for creating an IO-Link group						
3RT204 ¹⁾	S3	AS-Interface connection	2	3RA2712-1BA00	2	3RA2712-2BA00		
		comprising one basic and one coupling module						
		Assembly kits for making 3-pole contactor assemblies						
		See page 3/110						
SIRIUS 3RA27 function modules for star-delta (wye-delta) starting⁴⁾								
3RT201	S00	IO-Link connection	2	3RA2711-1CA00	2	3RA2711-2CA00		
...	...	comprising one basic and two coupling modules and an additional module connector ³⁾ for creating an IO-Link group						
3RT204 ¹⁾	S3	AS-Interface connection	2	3RA2712-1CA00	2	3RA2712-2CA00		
		comprising one basic and two coupling modules						
		Assembly kits for making 3-pole contactor assemblies						
		See page 3/111						

¹⁾ From product version E06 onwards, 3RA271. function modules can be used for 3RT2.4 contactors.

²⁾ For prewired reversing contactor assemblies with voltage tap-off, see pages 3/163 to 3/166. When these contactor assemblies are used, the assembly kit for the wiring is already integrated.

³⁾ 3RA2711-0EE17 module connectors for size S3 must be ordered separately, see page 3/108.

⁴⁾ For complete contactor assemblies for star-delta (wye-delta) starting including function modules, see pages 3/180 to 3/183.

For technical specifications for 3RA27 function modules, see page 3/87.

For contactors with voltage tap-off, see pages 3/61, 3/65, 3/69 and 3/70.

For IO-Link masters and AS-Interface masters, routers and power supply units, see "Industrial Communication", from page 2/1 onwards.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Modules for contactor control



3RA2711-0EE10



3RA2711-0EE06



3RA2711-0EE15



3RA2910-0



3RA6935-0A



3RA2711-0EE11


For function modules	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type							
Accessories for 3RA27 function modules							
3RA2711-...A00	Module connector set Comprising: • Two module connectors, (14-pole, short) • Two interface covers	2	3RA2711-0EE10		1	1 unit	41B
3RA2711-...A00	Module connectors • 14-pole - 6 cm - 9 cm - 13 cm - 26 cm - 33.5 cm • 10-pole, 9 cm for the additional auxiliary voltage infeed	2 2 2 2 2 2	3RA2711-0EE17 3RA2711-0EE06 3RA2711-0EE18 3RA2711-0EE07 3RA2711-0EE08 3RA2711-0EE16		1 1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit 1 unit	41B 41B 41B 41B 41B 41B
<u>Note:</u> Selection of module connectors, see Manual "SIRIUS 3RA2711 Function Modules for IO-Link".							
3RA2711-...A00	Interface covers (Set of 5)	2	3RA2711-0EE15		1	1 unit	41B
3RA2711-...A00	Sealable covers	2	3RA2910-0		1	5 units	41B
Operator panel for communication via IO-Link							
3RA2711-...A00	Operator panel (set) Comprising: • 1 x operator panel • 1 x enabling module • 1 x interface cover • 1 x fixing terminal	10	3RA6935-0A		1	1 unit	42F
3RA2711-...A00	Connection cable For connecting the operator panel to the coupling module Length 2 m, 10- to 14-pole	2	3RA2711-0EE11		1	1 unit	41B
3RA2711-...A00	Enabling modules (replacement)	10	3RA6936-0A		1	1 unit	42F
3RA2711-...A00	Interface covers (replacement)	10	3RA6936-0B		1	5 units	42F

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Modules for contactor control

For contactors	Rated control supply voltage U_s	Time setting range t	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
Type	V	s	d	Article No.	Price per PU			

Mechanical latching blocks (no switching state change in the event of voltage drop)

Size S0

For snapping onto the front of contactors

The contactor remains in the energized state after a power failure.



3RT2926-3A.31

3RT202,	24 AC/DC	--	▶	3RT2926-3AB31		1	1 unit	41B
3RT232,	110 AC/DC	--	5	3RT2926-3AF31		1	1 unit	41B
3RT252	230 AC/DC	--	5	3RT2926-3AP31		1	1 unit	41B

OFF-delay devices for contactors with AC/DC and DC operation

Sizes S00 to S3

Non-adjustable delay time



3RT2916-2B.01


3RT201.-1BF4., 3RT202.-1BF4., 3RT203.-1NF3., 3RH2...-1BF40	110 AC/DC	S00: > 0.1 S0: > 0.08 S2: > 0.25	5	3RT2916-2BK01		1	1 unit	41B
3RT201.-1BM4./1BP4., 3RT202.-1BM4./1BP4., 3RT203.-1NP3., 3RH2...-1BM40/1BP40	220/230 AC/DC	S00: > 0.5 S0: > 0.3 S2: > 0.8	5	3RT2916-2BL01		1	1 unit	41B
3RT201.-1BB4., 3RT202.-1BB4., 3RT203.-1NB3., 3RT204.-1NB3., 3RT244.-1NB3., 3RH2...-1BB40	24 DC	S00: > 0.2 S0: > 0.1 S2: > 0.1 S3: > 0.05	2	3RT2916-2BE01		1	1 unit	41B

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Link modules










Selection and ordering data

For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type			d					
Safety main circuit connectors for two contactors								
	3RT2.1	S00	For series connection of two contactors	2	3RA2916-1A		1	1 unit 41B
	3RT2.2	S0		2	3RA2926-1A		1	1 unit 41B
	3RT2.3	S2		2	3RA2936-1A		1	1 unit 41B

PU (UNIT, SET, M) = 1
 PS* = 1 unit (unless otherwise specified)
 PG = 41B

For contactors	Size	Version	SD	Article No.	Price per PU	SD	Article No.	Price per PU
Type			d			d		

Assembly kits for reversing contactor assemblies for making 3-pole contactor assemblies

					Screw terminals 	Spring-type terminals 
	3RT201	S00-S00	The assembly kit contains: Mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom • For main, auxiliary and control circuits ▶		3RA2913-2AA1 ▶	3RA2913-2AA2
	3RT202	S0-S0	The assembly kit contains: Mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom • For main, auxiliary and control circuits ¹⁾ ▶ • Only for main circuit ²⁾		3RA2923-2AA1 --	-- ▶ 3RA2923-2AA2
	3RT203	S2-S2	The assembly kit contains: Two connectors for two contactors, wiring modules on the top and bottom (3RA2934-2B mechanical interlock must be ordered separately, see page 3/114) • For main and auxiliary circuits ▶ • Only for main circuit ³⁾		3RA2933-2AA1 --	-- ▶ 3RA2933-2AA2
	3RT204	S3-S3	The assembly kit contains: Two connectors for two contactors, wiring modules on the top and bottom (3RA2934-2B mechanical interlock must be ordered separately, see page 3/114) • For main and auxiliary circuits 2 ▶ • Only for main circuit ³⁾		3RA2943-2AA1 --	-- ▶ 3RA2943-2AA2
	3RT1.5	S6-S6	The assembly kit contains: Wiring modules on the top and bottom	2	3RA1953-2A	2 3RA1953-2A
	3RT1.6	S10-S10		2	3RA1963-2A	2 3RA1963-2A
	3RT1.7	S12-S12		2	3RA1973-2A	2 3RA1973-2A

¹⁾ Use of the 3RA2923-2AA1 assembly kit in conjunction with the 3RT202-...-3MA0 contactors is limited because the auxiliary switches in the basic unit are not allowed to be used on account of the permanently mounted auxiliary switch block.

²⁾ Version in size S0 with spring-type terminals:
Only the wiring modules for the main circuit are included.
No connecting clips are included for the auxiliary and control circuit.

³⁾ Version in sizes S2 and S3 with spring-type terminals in the auxiliary and control circuits: Only the wiring modules for the main circuit are included. A cable set is included for the auxiliary circuit.

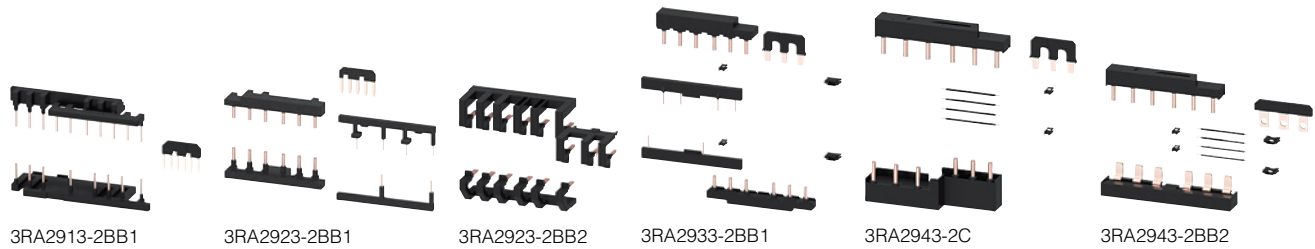
Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Link modules

PU (UNIT, SET, M) = 1
 PS* = 1 unit (unless otherwise specified)
 PG = 41B



For con- tactors	Size	Version	SD	Screw terminals	SD	Spring-type terminals	
Type			d	Article No.	Price per PU	Article No.	Price per PU
Assembly kits¹⁾ for contactor assemblies for star-delta (wye-delta) starting for making 3-pole contactor assemblies							
3RT01	S00-S00-S00	The assembly kit contains: Mechanical interlock, four connecting clips for three contactors, a star jumper, wiring modules on the top and bottom <ul style="list-style-type: none"> For main, auxiliary and control circuits 	▶	3RA2913-2BB1	▶	3RA2913-2BB2	
3RT02	S0-S0-S0	The assembly kit contains: Mechanical interlock, four connecting clips for three contactors, a star jumper, wiring modules on the top and bottom <ul style="list-style-type: none"> For main, auxiliary and control circuits Only for main circuit 	▶	3RA2923-2BB1	▶	-- 3RA2923-2BB2	
3RT02	S0-S0-S0	The assembly kit contains: Mechanical interlock, four connecting clips for three contactors, a star jumper, wiring modules on the top and bottom, 3-phase infeed terminal <ul style="list-style-type: none"> For main, auxiliary and control circuits 	5	3RA2924-2BB1	▶	--	
3RT03	S2-S2-S0	The assembly kit ²⁾ contains: Two connectors for three contactors, an S0 star jumper, a spacer, wiring modules on the top and bottom (S2-S0) for the main circuit, a cable set for the auxiliary circuit, a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor	▶	3RA2933-2C	▶	3RA2933-2C	
3RT03	S2-S2-S2	The assembly kit ²⁾ contains: Four connectors for three contactors, an S2 star jumper, a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor and <ul style="list-style-type: none"> Wiring modules on the top and bottom for the main circuit and the auxiliary circuit Wiring modules on the top and bottom for the main circuit, a cable set for the auxiliary circuit 	▶	3RA2933-2BB1	▶	-- 3RA2933-2BB2	
3RT04	S3-S3-S2	The assembly kit ²⁾ contains: Two connectors for three contactors, an S2 star jumper, a spacer, wiring modules on the top and bottom (S3-S2) for the main circuit, a cable set for the auxiliary circuit, a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor	2	3RA2943-2C	2	3RA2943-2C	
3RT04	S3-S3-S3	The assembly kit ²⁾ contains: Four connectors for three contactors, an S3 star jumper, a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor and <ul style="list-style-type: none"> Wiring modules on the top and bottom for the main circuit and the auxiliary circuit Wiring modules on the top and bottom for the main circuit, a cable set for the auxiliary circuit 	2	3RA2943-2BB1	2	-- 3RA2943-2BB2	

¹⁾ When using the function modules for contactor assemblies for star-delta (wye-delta) starting, the wiring modules for the auxiliary current are not required.

²⁾ The 3RA2934-2B mechanical interlock for sizes S2 and S3 must be ordered separately, see page 3/114.




Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Link modules

For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type			d					

Assembly kits for contactor assemblies for star-delta (wye-delta) starting for making 3-pole contactor assemblies

			The assembly kit contains: link rails at bottom (a double infeed between the line contactor and the delta contactor is recommended.)					
 3RA1953-3G	3RT1.5, 3RT204	S6-S6-S3 for connection with box terminal	The S3 star jumper must be ordered separately, see page 3/113.	X	3RA1953-3G	1	1 unit	41B
	3RT1.5	S6-S6-S6 for connection with box terminal	--	2	3RA1953-2B	1	1 unit	41B
 3RA1953-2B	3RT1.5	S6-S6-S6 for connection without box terminal	--	2	3RA1953-2N	1	1 unit	41B
	 3RA1963-3E	3RT1.6, 3RT1.5	S10-S10-S6 for connection with box terminal	The S6 star jumper must be ordered separately, see page 3/113.	20	3RA1963-3E	1	1 unit
3RT1.6		S10-S10-S10 for connection without box terminal	--	2	3RA1963-2B	1	1 unit	41B
 3RA1973-3E	3RT1.7, 3RT1.6	S12-S12-S10 for connection with box terminal	The S10 star jumper must be ordered separately, see page 3/113.	20	3RA1973-3E	1	1 unit	41B
	3RT1.7	S12-S12-S12 for connection without box terminal	--	5	3RA1973-2B	1	1 unit	41B
 3RA1973-2B								

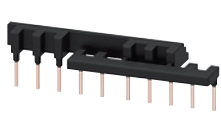
Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Link modules

PU (UNIT, SET, M) = 1
 PS* = 1 unit (unless otherwise specified)
 PG = 41B



3RA2913-3DA1



3RA2913-3DA2



3RT1933-3D



3RT1916-4BA31



3RT2916-4BA32



3RT1936-4BA31

For con- tactors	Size	Version	SD	Article No.	Price per PU	SD	Article No.	Price per PU
Type			d			d		

Single wiring modules for making 3-pole contactor assemblies

				Screw terminals	Spring-type terminals	
				⊕	⊗	
3RT201	S00-S00	<ul style="list-style-type: none"> Top (in-phase) Bottom (with phase reversal) 	PS = 5 units 5	▶ 3RA2913-3DA1 ▶ 3RA2913-3EA1	5 5	3RA2913-3DA2 3RA2913-3EA2
3RT202	S0-S0	<ul style="list-style-type: none"> Top (in-phase) Bottom (with phase reversal) 	PS = 5 units 5	▶ 3RA2923-3DA1 ▶ 3RA2923-3EA1	5 5	3RA2923-3DA2 3RA2923-3EA2
3RT203	S2-S2	<ul style="list-style-type: none"> Top (in-phase), contactor clearance 10 mm Bottom (with phase reversal), Contactor clearance 10 mm 	▶ 2	3RA1933-3D 3RA1933-3E	▶ 2	3RA1933-3D 3RA1933-3E
3RT204	S3-S3	<ul style="list-style-type: none"> Top (in-phase), contactor clearance 10 mm Bottom (with phase reversal), Contactor clearance 10 mm 	▶ 5	3RA1943-3D 3RA1943-3E	▶ 5	3RA1943-3D 3RA1943-3E
3RT1.5	S6-S6	<ul style="list-style-type: none"> Top (in-phase, for connection with box terminal), contactor clearance 10 mm Top (with phase reversal, for connection without box terminal), contactor clearance 10 mm 	2 5	3RA1953-3D 3RA1953-3P	2 5	3RA1953-3D 3RA1953-3P

Star jumpers (links for paralleling), 3-pole

				Screw terminals	Spring-type terminals	
				⊕	⊗	
3RT201	S00	With through-hole	▶	3RT1916-4BA31	2	3RT2916-4BA32
3RT202	S0	The links for paralleling can be reduced by one pole.	▶	3RT1926-4BA31	2	3RT2926-4BA32
3RT203	S2	Without connecting terminal	▶	3RT1936-4BA31	▶	3RT1936-4BA31
3RT204	S3		▶	3RT1946-4BA31	▶	3RT1946-4BA31
3RT1.5	S6		2	3RT1956-4BA31	2	3RT1956-4BA31
3RT1.6, 3RT1.7	S10, S12		2	3RT1966-4BA31	2	3RT1966-4BA31


Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Link modules



For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type			d					

Mechanical interlock assembly kits for two contactors for making 3- and 4-pole contactor assemblies



 3RA29.2-2H	3RT201, 3RT231	S00-S00	The interlocking assembly kits can be used without a contactor clearance. One assembly kit consists of a mechanical interlock and two connecting clips.	▶	3RA2912-2H	1	10 units	41B
	3RT202, 3RT232	S0-S0		▶	3RA2922-2H	1	10 units	41B

For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type			d					

Mechanical interlocks for contactor assemblies

 3RA2934-2B	3RT202, 3RT203, 3RT204	S2-S2-S0, S2-S2-S2, S3-S3-S2, S3-S3-S3	Mechanical interlocks Note: The mechanical interlock for sizes S2 and S3 must be ordered separately.	▶	3RA2934-2B	1	1 unit	41B
	3RT1.5 with 3RT204	S6 (3RT1)- S6 (3RT1)- S3 (3RT2)	Adapter in addition to the mechanical interlock The mechanical interlock is only possible together with this 3RA1954-2G adapter and the 3RA1954-2A mechanical interlock. Two connectors are included with the adapter, the interlock must be ordered separately.	X	3RA1954-2G	1	1 unit	41B
 3RA1954-2A	3RT1.5, 3RT1.6, 3RT1.7	S6, S10, S12	Mechanical interlocks Without auxiliary contacts; contactors in sizes S6, S10 and S12 can be interlocked with each other as required. No adaption of mounting depth is necessary.	▶	3RA1954-2A	1	1 unit	41B

Mechanical connectors for contactor assemblies

 3RA1932-2D	3RT203, 3RT204	S2-S2, S3-S3	Two connectors are required for each assembly. The contactor clearance must be considered when selecting the connectors.	2 ▶ ▶	3-pole version	3RA2932-2C	1	10 units	41B
	3RT105	S6-S6			<ul style="list-style-type: none"> Without contactor clearance With 10 mm contactor clearance 	3RA2932-2D	1	10 units	41B
					<ul style="list-style-type: none"> With 10 mm contactor clearance (1 unit corresponds to 2 parts for 1 assembly) 	3RA1932-2D	1	10 units	41B
 3RA2942-2G	3RT233, 3RT234.	S2-S2, S3-S3	Two connectors are required for each assembly. The contactor clearance must be considered when selecting the connectors.	2 NEW 5	4-pole version	3RA2932-2G	1	10 units	41B
					<ul style="list-style-type: none"> With 20 mm contactor clearance With 10 mm contactor clearance 	3RA2942-2G	1	10 units	41B


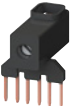




Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Terminal modules/adapters

Selection and ordering data

For contactors	Size	Version	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
Type			d	Article No.	Price per PU			
Links for paralleling for main circuits								
The links for paralleling (insulated) can be reduced by one pole. With connecting terminal								
3-pole								
	3RT201	S00	• Max. conductor cross-section: 25 mm ² , stranded	▶	3RT1916-4BB31	1	1 unit	41B
3RT1916-4BB31								
	3RT202	S0	• Max. conductor cross-section: 50 mm ² , stranded	2	3RT2926-4BB31	1	1 unit	41B
3RT2926-4BB31								
	3RT203	S2	• Max. conductor cross-section: 120 mm ² , stranded	▶	3RT1936-4BB31	1	1 unit	41B
3RT1936-4BB31								
	3RT204, 3RT244	S3	• Max. conductor cross-section: 185 mm ² , stranded A cover plate is included for touch protection (can only be used when box terminal is removed).	2	3RT1946-4BB31	1	1 unit	41B
3RT1946-4BB31								
4-pole								
	3RT231, 3RT251	S00	• Max. conductor cross-section: 25 mm ² , stranded	15	3RT1916-4BB41	1	1 unit	41B
3RT1916-4BB41								

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Terminal modules/adapters





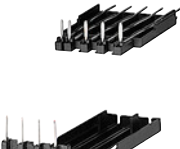





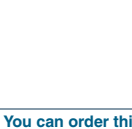
	For con- tactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	d								
Single-phase infeed terminals									
	3RT204, 3RT244, 3RT264	S3	Conductor cross-section: 95 mm ²	2	3RA2943-3L		1	1 unit	41B
3RA2943-3L									
Three-phase infeed terminals									
Infeed terminal blocks for the line contactor for large conductor cross-sections									
	3RT201	S00	Max. conductor cross-section: up to 10 mm ² , AWG 12 ... 8	2	3RA2913-3K		1	10 units	41B
3RA2913-3K									
	3RT202	S0	Max. conductor cross-section: up to 25 mm ² , AWG 10 ... 2/0	▶	3RV2925-5AB		1	1 unit	41E
3RA2925-5AB									
	3RT203	S2	Max. conductor cross-section: up to 70 mm ² , AWG 10 ... 2/0	▶	3RV2935-5A		1	1 unit	41E
3RA2935-5A									
Three-phase infeed terminals with increased clearances and creepage distances									
	3RT203	S2	Max. conductor cross-section: up to 70 mm ² , AWG 10 ... 2/0	▶	3RV2935-5E		1	1 unit	41E
3RA2935-5E									
Three-phase busbars									
	3RT202	S0	Bridging phase-by-phase of all input terminals of the line contactor (Q11) and delta contactor (Q13)	▶	3RV1915-1AB		1	1 unit	41E
3RA1915-1AB									
Terminal blocks for connecting auxiliary conductors to main terminals									
Box terminal blocks									
For round and ribbon cables Connectable cross-sections of the contactors, see Technical specifications , page 3/52 .									
	3RT1.5	S6	• Up to 70 mm ² , as standard on 3RT1054-1 contactor (55 kW) • Up to 120 mm ²	▶	3RT1955-4G		1	1 unit	41B
3RT1956-4G									
	3RT1.6, 3RT1.7	S10, S12	• Up to 240 mm ² , With auxiliary conductor connection up to 2.5 mm ²	▶	3RT1966-4G		1	1 unit	41B
3RT1966-4G									
	3RT1.5	S6	Box terminal for auxiliary conductor connection, 1-pole for connection of auxiliary and control cables (0.5 ... 2.5 mm ²) to the main conductor terminals	5	3TX7500-0A		1	1 unit	41B
3TX7500-0A									
	3RT204	S3	Auxiliary terminals, 3-pole for connection of auxiliary and control cables (0.5 ... 2.5 mm ²) to the main conductor terminals	5	3RT2946-4F		1	1 unit	41B
3RT2946-4F									

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Terminal modules/adapters















For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type			d					
Solder pin adapters for mounting contactors on printed circuit boards up to 5.5 kW / 12 A								
	3RT2.1, 3RH21	S00	Assembly kit for soldering contactors with an integrated auxiliary contact onto a printed circuit board <u>Note:</u> For 1 contactor, 1 set is required.	2	Screw terminals  3RT1916-4KA1		1	4 units 41B
	3RT1916-4KA1							
	3RT2.1, 3RH21	S00	Assembly kit for soldering contactors with 4-pole mounted auxiliary switch block onto a printed circuit board. <u>Note:</u> For 1 contactor, 1 set is required.	5	3RT1916-4KA2		1	4 units 41B
	3RT1916-4KA2							
Coil connection modules for connections from top or from bottom								
	3RT2.2, 3RT2.3, 3RT2.4	S0 to S3	<ul style="list-style-type: none"> • Connection from top • Connection from bottom • Connection diagonally 	2 5 5	3RT2926-4RA11 3RT2926-4RB11 3RT2926-4RC11		1 1 1	1 unit 1 unit 1 unit 41B
	3RT2.2	S0	<ul style="list-style-type: none"> • Connection from top • Connection from bottom 	5 5	Spring-type terminals  3RT2926-4RA12 3RT2926-4RB12		1 1	1 unit 1 unit 41B
Motor feeder connectors for contactors with screw terminals								
	3RT201, 3RH2	S00	Adapters for contactors Ambient temperature $t_{u\max} = 60\text{ °C}$ <ul style="list-style-type: none"> • Rated operational current I_e at AC-3/400 V: 20 A 	5	3RT1916-4RD01		1	1 unit 41B
	3RT202	S0	<ul style="list-style-type: none"> • Rated operational current I_e at AC-3/400 V: 25 A 	5	3RT1926-4RD01		1	1 unit 41B
	3RT201, 3RT202, 3RH2	S00, S0	Motor feeder connectors for contactor	5	3RT1900-4RE01		1	1 unit 41B

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Covers

Selection and ordering data

For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Type			d						
Terminal covers									
Covers for contactors with screw terminals (box terminals) (2 units required per contactor)									
		3RT203 3RT204, 3RT244	S2 S3	• For 3-pole contactors	▶	3RT2936-4EA2	1	1 unit	41B
					▶	3RT2946-4EA2	1	1 unit	41B
		3RT1.5 3RT1.6, 3RT1.7	S6¹⁾ S10¹⁾, S12¹⁾		▶	3RT1956-4EA2	1	1 unit	41B
					2	3RT1966-4EA2	1	1 unit	41B
		3RT233, 3RT253 3RT234, 3RT254	S2 S3	• For 4-pole contactors (Scope of supply: one 3-pole and two 1-pole terminal covers are supplied)	▶	3RT2936-4EA4	1	1 unit	41B
					5	3RT2946-4EA4	1	1 unit	41B
Covers for contactors with cable lugs and busbar connections									
For complying with the phase clearances and as touch protection if box terminal is removed (2 units required per contactor)									
		3RT2.4 3RT1.5 3RT1.6, 3RT1.7	S3 S6¹⁾ S10¹⁾, S12¹⁾	• Length: 100 mm • Length: 100 mm • Length: 120 mm	NEW ▶	3RT1946-4EA1	1	1 unit	41B
					5	3RT1956-4EA1	1	1 unit	41B
					2	3RT1966-4EA1	1	1 unit	41B
		3RT1.5	S6	• For the assembly kits for 3RA1953-... contactor assemblies for star-delta (wye-delta) starting (page 3/112) or for the 3RA1953-3... single-wiring modules (page 3/113) - Length: 38 mm	▶	3RT1956-4EA4	1	1 unit	41B
Terminal covers with busbar connections									
• Cover the three busbar connections, between the contactor and 3RB2 overload relay									
		3RT1.5 3RT1.6, 3RT1.7	S6 S10²⁾, S12²⁾	- Length: 27 mm - Length: 42 mm	▶	3RT1956-4EA3	1	1 unit	41B
					2	3RT1966-4EA3	1	1 unit	41B
		3RT1.5 3RT1.6, 3RT1.7	S6 S10, S12	• Can be screwed on free screw end; cover one busbar connection (1 set = 6 units) - M8 - M10	▶	3TX6526-3B	1	1 unit	41B
					5	3TX6546-3B	1	1 unit	41B
Sealable covers									
		3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4, 3RH2 ³⁾	S00 ... S3	For preventing manual operation (Not suitable for coupling relays)	▶	3RT2916-4MA10	1	5 units	41B
		3RT1.5 ... 3RT1.7 ³⁾	S6 ... S12		▶	3RT1926-4MA10	1	5 units	41B

¹⁾ Also fits on contactors of sizes S6 to S12 with box terminals.

²⁾ The 3RT1966-4EA3 cover is required in addition for use in reversing contactor assemblies and contactor assemblies for star-delta (wye-delta) starting.

³⁾ Exception: contactors and contactor relays with auxiliary switch block mounted onto the front.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Miscellaneous accessories

Selection and ordering data

For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type			d					

Base plates

For reversing contactor assemblies

3RT1.5	S6	For customer assembly of reversing contactor assemblies	5	3RA1952-2A		1	1 unit	41B
3RT1.6	S10		5	3RA1962-2A		1	1 unit	41B
3RT1.7	S12		5	3RA1972-2A		1	1 unit	41B



3RA1952-2A

For contactor assemblies for star-delta (wye-delta) starting

3RT2/ 3RT2/ 3RT2	S2-S2-S0, S2-S2-S2, S3-S3-S2, S3-S3-S3	For configuring contactor assemblies for star-delta (wye-delta) starting	2	3RA2932-2F		1	1 unit	41B
			3	3RA2942-2F		1	1 unit	41B

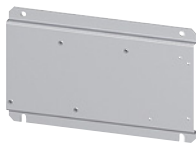


3RA2932-2F



3RA2942-2F

3RT1/ 3RT1/ 3RT2	S6-S6-S3	For customer assembly of contactor assemblies for star-delta (wye-delta) starting with a laterally mounted timing relay	5	3RA1952-2E		1	1 unit	41B
3RT1/ 3RT1/ 3RT1	S6-S6-S6 S10-S10-S6 S10-S10-S10 S12-S12-S10 S12-S12-S12		10 mm distance between the contactors	5	3RA1952-2F		1	1 unit
			5	3RA1962-2E		1	1 unit	41B
			5	3RA1962-2F		1	1 unit	41B
			5	3RA1972-2E		1	1 unit	41B
			5	3RA1972-2F		1	1 unit	41B



3RA1952-2E



3RA1952-2F

Adapters for screw fixing

3RT2.2	S0	Screw adapters for securing the contactors, two units required per contactor (1 pack = 10 sets for 10 contactors)	15	3RT1926-4P		1	10 units	41B
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3RT1926-4P

EMC suppression modules; three-phase, up to 7.5 kW

For contactors with AC or DC operation

				Screw terminals				
3RT201	S00	RC elements (3 x 220 Ω/0.22 μF) • Up to 400 V • Up to 575 V • Up to 690 V	▶	3RT2916-1PA1	1	1 unit	41B	
				3RT2916-1PA2	1	1 unit	41B	
				3RT2916-1PA3	1	1 unit	41B	
3RT201	S00	Varistors • Up to 400 V • Up to 575 V • Up to 690 V	▶	3RT2916-1PB1	1	1 unit	41B	
				3RT2916-1PB2	1	1 unit	41B	
				3RT2916-1PB3	1	1 unit	41B	






3RT2916-1PA.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays Accessories

Miscellaneous accessories




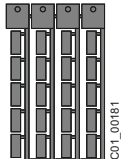
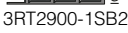
	For con- tactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Additional load modules									
 3RT2916-1GA00	3RT2.1, 3RH2	S00	For plugging onto the front side of the contactors with or without auxiliary switch blocks For increasing the permissible residual current and for limiting the residual voltage, it ensures the safe opening of contactors with direct control via 230 V AC semiconductor outputs of SIMATIC controllers, simultaneously provides overvoltage damping Rated voltage: 50/60 Hz AC, 180 ... 255 V Operating range: 0.8 ... 1.1 x U _s	d	3RT2916-1GA00		1	1 unit	41B
LED modules for displaying contactor operation									
 3RT2926-1QT00	3RT2, 3RT1	S00 ... S12	For snapping into the location hole of an inscription label on the front of a contactor either directly on the contactor or on the front auxiliary switch. The LED module is connected to coil terminals A1 and A2 of the contactor and indicates its energized state with a yellow LED. Connecting leads need to be extended as required. Rated voltage: 24 ... 240 V AC/DC with reverse polarity protection	5	3RT2926-1QT00		1	5 units	41B
Control kit									
 3RT2916-4MC00	3RT2.1, 3RH2	S00	For manual operation of contactor contacts, for startup and service	2	3RT2916-4MC00		1	5 units	41B
	3RT2.2	S0		2	3RT2926-4MC00		1	5 units	41B
	3RT2.3, 3RT2.4	S2, S3		2	3RT2936-4MC00		1	5 units	41B

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Accessories

Miscellaneous accessories

For contactors	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type			d					
Insulation stop for securely holding back the conductor insulation for conductors up to 1 mm²								
 <p>Insulation stop strip Can be inserted in cable entry of the spring-type terminal (two strips per contactor required)</p> <ul style="list-style-type: none"> For basic units, removable individually For auxiliary and control current on basic units and for mountable 3RH29 auxiliary switches, removable in pairs 				Spring-type terminals 				
3RT2916-4JA02	3RT2.1, 3RH2	S00	5	3RT2916-4JA02		1	20 units	41B
3RT1916-4JA02	3RT2.2 ... 3RT2.4, 3RT1, 3RH29	S0 ... S12	5	3RT1916-4JA02		1	20 units	41B
Tools for opening spring-type terminals								
 <p>Screwdrivers For all SIRIUS devices with spring-type terminals Length: approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated</p>				3RA2908-1A				
3RA2908-1A	3RT, 3RH	S00 ... S12	2			1	1 unit	41B
Blank labels								
 <p>Unit labeling plates For SIRIUS devices¹⁾</p>								
3RT2	S00 ... S3	• 10 mm x 7 mm, titanium gray • 20 mm x 7 mm, titanium gray	20 20	3RT2900-1SB10 3RT2900-1SB20		100 100	816 units 340 units	41B 41B
3RT1	S6 ... S12	• 10 mm x 7 mm, pastel turquoise • 20 mm x 7 mm, pastel turquoise	15 20	3RT1900-1SB10 3RT1900-1SB20		100 100	816 units 340 units	41B 41B
 <p>Adhesive labels For SIRIUS devices</p>								
3RT2	S00 ... S3	• 19 mm x 6 mm, titanium gray	5	3RT2900-1SB60		100	3 060 units	41B
3RT1	S6 ... S12	- Pastel turquoise - Zinc/yellow	15 15	3RT1900-1SB60 3RT1900-1SD60		100 100	3 060 units 3 060 units	41B 41B

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/16).

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays
Spare Parts

Solenoid coils

Selection and ordering data

Screw terminals and spring-type terminals



3RT2924-5A.01

For contactors	Rated control supply voltage U_s			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	50 Hz	50/60 Hz	60 Hz						
Type	V	V	V	d					
Solenoid coils · AC operation									
Size S0									
3RT2023-A,	24	--	--	5	3RT2924-5AB01		1	1 unit	41B
3RT2024-A,	42	--	--	5	3RT2924-5AD01		1	1 unit	41B
3RT2025-A	48	--	--	5	3RT2924-5AH01		1	1 unit	41B
	110	--	--	5	3RT2924-5AF01		1	1 unit	41B
	230	--	--	5	3RT2924-5AP01		1	1 unit	41B
	400	--	--	5	3RT2924-5AV01		1	1 unit	41B
	--	24	--	5	3RT2924-5AC21		1	1 unit	41B
	--	42	--	5	3RT2924-5AD21		1	1 unit	41B
	--	48	--	5	3RT2924-5AH21		1	1 unit	41B
	--	110	--	5	3RT2924-5AG21		1	1 unit	41B
	--	220	--	5	3RT2924-5AN21		1	1 unit	41B
	--	230	--	5	3RT2924-5AL21		1	1 unit	41B
	--	--	24	X	3RT2924-5AC11		1	1 unit	41B
	110	--	120	5	3RT2924-5AK61		1	1 unit	41B
	220	--	240	5	3RT2924-5AP61		1	1 unit	41B
	--	100	110	5	3RT2924-5AG61		1	1 unit	41B
	--	200	220	5	3RT2924-5AN61		1	1 unit	41B
	--	400	440	5	3RT2924-5AR61		1	1 unit	41B
3RT2026-A,	24	--	--	5	3RT2926-5AB01		1	1 unit	41B
3RT2027-A,	42	--	--	5	3RT2926-5AD01		1	1 unit	41B
3RT2028-A	48	--	--	5	3RT2926-5AH01		1	1 unit	41B
3RT2325-A,	110	--	--	5	3RT2926-5AF01		1	1 unit	41B
3RT2326-A,	230	--	--	5	3RT2926-5AP01		1	1 unit	41B
3RT2327-A	400	--	--	5	3RT2926-5AV01		1	1 unit	41B
3RT2526-A	--	24	--	5	3RT2926-5AC21		1	1 unit	41B
	--	42	--	X	3RT2926-5AD21		1	1 unit	41B
	--	48	--	5	3RT2926-5AH21		1	1 unit	41B
	--	110	--	5	3RT2926-5AG21		1	1 unit	41B
	--	220	--	5	3RT2926-5AN21		1	1 unit	41B
	--	230	--	5	3RT2926-5AL21		1	1 unit	41B
	--	--	24	5	3RT2926-5AC11		1	1 unit	41B
	110	--	120	5	3RT2926-5AK61		1	1 unit	41B
	220	--	240	5	3RT2926-5AP61		1	1 unit	41B
	--	100	110	X	3RT2926-5AG61		1	1 unit	41B
	--	200	220	5	3RT2926-5AN61		1	1 unit	41B
	--	400	440	5	3RT2926-5AR61		1	1 unit	41B

Note:

Contactors with AC and AC/DC coils have different depths. It is only possible to replace the coils on AC contactors with AC coils. It is not possible to replace the coils on DC contactors.

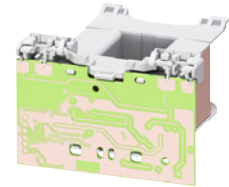
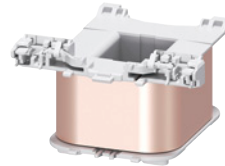
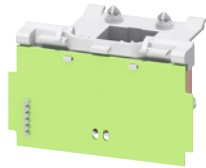
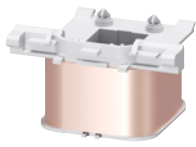
Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Spare Parts

Solenoid coils

Screw terminals and spring-type terminals



3RT2934-5A.01

3RT2934-5N.31

3RT2944-5A..1

3RT2944-5N.31

For contactors	Rated control supply voltage U_s				SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	50 Hz	50/60 Hz	60 Hz	DC						
Type	V	V	V		d					

Solenoid coils · AC operation

Size S2

3RT203.-A,	24	--	--	--	5	3RT2934-5AB01		1	1 unit	41B
3RT233.-A,	42	--	--	--	5	3RT2934-5AD01		1	1 unit	41B
3RT243.-A,	48	--	--	--	5	3RT2934-5AH01		1	1 unit	41B
3RT253.-A	110	--	--	--	5	3RT2934-5AF01		1	1 unit	41B
	230	--	--	--	5	3RT2934-5AP01		1	1 unit	41B
	400	--	--	--	5	3RT2934-5AV01		1	1 unit	41B
	--	24	--	--	5	3RT2934-5AC21		1	1 unit	41B
		42	--	--	X	3RT2934-5AD21		1	1 unit	41B
		48	--	--	5	3RT2934-5AH21		1	1 unit	41B
		110	--	--	5	3RT2934-5AG21		1	1 unit	41B
		208	--	--	5	3RT2934-5AM21		1	1 unit	41B
		220	--	--	5	3RT2934-5AN21		1	1 unit	41B
		230	--	--	5	3RT2934-5AL21		1	1 unit	41B
	110	--	120	--	5	3RT2934-5AK61		1	1 unit	41B
	220	--	240	--	5	3RT2934-5AP61		1	1 unit	41B
		--	480	--	5	3RT2934-5AV61		1	1 unit	41B
		--	600	--	5	3RT2934-5AT61		1	1 unit	41B
		100	110	--	X	3RT2934-5AG61		1	1 unit	41B
		200	220	--	5	3RT2934-5AN61		1	1 unit	41B
		--	277	--	X	3RT2934-5AU61		1	1 unit	41B
		400	440	--	5	3RT2934-5AR61		1	1 unit	41B

Size S3

3RT204.-A,	24	--	--	--	5	3RT2944-5AB01		1	1 unit	41B
3RT234.-A,	42	--	--	--	5	3RT2944-5AD01		1	1 unit	41B
3RT244.-A,	48	--	--	--	5	3RT2944-5AH01		1	1 unit	41B
3RT254.-A	110	--	--	--	5	3RT2944-5AF01		1	1 unit	41B
	230	--	--	--	5	3RT2944-5AP01		1	1 unit	41B
	400	--	--	--	5	3RT2944-5AV01		1	1 unit	41B
	--	24	--	--	5	3RT2944-5AC21		1	1 unit	41B
		42	--	--	5	3RT2944-5AD21		1	1 unit	41B
		48	--	--	5	3RT2944-5AH21		1	1 unit	41B
		110	--	--	5	3RT2944-5AG21		1	1 unit	41B
		220	--	--	5	3RT2944-5AN21		1	1 unit	41B
		230	--	--	5	3RT2944-5AL21		1	1 unit	41B
	110	--	120	--	5	3RT2944-5AK61		1	1 unit	41B
	220	--	240	--	5	3RT2944-5AP61		1	1 unit	41B
		--	480	--	5	3RT2944-5AV61		1	1 unit	41B
		--	600	--	5	3RT2944-5AT61		1	1 unit	41B
		100	110	--	5	3RT2944-5AG61		1	1 unit	41B
		200	220	--	5	3RT2944-5AN61		1	1 unit	41B
		400	440	--	5	3RT2944-5AR61		1	1 unit	41B

Solenoid coils · AC/DC operation, with varistor

Size S2

3RT203.-N,	--	20 ... 33	--	20 ... 33	5	3RT2934-5NB31		1	1 unit	41B
3RT233.-N	--	30 ... 42	--	30 ... 42	X	3RT2934-5ND31		1	1 unit	41B
		48 ... 80	--	48 ... 80	5	3RT2934-5NE31		1	1 unit	41B
		83 ... 155	--	83 ... 155	X	3RT2934-5NF31		1	1 unit	41B
		175 ... 280	--	175 ... 280	5	3RT2934-5NP31		1	1 unit	41B

Size S3

3RT204.-N,	--	20 ... 33	--	20 ... 33	5	3RT2944-5NB31		1	1 unit	41B
3RT234.-N,	--	30 ... 42	--	30 ... 42	5	3RT2944-5ND31		1	1 unit	41B
3RT244.-N,	--	48 ... 80	--	48 ... 80	5	3RT2944-5NE31		1	1 unit	41B
3RT254.-N	--	83 ... 155	--	83 ... 155	5	3RT2944-5NF31		1	1 unit	41B
		175 ... 280	--	175 ... 280	5	3RT2944-5NP31		1	1 unit	41B

Note:

It is only possible to replace the coils on AC contactors with AC coils, and on AC/DC contactors with AC/DC coils.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays
Spare Parts

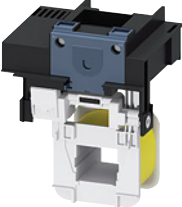
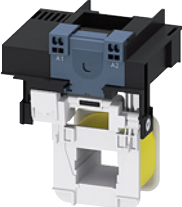

Solenoid coils

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B


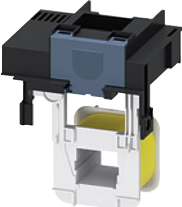

For contactors		Rated control supply voltage U_s	SD	Screw terminals	SD	Spring-type terminals	
Size	Type	V	d	Article No.	Price per PU	Article No.	Price per PU

Withdrawable coils

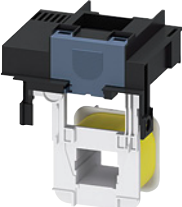


Standard operating mechanism for AC/DC

	S6	3RT105,	23 ... 26 AC/DC	5	3RT1955-5AB31	5	3RT1955-5AB32
		3RT145	42 ... 48 AC/DC	5	3RT1955-5AD31	5	3RT1955-5AD32
			110 ... 127 AC/DC	5	3RT1955-5AF31	5	3RT1955-5AF32
			200 ... 220 AC/DC	5	3RT1955-5AM31	5	3RT1955-5AM32
			220 ... 240 AC/DC	5	3RT1955-5AP31	5	3RT1955-5AP32
			240 ... 277 AC/DC	5	3RT1955-5AU31	5	3RT1955-5AU32
			380 ... 420 AC/DC	5	3RT1955-5AV31	5	3RT1955-5AV32
	440 ... 480 AC/DC	5	3RT1955-5AR31	5	3RT1955-5AR32		
	500 ... 550 AC/DC	5	3RT1955-5AS31	5	3RT1955-5AS32		
	575 ... 600 AC/DC	5	3RT1955-5AT31	5	3RT1955-5AT32		
	S10	3RT106,	23 ... 26 AC/DC	5	3RT1965-5AB31	5	3RT1965-5AB32
		3RT146	42 ... 48 AC/DC	5	3RT1965-5AD31	5	3RT1965-5AD32
			110 ... 127 AC/DC	5	3RT1965-5AF31	5	3RT1965-5AF32
			200 ... 220 AC/DC	5	3RT1965-5AM31	5	3RT1965-5AM32
			220 ... 240 AC/DC	5	3RT1965-5AP31	5	3RT1965-5AP32
			240 ... 277 AC/DC	5	3RT1965-5AU31	5	3RT1965-5AU32
			380 ... 420 AC/DC	5	3RT1965-5AV31	5	3RT1965-5AV32
	440 ... 480 AC/DC	5	3RT1965-5AR31	5	3RT1965-5AR32		
	500 ... 550 AC/DC	5	3RT1965-5AS31	5	3RT1965-5AS32		
	575 ... 600 AC/DC	5	3RT1965-5AT31	5	3RT1965-5AT32		
	S12	3RT107,	23 ... 26 AC/DC	5	3RT1975-5AB31	5	3RT1975-5AB32
		3RT147	42 ... 48 AC/DC	5	3RT1975-5AD31	5	3RT1975-5AD32
			110 ... 127 AC/DC	5	3RT1975-5AF31	5	3RT1975-5AF32
			200 ... 220 AC/DC	5	3RT1975-5AM31	5	3RT1975-5AM32
			220 ... 240 AC/DC	5	3RT1975-5AP31	5	3RT1975-5AP32
			240 ... 277 AC/DC	5	3RT1975-5AU31	5	3RT1975-5AU32
			380 ... 420 AC/DC	5	3RT1975-5AV31	5	3RT1975-5AV32
	440 ... 480 AC/DC	5	3RT1975-5AR31	5	3RT1975-5AR32		
	500 ... 550 AC/DC	5	3RT1975-5AS31	5	3RT1975-5AS32		
	575 ... 600 AC/DC	5	3RT1975-5AT31	5	3RT1975-5AT32		

Solid-state operating mechanism for AC/DC with 24 V DC control signal input e.g. for control by PLC




	S6	3RT105,	21 ... 27.3 AC/DC	5	3RT1955-5NB31	5	3RT1955-5NB32
		3RT145	96 ... 127 AC/DC	5	3RT1955-5NF31	5	3RT1955-5NF32
			200 ... 277 AC/DC	5	3RT1955-5NP31	5	3RT1955-5NP32
	S10	3RT106,	21 ... 27.3 AC/DC	5	3RT1965-5NB31	5	3RT1965-5NB32
		3RT146	96 ... 127 AC/DC	5	3RT1965-5NF31	5	3RT1965-5NF32
			200 ... 277 AC/DC	5	3RT1965-5NP31	5	3RT1965-5NP32
	S12	3RT107,	21 ... 27.3 AC/DC	5	3RT1975-5NB31	5	3RT1975-5NB32
		3RT147	96 ... 127 AC/DC	5	3RT1975-5NF31	5	3RT1975-5NF32
			200 ... 277 AC/DC	5	3RT1975-5NP31	5	3RT1975-5NP32

• Additionally with PLC relay output and remaining lifetime indicator (RLT)
(withdrawable coil with laterally mounted solid-state module)

	S6	3RT105,	96 ... 127 AC/DC	5	3RT1955-5PF31	--	
		3RT145	200 ... 277 AC/DC	5	3RT1955-5PP31	--	
	S10	3RT106,	96 ... 127 AC/DC	5	3RT1965-5PF31	--	
		3RT146	200 ... 277 AC/DC	5	3RT1965-5PP31	--	
	S12	3RT107,	96 ... 127 AC/DC	5	3RT1975-5PF31	--	
		3RT147	200 ... 277 AC/DC	5	3RT1975-5PP31	--	

Solid-state operating mechanism for DC with 24 ... 110 V DC control signal input e.g. for control from PLC with extended application range

(see also traction contactors on page 4/57)

	S6	3RT105...-X...-	24 DC	--	5	3RT1955-5XB42
		OLA2	72 DC	--	5	3RT1955-5XJ42
			110 DC	--	5	3RT1955-5XF42
	S10	3RT106...-X...-	24 DC	--	5	3RT1965-5XB42
		OLA2	72 DC	--	5	3RT1965-5XJ42
			110 DC	--	5	3RT1965-5XF42
	S12	3RT107...-X...-	24 DC	--	5	3RT1975-5XB42
		OLA2	72 DC	--	5	3RT1975-5XJ42
			110 DC	--	5	3RT1975-5XF42

Note:

In the case of 3RT10...-S contactors with fail-safe control inputs, removing and replacing the operating mechanism are not permitted.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT Contactors and SIRIUS 3RH2 Contactor Relays

Spare Parts

Contacts and arc chambers

Selection and ordering data

For contactors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type	d					

Contacts with fixing parts

For contactors with 3 main contacts



3RT294.-6A

S2	3RT2035	Main contacts (3 NO contacts) for utilization category AC-3	5	3RT2935-6A		1	1 unit	41B
	3RT2036		5	3RT2936-6A		1	1 unit	41B
	3RT2037	(1 set = 3 movable and 6 fixed switching elements with fixing parts)	5	3RT2937-6A		1	1 unit	41B
	3RT2038		5	3RT2938-6A		1	1 unit	41B
S3	3RT2045		5	3RT2945-6A		1	1 unit	41B
	3RT2046		5	3RT2946-6A		1	1 unit	41B
	3RT2047		5	3RT2947-6A		1	1 unit	41B
S6	3RT1054		▶	3RT1954-6A		1	1 unit	41B
	3RT1055		▶	3RT1955-6A		1	1 unit	41B
	3RT1056		▶	3RT1956-6A		1	1 unit	41B
S10	3RT1064		▶	3RT1964-6A		1	1 unit	41B
	3RT1065		▶	3RT1965-6A		1	1 unit	41B
	3RT1066		▶	3RT1966-6A		1	1 unit	41B
S12	3RT1075		▶	3RT1975-6A		1	1 unit	41B
	3RT1076		2	3RT1976-6A		1	1 unit	41B
S3	3RT2446	Main contacts (3 NO contacts) for utilization category AC-1	NEW 5	3RT2946-6D		1	1 unit	41B
	3RT2448		NEW 5	3RT2948-6D		1	1 unit	41B
S6	3RT1456	(1 set = 3 movable and 6 fixed switching elements with fixing parts)	5	3RT1956-6D		1	1 unit	41B
S10	3RT1466		5	3RT1966-6D		1	1 unit	41B
	3RT1467		NEW 10	3RT1967-6D		1	1 unit	41B
S12	3RT1476		5	3RT1976-6D		1	1 unit	41B

For contactors with 4 main contacts



3RT2936-6E

S2	3RT2336	Main contacts (4 NO contacts) for utilization category AC-1	X	3RT2936-6E		1	1 unit	41B
	3RT2337	(1 set = 3 movable and 6 fixed switching elements and spare pole with fixing parts)	X	3RT2937-6E		1	1 unit	41B

Arc chambers

For contactors with 3 main contacts

S6	3RT1054	Only for contactors with AC/DC coil	5	3RT1954-7A		1	1 unit	41B
	3RT1055		5	3RT1955-7A		1	1 unit	41B
	3RT1056		5	3RT1956-7A		1	1 unit	41B
	3RT1456		5	3RT1956-7B		1	1 unit	41B
S10	3RT1064		5	3RT1964-7A		1	1 unit	41B
	3RT1065		5	3RT1965-7A		1	1 unit	41B
	3RT1066		5	3RT1966-7A		1	1 unit	41B
	3RT1466		5	3RT1966-7B		1	1 unit	41B
S12	3RT1075		5	3RT1975-7A		1	1 unit	41B
	3RT1076		5	3RT1976-7A		1	1 unit	41B
	3RT1476		5	3RT1976-7B		1	1 unit	41B

Power Contactors for Switching Motors

SIRIUS 3RT12 and 3TF6 vacuum contactors

Overview

Vacuum contactors

Standards

IEC/EN 60947-1,
IEC/EN 60947-4-1,
IEC/EN 60947-5-1 (auxiliary switches)

The SIRIUS 3RT12 and 3TF68/3TF69 vacuum contactors are suitable for use in any climate. They are finger-safe according to IEC 60529. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices (see pages 3/118 and 3/139).

Connection methods

The vacuum contactors are available with screw terminals (box terminals).

Contact reliability

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the vacuum contactors or 3RH contactor relays should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Short-circuit protection

For short-circuit protection of the vacuum contactors with or without overload relays, refer to the Manuals and Configuration Manuals, see "More information" on page 3/127.

Electromagnetic compatibility (EMC)

The contactors with solid-state operating mechanism comply with the international standards IEC/EN 60947-1 and IEC/EN 60947-4-1.

These contactors have been developed for environment A.

Note:

Environment A refers to private low-voltage or industrial networks/locations/plants, including high-grade sources of interference.

Environment A corresponds to devices of Class A with CISPR 11, EN 55011.

Note:

In connection with converters, the control cables must be routed separately from the load cables to the converter.

Motor protection

For protection against overload, 3RB2 electronic overload relays (see page 7/117 onwards) can be mounted on the vacuum contactors. These must be ordered separately.

Ratings of three-phase motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

The power rating specifications of the vacuum contactors in kW are guide values for 4-pole standard motors at 50 Hz AC and specified voltage (e.g. 400 V). The specific starting and rated data of the motor to be switched are decisive when it comes to selecting the right devices, and the motor current, motor protection device and the permissible contactor current according to the utilization category must be aligned with each other when doing so.

Surge suppression

The vacuum contactors can be retrofitted with varistors for damping opening overvoltages in the coil.

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 to 5 ms)

Vacuum contactors are basically unsuitable for switching DC voltage.

SIRIUS 3RT12 vacuum contactors, 3-pole, 110 to 250 kW

AC/DC operation

The contactors can be operated with AC (50 to 60 Hz) as well as with DC.

Two types of solenoid operation are available:

- Standard operating mechanism with economy circuit for AC and DC operation (switchover from closing coil to holding coil), version 3RT12...-A
- Solid-state operating mechanism, version 3RT12...-N

Withdrawable coils

For simple coil replacement, e.g. if the application is replaced, the solenoid coil can be pulled out upwards after the release mechanism has been actuated and can be replaced by any other coil of the same size.

Vacuum interrupters

In contrast to the 3RT10 contactors – the main contacts operate in air under atmospheric conditions – the contact gaps of the 3RT12 vacuum contactors are contained in hermetically enclosed vacuum interrupters. Neither arcs nor arcing gases are produced. The particular benefit of 3RT12 vacuum contactors, however, is that their electrical endurance is at least twice as long as that of 3RT10 contactors. They are therefore particularly well suited to frequent switching in inching/mixed operation, e.g. in crane control systems.

Auxiliary contact complement

The 3RT12 vacuum contactors of sizes S10 to S12 are supplied with laterally mounted auxiliary switch blocks. These can be fitted with up to eight lateral auxiliary contacts (identical auxiliary switch blocks for S10 and S12). Of these, no more than four are permitted to be NC contacts.

3TF6 vacuum contactors, 3-pole, 335 to 450 kW

Main contacts

Contact erosion indication with 3TF68/3TF69 vacuum contactors: The contact erosion of the vacuum interrupters can be checked during operation with the help of three white double slides on the contactor base. If the distance indicated by one of the double slides is < 0.5 mm while the contactor is in the closed position, the vacuum interrupter must be replaced. To ensure maximum reliability, it is recommended to replace all three vacuum interrupters simultaneously.

Auxiliary contacts

Contact reliability:

These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Protection of the main current paths

An integrated RC varistor connection for the main current paths dampens the switching overvoltage rises to safe values. This prevents multiple restricting. It can therefore be assumed that the motor winding cannot be damaged by switching overvoltages with steep voltage rises.

During operation in installations in which the emitted interference limits cannot be observed, e.g. when used for output contactors in converters, 3TF68/3TF69..-Q vacuum contactors – without connection of the main current path circuit – are recommended.

Technical specifications

Unless otherwise listed on subsequent pages, the technical specifications of the SIRIUS 3RT12 vacuum contactors correspond to those of the 3RT10 basic units, see pages 3/23, and 3/48 to 3/54.

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16137/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16137/faq>
 System Manual, see "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>
 Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", see <https://support.industry.siemens.com/cs/ww/en/view/60306557>
 Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>
 Configuration Manual "Load Feeders – Configuring the SIRIUS Modular System", see <https://support.industry.siemens.com/cs/ww/en/view/39714188>
 Configuration Manual "Configuring SIRIUS Innovations UL", see <https://support.industry.siemens.com/cs/ww/en/view/53433538>

Type
Size

SIRIUS vacuum contactors**3RT12****S10 and S12****Contact endurance of the main contacts**

The characteristic curves show the contact endurance of the contactors when switching resistive and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking 6 times the rated operational current) and is intended for a contact endurance of approximately 200 000 operating cycles.

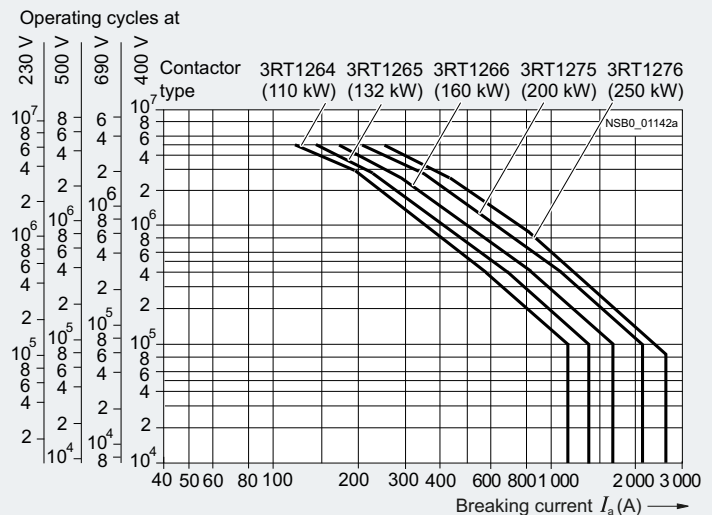
If a shorter contact endurance is sufficient, the rated operational current $I_e/AC-4$ can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

$$X = \frac{A}{1 + \frac{C}{100} \left(\frac{A}{B} - 1 \right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching ($I_a = \text{multiple of } I_e$) in operating cycles
- C Inching operations as a percentage of total switching operations



Power Contactors for Switching Motors

SIRIUS 3RT12 and 3TF6 vacuum contactors

		Vacuum contactors	
Type		3TF6	
Size		14	
Rated data of the auxiliary contacts		According to IEC 60947-5-1	
Rated insulation voltage U_i (pollution degree 3)	V	690	
Conventional thermal current I_{th} = rated operational current $I_e/AC-12$	A	10	
AC load			
Rated operational current $I_e/AC-15/AC-14$			
• For rated operational voltage U_e			
- At 24 V	A	10	
- At 110 V	A	10	
- At 125 V	A	10	
- At 220 V	A	6	
- At 230 V	A	5.6	
- At 380 V	A	4	
- At 400 V	A	3.6	
- At 500 V	A	2.5	
- At 660 V	A	2.5	
- At 690 V	A	2.3	
DC load			
Rated operational current $I_e/DC-12$			
• For rated operational voltage U_e			
- At 24 V	A	10	
- At 60 V	A	10	
- At 110 V	A	3.2	
- At 125 V	A	2.5	
- At 220 V	A	0.9	
- At 440 V	A	0.33	
- At 600 V	A	0.22	
Rated operational current $I_e/DC-13$			
• For rated operational voltage U_e			
- At 24 V	A	10	Auxiliary contacts with delayed NC contact: 6
- At 60 V	A	5	N S
- At 110 V	A	1.14	0.98
- At 125 V	A	0.98	N S
- At 220 V	A	0.48	N S
- At 440 V	A	0.13	N S
- At 600 V	A	0.07	0.07

Ⓢ and Ⓣ rated data of the auxiliary contacts

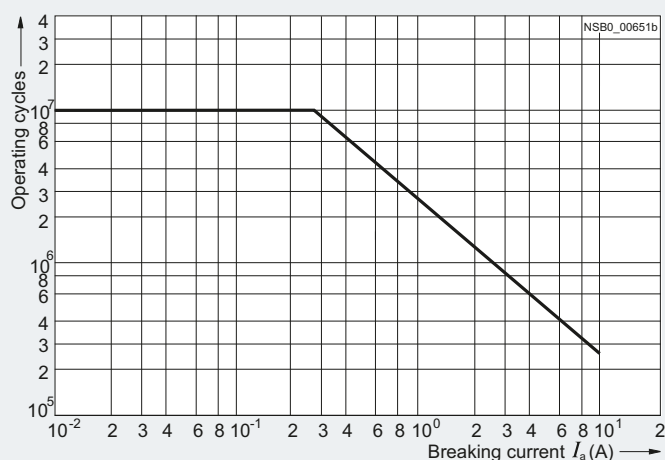
Rated voltage, max. V AC 600

Switching capacity A 600, P 600

Endurance of the auxiliary contacts

The contact endurance for utilization category AC-12 or AC-15/AC-14 depends mainly on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The characteristic curves apply to 230 V AC.



Contact erosion indication with vacuum contactors

The contact erosion of the vacuum interrupters can be checked during operation with the help of three white double slides on the contactor base.

If the distance indicated by one of the double slides is < 0.5 mm while the contactor is in the closed position, the vacuum interrupter must be replaced. To ensure maximum reliability, it is recommended to replace all three vacuum interrupters at once.

Type
Size

Vacuum contactors
3TF6
14

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching resistive and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking 6 times the rated operational current) and is intended for a contact endurance of approximately 200 000 operating cycles.

If a shorter contact endurance is sufficient, the rated operational current $I_e/AC-4$ can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

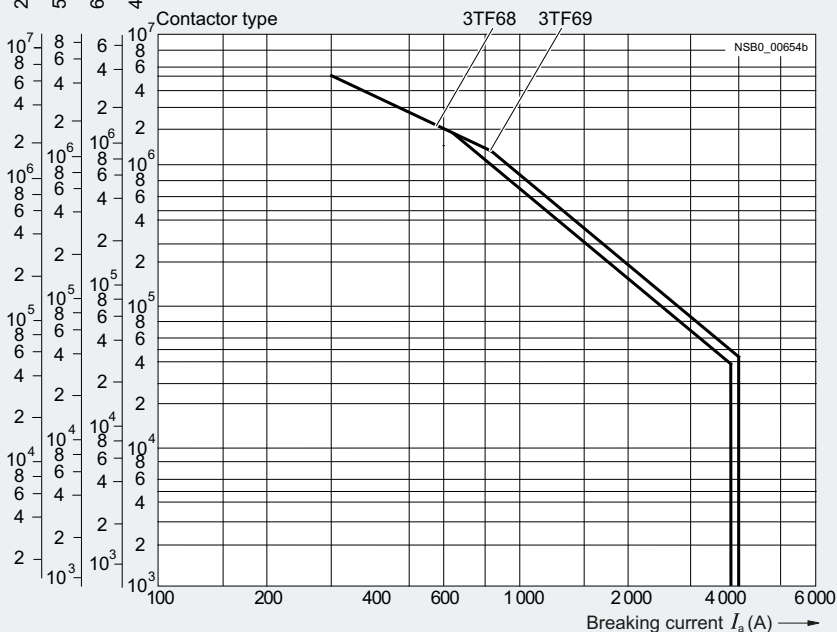
$$X = \frac{A}{1 + \frac{C}{100} \left(\frac{A}{B} - 1 \right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching ($I_a = \text{multiple of } I_e$) in operating cycles
- C Inching operations as a percentage of total switching operations

Operating cycles at

230 V 500 V 690 V 400 V



Type
Size

SIRIUS vacuum contactors
3RT126
S10

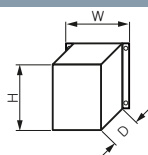
3RT127
S12

Vacuum contactors
3TF68
14

3TF69

General data

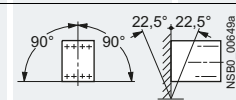
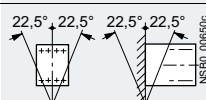
Dimensions (W x H x D)



mm	145 x 210 x 206	160 x 214 x 225	230 x 276 x 237	230 x 295 x 237
----	-----------------	-----------------	-----------------	-----------------

Permissible mounting position

The contactors are designed for operation on a vertical mounting surface.



- To easily replace the laterally mounted auxiliary switches it is recommended to maintain a minimum distance of 30 mm between the contactors.
- If mounted at a 90° angle (current paths are horizontally above each other), the switching frequency is reduced by 80% compared with the normal values.

No	Yes
No	Yes

Mechanical endurance

Operating cycles	10 million	5 million
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Electrical endurance

Contact endurance of the main contacts See above

Rated insulation voltage U_i (pollution degree 3) kV 1

Rated impulse withstand voltage U_{imp} kV 8

Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N V 690 1 000

Mirror contacts

A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.

Yes, acc. to IEC 60947-4-1, Appendix F	Yes, acc. to IEC 60947-4-1, Appendix F One NC contact each must be connected in series for the left and right auxiliary switch block respectively.
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Power Contactors for Switching Motors

SIRIUS 3RT12 and 3TF6 vacuum contactors

Type Size	SIRIUS vacuum contactors		Vacuum contactors	
	3RT126 S10	3RT127 S12	3TF68 14	3TF69
General data (continued)				
Permissible ambient temperature				
• During operation	°C	-25 ... +60		-25 ... +55 ¹⁾
• During storage	°C	-55 ... +80		-55 ... +80
Degree of protection acc. to IEC 60529				
• On front		IP00 (IP20 with box terminal/cover)		2)3)
• Connecting terminal		IP00 (for higher degree of protection, use additional terminal covers)		
Touch protection acc. to IEC 60529				
		Finger-safe for vertical touching from the front with cover		
Shock resistance				
• Rectangular pulse				
- AC operation	g/ms	8.5/5 and 4.2/10		8.1/5 and 4.7/10
- DC operation	g/ms	8.5/5 and 4.2/10		9.5/5 and 5.7/10
• Sine pulse				
- AC operation	g/ms	13.4/5 and 6.5/10		12.8/5 and 7.4/10
- DC operation	g/ms	13.4/5 and 6.5/10		13.5/5 and 7.8/10
				8.6/5 and 5.1/10
				13.5/5 and 7.8/10
Electromagnetic compatibility (EMC)				
		See page 3/126		
Short-circuit protection				
Main circuit				
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC/EN 60947-4-1				
• Type of coordination "1"	A	500	800	1 000
• Type of coordination "2"	A	500	800	630
• Weld-free (test conditions acc. to IEC 60947-4-1)	A	400	500	400
Auxiliary circuit				
Short-circuit test				
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection at $I_k \leq 1$ kA)	A	10		
• Miniature circuit breaker with C characteristic (short-circuit current $I_k \leq 400$ A)	A	10		
Short-circuit protection for contactors with overload relays				
		See Configuration Manual for load feeders		

¹⁾ For ambient temperatures > 55 °C, only 3TF6.33-.Q..-Z A02 contactors (= without connection of the main current path circuits) can be used. Then, derating is also possible with these contactors:
- AC-1: $I_e = 782$ A, 644 operating cycles/h;
- AC-3: Operating range 0.85 to 1.05 x U_s , 460 operating cycles/h, mech. endurance 5 million operating cycles, lateral clearance 10 mm.

²⁾ The following applies for 3TF6.-.C.:
- IP00 without cover (the connecting bar is reached directly from the front)
- IP00 with cover for conductor entry
- IP20 on the front plate with cover.
³⁾ The following applies for 3TF6.-.Q../-.D.:
- IP00 without box terminal (the connecting bar, series resistor and the 3TC44 reversing contactor are reached directly from the front)
- IP00 with box terminal (the series resistor and the 3TC44 reversing contactor are reached directly).

Type Size	SIRIUS vacuum contactors		Vacuum contactors		
	3RT126 S10	3RT127 S12	3TF68 14	3TF69	
Control					
Solenoid coil operating range	AC/DC	0.8 x $U_{s \text{ min}}$... 1.1 x $U_{s \text{ max}}$			
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)					
<u>Standard operating mechanism</u>					
• AC operation	- Closing at $U_{s \text{ min}}/U_{s \text{ max}}$ - P.f.	VA	530/630	700/830	--
			0.9		
- Closed at $U_{s \text{ min}}/U_{s \text{ max}}$ - P.f.	VA	6.1/7.4	7.6/9.2	--	
		0.9		--	
• DC operation	- Closing at $U_{s \text{ min}}/U_{s \text{ max}}$ - Closed at $U_{s \text{ min}}/U_{s \text{ max}}$	W	580/780	770/920	--
		W	6.8/8.2	8.5/10	--
<u>Solid-state operating mechanism</u>					
• AC operation	- Closing at $U_{s \text{ min}}/U_{s \text{ max}}$ - P.f.	VA	420/570	560/750	1 200/1 850
			0.8		1
- Closed at $U_{s \text{ min}}/U_{s \text{ max}}$ - P.f.	VA	5.5/8.5	5.6/9	13.5/49	12.9/30.6
		0.5/0.4		0.15	0.31
• AC operation for 3TF68/3TF69...Q	- Closing at $U_{s \text{ min}}$ - P.f.	VA	--	--	1 000
			--	--	0.99
- Closed at $U_{s \text{ min}}$ - P.f.	VA	--	--	11	1 150
		--	--	1	
• DC operation	- Closing at $U_{s \text{ min}}/U_{s \text{ max}}$ - Closed at $U_{s \text{ min}}/U_{s \text{ max}}$	W	460/630	600/800	--
		W	2.8/3.4	3/3.6	--
• DC economy circuit ¹⁾	- Closing at $U_{s \text{ min}}$ - Closed at $U_{s \text{ min}}$	W	--	--	1 010
		W	--	--	28
PLC control input acc. to IEC 61131-2		Type 2			--
• Rated voltage	V DC	24			--
• Operating range	V DC	17 ... 30			--
• Power consumption	mA	≤ 30			--
Operating times (Total break time = Opening delay + Arcing time)					
(Values apply to cold and warm coil)					
<u>Standard operating mechanism</u>					
• For 0.8 x $U_{s \text{ min}}$... 1.1 x $U_{s \text{ max}}$	- Closing delay	ms	30 ... 95	45 ... 100	--
		- Opening delay	ms	40 ... 80	60 ... 100
• For $U_{s \text{ min}}$... $U_{s \text{ max}}$	- Closing delay	ms	35 ... 50	50 ... 70	--
		- Opening delay	ms	50 ... 80	70 ... 100
<u>Solid-state operating mechanism, actuated via A1/A2</u>					
• AC operation at 0.8 x $U_{s \text{ min}}$... 1.1 x $U_{s \text{ max}}$	- Closing delay	ms	105 ... 145	120 ... 150	70 ... 120 (22 ... 65)
		- Opening delay	ms	80 ... 100	
• AC operation for 3TF68/3TF69...Q at $U_{s \text{ min}}$ (including reversing contactor)	- Closing delay	ms	--	--	35 ... 90
		- Opening delay	ms	--	--
• AC operation at $U_{s \text{ min}}$... $U_{s \text{ max}}$	- Closing delay	ms	110 ... 130	125 ... 150	80 ... 100 (30 ... 45)
		- Opening delay	ms	80 ... 100	
<u>Solid-state operating mechanism, actuated via PLC input</u>					
• For 0.8 x $U_{s \text{ min}}$... 1.1 x $U_{s \text{ max}}$	- Closing delay	ms	45 ... 80	60 ... 90	--
		- Opening delay	ms	80 ... 100	
• DC economy circuit for 0.8 x $U_{s \text{ min}}$... 1.1 x $U_{s \text{ max}}$	- Closing delay	ms	--	--	76 ... 110
		- Opening delay	ms	--	--
• For $U_{s \text{ min}}$... $U_{s \text{ max}}$	- Closing delay	ms	50 ... 65	65 ... 80	--
		- Opening delay	ms	80 ... 100	
• DC economy circuit for $U_{s \text{ min}}$... $U_{s \text{ max}}$	- Closing delay	ms	--	--	80 ... 90
		- Opening delay	ms	--	--
Arcing time		ms	10 ... 15		10 ... 15
Minimum command duration		ms	--		120
For closing		ms	--		90
Minimum interval time between two ON commands		ms	--		100
					300

1) At 24 V DC; for further voltages, deviations of up to ± 10 % are possible.

Power Contactors for Switching Motors




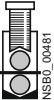
SIRIUS 3RT12 and 3TF6 vacuum contactors

Type Size	SIRIUS vacuum contactors					Vacuum contactors			
	3RT1264	3RT1265	3RT1266	3RT1275	3RT1276	3TF68	3TF69		
	S10			S12		14			
Rated data of the main contacts									
Load rating with AC									
Utilization category AC-1									
Switching resistive loads									
• Rated operational currents I_e	- At 40 °C up to 690 V	A	330		610		700	910	
	- At 40 °C up to 1 000 V	A	330		610		--	--	
	- At 55 °C up to 690 V	A	--		--		630	850	
	- At 55 °C up to 1 000 V	A	--		--		450	800	
	- At 60 °C up to 1 000 V	A	300		550		--	--	
• Rated power for AC loads ¹⁾ with p.f. = 0.95	- At 230 V	kW	113		208		240	323	
	- At 400 V	kW	197		362		415	558	
	- At 500 V	kW	246		452		545	735	
	- At 690 V	kW	340		624		720	970	
	- At 1 000 V	kW	492		905		780	1 385	
• Minimum conductor cross-section for loads with I_e	- At 40 °C	mm ²	185		2 x 185		2 x 240	$I_e \geq 800$ A: 2 x 60 x 5 (copper busbars)	
	- At 55 °C	mm ²	--		--		2 x 185	$I_e < 800$ A: 2 x 240	
	- At 60 °C	mm ²	185		2 x 185		--	--	
Utilization categories AC-2 and AC-3									
• Rated operational currents I_e	- Up to 690 V	A	--		--		630	820	
	- Up to 1 000 V	A	225	265	300	400	500	435	580
• Rated power for slipring or squirrel-cage motors at 50 Hz and 60 Hz	- At 230 V	kW	73	85	97	132	164	200	260
	- At 400 V	kW	128	151	171	231	291	347	450
	- At 500 V	kW	160	189	215	291	363	434	600
	- At 690 V	kW	223	265	288	400	507	600	800
	- At 1 000 V	kW	320	378	428	578	728	600	800
Thermal load capacity, 10 s current		A	1 800	2 120	2 400	3 200	4 000	5 040	7 000
Power loss per conducting path at $I_e/AC-3$		W	9	12	14	21	32	45	70
Utilization category AC-4 (for $I_a = 6 \times I_e$)									
Maximum values:									
• Rated operational current I_e	- Up to 690 V	A	195	230	280	350	430	610	690
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz	- At 400 V	kW	110	132	160	200	250	355	400
The following applies to a contact endurance of about 200 000 operating cycles:									
• Rated operational currents I_e	- Up to 690 V	A	97	115	140	175	215	300	360
	- Up to 1 000 V	A	68	81	98	123	151	210	250
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz	- At 230 V	kW	30	37	45	56	70	97	110
	- At 400 V	kW	55	65	79	98	122	168	191
	- At 500 V	kW	68	81	98	124	153	210 ²⁾	250 ²⁾
	- At 690 V	kW	94	112	138	172	212	278 ²⁾	335 ²⁾
	- At 1 000 V	kW	95	114	140	183	217	290 ²⁾	350 ²⁾
Switching frequency									
Switching frequency z in operating cycles/hour									
Contactors without overload relays									
• No-load switching frequency	- AC/DC	1/h	Standard operating mechanism: 2 000, Solid-state operating mechanism: 1 000				--	--	
	- AC	1/h	--		--		2 000	1 000	
	- DC	1/h	--		--		1 000	--	
• Switching frequency z during rated operation ³⁾	- $I_e/AC-1$ at 400 V	1/h	800	750			700		
	- $I_e/AC-2$ at 400 V	1/h	300	250			200		
	- $I_e/AC-3$ at 400 V	1/h	750				500		
	- $I_e/AC-4$ at 400 V	1/h	250				150		
Contactors with overload relays									
• Mean value		1/h	60				15		

¹⁾ Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

²⁾ Max. permissible rated operational current $I_e/AC-4 = I_e/AC-3$ up to 500 V, for reduced contact endurance and reduced switching frequency.

³⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U':
 $z' = z \cdot (I_e/I') \cdot (U_e/U)^{1.5} \cdot 1/h$.

Type Size	SIRIUS vacuum contactors		Vacuum contactors	
	3RT126. S10	3RT127. S12	3TF68 14	3TF69
Conductor cross-sections				
Main conductors (1 or 2 conductors can be connected)				
 Screw terminals				
With mounted box terminals	Type	3RT1966-4G		--
• Terminal screws - Tightening torque	Nm	M12 (hexagon socket, A/F 5) 20 ... 22 (180 ... 195 lb.in)		--
Front clamping point connected				
	• Finely stranded with end sleeve (DIN 46228-1)	mm ²	70 ... 240	--
	• Finely stranded without end sleeve	mm ²	70 ... 240	--
	• Stranded	mm ²	95 ... 300	--
• AWG cables, solid or stranded	AWG	3/0 ... 600 kcmil	--	
• Ribbon cable conductors (number x width x thickness)	mm	Min. 6 x 9 x 0.8; max. 20 x 24 x 0.5	--	
Rear clamping point connected				
	• Finely stranded with end sleeve (DIN 46228-1)	mm ²	120 ... 185	--
	• Finely stranded without end sleeve	mm ²	120 ... 185	--
	• Stranded	mm ²	120 ... 240	--
• AWG cables, solid or stranded	AWG	250 ... 500 kcmil	--	
• Ribbon cable conductors (number x width x thickness)	mm	Min. 6 x 9 x 0.8; max. 20 x 24 x 0.5	--	
Both clamping points connected				
	• Finely stranded with end sleeve (DIN 46228-1)	mm ²	Min. 2 x 50, max. 2 x 185	--
	• Finely stranded without end sleeve	mm ²	Min. 2 x 50, max. 2 x 185	--
	• Stranded	mm ²	Min. 2 x 70, max. 2 x 240	--
• AWG cables, solid or stranded	AWG	Min. 2 x 2/0, max. 1 x 500 kcmil	--	
• Ribbon cable conductors (number x width x thickness)	mm	Max. 2 x (20 x 24 x 0.5)	--	
Cable lug connection				
• Finely stranded with cable lug ¹⁾	mm ²	50 ... 240	--	
• Stranded with cable lug ¹⁾	mm ²	70 ... 240	--	
• AWG cables, solid or stranded	AWG	2/0 ... 500 kcmil	--	
• Terminal screws - Tightening torque	Nm	M10 x 30 (A/F 17) 14 ... 24 (124 ... 210 lb.in)	--	
Busbar connections				
• Finely stranded with cable lug	mm ²	--	50 ... 240	
• Stranded with cable lug	mm ²	--	70 ... 240	50 ... 240
• Solid or stranded	AWG	--	2/0 ... 500 MCM	2/0 ... 500 MCM
• Connecting bar (max. width)	mm	25	50	60 (U _b ≤ 690 V), 50 (U _b > 690 V)
• Terminal screws - Tightening torque	Nm lb.in	-- --	M10 x 30 14 ... 24 124 ... 210	M12 x 40 20 ... 35 177 ... 310
With box terminal (see page 3/139)				
• Connectable laminated copper bars		--	Yes	
• Width	mm	--	15 ... 25	15 ... 38
• Max. thickness	mm	--	1 x 26 or 2 x 11	1 x 46 or 2 x 18
• Terminal screw		--	A/F 6 (hexagon socket)	A/F 8 (hexagon socket)
• Tightening torque	Nm	--	25 ... 40 (221 ... 354 lb.in)	35 ... 50 (266 ... 443 lb.in)
Auxiliary conductors (1 or 2 conductors connectable)				
• Solid	mm ²	2 x (0.5 ... 1.5) ²⁾ ; 2 x (0.75 ... 2.5) ²⁾ acc. to IEC 60947; max. 2 x (0.75 ... 4)	2 x (0.5 ... 1) ²⁾ /2 x (1 ... 2.5) ²⁾	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ²⁾ ; 2 x (0.75 ... 2.5) ²⁾	2 x (0.5 ... 1) ²⁾ ; 2 x (0.75 ... 2.5) ²⁾	
• Pin-end connector to DIN 46231	mm ²	--	2 x (1 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)	2 x (18 ... 12)	
• Terminal screws - Tightening torque	Nm	M3 (Pozi driv size 2) 0.8 ... 1.2 (7 ... 10.3 lb.in)	-- 0.8 ... 1.4 (7 ... 12 lb.in)	

¹⁾ When connecting cable lugs according to DIN 46234 for conductor cross-sections larger than 240 mm² and according to DIN 46235 for conductor cross-sections larger than 185 mm², the 3RT1966-4EA1 terminal cover is required to maintain phase separation, see page 3/118.

²⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Power Contactors for Switching Motors

SIRIUS 3RT12 and 3TF6 vacuum contactors

Type Size	SIRIUS vacuum contactors					Vacuum contactors		
	3RT1264 S10	3RT1265	3RT1266	3RT1275 S12	3RT1276	3TF68 14	3TF69	
and rated data								
Rated insulation voltage	V AC	600					600	
Uninterrupted current at 40 °C, open and enclosed	A	330			540		630	820
Maximum horsepower ratings (from and approved values)								
• Rated power for three-phase motors at 60 Hz								
- At 200 V	hp	60	75	100	125	150	231	290
- At 230 V	hp	75	100	125	150	200	266	350
- At 460 V	hp	150	200	250	300	400	530	700
- At 575 V	hp	200	250	300	400	500	664	860
NEMA/EEMAC ratings								
SIZE	hp	--					6	7
• Uninterrupted current								
- Open	A	--					600	820
- Enclosed	A	--					540	810
• Rated power for three-phase motors at 60 Hz								
- At 200 V	hp	--					150	--
- At 230 V	hp	--					200	300
- At 460 V	hp	--					400	600
- At 575 V	hp	--					400	600
Short-circuit protection¹⁾								
	kA	10	18			30	100	
• CLASS L fuse	A	600	700	800	1 000	1 200	1 600	
• Circuit breakers acc. to UL 489	A	500	700	800	1 000	1 200	On request ¹⁾	


¹⁾ For more information about short-circuit values, e.g. for protection against short-circuit currents, see [Certificate of Compliance for the individual devices](#).

For the selection and dimensioning of load feeders, see [UL Configuration Manual](#) and the [UL guide "Industrial Control Panels and Electrical Equipment of Industrial Machinery for North America"](#).

IE3/IE4 ready

SIRIUS 3RT12 and 3TF6 vacuum contactors

Selection and ordering data

SIRIUS 3RT12 vacuum contactors, 3-pole, 110 ... 250 kWAC/DC operation 


- Operating mechanism with integrated coil circuit (varistor)
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections



3RT1264-6AF36



3RT127.-6N.36

Size	Rated data					AC-1, t_{ij} : 40 °C	Auxiliary contacts, lateral			Rated control supply voltage U_s 50/60 Hz AC or DC	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	
	AC-2 and AC-3, t_{ij} : Up to 60 °C	Rating of three-phase motors at 50 Hz and					Operational current I_e up to	NO	NC							V
	1 000 V	230 V	400 V	500 V	690 V	1 000 V										
A	kW	kW	kW	kW	A				d							
Standard operating mechanism with economy circuit for AC and DC operation (switchover from closing coil to holding coil)																
S10	225	55	110	160	200	330	2	2	110 ... 127 220 ... 240	5 2	3RT1264-6AF36 3RT1264-6AP36	1 1	1 unit 1 unit	41B 41B		
	265	75	132	160	250	330	2	2	110 ... 127 220 ... 240	2 5	3RT1265-6AF36 3RT1265-6AP36	1 1	1 unit 1 unit	41B 41B		
	300	90	160¹⁾	200	250	330	2	2	110 ... 127 220 ... 240	2 2	3RT1266-6AF36 3RT1266-6AP36	1 1	1 unit 1 unit	41B 41B		
S12	400	132	200	250	400	610	2	2	110 ... 127 220 ... 240	5 2	3RT1275-6AF36 3RT1275-6AP36	1 1	1 unit 1 unit	41B 41B		
	500	160	250¹⁾	355	500	610	2	2	110 ... 127 220 ... 240	5 5	3RT1276-6AF36 3RT1276-6AP36	1 1	1 unit 1 unit	41B 41B		

Solid-state operating mechanism**With 24 V DC control signal input
e.g. for control by PLC**

S10	225	55	110	160	200	330	2	2	96 ... 127 200 ... 277	5 5	3RT1264-6NF36 3RT1264-6NP36	1 1	1 unit 1 unit	41B 41B
	265	75	132	160	250	330	2	2	96 ... 127 200 ... 277	5 5	3RT1265-6NF36 3RT1265-6NP36	1 1	1 unit 1 unit	41B 41B
	300	90	160	200	250	330	2	2	96 ... 127 200 ... 277	5 5	3RT1266-6NF36 3RT1266-6NP36	1 1	1 unit 1 unit	41B 41B
S12	400	132	200	250	400	610	2	2	96 ... 127 200 ... 277	5 5	3RT1275-6NF36 3RT1275-6NP36	1 1	1 unit 1 unit	41B 41B
	500	160	250	355	500	610	2	2	96 ... 127 200 ... 277	5 5	3RT1276-6NF36 3RT1276-6NP36	1 1	1 unit 1 unit	41B 41B

¹⁾ When using 3RT12.6-6A... vacuum contactors with IE3/IE4 motors from 8.5 times the starting current, use the versions with solid-state operating mechanism 3RT12.6-6N...
For more information about dimensioning and configuring, see page 3/7.

Other voltages according to page 3/75 on request.

For an overview of the 3RT12 vacuum contactors with mountable accessories, see pages 3/14 and 3/16.

The accessories for the 3RT1 vacuum contactors correspond to those for the basic units of the 3RT1 contactors, see from page 3/76 onwards.

For spare parts, see page 3/140.

Power Contactors for Switching Motors

SIRIUS 3RT12 and 3TF6 vacuum contactors


3TF6 vacuum contactors, 3-pole, 335 ... 450 kW

AC operation

- For screw fixing
- Main conductors: Busbar connections
- Auxiliary and control conductors: Screw terminals
- With overvoltage protection of the coil (varistor)



3TF68/3TF69

Size	Rated data						AC-1, t_U : 40 °C	Auxiliary contacts, lateral		Rated control supply voltage U_s 50/60 Hz AC	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	
	Operational current I_e up to	Rating of three-phase motors at 50 Hz and up to						Operational current I_e up to	NO							NC
A	230 V	400 V	500 V	690 V	1 000 V	A	4			4	V	d				
AC operation, 50/60 Hz¹⁾																
14	630	200	335 ²⁾	434	600	--	700	4	4	110 ... 132	X	3TF6844-OCF7 3TF6844-OCM7	1	1 unit	41B	
							600	700	4	4	200 ... 240					X
14	820	260	450 ³⁾	600	800	--	910	4	4	110 ... 132	X	3TF6944-OCF7 3TF6944-OCM7	1	1 unit	41B	
							800	910	4	4	200 ... 240					X
							800	910	4	4	200 ... 240	X	3TF6944-8CF7 3TF6944-8CM7	1	1 unit	41B

¹⁾ For use of 3TF6 vacuum contactors in the environment of frequency converters, we recommend ordering a special version: **3TF6...-Z A02**.

3TF68/3TF69 vacuum contactors in their basic version are supplied with integrated overvoltage damping for the main current paths. The surge suppression circuit is not required for operation in circuits with DC choppers, frequency converters or speed-variable operating mechanisms, for example.

The circuit could be damaged by the voltage peaks and harmonics and thus cause phase-to-phase short circuits. For this reason, the contactors can also be supplied without integrated overvoltage damping. Without additional price.

The article number must be supplemented by "-Z" and the order code "A02".

²⁾ When using 3TF68 vacuum contactors with IE3/IE4 motors from 8.5 times the starting current, please use 3TF69 vacuum contactors. For more information about dimensioning and configuring, see page 3/7.

³⁾ Please inquire about use of 3TF69 vacuum contactors with IE3/IE4 motors.

Accessories and spare parts, see pages 3/138 to 3/141.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type
	3TF6844-C..., 3TF6944-C...
	Size 14

AC operation

Solenoid coils for 50/60 Hz

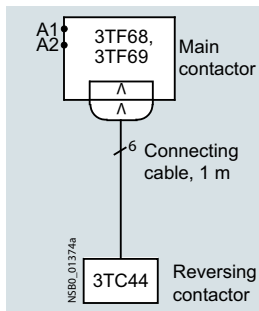
110 ... 132 V AC	F7
200 ... 240 V AC	M7
230 ... 277 V AC	P7
380 ... 460 V AC	Q7
500 ... 600 V AC	S7

IE3/IE4 ready


SIRIUS 3RT12 and 3TF6 vacuum contactors

DC operation  and for AC operation subject to strong interference 

- Main conductors: Busbar connections
- Auxiliary and control conductors: Screw terminals
- DC solenoid system with 3TC44 reversing contactor for series resistor



3TF6.33-Q.7

Size	Rated data						AC-1, t_U : 40 °C	Auxiliary contacts, lateral			Rated control supply voltage U_s 50/60 Hz AC or DC	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	
	AC-2 and AC-3, t_U : Up to 55 °C	Operational current I_e up to	Rating of three-phase motors at 50 Hz and up to					Operational current I_e up to	NO	NC							V
	690 V	230 V	400 V	500 V	690 V	1 000 V	690 V										
	A	kW	kW	kW	kW	kW	A										
DC operation · DC economy circuit¹⁾²⁾																	
14	630	200	335 ³⁾	434	600	--	700	3	3	24 DC	X	3TF6833-1DB4	1	1 unit	41B		
						600	700	3	3	24 DC	X	3TF6833-8DB4	1	1 unit	41B		
14	820	260	450 ⁴⁾	600	800	--	910	3	3	24 DC	X	3TF6933-1DB4	1	1 unit	41B		
						800	910	3	3	24 DC	X	3TF6933-8DB4	1	1 unit	41B		
AC operation 50/60 Hz with DC economy circuit²⁾⁵⁾. For AC operation subject to strong interference																	
14	630	200	335 ³⁾	434	600	--	700	3	3	110 ... 120 AC X		3TF6833-1QG7	1	1 unit	41B		
										220 ... 240 AC X		3TF6833-1QL7	1	1 unit	41B		
										380 ... 420 AC X		3TF6833-1QV7	1	1 unit	41B		
						600	700	3	3	220 ... 240 AC X		3TF6833-8QL7	1	1 unit	41B		
14	820	260	450 ⁴⁾	600	800	--	910	3	3	110 ... 120 AC X		3TF6933-1QG7	1	1 unit	41B		
										220 ... 240 AC X		3TF6933-1QL7	1	1 unit	41B		
										380 ... 420 AC X		3TF6933-1QV7	1	1 unit	41B		
						800	910	3	3	110 ... 120 AC X		3TF6933-8QG7	1	1 unit	41B		
										220 ... 240 AC X		3TF6933-8QL7	1	1 unit	41B		

1) On this version, a magnetic system is used in the DC economy circuit. A varistor can be retrofitted. A 3TC4417-4A.. reversing contactor is included in the scope of supply of the vacuum contactor.

2) For use of 3TF6 vacuum contactors in the environment of frequency converters, we recommend ordering a special version: **3TF6...-Z A02**.

3TF68/3TF69 vacuum contactors in their basic version are supplied with integrated overvoltage damping for the main current paths. The surge suppression circuit is not required for operation in circuits with DC choppers, frequency converters or speed-variable operating mechanisms, for example.

The circuit could be damaged by the voltage peaks and harmonics and thus cause phase-to-phase short circuits. For this reason, the contactors can also be supplied without integrated overvoltage damping. Without additional price.

The article number must be supplemented by "-Z" and the order code "A02".

3) When using 3TF68 vacuum contactors with IE3/IE4 motors from 8.5 times the starting current, please use 3TF69 vacuum contactors. For more information about dimensioning and configuring, see page 3/7.

4) Please inquire about use of 3TF69 vacuum contactors with IE3/IE4 motors.

5) On this version, a magnetic system with rectifier is used in the DC economy circuit. Varistor integrated. A 3TC4417-.... reversing contactor with preassembled connecting cable (approx. 1 m) and plug is included in the scope of supply of the vacuum contactor.

Accessories and spare parts, see pages 3/138 to 3/141.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type 3TF6833-D.., 3TF6933-D..
	Size 14

DC operation




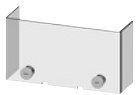
Solenoid coils for DC economy circuit

24 V DC	B4
110 V DC	F4
125 V DC	G4
220 V DC	M4
230 V DC	P4

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT12 and 3TF6 Vacuum Contactors

Accessories

For contactors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type	d					
Main current path surge suppression modules							
 3RT1966-1PV3	S10/ S12	3RT12	For damping overvoltages and protecting motor windings against multiple re-ignition when switching off three-phase motors For connection on the contactor feeder side (2-T1/4-T2/6-T3), for separate installation Rated operational voltage U_e				
			<ul style="list-style-type: none"> • 690 V AC • 1 000 V AC 	10	3RT1966-1PV3	1	1 unit 41B
 3RT1966-1PV4				10	3RT1966-1PV4	1	1 unit 41B
Surge suppressors							
 3TX7572-3.	14	3TF68, 3TF69	Varistors <u>AC operation</u> The surge suppressor (varistor) is included in the scope of supply of the 3TF68 and 3TF69 contactors with AC operation. <u>DC operation · DC economy circuit</u> Varistor for snapping onto the side of the auxiliary switch (includes the peak value of the alternating voltage on the DC side) Rated control supply voltage U_s				
			<ul style="list-style-type: none"> • 24 ... 48 V DC • 127 ... 240 V DC 	20	3TX7572-3G	1	1 unit 41B
				20	3TX7572-3J	1	1 unit 41B
Terminal covers							
 3TX7686-0A	14		Two units required per contactor (1 set = 2 units).				
		3TF68	For protection against inadvertent contact with exposed busbar connections	5	3TX7686-0A	1	1 unit 41B
		3TF69	Can be screwed onto free screw end on middle connecting bar	5	3TX7696-0A	1	1 unit 41B
Links for paralleling (star jumpers), 3-pole							
	14	3TF68, 3TF69	Links for paralleling Without connecting terminal (the link for paralleling can be reduced by one pole)	5	3TX7680-0D	1	1 unit 41B
	14	3TF68, 3TF69	Cover plates for links for paralleling A cover plate must be used to protect against inadvertent contact with exposed busbar connections (IEC 60529).	15	3TX7680-0E	1	1 unit 41B
Box terminals for laminated copper bars							
	14	3TF68	Without auxiliary conductor connection (1 set = 3 units) With single covers for protection against inadvertent contact (IEC 60529)	30	3TX7570-1E	1	1 unit 41B
	14	3TF69	With auxiliary conductor connection (1 set = 3 units) Conductor cross-sections for auxiliary conductors: • Solid 2 x (0.75 ... 2.5) mm ² • Finely stranded with end sleeve 2 x (0.5 ... 2.5) mm ² • AWG, solid or stranded 2 x (18 ... 12) • Tightening torque 0.8 ... 1.4 Nm (7 ... 12 lb.in)	30	3TX7690-1F	1	1 unit 41B
Locking devices for mechanical interlock							
	14	3TF68	For two contactors of the same size	15	3TX7686-1A	1	1 unit 41B

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT12 and 3TF6 Vacuum Contactors

Spare parts



Selection and ordering data

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B


For contactors		Rated control supply voltage $U_{s \text{ min}} \dots U_{s \text{ max}}$	SD	Screw terminals	SD	Spring-type terminals
Size	Type	V AC/DC	d	Article No.	Price per PU	Article No.

Withdrawable coils

Standard operating mechanism for AC/DC


 3RT1975-5A.31	S10	3RT126	23 ... 26	5	3RT1966-5AB31	---	---
			42 ... 48	5	3RT1966-5AD31	---	---
			110 ... 127	2	3RT1966-5AF31	---	---
			200 ... 220	5	3RT1966-5AM31	---	---
			220 ... 240	5	3RT1966-5AP31	---	---
			240 ... 277	5	3RT1966-5AU31	---	---
			380 ... 420	5	3RT1966-5AV31	---	---
			440 ... 480	5	3RT1966-5AR31	---	---
			500 ... 550	5	3RT1966-5AS31	---	---
			575 ... 600	5	3RT1966-5AT31	---	---
 3RT1975-5A.32	S12	3RT127	23 ... 26	5	3RT1975-5AB31	5	3RT1975-5AB32
			42 ... 48	5	3RT1975-5AD31	5	3RT1975-5AD32
			110 ... 127	5	3RT1975-5AF31	5	3RT1975-5AF32
			200 ... 220	5	3RT1975-5AM31	5	3RT1975-5AM32
			220 ... 240	5	3RT1975-5AP31	5	3RT1975-5AP32
			240 ... 277	5	3RT1975-5AU31	5	3RT1975-5AU32
			380 ... 420	5	3RT1975-5AV31	5	3RT1975-5AV32
			440 ... 480	5	3RT1975-5AR31	5	3RT1975-5AR32
			500 ... 550	5	3RT1975-5AS31	5	3RT1975-5AS32
			575 ... 600	5	3RT1975-5AT31	5	3RT1975-5AT32

Solid-state operating mechanism for AC/DC with 24 V DC control signal input e.g. for control by PLC

 3RT1975-5N.31	S10	3RT126	21 ... 27.3	5	3RT1966-5NB31	---	---
			96 ... 127	5	3RT1966-5NF31	---	---
			200 ... 277	5	3RT1966-5NP31	---	---
	S12	3RT127	21 ... 27.3	5	3RT1975-5NB31	5	3RT1975-5NB32
			96 ... 127	5	3RT1975-5NF31	5	3RT1975-5NF32
			200 ... 277	5	3RT1975-5NP31	5	3RT1975-5NP32

For contactors		Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type		d					

Solenoid coils

 3TY76.3-0...	14	3TF68 3TF69	AC operation¹⁾		3TY7683-0C.. 3TY7693-0C..		
			The solenoid coils are fitted as standard with varistors against overvoltage; the coil is supplied with switch-on electronics.				
	14	3TF68 3TF69	DC operation¹⁾ · DC economy circuit		3TY7683-0D.. 3TY7693-0D..		
			The solenoid coils are supplied without reversing contactor.				

Vacuum interrupters

S10	3RT1264 3RT1265 3RT1266	Set with 3 vacuum interrupters with fixing parts	5	3RT1964-6V	1	1 unit	41B
			5	3RT1965-6V	1	1 unit	41B
			5	3RT1966-6V	1	1 unit	41B
S12	3RT1275 3RT1276		5	3RT1975-6V	1	1 unit	41B
			5	3RT1976-6V	1	1 unit	41B
14	3TF68 3TF69	Set with 3 vacuum interrupters with components	5	3TY7680-0B	1	1 unit	41B
			15	3TY7690-0B	1	1 unit	41B

Note:


In order to ensure reliable operation of the contactors, only **original replacement interrupters** should be used.

¹⁾ Rated control supply voltages for solenoid coils:
 The 10th and 11th digits of the article number must be supplemented accordingly, see the tables on pages 3/136 and 3/137.

Power Contactors for Switching Motors

Accessories and Spare Parts for SIRIUS 3RT12 and 3TF6 Vacuum Contactors

Spare parts

For contactors		Version	Rated control supply voltage U_s	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	
Size	Type		V AC	d	Article No.	Price per PU			
Solenoid coils for main contactor									
14	3TF68...-Q	With rectifier bridge	110 ... 120	20	3TY7683-0QG7		1	1 unit	41B
			220 ... 240	X	3TY7683-0QL7		1	1 unit	41B
			380 ... 420	X	3TY7683-0QV7		1	1 unit	41B
14	3TF69...-Q	With rectifier bridge	110 ... 120	20	3TY7693-0QG7		1	1 unit	41B
			220 ... 240	20	3TY7693-0QL7		1	1 unit	41B
			380 ... 420	X	3TY7693-0QV7		1	1 unit	41B
3TC44 reversing contactors									
14	3TF68...-Q, 3TF69...-Q	Complete with series resistor, 1 m connecting cable and plug-in connector	110 ... 120	20	3TY7684-0QG7		1	1 unit	41B
			220 ... 240	20	3TY7684-0QL7		1	1 unit	41B
			380 ... 420	X	3TY7684-0QV7		1	1 unit	41B

Power Contactors for Switching Motors

3TF2 miniature contactors, 3-pole

Overview

Standards

IEC/EN 60947-1,
IEC/EN 60947-4-1,
IEC/EN 60947-5-1 (auxiliary switches)

The 3TF2 miniature contactors are climate-proof, and the versions with screw terminals are finger-safe according to IEC 60529.

Connection methods

The miniature contactors are available in versions with screw terminals, 6.3 mm plug-in terminals and solder pin connections for soldering in printed circuit boards.

Ratings of three-phase motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

The power rating specifications of the contactors in kW are guide values for 4-pole standard motors at 50 Hz AC and specified voltage (e.g. 400 V). The actual starting and rated data of the motor to be switched must be considered when selecting the units.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16142/td>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16142/faq>

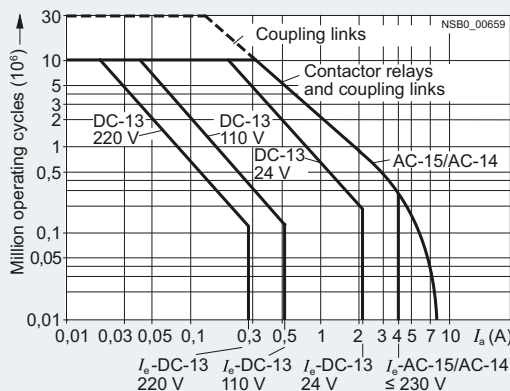
Type	3TF2
Size	00

Contact endurance of the auxiliary contacts

The contact endurance for utilization category AC-12 or AC-15/AC-14 depends mainly on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

Diagram legend:

I_a = Breaking current
 I_e = Rated operational current



Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching inductive AC loads (AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

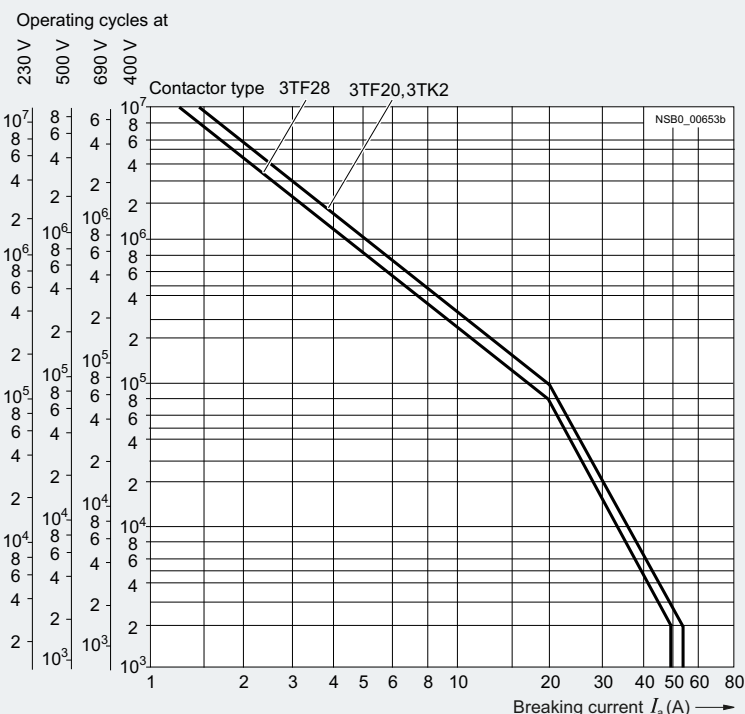
The rated operational current I_e in accordance with utilization category AC-4 (breaking 6 times the rated operational current) is determined for a contact endurance of approximately 200 000 operating cycles. If a shorter contact endurance is sufficient, the rated operational current $I_e/AC-4$ can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking the rated operational current several times according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

$$X = \frac{A}{1 + \frac{C}{100} \left(\frac{A}{B} - 1 \right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching ($I_a = \text{multiple of } I_e$) in operating cycles
- C Inching operations as a percentage of total switching operations



Type	3TF20, 3TF28		3TF22, 3TF29	
Size	00			
General data				
Dimensions (W x H x D)				
<ul style="list-style-type: none"> Basic unit Basic unit with mounted auxiliary switch block Basic unit with 3TX4490 surge suppressor 		mm	45 x 48 x 63	--
		mm	45 x 48 x 91	
		mm	45 x 48 x 88	45 x 48 x 116
Permissible mounting position				
Any				
Mechanical endurance				
<ul style="list-style-type: none"> AC operation DC operation Auxiliary switch block 	Operating cycles		10 million 30 million 10 million	
Rated insulation voltage U_i (Pollution degree 3)				
<ul style="list-style-type: none"> Screw terminals Flat connectors 6.3 mm x 0.8 mm Solder pin connections 	V		690 500 500	690 (auxiliary contacts 500 V) -- --
Rated impulse withstand voltage U_{imp} (Pollution degree 3)				
<ul style="list-style-type: none"> Screw terminals Flat connectors 6.3 mm x 0.8 mm Solder pin connections 	kV		6 (control circuit max. 4 kV) 6 6	-- -- --
Protective separation between coil and main contacts (according to IEC 60947-1, Appendix N)				
		V	Up to 300	
Mirror contacts				
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			Yes, this applies to both the basic unit as well as to between the basic unit and the mounted auxiliary switch block according to IEC 60947-4-1, Appendix F	Yes, acc. to IEC 60947-4-1, Appendix F and SUVA
Permissible ambient temperature¹⁾				
<ul style="list-style-type: none"> During operation During storage 	°C		-25 ... +55 -55 ... +80	
Degree of protection acc. to IEC 60529				
<ul style="list-style-type: none"> On front Connecting terminal 			IP20 (with screw terminals) IP20 (with screw terminals)	
Touch protection acc. to IEC 60529				
Finger-safe (for screw terminals)				
Shock resistance				
<ul style="list-style-type: none"> Without 3TX44 auxiliary switch block - Rectangular pulse - Sine pulse 	AC operation DC operation	<i>g/ms</i>	8.3/5 and 5.2/10 11.3/5 and 9.2/10	-- -- --
	AC operation DC operation	<i>g/ms</i>	13/5 and 8/10 17.4/5 and 12.9/10	-- --
<ul style="list-style-type: none"> With 3TX44 auxiliary switch block - Rectangular pulse - Sine pulse 	AC operation DC operation	<i>g/ms</i>	5/5 and 3.6/10 9/5 and 6.9/10	9/5 and 7.3/10
	AC operation DC operation	<i>g/ms</i>	7.8/5 and 5.6/10 13.9/5 and 10.1/10	14/5 and 11/10
Short-circuit protection				
Main circuit²⁾				
<ul style="list-style-type: none"> Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1 - Type of coordination "1" - Type of coordination "2"³⁾ - Weld-free Miniature circuit breaker with C characteristic 				
	A		25 10 10 10	
Auxiliary circuit				
Short-circuit test				
<ul style="list-style-type: none"> With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1 	A		6	

¹⁾ Applies to 50/60 Hz coil:
At 50 Hz, $1.1 \times U_s$, with side-by-side mounting and 100 % ON period the max. ambient temperature is +40 °C.

²⁾ According to excerpt from IEC 60947-4-1
Type of coordination "1":
Destruction of the contactor and the overload relay is permissible. The contactor and/or overload relay can be replaced if necessary.
Type of coordination "2":
The overload relay must not suffer any damage. Contact welding on the contactor is permissible, however, if the contacts can be easily separated.

³⁾ A short-circuit current of $I_q \leq 6$ kA applies to type of coordination "2".

Power Contactors for Switching Motors

3TF2 miniature contactors, 3-pole

Type	3TF2		
Size	00		
Control			
Solenoid coil operating range¹⁾		0.8 ... 1.1 x U_s	
Solenoid coil power consumption (for cold coil and 1.0 x U_s)			
<u>Standard version</u>			
• AC operation, 50 Hz	Closing	VA	15
	P.f.		0.41
	Closed	VA	6.8
• AC operation, 60 Hz	Closing	VA	14.4
	P.f.		0.36
	Closed	VA	6.1
• AC operation, 50/60 Hz ¹⁾	Closing	VA	16.5/13.2
	P.f.		0.43/0.38
	Closed	VA	8.0/5.4
<u>For USA and Canada</u>	Closing	VA	14.6
	P.f.		0.38
	Closed	VA	6.5
• AC operation, 60 Hz	Closing	VA	14.4
	P.f.		0.30
	Closed	VA	6.0
• DC operation	Closing = Closed	W	3
	P.f.		0.44
Permissible residual current of the electronic circuit²⁾ (with 0 signal)			
• AC operation		mA	$\leq 3 \times (230 \text{ V}/U_s)$
• DC operation		mA	$\leq 1 \times (230 \text{ V}/U_s)$
Operating times for 0.8 ... 1.1 x U_s³⁾ Total break time = Opening delay and arcing time			
Values apply with coil in cold state and at operating temperature for operating range			
• AC operation	Closing delay	ms	5 ... 19
	Opening delay	ms	2 ... 22
	Dead interval		To use the 3TF2 AC-operated contactor in reversing an additional dead interval of 50 ms is required along with an NC contact interlock.
• DC operation	Closing delay	ms	16 ... 65
	Opening delay	ms	2 ... 5
• Arcing time		ms	10 ... 15
Operating times for 1.0 x U_s³⁾			
• AC operation	Closing delay	ms	5 ... 18
	Opening delay	ms	3 ... 21
	Dead interval		To use the 3TF2 AC-operated contactor in reversing an additional dead interval of 50 ms is required along with an NC contact interlock.
• DC operation	Closing delay	ms	19 ... 31
	Opening delay	ms	3 ... 4
• Arcing time		ms	10 ... 15

¹⁾ Applies to 50/60 Hz coil:
At 50 Hz, 1.1 x U_s , with side-by-side mounting and 100% ON period the max. ambient temperature is +40 °C.

²⁾ The 3TX4490-1J additional load module is recommended for higher residual currents, see page 3/151.

³⁾ The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

Type			3TF28, 3TF29	3TF20...-0..., 3TF22...-0...	3TF20...-3..., 3TF20...-6..., 3TF20...-7...
Size			00		
Rated data of the main contacts					
Load rating with AC					
Utilization category AC-1, switching resistive loads					
• Rated operational current I_e (at 40 °C)	Up to 400/380 V	A	18		
	690/660 V	A	18		--
• Rated operational current I_e (at 55 °C)	400/380 V	A	16		
	690/660 V	A	16		--
• Rated power of AC loads P.f. = 1	At 230/220 V	kW	6.0		
	400/380 V	kW	10		
	500 V	kW	13		
	690/660 V	kW	17		--
• Minimum conductor cross-section for loads with I_e		mm ²	2.5		
Utilization categories AC-2 and AC-3					
• Rated operational current I_e	Up to 220 V	A	5.1	9.0	
	230 V	A	5.1	9.0	
	380 V	A	5.1	9.0	
	400 V	A	5.1	8.4	
	500 V	A	4.8	6.5	
	660 V	A	4.8	5.2	--
	690 V	A	4.8	5.2	--
• Rated power for motors with slipping or squirrel cage at 50 Hz and 60 Hz and	At 110 V	kW	0.7	1.2	
	115 V	kW	0.7	1.2	
	120 V	kW	0.7	1.3	
	127 V	kW	0.8	1.4	
	200 V	kW	1.2	2.2	
	220 V	kW	1.3	2.4	
	230 V	kW	1.4	2.5	
	240 V	kW	1.5	2.6	
	380 V	kW	2.2	4.0	
	400 V	kW	2.2	4.0	
	415 V	kW	2.5	4.0	
	440 V	kW	2.5	4.0	
	460 V	kW	2.7	4.0	
	500 V	kW	2.9	4.0	
	575 V	kW	3.2	4.0	--
	660 V	kW	3.8	4.0	--
	690 V	kW	4.0		
Utilization category AC-4					
(Contact endurance approx. 200 000 operating cycles at $I_a = 6 \times I_e$)					
• Rated operational current I_e (max. permissible operational current $I_e/AC-4 \cong I_e/AC-3$ up to 500 V, for reduced contact endurance and reduced switching frequency)	Up to 400 V	A	1.9	2.6	
	690 V	A	1.4	1.8	--
• Rated power for motors with squirrel cage at 50 Hz and 60 Hz and	At 110 V	kW	0.23	0.32	
	115 V	kW	0.24	0.33	
	120 V	kW	0.26	0.35	
	127 V	kW	0.27	0.37	
	200 V	kW	0.42	0.58	
	220 V	kW	0.47	0.64	
	230 V	kW	0.49	0.67	
	240 V	kW	0.51	0.70	
	380 V	kW	0.81	1.10	
	400 V	kW	0.85	1.15	
	415 V	kW	0.93	1.20	
	440 V	kW	1.0	1.27	
	460 V	kW	1.0	1.33	
	500 V	kW	1.1	1.45	
	575 V	kW	1.0	1.30	--
	660 V	kW	0.86	1.10	--
	690 V	kW	0.89	1.15	--
Thermal load capacity	10 s current	A	70		
Power loss per conducting path	At $I_e/AC-3$	W	0.3		

Power Contactors for Switching Motors

3TF2 miniature contactors, 3-pole

Type			3TF28, 3TF29	3TF20, 3TF22
Size			00	
Rated data of the main contacts (continued)				
Load rating with DC				
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)				
• Rated operational currents I_e (at 55 °C)				
- 1 conducting path	Up to 24 V	A	10	16
	60 V	A	4	6
	110 V	A	1.5	2
	220/240 V	A	0.6	1
- 2 conducting paths in series	Up to 24 V	A	10	16
	60 V	A	10	16
	110 V	A	4	6
	220/240 V	A	1.5	2
- 3 conducting paths in series	Up to 24 V	A	10	16
	60 V	A	10	16
	110 V	A	10	16
	220/240 V	A	4	6
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)				
• Rated operational currents I_e (at 55 °C)				
- 1 conducting path	Up to 24 V	A	4	6
	60 V	A	1.8	3
	110 V	A	0.3	0.5
	220/240 V	A	--	0.1
- 2 conducting paths in series	Up to 24 V	A	6	10
	60 V	A	3	5
	110 V	A	1.5	2
	220/240 V	A	0.3	0.5
- 3 conducting paths in series	Up to 24 V	A	10	16
	60 V	A	10	16
	110 V	A	10	16
	220/240 V	A	1.5	2
Switching frequency				
Switching frequency z in operating cycles/hour				
• Contactors without overload relays for rated operation	No-load switching frequency	1/h	10 000	
Dependence of the switching frequency z' on the operational current I' and operational voltage U': $z' = z \cdot (I_e/I) \cdot (U_e/U)^{1.5}$	AC-1	1/h	1 000	
	AC-2	1/h	500	
	AC-3	1/h	1 000	
• Contactors with overload relays (mean value)		1/h	15	
Conductor cross-sections				
Main and auxiliary conductors (1 or 2 conductors connectable)				
• Solid		mm ²	2 x (0.5 ... 2.5), 1 x 4	
• Finely stranded with end sleeve		mm ²	2 x (0.5 ... 1.5), 1 x 2.5	
• AWG cables, solid or stranded		AWG	2 x (20 ... 14), 1 x 12	
• Pin-end connector (DIN 46231)		mm ²	1 x 1 ... 2.5	
• Terminal screw			M3	
• Prescribed tightening torque for terminal screws		Nm lb.in	0.8 ... 1.3 7 ... 11	
Main and auxiliary conductors (1 or 2 conductors connectable)				
• When using a plug-in sleeve 6.3–2.1		mm ²	0.5 ... 1	
• Solid with 6.3–2.5		mm ²	1 ... 2.5	
Screw terminals				
Flat connectors				
• Solder pin cross-section	(does not apply to plug-in bases)	mm ²	0.8 x 1.2	
• Solder pin cross-section, plug-in base		mm ²	0.32 x 1.0	

Type	3TF2		
Size	00		
Rated data of the auxiliary contacts according to IEC 60947-5-1			
General data			
Rated insulation voltage U_i (Pollution degree 3)	V	690	
Conventional thermal current I_{th} = Rated operational current $I_e/AC-12$	A	10	
Load rating with AC			
Rated operational current $I_e/AC-15/AC-14$			
• For rated operational voltage U_e	24 V	A	4
	110 V	A	4
	125 V	A	4
	220 V	A	4
	230 V	A	4
	380 V	A	3
	400 V	A	3
	500 V	A	2
	660 V	A	1
	690 V	A	1
Load rating with DC			
Rated operational current $I_e/DC-12$			
• For rated operational voltage U_e	24 V	A	4
	48 V	A	2.2
	110 V	A	1.1
	125 V	A	1.1
	220 V	A	0.5
	440 V	A	--
	600 V	A	--
Rated operational current $I_e/DC-13$			
• For rated operational voltage U_e	24 V	A	2.1
	48 V	A	1.1
	110 V	A	0.52
	125 V	A	0.52
	220 V	A	0.27
	440 V	A	--
	600 V	A	--

Type	3TF20..-7...		3TF20..-3..., 3TF20..-6..., 3TF20..-7...
Size	00		
Ⓢ and Ⓣ rated data			
Rated insulation voltage U_i	V AC	600	300
Uninterrupted current	Open and enclosed	A	16 (10 for solder pin connection)
Maximum horsepower ratings (Ⓢ and Ⓣ approved values)			
• Rated power for three-phase motors at 60 Hz			
- Single-phase	At 115 V	hp	0.5
	200 V	hp	1
	230 V	hp	1.5
	460/575 V	hp	--
			1
- Three-phase	At 115 V	hp	--
	200 V	hp	3 (1 for 3TF20..-6)
	230 V	hp	3 (1 for 3TF20..-6)
	460/575 V	hp	5
			--
Ⓢ, Ⓣ and Ⓜ rated data of the auxiliary contacts			
Rated voltage, max.	V AC	600	
Auxiliary switch blocks, max.	V AC	300	
Switching capacity	A 600, Q 300		
Uninterrupted current at 240 V AC	A	10	


Power Contactors for Switching Motors

3TF2 miniature contactors, 3-pole





Selection and ordering data

AC operation or DC operation

- Size 00
- AC-1: Operational current $I_e = 16$ A (at 55 °C)
- For screw fixing and snap-on mounting onto TH 35 standard mounting rail
- Screw terminals

Rated data					Auxiliary contacts		SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
Utilization categories AC-2 and AC-3					Ident. No.	Version	Article No.				
Operational current I_e	Ratings of three-phase motors at 50 Hz and				NO	NC	d				
	At 380 V	230 V	400/380 V	500 V							
A	kW	kW	kW	kW							

Miniature contactors with screw terminals

AC operation, rated control supply voltage $U_s = 50$ Hz 230/220 V AC ¹⁾													
	5.1	1.4	2.2	2.9	4	10	1	--	20	3TF2810-0AP0	1	1 unit	41B
						01	--	1	20	3TF2801-0AP0	1	1 unit	41B
	9	2.5	4	4	4	10	1	--	▶	3TF2010-0AP0	1	1 unit	41B
						01	--	1	2	3TF2001-0AP0	1	1 unit	41B
With permanently mounted auxiliary switch blocks													
	5.1	1.4	2.2	2.9	4	11	1	1	20	3TF2911-0AP0	1	1 unit	41B
						22	2	2	20	3TF2922-0AP0	1	1 unit	41B
	9	2.5	4	4	4	11	1	1	20	3TF2211-0AP0	1	1 unit	41B
						22	2	2	2	3TF2222-0AP0	1	1 unit	41B
DC operation, rated control supply voltage $U_s = 24$ V DC													
	5.1	1.4	2.2	2.9	4	10	1	--	5	3TF2810-0BB4	1	1 unit	41B
						01	--	1	5	3TF2801-0BB4	1	1 unit	41B
	9	2.5	4	4	4	10	1	--	▶	3TF2010-0BB4	1	1 unit	41B
						01	--	1	▶	3TF2001-0BB4	1	1 unit	41B
With permanently mounted auxiliary switch blocks													
	5.1	1.4	2.2	2.9	4	11	1	1	20	3TF2911-0BB4	1	1 unit	41B
						22	2	2	20	3TF2922-0BB4	1	1 unit	41B
	9	2.5	4	4	4	11	1	1	20	3TF2211-0BB4	1	1 unit	41B
						22	2	2	2	3TF2222-0BB4	1	1 unit	41B

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

For further rated control supply voltages, see page 3/149.

Accessories, see pages 3/150 and 3/151.

AC operation  or **DC operation** 

- Size 00
- AC-1: Operational current $I_e = 16$ A (at 55 °C)
- For screw fixing and snap-on mounting onto TH 35 standard mounting rail or screw fixing (diagonal)
- Flat connectors or solder pin connection

Rated data Utilization categories AC-2 and AC-3					Auxiliary contacts		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current I_e At 380 V	Ratings of three-phase motors at 50 Hz and				Ident. No.	Version	d					
	230 V	400/380 V	500 V	690 V				NO	NC			
A	kW	kW	kW	kW								

Miniature contactors with 6.3 mm x 0.8 mm flat connectors**Flat connectors** 

3TF20..-3...

AC operation, rated control supply voltage $U_s = 50$ Hz 230/220 V AC¹⁾

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

9	2.5	4	4	--	10	1	--	20	3TF2010-3AP0 3TF2001-3AP0	1	1 unit	41B
					01	--	1	15		1	1 unit	41B
9	2.5	4	4	--	10	1	--	20	3TF2010-7AP0 3TF2001-7AP0	1	1 unit	41B
					01	--	1	20		1	1 unit	41B

DC operation, rated control supply voltage $U_s = 24$ V DC

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

9	2.5	4	4	--	10	1	--	20	3TF2010-3BB4 3TF2001-3BB4	1	1 unit	41B
					01	--	1	20		1	1 unit	41B
9	2.5	4	4	--	10	1	--	20	3TF2010-7BB4 3TF2001-7BB4	1	1 unit	41B
					01	--	1	20		1	1 unit	41B



3TF20..-7...

Miniature contactors with solder pin connections for printed circuit boards**Solder pin connections** 

3TF20..-6...

AC operation, rated control supply voltage $U_s = 50$ Hz 230/220 V AC¹⁾

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

9	2.5	4	4	--	10	1	--	5	3TF2010-6AP0 3TF2001-6AP0	1	1 unit	41B
					01	--	1	20		1	1 unit	41B

DC operation, rated control supply voltage $U_s = 24$ V DC

For screw fixing (diagonal)

9	2.5	4	4	--	10	1	--	5	3TF2010-6BB4 3TF2001-6BB4	1	1 unit	41B
					01	--	1	▶		1	1 unit	41B

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

Accessories, see pages 3/150 and 3/151.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type 3TF20, 3TF28		Size 00
AC operation			
Solenoid coils for AC 50 Hz and 60 Hz			
50 Hz	60 Hz		
24 V AC	29 V AC		B0
110 V AC	132 V AC		F0
230/220 V AC	276 V AC		P0 ¹⁾
Solenoid coils for AC 50/60 Hz			
230 V AC			L2
DC operation			
24 V DC			B4

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

Other voltages and delivery times on request.

Rated control supply voltage U_s	Contactor type 3TF22, 3TF29		Size 00
AC operation			
Solenoid coils for AC 50 Hz and 60 Hz			
50 Hz	60 Hz		
230/220 V AC	276 V AC		P0 ¹⁾
DC operation			
24 V DC			B4


¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

Other voltages and delivery times on request.

Power Contactors for Switching Motors

Accessories for 3TF2 miniature contactors

Selection and ordering data

Rated operational current I_e /AC-15/AC-14 at			Auxiliary contacts			SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
230/ 220 V	400/ 380 V	500 V	Ident. No.	Version	Connections		Article No.	Price per PU			
A	A	A			 NO NC NO NC	d					





Snap-on auxiliary switch blocks for 3TF2 miniature contactor relays











3TX44...-A

For expansion to 2, 4 or 5 auxiliary contacts according to EN 50012

only for 3TF2.10, Ident. No. 10 (with auxiliary contact 1 NO)

4	3	2	Ident. No.	Version	Connections	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			11	-- 1 -- --		20	3TX4401-1A		1	1 unit	41A
			22	1 2 -- --		2	3TX4412-1A		1	1 unit	41A
			23	1 3 -- --		5	3TX4413-1A		1	1 unit	41A
			32	2 2 -- --		2	3TX4422-1A		1	1 unit	41A

For expansion to 3 or 5 auxiliary contacts according to EN 50005

4	3	2	Ident. No.	Version	Connections	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			20	2 -- -- --	 53 63 54 64	2	3TX4420-2A		1	1 unit	41A
			11	1 1 -- --	 53 61 54 62	2	3TX4411-2A		1	1 unit	41A
			02	-- 2 -- --	 51 61 52 62	20	3TX4402-2A		1	1 unit	41A
			11; U	-- -- 1 1	 57 65 58 66	20	3TX4411-2G		1	1 unit	41A
			40	4 -- -- --	 53 63 73 83 54 64 74 84	2	3TX4440-2A		1	1 unit	41A
			31	3 1 -- --	 53 61 73 83 54 62 74 84	2	3TX4431-2A		1	1 unit	41A
			22	2 2 -- --	 53 61 71 83 54 62 72 84	▶	3TX4422-2A		1	1 unit	41A
			22; 2 U	-- -- 2 2	 57 67 75 85 58 68 76 86	2	3TX4422-2G		1	1 unit	41A

Accessories for 3TF2 miniature contactors

For contactors Type	Rated control supply voltage U_s		Power consumption of LED at U_s mW	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V AC	V DC							
Surge suppressors¹⁾ For plugging onto 3TF2 miniature contactors with and without auxiliary switch blocks									
Version without LED									
RC elements									
3TF2...-0...	24 ... 48	24 ... 70	--	5	3TX4490-3R		1	1 unit	41B
3TF2...-1...	48 ... 127	70 ... 150	--	5	3TX4490-3S		1	1 unit	41B
	127 ... 240	150 ... 250	--	5	3TX4490-3T		1	1 unit	41B
	240 ... 400	--	--	5	3TX4490-3U		1	1 unit	41B
	400 ... 600	--	--	5	3TX4490-3V		1	1 unit	41B
Varistors									
3TF2...-0...	≤ 48	24 ... 70	--	▶ 5	3TX4490-3G		1	1 unit	41B
3TF2...-1...	48 ... 127	70 ... 150	--	5	3TX4490-3H		1	1 unit	41B
	127 ... 240	150 ... 250	--	5	3TX4490-3J		1	1 unit	41B
	240 ... 400	--	--	5	3TX4490-3K		1	10 units	41B
	400 ... 600	--	--	5	3TX4490-3L		1	10 units	41B
Noise suppression diodes									
3TF2...-0...	--	12 ... 250	--	▶ 5	3TX4490-3A		1	1 unit	41B
3TF2...-1...	--	12 ... 250	--	▶ 5	3TX4490-3A		1	1 unit	41B
Diode assemblies (diode and Zener diode) For DC operation and short break times									
3TF2...-0...	--	24 ... 250	--	5	3TX4490-3B		1	1 unit	41B
3TF2...-1...	--	24 ... 250	--	5	3TX4490-3B		1	1 unit	41B
Version with LED									
Varistors									
3TF2...-0...	24 ... 48	12 ... 24	10 ... 120	5	3TX4490-4G		1	1 unit	41B
3TF2...-1...	48 ... 127	24 ... 70	20 ... 470	5	3TX4490-4H		1	1 unit	41B
	127 ... 240	70 ... 150	50 ... 700	5	3TX4490-4J		1	1 unit	41B
	--	150 ... 250	160 ... 950	20	3TX4490-4K		1	1 unit	41B
Noise suppression diodes									
3TF2...-0...	--	24 ... 70	20 ... 470	5	3TX4490-4A		1	1 unit	41B
3TF2...-1...	--	70 ... 150	50 ... 700	5	3TX4490-4B		1	1 unit	41B
	--	150 ... 250	160 ... 950	5	3TX4490-4C		1	1 unit	41B
Additional load modules For plugging onto 3TF2 miniature contactors with and without auxiliary switch blocks									
To increase the permissible residual current and limit the residual voltage, identical dimensions to 3TX4490-3 surge suppressor.									
3TF2...-0A...	230/220, 50 Hz	--	--	20	3TX4490-1J		1	1 unit	41B
3TF2...-1A...	230, 60 Hz	--	--	20	3TX4490-1J		1	1 unit	41B
	230, 50/60 Hz	--	--	20	3TX4490-1J		1	1 unit	41B
	Operating range 0.8 ... 1.1 x U_s								
Plug-in bases with solder pin connections for printed circuit boards, 45 mm									
Rated insulation voltage U_i : 400 V (for pollution degree 3); rated impulse withstand voltage U_{imp} : 6 kV; rated operational current I_e : 6 A; Ⓢ and Ⓜ rated data: max. 300 V, 6 A									
3TF20...-3...	For contactors with flat con-			--					
3TF20...-7...	nectors, 6.3 mm x 0.8 mm			--					
3TK20...-3...				20	3TX4491-2A		1	5 units	41A
3TK20...-7...				20	3TX4491-2A		1	5 units	41A
Release tools									
For releasing miniature contactors from 3TX4491-2A plug-in bases									
3TF2...-7...	--	--	--	20	3TX4491-2K		1	1 unit	41A
3TK2...-7...	--	--	--	20	3TX4491-2K		1	1 unit	41A

¹⁾ The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

Power Contactors for Switching Motors

3TG10 power relays/miniature contactors

Overview

Standards

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1

Version

The 3TG10 power relays/miniature contactors are available with screw terminals or 6.3 mm × 0.8 mm flat connectors. The versions with screw terminals are suitable for use in any climate and finger-safe according to IEC 60529.

The 3TG10 miniature contactors are characterized by their width of just 36 mm.

Surge suppression

The 3TG10 power relays/miniature contactors have an integrated protective circuit against opening surges.

Application

Because they are hum-free they are suitable for use in household appliances and distribution boards in office and residential areas.

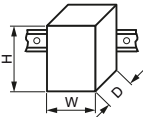
They can also be used for applications where there is little space such as air conditioners, heating systems, pumps and fans, i.e. for simple electrical controls.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16186/td>

Reference Manual "Switching Devices - Contactors and Contactor Assemblies", see <https://support.industry.siemens.com/cs/ww/en/view/35554359>
FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16186/faq>



Type	3TG10	
General data		
Dimensions (W x H x D)		mm 36 x 56 x 56
Endurance		
• Mechanical	Operating cycles	3 million
• Electrical		
- AC-1 at I_e	Operating cycles	0.1 million
- AC-3 at I_e	Operating cycles	0.4 million
Rated insulation voltage U_i (pollution degree 3)	V	400
Rated impulse withstand voltage U_{imp}	kV	4
Protective separation		
Between coil and contacts acc. to IEC 60947-1, Appendix N	V	Up to 300
Permissible ambient temperature		
• During operation ¹⁾	°C	-25 ... +55
• During storage	°C	-50 ... +80
Degree of protection acc. to IEC 60529		IP00
Touch protection acc. to IEC 60529		Finger-safe for vertical touching from the front (with screw terminals)
Short-circuit protection		
Fuse links , operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1		
• Type of coordination "1"	A	25
• Type of coordination "2"	A	10
Miniature circuit breakers , C characteristic	A	10
Control		
Solenoid coil operating range		0.85 ... 1.1 × U_g
Power consumption of the solenoid coils (for cold coil and 1.0 × U_g)		
• AC operation, 45 ... 450 Hz	VA	4.4
- P.f.		0.9 (hum-free)
• DC operation	W	4
Rated data of the main contacts		
Load rating with AC		
Utilization category AC-1, switching resistive loads		
• Rated operational current I_e up to 400 V at 55 °C ¹⁾	A	20 for screw terminals, 16 for flat connectors
• Rated power U_e for AC loads with p.f. = 1, 230/220 V		
- For screw terminals	kW	7.5 (13 at 400 V)
- For flat connectors	kW	6 (10 at 400 V)
• Minimum conductor cross-section for loads with I_e	mm ²	2.5

¹⁾ If the three main current paths carry a load of 20 A, the following applies if $I > 10$ A in the fourth current path: Permissible ambient temperature 40 °C.

Type	3TG10			
Rated data of the main contacts (continued)				
Load rating with AC				
Utilization categories AC-2 and AC-3				
• Operational current for AC-3 at $U_e \leq 400$ V rated value			A	8.4
• Rated power for slipping or squirrel-cage motors with 50 Hz and 60 Hz and at $U_e \leq 400$ V			kW	4
Utilization category AC-5a (permissible nominal impedance: $\geq 0.5 \Omega$)				
Switching of gas discharge lamps				
Per main current path at 230 V, 50 Hz				
Rated power/rated operational current per lamp				
• Uncompensated	18 W	0.37 A	Unit(s)	43
	36 W	0.43 A	Unit(s)	37
	58 W	0.67 A	Unit(s)	24
• DUO switching	18 W	2 x 0.11 A	Unit(s)	2 x 81
	36 W	2 x 0.21 A	Unit(s)	2 x 42
	58 W	2 x 0.32 A	Unit(s)	2 x 28
Switching gas discharge lamps with compensation or ECG				
Per main current path 230 V, 50 Hz				
Connection	Rated power per lamp	Capacitor capacitance	Rated operational current per lamp	
• Shunt compensation	L18 W	4.5 μ F	0.11 A	Unit(s) 15
	L36 W	4.5 μ F	0.21 A	Unit(s) 15
	L58 W	7 μ F	0.32 A	Unit(s) 10
• With ECG (single lamp)	L18 W	6.8 μ F	0.10 A	Unit(s) 39
	L36 W	6.8 μ F	0.18 A	Unit(s) 39
	L58 W	10 μ F	0.27 A	Unit(s) 26
• With ECG (two lamps)	L18 W	10 μ F	0.18 A	Unit(s) 2 x 26
	L36 W	10 μ F	0.35 A	Unit(s) 2 x 26
	L58 W	22 μ F	0.52 A	Unit(s) 2 x 12
Utilization category AC-5b, switching incandescent lamps			kW	1.6
Per main current path at 230 V, 50 Hz				
Load rating with DC				
Utilization category DC-1, switching resistive loads ($L/R \leq 15$ ms)				
• Rated operational currents I_e				
- 1 conducting path			Up to 24 V	A 16
			60 V	A 6
			110 V	A 2
			220 V/240 V	A 0.8
- 2 conducting paths in series			Up to 24 V	A 16
			60 V	A 16
			110 V	A 6
			220 V/240 V	A 1.6
- 3 conducting paths in series			Up to 24 V	A 18
			60 V	A 18
			110 V	A 16
			220 V/240 V	A 6
- 4 conducting paths in series			Up to 24 V	A 20
			60 V	A 20
			110 V	A 20
			220 V/240 V	A 20
Utilization category DC-3 and DC-5				
Shunt-wound and series-wound motors ($L/R \leq 15$ ms)				
• Rated operational currents I_e				
- 1 conducting path			Up to 24 V	A 10
			60 V	A 0.5
			110 V	A 0.15
			220 V/240 V	A 0
- 2 conducting paths in series			Up to 24 V	A 16
			60 V	A 5
			110 V	A 0.35
			220 V/240 V	A 0
- 3 conducting paths in series			Up to 24 V	A 16
			60 V	A 16
			110 V	A 10
			220 V/240 V	A 1.75
- 4 conducting paths in series			Up to 24 V	A 18
			60 V	A 16
			110 V	A 10
			220 V/240 V	A 2

Power Contactors for Switching Motors

3TG10 power relays/miniature contactors

Type	3TG10	
Conductor cross-sections		
<ul style="list-style-type: none"> Terminal screws Finely stranded with end sleeve (DIN 46228 Form A/D/C) Solid Permissible opening tool (screwdriver) 		 Screw terminals M3 2 x (0.75 ... 2.5) 2 x (1 ... 2.5), 1 x 4 3.0 mm x 0.5 mm (3RA2908-1A) or Pozidriv 2
<ul style="list-style-type: none"> Finely stranded 6.3 mm plug-in sleeve acc. to DIN 46245/DIN 46247 <ul style="list-style-type: none"> - 6.3 ... 1 - 6.3 ... 2.5 		 Flat connectors 0.5 ... 1 1 ... 2.5
Ⓢ and Ⓣ rating (screw terminals)		
Rated insulation voltage	V AC	600
Uninterrupted current Open and enclosed	A	20
Maximum horsepower ratings (from Ⓢ and Ⓣ approved values)		
<ul style="list-style-type: none"> Rated power for three-phase motors at 60 Hz 	At 115 V hp 200 V hp 230 V hp 460 ... 600 V hp	0.5/ -- 1/ 3 1.5/ 3 0/ 5

Selection and ordering data

AC operation  or DC operation 

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Rated data		Main contacts		Rated control supply voltage U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Utilization category	AC-1 Switching of resistive loads at 55 °C	AC-2 and AC-3		Version						
Operational current I_e up to 400 V	Power of AC loads at 50 Hz and 400 V	Operational current I_e up to 400 V ¹⁾	Power of AC loads at 50 Hz and 400 V	NO NC	V					
A	kW	A	kW							d

Hum-free · with screw terminals



3TG10..-0...

Screw terminals 

AC operation, 45 ... 450 Hz

20	13	8.4	4	4	--	24 AC	▶	3TG1010-0AC2	1	1 unit	41H
						110 AC	5	3TG1010-0AG2	1	1 unit	41H
						230 AC	▶	3TG1010-0AL2	1	1 unit	41H
				3	1	24 AC	▶	3TG1001-0AC2	1	1 unit	41H
						110 AC	5	3TG1001-0AG2	1	1 unit	41H
						230 AC	▶	3TG1001-0AL2	1	1 unit	41H

DC operation

20	13	8.4	4	4	--	24 DC	▶	3TG1010-0BB4	1	1 unit	41H
				3	1	24 DC	▶	3TG1001-0BB4	1	1 unit	41H

Hum-free · with 6.3 mm x 0.8 mm flat connectors



3TG10..-1...

Flat connectors 

AC operation, 45 ... 450 Hz


16	10	8.4	4	4	--	24 AC	5	3TG1010-1AC2	1	1 unit	41H
						110 AC	30	3TG1010-1AG2	1	1 unit	41H
						230 AC	5	3TG1010-1AL2	1	1 unit	41H
				3	1	24 AC	30	3TG1001-1AC2	1	1 unit	41H
						110 AC	30	3TG1001-1AG2	1	1 unit	41H
						230 AC	▶	3TG1001-1AL2	1	1 unit	41H

DC operation

16	10	8.4	4	4	--	24 DC	5	3TG1010-1BB4	1	1 unit	41H
		8.4	4	3	1	24 DC	5	3TG1001-1BB4	1	1 unit	41H

¹⁾ The rated operational currents apply to each pole.

Accessories

Version	Max. rated operational currents I_e /AC-1 (at 55 °C) of the contactors	Max. conductor cross-sections	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	A	mm ²	d	Article No.	Price per PU		

Links for paralleling (insulated star jumpers)¹⁾

3RT1916-4BB31

3-pole

• Without connection terminal (replacement for 3TX4490-2C)	16	--	▶	3RT1916-4BA31	1	1 unit	41B
• With connection terminal (replacement for 3TX4490-2A)	40	25	▶	3RT1916-4BB31	1	1 unit	41B

4-pole

• With connection terminal (replacement for 3TX4490-2B)	40	25	15	3RT1916-4BB41	1	1 unit	41B
---	----	----	----	----------------------	---	--------	-----

¹⁾ The links for paralleling can be reduced by one pole. The rated operational currents apply to each pole.

Reversing Contactor Assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Overview

More information

Homepage, see www.siemens.com/sirius

Industry Mall, see www.siemens.com/product?3RA23_3RT1

Conversion tool, e.g. from 3RT10 to 3RT20, see www.siemens.com/sirius/conversion-tool

TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/TSTWeb/?kmat=LoadFeeder>

The 3RA23 reversing contactor assemblies in sizes S00 to S3 can be ordered as follows:

- Fully wired and tested, with mechanical and electrical interlock, see from [page 3/163 onwards](#).
- For all individual parts for customer assembly, see from [page 3/76 onwards](#).

The 3RA23 reversing contactor assemblies have screw or spring-type terminals (main and control circuits) and are suitable for screw fixing and snap-on mounting onto TH 35 standard mounting rails.

Complete 3RA23 reversing contactor assemblies

The fully wired reversing contactor assemblies are suitable for use in any climate.

They are finger-safe according to IEC 60529.

The 3RA23 reversing contactor assemblies of size S00 to S3 each consist of two contactors with the same power, with one NC contact (S00) or one NO contact and one NC contact (S0 to S3) in the basic unit. The contactors are mechanically and electrically interlocked (NC contact interlock).



3RU2 overload relays (see from [page 7/92 onwards](#)) or 3RB3 overload relays (see from [page 7/105 onwards](#)) for contactor mounting or stand-alone installation, SIMOCODE pro 3UF7 motor management and control devices (from [page 10/16 onwards](#)) or 3RN thermistor motor protection relays ([page 10/161](#)) can be used for motor protection.

3RA23 reversing contactor assemblies with voltage tap-off

The reversing contactor assemblies with voltage tap-off (see [pages 3/163 to 3/166](#)) are required for mounting the function modules for connection to the controller via the IO-Link or AS-Interface communication systems. The 3RA27 function modules must be ordered separately, see [page 3/107](#).

For more information on IO-Link and AS-Interface, see "Industrial Communication", from [page 2/1 onwards](#).

Sizes S00 to S3

Rated data AC-2 and AC-3 for 50 Hz 400 V AC		Size	Type		
Rating kW	Operational current I_e A		Contactors (See from page 3/55 onwards)	Assembly kit (See page 3/110)	Fully-wired and tested reversing contactor assemblies
 Screw terminals					
3	7	S00	3RT2015-1...2	3RA2913-2AA1	3RA2315-8XB30-1...
4	9		3RT2016-1...2	3RA2913-2AA1	3RA2316-8XB30-1...
5.5	12		3RT2017-1...2	3RA2913-2AA1	3RA2317-8XB30-1...
7.5	16		3RT2018-1...2	3RA2913-2AA1	3RA2318-8XB30-1...
5.5	12	S0	3RT2024-1...0	3RA2923-2AA1	3RA2324-8XB30-1...
7.5	16		3RT2025-1...0	3RA2923-2AA1	3RA2325-8XB30-1...
11	25		3RT2026-1...0	3RA2923-2AA1	3RA2326-8XB30-1...
15	32		3RT2027-1...0	3RA2923-2AA1	3RA2327-8XB30-1...
18.5	38		3RT2028-1...0	3RA2923-2AA1	3RA2328-8XB30-1...
18.5	40	S2	3RT2035-1...0	3RA2933-2AA1	3RA2335-8XB30-1...
22	55		3RT2036-1...0	3RA2933-2AA1	3RA2336-8XB30-1...
30	65		3RT2037-1...0	3RA2933-2AA1	3RA2337-8XB30-1...
37	80		3RT2038-1...0	3RA2933-2AA1	3RA2338-8XB30-1...
37	80	S3	3RT2045-1...0	3RA2943-2AA1	3RA2345-8XB30-1...
45	90		3RT2046-1...0	3RA2943-2AA1	3RA2346-8XB30-1...
55	110		3RT2047-1...0	3RA2943-2AA1	3RA2347-8XB30-1...
 Spring-type terminals					
3	7	S00	3RT2015-2...2	3RA2913-2AA2	3RA2315-8XB30-2...
4	9		3RT2016-2...2	3RA2913-2AA2	3RA2316-8XB30-2...
5.5	12		3RT2017-2...2	3RA2913-2AA2	3RA2317-8XB30-2...
7.5	16		3RT2018-2...2	3RA2913-2AA2	3RA2318-8XB30-2...
5.5	12	S0	3RT2024-2...0	3RA2923-2AA2	3RA2324-8XB30-2...
7.5	16		3RT2025-2...0	3RA2923-2AA2	3RA2325-8XB30-2...
11	25		3RT2026-2...0	3RA2923-2AA2	3RA2326-8XB30-2...
15	32		3RT2027-2...0	3RA2923-2AA2	3RA2327-8XB30-2...
18.5	38		3RT2028-2...0	3RA2923-2AA2	3RA2328-8XB30-2...

Note:

The 3RA2934-2B mechanical interlock for sizes S2 and S3 must be ordered separately, [see page 3/114](#).

Article No. scheme

Product versions	Article number
SIRIUS reversing contactor assembly	3RA23 <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Size of the contactor	e.g. 4 = S3 <input type="checkbox"/>
Rating dependent on size	e.g. 5 = 37 kW for size S3 <input type="checkbox"/>
Type of overload relay	e.g. 8X = without <input type="checkbox"/>
Assembly	e.g. E = communication-capable installation <input type="checkbox"/>
Interlock	e.g. 3 = mechanical and electrical <input type="checkbox"/>
Free auxiliary switches	e.g. 0 = S3: 2 NO total <input type="checkbox"/>
Type of electrical connection	e.g. 1 = screw terminals (main and auxiliary circuits) <input type="checkbox"/>
Operating range/solenoid coil circuit	e.g. A = AC standard/without coil circuit <input type="checkbox"/>
Rated control supply voltage	e.g. L2 = 230 V AC, 50/60 Hz <input type="checkbox"/>
Example	3RA23 4 5 - 8 X E 3 0 - 1 A L 2

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

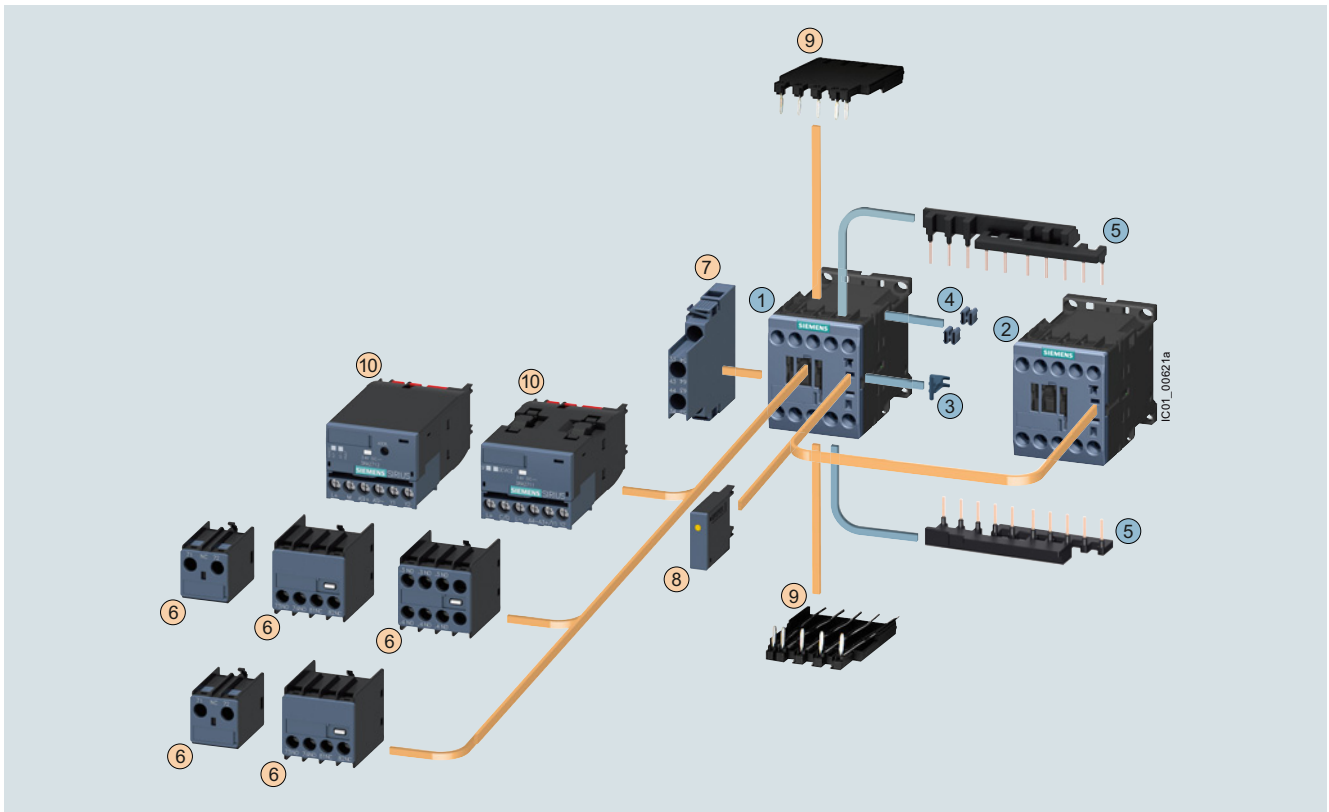
For your orders, please use the article numbers quoted in the selection and ordering data.

Reversing Contactor Assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Fully wired and tested reversing contactor assemblies · Size S00 · Up to 7.5 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Type	Page
⑥ Auxiliary switch block, front ¹⁾	3RH2911	3/94 ... 3/96
⑦ Auxiliary switch block, lateral	3RH2921	3/98
⑧ Surge suppressors	3RT2916	3/103, 3/104
⑨ Solder pin adapters	3RT1916-4KA1	3/117
⑩ Function module for connection to the control system	3RA271.-1BA00	3/107

Complete reversing contactor assembly

Individual parts	Type		Page
	Q11	Q12	
① ② Contactors, 3 kW	3RT2015	3RT2015	3/55, 3/62
① ② Contactors, 4 kW	3RT2016	3RT2016	3/55, 3/62
① ② Contactors, 5.5 kW	3RT2017	3RT2017	3/55, 3/62
① ② Contactors, 7.5 kW	3RT2018	3RT2018	3/55, 3/62
③ ... ⑤ Assembly kit comprising:	3RA2913-2AA1		3/110
③ Mechanical interlock ²⁾			
④ Two connecting clips for two contactors ²⁾			
⑤ Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included ³⁾ , interruptible (NC contact interlock)			

¹⁾ Auxiliary switch block according to EN 50005 must be used.

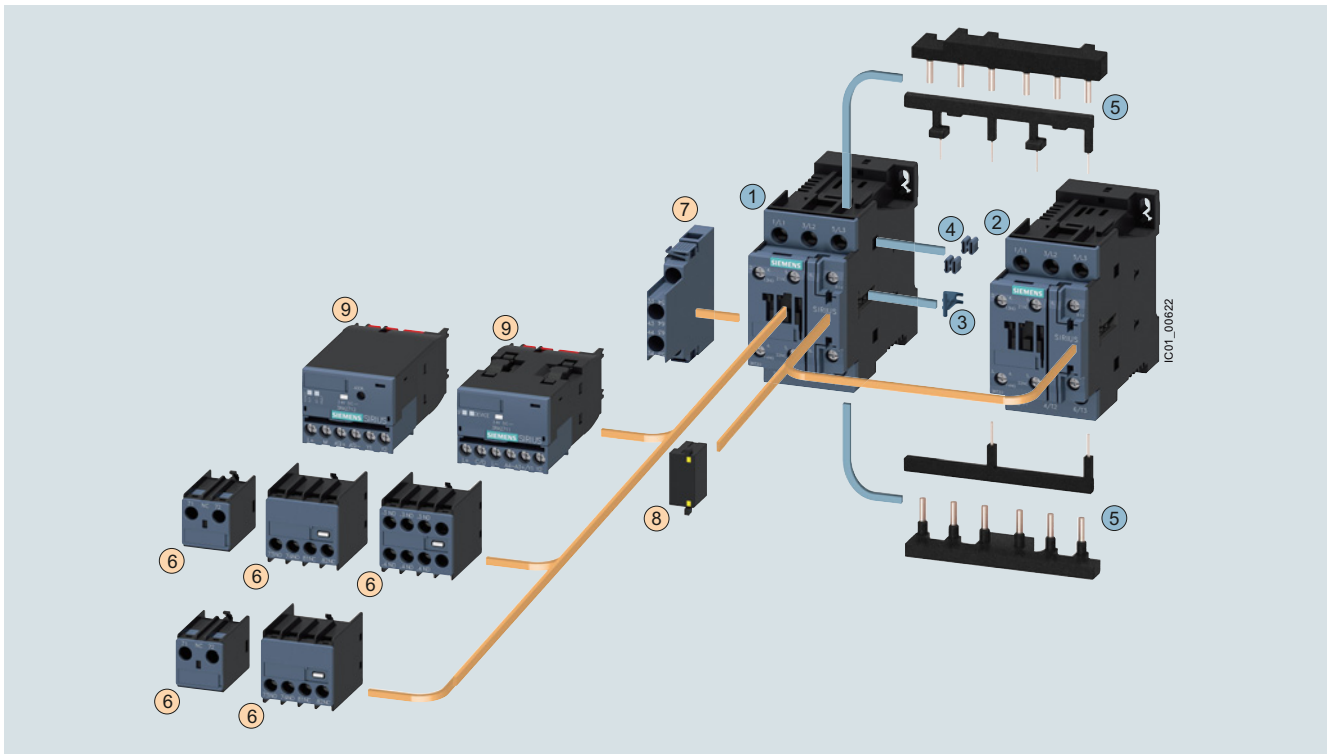
²⁾ The parts ③ and ④ can only be ordered together as 3RA2912-2H mechanical connectors.

³⁾ 3RT201. contactors with one NC contact in the basic unit are required for the electrical interlock. An additional NO contact is required for momentary-contact operation.

For complete reversing contactor assemblies, see page 3/163.

Fully wired and tested reversing contactor assemblies · Size S0 · Up to 18.5 kW

The figure shows the version with screw terminals

**Mountable accessories (optional)**

To be ordered separately	Type	Page
⑥ Auxiliary switch block, front	3RH2911	3/94 ... 3/96
⑦ Auxiliary switch block, lateral	3RH2921	3/98
⑧ Surge suppressors	3RT2926	3/103, 3/104
⑨ Function module for connection to the control system	3RA271.-1BA00	3/107

Complete reversing contactor assembly

Individual parts	Type		Page
	Q11	Q12	
① ② Contactors, 5.5 kW	3RT2024	3RT2024	3/56, 3/66
① ② Contactors, 7.5 kW	3RT2025	3RT2025	3/56, 3/66
① ② Contactors, 11 kW	3RT2026	3RT2026	3/56, 3/66
① ② Contactors, 15 kW	3RT2027	3RT2027	3/56, 3/66
① ② Contactors, 18.5 kW	3RT2028	3RT2028	3/56, 3/66
③ ... ⑤ Assembly kit comprising:	3RA2923-2AA1		3/110
	③ Mechanical interlock ¹⁾		
	④ Two connecting clips for two contactors ¹⁾		
	⑤ Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included (NC contact interlock)		

¹⁾ The parts ③ and ④ can only be ordered together as 3RA2922-2H mechanical connectors.

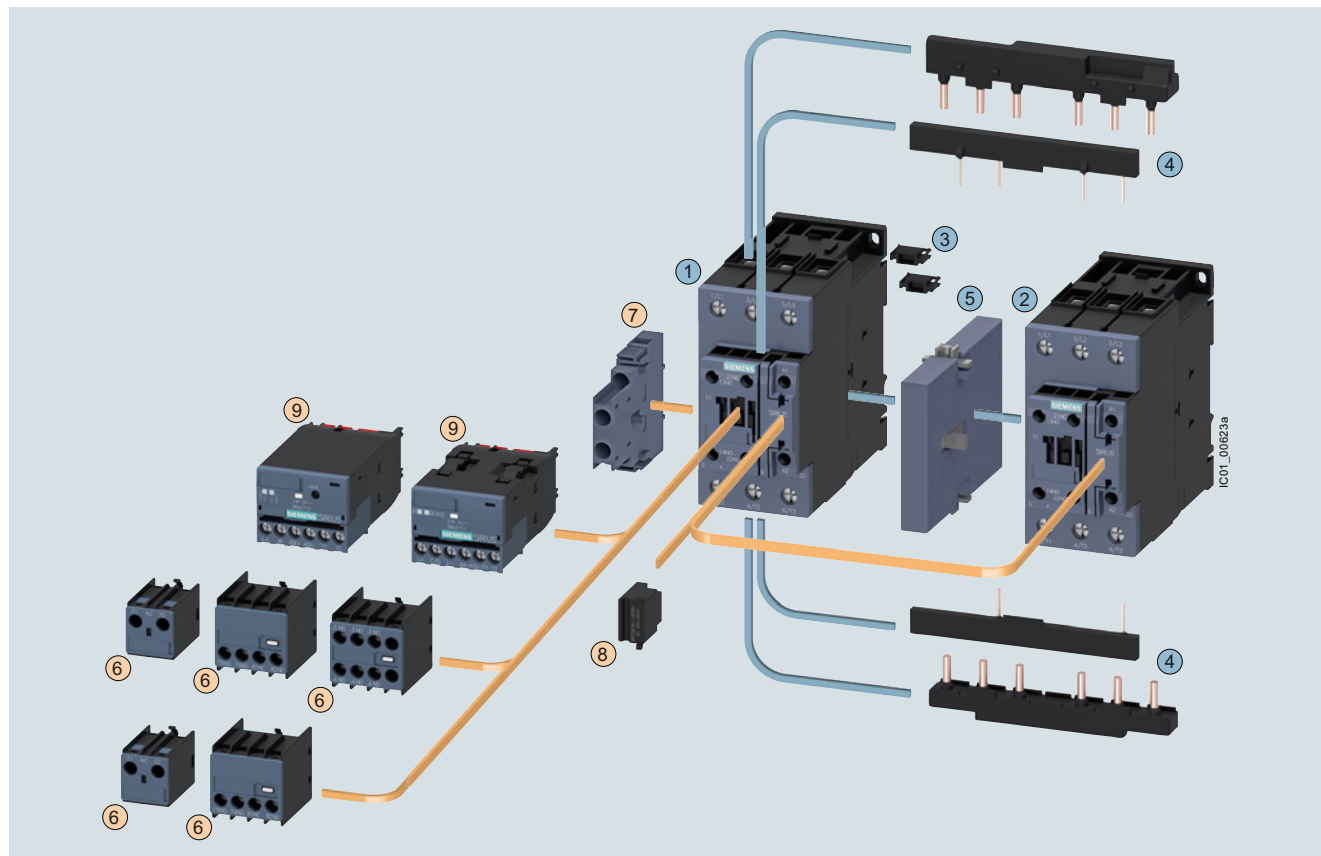
For complete reversing contactor assemblies, see page 3/164.

Reversing Contactor Assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Fully wired and tested reversing contactor assemblies · Size S2 · Up to 37 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Type	Page
⑥ Auxiliary switch block, front	3RH2911	3/94 ... 3/96
⑦ Auxiliary switch block, lateral	3RH2921	3/98
⑧ Surge suppressors	3RT2936	3/103, 3/104
⑨ Function module for connection to the control system	3RA271.-1BA00	3/107

Complete reversing contactor assembly

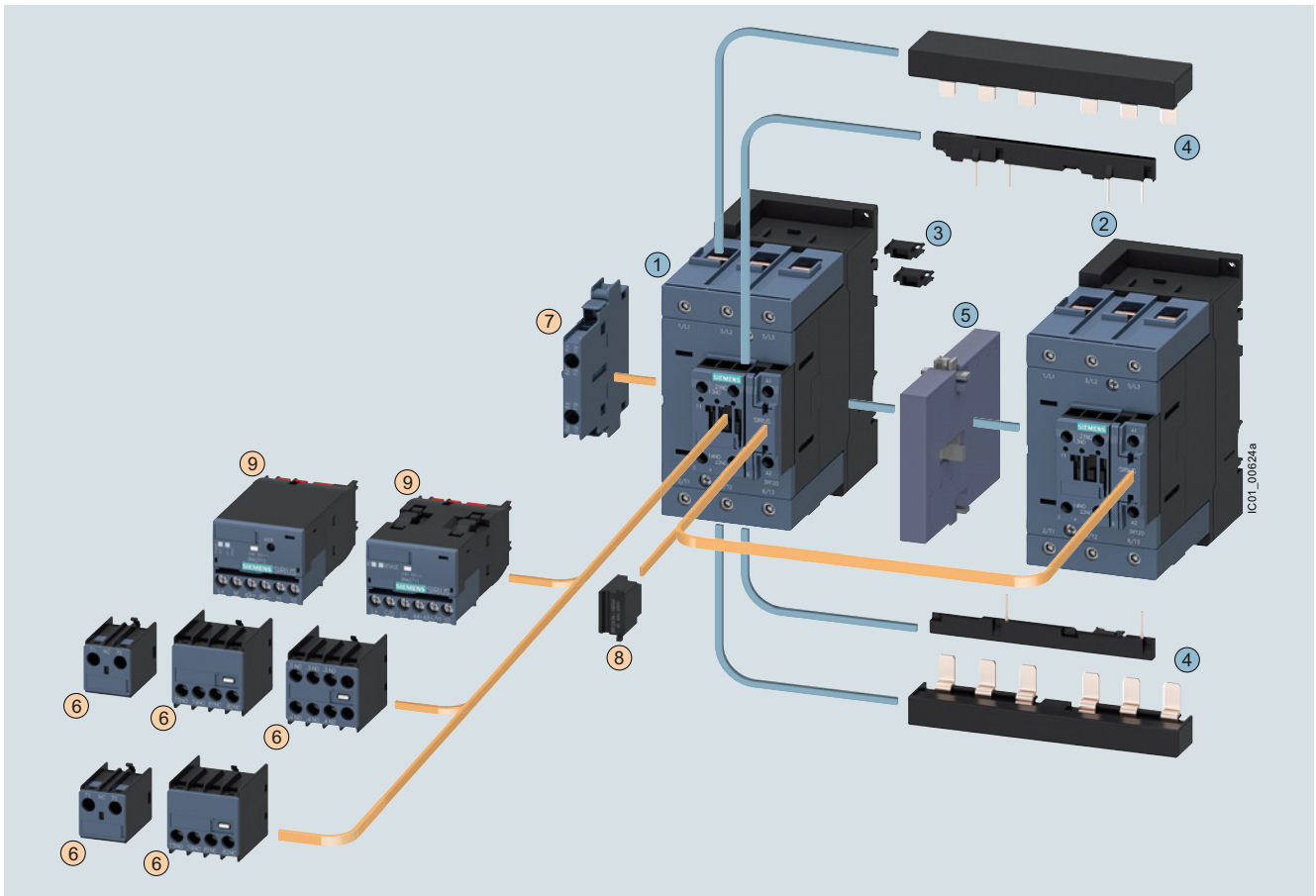
Individual parts	Type		Page
	Q11	Q12	
①② Contactors, 18.5 kW	3RT2035	3RT2035	3/58, 3/67
①② Contactors, 22 kW	3RT2036	3RT2036	3/58, 3/67
①② Contactors, 30 kW	3RT2037	3RT2037	3/58, 3/67
①② Contactors, 37 kW	3RT2038	3RT2038	3/58, 3/67
③④ Assembly kit comprising:	3RA2933-2AA1		3/110
③ Two connectors for two contactors			
④ Wiring modules on the top and bottom for connecting the main and auxiliary circuits, electrical interlock included (NC contact interlock)			
⑤ Mechanical interlock (must be ordered separately)	3RA2934-2B		3/114

For complete reversing contactor assemblies, see page 3/165.

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Fully wired and tested reversing contactor assemblies · Size S3 · Up to 55 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Type	Page
⑥ Auxiliary switch block, front	3RH2911	3/94 ... 3/96
⑦ Auxiliary switch block, lateral	3RH2921	3/98
⑧ Surge suppressors	3RT2936 ¹⁾ , 3RT2946	3/103, 3/104
⑨ Function module for connection to the control system (the associated module connectors 3RA2711-0EE17 must be ordered separately, see page 3/108)	3RA271.-1BA00	3/107

Complete reversing contactor assembly

Individual parts	Type		Page
	Q11	Q12	
①② Contactors, 37 kW	3RT2045	3RT2045	3/59, 3/67
①② Contactors, 45 kW	3RT2046	3RT2046	3/59, 3/67
①② Contactors, 55 kW	3RT2047	3RT2047	3/59, 3/67
③④ Assembly kit comprising:	3RA2943-2AA1		3/110
③ Two connectors for two contactors			
④ Wiring modules on the top and bottom for connecting the main and auxiliary circuits, electrical interlock included (NC contact interlock)			
⑤ Mechanical interlock (must be ordered separately)	3RA2934-2B		3/114

¹⁾ From product version E03 onwards, 3RT2936-1B/-1E surge suppressors can be used for 3RT2.4 contactors.

For complete reversing contactor assemblies, see page 3/166.

Reversing Contactor Assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Benefits

Using wiring kits for reversing contactor assemblies has the following advantages:

- Notable reduction of wiring in the control circuit
- Integrated mechanical interlock for sizes S00 and S0
- Prevention of wiring errors in the main circuit

Connecting combs for screw terminals also result in:

- Prevention of wiring errors in the control circuit
- Reduction of testing costs
- Ready-jumpered actuation of the auxiliary switches and the frame (A2)
- Integrated electrical interlocking

Accessories

Selecting the auxiliary switches

The following points should be noted:

Size S00

- For maintained-contact operation:
Use contactors with an NC contact in the basic unit for the electrical interlock.
- For momentary-contact operation:
Use contactors with an NC contact in the basic unit for the electrical interlock; in addition, an auxiliary switch block with at least one NO contact for latching is required per contactor.

Sizes S0 to S3

- For maintained-contact operation:
The contactors have two integrated auxiliary contacts (1 NO + 1 NC); the NC contact can be used for electrical interlocking.
- For momentary-contact operation:
Electrical interlock as for maintained-contact operation; the NO contact in the basic unit can be used for the latching.

Surge suppression

Sizes S00 to S3

All reversing contactor assemblies can be fitted with RC elements or varistors for damping opening surges in the coil.

As with the individual contactors, the surge suppressors can either be plugged onto the top of the contactors (S00) or be plugged into the front of the contactors (S0 to S3).

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16146/td>
FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16146/faq>

System Manual "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>
Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", see <https://support.industry.siemens.com/cs/ww/en/view/60306557>
Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>

The technical specifications are the same as for the individual contactors (see page 3/23 onwards).

IE3/IE4 ready

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Selection and ordering data

Fully wired and tested reversing contactor assemblies¹⁾ · Size S00 · Up to 7.5 kW
 AC operation  or DC operation 

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B





3RA231.-8XB30-1A.0



3RA231.-8XE30-1BB4



3RA231.-8XB30-2A.0

Rated data AC-2 and AC-3				Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 		
Operational current I_e up to 400 V	Rating of three-phase motors at 50 Hz and					Article No.	Price per PU		Article No.	Price per PU	
	A	230 V	400 V	690 V	kW			kW			kW
AC operation, 50/60 Hz											
7	2.2	3	4	24 AC	5	3RA2315-8XB30-1AB0	5	3RA2315-8XB30-2AB0			
				110 AC	5	3RA2315-8XB30-1AF0	5	3RA2315-8XB30-2AF0			
				230 AC	2	3RA2315-8XB30-1AP0	2	3RA2315-8XB30-2AP0			
9	3	4	5.5	24 AC	5	3RA2316-8XB30-1AB0	5	3RA2316-8XB30-2AB0			
				110 AC	5	3RA2316-8XB30-1AF0	5	3RA2316-8XB30-2AF0			
				230 AC	2	3RA2316-8XB30-1AP0	2	3RA2316-8XB30-2AP0			
12	3	5.5	5.5	24 AC	5	3RA2317-8XB30-1AB0	5	3RA2317-8XB30-2AB0			
				110 AC	5	3RA2317-8XB30-1AF0	5	3RA2317-8XB30-2AF0			
				230 AC	2	3RA2317-8XB30-1AP0	2	3RA2317-8XB30-2AP0			
16	4	7.5	7.5	24 AC	5	3RA2318-8XB30-1AB0	5	3RA2318-8XB30-2AB0			
				110 AC	5	3RA2318-8XB30-1AF0	5	3RA2318-8XB30-2AF0			
				230 AC	2	3RA2318-8XB30-1AP0	2	3RA2318-8XB30-2AP0			
DC operation											
7	2.2	3	4	24 DC	2	3RA2315-8XB30-1BB4	2	3RA2315-8XB30-2BB4			
9	3	4	5.5	24 DC	2	3RA2316-8XB30-1BB4	2	3RA2316-8XB30-2BB4			
12	3	5.5	5.5	24 DC	2	3RA2317-8XB30-1BB4	2	3RA2317-8XB30-2BB4			
16	4	7.5	7.5	24 DC	2	3RA2318-8XB30-1BB4	2	3RA2318-8XB30-2BB4			
With voltage tap-off											
7	2.2	3	4	24 DC	2	3RA2315-8XE30-1BB4	5	3RA2315-8XE30-2BB4			
9	3	4	5.5	24 DC	2	3RA2316-8XE30-1BB4	5	3RA2316-8XE30-2BB4			
12	3	5.5	5.5	24 DC	2	3RA2317-8XE30-1BB4	2	3RA2317-8XE30-2BB4			
16	4	7.5	7.5	24 DC	2	3RA2318-8XE30-1BB4	2	3RA2318-8XE30-2BB4			

¹⁾ The contactors integrated in the reversing contactor assemblies have no unassigned auxiliary contacts. When used with a voltage tap-off and function module, the auxiliary contacts are unassigned.

Representation of the complete reversing contactor assemblies with optionally mountable accessories, see page 3/158.

Reversing Contactor Assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW **IE3/IE4 ready**

Fully wired and tested reversing contactor assemblies · Size S0 · Up to 18.5 kW
AC operation  **or DC operation** 

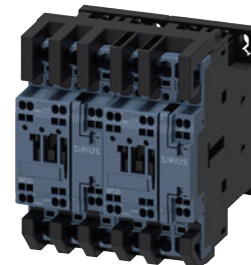
PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B





3RA232.-8XB30-1A.2





3RA2324-8XE30-1BB4



3RA232.-8XB30-2A.2

Rated data AC-2 and AC-3				Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 		
Operational current I_e up to 400 V	Rating of three-phase motors at 50 Hz and					Article No.	Price per PU		Article No.	Price per PU	
	230 V	400 V	690 V	A	kW			kW			kW
AC operation, 50/60 Hz											
12	3	5.5	7.5	24 AC	5	3RA2324-8XB30-1AC2	5	3RA2324-8XB30-2AC2			
				110 AC	5	3RA2324-8XB30-1AG2	5	3RA2324-8XB30-2AG2			
				230 AC	5	3RA2324-8XB30-1AL2	5	3RA2324-8XB30-2AL2			
17	4	7.5	11	24 AC	5	3RA2325-8XB30-1AC2	5	3RA2325-8XB30-2AC2			
				110 AC	5	3RA2325-8XB30-1AG2	5	3RA2325-8XB30-2AG2			
				230 AC	5	3RA2325-8XB30-1AL2	5	3RA2325-8XB30-2AL2			
25	5.5	11	11	24 AC	5	3RA2326-8XB30-1AC2	5	3RA2326-8XB30-2AC2			
				110 AC	5	3RA2326-8XB30-1AG2	5	3RA2326-8XB30-2AG2			
				230 AC	5	3RA2326-8XB30-1AL2	5	3RA2326-8XB30-2AL2			
32	7.5	15	18.5	24 AC	5	3RA2327-8XB30-1AC2	5	3RA2327-8XB30-2AC2			
				110 AC	5	3RA2327-8XB30-1AG2	5	3RA2327-8XB30-2AG2			
				230 AC	5	3RA2327-8XB30-1AL2	5	3RA2327-8XB30-2AL2			
38	11	18.5	18.5	24 AC	5	3RA2328-8XB30-1AC2	5	3RA2328-8XB30-2AC2			
				110 AC	5	3RA2328-8XB30-1AG2	5	3RA2328-8XB30-2AG2			
				230 AC	5	3RA2328-8XB30-1AL2	5	3RA2328-8XB30-2AL2			
DC operation											
12	3	5.5	7.5	24 DC	2	3RA2324-8XB30-1BB4	2	3RA2324-8XB30-2BB4			
17	4	7.5	11	24 DC	2	3RA2325-8XB30-1BB4	2	3RA2325-8XB30-2BB4			
25	5.5	11	11	24 DC	2	3RA2326-8XB30-1BB4	2	3RA2326-8XB30-2BB4			
32	7.5	15	18.5	24 DC	2	3RA2327-8XB30-1BB4	2	3RA2327-8XB30-2BB4			
38	11	18.5	18.5	24 DC	2	3RA2328-8XB30-1BB4	2	3RA2328-8XB30-2BB4			
With voltage tap-off											
12	3	5.5	7.5	24 DC	2	3RA2324-8XE30-1BB4	2	3RA2324-8XE30-2BB4			
17	4	7.5	11	24 DC	2	3RA2325-8XE30-1BB4	5	3RA2325-8XE30-2BB4			
25	5.5	11	11	24 DC	2	3RA2326-8XE30-1BB4	2	3RA2326-8XE30-2BB4			
32	7.5	15	18.5	24 DC	5	3RA2327-8XE30-1BB4	2	3RA2327-8XE30-2BB4			
38	11	18.5	18.5	24 DC	2	3RA2328-8XE30-1BB4	2	3RA2328-8XE30-2BB4			

Representation of the complete reversing contactor assemblies with optionally mountable accessories, [see page 3/159](#).

IE3/IE4 ready SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW**Fully wired and tested reversing contactor assemblies · Size S2 · Up to 37 kW****AC operation**  **or AC/DC operation** 



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RA233.-8XB30-1A.2



3RA233.-8XE30-1NB3

Rated data AC-2 and AC-3					Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 	
Operational current I_e up to 400 V	Rating of three-phase motors at 50 Hz and			V	d	Article No.	Price per PU	d	Article No.	Price per PU	
	A	230 V	400 V								690 V
AC operation, 50/60 Hz											
40	11	18.5	22	110 AC	2	3RA2335-8XB30-1AG2			--		
				230 AC	2	3RA2335-8XB30-1AL2			--		
50	15	22	22	110 AC	5	3RA2336-8XB30-1AG2			--		
				230 AC	2	3RA2336-8XB30-1AL2			--		
65	18.5	30	37	110 AC	5	3RA2337-8XB30-1AG2			--		
				230 AC	2	3RA2337-8XB30-1AL2			--		
80	22	37	45	110 AC	5	3RA2338-8XB30-1AG2			--		
				230 AC	2	3RA2338-8XB30-1AL2			--		
AC/DC operation¹⁾											
40	11	18.5	22	20 ... 33 AC/DC	2	3RA2335-8XB30-1NB3			--		
50	15	22	22	20 ... 33 AC/DC	2	3RA2336-8XB30-1NB3			--		
65	18.5	30	37	20 ... 33 AC/DC	2	3RA2337-8XB30-1NB3			--		
80	22	37	45	20 ... 33 AC/DC	2	3RA2338-8XB30-1NB3			--		
With voltage tap-off											
40	11	18.5	22	20 ... 33 AC/DC	5	3RA2335-8XE30-1NB3			--		
50	15	22	22	20 ... 33 AC/DC	5	3RA2336-8XE30-1NB3			--		
65	18.5	30	37	20 ... 33 AC/DC	5	3RA2337-8XE30-1NB3			--		
80	22	37	45	20 ... 33 AC/DC	5	3RA2338-8XE30-1NB3			--		



¹⁾ With integrated coil circuit (varistor).

Representation of the complete reversing contactor assemblies with optionally mountable accessories, see page 3/160.

Reversing Contactor Assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW **IE3/IE4 ready**

Fully wired and tested reversing contactor assemblies · Size S3 · Up to 55 kW

AC operation  **or AC/DC operation** 



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RA234.-8XB30-1A.2



3RA234.-8XE30-1NB3

Rated data AC-2 and AC-3						SD	Screw terminals 		SD	Spring-type terminals 	
Operational current I_e up to 400 V	Rating of three-phase motors at 50 Hz and			Rated control supply voltage U_s ¹⁾	d		Article No.	Price per PU		Article No.	Price per PU
	A	230 V	400 V			690 V			V		
	kW	kW	kW								
AC operation, 50/60 Hz											
80	22	37	55	110 AC	X	3RA2345-8XB30-1AG2		--			
				230 AC	X	3RA2345-8XB30-1AL2		--			
95	22	45	75	110 AC	X	3RA2346-8XB30-1AG2		--			
				230 AC	X	3RA2346-8XB30-1AL2		--			
110	30	55	75	110 AC	X	3RA2347-8XB30-1AG2		--			
				230 AC	X	3RA2347-8XB30-1AL2		--			
AC/DC operation¹⁾											
80	22	37	55	20 ... 33 AC/DC	X	3RA2345-8XB30-1NB3		--			
95	22	45	75	20 ... 33 AC/DC	X	3RA2346-8XB30-1NB3		--			
110	30	55	75	20 ... 33 AC/DC	X	3RA2347-8XB30-1NB3		--			
With voltage tap-off²⁾											
80	22	37	55	20 ... 33 AC/DC	X	3RA2345-8XE30-1NB3		--			
95	22	45	75	20 ... 33 AC/DC	X	3RA2346-8XE30-1NB3		--			
110	30	55	75	20 ... 33 AC/DC	X	3RA2347-8XE30-1NB3		--			

¹⁾ With integrated coil circuit (varistor).

²⁾ The associated module connectors 3RA2711-0EE17 for the 3RA271. function modules must be ordered separately, [see page 3/108](#).

Representation of the complete reversing contactor assemblies with optionally mountable accessories, [see page 3/161](#).

Overview

The individual parts for the reversing contactor assemblies for customer assembly must be ordered separately.

- 3RT contactors: The operating times of the individual 3RT10 contactors are rated in such a way that no overlapping of the contact making and the arcing time between two contactors can occur on reversing, provided they are interlocked by way of their auxiliary switches (NC contact interlock) and the mechanical interlock.

For assemblies with AC operation and 50/60 Hz, a dead interval of 50 ms must be provided when used with voltages over 500 V; a dead interval of 30 ms is recommended for use with voltages up to and including 400 V. These dead times do not apply to assemblies with DC operation.

The operating times of the individual contactors are not affected by the mechanical interlock.

- Mechanical interlock
- Wiring kits consisting of link rails
- Base plate

Additional components

- For momentary-contact operation: auxiliary switch (NO contact) for self-locking
- 3RB2 overload relays (see from page 7/117 onwards), SIMOCODE pro 3UF7 motor management and control devices (from page 10/16 onwards) or 3RN thermistor motor protection relays (page 10/161) can be used for overload protection.

More information

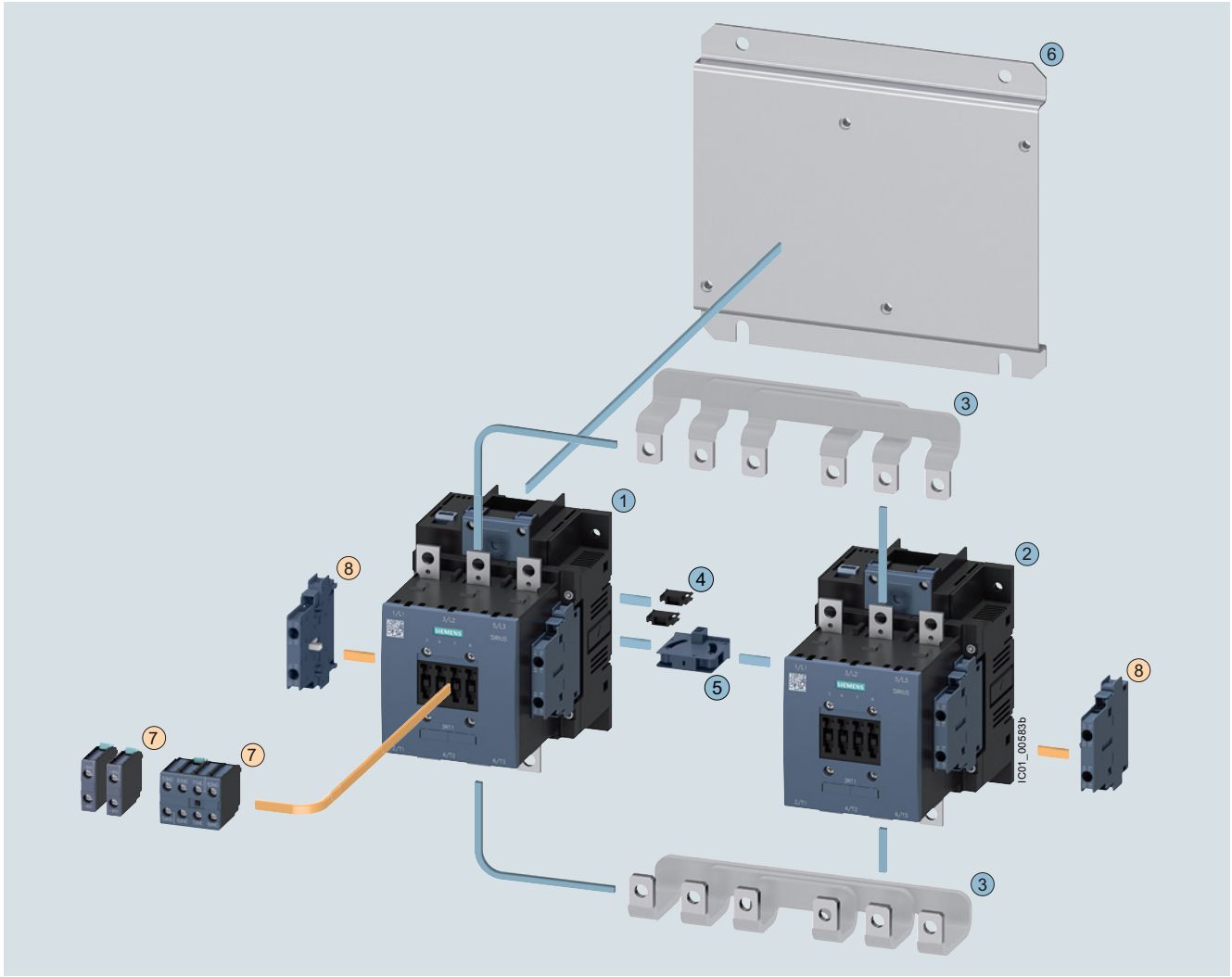
Homepage, see www.siemens.com/sirius

Industry Mall, see www.siemens.com/product?3RA23_3RT1

Reversing Contactor Assemblies

Reversing contactor assemblies consisting of SIRIUS 3RT1 contactors, up to 250 kW

Reversing contactor assemblies for customer assembly · Size S6 · Up to 90 kW



Mountable accessories (optional)

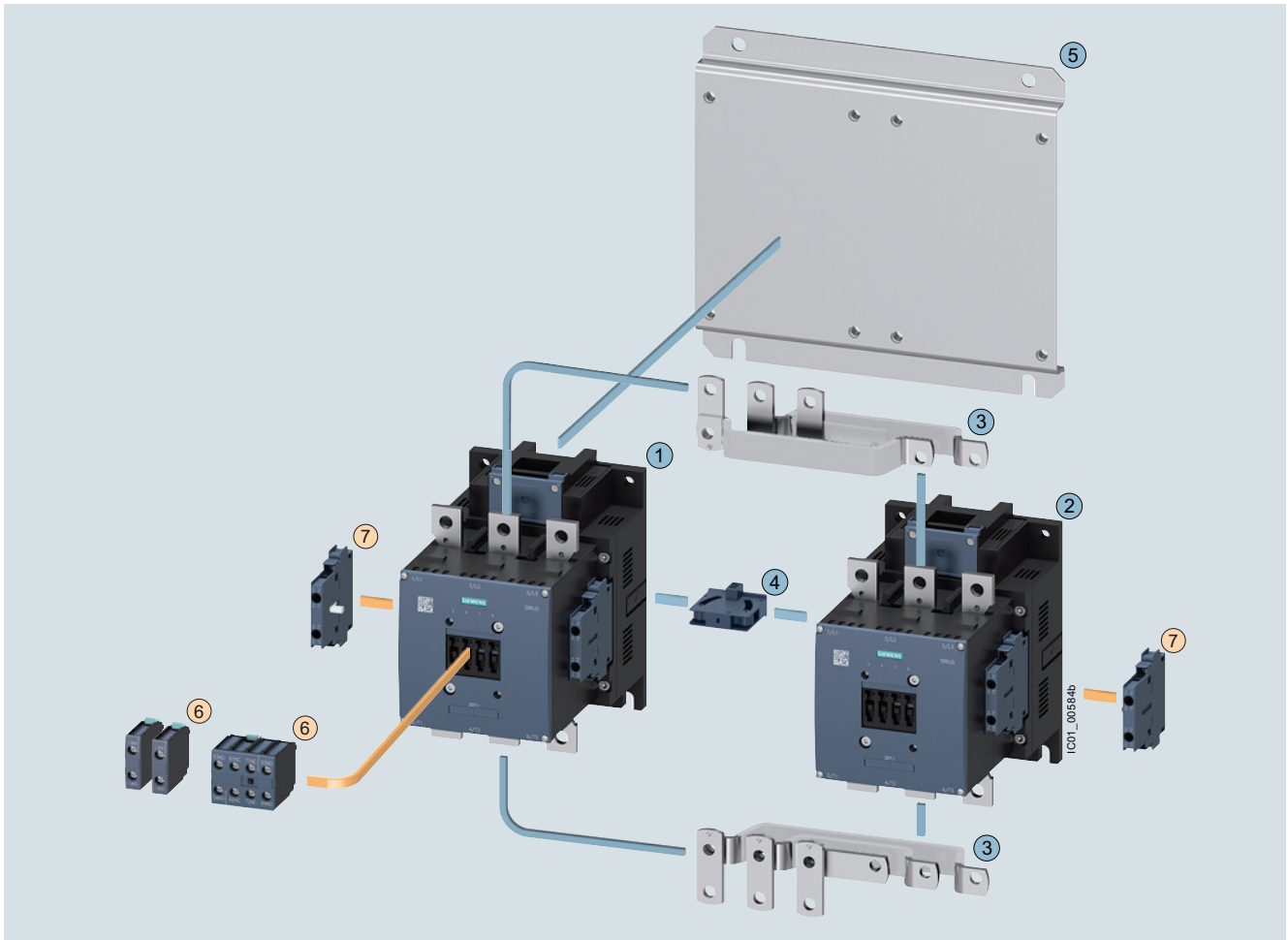
To be ordered separately	Type	Page
⑦ Auxiliary switch block, front	3RH1921	3/97
⑧ Auxiliary switch block, lateral	3RH1921	3/99

Reversing contactor assembly for customer assembly

Individual parts	Type		Page
	Q11	Q12	
①② Contactors, 55 kW	3RT1.54	3RT1.54	3/71 ... 3/73
①② Contactors, 75 kW	3RT1.55	3RT1.55	3/71 ... 3/73
①② Contactors, 90 kW	3RT1.56	3RT1.56	3/71 ... 3/73
③ Assembly kit consisting of: Wiring modules on the top and bottom for contactors without box terminals for connecting the main and auxiliary circuits, electrical interlock included (NC contact interlock)	3RA1953-2A		3/110
④ Two connectors for two contactors	3RA1932-2D		3/114
⑤ Mechanical interlock (must be ordered separately)	3RA1954-2A		3/114
⑥ Base plate for reversing contactor assemblies	3RA1952-2A		3/119

Reversing contactor assemblies consisting of SIRIUS 3RT1 contactors, up to 250 kW

Reversing contactor assemblies for customer assembly · Size S10 · Up to 160 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑥ Auxiliary switch block, front	3RH1921	3/97
⑦ Auxiliary switch block, lateral	3RH1921	3/99

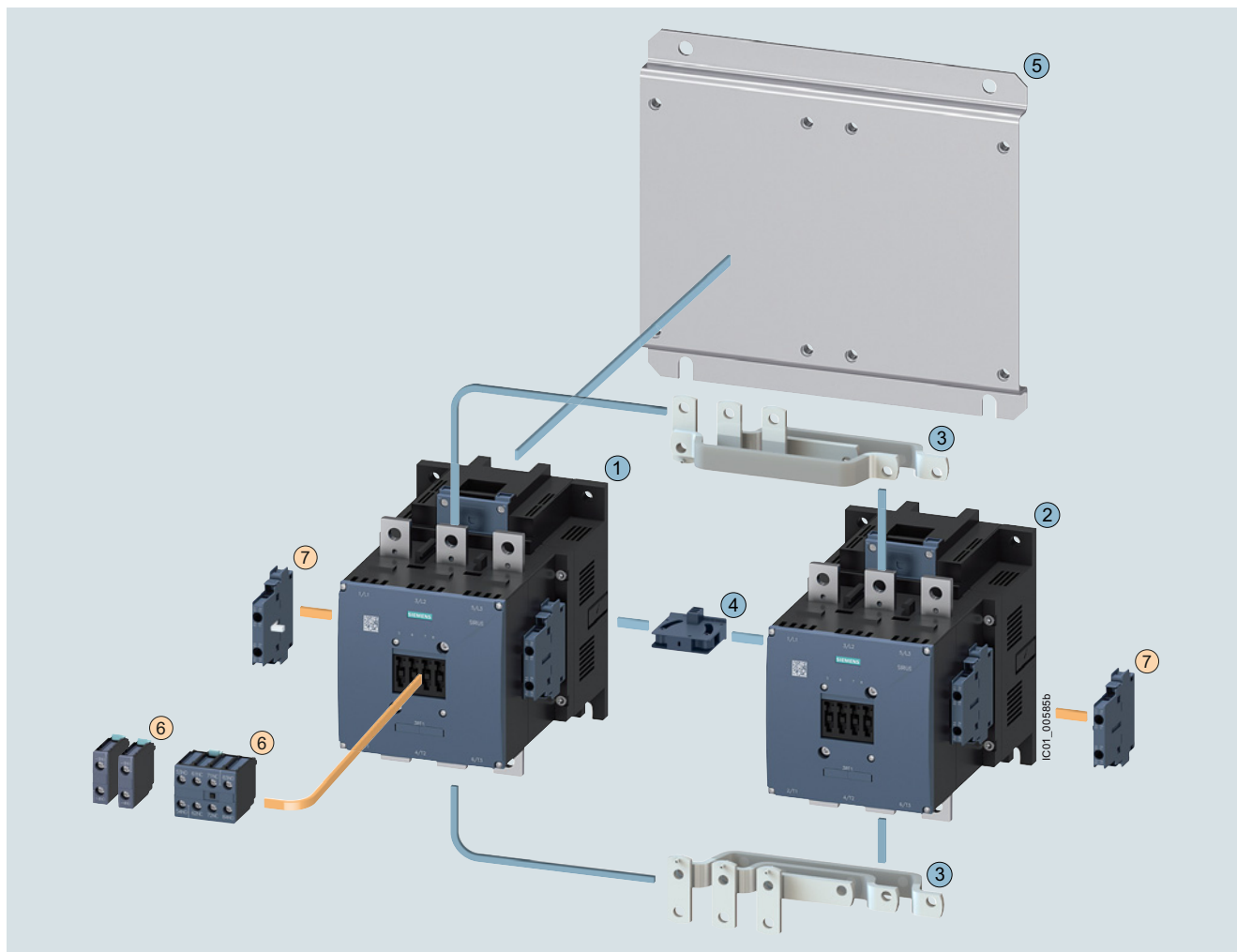
Reversing contactor assembly for customer assembly

Individual parts	Type	Page
①② Contactors, 110 kW	Q11 3RT1.64	Q12 3RT1.64 3/71 ... 3/73
①② Contactors, 132 kW	3RT1.65	3RT1.65 3/71 ... 3/73
①② Contactors, 160 kW	3RT1.66	3RT1.66 3/71 ... 3/73
③ Assembly kit consisting of: Wiring modules on the top and bottom for contactors without box terminals for connecting the main and auxiliary circuits, electrical interlock included (NC contact interlock)	3RA1963-2A	3/110
④ Mechanical interlock (must be ordered separately)	3RA1954-2A	3/114
⑤ Base plate for reversing contactor assemblies	3RA1962-2A	3/119

Reversing Contactor Assemblies

Reversing contactor assemblies consisting of SIRIUS 3RT1 contactors, up to 250 kW

Reversing contactor assemblies for customer assembly · Size S12 · Up to 250 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑥ Auxiliary switch block, front	3RH1921	3/97
⑦ Auxiliary switch block, lateral	3RH1921	3/99

Reversing contactor assembly for customer assembly

Individual parts	Type		Page
	Q11	Q12	
① ② Contactors, 200 kW	3RT1.74	3RT1.74	3/71 ... 3/73
① ② Contactors, 250 kW	3RT1.75	3RT1.75	3/71 ... 3/73
③ Assembly kit consisting of: Wiring modules on the top and bottom for contactors without box terminals for connecting the main and auxiliary circuits, electrical interlock included (NC contact interlock)	3RA1973-2A		3/110
④ Mechanical interlock (must be ordered separately)	3RA1954-2A		3/114
⑤ Base plate for reversing contactor assemblies	3RA1972-2A		3/119

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Overview

More information

Homepage, see www.siemens.com/sirius
 Industry Mall, see www.siemens.com/product?3RA24_3RT

Conversion tool, e.g. from 3RT10 to 3RT20, see www.siemens.com/sirius/conversion-tool
 TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/TSTWeb/?kmat=LoadFeeder>

The 3RA24 contactor assemblies for star-delta (wye-delta) starting in sizes S00 to S3 can be ordered as follows:

- Fully wired and tested, with electrical and mechanical interlock, see [page 3/180 onwards](#).
- For all individual parts for customer assembly, see [from page 3/76 onwards](#).

The 3RA24 contactor assemblies for star-delta (wye-delta) starting have screw or spring-type terminals and are suitable for screwing and snapping onto TH 35 standard mounting rails.

A base plate is also available for the size S2 and S3 assemblies.

A dead interval of 50 ms on reversing is already integrated in the 3RA28 function module for star-delta (wye-delta) starting.

With the fully wired and tested 3RA24 contactor assemblies for star-delta (wye-delta) starting, the auxiliary contacts included in the basic units are unassigned.

The 3RA24 contactor assemblies for star-delta (wye-delta) starting are designed for standard applications.

Note:

Contactor assemblies for star-delta (wye-delta) starting in special applications such as very heavy starting¹⁾ or star-delta (wye-delta) starting of special motors must be customized. Help with designing such special applications is available from our Technical Support:

<https://support.industry.siemens.com/My/ww/en/requests>

¹⁾ For effective support from Technical Support you must provide the following details:

- Rated motor voltage
- Rated motor current
- Service factor, operating values
- Motor starting current factor
- Starting time
- Ambient temperature.

Surge suppression

Surge suppression (varistor) is included in the 3RA28 function modules for star-delta (wye-delta) starting.

Motor protection

3RU2 overload relays (see [from page 7/92 onwards](#)) or 3RB3 overload relays (see [from page 7/105 onwards](#)) for contactor mounting or stand-alone installation, SIMOCODE pro 3UF7 motor management and control devices (from [page 10/16 onwards](#)) or 3RN thermistor motor protection relays ([page 10/161](#)) can be used for motor protection.

The overload relay can be either mounted onto the line contactor or separately fitted. It must be set to 0.58 times the rated motor current.

SIRIUS 3RA28 function module for star-delta (wye-delta) starting

The 3RA2816-0EW20 star-delta (wye-delta) function module (see [page 3/106](#)) replaces the complete wiring in the control circuit and can be used in the voltage range from 24 to 240 V AC/DC. It is snapped onto the front of the contactor assembly for star-delta (wye-delta) starting size S00, S0, S2 or S3.

One function module comprises a complete module kit:

- Basic module with integrated control logic and time setting
- Two coupling modules with corresponding connecting cables

The scope of supply thus comprises a complete module kit for one contactor assembly for star-delta (wye-delta) starting in size S00, S0, S2 or S3, regardless of the connection method.

Data of the control circuit:

- Wide voltage range 24 to 240 V AC/DC
- Time setting range 0.5 to 60 s (3 selectable settings)
- Dead interval of 50 ms, non-adjustable



Contactors Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Complete units

Note:

The selection of contactor types refers to fused designs.

Rated data at 50 Hz 400 V AC			Size	Type		Fully-wired and tested contactor assemblies for star-delta (wye-delta) starting
Rating P kW	Operational current I_e A	Motor current A		Line/delta contactor	Star contactor	
 Screw terminals						
5.5	12	9.5 ... 13.8	S00-S00-S00	3RT2015-1...	3RT2015-1...	3RA2415-8XF31-1...
7.5	16	12.1 ... 17		3RT2017-1...	3RT2015-1...	3RA2416-8XF31-1...
11	25	19 ... 25		3RT2018-1...	3RT2016-1...	3RA2417-8XF31-1...
11	25	19 ... 25	S0-S0-S0	3RT2024-1...0	3RT2024-1...0	3RA2423-8XF32-1...
15	32	24.1 ... 34		3RT2026-1...0	3RT2024-1...0	3RA2425-8XF32-1...
18.5	40	34.5 ... 40		3RT2026-1...0	3RT2024-1...0	3RA2425-8XF32-1...
22	50	31 ... 43		3RT2027-1...0	3RT2026-1...0	3RA2426-8XF32-1...
22/30	50	31 ... 43	S2-S2-S0	3RT2035-1...0	3RT2026-1...0	3RA2434-8XF32-1...
37	80	62.1 ... 77.8		3RT2035-1...0	3RT2027-1...0	3RA2435-8XF32-1...
45	86	69 ... 86		3RT2036-1...0	3RT2028-1...0	3RA2436-8XF32-1...
55	115	77.6 ... 108.6	S2-S2-S2	3RT2037-1...0	3RT2035-1...0	3RA2437-8XF32-1...
55	115	77.6 ... 108.6	S3-S3-S2	3RT2045-1...0	3RT2035-1...0	3RA2444-8XF32-1...
75	150	120.7 ... 150		3RT2045-1...0	3RT2036-1...0	3RA2445-8XF32-1...
90	160	86 ... 160		3RT2046-1...0	3RT2037-1...0	3RA2446-8XF32-1...
 Spring-type terminals						
5.5	12	9.5 ... 13.8	S00-S00-S00	3RT2015-2...	3RT2015-2...	3RA2415-8XF31-2...
7.5	16	12.1 ... 17		3RT2017-2...	3RT2015-2...	3RA2416-8XF31-2...
11	25	19 ... 25		3RT2018-2...	3RT2016-2...	3RA2417-8XF31-2...
11	25	19 ... 25	S0-S0-S0	3RT2024-2...0	3RT2024-2...0	3RA2423-8XF32-2...
15	32	24.1 ... 34		3RT2026-2...0	3RT2024-2...0	3RA2425-8XF32-2...
18.5	40	34.5 ... 40		3RT2026-2...0	3RT2024-2...0	3RA2425-8XF32-2...
22	50	31 ... 43		3RT2027-2...0	3RT2026-2...0	3RA2426-8XF32-2...

Article No. scheme

Product versions	Article number
SIRIUS contactor assembly for star-delta (wye-delta) starting	3RA24 <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Contactor size	e.g. 4 = S3 <input type="checkbox"/>
Rating dependent on size	e.g. 5 = 75 kW for size S3 <input type="checkbox"/>
Type of overload relay	e.g. 8X = without <input type="checkbox"/>
Assembly	e.g. F = ready-assembled with function modules <input type="checkbox"/>
Interlock	e.g. 3 = mechanical and electrical <input type="checkbox"/>
Free auxiliary switches	e.g. 2 = S3: 3 NO + 3 NC total <input type="checkbox"/>
Type of electrical connection	e.g. 1 = screw terminals (main and auxiliary circuits) <input type="checkbox"/>
Operating range/solenoid coil circuit	e.g. A = AC standard/without coil circuit <input type="checkbox"/>
Rated control supply voltage	e.g. L2 = 230 V AC, 50/60 Hz <input type="checkbox"/>
Example	3RA24 4 5 - 8 X F 3 2 - 1 A L 2

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

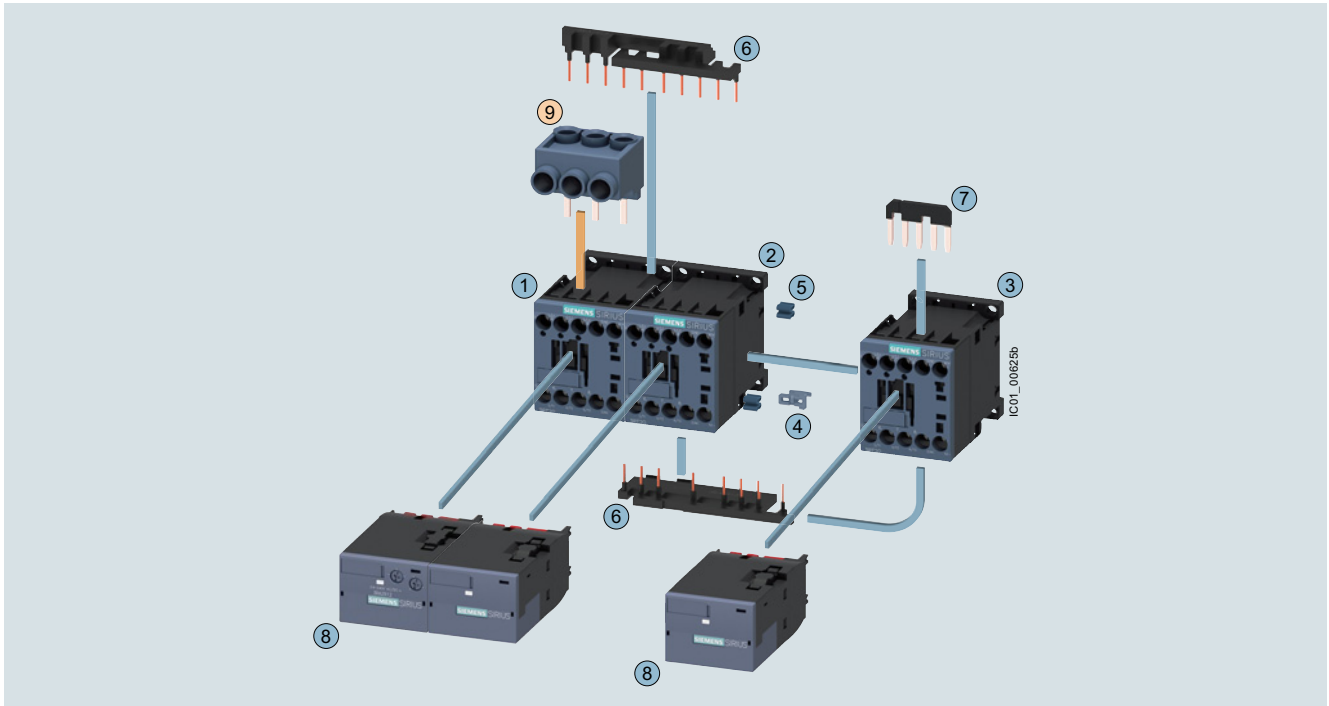
For your orders, please use the article numbers quoted in the selection and ordering data.

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S00-S00-S00 · Up to 11 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Type	Page
⑨ Three-phase infeed terminal ¹⁾	3RA2913-3K	3/116

Complete contactor assembly for star-delta (wye-delta) starting

Individual parts	Type			Page
	Q11 ²⁾	Q13	Q12	
①②③ Contactors, 5.5 kW	3RT2015	3RT2015	3RT2015	3/55, 3/62
①②③ Contactors, 7.5 kW	3RT2017	3RT2017	3RT2015	3/55, 3/62
①②③ Contactors, 11 kW	3RT2018	3RT2018	3RT2016	3/55, 3/62
④ ... ⑦ Assembly kit S00-S00-S00 comprising:	3RA2913-2BB1			3/111
④ Mechanical interlock				
⑤ Four connecting clips for three contactors				
⑥ Wiring modules on top and bottom for connecting the main and auxiliary circuits				
⑦ Star jumper				
⑧ Function modules for star-delta (wye-delta) starting	3RA2816-0EW20			3/106

¹⁾ Part ⑨ can only be mounted in the case of contactors with screw terminal.

²⁾ The version with 1 NO is required for momentary-contact operation.

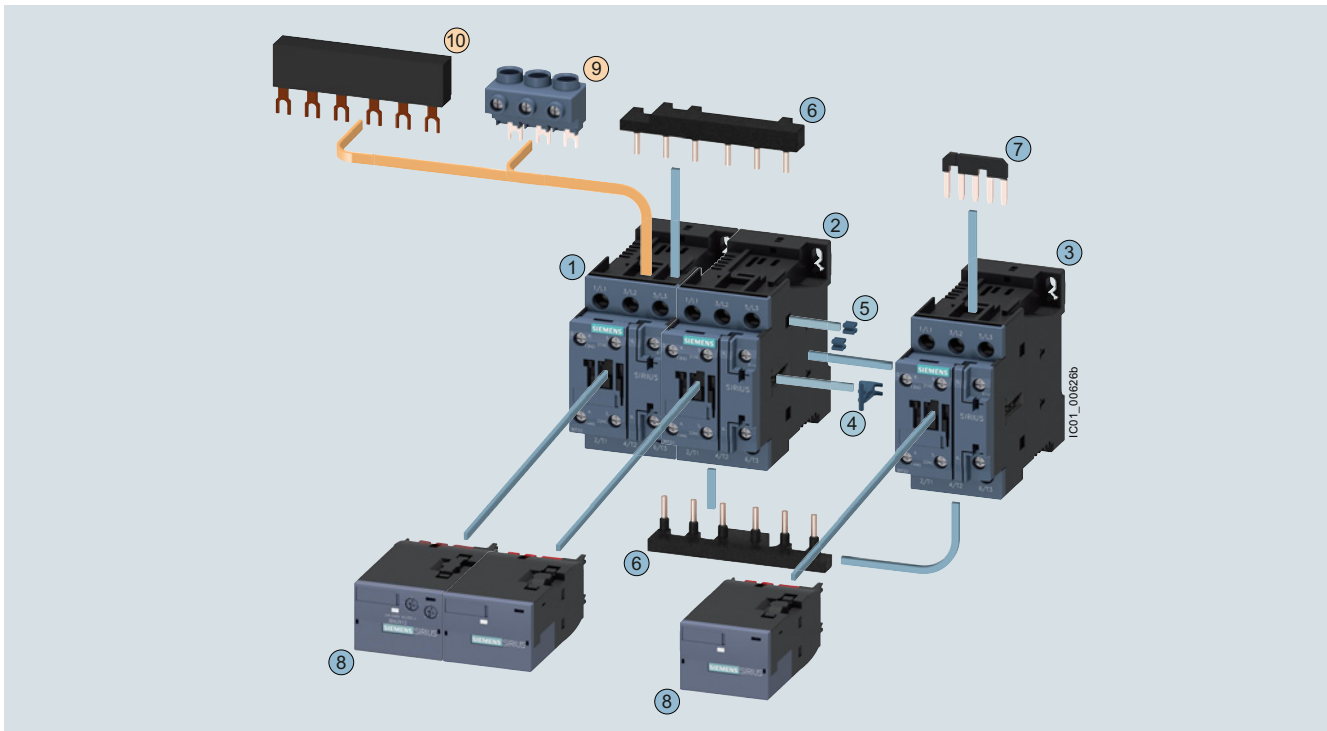
Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/180.

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S0-S0-S0 · Up to 22 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Type	Page
⑨ Three-phase infed terminal ¹⁾	3RV2925-5AB	3/116
⑩ Three-phase busbar ¹⁾	3RV1915-1AB	3/116

Complete contactor assembly for star-delta (wye-delta) starting

Individual parts	Type	Q11	Q13	Q12	Page
①②③ Contactors, 11 kW	3RT2024	3RT2024	3RT2024		3/56, 3/66
①②③ Contactors, 15/18.5 kW	3RT2026	3RT2026	3RT2024		3/56, 3/66
①②③ Contactors, 22 kW	3RT2027	3RT2027	3RT2026		3/56, 3/66
④ ... ⑦ Assembly kit S0-S0-S0 comprising:	3RA2923-2BB1				3/111
④ Mechanical interlock					
⑤ Four connecting clips for three contactors					
⑥ Wiring modules on top and bottom for connecting the main and auxiliary circuits					
⑦ Star jumper					
⑧ Function modules for star-delta (wye-delta) starting	3RA2816-0EW20				3/106

¹⁾ The parts ⑨ and ⑩ can only be mounted with contactors with screw terminal, the ⑥ wiring modules must be removed beforehand.

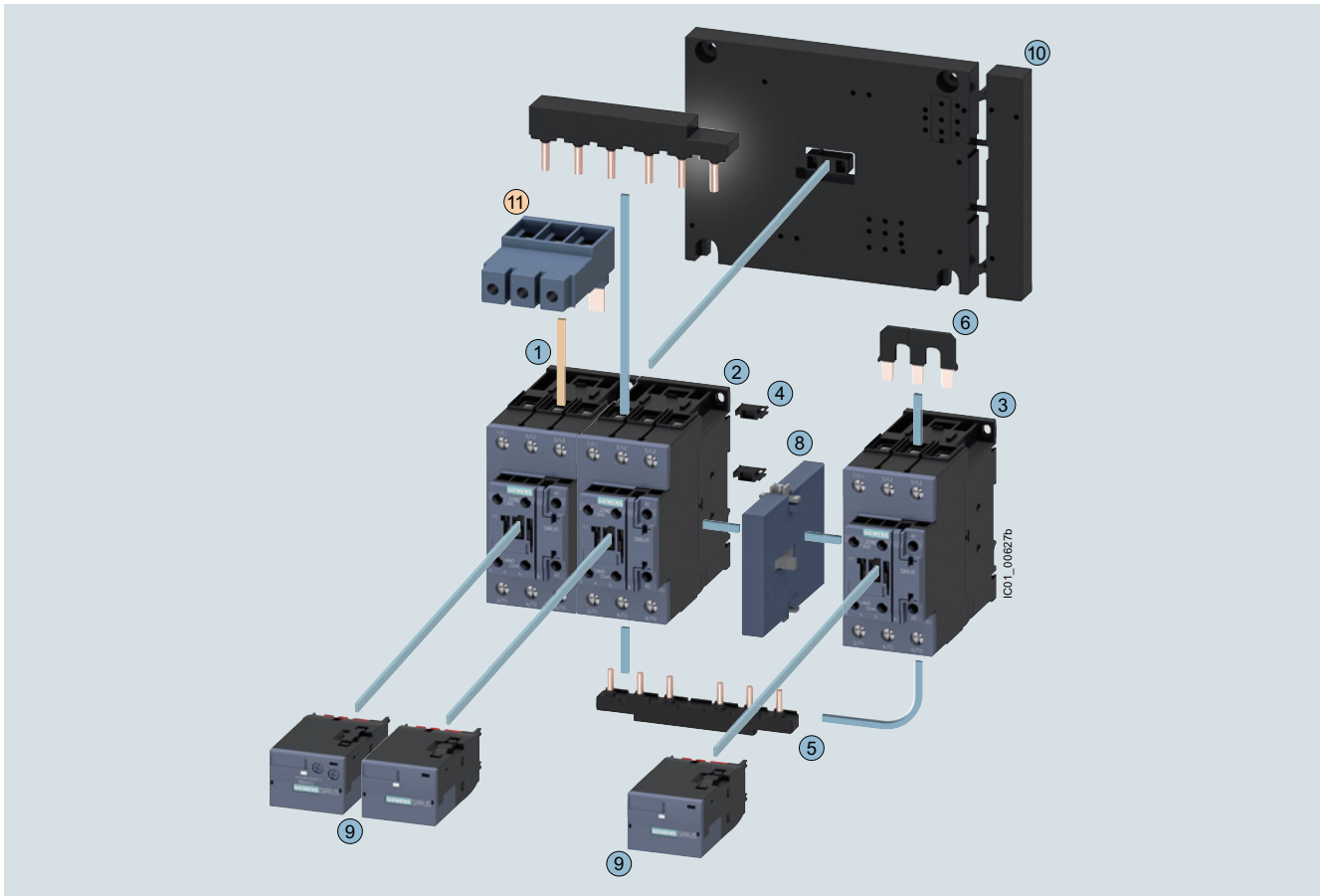
Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/181.

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S2-S2-S0¹⁾ · Up to 45 kW and S2-S2-S2 · 55 kW

The figure shows the version with screw terminals in S2-S2-S2



Mountable accessories (optional)

To be ordered separately	Type	Page
⑪ Three-phase infeed terminal	3RV2935-5A	3/116

Complete contactor assembly for star-delta (wye-delta) starting

Individual parts	Type	Q11	Q13	Q12	Page
①②③ Contactors, 22/30 kW	3RT2035	3RT2035	3RT2026		3/58, 3/67
①②③ Contactors, 37 kW	3RT2035	3RT2035	3RT2027		3/58, 3/67
①②③ Contactors, 45 kW	3RT2036	3RT2036	3RT2028		3/58, 3/67
①②③ Contactors, 55 kW	3RT2037	3RT2037	3RT2035		3/58, 3/67
④ ... ⑦ Assembly kit S2-S2-S2 comprising:	3RA2933-2BB1				3/111
④ Four connectors for three contactors (not required for fully pre-wired contactor assemblies for star-delta (wye-delta) starting)					
⑤ Wiring modules on top and bottom for connecting the main and auxiliary circuits					
⑥ Star jumper S2					
⑦ Cable for connecting the A2 coil contact from the line contactor with the A2 coil contact of the delta contactor (not shown in the drawing)					
⑧ Mechanical interlock	3RA2934-2B				3/114
⑨ Function modules for star-delta (wye-delta) starting	3RA2816-0EW20				3/106
⑩ Base plate star-delta (wye-delta)	3RA2932-2F				3/119

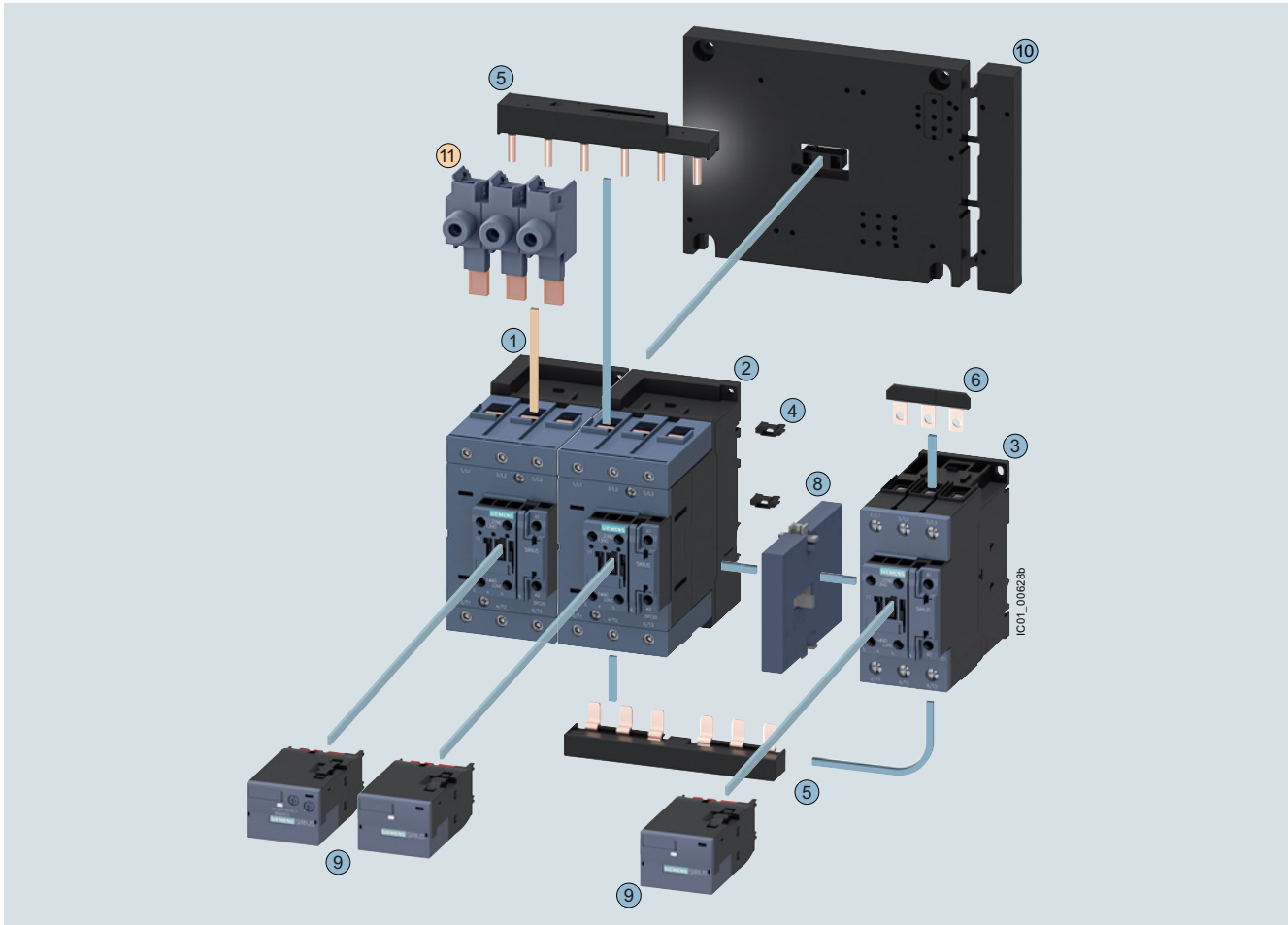
¹⁾ Complete contactor assembly for star-delta (wye-delta) starting in size S2-S2-S0 (not shown): The 3RA2933-2C assembly kit is to be used here, see page 3/111.

Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/182.

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S3-S3-S2¹⁾ · Up to 90 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑪ Single-phase infeed terminal (3 units are required)	3RA2943-3L	3/116

Complete contactor assembly for star-delta (wye-delta) starting

Individual parts	Type			Page
	Q11	Q13	Q12	
① ② ③ Contactors, 55 kW	3RT2045	3RT2045	3RT2035	3/59, 3/67
① ② ③ Contactors, 75 kW	3RT2045	3RT2045	3RT2036	3/59, 3/67
① ② ③ Contactors, 90 kW	3RT2046	3RT2046	3RT2037	3/59, 3/67
④ ... ⑦ Assembly kit S3-S3-S2 comprising:	3RA2943-2C			3/111
④ Two connectors for three contactors (not required for fully pre-wired contactor assemblies for star-delta (wye-delta) starting)				
⑤ Wiring modules on top and bottom (S3-S2) for connecting the main and auxiliary circuits and a cable set for the auxiliary circuit				
⑥ Star jumper S2				
⑦ Cable for connecting the A2 coil contact from the line contactor with the A2 coil contact of the delta contactor (not shown in the drawing)				
⑧ Mechanical interlock	3RA2934-2B			3/114
⑨ Function modules for star-delta (wye-delta) starting	3RA2816-0EW20			3/106
⑩ Base plate star-delta (wye-delta)	3RA2942-2F			3/119

¹⁾ Contactor assembly for star-delta (wye-delta) starting for customer assembly in size S3-S3-S3 (not shown): The 3RA2943-2BB assembly kit is to be used here, see page 3/111.

Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/183.

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

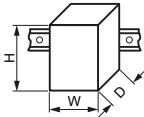
Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16150/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16150/faq>

System Manual "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>
 Manual "SIRIUS – SIRIUS 3RT Contactors/Contactor Assemblies", see <https://support.industry.siemens.com/cs/ww/en/view/60306557>
 Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>

Unless otherwise indicated, the technical specifications correspond to those of the 3RT individual contactors (see from page 3/23 onwards) and 3RU2 overload relays (see from page 7/88 onwards).

Type		3RA2415	3RA2416	3RA2417	3RA2423	3RA2425	3RA2426
Sizes		S00-S00-S00	S00-S00-S00	S00-S00-S00	S0-S0-S0	S0-S0-S0	S0-S0-S0
General data							
Dimensions (W x H x D) with function module							
<ul style="list-style-type: none"> AC operation - Screw terminals - Spring-type terminals DC operation - Screw terminals - Spring-type terminals 		mm	135 x 68 x 145		135 x 101 x 171		
		mm	135 x 84 x 145		135 x 114 x 171		
		mm	135 x 68 x 145		135 x 101 x 181		
		mm	135 x 84 x 145		135 x 114 x 181		
Individual contactors							
• Q11 line contactor	Type	3RT2015	3RT2017	3RT2018	3RT2024	3RT2026	3RT2027
• Q13 delta contactor	Type	3RT2015	3RT2017	3RT2018	3RT2024	3RT2026	3RT2027
• Q12 star contactor	Type	3RT2015	3RT2015	3RT2016	3RT2024	3RT2024	3RT2026
Mechanical endurance		Operating cycles	3 million				
Unassigned auxiliary contacts of the individual contactors		For circuit diagrams of the control circuit, see Manual for Contactors/Contactor assemblies .					
Short-circuit protection							
Main circuit without overload relays							
<ul style="list-style-type: none"> Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE with single or double infeed <p>Greatest rated current of the fuse according to IEC 60947-4-1</p>							
- Type of coordination "1"	A	35		63		100	125
- Type of coordination "2"	A	20		25		35	63
Auxiliary circuit							
Short-circuit test							
• With fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1	A	10					
	A	6 (up to $I_k < 0.5$ kA; ≤ 260 V), if the auxiliary contact of the overload relay is connected in the contactor coil circuit.					
• With miniature circuit breaker, C characteristic with short-circuit current $I_k = 400$ A	A	10					
	A	6 (up to $I_k < 0.5$ kA; ≤ 260 V), if the auxiliary contact of the overload relay is connected in the contactor coil circuit					
Short-circuit protection with overload relay		See Configuration Manual for load feeders					

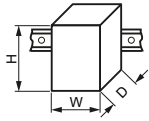
Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Type		3RA2415	3RA2416	3RA2417	3RA2423	3RA2425	3RA2426
Sizes		S00-S00-S00	S00-S00-S00	S00-S00-S00	S0-S0-S0	S0-S0-S0	S0-S0-S0
Rated data of the main contacts							
Current-carrying capacity with reversing time up to 10 s							
• Rated operational current I_e	At 400 V	A	12	17	25	40	55
	690 V	A	6.9	9	20.8	22.5	35
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	3.3	4.7	7.2	12	16.6
	400 V	kW	5.8	8.2	12.5	21	30.1
	690 V	kW	5.8	7.5	18	20.4	33
• Switching frequency with overload relay		1/h	15				
Current-carrying capacity with reversing time up to 15 s							
• Rated operational current I_e	At 400 V	A	12	17	25	31	44
	690 V	A	6.9	9	20.8	22.5	35
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	3.3	4.7	7.2	9.4	13.8
	400 V	kW	5.8	8.2	12.5	16.3	24
	690 V	kW	5.8	7.5	18	20.4	33
• Switching frequency with overload relay		1/h	15				
Current-carrying capacity with reversing time up to 20 s							
• Rated operational current I_e	At 400 V	A	12	17	25	28	39
	690 V	A	6.9	9	20.8	22.5	35
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	3.3	4.7	7.2	8.5	12.2
	400 V	kW	5.8	8.2	12.5	14.7	21.3
	690 V	kW	5.8	7.5	18	20.4	33
• Switching frequency with overload relay		1/h	15				

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Type		3RA2434	3RA2435	3RA2436	3RA2437	3RA2444	3RA2445	3RA2446
Sizes		S2-S2-S0	S2-S2-S0	S2-S2-S0	S2-S2-S2	S3-S3-S2	S3-S3-S2	S3-S3-S2
General data								
Dimensions (W x H x D) with function module								
<ul style="list-style-type: none"> AC and DC operation Screw terminals 								
	mm	177.5 x 142 x 223				220 x 180 x 244		
Individual contactors								
• Q11 line contactor	Type	3RT2035	3RT2035	3RT2036	3RT2037	3RT2045	3RT2045	3RT2046
• Q13 delta contactor	Type	3RT2035	3RT2035	3RT2036	3RT2037	3RT2045	3RT2045	3RT2046
• Q12 star contactor	Type	3RT2026	3RT2027	3RT2028	3RT2035	3RT2035	3RT2036	3RT2037
Mechanical endurance		Operating cycles	1 million					
Unassigned auxiliary contacts of the individual contactors		For circuit diagrams of the control circuit, see Manual .						
Short-circuit protection								
Main circuit without overload relays								
<ul style="list-style-type: none"> Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE with single or double infeed 								
Greatest rated current of the fuse according to IEC 60947-4-1								
- Type of coordination "1"	A	160			250			
- Type of coordination "2"	A	80			125		160	
Auxiliary circuit								
Short-circuit test								
• With fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1	A	10						
	A	6 (up to $I_k < 0.5$ kA; ≤ 260 V), if the auxiliary contact of the overload relay is connected in the contactor coil circuit.						
• With miniature circuit breaker, C characteristic with short-circuit current $I_k = 400$ A	A	10						
	A	6 (up to $I_k < 0.5$ kA; ≤ 260 V), if the auxiliary contact of the overload relay is connected in the contactor coil circuit						
Short-circuit protection with overload relay		See Configuration Manual for load feeders				On request		
Rated data of the main contacts								
Current-carrying capacity with reversing time up to 10 s								
• Rated operational current I_e	At 400 V	A	On request					
	690 V	A	On request					
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	On request					
	400 V	kW	On request					
	690 V	kW	On request					
• Switching frequency with overload relay	1/h	15						
Current-carrying capacity with reversing time up to 15 s								
• Rated operational current I_e	At 400 V	A	On request					
	690 V	A	On request					
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	On request					
	400 V	kW	On request					
	690 V	kW	On request					
• Switching frequency with overload relay	1/h	15						
Current-carrying capacity with reversing time up to 20 s								
• Rated operational current I_e	At 400 V	A	On request					
	690 V	A	On request					
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	On request					
	400 V	kW	On request					
	690 V	kW	On request					
• Switching frequency with overload relay	1/h	15						

Contactors Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

IE3/IE4 ready

Selection and ordering data

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S00-S00-S00 · Up to 11 kW
AC operation  **or DC operation** 



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RA241.-8XF31-1A.0

3RA241.-8XF31-2A.0

3RA241.-8XE31-2BB4

Rated data AC-3				Rated control supply voltage U_s	SD	Screw terminals 		Spring-type terminals 	
Operational current I_e up to 400 V	Rating of three-phase motors at 50 Hz and					Article No.	Price per PU	Article No.	Price per PU
A	230 V	400 V	690 V	V	d		d		
AC operation, 50/60 Hz									
12	3.3	5.5	9.2	24 AC	2	3RA2415-8XF31-1AB0	2	3RA2415-8XF31-2AB0	
				110 AC	2	3RA2415-8XF31-1AF0	5	3RA2415-8XF31-2AF0	
				230 AC	2	3RA2415-8XF31-1AP0	2	3RA2415-8XF31-2AP0	
16	4.7	7.5	9.2	24 AC	2	3RA2416-8XF31-1AB0	5	3RA2416-8XF31-2AB0	
				110 AC	2	3RA2416-8XF31-1AF0	5	3RA2416-8XF31-2AF0	
				230 AC	2	3RA2416-8XF31-1AP0	2	3RA2416-8XF31-2AP0	
25	5.5	11	11	24 AC	2	3RA2417-8XF31-1AB0	5	3RA2417-8XF31-2AB0	
				110 AC	2	3RA2417-8XF31-1AF0	5	3RA2417-8XF31-2AF0	
				230 AC	2	3RA2417-8XF31-1AP0	2	3RA2417-8XF31-2AP0	
DC operation									
12	3.3	5.5	9.2	24 DC	2	3RA2415-8XF31-1BB4	2	3RA2415-8XF31-2BB4	
16	4.7	7.5	9.2	24 DC	2	3RA2416-8XF31-1BB4	2	3RA2416-8XF31-2BB4	
25	5.5	11	11	24 DC	2	3RA2417-8XF31-1BB4	2	3RA2417-8XF31-2BB4	
For IO-Link connection									
12	3.3	5.5	9.2	24 DC	2	3RA2415-8XE31-1BB4	2	3RA2415-8XE31-2BB4	
16	4.7	7.5	9.2	24 DC	2	3RA2416-8XE31-1BB4	2	3RA2416-8XE31-2BB4	
25	5.5	11	11	24 DC	2	3RA2417-8XE31-1BB4	2	3RA2417-8XE31-2BB4	
For AS-Interface connection									
12	3.3	5.5	9.2	24 DC	5	3RA2415-8XH31-1BB4	2	3RA2415-8XH31-2BB4	
16	4.7	7.5	9.2	24 DC	2	3RA2416-8XH31-1BB4	5	3RA2416-8XH31-2BB4	
25	5.5	11	11	24 DC	2	3RA2417-8XH31-1BB4	2	3RA2417-8XH31-2BB4	

Representation of the complete contactor assemblies for star-delta (wye-delta) starting with optionally mountable accessories, see page 3/173.

Contactors Assemblies for Star-Delta (Wye-Delta) Starting

IE3/IE4 ready SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S0-S0-S0 · Up to 22 kW
AC operation  **or DC operation** 



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RA242.-8XF32-1A.2

3RA242.-8XE32-1BB4

3RA242.-8XF32-2A.2

Rated data AC-3				Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 	
Operational current I_e up to 400 V	Rating of three-phase motors at 50 Hz and					Article No.	Price per PU		Article No.	Price per PU
	A	230 V	400 V	690 V	V			d		
AC operation, 50/60 Hz										
25	7.1	11	19	24 AC	2	3RA2423-8XF32-1AC2	2	3RA2423-8XF32-2AC2		
				110 AC	2	3RA2423-8XF32-1AG2	5	3RA2423-8XF32-2AG2		
				230 AC	5	3RA2423-8XF32-1AL2	5	3RA2423-8XF32-2AL2		
32/40	11.4	15/18.5	19	24 AC	2	3RA2425-8XF32-1AC2	2	3RA2425-8XF32-2AC2		
				110 AC	2	3RA2425-8XF32-1AG2	5	3RA2425-8XF32-2AG2		
				230 AC	5	3RA2425-8XF32-1AL2	5	3RA2425-8XF32-2AL2		
50	--	22	19	24 AC	2	3RA2426-8XF32-1AC2	5	3RA2426-8XF32-2AC2		
				110 AC	2	3RA2426-8XF32-1AG2	5	3RA2426-8XF32-2AG2		
				230 AC	5	3RA2426-8XF32-1AL2	5	3RA2426-8XF32-2AL2		
DC operation										
25	7.1	11	19	24 DC	2	3RA2423-8XF32-1BB4	2	3RA2423-8XF32-2BB4		
32/40	11.4	15/18.5	19	24 DC	2	3RA2425-8XF32-1BB4	2	3RA2425-8XF32-2BB4		
50	--	22	19	24 DC	2	3RA2426-8XF32-1BB4	2	3RA2426-8XF32-2BB4		
For IO-Link connection										
25	7.1	11	19	24 DC	2	3RA2423-8XE32-1BB4	5	3RA2423-8XE32-2BB4		
32/40	11.4	15/18.5	19	24 DC	2	3RA2425-8XE32-1BB4	5	3RA2425-8XE32-2BB4		
50	--	22	19	24 DC	2	3RA2426-8XE32-1BB4	5	3RA2426-8XE32-2BB4		
For AS-Interface connection										
25	7.1	11	19	24 DC	5	3RA2423-8XH32-1BB4	2	3RA2423-8XH32-2BB4		
32/40	11.4	15/18.5	19	24 DC	5	3RA2425-8XH32-1BB4	5	3RA2425-8XH32-2BB4		
50	--	22	19	24 DC	2	3RA2426-8XH32-1BB4	5	3RA2426-8XH32-2BB4		

Representation of the complete contactor assemblies for star-delta (wye-delta) starting with optionally mountable accessories, see page 3/174.

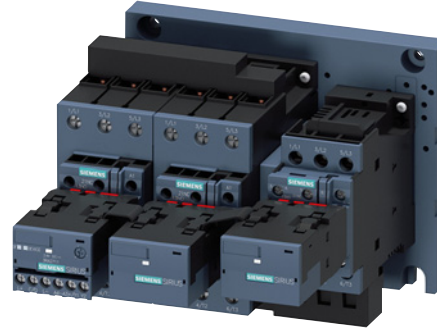
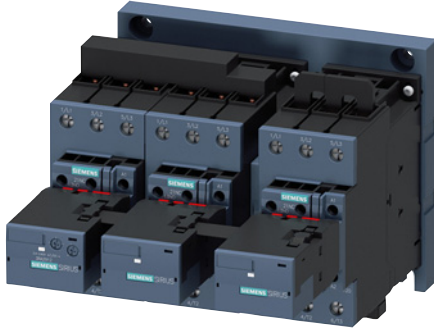
Contactor Assemblies for Star-Delta (Wye-Delta) Starting

SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

IE3/IE4 ready



Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S2-S2-S0 · Up to 45 kW and S2-S2-S2 · 55 kW
AC operation , **AC/DC operation**  or **DC operation** 

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RA2437-8XF32-1A.2

3RA2434-8XE32-1NB3

Rated data AC-3					SD	Screw terminals 		SD	Spring-type terminals 	
Operational current I_e up to 400 V	Rating of three-phase motors at 50 Hz and			Rated control supply voltage U_s		Article No.	Price per PU		Article No.	Price per PU
A	230 V	400 V	690 V	V	d					
AC operation, 50/60 Hz										
50/65	19.6	22/30	34	24 AC	5	3RA2434-8XF32-1AC2	--			
				110 AC	5	3RA2434-8XF32-1AG2	--			
				230 AC	2	3RA2434-8XF32-1AL2	--			
80	25	37	63	24 AC	2	3RA2435-8XF32-1AC2	--			
				110 AC	2	3RA2435-8XF32-1AG2	--			
				230 AC	2	3RA2435-8XF32-1AL2	--			
86	27	45	63	24 AC	2	3RA2436-8XF32-1AC2	--			
				110 AC	2	3RA2436-8XF32-1AG2	--			
				230 AC	2	3RA2436-8XF32-1AL2	--			
115	37	55	93	24 AC	5	3RA2437-8XF32-1AC2	--			
				110 AC	5	3RA2437-8XF32-1AG2	--			
				230 AC	2	3RA2437-8XF32-1AL2	--			
AC/DC operation										
50/65	19.6	22/30	34	24 ... 33 AC/DC	2	3RA2434-8XF32-1NB3	--			
80	25	37	63	24 ... 33 AC/DC	2	3RA2435-8XF32-1NB3	--			
86	27	45	63	24 ... 33 AC/DC	2	3RA2436-8XF32-1NB3	--			
115	37	55	93	24 ... 33 AC/DC	5	3RA2437-8XF32-1NB3	--			
DC operation										
For IO-Link connection										
50/65	19.6	22/30	34	24 DC	5	3RA2434-8XE32-1NB3	--			
80	25	37	63	24 DC	5	3RA2435-8XE32-1NB3	--			
86	27	45	63	24 DC	5	3RA2436-8XE32-1NB3	--			
115	37	55	93	24 DC	5	3RA2437-8XE32-1NB3	--			
For AS-Interface connection										
50/65	19.6	22/30	34	24 DC	5	3RA2434-8XH32-1NB3	--			
80	25	37	63	24 DC	5	3RA2435-8XH32-1NB3	--			
86	27	45	63	24 DC	5	3RA2436-8XH32-1NB3	--			
115	37	55	93	24 DC	5	3RA2437-8XH32-1NB3	--			

Representation of the complete contactor assemblies for star-delta (wye-delta) starting in size S2-S2-S2 with optionally mountable accessories, [see page 3/175](#).

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

IE3/IE4 ready SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

Fully wired and tested contactor assemblies for star-delta (wye-delta) starting · Size S3-S3-S2 · Up to 90 kW
 AC operation , AC/DC operation  or DC operation 



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RA244.-8XF32-1A.2

3RA244.-8XE32-1NB3

3RA244.-8XH32-1NB3

Rated data AC-3				Rated control supply voltage U_s	SD	Screw terminals 		Spring-type terminals 	
Operational current I_e up to 400 V	Rating of three-phase motors at 50 Hz and					Article No.	Price per PU	Article No.	Price per PU
A	230 V	400 V	690 V	V	d		d		
AC operation, 50/60 Hz									
115	30	55	90	24 AC	X	3RA2444-8XF32-1AC2	--	--	--
				110 AC	X	3RA2444-8XF32-1AG2	--	--	--
				230 AC	X	3RA2444-8XF32-1AL2	--	--	--
150	37	75	110	24 AC	X	3RA2445-8XF32-1AC2	--	--	--
				110 AC	X	3RA2445-8XF32-1AG2	--	--	--
				230 AC	X	3RA2445-8XF32-1AL2	--	--	--
160	45	90	132	24 AC	X	3RA2446-8XF32-1AC2	--	--	--
				110 AC	X	3RA2446-8XF32-1AG2	--	--	--
				230 AC	X	3RA2446-8XF32-1AL2	--	--	--
AC/DC operation									
115	30	55	90	24 ... 33 AC/DC	X	3RA2444-8XF32-1NB3	--	--	--
150	37	75	110	24 ... 33 AC/DC	X	3RA2445-8XF32-1NB3	--	--	--
160	45	90	132	24 ... 33 AC/DC	X	3RA2446-8XF32-1NB3	--	--	--
DC operation									
For IO-Link connection									
115	30	55	90	24 DC	X	3RA2444-8XE32-1NB3	--	--	--
150	37	75	110	24 DC	X	3RA2445-8XE32-1NB3	--	--	--
160	45	90	132	24 DC	X	3RA2446-8XE32-1NB3	--	--	--
For AS-Interface connection									
115	30	55	90	24 DC	X	3RA2444-8XH32-1NB3	--	--	--
150	37	75	110	24 DC	X	3RA2445-8XH32-1NB3	--	--	--
160	45	90	132	24 DC	X	3RA2446-8XH32-1NB3	--	--	--

Representation of the complete contactor assemblies for star-delta (wye-delta) starting with optionally mountable accessories, see page 3/176.

Contactors Assemblies for Star-Delta (Wye-Delta) Starting

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Overview

The individual parts for the contactor assemblies for star-delta (wye-delta) starting for customer assembly must be ordered separately.

- 3RT contactors: The operating times of the individual 3RT10 contactors are rated in such a way that no overlapping of the contact making and the arcing time between two contactors can occur on reversing, provided they are interlocked by way of their auxiliary switches (NC contact interlock) and the mechanical interlock.
For assemblies with AC operation and 50/60 Hz, a dead interval of 50 ms must be provided when used with voltages over 500 V; a dead interval of 30 ms is recommended for use with voltages up to and including 400 V. These dead times do not apply to assemblies with DC operation.
The operating times of the individual contactors are not affected by the mechanical interlock.
- Mechanical interlock
- Wiring kits: consisting of wiring modules or link rails and star jumpers
- Adapter for the mechanical interlock between S6 and S3
- Base plate

Additional components

- For momentary-contact operation: auxiliary switch (NO contact) for self-locking
- 3RB2 overload relays ([from page 7/117 onwards](#)), SIMOCODE pro 3UF7 motor management and control devices ([from page 10/16 onwards](#)) or 3RN thermistor motor protection relays ([page 10/161](#)) can be used for overload protection.
The overload relay can either be mounted onto the line contactor or separately fitted. It must be set to 0.58 times the rated motor current.
- Optional surge suppression for the S3 contactors; the contactors in sizes S6 to S12 are wired as standard with varistors.

The contactor assemblies for star-delta (wye-delta) starting for customer assembly are designed for standard applications.

Note:

Contactor assemblies for star-delta (wye-delta) starting in special applications such as very heavy starting¹⁾ or star-delta (wye-delta) starting of special motors must be customized. Help with designing such special applications is available from our Technical Support:

<https://support.industry.siemens.com/My/ww/en/requests>

¹⁾ For effective support from Technical Support you must provide the following details:

- Rated motor voltage
- Rated motor current
- Service factor, operating values
- Motor starting current factor
- Starting time
- Ambient temperature.

More information

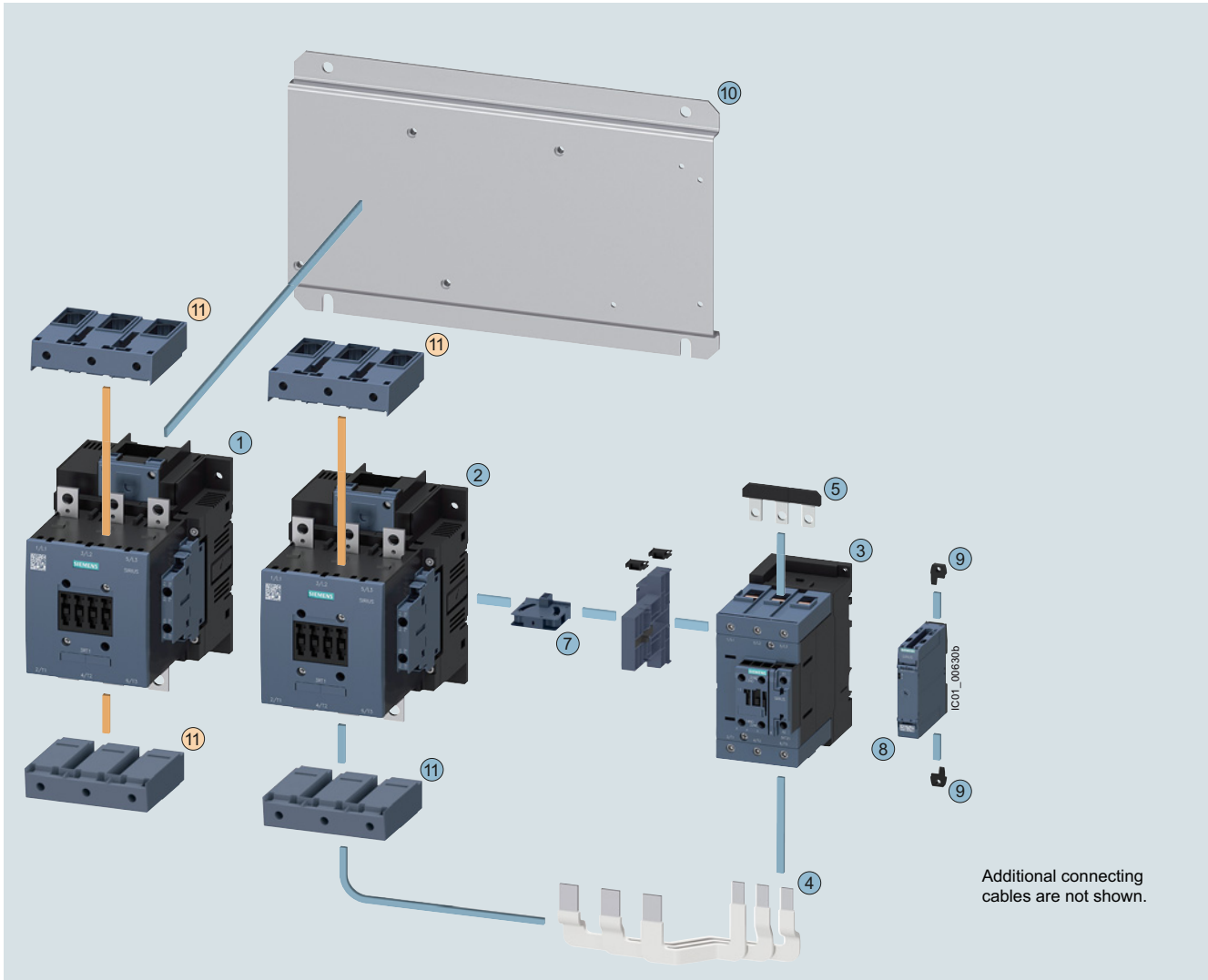
Homepage, see www.siemens.com/sirius

Industry Mall, see www.siemens.com/product?3RA24_3RT

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S6-S6-S3 · Up to 160 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑪ Box terminal blocks	3RT1955-4G	3/116

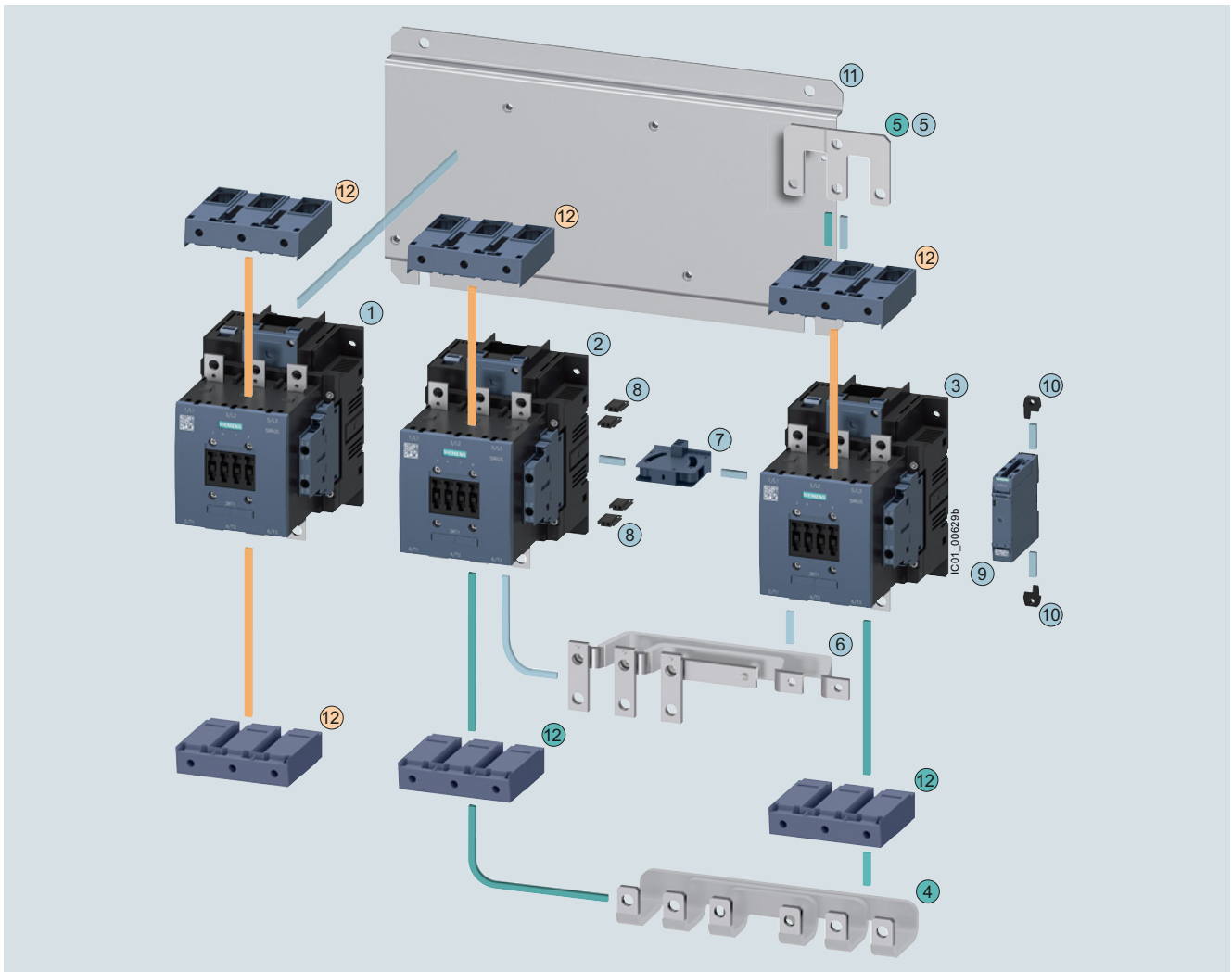
Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts	Type			Page
	Q11	Q13	Q12	
①②③ Contactors, 110 kW	3RT1.54	3RT1.54	3RT2045	3/59, 3/67, 3/70 ... 3/73
①②③ Contactors, 132 kW	3RT1.55	3RT1.55	3RT2046	3/59, 3/67, 3/70 ... 3/73
①②③ Contactors, 160 kW	3RT1.56	3RT1.56	3RT2047	3/59, 3/67, 3/70 ... 3/73
④ Assembly kit S6-S6-S3 for contactors with box terminals consisting of: Wiring modules, bottom	3RA1953-3G			3/112
⑤ Star jumper S3	3RT1946-4BA31			3/113
⑥ Adapter for the mechanical interlock between S6 and S3 (including two connectors)	3RA1954-2G			3/114
⑦ Mechanical interlock between S6 and S3	3RA1954-2A			3/114
⑧ Timing relay with star-delta (wye-delta) function	3RP257.			10/49
⑨ Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/50
⑩ Base plate star-delta (wye-delta)	3RA1952-2E			3/119
⑪ Box terminal block	3RT1955-4G			3/116

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S6-S6-S6 · Up to 160 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
12	Box terminal blocks	3/116

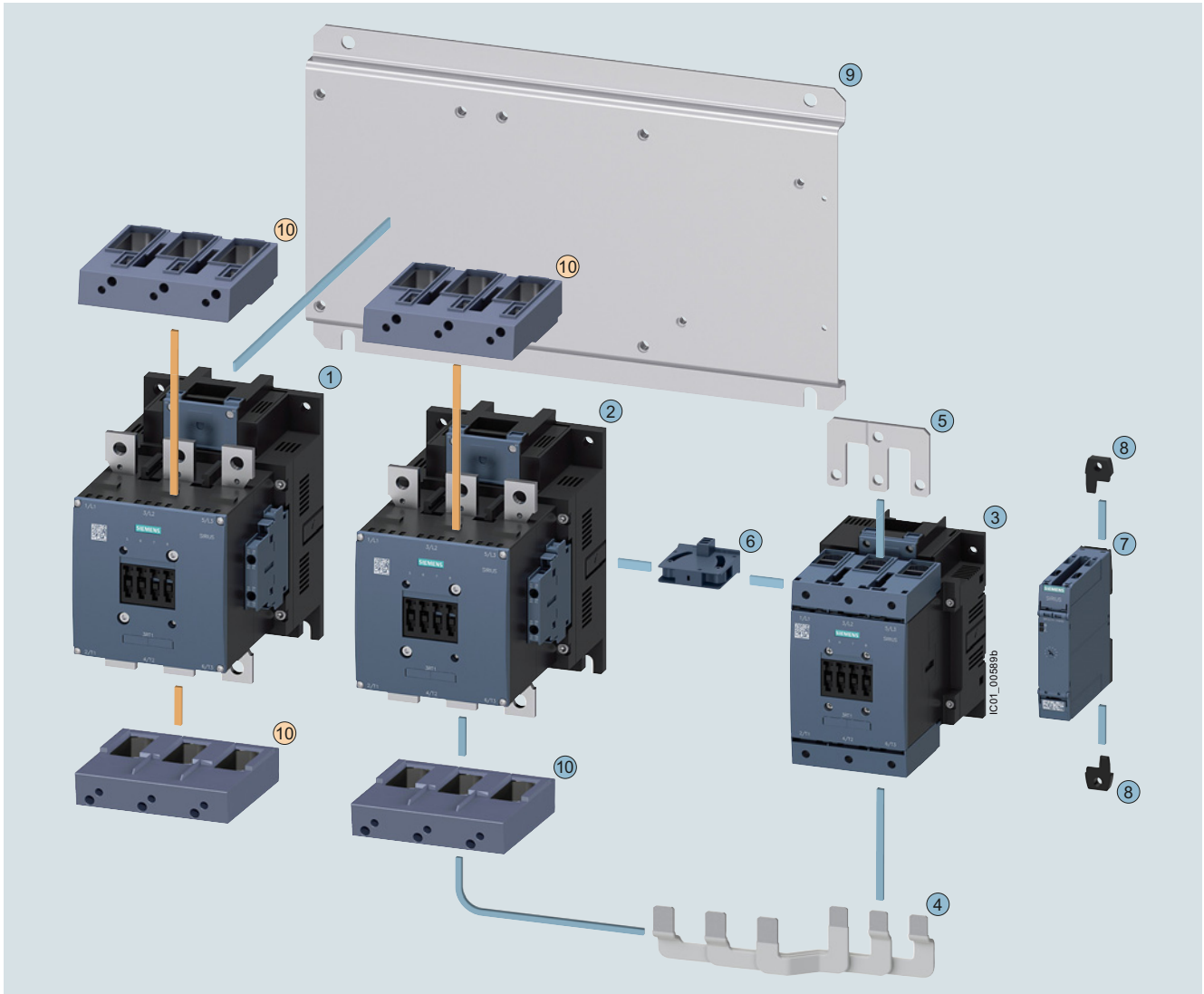
Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts	Type			Page
	Q11	Q13	Q12	
1 2 3	3RT1.54	3RT1.54	3RT1.54	3/71 ... 3/73
1 2 3	3RT1.55	3RT1.55	3RT1.55	3/71 ... 3/73
1 2 3	3RT1.56	3RT1.56	3RT1.56	3/71 ... 3/73
4 5	3RA1953-2B			3/112
4 5				
4				
5				
5 6	3RA1953-2N			3/112
6				
7	3RA1954-2A			3/114
8	3RA1932-2D			3/114
9	3RP257			10/49
10	3ZY1311-0AA00			10/50
11	3RA1952-2F			3/119
12	3RT1955-4G			3/116

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S10-S10-S6 · Up to 250 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑩ Box terminal blocks	3RT1966-4G	3/116

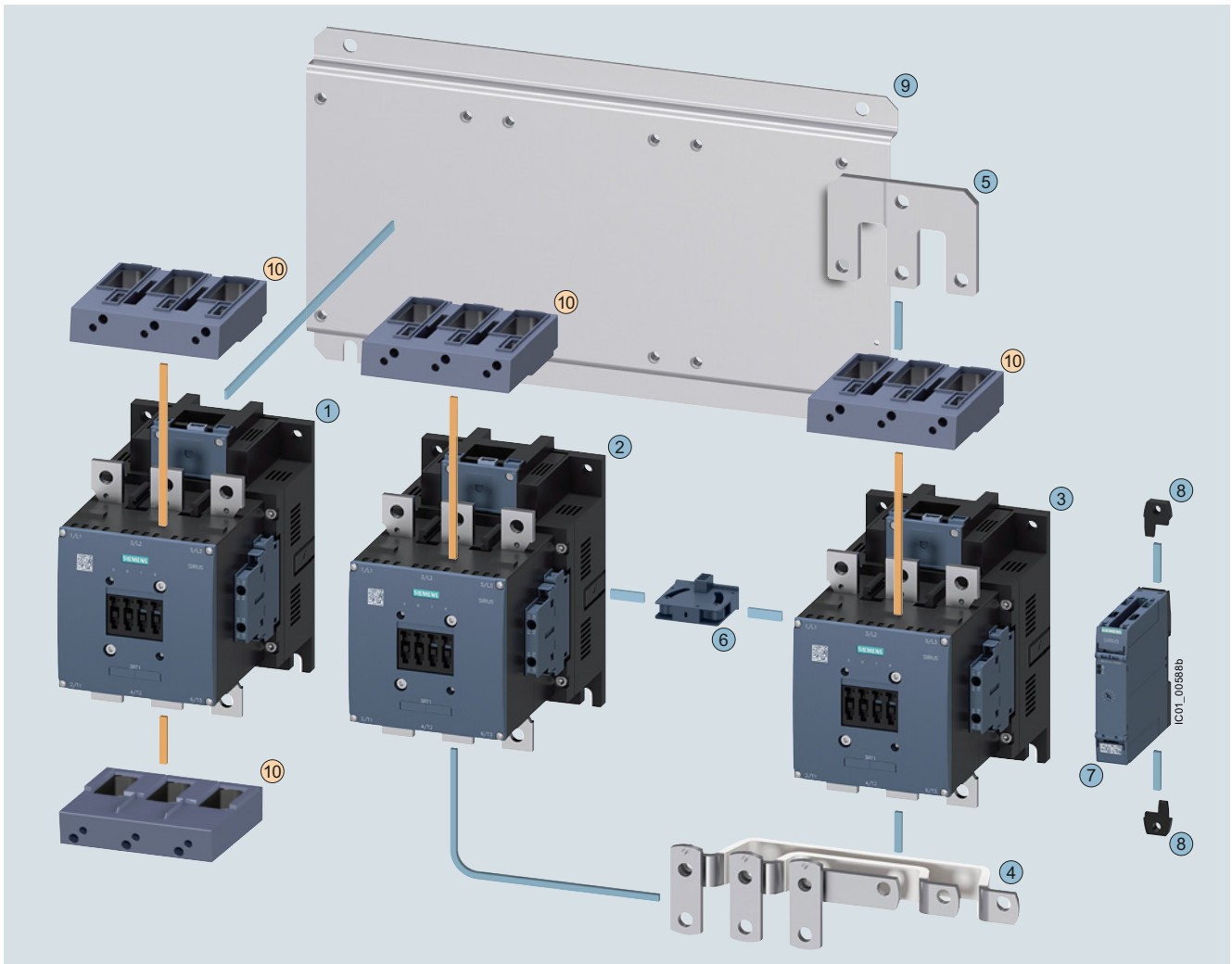
Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts	Type			Page
	Q11	Q13	Q12	
①②③ Contactors, 200 kW	3RT1.64	3RT1.64	3RT1.54	3/71 ... 3/73, 3/135
①②③ Contactors, 250 kW	3RT1.65	3RT1.65	3RT1.55	3/71 ... 3/73, 3/135
④ Assembly kit S10-S10-S6 for contactors with box terminals consisting of: Wiring modules, bottom	3RA1963-3E			3/112
⑤ Star jumper S6	3RT1956-4BA31			3/113
⑥ Mechanical interlock between S10 and S6	3RA1954-2A			3/114
⑦ Timing relay with star-delta (wye-delta) function	3RP257.			10/49
⑧ Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/50
⑨ Base plate star-delta (wye-delta)	3RA1962-2E			3/119
⑩ Box terminal block	3RT1966-4G			3/116

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S10-S10-S10 · Up to 250 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑩ Box terminal blocks	3RT1966-4G	3/116

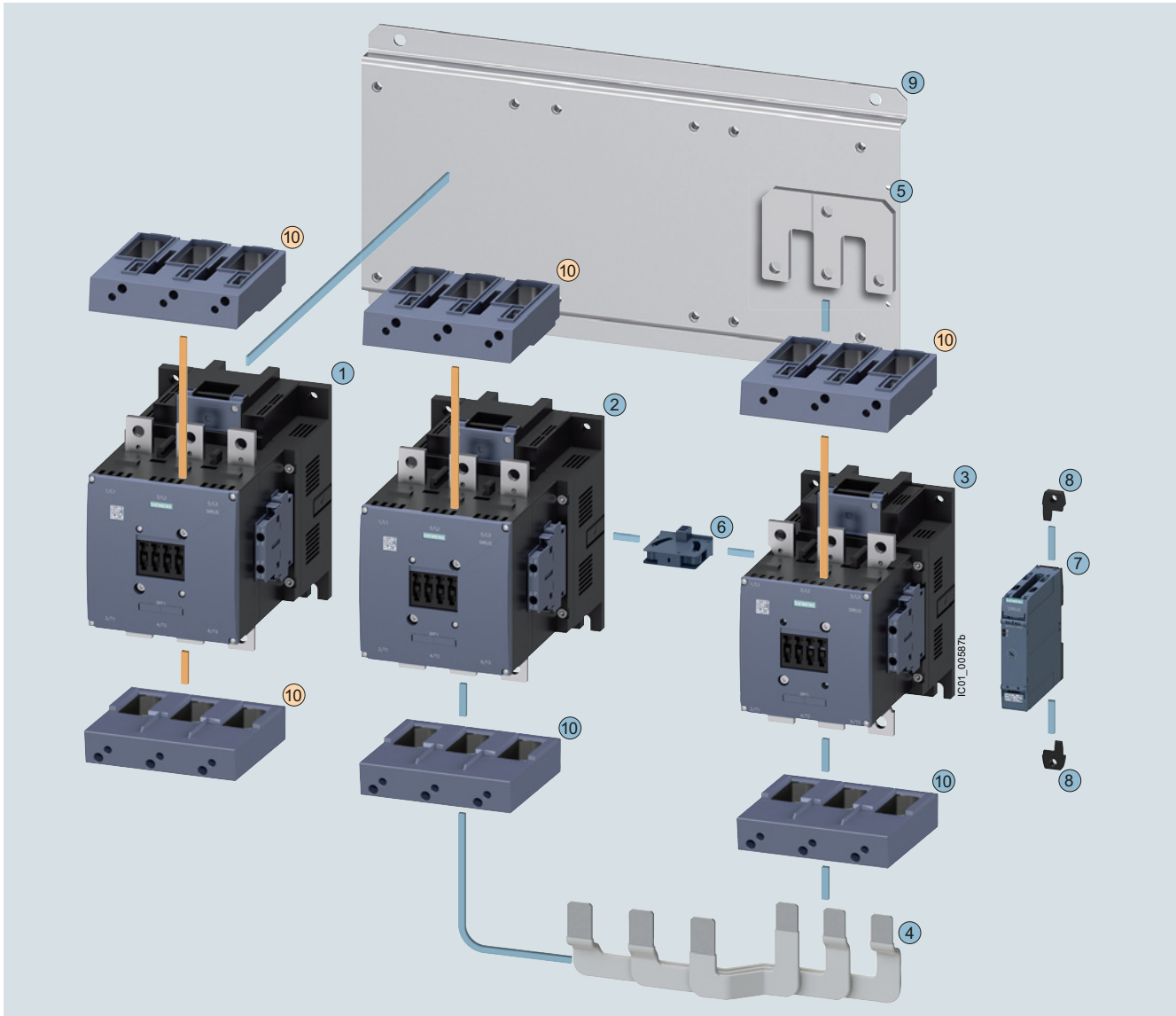
Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts	Type			Page
	Q11	Q13	Q12	
①②③ Contactors, 200 kW	3RT1.64	3RT1.64	3RT1.64	3/71 ... 3/73, 3/135
①②③ Contactors, 250 kW	3RT1.65	3RT1.65	3RT1.65	3/71 ... 3/73, 3/135
④⑤ Assembly kit S10-S10-S10 for contactors without box terminals consisting of:	3RA1963-2B			3/112
④ Link rails, bottom				
⑤ Star jumper S10				
⑥ Mechanical interlock	3RA1954-2A			3/114
⑦ Timing relay with star-delta (wye-delta) function	3RP257.			10/49
⑧ Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/50
⑨ Base plate star-delta (wye-delta)	3RA1962-2F			3/119

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S12-S12-S10 · Up to 500 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑩ Box terminal blocks	3RT1966-4G	3/116

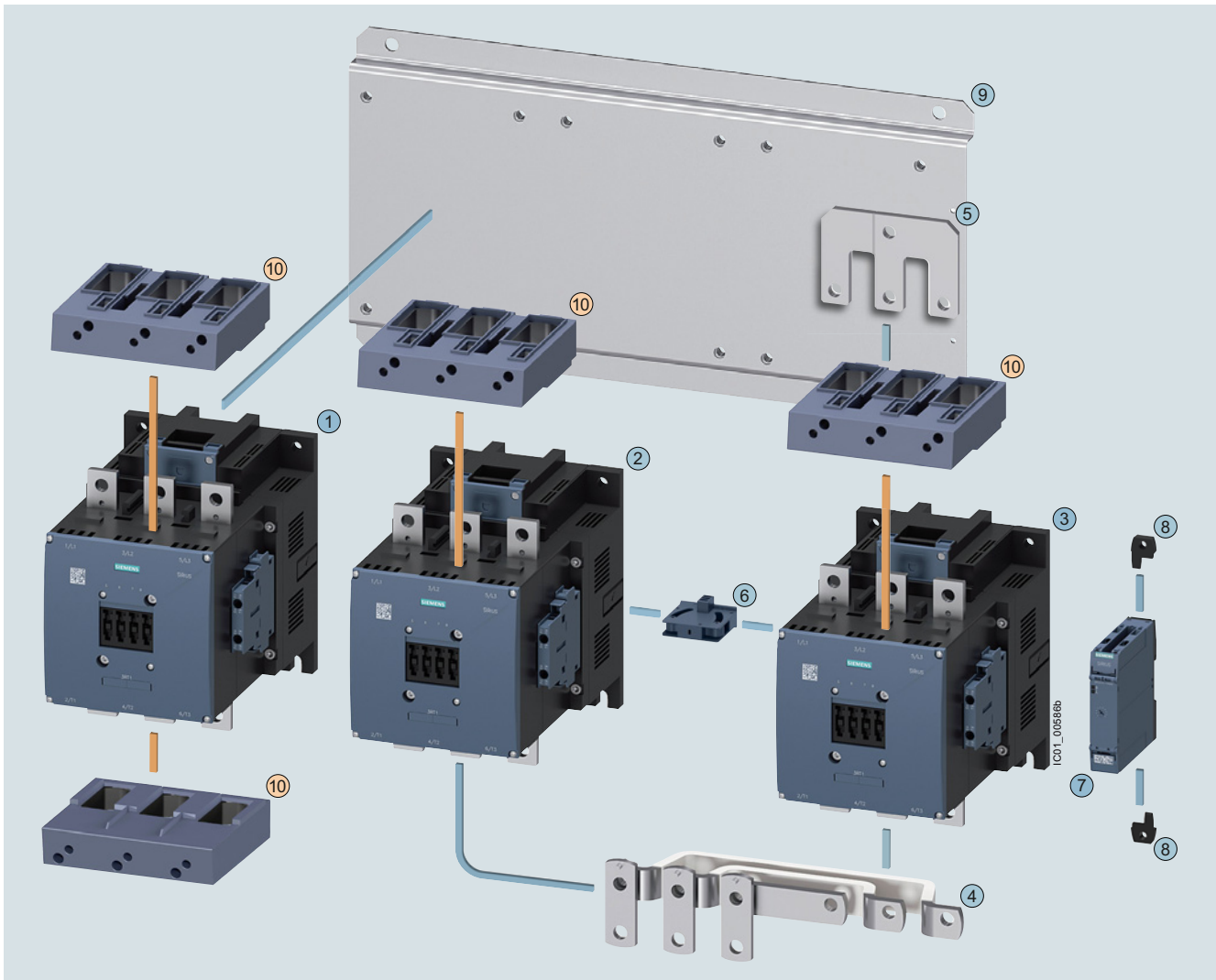
Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts	Type			Page
	Q11	Q13	Q12	
①②③ Contactors, 355 kW	3RT1.75	3RT1.75	3RT1.64	3/71 ... 3/73, 3/135
①②③ Contactors, 400 kW	3RT1.75	3RT1.75	3RT1.65	3/71 ... 3/73, 3/135
①②③ Contactors, 500 kW	3RT1.76	3RT1.76	3RT1.66	3/71 ... 3/73, 3/135
④ Assembly kit S12-S12-S10 for contactors with box terminals consisting of: Wiring modules, bottom	3RA1973-3E			3/112
⑤ Star jumper S10	3RT1966-4BA31			3/113
⑥ Mechanical interlock between S12 and S10	3RA1954-2A			3/114
⑦ Timing relay with star-delta (wye-delta) function	3RP257.			10/49
⑧ Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00			10/50
⑨ Base plate star-delta (wye-delta)	3RA1972-2E			3/119
⑩ Box terminal blocks	3RT1966-4G			3/116

Contactor Assemblies for Star-Delta (Wye-Delta) Starting

Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Contactor assemblies for star-delta (wye-delta) starting for customer assembly · Size S12-S12-S12 · Up to 500 kW



Mountable accessories (optional)

To be ordered separately	Type	Page
⑩	Box terminal blocks	3/116

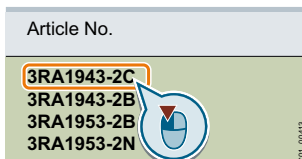
Contactor assemblies for star-delta (wye-delta) starting for customer assembly

Individual parts	Type			Page
	Q11	Q13	Q12	
①②③	3RT1.75	3RT1.75	3RT1.75	3/71 ... 3/73, 3/135
①②③	3RT1.76	3RT1.76	3RT1.76	3/71 ... 3/73, 3/135
④⑤	3RA1973-2B			3/112
Assembly kit S12-S12-S12 for contactors without box terminals consisting of:				
④	Link rails, bottom			
⑤	Star jumper S12			
⑥	Mechanical interlock	3RA1954-2A		3/114
⑦	Timing relay with star-delta (wye-delta) function	3RP257.		10/49
⑧	Push-in lugs for star-delta (wye-delta) timing relays	3ZY1311-0AA00		10/50
⑨	Base plate star-delta (wye-delta)	3RA1972-2F		3/119



clickable

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.



Or directly on the Internet, e.g.
www.siemens.com/product?3RA1943-2C

Price groups

PG 41A, 41B

4/2

Introduction

Contactors for special applications

- 4/6 SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole **NEW**
- 4/17 SIRIUS 3RT23 contactors, 4-pole
- 4/27 SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC
- 4/33 SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole
- 4/44 3TK20 miniature contactors for resistive loads (AC-1), 4-pole
- 4/52 Contactors for railway applications
 - SIRIUS 3RT contactors with extended operating range, 3-pole **NEW**
- 4/59 - SIRIUS 3RH2 contactor relays with extended operating range
- 4/61 - 3TH4 contactor relays, 8-pole
- 4/63 - 3TC contactors for switching DC voltage, 2-pole
- 4/65 3TC contactors for switching DC voltage, 1-pole and 2-pole

3/152

3TG10 power relays/miniature contactors

Note:

Conversion tool
 e.g. from 3RT13 to 3RT23, see
www.siemens.com/sirius/conversion-tool

Switching Devices – Contactors and Contactor Assemblies

Contactors for Special Applications

Introduction

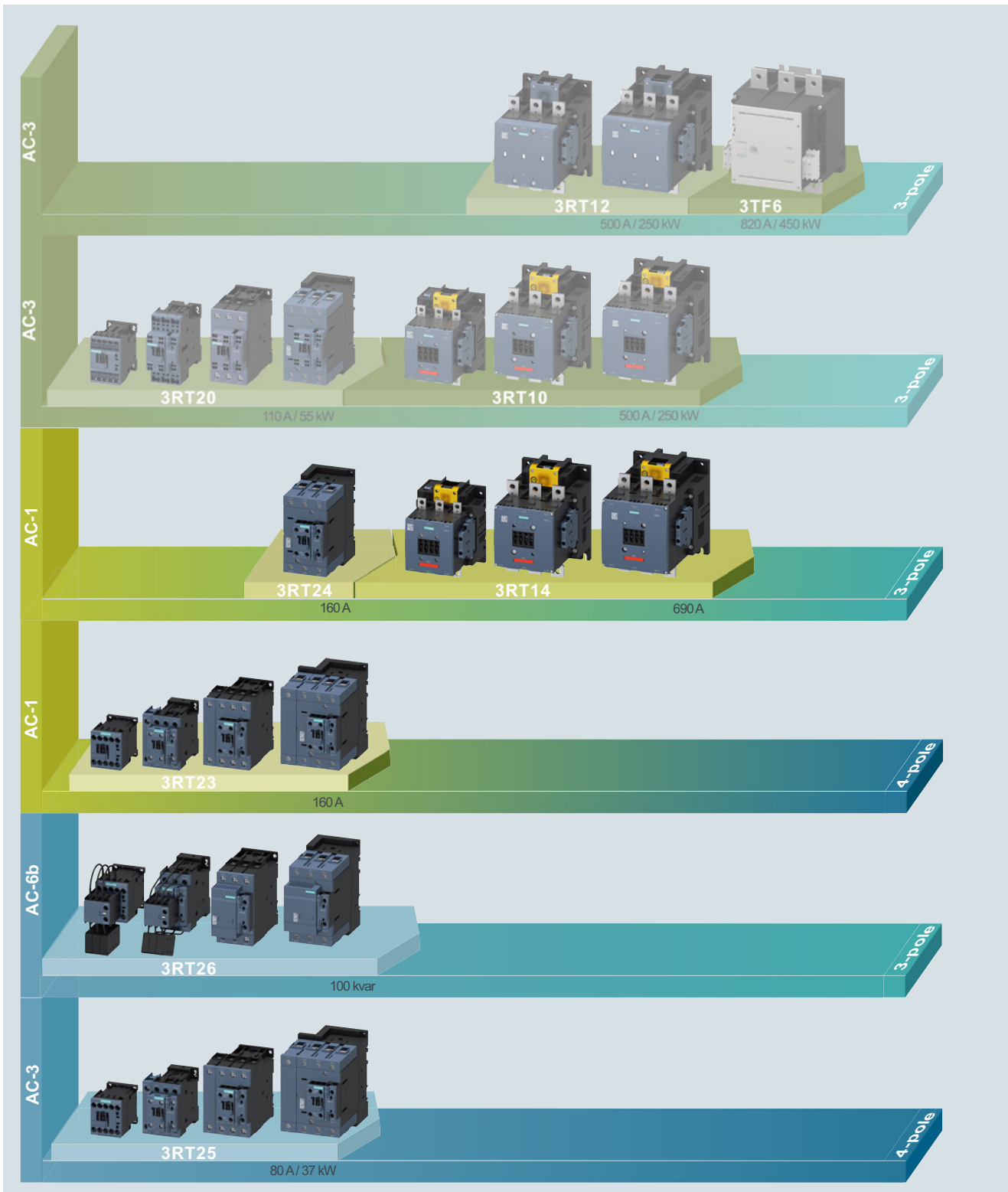
Overview

More information

Homepage, see www.siemens.com/sirius

Industry Mall, see www.siemens.com/product?3RT_3TK_3TC

Conversion tool e.g. from 3RT13 to 3RT23, see www.siemens.com/sirius/conversion-tool



Overview of the 3RT and 3TF contactors

Switching Devices – Contactors and Contactor Assemblies

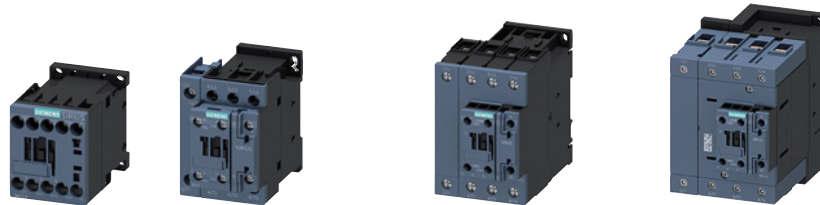
Contactors for Special Applications

Introduction



Size	S3		S6		S10		S12	
Type	3RT244.		3RT1456		3RT146.		3RT1476	
3RT244, and 3RT145 to 3RT147 3-pole contactors								
Type	3RT2446	3RT2448	3RT1456	3RT1466	3RT1467	3RT1476		
Number of main contacts	3 NO		3 NO		3 NO		3 NO	
AC, AC/DC operation	(p. 4/14)		(p. 4/15, 4/16)		(p. 4/15, 4/16)		(p. 4/15, 4/16)	
AC-1								
U_i	V	1 000		1 000		1 000		
U_e	V	1 000		1 000		1 000		
I_e up to 690 V	40 °C A	140	160	275	400	500	690	
	60 °C A	130	140	250	380	450	Standard operating mechanism: 650, solid-state operating mechanism: 600	
Accessories for contactors								
Auxiliary switch blocks	3RH29, 3RA28		3RH19, 3RT1926		(p. 3/97, 3/99, 3/100, 3/102)			
Functional modules (Direct-on-line, star-delta (wye-delta) starting)	3RA281.		(p. 3/106)		--			
Terminal covers	3RT2946-4EA4		(p. 3/118)		3RT1956-4EA.		(p. 3/118)	
Box terminal blocks	--		--		3RT1955/56-4G		(p. 3/116)	
Surge suppressors	3RT2936¹⁾, 3RT2946		(p. 3/103, 3/104)		3RT1956-1C (RC element)		(p. 3/104)	

¹⁾ Surge suppressors 3RT2936-1B/-1E can be used for 3RT2.4 contactors as from product version E03. When using an AC/DC coil, the surge suppressor is already integrated in the electronics.



Size	S00		S0			S2		S3		
Type	3RT231.		3RT232.			3RT233.		3RT234.		
4-pole 3RT23 contactors										
Type	3RT2316	3RT2317	3RT2325	3RT2326	3RT2327	3RT2336	3RT2337	3RT2344	3RT2346	3RT2348
Number of main contacts	4 NO		4 NO			4 NO		4 NO		
AC, DC and AC/DC operation	(p. 4/22, 4/24)		(p. 4/22 ... 4/24)			(p. 4/22 ... 4/26)		(p. 4/22 ... 4/26)		
AC-1										
U_i	V	690		690			690		690	
U_e	V	690		690			690		690	
I_e up to 690 V	40 °C A	18	22	35	40	50	60	110	110	160
	60 °C A	16	20	30	35	42	55	95	100	140
AC-2 and AC-3										
I_e up to 400 V	A	9	12	15.5	15.5	15.5	--	--	--	--
P at 400 V	kW	4	5.5	7.5	7.5	7.5	--	--	--	--
Accessories for contactors										
Auxiliary switch blocks	3RH29, 3RA28							(p. 3/94 ... 3/101)		
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	3RA281.							(p. 3/106)		
Terminal covers	--		--			3RT2936-4EA4		3RT2946-4EA4		(p. 3/118)
Surge suppressors	3RT2916		(p. 3/103, 3/104)			3RT2936		3RT2936¹⁾, 3RT2946		(p. 3/103, 3/104)

¹⁾ Surge suppressors 3RT2936-1B/-1E can be used for 3RT2.4 contactors as from product version E03. When using an AC/DC coil, the surge suppressor is already integrated in the electronics.

Switching Devices – Contactors and Contactor Assemblies

Contactors for Special Applications

Introduction



Size	S00	S0	S2	S3
Type	3RT251.	3RT252.	3RT253.	3RT254.

4-pole 3RT25 contactors

Type	3RT2516 3RT2517 3RT2518 3RT2526	3RT2535 3RT2536	3RT2544 3RT2545
Number of main contacts	2 NO + 2 NC	2 NO + 2 NC	2 NO + 2 NC
AC, DC and AC/DC operation	(p. 4/30, 4/31)	(p. 4/30, 4/31)	(p. 4/30, 4/32)

AC-1

U_i	V	690								
U_e	V	690								
I_e up to 690 V	40 °C	A	18	22	22	40	60	70	100	125
	60 °C	A	16	20	20	35	55	60	90	105

AC-2 and AC-3

I_e up to 400 V	NO	A	9	12	16	25	35	41	65	80
	NC	A	9	9	9	25 (20) ¹⁾	35	41	65	80
P at 400 V	NO	kW	4	5.5	7.5	11	18.5	22	30	37
	NC	kW	4	4	4	11 (7.5)¹⁾	18.5	22	30	37
At 230 V	NO	kW	2.2	3 / 2.2	4 / 2.2	5.5	11	11	18.5	22
	NC	kW	2.2	3 / 2.2	4 / 2.2	5.5	11	11	18.5	22

Accessories for contactors

Auxiliary switch blocks	3RH29, 3RA28	(p. 3/94 ... 3/101)
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	3RA281.	(p. 3/106)
Terminal covers	--	3RT2936-4EA4 (p. 3/118) 3RT2946-4EA4 (p. 3/118)
Surge suppressors	3RT2916 (p. 3/103, 3/104)	3RT2926 (p. 3/103, 3/104) 3RT2936 (p. 3/103, 3/104) 3RT2936²⁾, 3RT2946 (p. 3/103, 3/104)

¹⁾ The value in brackets applies to the NC for DC operation.

²⁾ Surge suppressors 3RT2936-1B/-1E can be used for 3RT2.4 contactors as from product version E03. When using an AC/DC coil, the surge suppressor is already integrated in the electronics.



Size	00
Type	3TK20

4-pole 3TK miniature contactors

Type	3TK20
Number of main contacts	4
AC, DC operation	(p. 4/50, 4/51)

AC-1

I_e at 400 V	Up to 690 V	A	18
----------------	-------------	---	-----------

AC-2 and AC-3

I_e at 400 V	A	8.4
P at 400 V	kW	4
At 127 V	kW	1.4
At 230 V	kW	2.5
At 500 V	kW	4
At 690 V	kW	4

Accessories for contactors

Auxiliary switch blocks	Lateral	--
Terminal covers	--	--
Surge suppressors	3TX4490	(p. 3/151)

Further contactors

- For SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole, [see page 4/33](#)
- For 3TC contactors for switching DC voltage, 1 and 2-pole, [see page 4/65](#)
- Contactors for railway applications
 - For SIRIUS 3RT contactors with extended operating range, 3-pole, [see page 4/52](#)
 - For SIRIUS 3RH2 contactor relays with extended operating range, [see page 4/59](#)
 - For 3TH4 contactor relays, 8-pole, [see page 4/61](#)
 - For 3TC contactors for switching DC voltage, 2-pole, [see page 4/63](#)

Switching Devices – Contactors and Contactor Assemblies

Contactors for Special Applications

Introduction

Connection methods

The following connection options are available for 3RT contactors depending on the size and version:

- 3RT2 contactors, sizes S00 and S0: screw terminals or spring-type terminals both for the main as well as for the auxiliary and control circuits
- 3RT2 contactors, sizes S2 and S3: screw terminals (complete devices) or spring-type terminals (auxiliary circuit only)
- 3RT14 contactors, sizes S6 to S12: busbar connections, optionally with box terminal blocks, auxiliary and control circuit available either with screw or spring type connection system

Devices of the 3TK2 series are available with flat connectors and solder pin connections.



Screw terminals



Spring-type terminals



Busbar connections



Flat connectors



Solder pin connections

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Contactors for Special Applications

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Overview

Standards

IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1 (auxiliary switches)

3RT.4 contactors are used for switching resistive loads (AC-1) or as contactors that normally only have to carry the current, for example, for variable-speed drives.

The accessories and spare parts of the 3RT contactors can also be used here, [see from page 3/76 onwards](#).

For a general description of 3RT contactors, sizes S3 to S12, [see from page 3/17 onwards](#).

Connection methods

Main circuit

- Size S3: screw terminals with box terminal; direct connection to the connecting bar possible with cable lugs when the box terminal is removed.
- Sizes S6 to S12: screw terminals with connecting bars that the cables can be connected to using either cable lugs or flexible or rigid busbars. Alternatively, box terminals are available as accessories.

Auxiliary/control circuit

Sizes S3 to S12: Screw terminals

Operating mechanism types

3RT2 contactors

3RT2 contactors are available as versions with conventional AC or DC operating mechanisms or as versions with a wide-range solid-state operating mechanism and a universal actuating voltage (AC or DC operation).

With an operating range from 0.8 to $1.1 \times U_s$, control takes place via the control supply voltage connection A1 - A2 as is typically the case.

3RT1 contactors

The following control and/or actuator versions are available in sizes S6 to S12:

- Standard operating mechanism with economy circuit for AC and DC operating mechanism (switchover from closing coil to holding coil)
- Solid-state operating mechanisms
Overvoltage damping of the operating mechanism coil is already integrated in the electronics for contactors with solid-state operating mechanisms. The operating mechanisms are powered via a supply voltage with an operating range from 0.8 to $1.1 \times U_s$, optionally also controlled depending on the chosen mode of operation. Alternatively, control is via the separate 24 V DC control signal input. Various rated voltage ranges for AC/DC control are available.

The following versions are available:

- With two operating modes: Direct control or via CPU input
- As above, but additionally with remaining lifetime indication (RLT)
- With fail-safe PLC input for simplification of safety applications (without mode of operation selection)

Solenoid coils/drive units

3RT2 contactors

Coil replacement is possible for sizes S0 to S3.

3RT1 contactors

The operating mechanisms for 3RT14...A/-N/-P contactors are removable and can be replaced simply by unlocking and pulling them out.

NOTICE: Removal or changing of the operating mechanism is not permitted for 3RT14...S contactors with fail-safe control.

Contactors for Special Applications

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Safety applications

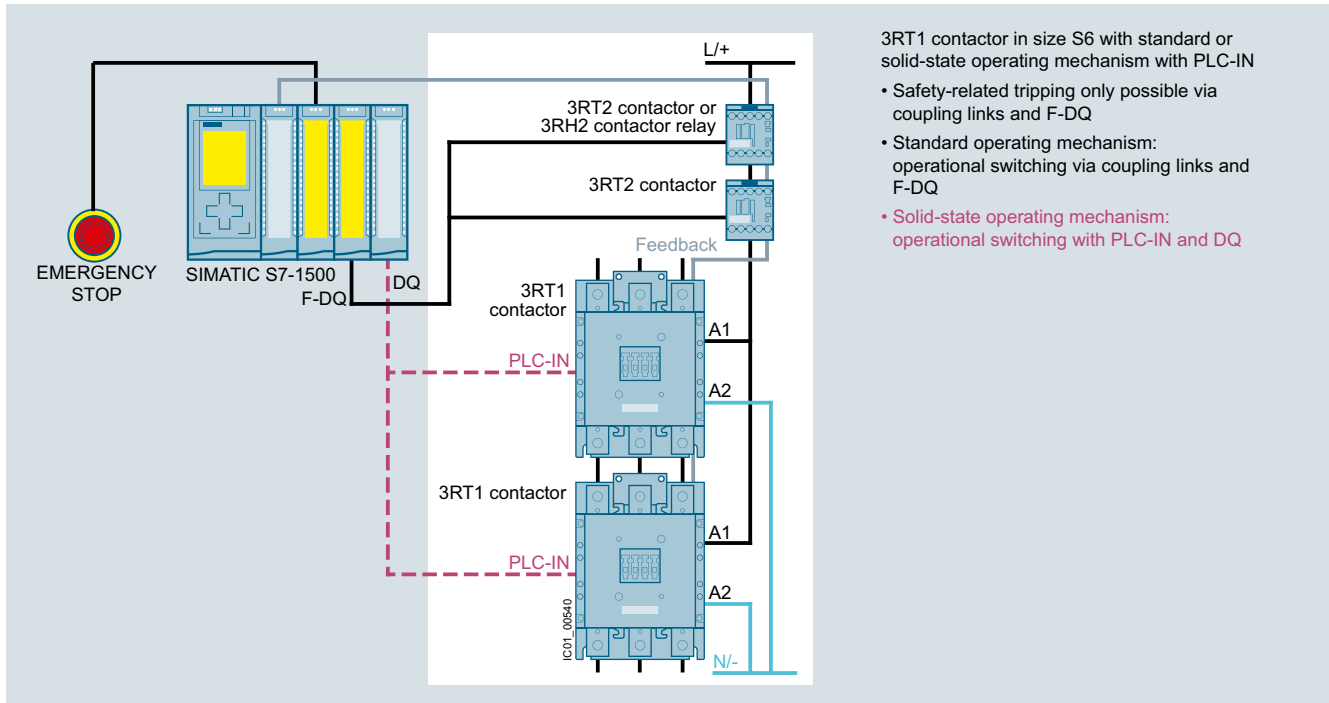
Contactors are a significant part of safety-related applications. They are generally the actuators that perform the switching operation leading to the safe disconnection of the corresponding application or system.

While contactors with smaller power ratings can be connected directly to the outputs of fail-safe controllers, implementing

safety-related applications with standard contactors with higher power is much more complicated and elaborate because of the necessary coupling links. Due to their fail-safe control input, the special versions with size S6 (3RT14...S) provide a much simpler way of doing this.

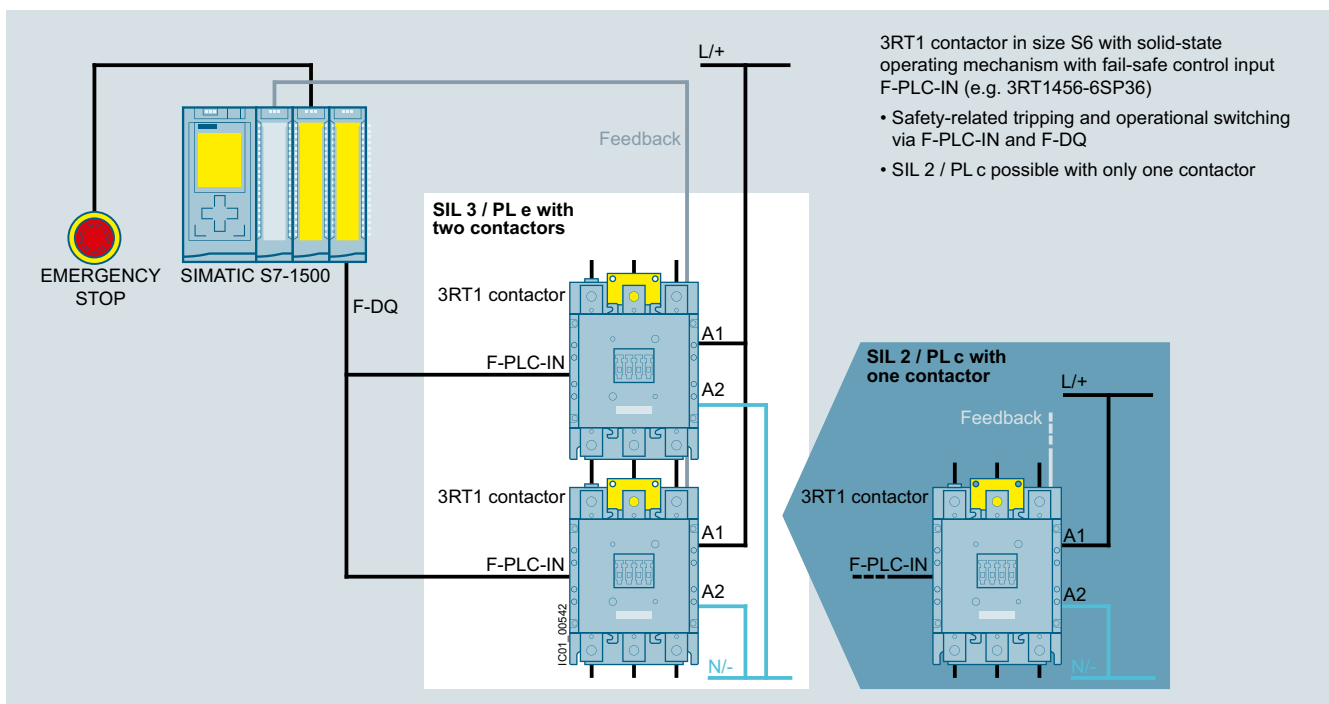
For more information on safety systems, see from page 11/1 onwards.

Example for SIL 2 and SIL 3 / PL e application - previously:



Application with safety-related disconnection with standard contactors

Example for SIL 3 / PL e (left-hand side) and SIL 2 / PL c (right-hand side) Application - new:



Application with safety-related disconnection with contactors with fail-safe control

Contactors for Special Applications

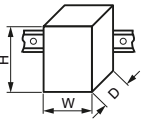
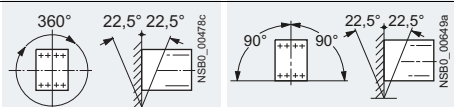

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/24229/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/24229/faq>

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/24229/man>

Type		3RT2446, 3RT2448	3RT1456	3RT1466	3RT1467	3RT1476
Size		S3	S6	S10	S12	S12
General data						
Dimensions (W x H x D)						
<ul style="list-style-type: none"> Basic units <ul style="list-style-type: none"> Screw/spring-type terminals Basic unit with mounted auxiliary switch block <ul style="list-style-type: none"> Screw terminals Spring-type terminals Basic unit with mounted function module or solid-state time-delayed auxiliary switch block <ul style="list-style-type: none"> Screw/spring-type terminals 		mm	70 x 140 x 152	120 x 172 x 170	145 x 210 x 202	160 x 214 x 225
		mm	70 x 140 x 196	120 x 172 x 217	145 x 210 x 251	160 x 214 x 271
		mm	70 x 140 x 200	--	--	--
		mm	70 x 140 x 226	--	--	--
Permissible mounting position						
The contactors are designed for operation on a vertical mounting surface.						
Upright mounting position			 Special version required			
Mechanical endurance						
Basic units and basic units with mounted auxiliary switch block		Operating cycles	10 million			
Basic units with solid-state compatible auxiliary switch block		Operating cycles	5 million	--		
Electrical endurance for utilization category AC-1, at $U_e = 400$ V			Operating cycles	0.5 million	On request	0.5 million
Rated insulation voltage U_i (pollution degree 3)		V	1 000			
Rated impulse withstand voltage U_{imp}		kV	6	8		
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		V	690			
Mirror contacts according to IEC 60947-4-1, Appendix F						
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.						
Integrated auxiliary switches			Yes	--		
Removable auxiliary switch block			--	Yes		
Permissible ambient temperature						
During operation		°C	-25 ... +60			
During storage		°C	-55 ... +80			
Degree of protection acc. to IEC 60529						
On front			IP20	IP00 (IP20 with box terminal/cover)		
Connecting terminal			IP00 (for higher degree of protection: use additional terminal covers)			
Touch protection acc. to IEC 60529						
			Finger-safe for vertical touching from the front	Finger-safe for vertical touching from the front with cover		
Shock resistance						
Rectangular pulse						
- AC operation		g/ms	10.3/5 and 10.5/10	8.5/5 and 4.2/10		
- DC operation		g/ms	6.7/5 and 4.0/10	8.5/5 and 4.2/10		
Sine pulse						
- AC operation		g/ms	16.3/5 and 10.5/10	13.4/5 and 6.5/10		
- DC operation		g/ms	10.6/5 and 6.3/10	13.4/5 and 6.5/10		

Contactors for Special Applications

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Type	3RT2446, 3RT2448		3RT1456	3RT1466	3RT1467	3RT1476
Size	S3		S6	S10		S12
Short-circuit protection						
Main circuit						
• Version of the fuse link required for short-circuit protection of the main circuit						
- for type of coordination "1"		gG: 250 A (690 V, 100 kA)	gG: 355 A (690 V, 100 kA)	gG: 500 A (690 V, 100 kA)	On request	gG: 800 A (690 V, 50 kA)
- for type of coordination "2"		gG: 250 A (690 V, 100 kA)	gG: 350 A (690 V, 100 kA)	gG: 500 A (690 V, 100 kA)	On request	gG: 710 A (690 V, 100 kA)
Auxiliary circuit						
• Version of the fuse link required for short-circuit protection of the auxiliary switch	A	Fuse gG: 10				
• Miniature circuit breaker version required for short-circuit protection of the auxiliary switch	A	On request				
Short-circuit protection for contactors with overload relays	See Configuration Manual for load feeders					
Short-circuit protection for fuseless load feeders	See • 3RA2 load feeders, from page 8/4 • Configuration Manual for load feeders					

Type	3RT2446, 3RT2448		3RT1456	3RT1466, 3RT1467		3RT1476			
Size	-A	-N	-A	-N/-P/-S	-A	-N/-P/-S			
	S3		S6	S10		S12			
Control									
Solenoid coil operating range (AC/DC)	0.8 ... 1.1 x U_s	0.8 x U_s min ... 1.1 x U_s max							
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)									
• AC operation, 50 Hz, standard version									
- Closing	VA	296	--						
- P.f.		0.61	--						
- Closed	VA	19	--						
- P.f.		0.38	--						
• AC operation, 50/60 Hz, standard version									
- Closing	VA	348/296	--						
- P.f.		0.62/0.55	--						
- Closed	VA	25/18	--						
- P.f.		0.35/0.41	--						
• AC operation, 50/60 Hz, for USA/Canada									
- Closing	VA	326/326	--						
- P.f.		0.62/0.55	--						
- Closed	VA	22/22	--						
- P.f.		0.38/0.4	--						
• AC/DC operation									
- Closing for AC operation	VA	--	163	300	280	590	530	830	750
- P.f.		--		0.9	0.8	0.9	0.8	0.9	0.8
- Closed for AC operation	VA	--	3.1	5.8	4.8	6.7	8.5	9.2	9
- P.f.		--		0.8	0.6	0.9	0.4	0.9	0.4
- Closing for DC operation	W	--	76	360	320	650	580	920	800
- Closed for DC operation	W	--	1.8	5.2	2.8	7.4	3.4	10	3.6

Contactors for Special Applications

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Type			3RT2446, 3RT2448	3RT1456	3RT1466, 3RT1467	3RT1476
Size			S3	S6	S10	S12
Control (continued)						
Type of PLC control input according to IEC 60947-1						
<u>Solid-state operating mechanism</u>						
• Version	3RT14...-N/-P/-S	--		Type 1		
• Rated voltage	V DC	--		24		
• Operating range	V DC	--		17 ... 30		
• Power consumption	mA	--		≤ 30		
• Recovery time after mains failure, typical	3RT14...-S	s	--	2		
Operating times for 1.0 x U_s¹⁾ (Total break time = Opening delay + Arcing time)						
<u>Standard operating mechanism</u> 3RT.4...-A						
- Closing delay	ms	13 ... 50	25 ... 50	35 ... 50	50 ... 70	
- Opening delay	ms	10 ... 21	40 ... 60	50 ... 80	70 ... 100	
<u>Solid-state operating mechanism</u>						
• Actuated via A1/A2	3RT.4...-N/-P					
- Closing delay	ms	50 ... 70	100 ... 120	110 ... 130	125 ... 150	
- Opening delay	ms	38 ... 57	80 ... 100			
• Actuated via PLC input	3RT14...-N/-P					
- Closing delay	ms	--	40 ... 60	50 ... 65	65 ... 80	
- Opening delay	ms	--	80 ... 100			
• Actuated via F-PLC input	3RT14...-S					
- Closing delay	ms	--	60 ... 75			
- Opening delay	ms	--	115 ... 130			
• Arcing time	ms	10 ... 20	10 ... 15			

¹⁾ The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 to 5 ms, diode assembly: 2x to 6x).

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Type		3RT2446	3RT2448	3RT1456	3RT1466	3RT1467	3RT1476
Size		S3		S6	S10		S12
Rated data of the main contacts							
Load rating with AC							
Utilization category AC-1, switching resistive loads							
• Rated operational currents I_e	At 40 °C up to 690 V A	140	160	275	400	500	690
	At 60 °C up to 690 V A	130	140	250	380	450	Standard operating mechanism: 650, solid-state operating mechanism: 600
	Up to 1 000 V A	60	80	100	150	--	250
• Minimum conductor cross-section for loads with I_e	At 40 °C mm ²	50	70	2 x 70	240	300	2 x 240
	At 60 °C mm ²	50		120	240	300	2 x 240
Utilization categories AC-2 and AC-3							
With an electrical endurance of 1.3 million operating cycles							
• Rated operational currents I_e	Up to 400 V A	44		97	138		170
	Up to 690 V A	44		97	138		170
• Rated power for slipping or squirrel-cage motors at 50 and 60 Hz	At 230 V kW	12.7		30	37		55
	400 V kW	22		55	75		90
	500 V kW	29.9		55	90		110
	690 V kW	38.2		90	132		160
Power loss per conducting path	At I_e /AC-1 W	--		20	27	42	55
Load rating with DC							
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)							
• Rated operational currents I_e (at 60 °C)							
- 1 conducting path	Up to 24 V A	130	140	250	380		500
	60 V A	80		250	380		500
	110 V A	12		18	33		
	220 V A	2.5		3.4	3.8		
	440 V A	0.8		0.8	0.9		
	600 V A	0.48		0.5	0.6		
- 2 conducting paths in series	Up to 24 V A	130	140	250	380		500
	60 V A	130	140	250	380		500
	110 V A	130	140	250	380		500
	220 V A	13		20	380		500
	440 V A	2.4		3.2	4		
	600 V A	1.3		1.6	2		
- 3 conducting paths in series	Up to 24 V A	130	140	250	380		500
	60 V A	130	140	250	380		500
	110 V A	130	140	250	380		500
	220 V A	130	140	250	380		500
	440 V A	6		11.5	11		
	600 V A	3.4		4	5.2		
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)							
• Rated operational currents I_e (at 60 °C)							
- 1 conducting path	Up to 24 V A	6		250	380		500
	60 V A	3		7.5	11		
	110 V A	1.25		2.5	3		
	220 V A	0.35		0.6			
	440 V A	0.15		0.17	0.18		
	600 V A	0.1		0.12	0.125		
- 2 conducting paths in series	Up to 24 V A	130	140	250	380		500
	60 V A	130	140	250	380		500
	110 V A	130	140	250	380		500
	220 V A	1.75		2.5			
	440 V A	0.42		0.65			
	600 V A	0.27		0.37			
- 3 conducting paths in series	Up to 24 V A	130	140	250	380		500
	60 V A	130	140	250	380		500
	110 V A	130	140	250	380		500
	220 V A	4		250	380		500
	440 V A	0.8		1.4			
	600 V A	0.45		0.75			

Contactors for Special Applications






SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Type	3RT2446	3RT2448	3RT1456	3RT1466, 3RT1467	3RT1476
Size	S3		S6	S10	S12
Rated data of main contacts (continued)					
Switching frequency					
Switching frequency z in operating cycles/hour					
Contactors without overload relays					
• No-load switching frequency					
- Standard operating mechanism	3RT244.-.A	1/h	5 000	1 000	--
	3RT14.-.A	1/h	--		2 000
- Solid-state operating mechanism	3RT14.-.N/-P	1/h	--		1 000
	3RT14.-.S	1/h	--		1 000
• Switching frequency z during rated operation					
- Standard operating mechanism	3RT244.-.A	$I_e/AC-1$ at 400 V	1/h	650	--
- Standard operating mechanism	3RT14.-.A and solid-state operating mechanism 3RT14.-.N/-P	$I_e/AC-1$ at 400 V	1/h	--	600
- Solid-state operating mechanism	3RT14.-.S	$I_e/AC-1$ at 400 V	1/h	--	350
Dependence of the switching frequency z' on the operational current I' and operational voltage U' : $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$					

Type	3RT2446, 3RT2448	
Size	S3	
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		
• Solid	mm ²	2 x (2.5 ... 16) ¹⁾
• Stranded	mm ²	2 x (6 ... 16) ¹⁾ ; 2 x (10 ... 50) ¹⁾ ; 1 x (10 ... 70) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (2.5 ... 35) ¹⁾ ; 1 x (2.5 ... 50) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (10 ... 1/0) ¹⁾ ; 1 x (10 ... 2/0) ¹⁾
• Terminal screws		Hexagon socket, A/F 4
- Tightening torque	Nm	4.5 ... 6 (40 ... 53 lb.in)
Auxiliary conductors and control conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾
• Terminal screws		M3 (for Pozidriv size 2; Ø 5 ... 6)
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Type	3RT1456		3RT1466, 3RT1467	3RT1476	
Size	S6		S10	S12	
Conductor cross-sections					
Main conductors (1 or 2 conductors can be connected)		 Screw terminals			
With mounted box terminals		Type	3RT1955-4G	3RT1956-4G	3RT1966-4G
Terminal screws			M10 (hexagon socket, A/F 4)	M10 (hexagon socket, A/F 4)	M12 (hexagon socket, A/F 5)
• Tightening torque		Nm	10 ... 12	10 ... 12	20 ... 22
		lb.in	90 ... 110	90 ... 110	180 ... 195
Front clamping point connected					
	• Finely stranded with end sleeve (DIN 46228-1)	mm ²	16 ... 70	16 ... 120	70 ... 240
	• Finely stranded without end sleeve	mm ²	16 ... 70	16 ... 120	70 ... 240
	• Stranded	mm ²	16 ... 70	16 ... 120	95 ... 300
	• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	3/0 ... 600 kcmil
	• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5
Rear clamping point connected					
	• Finely stranded with end sleeve (DIN 46228-1)	mm ²	16 ... 70	16 ... 120	120 ... 185
	• Finely stranded without end sleeve	mm ²	16 ... 70	16 ... 120	120 ... 185
	• Stranded	mm ²	16 ... 70	16 ... 120	120 ... 240
	• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	250 ... 500 kcmil
	• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5
Both clamping points connected (minimum cross-section 16 mm ²)					
	• Finely stranded with end sleeve (DIN 46228-1)	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185
	• Finely stranded without end sleeve	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185
	• Stranded	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 70, max. 2 x 240
	• AWG cables, solid or stranded	AWG	Max. 2 x 1/0	Max. 2 x 3/0	Min. 2 x 2/0, max. 2 x 500 kcmil
	• Ribbon cable conductors (Number x Width x Thickness)	mm	Max. 2 x (6 x 15.5 x 0.8)	Max. 2 x (10 x 15.5 x 0.8)	Max. 2 x (20 x 24 x 0.5)
Busbar connections					
• Connecting bar (max. width)		mm	17	25	
- Bore diameter		mm	9	11	
Cable lug connection			1)	2)	
• Finely stranded with cable lug		mm ²	16 ... 95	50 ... 240	
• Stranded with cable lug		mm ²	25 ... 120	70 ... 240	
• AWG cables, solid or stranded		AWG	4 ... 250 kcmil	2/0 ... 500 kcmil	
• Terminal screws			M8 x 25 (A/F 13)	M10 x 30 (A/F 17)	
- Tightening torque		Nm	10 ... 14	14 ... 24	
		lb.in	90 ... 124	124 ... 210	
Auxiliary conductors (1 or 2 conductors can be connected)					
• Solid		mm ²	2 x (0.5 ... 1.5) ³⁾ ; 2 x (0.75 ... 2.5) ³⁾ acc. to IEC 60947; max. 2 x (0.75 ... 4) ³⁾		
• Finely stranded with end sleeve (DIN 46228-1)		mm ²	2 x (0.5 ... 1.5) ³⁾ ; 2 x (0.75 ... 2.5) ³⁾		
• AWG cables, solid or stranded		AWG	2 x (18 ... 14)		
• Terminal screws			M3 (Pozidriv size 2)		
- Tightening torque		Nm	0.8 ... 1.2		
		lb.in	7 ... 10.3		
Auxiliary conductors⁴⁾ (1 or 2 conductors can be connected)			 Spring-type terminals		
• Operating tool			3.0 x 0.5; 3.5 x 0.5		
• Solid		mm ²	2 x (0.25 ... 2.5)		
• Finely stranded with end sleeve (DIN 46228-1)		mm ²	2 x (0.25 ... 1.5)		
• Finely stranded without end sleeve		mm ²	2 x (0.25 ... 2.5)		
• AWG cables, solid or stranded		AWG	2 x (24 ... 14)		

¹⁾ 3RT1456: When connecting cable lugs according to DIN 46235, use the 3RT1956-4EA1 terminal cover for conductor cross-sections from 95 mm² to keep the phase clearance, see page 3/118.

²⁾ 3RT1466, 3RT1467 and 3RT1476: When connecting cable lugs according to DIN 46234 for conductor cross-sections larger than 240 mm² and according to DIN 46235 for conductor cross-sections larger than 185 mm², the 3RT1966-4EA1 terminal cover is required to maintain phase separation, see page 3/118.

³⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

⁴⁾ Max. external diameter of the conductor insulation: 3.6 mm. With conductor cross-sections ≤ 1 mm² an "insulation stop" must be used, see page 3/121.

Contactors for Special Applications

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole




Selection and ordering data

Size S3: AC operation or AC/DC operation

- Coil circuits (varistors, diodes, etc.) retrofittable
- Auxiliary switches can be retrofitted
- Main and control conductors: Screw terminals



3RT244.-1...0

Size	Rated data		Auxiliary contacts		Rated control supply voltage U_s		SD	Screw terminals 		PU (UNIT, SET, M)	PS*	PG
	AC-1, t_{ij} : 40 °C 60 °C	Operational current I_e up to	Ident. No.	Version	50 Hz AC	50 Hz AC or DC		Article No.	Price per PU			
690 V A	690 V			 	V	V	d					

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

AC operation

S3	140	130	11	1	1	24	--	5	3RT2446-1AB00	1	1 unit	41B
						110	--	5	3RT2446-1AF00	1	1 unit	41B
						230	--	2	3RT2446-1AP00	1	1 unit	41B
160	140	11	1	1	24	--	5	3RT2448-1AB00	1	1 unit	41B	
					110	--	5	3RT2448-1AF00	1	1 unit	41B	
					230	--	5	3RT2448-1AP00	1	1 unit	41B	

AC/DC operation

With integrated coil circuit (varistor)

S3	140	130	11	1	1	--	20 ... 33	2	3RT2446-1NB30	1	1 unit	41B
						--	83 ... 155	5	3RT2446-1NF30	1	1 unit	41B
						--	175 ... 280	5	3RT2446-1NP30	1	1 unit	41B
160	140	11	1	1	--	20 ... 33	5	3RT2448-1NB30	1	1 unit	41B	
					--	83 ... 155	5	3RT2448-1NF30	1	1 unit	41B	
					--	175 ... 280	5	3RT2448-1NP30	1	1 unit	41B	

Other voltages [according to page 4/42](#) on request.

Accessories and spare parts, [see page 3/76 onwards](#).

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Sizes S6 to S12: AC/DC operation 

- Operating mechanism with integrated coil circuit (varistor)
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washer and nut is enclosed.



3RT1456-6A.36



3RT1466-6A.36






3RT1476-6A.36



3RT1476-6N.36



3RT1476-6P.35

Size	Rated data AC-1, I_N : 40 °C 60 °C Operational current I_e up to		Auxiliary contacts, lateral		Rated control supply voltage U_c	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	690 V A	690 V A			50/60 Hz AC or DC		Article No.	Price per PU		
			NO	NC	V	d				
Standard operating mechanism										
S6	275	250	2	2	110 ... 127 220 ... 240	▶	3RT1456-6AF36 3RT1456-6AP36	1 1	1 unit 1 unit	41B 41B
S10	400	380	2	2	110 ... 127 220 ... 240	▶	3RT1466-6AF36 3RT1466-6AP36	1 1	1 unit 1 unit	41B 41B
	500	450	2	2	110 ... 127 220 ... 240	NEW 5 NEW 5	3RT1467-6AF36 3RT1467-6AP36	1 1	1 unit 1 unit	41B 41B
S12	690	650	2	2	110 ... 127 220 ... 240	▶	3RT1476-6AF36 3RT1476-6AP36	1 1	1 unit 1 unit	41B 41B
Solid-state operating mechanism										
With 24 V DC control signal input e. g. for control by PLC										
S6	275	250	2	2	96 ... 127	5	3RT1456-6NF36	1	1 unit	41B
					200 ... 277	5	3RT1456-6NP36	1	1 unit	41B
S10	400	380	2	2	96 ... 127	5	3RT1466-6NF36	1	1 unit	41B
					200 ... 277	5	3RT1466-6NP36	1	1 unit	41B
	500	450	2	2	110 ... 127	NEW 5	3RT1467-6NF36	1	1 unit	41B
					220 ... 240	NEW 5	3RT1467-6NP36	1	1 unit	41B
S12	690	650	2	2	96 ... 127	5	3RT1476-6NF36	1	1 unit	41B
					200 ... 277	2	3RT1476-6NP36	1	1 unit	41B
For 24 V DC control signal input · with indication of remaining lifetime (RLT) e.g. for control by PLC										
S6	275	250	1	1	96 ... 127	5	3RT1456-6PF35	1	1 unit	41B
					200 ... 277	5	3RT1456-6PP35	1	1 unit	41B
S10	400	380	1	1	96 ... 127	5	3RT1466-6PF35	1	1 unit	41B
					200 ... 277	5	3RT1466-6PP35	1	1 unit	41B
	500	450	2	2	110 ... 127	NEW 5	3RT1467-6PF35	1	1 unit	41B
					220 ... 240	NEW 5	3RT1467-6PP35	1	1 unit	41B
S12	690	650	1	1	96 ... 127	5	3RT1476-6PF35	1	1 unit	41B
					200 ... 277	5	3RT1476-6PP35	1	1 unit	41B

Other voltages according to page 4/43 on request.

Accessories and spare parts, see page 3/76 onwards.

Contactors for Special Applications

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Sizes S6 to S12: AC/DC operation

- Solid-state operating mechanism (with integrated varistor) with fail-safe control input for safety-related applications to SIL CL 3
- 24 V DC control signal input, e.g. for control via the fail-safe output module of a controller (F-PLC) or safety relay
- Attainable Safety Integrity Level (SIL):
 - With one contactor: SIL CL 2 acc. to IEC 62061 or PL c acc. to ISO 13849-1
 - With two contactors in series: SIL CL 3 acc. to IEC 62061 or PL e acc. to ISO 13849-1
- Version with removable lateral auxiliary switches or permanently mounted auxiliary switches and additional approval according to SUVA (on request)
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washer and nut is enclosed.

For more information on safety systems, [see from page 11/1 onwards](#).



3RT1456-6S.36



3RT1466-6S.36






3RT1476-6S.36



3RT1456-6S.36-3PA0



3RT1476-6S.36-3PA0

Size	Rated data according to IEC 60947-4-1 AC-1, t_U : 40 °C 60 °C Operational current I_e up to 690 V A	Auxiliary contacts, lateral Version   NO NC V	Rated control supply voltage U_s 50/60 Hz AC or DC	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
					Article No.	Price per PU		

Solid-state operating mechanism

With two removable laterally mounted auxiliary switches

S6	275	250	2	2	96 ... 127	5	3RT1456-6SF36	1	1 unit	41B
					200 ... 277		3RT1456-6SP36			
S10	400	380	2	2	96 ... 127	5	3RT1466-6SF36	1	1 unit	41B
					200 ... 277		3RT1466-6SP36			
	500	450	2	2	96 ... 127	NEW 5	3RT1467-6SF36	1	1 unit	41B
					200 ... 277		3RT1467-6SP36			
S12	690	650	2	2	96 ... 127	5	3RT1476-6SF36	1	1 unit	41B
					200 ... 277		3RT1476-6SP36			

With two permanently laterally mounted auxiliary switches

S6	275	250	2	2	96 ... 127	5	3RT1456-6SF36-3PA0	1	1 unit	41B
					200 ... 277		3RT1456-6SP36-3PA0			
S10	400	380	2	2	96 ... 127	5	3RT1466-6SF36-3PA0	1	1 unit	41B
					200 ... 277		3RT1466-6SP36-3PA0			
	500	450	2	2	96 ... 127	NEW 5	3RT1467-6SF36-3PA0	1	1 unit	41B
					200 ... 277		3RT1467-6SP36-3PA0			
S12	690	650	2	2	96 ... 127	5	3RT1476-6SF36-3PA0	1	1 unit	41B
					200 ... 277		3RT1476-6SP36-3PA0			

Accessories and spare parts, [see page 3/76 onwards](#).

Overview**Standards**

IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1 (auxiliary switches)

In sizes S0 to S3, the 3RT23 contactors have two auxiliary contacts with 1 NO and 1 NC.

Connection methodsMain circuit

- Sizes S00 and S0: screw or spring-type terminals, spring-type terminals with convenient plug-in design for device connectors
- Sizes S2 and S3: screw terminals with box terminal; direct connection to the connecting bar possible with cable lugs for S3 when the box terminal is removed.

Auxiliary/control circuit

Sizes S00 to S3: Screw or spring-type terminals

Operating mechanism typesSizes S00 to S3

3RT23 contactors are available as versions with conventional AC or DC operating mechanisms or as versions with a wide-range solid-state operating mechanism and a universal actuating voltage (AC or DC operation possible).

With an operating range between 0.8 to $1.1 \times U_s$, control typically takes place via the control supply voltage connection A1 - A2.

Mounting of additional auxiliary contactsSize S00

Four auxiliary contacts, including no more than three NC

Sizes S0 to S3

Four additional auxiliary contacts, including no more than two NC

Accessories and spare parts

See from page 3/76 onwards

Application

The contactors are suitable:

- For switching resistive loads
- For disconnecting from power systems (with neutral conductor to be switched)
- For system transfers when alternative AC power supplies are used
- For use as contactors which only carry current and do not have to switch in case of inductive loads – e.g. upstream of frequency converters for variable-speed drives
- For switching mixed loads in distribution systems (e.g. for supplying heaters, lamps, motors, PC power supply units) with p.f. > 0.8 according to IEC 60947-4-1 test conditions for utilization category AC-1

For a general description of 3RT contactors, sizes S00 to S3, see from page 3/17 onwards.

Contactors for Special Applications

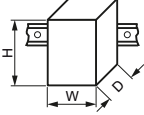
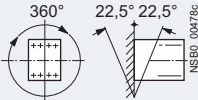
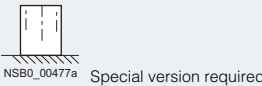
SIRIUS 3RT23 contactors, 4-pole

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16165/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16165/faq>

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16165/man>

Type	3RT2316, 3RT2317	3RT2325 to 3RT2327	3RT2336, 3RT2337	3RT2344, 3RT2346, 3RT2348	
Size	S00	S0	S2	S3	
General data					
Dimensions (W x H x D)					
AC or DC operation					
 <ul style="list-style-type: none"> • Basic units <ul style="list-style-type: none"> - Screw terminals - Spring-type terminals • Basic unit with mounted auxiliary switch block <ul style="list-style-type: none"> - Screw terminals - Spring-type terminals • Basic unit with mounted function module or solid-state time-delayed auxiliary switch block <ul style="list-style-type: none"> - Screw terminals - Spring-type terminals 	mm	45 x 58 x 73 45 x 70 x 73	(The values in brackets apply for DC operation) 60 x 85 x 97 (107) 61 x 102 x 97 (107)	75 x 114 x 130 --	96 x 140 x 152 --
	mm	45 x 58 x 117 45 x 70 x 121	60 x 85 x 141 (151) 61 x 102 x 145 (155)	75 x 114 x 174 --	96 x 140 x 196 --
	mm	45 x 58 x 147 45 x 70 x 147	60 x 85 x 171 (181) 61 x 102 x 171 (181)	75 x 114 x 204 --	96 x 140 x 226 --
	Permissible mounting position				
	The contactors are designed for operation on a vertical mounting surface.				
					
Upright mounting position					
					
Mechanical endurance					
Operating cycles	30 million	10 million			
Electrical endurance at $I_e/AC-1$					
Operating cycles	Approx. 0.5 million				
Rated insulation voltage U_i (pollution degree 3)					
V	690				
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N					
V	400			690	
Permissible ambient temperature					
• During operation	°C	-25 ... +60			
• During storage	°C	-55 ... +80			
Degree of protection acc. to IEC 60529					
• On front	IP20 (screw terminals and spring-type terminals)				
• Connecting terminal	IP20 (screw terminals and spring-type terminals)		IP00 (for higher degree of protection, use additional terminal covers)		
Touch protection acc. to IEC 60529					
	Finger-safe (screw terminals and spring-type terminals)		Finger-safe for vertical touching from the front		

Type Size	3RT2316, 3RT2317 S00	3RT2325, 3RT2326 S0	3RT2326-1...0-4AA0	3RT2327
Short-circuit protection				
Main circuit				
<ul style="list-style-type: none"> Version of the fuse link required for short-circuit protection of the main circuit - for type of coordination "1" - for type of coordination "2" 	gG: 35 A (690 V, 100 kA)	gG: 63 A (690 V, 100 kA)	gG: 100 A (690 V, 100 kA), aM: 50 A (690 V, 100 kA), BS88: 100 A (415 V, 80 kA)	gG: 63 A (690 V, 100 kA)
	gG: 20 A (690 V, 100 kA)		gG: 35 A (690 V, 100 kA), aM: 20 A (690 V, 100 kA), BS88: 35 A (415 V, 80 kA)	gG: 20 A (690 V, 100 kA)
Auxiliary circuit				
<ul style="list-style-type: none"> Version of the fuse link required for short-circuit protection of the auxiliary switch Miniature circuit breaker version required for short-circuit protection of the auxiliary switch 	Fuse gG: 10 A (690 V, 1 kA)			
	6 A (230 V, 400 A, C characteristic)			

Type Size	3RT2336, 3RT2337 S2	3RT2344, 3RT2346 S3	3RT2346-1...0-4AA0	3RT2348
Short-circuit protection				
Main circuit				
<ul style="list-style-type: none"> Version of the fuse link required for short-circuit protection of the main circuit - for type of coordination "1" - for type of coordination "2" 	gG: 160 A (690 V, 100 kA)	gG: 250 A (690 V, 100 kA)	gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)	gG: 250 A (690 V, 100 kA)
	gG: 63 A (690 V, 100 kA)	gR: 80 A (690 V, 100 kA)	gR: 250 A (690 V, 100 kA)	gG: 160 A (690 V, 100 kA), aM: 100 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA)
				gR: 250 A (690 V, 100 kA)
Auxiliary circuit				
<ul style="list-style-type: none"> Version of the fuse link required for short-circuit protection of the auxiliary switch Miniature circuit breaker version required for short-circuit protection of the auxiliary switch 	Fuse gG: 10 A (690 V, 1 kA)			
	6 A (230 V, 400 A, C characteristic)			

Contactors for Special Applications

SIRIUS 3RT23 contactors, 4-pole

Type		3RT2316	3RT2317	3RT2325	3RT2326, 3RT2327	3RT2336, 3RT2337	3RT2344, 3RT2346, 3RT2348
Size		S00		S0		S2	S3
Control							
Solenoid coil operating range							
• AC operation	At 50 Hz	0.8 ... 1.1 x U_s		0.8 ... 1.1 x U_s		0.85 ... 1.1 x U_s	
	At 60 Hz	0.85 ... 1.1 x U_s					
• DC operation	At 50 °C	0.8 ... 1.1 x U_s				--	
	At 60 °C	0.85 ... 1.1 x U_s				--	
• AC/DC operation		--				0.8 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)							
• AC operation, 50 Hz, standard version							
- Closing	VA	--	--	77	--	190	296
- P.f.		--	--	0.82	--	0.72	0.61
- Closed	VA	--	--	9.8	--	16	19
- P.f.		--	--	0.25	--	0.37	0.38
• AC operation, 50/60 Hz, standard version							
- Closing	VA	27/24.3	37/33	81/79	--	210/188	348/296
- P.f.		0.8/0.75	--	0.72/0.74	--	0.69/0.65	0.62/0.55
- Closed	VA	4.2/3.3	5.7/4.4	10.5/8.5	--	17.2/16.5	25/18
- P.f.		0.25/0.25	--	0.25/0.28	--	0.36/0.39	0.35/0.41
• AC operation, 60 Hz, USA, Canada							
- Closing	VA	31.7	43	87	--	188	326
- P.f.		0.77	--	0.76	--	0.67	0.55
- Closed	VA	4.8	6.5	9.4	--	16.5	22
- P.f.		0.25	--	0.28	--	0.37	0.4
• AC/DC operation							
- Closing for AC operation	VA	--	--	--	--	40	151
- P.f.		--	--	--	--	0.95	0.95
- Closed for AC operation	VA	--	--	--	--	2	3.5
- P.f.		--	--	--	--	0.95	0.95
- Closing for DC operation	W	--	--	--	--	23	59
- Closed for DC operation	W	--	--	--	--	1	2.7
• DC operation (closing = closed)	W	4	--	5.9	--	--	--
Operating times for 0.8 ... 1.1 x U_s¹⁾ Total break time = Opening delay + Arcing time							
• AC operation							
- Closing delay	ms	8 ... 35	8 ... 33	9 ... 38	8 ... 40	10 ... 80	13 ... 50
- Opening delay	ms	3.5 ... 14	4 ... 15	4 ... 16	4 ... 16	10 ... 18	10 ... 21
• DC operation							
- Closing delay	ms	30 ... 100	--	50 ... 170	--	--	--
- Opening delay	ms	7 ... 13	--	15 ... 17.5	--	--	--
• AC/DC operation							
- Closing delay	ms	--	--	--	--	35 ... 110	50 ... 70
- Opening delay	ms	--	--	--	--	30 ... 55	38 ... 57
• Arcing time	ms	10 ... 15	--	10	--	10 ... 20	--

¹⁾ With size S00, DC operation: Operating times at 0.85 to 1.1 x U_s .

Type		3RT2316	3RT2317	3RT2325	3RT2326	3RT2327	3RT2336	3RT2337	3RT2344	3RT2346	3RT2348	
Size		S00		S0			S2		S3			
Rated data of the main contacts												
Load rating with AC												
Utilization category AC-1, switching resistive loads												
• Rated operational currents I_e	At 40 °C, up to 690 V	A	18	22	35	40	50	60	110	110	140 (110) ¹⁾	160
	At 60 °C, up to 690 V	A	16	20	30	35	42	55	95	100	130 (100) ¹⁾	140
• Rated power for AC loads P.f. = 0.95 (at 60 °C)	At 230 V	kW	6	7.5	11	13	16	21	36	38	49	53
	400 V	kW	10.5	13	20	23	28	36	63	72	92	105
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm ²	2.5	4	10			16	35		50 (35) ¹⁾	70
	At 60 °C	mm ²	2.5		6	10		16	35		50 (35) ¹⁾	50
Utilization categories AC-2 and AC-3												
• Rated operational currents I_e (at 60 °C)	At 400 V	A	9	12	15.5	15.5 (25) ¹⁾	15.5	38 (50) ¹⁾	38		-- (95) ¹⁾	--
	At 690 V	A	--			-- (21) ¹⁾	--	-- (24) ¹⁾	--		-- (58) ¹⁾	--
• Rated power for slipping or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	2.2	3	4	4 (7.5) ¹⁾	4	-- (15) ¹⁾	--		-- (22) ¹⁾	--
	400 V	kW	4	5.5	7.5	7.5 (15) ¹⁾	7.5	-- (22) ¹⁾	--		-- (45) ¹⁾	--
	690 V	kW	--			-- (18.5) ¹⁾	--	-- (22) ¹⁾	--		-- (55) ¹⁾	--
Load rating with DC												
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)												
• Rated operational currents I_e (at 60 °C)												
- 1 conducting path	Up to 24 V	A	16	20	30	35	42	55		70	80	
	60 V	A	16	20				23			60	
	110 V	A	2.1		4.5						9	
	220 V	A	0.8		1						2	
	440 V	A	0.6		0.4						0.6	
- 2 conducting paths in series	Up to 24 V	A	16	20	30	35	42	55		70	80	
	60 V	A	16	20	30	35	42	55		70	80	
	110 V	A	12		30	35	42	45		70	80	
	220 V	A	1.6		1			5			10	
	440 V	A	0.8		1						1.8	
- 3 conducting paths in series	Up to 24 V	A	16	20	30	35	42	55		70	80	
	60 V	A	16	20	30	35	42	55		70	80	
	110 V	A	16	20	30	35	42	55		70	80	
	220 V	A	16	20	30	35	42	45		70	80	
	440 V	A	1.3		2.9						4.5	
- 4 conducting paths in series	Up to 24 V	A	16	20	30	35	42	55	65	70	80	
	60 V	A	16	20	30	35	42	55	65	70	80	
	110 V	A	16	20	30	35	42	55		70	80	
	220 V	A	16	20	30	35	42	45		55	70	80
	440 V	A	1.3		2.9				3.5	2.9	4.5	
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)												
• Rated operational currents I_e (at 60 °C)												
- 1 conducting path	Up to 24 V	A	16	20								
	60 V	A	0.5		5					6	6.5	
	110 V	A	0.15		2.5							
	220 V	A	--		1							
	440 V	A	--		0.09			0.1		0.15		
- 2 conducting paths in series	Up to 24 V	A	16	20	30	35	42	45		70	80	
	60 V	A	5		30	35	42	45		70	80	
	110 V	A	0.35		15			25		70	80	
	220 V	A	--		3			5		7		
	440 V	A	--		0.27					0.42		
- 3 conducting paths in series	Up to 24 V	A	16	20	30	35	42	45		70	80	
	60 V	A	16	20	30	35	42	45		70	80	
	110 V	A	16	20	30	35	42	45		70	80	
	220 V	A	1.5		10			25		35		
	440 V	A	0.2		0.6					0.8		
- 4 conducting paths in series	Up to 24 V	A	16	20	30	35	42	45		70	80	
	60 V	A	16	20	30	35	42	45		70	80	
	110 V	A	16	20	30	35	42	45		70	80	
	220 V	A	1.5		30	35	42	25		70	80	
	440 V	A	0.2		0.6					0.8		

¹⁾ The values in brackets apply for 3RT23.6-1...0-4AA0. versions.

Data for North America

For technical specifications of 3RT contactors, see from page 3/53 onwards.

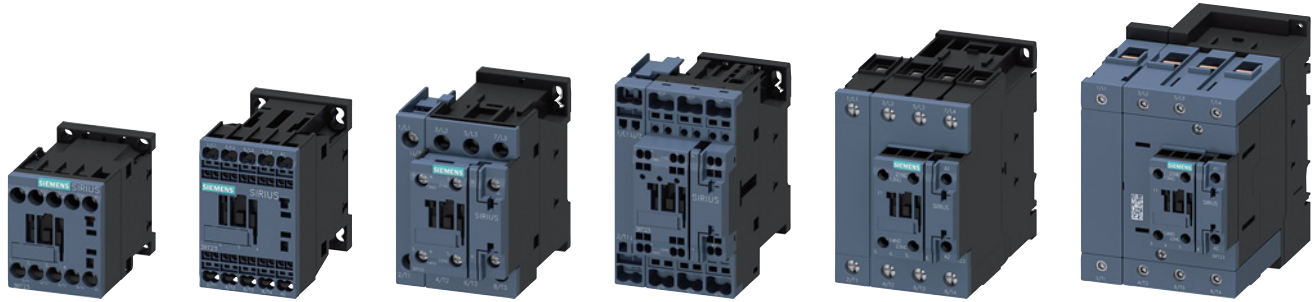
Contactors for Special Applications

SIRIUS 3RT23 contactors, 4-pole

Selection and ordering data

AC operation

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT231.-1A.00





3RT231.-2A.00

3RT232.-1A.00

3RT232.-2A.00

3RT233.-1A.00

3RT234.-1A.00

Rated data AC-1, t_{th} : 40 / 60 °C Operational current I_e up to 690 V	Auxiliary contacts		Rated control supply voltage U_s		SD	Screw terminals 		SD	Spring-type terminals 	
	Ident. No.	Version	50/60 Hz AC	50 Hz AC		Article No.	Price per PU		Article No.	Price per PU
A		 	V	V	d			d		

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

18 / 16	--	--	--	24	--	2	3RT2316-1AB00	5	3RT2316-2AB00
				110	--	5	3RT2316-1AF00	5	3RT2316-2AF00
				230	--	2	3RT2316-1AP00	5	3RT2316-2AP00
22 / 20	--	--	--	24	--	2	3RT2317-1AB00	5	3RT2317-2AB00
				110	--	5	3RT2317-1AF00	5	3RT2317-2AF00
				230	--	▶	3RT2317-1AP00	5	3RT2317-2AP00

Size S0

35 / 30 ¹⁾	11	1	1	--	24	5	3RT2325-1AB00	5	3RT2325-2AB00
				--	110	5	3RT2325-1AF00	X	3RT2325-2AF00
				--	230	5	3RT2325-1AP00	2	3RT2325-2AP00
40 / 35 ¹⁾	11	1	1	--	24	5	3RT2326-1AB00	5	3RT2326-2AB00
				--	110	5	3RT2326-1AF00	X	3RT2326-2AF00
				--	230	2	3RT2326-1AP00	2	3RT2326-2AP00
50 / 42 ¹⁾	11	1	1	--	24	5	3RT2327-1AB00	5	3RT2327-2AB00
				--	110	5	3RT2327-1AF00	5	3RT2327-2AF00
				--	230	2	3RT2327-1AP00	2	3RT2327-2AP00

Size S2

60 / 55	11	1	1	--	24	5	3RT2336-1AB00		--
				--	110	5	3RT2336-1AF00		--
				--	230	▶	3RT2336-1AP00		--
110 / 95	11	1	1	--	24	5	3RT2337-1AB00		--
				--	110	5	3RT2337-1AF00		--
				--	230	▶	3RT2337-1AP00		--

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

110 / 100	11	1	1	--	24	5	3RT2344-1AB00		--
				--	110	5	3RT2344-1AF00		--
				--	230	2	3RT2344-1AP00		--
140 / 130	11	1	1	--	24	5	3RT2346-1AB00		--
				--	110	5	3RT2346-1AF00		--
				--	230	2	3RT2346-1AP00		--
160 / 140	11	1	1	--	24	5	3RT2348-1AB00		--
				--	110	5	3RT2348-1AF00		--
				--	230	5	3RT2348-1AP00		--

¹⁾ Required conductor cross-section 10 mm².

Other voltages according to page 4/42 on request.

Accessories and spare parts, see page 3/76 onwards.

AC operation 

Version for AC-3 motor loads

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B







3RT2326-1AP00-4AA0



3RT2336-1AP00-4AA0



3RT2346-1AP00-4AA0

Rated data		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 	
AC-2/AC-3, t_{ij} : Up to 60 °C	AC-1, t_{ij} : 40 / 60 °C	Ident. No.	Version	50 Hz AC		Article No.	Price per PU		Article No.	Price per PU
Operational current I_e up to 400 V	Operational current I_e up to 690 V		 		d			d		
A	A		NO NC V							

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

32	40 / 35	11	1	1	230	5	3RT2326-1AP00-4AA0	--
----	---------	----	---	---	-----	---	---------------------------	----

Size S2

50	60 / 55	11	1	1	230	5	3RT2336-1AP00-4AA0	--
----	---------	----	---	---	-----	---	---------------------------	----

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

95	110 / 100	11	1	1	230	5	3RT2346-1AP00-4AA0	--
----	-----------	----	---	---	-----	---	---------------------------	----

Other voltages [according to page 4/42](#) on request.

Accessories and spare parts, [see page 3/76 onwards](#).

Contactors for Special Applications

SIRIUS 3RT23 contactors, 4-pole

DC operation

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



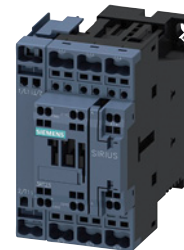
3RT231.-1B.40



3RT231.-2B.40



3RT232.-1B.40



3RT232.-2B.40

Rated data AC-1,
 t_{ij} : 40 / 60 °C

Operational current I_e
 up to

690 V

A

Auxiliary contacts

Ident. No.

Version



V

Rated control
 supply voltage U_s
 DC

SD

Screw terminals 

Article No.

Price
 per PU

d

Spring-type terminals 

Article No.

Price
 per PU

d

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

18 / 16	--	--	--	24 220	2 5	3RT2316-1BB40 3RT2316-1BM40	▶ 5	3RT2316-2BB40 3RT2316-2BM40
22 / 20	--	--	--	24 220	▶ 5	3RT2317-1BB40 3RT2317-1BM40	▶ 5	3RT2317-2BB40 3RT2317-2BM40

Size S0

35 / 30 ¹⁾	11	1	1	24 220	2 5	3RT2325-1BB40 3RT2325-1BM40	2 5	3RT2325-2BB40 3RT2325-2BM40
40 / 35 ¹⁾	11	1	1	24 220	2 5	3RT2326-1BB40 3RT2326-1BM40	2 X	3RT2326-2BB40 3RT2326-2BM40
50 / 42 ¹⁾	11	1	1	24 220	2 5	3RT2327-1BB40 3RT2327-1BM40	2 X	3RT2327-2BB40 3RT2327-2BM40

¹⁾ Required conductor cross-section 10 mm².

Other voltages according to page 4/42 on request.

Accessories and spare parts, see page 3/76 onwards.

AC/DC operation 





PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT233.-1N.30



3RT234.-1N.30

Rated data AC-1, t_f : 40 / 60 °C Operational current I_e up to 690 V A	Auxiliary contacts		Rated control supply voltage U_s 50/60 Hz AC or DC	SD	Screw terminals 		SD	Spring-type terminals 	
	Ident. No.	Version			Article No.	Price per PU		Article No.	Price per PU
		 	V	d					

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S2**With integrated coil circuit (varistor)**

60 / 55	11	1	1	20 ... 33 175 ... 280	2 5	3RT2336-1NB30 3RT2336-1NP30	--	--
110 / 95	11	1	1	20 ... 33 175 ... 280	5 5	3RT2337-1NB30 3RT2337-1NP30	--	--

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3**With integrated coil circuit (varistor)**

110 / 100	11	1	1	20 ... 33 175 ... 280	X 5	3RT2344-1NB30 3RT2344-1NP30	--	--
140 / 130	11	1	1	20 ... 33 175 ... 280	5 5	3RT2346-1NB30 3RT2346-1NP30	--	--
160 / 140	11	1	1	20 ... 33 175 ... 280	5 5	3RT2348-1NB30 3RT2348-1NP30	--	--

Other voltages [according to page 4/42](#) on request.

Accessories and spare parts, [see page 3/76 onwards](#).

Contactors for Special Applications

SIRIUS 3RT23 contactors, 4-pole

AC/DC operation

Version for AC-3 motor loads

PU (UNIT, SET, M) = 1

PS* = 1 unit





PG = 41B



3RT2336-1NB30-4AA0



3RT2346-1NB30-4AA0

Rated data		Auxiliary contacts		Rated supply voltage U_s 50/60 Hz AC or DC	SD	Screw terminals 		SD	Spring-type terminals 	
AC-2/AC-3, t_i : Up to 60 °C	AC-1, t_i : 40/60 °C	Ident. No.	Version			Article No.	Price per PU		Article No.	Price per PU
Operational current I_e up to 400 V	Operational current I_e up to 690 V		 							
A	A		NO NC V							

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S2

With integrated coil circuit (varistor)

50 60/55 11 1 1 20 ... 33 5

3RT2336-1NB30-4AA0

--

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

With integrated coil circuit (varistor)

95 110/100 11 1 1 20 ... 33 5

3RT2346-1NB30-4AA0

--

Other voltages [according to page 4/42](#) on request.

Accessories and spare parts, [see page 3/76 onwards](#).

Overview

Standards

IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1 (auxiliary switches)

The contactors are suitable for use in any climate. They are finger-safe according to IEC 60529.

The accessories for the 3-pole SIRIUS 3RT2 contactors can also be used for the 4-pole versions, [see from page 3/76 onwards](#).

Size S0 to S3 contactors have two auxiliary contacts 1 NO and 1 NC integrated in the basic version.

Mountable auxiliary contacts

Sizes S00 to S3

Four additional auxiliary contacts, including no more than two NC.

For a general description of sizes S00 to S3 of 3RT2 contactors, [see from page 3/17 onwards](#).

Use of 3RT contactors with IE3/IE4 motors

Note:

For the use of 3RT25 contactors in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, [see Application Manual](#).

For more information, [see page 1/7](#).

Application

The contactors are suitable:

- For changing the polarity of hoisting gear motors
- For switching two separate loads

Note:

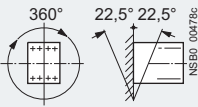

Single device for pole reversal; not suitable for reversing duty. 3RT25 contactors are not suitable for switching a load between two current sources.

Technical specifications

More information

Technical specifications, [see https://support.industry.siemens.com/cs/ww/en/ps/16169/td](https://support.industry.siemens.com/cs/ww/en/ps/16169/td)
FAQs, [see https://support.industry.siemens.com/cs/ww/en/ps/16169/faq](https://support.industry.siemens.com/cs/ww/en/ps/16169/faq)

Manuals, [see https://support.industry.siemens.com/cs/ww/en/ps/16169/man](https://support.industry.siemens.com/cs/ww/en/ps/16169/man)

Type		3RT2516 to 3RT2518	3RT2526	3RT2535	3RT2536	3RT2544, 3RT2545
Size		S00	S0	S2		S3
General data						
Dimensions (W x H x D)		See 3RT231., page 4/18	See 3RT232., page 4/18	See 3RT233., page 4/18		See 3RT234., page 4/18
Permissible mounting position						
The contactors are designed for operation on a vertical mounting surface.						
Upright mounting position		 Special version required				
Mechanical endurance	Operating cycles	30 million	10 million			
Electrical endurance at $I_e/JAC-1$	Operating cycles	Approx. 0.5 million				
Rated insulation voltage U_i (pollution degree 3)	V	690				
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N	V	400				690
Permissible ambient temperature						
• During operation	°C	-25 ... +60				
• During storage	°C	-55 ... +80				
Degree of protection acc. to IEC 60529						
• On front		IP20 (screw terminals and spring-type terminals)				
• Connecting terminal		IP20 (screw terminals and spring-type terminals)				IP00 (for higher degree of protection, use additional terminal covers)
Touch protection acc. to IEC 60529		Finger-safe (screw terminals and spring-type terminals)			Finger-safe for vertical touching from the front	

Contactors for Special Applications

SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

Type	3RT2516 to 3RT2518	3RT2526	3RT2535	3RT2536	3RT2544, 3RT2545
Size	S00	S0	S2	S2	S3
Short-circuit protection					
Main circuit					
<ul style="list-style-type: none"> Version of the fuse link required for short-circuit protection of the main circuit <ul style="list-style-type: none"> for type of coordination "1" for type of coordination "2" 	gG: 35 A (690 V, 100 kA)	gG: 63 A (690 V, 100 kA)	gG: 125 A (690 V, 100 kA)	gG: 160 A (690 V, 100 kA)	gG: 250 A (690 V, 100 kA)
	gG: 20 A (690 V, 100 kA)	gG: 35 A (690 V, 50 kA)	gG: 63 A (690 V, 100 kA)	gG: 80 A (690 V, 100 kA)	gR: 250 A (690 V, 100 kA)
Auxiliary circuit					
<ul style="list-style-type: none"> Version of the fuse link required for short-circuit protection of the auxiliary switch Miniature circuit breaker version required for short-circuit protection of the auxiliary switch 	Fuse gG: 10 A (690 V, 1 kA)				
	6 A (230 V, 400 A, C characteristic)				

Type	3RT2516-1A	3RT2517-1A, 3RT2518-1A	3RT2516-1B, 3RT2517-1B, 3RT2518-1B	3RT2526-1A	3RT2526-1B	3RT253-1A	3RT253-1N	3RT254-1A	3RT254-1N	
Size	S00			S0		S2		S3		
Control										
Type of operating mechanism	AC		DC	AC	DC	AC	AC/DC	AC	AC/DC	
Solenoid coil operating range										
<ul style="list-style-type: none"> AC operation <ul style="list-style-type: none"> At 50 Hz At 60 Hz DC operation <ul style="list-style-type: none"> Up to 50 °C Up to 60 °C AC/DC operation 	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--	0.85 ... 1.1 x U_s	--
	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--	0.85 ... 1.1 x U_s	--
	--	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--	0.8 ... 1.1 x U_s	--	0.85 ... 1.1 x U_s	--	0.85 ... 1.1 x U_s
	--	0.85 ... 1.1 x U_s	--	0.85 ... 1.1 x U_s	--	0.85 ... 1.1 x U_s	--	0.85 ... 1.1 x U_s	--	0.85 ... 1.1 x U_s
	--	--	--	--	--	--	0.8 x $U_{s \min}$... 1.1 x $U_{s \max}$	--	0.8 x $U_{s \min}$... 1.1 x $U_{s \max}$	--
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)										
<ul style="list-style-type: none"> AC operation, 50/60 Hz, standard version <ul style="list-style-type: none"> - Closing - P.f. - Closed - P.f. DC operation <ul style="list-style-type: none"> - Closing - Closed 	VA	27/24.3 0.8/0.75	37/33	--	81/79 0.72/0.74	--	210/188 0.69/0.65	110 0.95	348/296 0.62/0.55	--
	VA	4.2/3.3 0.25/0.25	5.7/4.4	--	10.5/8.5 0.25/0.28	--	17.2/16.5 0.36/0.39	2.5 0.95	25/18 0.35/0.41	--
	W	--	4	--	5.9	23	70	--	76	--
	W	--	4	--	5.9	1	1.5	--	1.8	--
Operating times for 1.0 x U_s¹⁾										
Total break time = Opening delay + Arcing time										
<ul style="list-style-type: none"> AC operation <ul style="list-style-type: none"> - Closing delay - Opening delay DC operation <ul style="list-style-type: none"> - Closing delay - Opening delay Arcing time 	ms	9.5 ... 24	9 ... 22	--	10 ... 17	--	12 ... 22	30 ... 70	15 ... 25	50 ... 70
	ms	4 ... 14	4.5 ... 15	--	4 ... 16	--	10 ... 18	30 ... 55	11 ... 20	38 ... 57
	ms	--	35 ... 50	--	55 ... 80	--	30 ... 70	--	50 ... 70	--
	ms	--	7 ... 12	--	16 ... 17	--	30 ... 55	--	38 ... 57	--
	ms	10 ... 15		10		10 ... 20				

¹⁾ The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2x to 6x).

Type	3RT2516	3RT2517	3RT2518	3RT2526	3RT2535	3RT2536	3RT2544	3RT2545
Size	S00			S0	S2		S3	

Rated data of the main contacts**Load rating with AC****Utilization category AC-1, switching resistive loads**

• Rated operational currents I_e	At 40 °C up to 690 V	A	18	22		40	60	70	100	125
	At 60 °C up to 690 V	A	16	20		35	55	60	90	105
• Rated power for AC loads P.f. = 0.95 (at 60 °C)	At 230 V	kW	6	7.5		13.3	21	23	34	59
	400 V	kW	10.5	13		23	36	39	40	69
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm ²	2.5	4		10	16	25	35	50

Utilization categories AC-2 and AC-3

					AC ¹⁾	DC ¹⁾				
• Rated operational currents I_e (at 60 °C)	NO up to 400 V	A	9	12	16	25	35	41	65	80
	NC up to 400 V	A	9			25	20	35	41	65
• Rated power for slipping or squirrel-cage motors at 50 and 60 Hz	NO at 230 V	kW	2.2	3	4	5.5	11		18.5	22
	NC at 230 V	kW	2.2			5.5	11		18.5	22
	NO at 400 V	kW	4	5.5	7.5	11	18.5	22	30	37
	NC at 400 V	kW	4			11	7.5	18.5	22	30

Load rating with DC**Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)**

• Rated operational currents I_e (at 60 °C)										
- 1 conducting path	Up to 24 V	A	16	20		35	55	60	100	
	60 V	A	16	20		20	23		60	
	110 V	A	2.1			4.5			9	
	220 V	A	0.8			1			2	
	440 V	A	0.6			0.4			0.6	
- 2 conducting paths in series	Up to 24 V	A	16	20		35	55		100	
	60 V	A	16	20		35	45		100	
	110 V	A	12			35	45		100	
	220 V	A	1.6			5			10	
	440 V	A	0.8			1			1.8	

Utilization category DC-3/DC-5²⁾, shunt-wound and series-wound motors ($L/R \leq 15$ ms)

• Rated operational currents I_e (at 60 °C)										
- 1 conducting path	Up to 24 V	A	16	20			35		40	
	60 V	A	0.5			5	6			
	110 V	A	0.15			2.5				
	220 V	A	0.75			1				
	440 V	A	--			0.09	0.1		0.15	
- 2 conducting paths in series	Up to 24 V	A	16	20		35	55		100	
	60 V	A	5			35	45		100	
	110 V	A	0.35			15	25		100	
	220 V	A	--			3	5		7	
	440 V	A	--			0.27			0.42	

Switching frequency**Switching frequency z in operating cycles/hour**

Contactors without overload relays

• No-load switching frequency	AC	1/h	--		5 000	--	5 000			
	DC	1/h	--		--	1 500	--			
	AC/DC	1/h	10 000		--		500		1 000	
• Switching frequency z during rated operation ³⁾	$I_e/AC-1$ at 400 V	1/h	1 000				1 200 (350) ⁴⁾	1 000 (350) ⁴⁾	900	

1) Values for devices with AC and DC operation: For 3RT2526 with DC operation, different values apply to AC-2 and AC-3 for the NC.

2) For $U_e > 24$ V, the rated operational currents I_e for the NC contact current paths are equal to 50% of the values for the NO contact current paths.

3) Dependence of the switching frequency z' on the operational current I' and operational voltage U' :
 $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

4) The values in brackets apply for 3RT253.-N.

Contactors for Special Applications

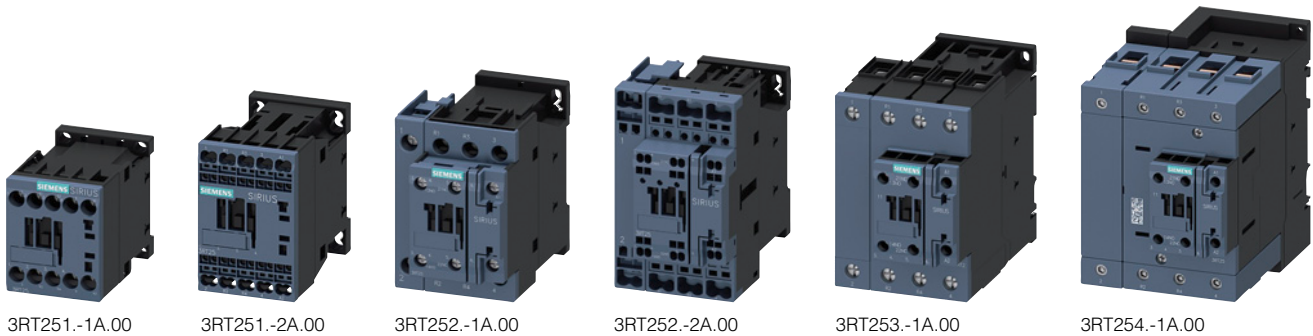
SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

Selection and ordering data

AC operation

Single device for pole reversal (not suitable for reversing duty)

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT251.-1A.00




3RT251.-2A.00

3RT252.-1A.00

3RT252.-2A.00

3RT253.-1A.00

3RT254.-1A.00

Rated data		Auxiliary contacts		Rated control supply voltage U_s		SD	Screw terminals 		SD	Spring-type terminals 	
AC-2/AC-3, t_{ij} : Up to 60 °C	AC-1, t_{ij} : 40/60 °C	Ident. No.	Version	50/60 Hz AC	50 Hz AC		Article No.	Price per PU		Article No.	Price per PU
Operational current I_e at 50 Hz and up to 400 V	Ratings of three-phase motors at 50 Hz and up to 400 V	Operational current I_e up to									
A	kW	A	NO NC V	V	d						

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

9	4	18 / 16	--	--	--	24	--	5	3RT2516-1AB00	5	3RT2516-2AB00
						110	--	5	3RT2516-1AF00	5	3RT2516-2AF00
						230	--	2	3RT2516-1AP00	5	3RT2516-2AP00
12/9 ¹⁾	5.5/4 ¹⁾	22 / 20	--	--	--	24	--	5	3RT2517-1AB00	5	3RT2517-2AB00
						110	--	5	3RT2517-1AF00	5	3RT2517-2AF00
						230	--	▶ 5	3RT2517-1AP00	5	3RT2517-2AP00
16/9 ¹⁾	7.5/4 ¹⁾	22 / 20	--	--	--	24	--	5	3RT2518-1AB00	5	3RT2518-2AB00
						110	--	5	3RT2518-1AF00	5	3RT2518-2AF00
						230	--	5	3RT2518-1AP00	5	3RT2518-2AP00

Size S0

25	11	40 / 35	11	1	1	--	24	5	3RT2526-1AB00	5	3RT2526-2AB00
						--	110	5	3RT2526-1AF00	5	3RT2526-2AF00
						--	230	2	3RT2526-1AP00	2	3RT2526-2AP00

Size S2

35	18.5	60 / 55	11	1	1	--	24	2	3RT2535-1AB00		--
						--	110	2	3RT2535-1AF00		--
						--	230	2	3RT2535-1AP00		--
41	22	70 / 60	11	1	1	--	24	5	3RT2536-1AB00		--
						--	110	5	3RT2536-1AF00		--
						--	230	2	3RT2536-1AP00		--

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

65	30	100 / 90	11	1	1	--	24	5	3RT2544-1AB00		--
						--	110	5	3RT2544-1AF00		--
						--	230	5	3RT2544-1AP00		--
80	37	125 / 105	11	1	1	--	24	5	3RT2545-1AB00		--
						--	110	5	3RT2545-1AF00		--
						--	230	5	3RT2545-1AP00		--

¹⁾ Values for NO contact/NC contact. The NC contact can switch no more than 4 kW.

Other voltages according to page 4/42 on request.

Accessories and spare parts, see page 3/76 onwards.

DC operation 

Single device for pole reversal (not suitable for reversing duty)

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT251.-1B.40







3RT251.-2B.40



3RT252.-1B.40



3RT252.-2B.40

Rated data		Auxiliary contacts		Rated control supply voltage U_s	SD	Screw terminals 		SD	Spring-type terminals 	
AC-2/AC-3, t_f : Up to 60 °C	AC-1, t_f : 40/60 °C	Ident. No.	Version	DC		Article No.	Price per PU		Article No.	Price per PU
Operational current I_e at 50 Hz and up to 400 V	Operational current I_e up to		 							
400 V	690		NO NC V							
A	A				d			d		
kW										

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

9	4	18 / 16	--	--	--	24 220	▶	3RT2516-1BB40	2	3RT2516-2BB40
							5	3RT2516-1BM40	5	3RT2516-2BM40
12/9 ¹⁾	5.5/4¹⁾	22 / 20	--	--	--	24 220		3RT2517-1BB40	2	3RT2517-2BB40
							5	3RT2517-1BM40	5	3RT2517-2BM40
16/9 ¹⁾	7.5/4¹⁾	22 / 20	--	--	--	24 220		3RT2518-1BB40	2	3RT2518-2BB40
							5	3RT2518-1BM40	5	3RT2518-2BM40

Size S0

25 (20) ²⁾	11 (7.5)²⁾	40 / 35	11	1	1	24 220		3RT2526-1BB40	2	3RT2526-2BB40
								3RT2526-1BM40	5	3RT2526-2BM40

- ¹⁾ Values for NO contact/NC contact. The NC contact can switch no more than 4 kW.
²⁾ Value in brackets for NC contact (the deviating value for the NC contact applies only for devices with DC operation).

Other voltages [according to page 4/42](#) on request.
 Accessories and spare parts, [see page 3/76 onwards](#).

Contactors for Special Applications

SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

AC/DC operation

Single device for pole reversal (not suitable for reversing duty)




PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT253.-1N.30



3RT254.-1N.30

Rated data		Auxiliary contacts		Rated control supply voltage U_c	SD	Screw terminals 	SD	Spring-type terminals 	
AC-2/AC-3, t_i : Up to 60 °C	AC-1, t_i : 40/60 °C	Ident. No.	Version	50/60 Hz AC or DC		Article No.	Price per PU	Article No.	Price per PU
Operational current I_e up to 400 V	Operational current I_e up to 690								
A	A		NO NC V		d				

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S2

With integrated coil circuit (varistor)

35	18.5	60 / 55	11	1	1	20 ... 33	2	3RT2535-1NB30	--
						83 ... 155	5	3RT2535-1NF30	--
						175 ... 280	5	3RT2535-1NP30	--
41	22	70 / 60	11	1	1	20 ... 33	2	3RT2536-1NB30	--
						83 ... 155	5	3RT2536-1NF30	--
						175 ... 280	5	3RT2536-1NP30	--

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

With integrated coil circuit (varistor)

65	30	100 / 90	11	1	1	20 ... 33	5	3RT2544-1NB30	--
						175 ... 280	5	3RT2544-1NP30	--
80	37	125 / 105	11	1	1	20 ... 33	5	3RT2545-1NB30	--
						175 ... 280	5	3RT2545-1NP30	--

Other voltages [according to page 4/42](#) on request.

Accessories and spare parts, [see page 3/76 onwards](#).

Overview

Standards

IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1, IEC/EN 60831-1, IEC/EN 61921

The 3RT26 contactors are suitable for use in any climate. They are finger-safe according to IEC 60529.

Function

The 3RT26 contactors for capacitive loads (AC-6b) are special versions of the 3RT20 contactors in sizes S00 to S3 that are configured for switching banks of capacitors.

They are designed to convey the inrush current in such applications, and are weld-resistant in compliance with the technical specifications.

The 3RT26 contactors are suitable for choked and unchoked capacitors. Besides switching power capacitors in reactive-current compensation systems, they are also used to switch converters.

In the case of 3RT26 contactors, the precharging resistors are an integral component of the contactor. The precharging resistors are activated via leading auxiliary contacts before the main contacts close. During switching, after attenuation of the peak current, they are decoupled again. Attenuation of the inrush current peaks also reduces interfering harmonics in the supply.

Notes:

Only switching onto discharged capacitors is permitted with 3RT26 contactors.

Manual operation for function tests is not permitted. The series resistors must not be removed.

Auxiliary switches

The variance of unassigned auxiliary switches has been increased; for available versions, see from page 4/38 onwards. Details of deviating versions are available on request.

In sizes S00 and S0, the auxiliary switch block which is snapped onto the capacitor contactor contains the three leading NO contacts and one unassigned auxiliary contact. In addition, another one (S00) or two (S0) unassigned auxiliary contacts are provided in the basic unit.

The fitting of auxiliary switches for 3RT26 contactors in sizes S00 and S0 of the respective version is not expandable. For sizes S2 and S3, freely available auxiliary switches are implemented by means of lateral auxiliary switch blocks. More auxiliary switch blocks can be mounted laterally corresponding to the 3RT20 contactors.

Devices with 2 NC contacts are now consistently available in all power quantities.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16171/td>

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16171/man>

Type

3RT26

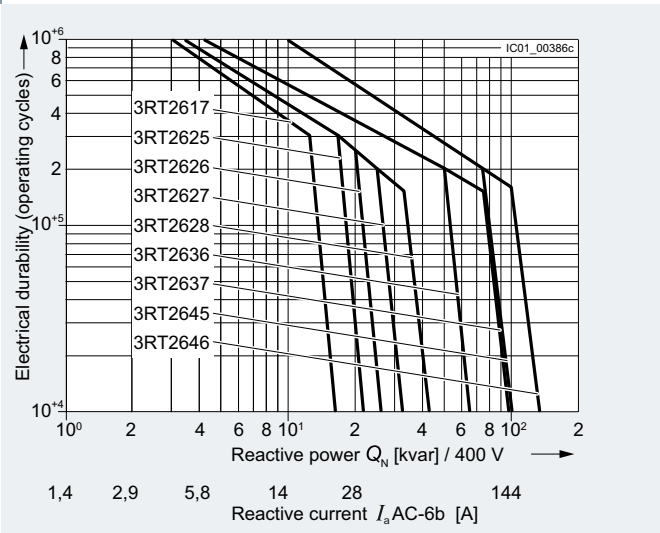
Size

S00 ... S3

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching capacitive loads (AC-6b) depending on the reactive power Q_N and rated operational voltage.

The rated operational current I_g in accordance with utilization category AC-6b (breaking of 1.35 times the rated operational current) is specified for a contact endurance of approximately 150 000 to 200 000 operating cycles.



Contactors for Special Applications

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

All technical specifications not mentioned in the table below are identical to those of the 3RT20 contactors:

- For size S00 as for the 3RT201 contactors
- For size S0 as for the 3RT202 contactors
- For size S2 as for the 3RT203 contactors
- For size S3 as for the 3RT204 contactors

See page 3/23 onwards.

Type		3RT2617	3RT2625	3RT2626	3RT2627	3RT2628	3RT2636	3RT2637	3RT2645	3RT2646
Size		S00	S0				S2		S3	
General data										
Dimensions (W x H x D) including auxiliary switches and connecting cables										
• AC operation		mm	45 x 125 x 120	45 x 135 x 155			45 x 150 x 155	65 x 114 x 130	80 x 140 x 152	
• DC operation, AC/DC operation		mm	45 x 125 x 120	45 x 135 x 165			45 x 150 x 165	65 x 114 x 130	80 x 140 x 152	
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.										
Mechanical endurance										
Basic units with mounted auxiliary switch block	Operating cycles		3 million							
Electrical endurance For apparent power at 400 V										
	kvar	12.5	16.7	20	25	33	50	75		100
	Operating cycles	300 000	200 000			150 000	200 000	150 000	200 000	150 000
Rated insulation voltage U_i (pollution degree 3)										
	V	690							1 000 ²⁾	
Rated impulse withstand voltage U_{imp}										
	kV	6							8 ²⁾	
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N										
	V	400							690	
Permissible ambient temperature										
• During operation ¹⁾	°C	-25 ... +60								
• During storage	°C	-55 ... +80								
Degree of protection acc. to IEC 60529										
• On front		IP20								
• Connecting terminal		IP20							IP00 (for higher degree of protection, use additional terminal covers)	
Touch protection acc. to IEC 60529										
		Finger-safe							Finger-safe for vertical touching from the front	
Shock resistance										
• Rectangular pulse	g/ms	6.7/5 and 4.2/10	7.5/5 and 4.7/10	8.3/5 and 5.3/10		6.8/5 and 4/10		10.3/5 and 6.7/10		
• Sine pulse	g/ms	10.5/5 and 6.6/10	11.8/5 and 7.4/10	13.5/5 and 8.3/10		10.6/5 and 6.2/10		16.3/5 and 10.5/10		
Short-circuit protection										
Main circuit Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC/EN 60947-4-1										
• Type of coordination "1"	A	25 ... 40	32 ... 80	40 ... 80	50 ... 100	63 ... 100	100 ... 160	160 ... 200	200 ... 250	
Auxiliary circuit										
• With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE With short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1	A	10								
• With miniature circuit breakers with C characteristic with short-circuit current $I_k = 400$ A	A	10								

¹⁾ A clearance of 10 mm is required for side-by-side mounting.

²⁾ Only applies for main current paths, otherwise $U_i = 690$ V; $U_{imp} = 6$ kV.

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Type		3RT2617-1A, -1B	3RT2625-1A, -1B	3RT2626-1A, -1B; 3RT2627-1A, -1B; 3RT2628-1A, -1B	3RT2636-1A, 3RT2637-1A	3RT2645-1A, 3RT2646-1A
Size		S00	S0		S2	S3
Control						
Solenoid coil operating range						
• AC operation	50 Hz	0.8 ... 1.1 x U_s	0.85 ... 1.1 x U_s	0.8 ... 1.1 x U_s	--	--
	60 Hz	0.85 ... 1.1 x U_s	0.8 ... 1.1 x U_s		--	--
• DC operation	At 50 °C	0.8 ... 1.1 x U_s			--	--
	At 60 °C	0.85 ... 1.1 x U_s			--	--
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
• AC operation, 50 Hz, standard version						
- Closing	VA	--	77		190	296
- P.f.		--	0.82		0.72	0.61
- Closed	VA	--	9.8		16	19
- P.f.		--	0.25		0.37	0.38
• AC operation, 50/60 Hz, standard version						
- Closing	VA	49	81/79		210/188	348/296
- P.f.		0.8	0.72/0.74		0.69/0.65	0.62/0.55
- Closed	VA	7.8	10.5/8.5		17.2/16.5	25/18
- P.f.		0.25	0.25/0.28		0.36/0.39	0.35/0.41
• DC operation						
- Closing	W	4	5.9		--	--
- Closed	W	4	5.9		--	--
Maximum permissible residual current of the electronics (with 0 signal) ¹⁾						
• AC operation (230 V/ U_s)	mA	4 ¹⁾	7		--	--
• DC operation (24 V/ U_s)	mA	10 ¹⁾	16		--	--
Operating times for 0.8 ... 1.1 x U_s²⁾ Total break time = Opening delay + Arcing time						
• AC operation						
- Closing delay	ms	8 ... 33	9 ... 38	8 ... 40	10 ... 80	15 ... 25
- Opening delay	ms	4 ... 15	4 ... 16		10 ... 18	11 ... 20
• DC operation						
- Closing delay	ms	30 ... 100	55 ... 80	50 ... 170	--	--
- Opening delay	ms	7 ... 13	16 ... 17	15 ... 18	--	--
• Arcing time	ms	10 ... 15				

¹⁾ Size S00: The 3RT2916-1GA00 additional load module is recommended for higher residual currents, see page 3/120.

²⁾ With size S00, DC operation: Operating times at 0.85 to 1.1 x U_s .

Type		3RT262.-1NB35	3RT262.-1NF35	3RT262.-1NP35	3RT263.-1N.35	3RT264.-1N.35
Size		S0			S2	S3
Control						
Solenoid coil operating range						
• AC/DC operation (50/60 Hz AC or DC)		--	0.7 ... 1.3 x U_s		0.8 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
• AC operation, 50/60 Hz, standard version						
- Closing	VA	6.6/6.7	11.9/12.0	12.7/14.7	110	163
- P.f.		0.98/0.98			0.95	--
- Closed	VA	1.9/2.0	1.6/1.8	3.9/4.3	2.5	3.1
- P.f.		0.86/0.82	0.79/0.74	0.51/0.56	0.95	--
• DC operation						
- Closing	W	5.9	10.2	14.3	70	76
- Closed	W	1.4	1.3	1.9	1.5	1.8
Maximum permissible residual current of the electronics (with 0 signal)						
• AC operation (230 V/ U_s)	mA	7			< 20	
• DC operation (24 V/ U_s)	mA	16			< 20	
Operating times for 0.8 ... 1.1 x U_s Total break time = Opening delay + Arcing time						
• AC/DC operation						
- Closing delay	for 0.8 ... 1.1 x U_s	ms	50 ... 70		30 ... 100	50 ... 70
	for 1.0 x U_s		--		30 ... 70	--
- Opening delay		ms	35 ... 45		30 ... 55	38 ... 57
• Arcing time		ms	10 ... 15			

Contactors for Special Applications

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Type		3RT2617	3RT2625	3RT2626	3RT2627	3RT2628	3RT2636	3RT2637	3RT2645	3RT2646
Size		S00	S0				S2		S3	
Auxiliary circuit										
Auxiliary contacts (unassigned)		1 NO + 1 NC, 2 NC	1 NO + 2 NC				1 NO + 1 NC, 2 NC			
Another auxiliary contact can be mounted laterally		--					No more than one lateral auxiliary switch block can be mounted			
Technical specifications including CSA and UL rated data of the auxiliary contacts, see "3RT20 contactors", from page 3/23 onwards.										
Rated data of the main contacts										
Load rating with AC										
Utilization category AC-6b										
Switching of AC capacitors										
• Rated operational current I_e for AC										
- Up to 690 V at ambient temperature	40 °C A	18.9	25.3	30.2	37.8	50	75.8	113.4	113	151
- Up to 1 000 V at ambient temperature	60 °C A	18	24	29	36	47.6	72.2	108	54	144
- Up to 1 000 V at ambient temperature	60 °C A	--								68
• Rated operational reactive power at rated operational voltage										
230 V, 50/60 Hz	kvar	0 ... 7.2	3 ... 9.6	4 ... 11.5	5 ... 14	6 ... 19	10 ... 29	14 ... 43		19 ... 57
400 V, 50/60 Hz	kvar	0 ... 12.5	6 ... 16.7	7 ... 20	8 ... 25	11 ... 33	17 ... 50	25 ... 75		33 ... 100
500 V, 50/60 Hz	kvar	0 ... 15	7 ... 21	8 ... 25	10 ... 31	14 ... 41	21 ... 63	31 ... 94		41 ... 125
690 V, 50/60 Hz	kvar	0 ... 21	10 ... 29	11 ... 34	14 ... 43	19 ... 57	29 ... 86	43 ... 129		57 ... 172
1 000 V, 50/60 Hz	kvar	--							31 ... 94	41 ... 125
Switching frequency										
No-load switching frequency										
AC operation	1/h	500					500 ²⁾			
DC operation	1/h	500					500 ²⁾			
Max. switching frequency z										
at $T_U = 60 °C$ ¹⁾										
in operating cycles/hour										
• At I_e /AC-6b and at										
230 V, 50/60 Hz	1/h	180		100					200	150
400 V, 50/60 Hz	1/h	180		100					100 / 80 ³⁾	80 / 60 ⁴⁾
480 V, 50/60 Hz	1/h	180		100		70	60	50	53	40
500 V, 50/60 Hz	1/h	180		100			65	55	45	40
600 V, 50/60 Hz	1/h	180		100			45	40	32	20
690 V, 50/60 Hz	1/h	180	150	100	72	36	30	25	30	20
1 000 V, 50/60 Hz	1/h	--							30	20
Ⓢ and Ⓞ rated data										
Rated insulation voltage	V AC	600								
Operational reactive power at AC-6b, 3-phase, at operational voltage										
110 ... 120 V	kvar	3.4	4.6	5.5	6.3	8.3	14	19	20	25
200 ... 208 V	kvar	6.2	8.3	10	11	15	25	34	37	45
220 ... 230 V	kvar	6.9	9.2	11	13	17	27	38	41	50
460 ... 480 V	kvar	14	18	22	25	33	55	75	82	100
575 ... 600 V	kvar	17	23	27	31	41	69	94	103	125
Short-circuit protection	At 600 V kA	5					10			
Fuse for main circuit	Class RK5 A	40	80			100	250			


1) Specifications for worst case scenario, higher switching frequency possible.

2) In case of AC/DC operation (UC operating mechanisms): max. 300/h.

3) Operating cycles/h: 100 with AC operation; 80 with AC/DC operation.

4) Operating cycles/h: 80 with AC operation; 60 with AC/DC operation.

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Type		3RT2617	3RT2625, 3RT2626, 3RT2627	3RT2628	3RT2636	3RT2637	3RT2645, 3RT2646
Size		S00	S0 ¹⁾		S2 ²⁾		S3 ³⁾
Conductor cross-sections							
Main conductors (1 or 2 conductors can be connected)		 Screw terminals					
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ⁴⁾ ; 2 x (0.75 ... 2.5) ⁴⁾ ; max. 2 x 4	2 x (1 ... 2.5) ⁴⁾ ; 2 x (2.5 ... 10) ⁴⁾	1 x (2.5 ... 25)	2 x (2.5 ... 35); 1 x (2.5 ... 50)	--	2 x (10 ... 70); 1 x (10 ... 70)
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ⁴⁾ ; 2 x (0.75 ... 2.5) ⁴⁾	2 x (1 ... 2.5) ⁴⁾ ; 2 x (2.5 ... 6) ⁴⁾ ; 1 x 10	1 x (2.5 ... 16)	2 x (1 ... 25); 1 x (1 ... 35)	--	2 x (10 ... 50); 1 x (10 ... 50)
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ⁴⁾ ; 2 x (18 ... 14) ⁴⁾ ; 2 x 12	2 x (16 ... 12) ⁴⁾ ; 2 x (14 ... 8) ⁴⁾	1 x (10 ... 4)	2 x (18 ... 2); 1 x (18 ... 0)	--	2 x (8 ... 3/0); 1 x (8 ... 3/0)
• Terminal screw		M3 (for Pozidriv size 2; Ø 5 ... 6)	M4 (for Pozidriv size 2; Ø 5 ... 6)	M8	M6 (for Pozidriv size 2; Ø 5 ... 6)	--	M8 (Inbus size 4)
• Tightening torque	Nm lb.in	0.8 ... 1.2 7 ... 10.3	2 ... 2.5 18 ... 22	3 ... 4 27 ... 36	3 ... 4.5 27 ... 40	--	4.5 ... 6 40 ... 53
Auxiliary conductors (1 or 2 conductors can be connected)							
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ⁴⁾ ; 2 x (0.75 ... 2.5) ⁴⁾ ; max. 2 x 4					
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ⁴⁾ ; 2 x (0.75 ... 2.5) ⁴⁾					
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ⁴⁾ ; 2 x (18 ... 14) ⁴⁾ ; 2 x 12					
• Terminal screw		M3 (for Pozidriv size 2; Ø 5 ... 6)					
• Tightening torque	Nm lb.in	0.8 ... 1.2 7 ... 10.3					

- ¹⁾ 3-phase infeed terminal 3RV2925-5AB available, [see page 3/116](#).
With 3RT2628, the three-phase infeed terminal is included in the scope of supply.
- ²⁾ 3-phase infeed terminal 3RV2935-5A available, [see page 3/116](#).
- ³⁾ 1-phase infeed terminal 3RA2943-3L available, [see page 3/116](#).
- ⁴⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Contactors for Special Applications

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

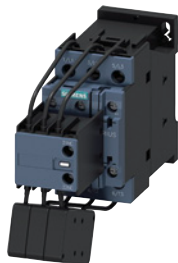
Selection and ordering data

AC operation

Main, auxiliary and control conductors: Screw terminals




3RT2617-1A.05



3RT262.-1A.05

3RT2628-1A.05
with infeed terminal

Utilization category AC-6b				Auxiliary contacts, unassigned		Rated control supply voltage U_s		SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
Switching AC capacitors at an ambient temperature of 60 °C				Version		50 Hz AC	50/60 Hz AC					
Capacitor rating at operational voltage 50/60 Hz				Version					Article No.	Price per PU		
At 230 V	At 400 V	At 500 V	At 690 V	NO	NC	V	V	d				
kvar	kvar	kvar	kvar									
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S00												
0 ... 7.2	0 ... 12.5	0 ... 15	0 ... 21	1	1	--	24	5	3RT2617-1AB03	1	1 unit	41B
						--	110	5	3RT2617-1AF03	1	1 unit	41B
						--	230	▶ 5	3RT2617-1AP03	1	1 unit	41B
0 ... 7.2	0 ... 12.5	0 ... 15	0 ... 21	0	2	--	24	5	3RT2617-1AB05	1	1 unit	41B
						--	110	5	3RT2617-1AF05	1	1 unit	41B
						--	230	5	3RT2617-1AP05	1	1 unit	41B
Size S0¹⁾												
3 ... 9.6	6 ... 16.7	7 ... 21	10 ... 29	1	2	24	--	5	3RT2625-1AB05	1	1 unit	41B
						110	--	5	3RT2625-1AF05	1	1 unit	41B
						230	--	5	3RT2625-1AP05	1	1 unit	41B
4 ... 11.5	7 ... 20	8 ... 25	11 ... 34	1	2	24	--	5	3RT2626-1AB05	1	1 unit	41B
						110	--	5	3RT2626-1AF05	1	1 unit	41B
						230	--	5	3RT2626-1AP05	1	1 unit	41B
5 ... 14	8 ... 25	10 ... 31	14 ... 43	1	2	24	--	5	3RT2627-1AB05	1	1 unit	41B
						110	--	5	3RT2627-1AF05	1	1 unit	41B
						230	--	▶ 5	3RT2627-1AP05	1	1 unit	41B
6 ... 19	11 ... 33	14 ... 41	19 ... 57	1	2	24	--	5	3RT2628-1AB05	1	1 unit	41B
						110	--	5	3RT2628-1AF05	1	1 unit	41B
						230	--	5	3RT2628-1AP05	1	1 unit	41B

¹⁾ 3-phase infeed terminal 3RV2925-5AB available, see page 3/116.
With 3RT2628, the three-phase infeed terminal is included in the scope of delivery.

Other voltages according to page 4/42 on request.

Accessories and spare parts, see page 3/76 onwards.

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

AC operation 


Main, auxiliary and control conductors: Screw terminals



3RT263.-1A.05



3RT264.-1A.05

Utilization category AC-6b				Auxiliary contacts, unassigned		Rated control supply voltage U_s	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Switching AC capacitors at an ambient temperature of 60 °C				Version		50 Hz AC					
Capacitor rating at operational voltage 50/60 Hz				NO		NC	V	Article No.	Price per PU		
At 230 V	At 400 V	At 500 V	At 690 V				d				
kvar	kvar	kvar	kvar								
For screw fixing and snap-on mounting onto TH 35 standard mounting rail											
Size S2¹⁾											
10 ... 29	17 ... 50	21 ... 63	29 ... 86	1	1	24	5	3RT2636-1AB03	1	1 unit	41B
						110	5	3RT2636-1AF03	1	1 unit	41B
						230	5	3RT2636-1AP03	1	1 unit	41B
10 ... 29	17 ... 50	21 ... 63	29 ... 86	0	2	24	5	3RT2636-1AB05	1	1 unit	41B
						110	5	3RT2636-1AF05	1	1 unit	41B
						230	5	3RT2636-1AP05	1	1 unit	41B
14 ... 43	25 ... 75	31 ... 94	43 ... 129	1	1	24	5	3RT2637-1AB03	1	1 unit	41B
						110	5	3RT2637-1AF03	1	1 unit	41B
						230	5	3RT2637-1AP03	1	1 unit	41B
14 ... 43	25 ... 75	31 ... 94	43 ... 129	0	2	24	5	3RT2637-1AB05	1	1 unit	41B
						110	5	3RT2637-1AF05	1	1 unit	41B
						230	5	3RT2637-1AP05	1	1 unit	41B
For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails											
Size S3²⁾											
14 ... 43	25 ... 75	31 ... 94	43 ... 129	1	1	24	5	3RT2645-1AB03	1	1 unit	41B
						110	5	3RT2645-1AF03	1	1 unit	41B
						230	5	3RT2645-1AP03	1	1 unit	41B
14 ... 43	25 ... 75	31 ... 94	43 ... 129	0	2	24	5	3RT2645-1AB05	1	1 unit	41B
						110	5	3RT2645-1AF05	1	1 unit	41B
						230	5	3RT2645-1AP05	1	1 unit	41B
19 ... 57	33 ... 100	41 ... 125	57 ... 172	1	1	24	5	3RT2646-1AB03	1	1 unit	41B
						110	5	3RT2646-1AF03	1	1 unit	41B
						230	5	3RT2646-1AP03	1	1 unit	41B
19 ... 57	33 ... 100	41 ... 125	57 ... 172	0	2	24	5	3RT2646-1AB05	1	1 unit	41B
						110	5	3RT2646-1AF05	1	1 unit	41B
						230	5	3RT2646-1AP05	1	1 unit	41B

¹⁾ 3-phase infeed terminal 3RV2935-5A available, see page 3/116.

²⁾ 1-phase infeed terminal 3RA2943-3L available, see page 3/116.

Other voltages according to page 4/42 on request.

Accessories, see page 3/76 onwards.

Contactors for Special Applications

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

DC operation

Main, auxiliary and control conductors: Screw terminals






3RT2617-1B.45



3RT262-1B.45



3RT2628-1B.45
with infeed terminal

Utilization category AC-6b	Auxiliary contacts, unassigned	Rated control supply voltage U_s	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
Switching AC capacitors at an ambient temperature of 60 °C	Version	DC					
Capacitor rating at operational voltage 50/60 Hz	 			Article No.	Price per PU		
At 230 V							
At 400 V							
At 500 V							
At 690 V							
kvar							

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

0 ... 7.2	0 ... 12.5	0 ... 15	0 ... 21	1	1	24 110	5 5	3RT2617-1BB43	1	1 unit	41B
								3RT2617-1BF43	1	1 unit	41B
0 ... 7.2	0 ... 12.5	0 ... 15	0 ... 21	0	2	24 110	5 5	3RT2617-1BB45	1	1 unit	41B
								3RT2617-1BF45	1	1 unit	41B

Size S0¹⁾

3 ... 9.6	6 ... 16.7	7 ... 21	10 ... 29	1	2	24 110	5 5	3RT2625-1BB45	1	1 unit	41B
								3RT2625-1BF45	1	1 unit	41B
4 ... 11.5	7 ... 20	8 ... 25	11 ... 34	1	2	24 110	5 5	3RT2626-1BB45	1	1 unit	41B
								3RT2626-1BF45	1	1 unit	41B
5 ... 14	8 ... 25	10 ... 31	14 ... 43	1	2	24 110	5 5	3RT2627-1BB45	1	1 unit	41B
								3RT2627-1BF45	1	1 unit	41B
6 ... 19	11 ... 33	14 ... 41	19 ... 57	1	2	24 110	5 5	3RT2628-1BB45	1	1 unit	41B
								3RT2628-1BF45	1	1 unit	41B

¹⁾ 3-phase infeed terminal 3RV2925-5AB available, [see page 3/116](#).
With 3RT2628, the three-phase infeed terminal is included in the scope of supply.

Other voltages [according to page 4/42](#) on request.

Accessories, [see page 3/76 onwards](#).

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

AC/DC operation 

Main, auxiliary and control conductors: Screw terminals





3RT262.-1N.35

3RT2628-1N.35
with infeed terminal

3RT263.-1N.35



3RT264.-1N.35

Utilization category AC-6b				Auxiliary contacts, unassigned		Rated control supply voltage U_s	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Switching AC capacitors at an ambient temperature of 60 °C				Version		50/60 Hz AC or DC					
Capacitor rating at operational voltage 50/60 Hz				 		V	d	Article No.	Price per PU		
At 230 V	At 400 V	At 500 V	At 690 V								
kvar	kvar	kvar	kvar								

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0¹⁾

3 ... 9.6	6 ... 16.7	7 ... 21	10 ... 29	1	2	21 ... 28 95 ... 130 200 ... 280	5 5 5	3RT2625-1NB35 3RT2625-1NF35 3RT2625-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
4 ... 11.5	7 ... 20	8 ... 25	11 ... 34	1	2	21 ... 28 95 ... 130 200 ... 280	5 5 5	3RT2626-1NB35 3RT2626-1NF35 3RT2626-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
5 ... 14	8 ... 25	10 ... 31	14 ... 43	1	2	21 ... 28 95 ... 130 200 ... 280	5 5 5	3RT2627-1NB35 3RT2627-1NF35 3RT2627-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
6 ... 19	11 ... 33	14 ... 41	19 ... 57	1	2	21 ... 28 95 ... 130 200 ... 280	5 5 5	3RT2628-1NB35 3RT2628-1NF35 3RT2628-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

Size S2²⁾

10 ... 29	17 ... 50	21 ... 63	29 ... 86	0	2	20 ... 33 83 ... 155 175 ... 280	5 5 5	3RT2636-1NB35 3RT2636-1NF35 3RT2636-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
14 ... 43	25 ... 75	31 ... 94	43 ... 129	0	2	20 ... 33 83 ... 155 175 ... 280	5 5 5	3RT2637-1NB35 3RT2637-1NF35 3RT2637-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3³⁾

14 ... 43	25 ... 75	31 ... 94	43 ... 129	0	2	20 ... 33 83 ... 155 175 ... 280	5 5 5	3RT2645-1NB35 3RT2645-1NF35 3RT2645-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
19 ... 57	33 ... 100	41 ... 125	57 ... 172	0	2	20 ... 33 83 ... 155 175 ... 280	5 5 5	3RT2646-1NB35 3RT2646-1NF35 3RT2646-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

¹⁾ 3-phase infeed terminal 3RV2925-5AB available, see page 3/116.
With 3RT2628, the three-phase infeed terminal is included in the scope of delivery.

²⁾ 3-phase infeed terminal 3RV2935-5A available, see page 3/116.

³⁾ 1-phase infeed terminal 3RA2943-3L available, see page 3/116.

Other voltages according to page 4/42 on request.
Accessories, see page 3/76 onwards.

Contactors for Special Applications

SIRIUS 3RT23 to 3RT26, 3RT14 contactors

Options

Rated control supply voltages for 3RT2 contactors, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type	3RT231, 3RT251	3RT232, 3RT252	3RT233, 3RT253	3RT234, 3RT244, 3RT254	3RT2617, 3RT262, 3RT263, 3RT264
	Size	S00	S0	S2	S3	S00 to S3

Sizes S00 to S3

AC operation¹⁾

Solenoid coils for 50 Hz

(exception: Size S00: 50 and 60 Hz²⁾)

24 V AC	B0	B0	B0	B0	B0
42 V AC	D0	D0	D0	D0	--
48 V AC	H0	--	--	H0	--
110 V AC	F0	F0	F0	F0	F0
230 V AC	P0	P0	P0	P0	P0
240 V AC	--	--	U0	U0	--
400 V AC	V0	V0	V0	V0	--

Solenoid coils for 50 and 60 Hz²⁾

24 V AC	B0	C2	C2	C2	C2
42 V AC	D0	D2	D2	D2	--
48 V AC	H0	H2	H2	H2	--
110 V AC	F0	G2	G2	G2	--
220 V AC	N2	N2	N2	N2	N2
230 V AC	P0	L2	L2	L2	L2

Solenoid coils (for USA and Canada³⁾)

50 Hz	60 Hz				
110 V AC	120 V AC	K6	K6	K6	--
220 V AC	240 V AC	P6	P6	P6	--

Solenoid coils (for Japan)

50/60 Hz ⁴⁾	60 Hz ⁵⁾				
100 V AC	110 V AC	G6	G6	G6	G6
200 V AC	220 V AC	N6	N6	N6	N6
400 V AC	440 V AC	R6	R6	R6	R6

DC operation¹⁾

12 V DC	A4	A4	--	--	--
24 V DC	B4	B4	--	--	B4
42 V DC	D4	D4	--	--	--
48 V DC	W4	W4	--	--	--
60 V DC	--	--	--	--	--
110 V DC	F4	F4	--	--	F4
125 V DC	G4	G4	--	--	--
220 V DC	M4	M4	--	--	--
230 V DC	P4	--	--	--	--

Examples

AC operation	3RT2325-1AP00 3RT2325-1AG20	Contactors with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage of 230 V AC Contactors with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage of 110 V AC
DC operation	3RT2526-2BB40 3RT2526-2BG40	Contactors with spring-type terminals; for rated control supply voltage of 24 V DC Contactors with spring-type terminals; for rated control supply voltage of 125 V DC

¹⁾ For deviating coil voltages and operating ranges of sizes S00 and S0, a SITOP 24 V DC power supply with wide-range input can be used for the coil control, see page 15/1 onwards.

²⁾ Coil operating range
- At 50 Hz: 0.8 to 1.1 x U_s ,
- At 60 Hz: 0.85 to 1.1 x U_s .

³⁾ Coil operating range
- Size S00:
At 50 Hz: 0.85 to 1.1 x U_s ,
at 60 Hz: 0.8 to 1.1 x U_s
- Sizes S0 to S3: At 50 Hz and 60 Hz: 0.8 to 1.1 x U_s .

⁴⁾ Coil operating range
- Size S00:
At 50/60 Hz: 0.85 to 1.1 x U_s
- Sizes S0 to S3:
At 50 Hz: 0.8 to 1.1 x U_s ,
at 60 Hz: 0.85 to 1.1 x U_s .

⁵⁾ Coil operating range at 60 Hz: 0.8 to 1.1 x U_s .

Rated control supply voltage	Contactor type	3RT2.2.-N	Rated control supply voltage	Contactor type	3RT2.3.-N	3RT2.4.-N
$U_{s \min} \dots U_{s \max}^1)$	Size	S0	$U_{s \min} \dots U_{s \max}^1)$	Size	S2	S3

Sizes S0 to S3

AC/DC operation (50/60 Hz AC or DC)

21 ... 28 V AC/DC	B3	20 ... 33 V AC/DC	B3	B3
95 ... 130 V AC/DC	F3	48 ... 80 V AC/DC	E3	E3
200 ... 280 V AC/DC	P3	83 ... 155 V AC/DC	F3	F3
		175 ... 280 V AC/DC	P3	P3

¹⁾ Coil operating range: 0.8 x $U_{s \min}$ to 1.1 x $U_{s \max}$.

**Rated control supply voltages for 3RT14 contactors,
possible on request (change of the 10th and 11th digits of the Article No.)**

Delivery time on request

Rated control supply voltage	Contactor type	3RT145.-A, 3RT146.-A, 3RT147.-A	Rated control supply voltage	Contactor type	3RT145.-N, 3RT146.-N, 3RT147.-N	3RT145.-P, 3RT145.-S, 3RT146.-P, 3RT146.-S, 3RT147.-P, 3RT147.-S
$U_{s \min} \dots U_{s \max}$	Sizes	S6 to S12	$U_{s \min} \dots U_{s \max}$	Sizes	S6 to S12	

Sizes S6 to S12

AC/DC operation (50/60 Hz AC or DC) and operating range $0.8 \times U_{s \min} \dots 1.1 \times U_{s \max}$

Standard operating mechanism

23 ... 26 V AC/DC	B3
42 ... 48 V AC/DC	D3
110 ... 127 V AC/DC	F3
200 ... 220 V AC/DC	M3
220 ... 240 V AC/DC	P3
240 ... 277 V AC/DC	U3
380 ... 420 V AC/DC	V3
440 ... 480 V AC/DC	R3
500 ... 550 V AC/DC	S3
575 ... 600 V AC/DC	T3

Solid-state operating mechanism

21 ... 27.3 V AC/DC	B3	--
96 ... 127 V AC/DC	F3	F3
200 ... 277 V AC/DC	P3	P3

Contactors for Special Applications

3TK20 miniature contactors for resistive loads (AC-1), 4-pole

Overview

Standards

IEC/EN 60947-1, IEC/EN 60947-4-1

The 3TK20 miniature contactors are climate-proof, and the versions with screw terminals are finger-safe according to IEC 60529.

Connection methods

The miniature contactors are available in versions with screw terminals, 6.3 mm plug-in terminals and solder pin connections for soldering to printed circuit boards.

3TK20 miniature contactors with 6.3 mm x 0.8 mm flat connectors are coded and can be used in the plug-in base with solder pin connections for printed circuit boards (see page 3/151).

Ratings of three-phase motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

The power rating specifications of the contactors in kW are guide values for 4-pole standard motors at 50 Hz AC and specified voltage (e.g. 400 V). The actual starting and rated data of the motor to be switched must be considered when selecting the units.

Application

Contactors with plug-in terminals

The main area of application for the 3TK20 miniature contactors with flat connectors is in household equipment. These contactors are also suitable for simple electric controllers.

No auxiliary switch blocks can be retrofitted.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16168/td>
FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16168/faq>

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16168/man>

Type
Size

3TK20
00

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching inductive AC loads (AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The rated operational current I_b in accordance with utilization category AC-4 (breaking 6 times the rated operational current) is determined for a contact endurance of approximately 200 000 operating cycles.

If a shorter contact endurance is sufficient, the rated operational current $I_b/AC-4$ can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking the rated operational current several times according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

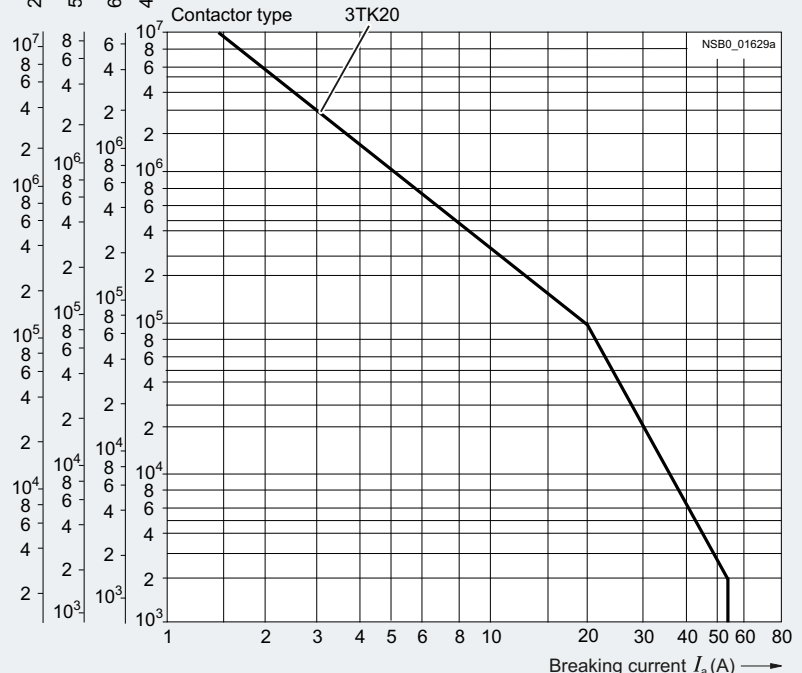
$$X = \frac{A}{1 + \frac{C}{100} \left(\frac{A}{B} - 1 \right)}$$

Characters in the equation:

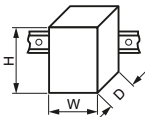
- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_b$) in operating cycles
- B Contact endurance for inching ($I_a = \text{multiple of } I_b$) in operating cycles
- C Inching operations as a percentage of total switching operations

Operating cycles at

230 V
500 V
690 V
400 V



3TK20 miniature contactors for resistive loads (AC-1), 4-pole

Type	3TK20	
Size	00	
General data		
Dimensions (W x H x D)		mm 45 x 48 x 63
Permissible mounting position	AC and DC operation	Any
Mechanical endurance		
• AC operation	Operating cycles	10 million
• DC operation		30 million
• Auxiliary switch block		10 million
Rated insulation voltage U_i (Pollution degree 3)		
• Screw terminals	V	690
• Flat connector 6.3 mm x 0.8 mm	V	500
• Solder pin connections	V	500
Rated impulse withstand voltage U_{imp} (Pollution degree 3)		
• Screw terminals	kV	6
• Flat connector 6.3 mm x 0.8 mm	kV	6
• Solder pin connections	kV	6
Protective separation between coil and main contacts According to IEC 60947-1, Appendix N	V	Up to 300
Permissible ambient temperature¹⁾		
• During operation	°C	-25 ... +55
• During storage	°C	-55 ... +80
Degree of protection acc. to IEC 60529		
• On front		IP20 (with screw terminals)
• Connecting terminal		IP20 (with screw terminals)
Touch protection acc. to IEC 60529		Finger-safe (with screw terminals)
Shock resistance		
• Rectangular pulse		
- AC operation	g/ms	8.3/5 and 5.2/10
- DC operation	g/ms	11.3/5 and 9.2/10
• Sine pulse		
- AC operation	g/ms	13/5 and 8/10
- DC operation	g/ms	17.4/5 and 12.9/10
Short-circuit protection		
Main circuit²⁾		
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC/EN 60947-4-1		
- Type of coordination "1"	A	25
- Type of coordination "2" ³⁾	A	10
- Weld-free	A	10
• Miniature circuit breaker with C characteristic	A	10
Auxiliary circuit		
Short-circuit test		
• With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1	A	6

1) Applies to 50/60 Hz coil:
At 50 Hz, $1.1 \times U_n$, with side-by-side mounting and 100% ON period the max. ambient temperature is +40 °C.

2) According to excerpt from IEC 60947-4-1:
- Type of coordination "1"
Destruction of the contactor and the overload relay is permissible.
The contactor and/or overload relay can be replaced if necessary.
- Type of coordination "2"
The overload relay must not suffer any damage. Contact welding on the contactor is permissible, however, if the contacts can be easily separated.

3) A short-circuit current of $I_k \leq 6$ kA applies to type of coordination "2".

Contactors for Special Applications

3TK20 miniature contactors for resistive loads (AC-1), 4-pole

Type	3TK20	
Size	00	
Control		
Solenoid coil operating range¹⁾	0.8 ... 1.1 x U	
Solenoid coil power consumption (for cold coil and 1.0 x U _s)		
<u>Standard version</u>		
• AC operation, 50 Hz		
- Closing	VA	15
- P.f.		0.41
- Closed	VA	6.8
- P.f.		0.42
• AC operation, 60 Hz		
- Closing	VA	14.4
- P.f.		0.36
- Closed	VA	6.1
- P.f.		0.46
• AC operation, 50/60 Hz ¹⁾		
- Closing	VA	16.5/13.2
- P.f.		0.43/0.38
- Closed	VA	8.0/5.4
- P.f.		0.48/0.42
<u>For USA and Canada</u>		
• AC operation, 50 Hz		
- Closing	VA	14.6
- P.f.		0.38
- Closed	VA	6.5
- P.f.		0.40
• AC operation, 60 Hz		
- Closing	VA	14.4
- P.f.		0.30
- Closed	VA	6.0
- P.f.		0.44
• DC operation (closing = closed)	W	3
Permissible residual current of the electronic circuit²⁾ (with 0 signal)		
• AC operation	mA	≤ 3 x (230 V/U _s)
• DC operation	mA	≤ 1 x (230 V/U _s)
Operating times for 1.0 x U_s³⁾		
• AC operation		
- Closing delay	ms	5 ... 18
- Opening delay	ms	3 ... 21
- Dead interval		To use the 3TK20 AC-operated contactor in reversing duty an additional dead interval of 50 ms is required along with an NC contact interlock.
• DC operation		
- Closing delay	ms	19 ... 31
- Opening delay	ms	3 ... 4
• Arcing time	ms	10 ... 15

¹⁾ Applies to 50/60 Hz coil:
At 50 Hz, 1.1 x U_s, with side-by-side mounting and 100% ON period the max. ambient temperature is +40 °C.

²⁾ The 3TX4490-1J additional load module is recommended for higher residual currents (see page 3/120).

³⁾ The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

3TK20 miniature contactors for resistive loads (AC-1), 4-pole

Type	3TK20..-0...		3TK20..-3..., 3TK20..-6..., 3TK20..-7...	
Size	00			
Rated data of the main contacts				
Load rating with AC				
Utilization category AC-1, switching resistive loads				
• Rated operational current I_e (at 40 °C)	Up to 400/380 V	A	18	
	690/660 V	A	18	--
• Rated operational current I_e (at 55 °C)	400/380 V	A	16	
	690/660 V	A	16	--
• Rated power for AC loads with p.f. = 1	At 230/220 V	kW	6.0	
	400/380 V	kW	10	
	500 V	kW	13	
	690/660 V	kW	17	--
• Minimum conductor cross-section for loads with I_e		mm ²	2.5	
Utilization categories AC-2 and AC-3				
• Rated operational current I_e	Up to 220 V	A	9.0	
	230 V	A	9.0	
	380 V	A	9.0	
	400 V	A	8.4	
	500 V	A	6.5	
	660 V	A	5.2	--
	690 V	A	5.2	--
• Rated power for motors with slipping or squirrel cage at 50 and 60 Hz	At 110 V	kW	1.2	
	115 V	kW	1.2	
	120 V	kW	1.3	
	127 V	kW	1.4	
	200 V	kW	2.2	
	220 V	kW	2.4	
	230 V	kW	2.5	
	240 V	kW	2.6	
	380 V	kW	4.0	
	400 V	kW	4.0	
	415 V	kW	4.0	
	440 V	kW	4.0	
	460 V	kW	4.0	
	500 V	kW	4.0	
	575 V	kW	4.0	--
	660 V	kW	4.0	--
	690 V	kW	4.0	--
• Power loss per conducting path	At $I_e/AC-3$	W	0.3	
Utilization category AC-4				
(Contact endurance approx. 200 000 operating cycles at $I_a = 6 \times I_e$)				
• Rated operational current I_e	Up to 400 V	A	2.6	
(max. permissible operational current $I_e/AC-4 \cong I_e/AC-3$ up to 500 V, for reduced contact endurance and reduced switching frequency)	690 V	A	1.8	--
• Rated power for squirrel-cage motors at 50 and 60 Hz	At 110 V	kW	0.32	
	115 V	kW	0.33	
	120 V	kW	0.35	
	127 V	kW	0.37	
	200 V	kW	0.58	
	220 V	kW	0.64	
	230 V	kW	0.67	
	240 V	kW	0.70	
	380 V	kW	1.10	
	400 V	kW	1.15	
	415 V	kW	1.20	
	440 V	kW	1.27	
	460 V	kW	1.33	
	500 V	kW	1.45	
	575 V	kW	1.30	--
	660 V	kW	1.10	--
	690 V	kW	1.15	--

Contactors for Special Applications

3TK20 miniature contactors for resistive loads (AC-1), 4-pole

Type	3TK20		
Size	00		
Rated data of the main contacts (continued)			
Load rating with DC			
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms) (contact endurance 0.1×10^6 operating cycles)			
• Rated operational currents I_e (at 55 °C)			
- 1 conducting path	Up to 24 V A	16	
	60 V A	6	
	110 V A	2	
	220/240 V A	1	
- 2 conducting paths in series	Up to 24 V A	16	
	60 V A	16	
	110 V A	6	
	220/240 V A	2	
- 3 conducting paths in series	Up to 24 V A	16	
	60 V A	16	
	110 V A	16	
	220/240 V A	6	
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)			
• Rated operational currents I_e (at 55 °C)			
- 1 conducting path	Up to 24 V A	6	
	60 V A	3	
	110 V A	0.5	
	220/240 V A	0.1	
- 2 conducting paths in series	Up to 24 V A	10	
	60 V A	5	
	110 V A	2	
	220/240 V A	0.5	
- 3 conducting paths in series	Up to 24 V A	16	
	60 V A	16	
	110 V A	16	
	220/240 V A	2	
Switching frequency			
Switching frequency z in operating cycles/hour			
• Contactors without overload relays for rated operation	No-load switching frequency	h ⁻¹	10 000
Dependence of the switching frequency z' on the operational current I' and operational voltage U: $z' = z \cdot (I_e/I') \cdot (U_e/U)^{1.5} \cdot 1/h$	AC-1	h ⁻¹	1 000
	AC-2	h ⁻¹	500
	AC-3	h ⁻¹	1 000
• Contactors with overload relays (mean value)		h ⁻¹	15

3TK20 miniature contactors for resistive loads (AC-1), 4-pole

Type	3TK20	
Size	00	
Conductor cross-sections		
Main and auxiliary conductors (1 or 2 conductors connectable)		
• Solid	mm ²	2 x (0.5 ... 2.5), 1 x 4
• Finely stranded with end sleeve	mm ²	2 x (0.5 ... 1.5), 1 x 2.5
• AWG cables, solid or stranded	AWG	2 x (20 ... 14), 1 x 12
• Pin-end connector (DIN 46231)	mm ²	1 x 1 ... 2.5
• Terminal screw		M3
• Prescribed tightening torque for terminal screws	Nm lb.in	0.8 ... 1.3 7 ... 11
Main and auxiliary conductors (1 or 2 conductors connectable)		
• When using a plug-in sleeve 6.3 – 1	mm ²	0.5 ... 1
• Finely stranded with 6.3 – 2.5	mm ²	1 ... 2.5
Solder pin connections (only for printed circuit boards)		
• Solder pin cross-section	mm ²	0.8 x 1.2
Type	3TK20	
Size	00	
Rated data of the auxiliary contacts according to IEC 60947-5-1		
General data		
Standards		
		IEC 60947-5-1
Rated insulation voltage U_i (Pollution degree 3)	V	690
Conventional thermal current I_{th} = Rated operational current I_e/AC-12	A	10
Load rating with AC		
Rated operational current I_e/AC-15/AC-14		
• For rated operational voltage U_e	24 ... 230 V A 380 ... 400 V A 500 V A 660 V A 690 V A	4 3 2 1 1
Load rating with DC		
Rated operational current I_e/DC-12		
• For rated operational voltage U_e	24 V A 48 V A 110 V A 125 V A 220 V A 440 V A 600 V A	4 2.2 1.1 1.1 0.5 -- --
Rated operational current I_e/DC-13		
• For rated operational voltage U_e	24 V A 48 V A 110 V A 125 V A 220 V A 440 V A 600 V A	2.1 1.1 0.52 0.52 0.27 -- --

Contactors for Special Applications




3TK20 miniature contactors for resistive loads (AC-1), 4-pole

Type		3TK20..-0...	3TK20..-3..., 3TK20..-6..., 3TK20..-7...
Size		00	
Ⓢ and Ⓣ rated data			
Rated insulation voltage U_i	V AC	600	300
Uninterrupted current , open and enclosed	A	16	16 (10 for solder pin connection)
Maximum horsepower ratings (Ⓢ and Ⓣ approved values)			
• Rated power for three-phase motors at 60 Hz			
- Single-phase	At 115 V hp	0.5	--
	200 V hp	1	
	230 V hp	1.5	1
	460/575 V hp	--	
- Three-phase	At 115 V hp	--	
	200 V hp	3	3 (1 for 3TK20..-6)
	230 V hp	3	3 (1 for 3TK20..-6)
	460/575 V hp	5	--
Ⓢ, Ⓣ and Ⓜ rated data of the auxiliary contacts			
Rated voltage, max.	V AC	600	
Auxiliary switch blocks, max.	V AC	300	
Switching capacity		A 600, Q 300	
Uninterrupted current at 240 V AC	A	10	

Selection and ordering data

AC operation or DC operation

- Size 00
- AC-1: Operational current $I_e = 16$ A (at 55 °C)
- For screw fixing and snap-on mounting onto TH 35 standard mounting rail
- Screw terminals

Rated data Utilization categories AC-2 and AC-3	Main contacts Version	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
Operational current I_e At 380 V	Ratings of three-phase motors at 50 Hz and 220 V 400/ 380 V 500 V 690/ 660 V	 	Article No.	Price per PU		
A	kW kW kW kW	NO NC d				

Miniature contactors with screw terminals



AC operation, rated control supply voltage $U_s = 50$ Hz 230/220 V AC ¹⁾

9	2.5	4	4	4	4	--	20	3TK2040-0AP0	1	1 unit	41B
						3	1	3TK2031-0AP0	1	1 unit	41B
						2	2	3TK2022-0AP0	1	1 unit	41B

DC operation, rated control supply voltage $U_s = 24$ V DC

9	2.5	4	4	4	4	--	20	3TK2040-0BB4	1	1 unit	41B
						3	1	3TK2031-0BB4	1	1 unit	41B
						2	2	3TK2022-0BB4	1	1 unit	41B

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

Plug-in base and release tool, see page 3/151.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type 3TK20 Size 00
---------------------------------------	---

AC operation

Solenoid coils for 50 and 60 Hz AC

50 Hz	60 Hz	
24 V AC	29 V AC	B0
110 V AC	132 V AC	F0
230/220 V AC	276 V AC	P0 ¹⁾

Solenoid coils for 50/60 Hz AC

230 V AC	L2
----------	----

DC operation

24 V DC	B4
---------	----

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

Other voltages and delivery time on request.

3TK20 miniature contactors for resistive loads (AC-1), 4-pole

AC operation  or **DC operation** 

- Size 00
- AC-1: Operational current $I_e = 16 \text{ A}$ (at 55 °C)
- For screw fixing and snap-on mounting onto TH 35 standard mounting rail (diagonal)
- Flat connectors or solder pin connection

Rated data		Utilization categories AC-2 and AC-3				Main contacts		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	At 380 V	Ratings of three-phase motors at 50 Hz and				Version		NO	NC	d			
		220 V	400/ 380 V	500 V	690/ 660 V								
A		kW	kW	kW	kW								

Miniature contactors with 6.3 mm x 0.8 mm flat connectors

Flat connectors 

3TK20..-3...

AC operation, rated control supply voltage $U_s = 50 \text{ Hz } 230/220 \text{ V AC}^{1)}$

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

9	2.5	4	4	--	4	--	20	3TK2040-3AP0	1	1 unit	41B	
					3	1	20	3TK2031-3AP0	1	1 unit	41B	
					2	2	20	3TK2022-3AP0	1	1 unit	41B	
For screw fixing (diagonal)												
9	2.5	4	4	--	4	--	20	3TK2040-7AP0	1	1 unit	41B	
					3	1	20	3TK2031-7AP0	1	1 unit	41B	
					2	2	20	3TK2022-7AP0	1	1 unit	41B	




3TK20..-7...

DC operation, rated control supply voltage $U_s = 24 \text{ V DC}$

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

9	2.5	4	4	--	4	--	X	3TK2040-3BB4	1	1 unit	41B	
					3	1	20	3TK2031-3BB4	1	1 unit	41B	
					2	2	X	3TK2022-3BB4	1	1 unit	41B	
For screw fixing (diagonal)												
9	2.5	4	4	--	4	--	5	3TK2040-7BB4	1	1 unit	41B	
					3	1	20	3TK2031-7BB4	1	1 unit	41B	
					2	2	20	3TK2022-7BB4	1	1 unit	41B	

Miniature contactors with solder pin connections for printed circuit boards

Solder pin connections 

3TK20..-6...

AC operation, rated control supply voltage $U_s = 50 \text{ Hz } 230/220 \text{ V AC}^{1)}$

For screw fixing (diagonal)

9	2.5	4	4	--	4	--	20	3TK2040-6AP0	1	1 unit	41B
					3	1	20	3TK2031-6AP0	1	1 unit	41B
					2	2	20	3TK2022-6AP0	1	1 unit	41B

DC operation, rated control supply voltage $U_s = 24 \text{ V DC}$

For screw fixing (diagonal)

9	2.5	4	4	--	4	--	5	3TK2040-6BB4	1	1 unit	41B
					3	1	2	3TK2031-6BB4	1	1 unit	41B
					2	2	20	3TK2022-6BB4	1	1 unit	41B

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

Plug-in base and release tool, see page 3/151.

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type 3TK20	Size 00
AC operation		
Solenoid coils for 50 and 60 Hz AC		
50 Hz	60 Hz	
24 V AC	29 V AC	B0
110 V AC	132 V AC	F0
230/220 V AC	276 V AC	P0 ¹⁾
Solenoid coils for AC 50/60 Hz		
230 V AC		L2
DC operation		
24 V DC		B4

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

Other voltages and delivery time on request.

Contactors for Special Applications

Contactors for Railway Applications

SIRIUS 3RT contactors with extended operating range, 3-pole

Overview

Standards

IEC/EN 60947-4-1, IEC/EN 60077-2, EN 50155

Performance range

Sizes S00 to S3

- 3RT20 contactors for motor loads (AC-3) up to 110 A/55 kW

Sizes S6 to S12

- 3RT10 contactors for motor loads (AC-3) from 55 kW to 500 A / 250 kW
- 3RT14 contactors for resistive loads (AC-1) up to 690 A

Application

Besides standard approval in compliance with IEC 60947-4-1, the contactors with an extended operating range are also approved in compliance with the relevant parts of IEC 60077-2, thus fulfilling the requirement for use in railway applications.

Thus, their suitability for increased requirements such as an

- extended temperature range compared to the IEC 60947-4-1 product standard or
- extended operating range of the solenoid coils or also
- increased resistance to mechanical oscillations and vibrations is warranted. The design of the terminals in the spring-type connection system also contributes toward vibration resistance.

Versions

In addition to the complete motor contactor series (AC-3) up to 250 kW of sizes S00 to S12 (3RT.0), as from size S6, new variants of the 3RT14 contactors optimized for AC-1 operation up to 525 kW with extended operating conditions are also available.

Operating range of contactor operating mechanisms

The contactors with extended operating range and railway approval are available with a solid-state DC operating mechanism in all sizes from S00 to S12.

This operating mechanism version has an operating range from 0.7 to 1.25 x U_s in the temperature range -40 to 70 °C. Overvoltage damping of the contactor coil with a varistor circuit is already implemented.

As from size S6, the operating mechanisms are equipped with an additional control input that can be operated between 24 DC and 110 V. This function can optionally be switched on or off via a selector switch.

Auxiliary switches

These devices can be equipped with auxiliary switches in the same way as their corresponding versions of the standard motor contactors (see overview diagrams of the contactors from page 3/8).

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full operating range of the operating mechanisms) is -40 to +70 °C.

Side-by-side mounting

Up to an ambient temperature of 60 °C, these device versions can be mounted side by side. Above 60 °C, a clearance of at least 10 mm must be provided.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16177/td>
FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16177/faq>

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16177/man>

Type	3RT2017	3RT201.- 2XB4.-0LA2	3RT201.- 2XF4.-0LA2	3RT202.	3RT202.- 2XB40-0LA2	3RT202.- 2XF40-0LA2
Size	S00			S0		
General data						
Upright mounting position						
• Contactors with series resistor	Special version (on request)					
• Contactors with conventional coil	Special version (on request)					
Ambient temperature						
• During operation	°C	-40 ... +70 ¹⁾	-40 ... +70			
• During storage	°C	-55 ... +80				
Control						
Solenoid coil operating range	DC	0.7 ... 1.25 x U_s				
Power consumption of the solenoid coils						
For cold coil and 1.0 x U_s						
• Contactors with series resistor	Closing	W	13	--		
	Closed	W	4.0	--		
• Contactors with conventional coil	Closing	W	2.8	--	4.5	--
	Closed	W	2.8	--	4.5	--
• Contactors with solid-state operating mechanism	Closing	W	--	4.0	--	6.7
	Closed	W	--	0.7	0.75	0.8

¹⁾ 3RT20...-K contactors without the article number suffix "-0LA2" are coupling contactors that are certified for the -25 to +60 °C temperature range. For railway applications, an additional certification approves these contactors with a minimum distance of 10 mm for the extended temperature range from -40 to +70 °C.

All details and technical specifications not mentioned here are identical to those of the basic units, see from page 3/23 onwards.

Contactors for Special Applications

Contactors for Railway Applications

SIRIUS 3RT contactors with extended operating range, 3-pole

Type		3RT203.-3XB40-0LA2	3RT203.-3XF40-0LA2	3RT204.-3XB40-0LA2	3RT204.-3XF40-0LA2
Size		S2		S3	
General data					
Ambient temperature					
• During operation	°C	-40 ... +70			
• During storage	°C	-55 ... +80			
Control					
Solenoid coil operating range	DC	0.7 ... 1.25 x U_s			
Power consumption of the solenoid coils					
For cold coil and 1.0 x U_s					
• Contactors with solid-state operating mechanism	Closing	W	23	76	64
	Closed	W	1	1.8	1.0

All details and technical specifications not mentioned here are identical to those of the basic units, [see from page 3/23 onwards](#).

Type		3RT1054-.X.46-0LA2	3RT1055-.X.46-0LA2	3RT1056-.X.46-0LA2	3RT1064-.X.46-0LA2	3RT1065-.X.46-0LA2	3RT1066-.X.46-0LA2	3RT1075-.X.46-0LA2	3RT1076-.X.46-0LA2
Size		S6			S10			S12	
General data									
Ambient temperature									
• During operation	°C	-40 ... +70							
• During storage	°C	-55 ... +80							
Control									
Operating range		0.7 ... 1.25							
Control input rated voltage	V DC	24 ... 110							
Power consumption									
• Contactor operating mechanism at A1/A2	Closing	W	320		580			800	
	Closed	W	2.8		3.4			3.6	
Rated data of the main contacts									
Switching frequency									
Switching frequency z in operating cycles/hour									
Contactors without overload relays									
• No-load switching frequency									
- Contactors with solid-state operating mechanism	1/h	1 000			700			500	
• Switching frequency z during rated operation ¹⁾									
- Contactors with solid-state operating mechanism	$I_{e}/AC-1$ at 400 V	800			700			500	
	$I_{e}/AC-2$ at 400 V	400	300		250	300	250	200	170
	$I_{e}/AC-3$ at 400 V	1 000	750		500	700	500		420
	$I_{e}/AC-4$ at 400 V	130							

¹⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U' :
 $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

For all details and technical specifications not mentioned here, [see https://support.industry.siemens.com/cs/ww/en/ps/16177/td](https://support.industry.siemens.com/cs/ww/en/ps/16177/td).

Type		3RT1456-.X.46-0LA2	3RT1466-.X.46-0LA2	3RT1467-.X.46-0LA2	3RT1476-.X.46-0LA2
Size		S6	S10		S12
General data					
Ambient temperature					
• During operation	°C	-40 ... +70			
• During storage	°C	-55 ... +80			
Control					
• Control version of the switch operating mechanism		PLC-IN or standard A1 - A2 (can be set)			
<u>Actuated via A1/A2</u>					
• Rated control supply voltage	V DC	24, 72 or 110			
• Operating range		0.7 ... 1.25			
<u>Actuated via PLC input</u>					
• Type of PLC control input according to IEC 60947-1		Type 1			
• Rated voltage	V DC	24 ... 110			
• Operating range		0.7 ... 1.25			
• Consumed current at PLC control input according to IEC 60947-1, maximum	mA	2			

Contactors for Special Applications

Contactors for Railway Applications

SIRIUS 3RT contactors with extended operating range, 3-pole **IE3/IE4 ready**

Selection and ordering data

DC operation


Solenoid coil fitted with surge suppressor



3RT201.-2K.4.



3RT201.-2K.42-OLA0

Rated data according to IEC 60947-4-1		Auxiliary contacts		Rated control supply voltage U_s	SD	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG
AC-2 and AC-3, t_{ij} : 70 °C	Operational current I_e up to	Ratings of three-phase motors at			Ident. No.	Version	Article No.	Price per PU	
400 V	230 V	400 V	500 V	690 V					
A	kW	kW	kW	kW	NO	NC	V DC	d	

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

With conventional coil

- Fitted with suppressor diode (coupling contactors)

12	3	5.5	5.5	5.5	10 ¹⁾	1	--	24	5	3RT2017-2KB41	1	1 unit	41B
								110	5	3RT2017-2KF41	1	1 unit	41B
12	3	5.5	5.5	5.5	01 ¹⁾	--	1	24	5	3RT2017-2KB42	1	1 unit	41B
								110	5	3RT2017-2KF42	1	1 unit	41B
• Fitted with varistor													
12	3	5.5	5.5	5.5	10 ¹⁾	1	--	24	5	3RT2017-2LB41	1	1 unit	41B
								110	5	3RT2017-2LF41	1	1 unit	41B
12	3	5.5	5.5	5.5	01 ¹⁾	--	1	24	5	3RT2017-2LB42	1	1 unit	41B
								110	5	3RT2017-2LF42	1	1 unit	41B

With series resistor

- Fitted with suppressor diode

12	3	5.5	5.5	5.5	-- ²⁾	--	1 ³⁾	24	5	3RT2017-2KB42-OLA0	1	1 unit	41B
								110	5	3RT2017-2KF42-OLA0	1	1 unit	41B
16	4	7.5	10	11	-- ²⁾	--	1 ³⁾	24	5	3RT2018-2KB42-OLA0	1	1 unit	41B
								110	5	3RT2018-2KF42-OLA0	1	1 unit	41B
• Fitted with varistor													
12	3	5.5	5.5	5.5	-- ²⁾	--	1 ³⁾	24	5	3RT2017-2LB42-OLA0	1	1 unit	41B
								110	5	3RT2017-2LF42-OLA0	1	1 unit	41B
16	4	7.5	10	11	-- ²⁾	--	1 ³⁾	24	5	3RT2018-2LB42-OLA0	1	1 unit	41B
								110	5	3RT2018-2LF42-OLA0	1	1 unit	41B

¹⁾ It is not possible to mount an auxiliary switch block. A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.

²⁾ One 4-pole auxiliary switch block according to EN 50005 can be mounted from -40 to 70 °C; no clearance required.

³⁾ NC contact cannot be used because it is used for switching of the series resistor.

Accessories and spare parts, see page 3/76 onwards.

Contactors for Special Applications Contactors for Railway Applications

IE3/IE4 ready SIRIUS 3RT contactors with extended operating range, 3-pole

DC operation

Solenoid coil fitted with varistor



3RT201.-2X.41-0LA2






3RT201.-2X.42-0LA2



3RT202.-2K.40



3RT202.-2X.40-0LA2

Rated data acc. to IEC 60077-2 IEC 60947-4-1	Auxiliary contacts	Rated control supply voltage U_s	SD	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG
t_u : 70 °C Conventional thermal current I_{th} up to	Ident. No.	Version		Article No.	Price per PU		
AC-3 t_u : 60 °C Operational current I_e up to							
Ratings of three-phase motors at							
690 V A	400 V A	230 V kW	400 V kW	500 V kW	690 V kW		
			 	V DC	d		

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

With solid-state operating mechanism, with integrated varistor

18	12	3	5.5	5.5	5.5	10	1	--	24 ... 34 72 ... 125	5	3RT2017-2XB41-0LA2 3RT2017-2XF41-0LA2	1	1 unit	41B
18	12	3	5.5	5.5	5.5	01	--	1	24 ... 34 72 ... 125	5	3RT2017-2XB42-0LA2 3RT2017-2XF42-0LA2	1	1 unit	41B
18	16	4	7.5	10	11	10	1	--	24 ... 34 72 ... 125	5	3RT2018-2XB41-0LA2 3RT2018-2XF41-0LA2	1	1 unit	41B
18	16	4	7.5	10	11	01	--	1	24 ... 34 72 ... 125	5	3RT2018-2XB42-0LA2 3RT2018-2XF42-0LA2	1	1 unit	41B

Size S0

With conventional operating mechanism (coupling contactors)

--	17	4	7.5	10	11	11¹⁾	1	1	24 110	2 5	3RT2025-2KB40 3RT2025-2KF40	1	1 unit	41B
--	25	5.5	11	11	11	11¹⁾	1	1	24 110	2 5	3RT2026-2KB40 3RT2026-2KF40	1	1 unit	41B
--	32	7.5	15	18.5	18.5	11¹⁾	1	1	24 110	2 5	3RT2027-2KB40 3RT2027-2KF40	1	1 unit	41B

With solid-state operating mechanism

30	17	4	7.5	10	11	11	1	1	24 110	5 5	3RT2025-2XB40-0LA2 3RT2025-2XF40-0LA2	1	1 unit	41B
30	25	5.5	11	11	11	11	1	1	24 110	5 5	3RT2026-2XB40-0LA2 3RT2026-2XF40-0LA2	1	1 unit	41B
36	32	7.5	15	18.5	18.5	11	1	1	24 110	5 5	3RT2027-2XB40-0LA2 3RT2027-2XF40-0LA2	1	1 unit	41B
38	38	7.5	18.5	18.5	18.5	11	1	1	24 110	5 5	3RT2028-2XB40-0LA2 3RT2028-2XF40-0LA2	1	1 unit	41B

¹⁾ It is not possible to mount an auxiliary switch block. A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.

Accessories and spare parts, see page 3/76 onwards.

Contactors for Special Applications

Contactors for Railway Applications

SIRIUS 3RT contactors with extended operating range, 3-pole **IE3/IE4 ready**

DC operation


Solenoid coil fitted with varistor



3RT203-3X.40-0LA2



3RT204-3X.40-0LA2

Rated data acc. to IEC 60077-2		Rated data acc. to IEC 60947-4-1		Ratings of three-phase motors at		Auxiliary contacts		Ident. No.	Version	Rated control supply voltage U_s	SD	Spring-type terminals for auxiliary and control circuits 	PU (UNIT, SET, M)	PS*	PG
t_{ij} : 70 °C	Conventional thermal current I_{th} up to	AC-3	t_{ij} : 60 °C	Operational current I_e up to	230 V	400 V	500 V								
690 V	A	400 V	A	kW	kW	kW	kW								

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S2

With solid-state operating mechanism

50	40	11	18.5	22	22	11	1	1	24	5	3RT2035-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2035-3XF40-0LA2	1	1 unit	41B
55	50	15	22	30	22	11	1	1	24	5	3RT2036-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2036-3XF40-0LA2	1	1 unit	41B
60	65	18.5	30	37	37	11	1	1	24	5	3RT2037-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2037-3XF40-0LA2	1	1 unit	41B
75	80	22	37	37	45	11	1	1	24	5	3RT2038-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2038-3XF40-0LA2	1	1 unit	41B

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

With solid-state operating mechanism

90	80	22	37	45	55	11	1	1	24	5	3RT2045-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2045-3XF40-0LA2	1	1 unit	41B
95	95	22	45	55	75	11	1	1	24	5	3RT2046-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2046-3XF40-0LA2	1	1 unit	41B
95	110	30	55	75	75	11	1	1	24	5	3RT2047-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2047-3XF40-0LA2	1	1 unit	41B

Accessories and spare parts, [see page 3/76 onwards](#).

Contactors for Special Applications

Contactors for Railway Applications

IE3/IE4 ready SIRIUS 3RT contactors with extended operating range, 3-pole

DC operation

- Operating mechanism with integrated coil circuit (varistor)
- For screw fixing
- Auxiliary and control conductors: Spring-type terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washer and nut is enclosed.






3RT105-2X.46-0LA2



3RT106-2X.46-0LA2



3RT107-2X.46-0LA2

Size	Rated data acc. to IEC 60077-2	IEC 60947-4-1 AC-3	Auxiliary contacts, lateral	Rated control supply voltage U_s	SD	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG
	t_{ij} : 70 °C Conventional thermal current I_{th} up to 690 V	t_{ij} : 60 °C Operational current I_e up to 400 V	Version  	V DC	d	Article No.	Price per PU		

Solid-state operating mechanism

With control signal input 24 ... 110 V DC
e. g. for control by PLC

S6	120	115	2	2	24	5	3RT1054-2XB46-0LA2	1	1 unit	41B
					72	5	3RT1054-2XJ46-0LA2	1	1 unit	41B
					110	5	3RT1054-2XF46-0LA2	1	1 unit	41B
	140	150	2	2	24	5	3RT1055-2XB46-0LA2	1	1 unit	41B
					72	5	3RT1055-2XJ46-0LA2	1	1 unit	41B
					110	5	3RT1055-2XF46-0LA2	1	1 unit	41B
	145	185	2	2	24	5	3RT1056-2XB46-0LA2	1	1 unit	41B
					72	5	3RT1056-2XJ46-0LA2	1	1 unit	41B
					110	5	3RT1056-2XF46-0LA2	1	1 unit	41B
S10	215	225	2	2	24	5	3RT1064-2XB46-0LA2	1	1 unit	41B
					72	5	3RT1064-2XJ46-0LA2	1	1 unit	41B
					110	5	3RT1064-2XF46-0LA2	1	1 unit	41B
	265	265	2	2	24	5	3RT1065-2XB46-0LA2	1	1 unit	41B
					72	5	3RT1065-2XJ46-0LA2	1	1 unit	41B
					110	5	3RT1065-2XF46-0LA2	1	1 unit	41B
	265	300	2	2	24	5	3RT1066-2XB46-0LA2	1	1 unit	41B
					72	5	3RT1066-2XJ46-0LA2	1	1 unit	41B
					110	5	3RT1066-2XF46-0LA2	1	1 unit	41B
S12	350	400	2	2	24	5	3RT1075-2XB46-0LA2	1	1 unit	41B
					72	5	3RT1075-2XJ46-0LA2	1	1 unit	41B
					110	5	3RT1075-2XF46-0LA2	1	1 unit	41B
	475	500	2	2	24	5	3RT1076-2XB46-0LA2	1	1 unit	41B
					72	5	3RT1076-2XJ46-0LA2	1	1 unit	41B
					110	5	3RT1076-2XF46-0LA2	1	1 unit	41B

Accessories and spare parts, see page 3/76 onwards.

Contactors for Special Applications

Contactors for Railway Applications

SIRIUS 3RT contactors with extended operating range, 3-pole **NEW**

DC operation

- Operating mechanism with integrated coil circuit (varistor)
- For screw fixing
- Auxiliary and control conductors: Spring-type terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washer and nut is enclosed.






3RT1456-2X.46-0LA2



3RT146-2X.46-0LA2



3RT1476-2X.46-0LA2

Size	Rated data acc. to IEC 60077-2	IEC 60947-4-1 AC-1	Auxiliary contacts, lateral	Rated control supply voltage U_s	SD	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG
	t_{ij} : 70 °C Conventional thermal current I_{th} up to 690 V	t_{ij} : 40 °C Operational current I_e up to 400 V	Version  	V DC	d	Article No.	Price per PU		

Solid-state operating mechanism

With control signal input 24 ... 110 V DC
e. g. for control by PLC

S6	190	275	2	2	24 72 110	5 5 5	3RT1456-2XB46-0LA2 3RT1456-2XJ46-0LA2 3RT1456-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
S10	330	400	2	2	24	5	3RT1466-2XB46-0LA2	1	1 unit	41B
					72	5	3RT1466-2XJ46-0LA2	1	1 unit	41B
					110	5	3RT1466-2XF46-0LA2	1	1 unit	41B
S12	520	690	2	2	24	5	3RT1467-2XB46-0LA2	1	1 unit	41B
					72	5	3RT1467-2XJ46-0LA2	1	1 unit	41B
					110	5	3RT1467-2XF46-0LA2	1	1 unit	41B

Accessories and spare parts, see page 3/76 onwards.

Overview

Standards

IEC/EN 60947-5-1

The contactor relays are finger-safe according to IEC 60529. The size S00 contactor relays have spring-type connections for all terminals.

Ambient temperature

The permissible ambient temperature for operation of the contactor relays (across the full coil operating range) is -40 to +70 °C.

Uninterrupted duty at temperatures > +60 °C reduces the mechanical endurance, the current carrying capacity of the conducting paths and the switching frequency.

Control and auxiliary circuits

The solenoid coils of the contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with surge suppressors. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Application

For operation in installations that are subject both to considerable variations in the control voltage and to high ambient temperatures, e. g. railway applications under extreme climatic conditions, rolling mills, etc.

Also for control supply voltages with battery buffering to extend the operating time in the event of battery charge failure.

Contactor relays with conventional coil

Control and auxiliary circuits

These contactor relays have an extended operating range from 0.7 to 1.25 x U_s ; the solenoid coils are fitted with suppressor diodes as standard. An additional series resistor is not required.

Note:

An additional auxiliary switch block cannot be mounted.

Side-by-side mounting

A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C ≤ 70 °C.

Contactor relays with series resistor

Control and auxiliary circuits

The DC solenoid systems of the contactor relays are modified (to holding coil) by means of a series resistor.

The size S00 contactor relays are supplied prewired with a plug-on module containing the series resistor. A surge suppressor (a suppressor diode or varistor as preferred) is integrated.

A 4-pole auxiliary switch block (according to EN 50005) can be fitted additionally.

Side-by-side mounting

Side-by-side mounting is permissible at ambient temperatures up to 70 °C.

Contactor relays with solid-state operating mechanism

Control and auxiliary circuits

The solenoid coils of these contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage.

The contactor relays are energized via upstream control electronics which ensure the coil operating range of 0.7 to 1.25 x U_s at an ambient temperature of 70 °C. They are supplied as complete units with integrated coil electronics. A varistor is integrated for damping opening surges in the coil.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16174/td>
FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16174/faq>

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16174/man>

Contactor relays	Type	3RH21...-2K, -2L	3RH2122-2XB40-0LA2	3RH2122-2XF40-0LA2
General data				
Upright mounting position		Special version (on request)		
<ul style="list-style-type: none"> • Contactors with series resistor • Contactors with conventional coil 		Special version (on request)		
Ambient temperature				
• During operation		°C	-40 ... +70 ¹⁾	
• During storage		°C	-55 ... +80	
Control				
Solenoid coil operating range		DC	0.7 ... 1.25 x U_s	
Power consumption of the solenoid coils		For cold coil and 1.0 x U_s		
• Contactors with series resistor	- Closing	W	13	--
	- Closed	W	4	--
• Contactors with conventional coil	- Closing	W	2.8	--
	- Closed	W	2.8	--
• Contactors with solid-state operating mechanism	- Closing	W	--	4
	- Closed	W	--	0.7
				4.5
				0.75

¹⁾ 3RH21...-K contactor relays without article number suffix "-0LA." are coupling contactor relays that are certified for the temperature range -25 to +60 °C. For railway applications, an additional certification approves these contactors with a minimum distance of 10 mm for the extended temperature range from -40 to +70 °C.

All details and technical specifications not mentioned here are identical to those of the 3RH2 basic units, see from page 5/4 onwards.

Contactors for Special Applications

Contactors for Railway Applications

SIRIUS 3RH2 contactor relays with extended operating range

Selection and ordering data

DC operation




Solenoid coil with surge suppression



3RH2122-2K.40



3RH2122-2K.40-0LA0

Rated operational current				Contacts Ident. No. acc. to EN 50011	Version	Rated control supply voltage U_s	SD	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG
I_e /AC-15/AC-14 t_u : 70 °C at	230 V	400 V	500 V								
A	A	A	A		 	V DC	d	Article No.	Price per PU		

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

With conventional coil

- Fitted with suppressor diode

10	3	2	1	22E	2	2 ¹⁾	24 110	▶	3RH2122-2KB40	1	1 unit	41A
				31E	3	1 ¹⁾	24	▶	3RH2131-2KB40	1	1 unit	41A
				40E	4	0 ¹⁾	24	5	3RH2140-2KB40	1	1 unit	41A

- Fitted with varistor

10	3	2	1	22E	2	2 ¹⁾	24 110	5	3RH2122-2LB40	1	1 unit	41A
								2	3RH2122-2LF40	1	1 unit	41A

With series resistor

- Fitted with suppressor diode

10	3	2	1	21X	2	1 ²⁾	24 110	5	3RH2122-2KB40-0LA0	1	1 unit	41A
								5	3RH2122-2KF40-0LA0	1	1 unit	41A

- Fitted with varistor

10	3	2	1	21X	2	1 ²⁾	24 110	2	3RH2122-2LB40-0LA0	1	1 unit	41A
								2	3RH2122-2LF40-0LA0	1	1 unit	41A

With solid-state operating mechanism, with integrated varistor

10	3	2	1	22E	2	2 ²⁾	24 ... 34 72 ... 125	5	3RH2122-2XB40-0LA2	1	1 unit	41A
								5	3RH2122-2XF40-0LA2	1	1 unit	41A

¹⁾ It is not possible to mount an auxiliary switch block.

²⁾ 4-pole auxiliary switch block according to EN 50005 can be mounted.

Accessories, see page 3/76 onwards.

Other voltages according to page 3/74 on request.

Overview

Standards

IEC/EN 60947-5-1

The contactor relays are finger-safe according to IEC 60529. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full coil operating range) is -50 to +70 °C. Uninterrupted duty at temperatures < -25 °C and > +55 °C reduces the mechanical endurance, the current carrying capacity of the conducting paths and the switching frequency.

A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 55 °C. There is no need to reduce the technical specifications.

Application

For operation in installations which are subject both to considerable variations in the control voltage and to high ambient temperatures, e.g. in railway applications.

Control and auxiliary circuits

The solenoid coils of the contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16176/td>
FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16176/faq>

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16176/man>

General data

Contactor relays	Type	3TH42	
Permissible ambient temperature			
• During operation	°C	-50 ... +70 ¹⁾	
• During storage	°C	-55 ... +80	
Control			
Solenoid coil operating range		0.7 ... 1.25 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s) For cold coil: Closing = Closed		W	5.2
Permissible residual current of the electronics (with 0 signal)			
• DC operation		≤ 10 mA x (24 V/ U_s)	
Operating times for 1.0 x U_s (Total break time = OFF-delay + Arcing time)			
• Closing	ON-delay (NO)	ms	45 ... 80
	OFF-delay (NC)	ms	30 ... 34
• Opening	OFF-delay (NO)	ms	20 ... 30
	ON-delay (NC)	ms	22 ... 32
• Arcing time		ms	10

¹⁾ Side-by-side mounting with 10 mm distance.

All details and technical specifications not mentioned here are identical to those of the 3TH4 basic units, see from page 5/16 onwards.

Contactors for Special Applications

Contactors for Railway Applications

3TH4 contactor relays, 8-pole


Selection and ordering data

DC operation

Solenoid coil fitted with varistor



3TH4244-0L..

Contacts	Rated operational current				Contacts ¹⁾		Rated control supply voltage U_s	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	
	I_e /AC-15/AC-14	230 V	400 V	500 V	690 V	Ident. No. acc. to EN 50011							Version
Number	A	A	A	A		NO	NC	V DC	d	Article No.	Price per PU		
For screw fixing and snap-on mounting onto TH 35 standard mounting rail													
8	10	6	4	2	44E	4	4	24 110	X X	3TH4244-0LB4 3TH4244-0LF4	1 1	1 unit 1 unit	41A 41A
8	10	6	4	2	53E	5	3	24 110	X X	3TH4253-0LB4 3TH4253-0LF4	1 1	1 unit 1 unit	41A 41A
8	10	6	4	2	62E	6	2	24 110	X X	3TH4262-0LB4 3TH4262-0LF4	1 1	1 unit 1 unit	41A 41A

¹⁾ Contacts not extendable.

Other voltages [according to page 5/22](#) on request.

Accessories, [see page 5/23](#).

Overview

Standards

IEC/EN 60947-4-1

The contactors are finger-safe according to IEC 60529 (exception: series resistor). Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

All details and technical specifications not mentioned here are identical to those of the standard 3TC contactors, see page 4/65.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full coil operating range) is -50 to +70 °C. Uninterrupted duty at temperatures < -25 °C and > +55 °C reduces the mechanical endurance, the current carrying capacity of the conducting paths and the switching frequency.

At ambient temperatures > 55 °C, a clearance of 10 mm is required for side-by-side mounting of size 2 contactors. There is no need to reduce the technical specifications.

Series resistor

The DC solenoid systems of the 3TC contactors must be modified (to holding coil) by means of a series resistor. This series resistor is supplied separately packed with the contactors.

With types 3TC48, the series resistor must be attached onto the right-hand side of the auxiliary switch block by means of the enclosed mounting parts and sets of links provided, while in the case of the 3TC44 it must be mounted and wired between the contactor poles. With types 3TC52 and 3TC56, the series resistor must be attached separately next to the contactors.

Auxiliary contacts

The contactors are equipped with two lateral auxiliary switch blocks each with 1 NO + 1 NC contact. Further auxiliary switch blocks cannot be fitted to the DC-operated contactors.

One NC contact is required for the series resistor function. Two NO contacts and one NC contact are thus freely available.

Reversing contactors

With the 3TC52 and 3TC56 contactors, the series resistor must be connected using an additional K2 reversing contactor (3RT1317-1F.40). This contactor is automatically included in the scope of supply in the same packaging as the contactor.

Dimensions

Attaching resistors and varistors increases the width of the contactors.

Application

For operation in installations which are subject both to considerable variations in the control voltage and to high ambient temperatures, e.g. in railway applications.

Control and auxiliary circuits

The solenoid coils of the contactors have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16180/td>

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16180/man>

Type	3TC44	3TC48	3TC52	3TC56
Size	2	4	8	12
General data				
Ambient temperature				
• During operation	°C -40 ... +70			
Control				
Solenoid coil operating range				
0.7 ... 1.25 x U_s				
Power consumption of the solenoid coils				
For cold coil and 1.0 x U_s				
• Closing	W 48	26	40	130
• Closed	W 13	14	21	59

All details and technical specifications not mentioned here are identical to those of the basic units of the 3TC contactors, see page 4/65.

Contactors for Special Applications

Contactors for Railway Applications

3TC contactors for switching DC voltage, 2-pole


Selection and ordering data

DC operation

- 3TC44: For screw fixing and snap-on mounting onto 35 mm standard mounting rail
3TC48 to 3TC56: For screw fixing
- Solenoid coil fitted with varistor



3TC48

Size	Utilization category	Rated operational current I_e at					Auxiliary contacts ¹⁾		Rated control supply voltage U_s	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
		750 V	220 V	440 V	600 V	750 V	Version	NO						
		A	kW	kW	kW	kW			V DC	d	Article No.	Price per PU		
Contactors for switching DC voltage														
2	DC-1	32	7	14	19.2	24	2	1 ²⁾	24	5	3TC4417-0LB4	1	1 unit	41B
	DC-3/DC-5	7.5	5	9	9	4			110	10	3TC4417-0LF4	1	1 unit	41B
4	DC-1	75	16.5	33	45	56	2	1 ²⁾	24	15	3TC4817-0LB4	1	1 unit	41B
	DC-3/DC-5	75	13	27	38	45			110	15	3TC4817-0LF4	1	1 unit	41B
8	DC-1	170	48	97	132	165	2	1 ²⁾	24	15	3TC5217-0LB4	1	1 unit	41B
	DC-3/DC-5	170	41	82	110	110			110	15	3TC5217-0LF4	1	1 unit	41B
12	DC-1	400	88	176	240	300	2	1 ²⁾	24	15	3TC5617-0LB4	1	1 unit	41B
	DC-3/DC-5	400	70	140	200	250			110	15	3TC5617-0LF4	1	1 unit	41B

¹⁾ The number of auxiliary contacts cannot be increased.

²⁾ One NC contact used for series resistor.

Other rated control supply voltages according to page 4/72 on request.

Accessories

Accessories, see basic units of the 3TC contactors, from page 4/72 onwards.

Spare parts for contactors with extended operating range

For contactors		Remarks	Rated control supply voltage U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type								
Arc chutes									
2	3TC4417-0L...	With cutout for resistor mounting	--	X	3TY2442-0B		1	1 unit	41B
Solenoid coils									
2	3TC44	With series resistor, without varistor	24	15	3TY6443-0LB4		1	1 unit	41B
			110	X	3TY6443-0LF4		1	1 unit	41B
4	3TC48		24	X	3TY6483-0LB4		1	1 unit	41B
			110	X	3TY6483-0LF4		1	1 unit	41B

All spare parts not mentioned here are identical to those of the basic units of the 3TC contactors, see page 4/74.

Overview

3TC4 and 3TC5

IEC/EN 60947-1,
IEC/EN 60947-4-1,
IEC/EN 60947-5-1 (auxiliary switches)

The contactors are finger-safe according to IEC 60529. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

The DC motor ratings given in the tables are applicable to the DC-3 and DC-5 utilization categories with 2-pole switching of the load or with the two conducting paths of the contactor connected in series.

One contactor conducting path can switch full power up to 220 V. For voltages over 220 V, the two conducting paths are to be switched in series, see "Rated data of the main contacts", page 4/67.

Auxiliary contacts

The contactors are equipped with two lateral auxiliary switch blocks each with 1 NO + 1 NC contact. On the contactors 3TC48 to 3TC56 with AC operation, a second auxiliary switch block can be mounted on the right and left. On contactors with DC operation, expansion of the auxiliary contacts is not possible.

3TC7

IEC/EN 60947-4-1

The contactors are suitable for use in any climate. They are suitable for switching and controlling DC motors as well as all other DC circuits.

The solenoid excitation is configured for a particularly large operating range. It is between 0.7 or 0.8 and $1.2 \times U_s$.

3TC74 contactors can be used at up to 750 V/400 A and 50 Hz in AC-1 operation.

For voltages over 750 V, the two conducting paths (3TC74: two contactors) are to be switched in series, see "Rated data of the main contacts", page 4/69.

Application

The contactors are suitable for switching and controlling DC motors as well as all other DC circuits.

A version with an especially large actuating voltage is available for operation in electrically driven vehicles and in switchgear with a particularly large coil operating range (see page 4/74).

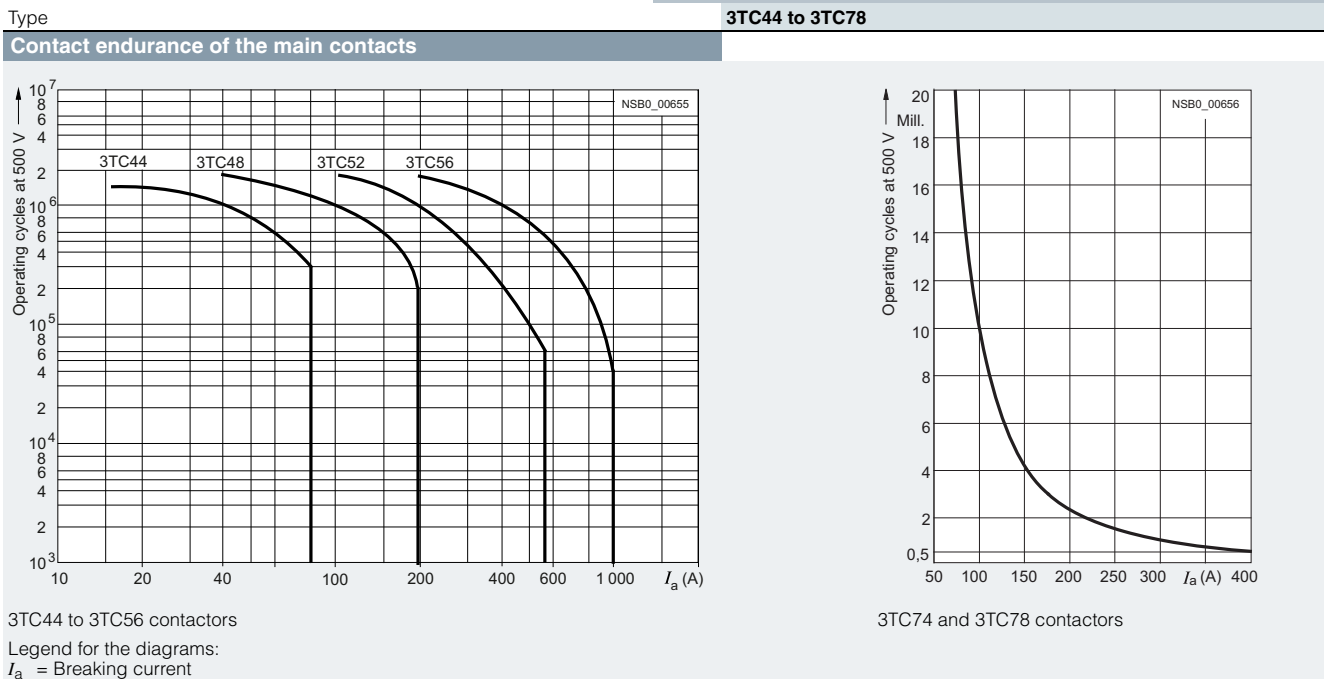
Technical specifications

Type	3TC4 and 3TC7		3TC5
Rated data of the auxiliary contacts			
Rated insulation voltage U_i (pollution degree 3)	V	690	
Conventional thermal current I_{th} = rated operational current $I_e/AC-12$	A	10	10
AC load			
Rated operational current $I_e/AC-15/AC-14$			
• For rated operational voltage U_e	24 V A	10	10
	110 V A	10	10
	125 V A	10	10
	220 V A	6	6
	230 V A	5.6	5.6
	380 V A	4	4
	400 V A	3.6	3.6
	500 V A	2.5	2.5
	660 V A	2.5	2.5
	690 V A	--	--
DC load			
Rated operational current $I_e/DC-12$			
• For rated operational voltage U_e	24 V A	10	10
	60 V A	10	10
	110 V A	3.2	8
	125 V A	2.5	6
	220 V A	0.9	2
	440 V A	0.33	0.6
	600 V A	0.22	0.4
Rated operational current $I_e/DC-13$			
• For rated operational voltage U_e	24 V A	10	10
	48 V A	5	5
	110 V A	1.14	2.4
	125 V A	0.98	2.1
	220 V A	0.48	1.1
	440 V A	0.13	0.32
	600 V A	0.07	0.21

Type	3TC44 to 3TC56	
Ⓢ and Ⓣ rated data of the auxiliary contacts		
Rated voltage, max.	V AC	600
Switching capacity	A 600, P 600	

Contactors for Special Applications

3TC contactors for switching DC voltage, 1-pole and 2-pole




Contactor	Type Size	3TC44 2	3TC48 4	3TC52 8	3TC56 12
General data					
Dimensions (W x H x D)					
• DC operation	mm				
• AC operation	mm	70 x 85 x 100	100 x 183 x 154	135 x 238 x 200	160 x 279 x 251
Permissible mounting position					
The contactors are designed for operation on a vertical mounting surface.					
Mechanical endurance	Operating cycles	10 million			
Electrical endurance		See the endurance diagram above			
Rated insulation voltage U_i (pollution degree 3)	V	800		1 000	
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N	V	Up to 300		Up to 660	
Mirror contacts¹⁾ A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.		Yes, acc. to IEC 60947-4-1, Appendix F			
Permissible ambient temperature					
• During operation	°C	-25 ... +55			
• During storage	°C	-50 ... +80			
Degree of protection acc. to IEC 60529		IP00			
• Connecting terminals		Finger-safe with terminal covers			
Touch protection acc. to IEC 60529		Finger-safe with terminal covers			
Shock resistance	Rectangular pulse	g/ms	7.5/5 and 3.4/10	10/5 and 5/10	12/5 and 5.5/10 12/5 and 5.6/10
Short-circuit protection					
Main circuit					
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE					
• Type of coordination "1"	A	50	160	250	400
• Type of coordination "2"	A	35	63	80	250
Auxiliary circuit (short-circuit current $I_k \leq 1$ kA)					
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE	A	16			
• Miniature circuit breaker with C characteristic	A	10			

¹⁾ For 3TC44, one NC contact each must be connected in series for the right and left auxiliary switch block respectively.

Rated data of the auxiliary contacts, see page 4/65.

3TC contactors for switching DC voltage, 1-pole and 2-pole

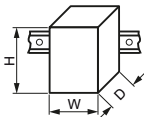
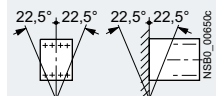
Type Size			3TC44	3TC48	3TC52	3TC56
			2	4	8	12
Control						
Solenoid coil operating range			0.8 ... 1.1 x U_s			
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
• DC operation	- Closing = Closed	W	10	19	30	86
• AC operation, 50 Hz coil	- Closing	VA/p.f.	68/0.86	300/0.5	640/0.48	1780/0.3
	- Closed	VA/p.f.	10/0.29	26/0.24	46/0.23	121/0.22
• AC operation, 60 Hz coil	- Closing	VA/p.f.	95/0.79	365/0.45	730/0.38	2140/0.3
	- Closed	VA/p.f.	12/0.3	35/0.26	56/0.24	140/0.29
• AC operation, 50/60 Hz coil	- Closing at 50 Hz/60 Hz	VA/p.f.	79/73/0.83/0.78	--	--	--
	- Closed at 50 Hz/60 Hz	VA/p.f.	11/9/0.28/0.27	--	--	--
Operating times (for 0.8 ... 1.1 x U_s) Total break time = Opening delay + Arcing time			(The values apply up to and including 20% undervoltage, 10% overvoltage, as well as when the coil is cold and warm)			
• DC operation	- Closing delay	ms	35 ... 190	90 ... 380	120 ... 400	110 ... 400
	- Opening delay ¹⁾	ms	10 ... 25	17 ... 28	22 ... 35	40 ... 110
• AC operation	- Closing delay	ms	10 ... 40	20 ... 50	--	--
	- Opening delay ¹⁾	ms	5 ... 25	5 ... 30	10 ... 30	--
• Arcing time	- DC-1	ms	20	--	--	--
	- DC-3/DC-5	ms	30	--	--	--
Rated data of the main contacts						
Load rating with DC						
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)						
• Rated operational currents I_e (at 55 °C)	Up to U_e 750 V	A	32	75	220	400
• Minimum conductor cross-section		mm ²	6	25	95	240
• Rated power at U_e (≤ 220 V DC: one conducting path, > 220 V DC: two conducting paths in series)	At 220 V	kW	7	16.5	48	88
	440 V	kW	14	33	97	176
	600 V	kW	19.2	45	132	240
	750 V	kW	24	56	165	300
Utilization category DC-3 and DC-5, Shunt-wound and series-wound motors ($L/R \leq 15$ ms)						
• Rated operational currents I_e (at 55 °C)	Up to 220 V	A	32	75	220	400
	440 V	A	29	75	220	400
	600 V	A	21	75	220	400
	750 V	A	7.5	75	170	400
• Rated power at U_e (≤ 220 V DC: one conducting path, > 220 V DC: two conducting paths in series)	At 110 V	kW	2.5	6.5	20	35
	220 V	kW	5	13	41	70
	440 V	kW	9	27	82	140
	600 V	kW	9	38	110	200
	750 V	kW	4	45	110	250
Switching frequency						
Switching frequency z in operating cycles/hour						
AC/DC operation						
• With resistive load DC-1		h ⁻¹	1 500	1 000	--	--
• For inductive load DC-3/DC-5		h ⁻¹	750	600	--	--
Conductor cross-sections						
Main conductors (1 or 2 conductors connectable)			 Screw terminals			
• Solid		mm ²	2 x (2.5 ... 10)	2 x (6 ... 16)	--	--
• Finely stranded with end sleeve		mm ²	2 x (1.5 ... 4)	--	--	--
• Stranded with cable lug		mm ²	2 x 16	2 x 35	2 x 120	2 x 150
• Pin-end connector to DIN 46231		mm ²	2 x (1 ... 6)	--	--	--
• Busbars		mm	--	15 x 2.5	25 x 4	2 x (25 x 3)
• Terminal screw			M5	M6	M10	--
Auxiliary conductors (1 or 2 conductors connectable)						
• Solid		mm ²	2 x (1 ... 2.5)	--	--	--
• Finely stranded with end sleeve		mm ²	2 x (0.75 ... 1.5)	--	--	--

¹⁾ The opening delay times can increase if the contactor coils are attenuated against voltage peaks. The 3TC44 contactors are not allowed to be fitted with diodes.

Rated data of the auxiliary contacts, see page 4/65.

Contactors for Special Applications

3TC contactors for switching DC voltage, 1-pole and 2-pole

Type			3TC74	3TC78
Design			1-pole contactors	2-pole contactors
General data				
Dimensions (W x H x D)		mm	78 x 352 x 276	160 x 366 x 290
Permissible mounting position	The contactors are designed for operation on a vertical mounting surface.			
Mechanical endurance		Operating cycles	30 million	
Electrical endurance			See page 4/66	
Rated insulation voltage U_i (pollution degree 3)		V	1 500	
Rated impulse withstand voltage U_{imp}		kV	8	
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		V	630	
Permissible ambient temperature		°C	-25 ... +55	
Degree of protection acc. to IEC 60529			IP00	
• Connecting terminals			Finger-safe with terminal covers	
Touch protection acc. to IEC 60529			Finger-safe with terminal covers	
Short-circuit protection				
Main circuit				
Fuse links, operational class gG: LV HRC, type 3NA				
• Type of coordination "1"		A	630	
• Type of coordination "2"		A	500	
Auxiliary circuit (Short-circuit current $I_k \leq 1$ kA)				
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE		A	16	
• Miniature circuit breaker with C characteristic		A	10	
Control				
Solenoid coil operating range				
• DC operation	At $U_c = 24$ V		0.8 ... 1.2 x U_s	
	At $U_c > 24$ V		0.7 ... 1.2 x U_s	
• AC operation	At $U_c = 24$ V		0.7 ... 1.15 x U_s	
	At $U_c > 24$ V		0.7 ... 1.14 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)				
• DC operation	Closing = Closed	W	46	92
• AC operation, 50 Hz	Closing = Closed	VA	80	160
		P.f.	0.95	
Operating times				
Total break time = Opening delay + Arcing time				
• AC and DC operation	Closing delay	ms	60 ... 100	
	Opening delay	ms	20 ... 35	
• Arcing time at 0.06 ... 4 x I_e		ms	40 ... 70	

Rated data of the auxiliary contacts, see page 4/65.

3TC contactors for switching DC voltage, 1-pole and 2-pole

Type	3TC74		3TC78	
Design	1-pole contactors		2-pole contactors	
Rated data of the main contacts				
Load rating with DC				
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)				
• Rated operational current $I_g/DC-1$ (at 55 °C)	A	500		
• Minimum conductor cross-section	mm ²	2 x 150		
• Rated power	At 220 V	kW	110	
(≤ 750 V DC: one conducting path,	440 V	kW	220	
> 750 V DC: two conducting paths in series)	600 V	kW	300	
	750 V	kW	375	
	1 200 V	kW	--	600
	1 500 V	kW	--	750
• critical currents, without arc extinction	At 440 V	A	≤ 7	--
	600 V	A	≤ 13	--
	750 V	A	≤ 15	--
	≤ 800 V	A	--	≤ 7
	1 200 V	A	--	≤ 13
	1 500 V	A	--	≤ 15
Utilization category DC-3 and DC-5, Shunt-wound and series-wound motors ($L/R \leq 15$ ms)				
• Rated operational current I_g (at 55 °C)	A	400		
• Rated power at U_g	At 110 V	kW	35	
(≤ 220 V DC: one conducting path,	220 V	kW	70	
> 220 V DC: two conducting paths in series)	440 V	kW	140	
	600 V	kW	200	
	750 V	kW	250	
	1 200 V	kW	--	400
	1 500 V	kW	--	500
Permissible rated current for regenerative braking				
at 110 ... 600 V	A	400		
Switching frequency				
Switching frequency z in operating cycles/hour				
AC/DC operation				
• With resistive load DC-1	h ⁻¹	750		1 000
• For inductive load DC-3/DC-5	h ⁻¹	500		
Conductor cross-sections				
Main conductors				
(1 or 2 conductors can be connected)				
• Stranded with cable lug	mm ²	2 x ... 150	⊕ Screw terminals	
• Busbars	mm	2 x (30 x 4)		
Auxiliary conductors				
(1 or 2 conductors connectable)				
• Solid	mm ²	1 ... 2.5		
• Finely stranded with end sleeve	mm ²	0.75 ... 1.5		

Rated data of the auxiliary contacts, [see page 4/65](#).

Contactors for Special Applications

3TC contactors for switching DC voltage, 1-pole and 2-pole

Selection and ordering data


DC operation  or AC operation, 50 Hz 



3TC44



3TC48

Size	Utilization category ¹⁾	Operational current I_e ²⁾	Ratings of DC motors at					Auxiliary contacts ³⁾		Rated control supply voltage U_s	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
			110 V	220 V	440 V	600 V	750 V	Version							
	A		kW	kW	kW	kW	kW	NO	NC	V	d	Article No.	Price per PU		

3TC44 to 3TC56 2-pole contactors · Operational voltage up to 750 V

DC operation

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

2	DC-3, DC-5	32	2.5	5	9	9	4	2	2	24 DC	▶	3TC4417-0AB4	1	1 unit	41B
										110 DC	▶	3TC4417-0AF4	1	1 unit	41B
										220 DC	▶	3TC4417-0AM4	1	1 unit	41B

For screw fixing

4	DC-3, DC-5	75	6.5	13	27	38	45	2	2	24 DC	2	3TC4817-0AB4	1	1 unit	41B
										110 DC	2	3TC4817-0AF4	1	1 unit	41B
										220 DC	2	3TC4817-0AM4	1	1 unit	41B
8	DC-3, DC-5	220 ⁴⁾	20	41	82	110	110	2	2	24 DC	15	3TC5217-0AB4	1	1 unit	41B
										110 DC	15	3TC5217-0AF4	1	1 unit	41B
										220 DC	10	3TC5217-0AM4	1	1 unit	41B
12	DC-3, DC-5	400	35	70	140	200	250	2	2	24 DC	15	3TC5617-0AB4	1	1 unit	41B
										110 DC	15	3TC5617-0AF4	1	1 unit	41B
										220 DC	15	3TC5617-0AM4	1	1 unit	41B

AC operation, 50 Hz

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

2	DC-3, DC-5	32	2.5	5	9	9	4	2	2	220/230 AC ⁵⁾	▶	3TC4417-0BP0	1	1 unit	41B
										110/110 AC	2	3TC4417-0BF0	1	1 unit	41B

For screw fixing

4	DC-3, DC-5	75	6.5	13	27	38	45	2	2	220/230 AC ⁵⁾	2	3TC4817-0BP0	1	1 unit	41B
										110 AC	2	3TC4817-0BF0	1	1 unit	41B
8	DC-3, DC-5	220 ⁴⁾	20	41	82	110	110	2	2	220/230 AC ⁵⁾	2	3TC5217-0BP0	1	1 unit	41B
										110 AC	10	3TC5217-0BF0	1	1 unit	41B
12	DC-3, DC-5	400	35	70	140	200	250	2	2	220/230 AC ⁵⁾	15	3TC5617-0BP0	1	1 unit	41B
										110 AC	15	3TC5617-0BF0	1	1 unit	41B

¹⁾ Permissible load for DC-1 utilization category, see detailed technical specifications in the Reference Manual.

²⁾ The following rated operational currents are permitted for reversing duty with 3TC44 to 3TC56 contactors:

Contactors	Rated operational voltage	
Type	110 V, 220 V	440 V
3TC44	32 A	7 A
3TC48	75 A	75 A
3TC52	170 A	170 A
3TC56	400 A	400 A

³⁾ The fitting of auxiliary switches cannot be altered on DC-operated contactors.

⁴⁾ At > 600 V: $I_e = 170$ A.

⁵⁾ Operating range at 220 V AC: 0.85 to 1.15 × U_s ; lower operating range limit according to IEC 60947.

Other rated control supply voltages according to page 4/72 on request.

Accessories, see page 4/72 onwards.

Spare parts, see page 4/74.

Contactors for Special Applications

3TC contactors for switching DC voltage, 1-pole and 2-pole

DC operation  or AC operation, 50 Hz 


For screw fixing



3TC74



3TC78

Size	Utilization category ¹⁾	Operational current I_e	Ratings of DC motors at								Auxiliary contacts ²⁾ Version		Rated control supply voltage U_s	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	
			110 V	220 V	440 V	600 V	750 V	1 200 V	1 500 V	NO	NC	V							d
		A	kW	kW	kW	kW	kW	kW	kW										

3TC74 1-pole contactors · Operational voltage up to 750 V

DC operation

12	DC-3, DC-5	400	35	70	140	200	250	--	--	4	4	24 DC 110 DC	15	3TC7414-0EB 3TC7414-0EF	1 1	1 unit 1 unit	41B 41B
----	------------	-----	----	----	-----	-----	-----	----	----	---	---	-----------------	----	--	--------	------------------	------------

AC operation, 50 Hz

12	DC-3, DC-5	400	35	70	140	200	250	--	--	4	4	230/220 AC ³⁾	15	3TC7414-1CM	1	1 unit	41B
----	------------	-----	----	----	-----	-----	-----	----	----	---	---	--------------------------	----	--------------------	---	--------	-----

3TC78 2-pole contactors · Operational voltage up to 1 500 V

DC operation

12	DC-3, DC-5	400	35	70	140	200	250	400	500	4	4	24 DC 110 DC	15	3TC7814-0EB 3TC7814-0EF	1 1	1 unit 1 unit	41B 41B
----	------------	-----	----	----	-----	-----	-----	-----	-----	---	---	-----------------	----	--	--------	------------------	------------

AC operation, 50 Hz

12	DC-3, DC-5	400	35	70	140	200	250	400	500	4	4	230/220 AC ³⁾	15	3TC7814-1CM	1	1 unit	41B
----	------------	-----	----	----	-----	-----	-----	-----	-----	---	---	--------------------------	----	--------------------	---	--------	-----

¹⁾ Permissible load for DC-1 utilization category, see detailed technical specifications in the Reference Manual.

²⁾ The fitting of auxiliary switches cannot be altered on DC-operated contactors.

³⁾ Upper operating range limit at 230 V AC: $1.14 \times U_s$.

Other rated control supply voltages according to page 4/72 on request.

Spare parts, see page 4/74.

Contactors for Special Applications

3TC contactors for switching DC voltage, 1-pole and 2-pole

Options

**Rated control supply voltages,
possible on request (change of the 10th and 11th digits of the Article No.)**


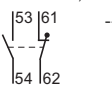

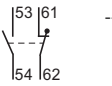

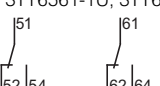
Delivery time on request

Rated control supply voltage U_s	Contactor type	3TC44	3TC48	3TC52/3TC56	3TC74/3TC78
DC operation					
24 V DC		B4	B4	B4	B
48 V DC		W4	W4	--	--
60 V DC		E4	E4	--	--
110 V DC		F4	F4	F4	F
125 V DC		G4	G4	--	--
220 V DC		M4	M4	M4	M
230 V DC		P4	P4	--	--
AC operation					
Solenoid coils for 50 Hz					
24 V AC		B0	B0	--	--
110 V AC		F0	F0	F0	--
230/220 V AC		P0 ¹⁾	P0 ¹⁾	P0 ¹⁾	M ²⁾
240 V AC		U0	U0	--	--
Solenoid coils for 50/60 Hz					
24 V AC		C2	--	--	--
110 V AC		G2	--	--	--
120 V AC		K2	--	--	--
220 V AC		N2	--	--	--
230 V AC		L2	--	--	--

¹⁾ Operating range at 220 V AC: 0.85 to $1.15 \times U_s$;
lower operating range limit according to IEC 60947.

²⁾ Upper operating range limit at 230 V AC: $1.14 \times U_s$.

Accessories




For contactors		Version	Auxiliary switch block		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Size	Type	Auxiliary contacts	Left	Right	d	Article No.	Price per PU		
		 NO NC							
Second auxiliary switch blocks (for AC operation only)									
4	3TC48	2nd auxiliary switch block, left	1	1	20	3TY6501-1K	1	1 unit	41B
									
		2nd auxiliary switch block, right	1	1	20	3TY6501-1L	1	1 unit	41B
									
8 and 12	3TC52, 3TC56	2nd auxiliary switch block, left	1	1	20	3TY6561-1K	1	1 unit	41B
									
		2nd auxiliary switch block, right	1	1	20	3TY6561-1L	1	1 unit	41B
									
Solid-state compatible auxiliary switch blocks									
2 and 4	3TC44, 3TC48	For operation in dusty atmospheres and in solid-state circuits with rated operational currents I_e /AC-14 and DC-13 of 1 ... 300 mA at 3 ... 60 V 2 nd auxiliary switch block, left or right (replacement for 3TY6561-1U, 3TY6561-1V) 1 CO contact			5	3TY7561-1UA00	1	1 unit	41B
									





5TY7561-1.

Contactors for Special Applications

3TC contactors for switching DC voltage, 1-pole and 2-pole

For contactors		Version	Rated control supply voltage U_s		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG				
Size	Type		V AC	V DC	d									
Surge suppressors · Varistors														
 3TX7402-3.	2	3TC44 ¹⁾	Varistors²⁾ With line spacer, for mounting onto the coil terminal	24 ... 48 48 ... 127 127 ... 240 240 ... 400 400 ... 600	24 ... 70 70 ... 150 150 ... 250 -- --	2 2 2 20 20	3TX7402-3G 3TX7402-3H 3TX7402-3J 3TX7402-3K 3TX7402-3L		1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	41B 41B 41B 41B 41B			
	 3TX7462-3.	4	3TC48	Varistors²⁾ For sticking onto the contactor base or for mounting separately	24 ... 48 48 ... 127 127 ... 240 240 ... 400 400 ... 600	24 ... 70 70 ... 150 150 ... 250 -- --	2 5 2 5 5	3TX7462-3G 3TX7462-3H 3TX7462-3J 3TX7462-3K 3TX7462-3L		1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	41B 41B 41B 41B 41B		
		 3TX7462-3.	8 and 12	3TC52, 3TC56	Varistors For sticking onto the contactor base or for mounting separately	24 ... 48 48 ... 127 127 ... 240 240 ... 400 400 ... 600	-- -- -- -- --	2 5 2 5 5	3TX7462-3G 3TX7462-3H 3TX7462-3J 3TX7462-3K 3TX7462-3L		1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	41B 41B 41B 41B 41B	
			 3TX7522-3.	8 and 12	3TC52, 3TC56	Varistors²⁾ For separate screw fixing or snapping onto TH 35 standard mounting rail	-- -- --	24 ... 70 70 ... 150 150 ... 250	5 5 5	3TX7522-3G 3TX7522-3H 3TX7522-3J		1 1 1	1 unit 1 unit 1 unit	41B 41B 41B


Surge suppressors · RC elements												
 3TX7462-3., 3TX7522-3.	4	3TC48	RC elements For lateral snapping onto auxiliary switch or TH 35 standard mounting rail	24 ... 48 -- 48 ... 127 -- 127 ... 240 -- 240 ... 400 400 ... 600	-- 24 ... 70 -- 70 ... 150 -- 150 ... 250 -- --	20 5 2 5 2 2 5	3TX7462-3R 3TX7522-3R 3TX7462-3S 3TX7522-3S 3TX7462-3T 3TX7522-3T 3TX7462-3U 3TX7462-3V		1 1 1 1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit 1 unit 1 unit 1 unit	41B 41B 41B 41B 41B 41B 41B 41B	
	 3TX7522-3.	8 and 12	3TC52, 3TC56	RC elements For lateral snapping onto auxiliary switch or TH 35 standard mounting rail	24 ... 48 48 ... 127 127 ... 240 240 ... 400 400 ... 600	-- -- -- -- --	5 5 5 5 5	3TX7522-3R 3TX7522-3S 3TX7522-3T 3TX7522-3U 3TX7522-3V		1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	41B 41B 41B 41B 41B

Surge suppressors · Diodes											
 3TX7462-3.	4 to 12	3TC48, 3TC52, 3TC56	Diode assemblies³⁾ (Diode and Zener diode) for DC solenoid system, for sticking onto the contactor base or for mounting separately	--	24 ... 250	2	3TX7462-3D		1	1 unit	41B

¹⁾ The connection piece for mounting the surge suppressor must be bent slightly.

²⁾ Includes the peak value of the alternating voltage on the DC side.



³⁾ Not for DC economy circuit.

For contactors		Version		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Size	Type			d						
Terminal covers										
 3TX6546-3B	6	3TC48	For protection against inadvertent contact with exposed busbar connections	M6	5	3TX6506-3B		1	1 unit	41B
	8 and 12	3TC52, 3TC56	Can be screwed on free screw end; covers one busbar connection (1 set = 6 units)	M10	5	3TX6546-3B		1	1 unit	41B

Contactors for Special Applications

3TC contactors for switching DC voltage, 1-pole and 2-pole

Spare parts

For contactors	Version	Auxiliary contacts	Auxiliary switch block Left	Right	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG			
Size	Type	NO	NC		d	Article No.	Price per PU					
Auxiliary switch blocks												
For lateral mounting												
	2 and 4	3TC44, 3TC48	Auxiliary switch block (replacement for 3TY6501-1A, 3TY6501-1B)		1	1		20	3TY6501-1AA00	1	1 unit	41B
	8 and 12	3TC52, 3TC56	Auxiliary switch block, left		1	1		20	3TY6561-1A	1	1 unit	41B
			Auxiliary switch block, right		1	1	--		20	3TY6561-1B	1	1 unit
	12	3TC74	Auxiliary switch block		4	4		5	3TY2741-2J	1	1 unit	41B
	12	3TC78	Auxiliary switch block, left		2	2		20	3TY2781-2C	1	1 unit	41B
			Auxiliary switch block, right		2	2	--		15	3TY2781-2D	1	1 unit
For contactors	Version	Rated control supply voltage U_s		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG			
Size	Type	V AC/DC		d								
Surge suppressors · Varistors												
12	3TC7	For sticking onto the contactor base		24	15	3TX2746-2F	1	1 unit	41B			
				110	10	3TX2746-2G	1	1 unit	41B			
For contactors	Version	Rated control supply voltage U_s		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG			
Size	Type	V AC/DC		d								
Solenoid coils												
DC operation¹⁾												
2	3TC44	--				3TY6443-0B..						
4	3TC48	--				3TY6483-0B..						
8	3TC52	--				3TY6523-0B..						
12	3TC56	--				3TY6563-0B..						
AC operation¹⁾												
2	3TC44	--				3TY7403-0A..						
4	3TC48	--				3TY6483-0A..						
8	3TC52	--				3TY6523-0A..						
12	3TC56	--				3TY6566-0A..						
Contacts with fixing parts												
In order to ensure reliable operation of the contactors, only original replacement contacts should be used.												
	2	3TC44	(1 set = 2 moving and 4 fixed switching elements)		5	3TY2440-0A	1	1 unit	41B			
	4	3TC48			5	3TY2480-0A	1	1 unit	41B			
	8	3TC52			5	3TY2520-0A	1	1 unit	41B			
	12	3TC56			5	3TY2560-0A	1	1 unit	41B			
	12	3TC7	Main contacts (1 set) For 3TC78: 2 units required per contactor		5	3TY2740-0E	1	1 unit	41B			
Arc chutes												
	2	3TC44	Arc chutes, 2-pole		15	3TY2442-0A	1	1 unit	41B			
	4	3TC48			15	3TY2482-0A	1	1 unit	41B			
	8	3TC52			15	3TY2522-0A	1	1 unit	41B			
	12	3TC56			15	3TY2562-0A	1	1 unit	41B			
	12	3TC7	for 3TC78: 2 units required per contactor		15	3TY2742-0C	1	1 unit	41B			

¹⁾ For rated control supply voltages, see page 4/72.
The 10th and 11th digits of the article number must be supplemented accordingly.

Switching Devices – Contactors and Contactor Assemblies – Contactor Relays and Relays

5



clickable

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.

Article No.
3RA1943-2C
3RA1943-2B
3RA1953-2B
3RA1953-2N

Or directly on the Internet, e.g.
[www.siemens.com/
product?3RA1943-2C](http://www.siemens.com/product?3RA1943-2C)

Price groups

PG 41A, 41B, 41H, 41L

5/2

Introduction

5/4

Contactor relays

SIRIUS 3RH2 contactor relays,
4- and 8-pole

5/16

3TH4 contactor relays,
8- and 10-pole

5/23

- Accessories for 3TH4 contactor relays

5/24

3TH2 miniature contactor relays,
4- and 8-pole

5/30

- Accessories for 3TH2 miniature
contactor relays

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Contactors for railway applications
- SIRIUS 3RH2 contactor relays with
extended operating range

4/61

- 3TH4 contactor relays, 8-pole

Coupling relays

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SIRIUS 3RQ3 coupling relays,
narrow design

5/40

SIRIUS 3RQ2 coupling relays with
industrial enclosure **NEW**

5/44

LZS coupling relays with plug-in relays

3/152

3TG10 power relays/miniature contactors

Note:

Conversion tool
e.g. from 3RH11 to 3RH21, see
www.siemens.com/sirius/conversion-tool

5

Switching Devices – Contactors and Contactor Assemblies

Contactor Relays and Relays

Introduction

Overview

More information

Homepage, see www.siemens.com/sirius
Industry Mall, see www.siemens.com/product?3RH_3TH

For the conversion tool, e.g. from 3RH11 to 3RH21, see www.siemens.com/sirius/conversion-tool

The advantages at a glance



Size
Type

S00
3RH21

S00
3RH22

3TH42

3TH43

3TH2

		Article No.	Page
SIRIUS 3RH2 contactor relays			
4-pole	• Screw or spring-type terminals	3RH21	5/12, 5/13
8-pole		3RH22	5/12, 5/13
4-pole, latched		3RH24	5/12, 5/13
Coupling contactor relays	• Coils for control by PLC	3RH21	5/14, 5/15
Contactor relays for railway applications	• Coils with extended voltage range	3RH21	4/60
3TH4 contactor relays			
8-pole	• Screw terminals	3TH42	5/20
10-pole		3TH43	5/21
Contactor relays for railway applications	• Coils with extended voltage range	3TH42	4/62
3TH2 miniature contactor relays			
4-pole	• Screw terminals, flat connectors and solder pin connections	3TH20	5/28, 5/29
8-pole	• Screw terminals	3TH22	5/28
Accessories for SIRIUS 3RH2 contactor relays			
Auxiliary switch blocks	• On front	3RH29, 3RA281.	from 3/88, 3/101
	• Lateral	3RH29	3/98
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	• On front	3RA281., 3RA283.	3/106
Surge suppressors	• On front	3RT2916	3/103, 3/104
Additional load modules	• On front	3RT2916	3/120

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/6.

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RQ_3RS_LZ

Conversion tool, e.g. from 3TX7 to 3RQ3 or 3RS18 to 3RQ2, see www.siemens.com/sirius/conversion-tool

The advantages at a glance



3RQ3



3RQ2



LZS/LZX

Type

Article No.	Page
-------------	------

SIRIUS 3RQ3 coupling relays, narrow design

Coupling relays with relay output (not plug-in)

- Width 6.2 mm, 1 CO, versions with hard gold-plated contacts optionally available
- Output coupling links
- Input coupling links

3RQ301	5/38
3RQ303	5/38

Coupling relays with plug-in relays

- Width 6.2 mm, 1 CO, versions with hard gold-plated contacts optionally available
- Output coupling links

3RQ311	5/38
---------------	------

Coupling relays with semiconductor output (not plug-in)

- Width 6.2 mm, output 1 semiconductor, triac or transistor
- Output coupling links
- Input coupling links

3RQ305, 3RQ306	5/38
3RQ307	5/38

SIRIUS 3RQ2 coupling relays with industrial enclosure

Coupling relays with relay output

- 1, 2 or 3 changeover contacts with wide voltage range
- Also available with hard gold-plated contacts

3RQ2	5/42
-------------	------

LZS coupling relays with plug-in relays

Coupling relays with plug-in relays with 2, 3 and 4 changeover contacts

- Switching capacity 12 A/10 A/6 A
- Width 27 mm
- Base with or without logical separation

LZS:PT, LZX:PT	5/48 ... 5/50
-----------------------	---------------

Coupling relays with plug-in relays with 3 changeover contacts and circular base

- Switching capacity 10 A
- 11-pole circular base
- Width 38 mm

LZS:MT, LZX:MT	5/50
-----------------------	------

Coupling relays with plug-in relays with 1 or 2 changeover contacts

- Switching capacity 16 A/8 A
- Width 15.5 mm
- Base with or without logical separation






LZS:RT, LZX:RT	5/51
-----------------------	------

Connection methods

The contactor relays and the relays are available with screw terminals (box terminals) or with spring-type terminals.

Devices of the 3TH2 series are also available with screw terminals, flat connectors and solder pin connectors.

The 3RQ coupling relays are supplied with screw terminals and spring-type (push-in) terminals. The plug-in bases for LZS/LZX coupling relays are also available with plug-in (push-in) terminals.

-  Screw terminals
-  Spring-type terminals, spring-type terminals (push-in)
-  Flat connectors
-  Solder pin connections
-  Plug-in terminals (push-in)

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

3RQ coupling relays: Spring-type terminals (push-in) with TOP-wiring

Push-in connections are a form of spring-type terminals allowing fast wiring without tools for rigid conductors or conductors equipped with end sleeves.

As with other spring-type terminals, a screwdriver (with 3.0 x 0.5 mm blade) is required to disconnect the conductor. The same tool can also be used to wire finely-stranded or stranded conductors with no end finishing.

The advantages of the push-in terminals are found, as with all spring-type terminals, in speed of assembly and disassembly and vibration-proof connection. There is no need for the checking and tightening required with screw terminals.

With the TOP wiring method, the wire inlet and terminals can be reached from the front. This helps to speed up the wiring process and eliminate wiring errors.

SUVA-certified safety contactors

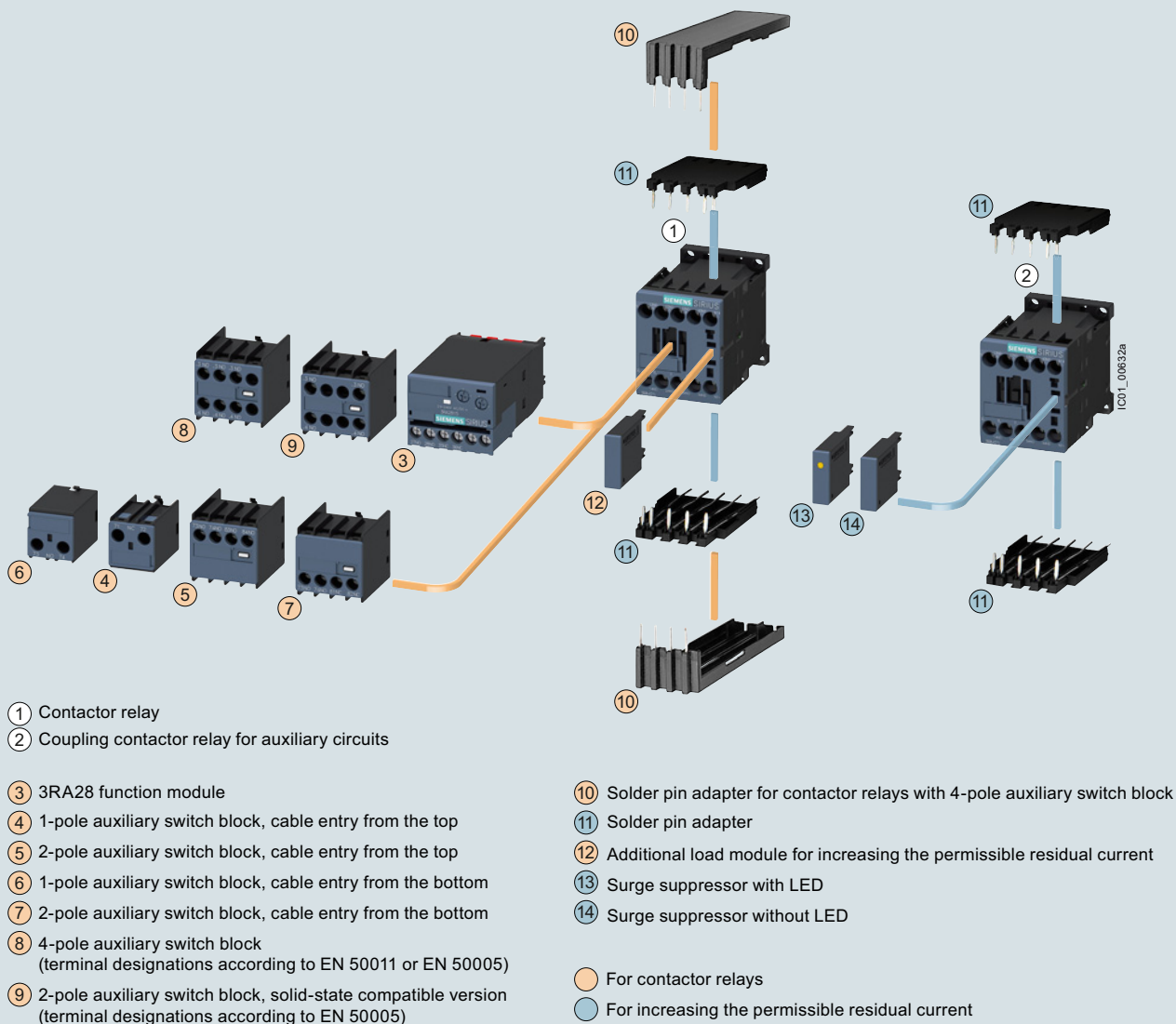
We offer special safety contactors for use in safety-related applications. They have NC contacts with mirror contact function and they have SUVA certification. This means they have permanently fitted auxiliary switch blocks and cannot be operated manually. They thus comply with all requirements for use in safety applications.

Contactor Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Overview

Contactor relays, size S00, with accessories



Contactors Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16188/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16188/faq>

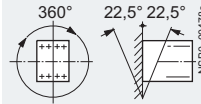
Manuals see, <https://support.industry.siemens.com/cs/ww/en/ps/16188/man>

Type
Size

Contactor relays
3RH2
S00

Permissible mounting position

The contactor relays are designed for operation on a vertical mounting surface.



Upright mounting position



Special version required

(in the case of coupling contactor relays and contactor relays with extended operating range 3RH2122-2K.40 on request)

Positively-driven operation of contacts in contactor relays

3RH2:

Yes, in the basic unit and the auxiliary switch block as well as between the basic unit and the mounted auxiliary switch block (**removable**) acc. to:

- ZH1/457
- IEC 60947-5-1, Appendix L

3RH22:

Yes, in the basic unit and the auxiliary switch block as well as between the basic unit and the mounted auxiliary switch block (**permanently mounted**) acc. to:

- ZH1/457
- IEC 60947-5-1, Appendix L

Note:

3RH2911-.NF. solid-state compatible auxiliary switch blocks have no positively-driven contacts.

Explanations:

There is positively-driven operation if it is ensured that the NC and NO contacts cannot be closed at the same time.

ZH1/457

Safety Rules for Controls on Power-Operated Metalworking Presses.

IEC 60947-5-1, Appendix L

Standard for low-voltage switchgear and controlgear; special requirements for positively-driven contacts

Contact reliability

Contact reliability at 17 V, 1 mA acc. to IEC 60947-5-4

Frequency of contact faults $< 10^{-8}$, i.e. < 1 fault per 100 million operating cycles

Contact endurance for AC-15/AC-14 and DC-13 utilization categories

The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

If magnetic circuits other than the contactor coil systems or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary, e.g. in the form of RC elements and freewheel diodes.

The characteristic curves apply to

- 3RH21/3RH22 contactor relays¹⁾
- 3RH24 latched contactor relays
- 3RH2911 auxiliary switch blocks¹⁾
- Auxiliary switch blocks for snapping onto the front, max. 4-pole and for mounting onto the side in size S00

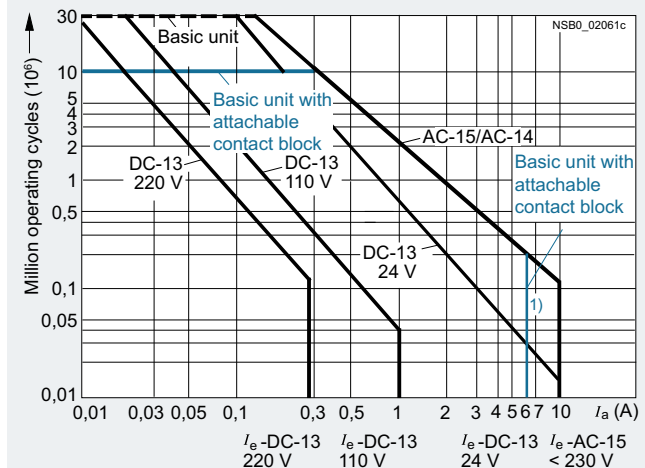


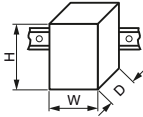
Diagram legend:

I_a = Breaking current

I_e = Rated operational current



¹⁾ 3RH22, 3RH2911: I_e = 6 A for AC-15/AC-14 and DC-13.

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Type Size	Contactor relays				
	3RH21 S00	3RH22	3RH24		
General data					
Dimensions (W x H x D)					
<ul style="list-style-type: none"> Basic units <ul style="list-style-type: none"> Screw terminals Spring-type terminals Basic unit with mounted auxiliary switch block <ul style="list-style-type: none"> Screw terminals Spring-type terminals Basic unit with mounted function module or solid-state time-delay auxiliary switch block <ul style="list-style-type: none"> Screw terminals Spring-type terminals 		mm	45 x 58 x 73	--	90 x 58 x 73
		mm	45 x 70 x 73	--	
		mm	45 x 58 x 117	--	
		mm	45 x 70 x 121	--	
		mm	45 x 58 x 147	--	
		mm	45 x 70 x 147	--	
Mechanical endurance					
<ul style="list-style-type: none"> Basic units 	Operating cycles	30 million		5 million	
<ul style="list-style-type: none"> Basic unit with mounted auxiliary switch block 	Operating cycles	10 million		5 million	
<ul style="list-style-type: none"> Solid-state compatible auxiliary switch block 	Operating cycles	5 million			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Protective separation between the coil and the contacts in the basic unit, acc. to IEC 60947-1, Appendix N	V	400			
Permissible ambient temperature					
<ul style="list-style-type: none"> During operation 	°C	-25 ... +60			
<ul style="list-style-type: none"> During storage 	°C	-55 ... +80			
Degree of protection acc. to IEC 60529					
<ul style="list-style-type: none"> On front 		IP20 (screw terminals and spring-type terminals)			
<ul style="list-style-type: none"> Connecting terminal 		IP20 (screw terminals and spring-type terminals)			
Touch protection acc. to IEC 60529		Finger-safe (screw terminals and spring-type terminals)			
Shock resistance					
<ul style="list-style-type: none"> Rectangular pulse <ul style="list-style-type: none"> AC operation DC operation Sine pulse <ul style="list-style-type: none"> AC operation DC operation 	g/ms	7.3/5 and 4.7/10			
	g/ms	10/5 and 5/10			
	g/ms	11.4/5 and 7.3/10			
	g/ms	15/5 and 8/10			
Short-circuit protection					
<ul style="list-style-type: none"> Short-circuit test <ul style="list-style-type: none"> With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1 With miniature circuit breakers with C characteristic with short-circuit current $I_k = 400$ A acc. to IEC 60947-5-1 	A	10			
	A	6			

Contactors Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Type Size	Contactor relays		
	3RH21 S00	3RH22	3RH24
Conductor cross-sections			
Auxiliary conductors and coil terminals (1 or 2 conductors can be connected)		 Screw terminals	
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ , max. 2 x 4	
• Finely stranded with end sleeve	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾	
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾	
• Terminal screw		M3 (for Pozidriv size 2, Ø 5 ... 6 mm)	
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)	
Auxiliary conductors and coil terminals²⁾ (1 or 2 conductors can be connected)		 Spring-type terminals	
• Operating tool	mm	3.0 x 0.5; 3.5 x 0.5	
• Solid or stranded	mm ²	2 x (0.5 ... 4)	
• Finely stranded with end sleeve	mm ²	2 x (0.5 ... 2.5)	
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 12)	
Auxiliary conductors for front and laterally mounted auxiliary switches²⁾			
• Operating tool	mm	3.0 x 0.5; 3.5 x 0.5	
• Solid or stranded	mm ²	2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve	mm ²	2 x (0.5 ... 1.5)	
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)	

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

²⁾ Max. external diameter of the conductor insulation: 3.6 mm.
On spring-type terminals with conductor cross-sections ≤ 1 mm² an "insulation stop" must be used; see page 3/121.

SIRIUS 3RH2 contactor relays, 4- and 8-pole




Type	Contactor relays	
Size	3RH2	S00
Control		
Solenoid coil operating range		
• AC operation	At 50 Hz At 60 Hz	0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s
• DC operation	At +50 °C At +60 °C	0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s
Solenoid coil power consumption (for cold coil and 1.0 x U_s)		
• AC operation, 50 Hz		
- Closing	VA/p.f.	37/0.8
- Closed	VA/p.f.	5.7/0.25
• AC operation, 60 Hz		
- Closing	VA/p.f.	33/0.75
- Closed	VA/p.f.	4.4/0.25
• DC operation	W	4.0
- Closing = Closed		
Permissible residual current of the electronics (with 0 signal)		
• AC operation ¹⁾		< 4 mA x (230 V/ U_s)
• For DC operation		< 10 mA x (24 V/ U_s)
Operating times for 1.0 x U_s²⁾ Total break time = OFF-delay + Arcing time Values apply with coil in cold state and at operating temperature for operating range		
<u>AC operation</u>		
• Closing		
- ON-delay of NO contact	ms	9 ... 22
3RH24 minimum operating time	ms	≥ 35
- OFF-delay of NC contact	ms	6.5 ... 19
• Opening		
- OFF-delay of NO contact	ms	4.5 ... 15
3RH24 minimum operating time	ms	≥ 30
- ON-delay of NC contact	ms	5 ... 15
<u>DC operation</u>		
• Closing		
- ON-delay of NO contact	ms	35 ... 50
3RH24 minimum operating time	ms	≥ 100
- OFF-delay of NC contact	ms	30 ... 45
• Opening		
- OFF-delay of NO contact	ms	7 ... 12
3RH24 minimum operating time	ms	≥ 30
- ON-delay of NC contact	ms	13 ... 18
• Arcing time	ms	10 ... 15




¹⁾ The 3RT2916-1GA00 additional load module is recommended for higher residual currents, see page 3/120.

²⁾ The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

Contactors Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

		Coupling contactor relays		
		3RH21...-HB40	3RH21...-JB40	3RH21...-KB40
		S00		
Control				
Solenoid coil operating range		0.7 ... 1.25 x U_s		
Power consumption of the solenoid coil (for cold coil and 1.0 x U_s) Closing = Closed at $U_s = 24$ V	W	2.8		
Permissible residual current Of the electronics for 0 signal		< 10 mA x (24 V/ U_s)		
Overvoltage configuration of the solenoid coil		No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times at 1.0 x U_s				
• Closing delay	ON-delay NO	ms	35 ... 60	
	OFF-delay NC	ms	25 ... 40	
• Opening delay	OFF-delay NO	ms	7 ... 20	38 ... 65
	ON-delay NO	ms	10 ... 30	30 ... 90
Upright mounting position		On request		

		Coupling contactor relays		
		3RH21...-MB40-0KT0	3RH21...-VB40	3RH21...-SB40
		S00		
Control				
Solenoid coil operating range		0.85 ... 1.85 x U_s		
Power consumption of the solenoid coil (for cold coil and 1.0 x U_s) Closing = Closed at $U_s = 24$ V	W	1.6		
Permissible residual current Of the electronics for 0 signal		< 8 mA x (24 V/ U_s)		
Overvoltage configuration of the solenoid coil		No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times at 1.0 x U_s				
• Closing delay	ON-delay NO	ms	25 ... 90	
	OFF-delay NC	ms	15 ... 80	
• Opening delay	ON-delay NO	ms	5 ... 20	20 ... 80
	OFF-delay NC	ms	10 ... 30	30 ... 90
Upright mounting position		On request		

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Type	Contactor relays		
Size	3RH2		
S00			
Rated data of the auxiliary contacts			
Load rating with AC			
Rated operational currents I_e			
AC-12	A		10
AC-15/AC-14, for rated operational voltage U_e	Up to 230 V	A	10 ¹⁾
	400 V	A	3
	500 V	A	2
	690 V	A	1
Load rating with DC			
Rated operational currents I_e			
DC-12, for rated operational voltage U_e			
• 1 conducting path	24 V	A	10
	60 V	A	6
	110 V	A	3
	220 V	A	1
	440 V	A	0.3
	600 V	A	0.15
• 2 conducting paths in series	24 V	A	10
	60 V	A	10
	110 V	A	4
	220 V	A	2
	440 V	A	1.3
	600 V	A	0.65
• 3 conducting paths in series	24 V	A	10
	60 V	A	10
	110 V	A	10
	220 V	A	3.6
	440 V	A	2.5
	600 V	A	1.8
DC-13, for rated operational voltage U_e			
• 1 conducting path	24 V	A	10 ¹⁾
	60 V	A	2
	110 V	A	1
	220 V	A	0.3
	440 V	A	0.14
	600 V	A	0.1
• 2 conducting paths in series	24 V	A	10
	60 V	A	3.5
	110 V	A	1.3
	220 V	A	0.9
	440 V	A	0.2
	600 V	A	0.1
• 3 conducting paths in series	24 V	A	10
	60 V	A	4.7
	110 V	A	3
	220 V	A	1.2
	440 V	A	0.5
	600 V	A	0.26
Switching frequency			
Switching frequency z in operating cycles/hour			
• Rated operation for utilization category	AC-12/DC-12	1/h	1 000
Dependence of the switching frequency z' on the operational current I' and operational voltage U' : $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$	AC-15/AC-14	1/h	1 000
	DC-13	1/h	1 000
• No-load switching frequency		1/h	10 000
Ⓢ and Ⓞ rated data			
Basic units and auxiliary switch blocks			
• Rated control supply voltage	V AC		max. 600
• Rated voltage	V AC		600
• Switching capacity			A 600, Q 600
• Uninterrupted current at 240 V AC	A		10

1) 3RH22, 3RH29: $I_e = 6$ A for AC-15/AC-14 and DC-13.

Contactor Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Selection and ordering data

AC operation

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41A



3RH2122-1A..0



3RH2122-2A..0







3RH2244-1A..0



3RH2244-2A..0



3RH2422-1A..0

Rated operational current $I_{e/AC-15/AC-14}$ at 230 V	Contacts		Rated control supply voltage U_s at 50/60 Hz ¹⁾	SD	Screw terminals 		SD	Spring-type terminals 	
	Ident. No.	Version			Article No.	Price per PU		Article No.	Price per PU
A		 NO  NC	V AC	d			d		

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

10	40E	4	--	24	▶	3RH2140-1AB00	2	3RH2140-2AB00
				110		3RH2140-1AF00		3RH2140-2AF00
				230		3RH2140-1AP00		3RH2140-2AP00
31E	3	1	24	▶	3RH2131-1AB00	2	3RH2131-2AB00	
			110		3RH2131-1AF00		3RH2131-2AF00	
			230		3RH2131-1AP00		3RH2131-2AP00	
22E	2	2	24	▶	3RH2122-1AB00	2	3RH2122-2AB00	
			110		3RH2122-1AF00		3RH2122-2AF00	
			230		3RH2122-1AP00		3RH2122-2AP00	
With permanently mounted auxiliary switch block (SUVA-certified safety contactor)								
6	44E	4	4	230	▶	3RH2244-1AP00	2	3RH2244-2AP00
				230		3RH2262-1AP00		3RH2262-2AP00
Latched								
No lateral auxiliary switch blocks can be mounted								
10	40 E	4	--	24	5	3RH2440-1AB00		--
				110		3RH2440-1AF00		--
				230		3RH2440-1AP00		--
31 E	3	1	24	5	3RH2431-1AB00		--	
			110		3RH2431-1AF00		--	
			230		3RH2431-1AP00		--	
22 E	2	2	24	5	3RH2422-1AB00		--	
			110		3RH2422-1AF00		--	
			230		3RH2422-1AP00		--	

¹⁾ Coil operating range
 - at 50 Hz: 0.8 to 1.1 × U_s
 - at 60 Hz: 0.85 to 1.1 × U_s .

Other voltages according to page 3/74 on request.

Accessories, see page 3/76 onwards.

SIRIUS 3RH2 contactor relays, 4- and 8-pole

DC operation 

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41A



3RH2122-1B..0



3RH2122-2B..0







3RH2244-1B..0



3RH2244-2B..0



3RH2422-1B.40

Rated operational current I_e /AC-15/AC-14 at 230 V	Contacts		Rated control supply voltage U_c	SD	Screw terminals 		SD	Spring-type terminals 	
	Ident. No.	Version			Article No.	Price per PU		Article No.	Price per PU
A		 	V DC	d			d		

For screw fixing and snap-on mounting onto TH 35 standard
 mounting rail

Size S00

10	40E	4	--	24 220	▶	3RH2140-1BB40 3RH2140-1BM40	▶	3RH2140-2BB40 3RH2140-2BM40	
	31E	3	1	24 220	▶	3RH2131-1BB40 3RH2131-1BM40	▶	3RH2131-2BB40 3RH2131-2BM40	
	22E	2	2	24 220	▶	3RH2122-1BB40 3RH2122-1BM40	▶	3RH2122-2BB40 3RH2122-2BM40	
With integrated diode									
10	40E	4	--	24	▶	3RH2140-1FB40	▶	3RH2140-2FB40	
	31E	3	1	24	▶	3RH2131-1FB40	▶	3RH2131-2FB40	
	22E	2	2	24	▶	3RH2122-1FB40	▶	3RH2122-2FB40	
With permanently mounted auxiliary switch block (SUVA-certified safety contactor)									
6	44E	4	4	24	▶	3RH2244-1BB40	▶	3RH2244-2BB40	
	62E	6	2	24	▶	3RH2262-1BB40	▶	3RH2262-2BB40	
Latched									
No lateral auxiliary switch blocks can be mounted									
10	40E	4	--	24	5	3RH2440-1BB40		--	
				110	5	3RH2440-1BF40		--	
				220	5	3RH2440-1BM40		--	
	31E	3	1	24	5	3RH2431-1BB40		--	
				110	5	3RH2431-1BF40		--	
				220	5	3RH2431-1BM40		--	
22E	2	2	24	2	3RH2422-1BB40		--		
			110	5	3RH2422-1BF40		--		
			220	5	3RH2422-1BM40		--		

Other voltages according to page 3/74 on request.

Accessories, see page 3/76 onwards.

Contactor Relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

DC operation for direct control from the PLC

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switch blocks





PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41A



3RH21...-1.B40



3RH21...-2.B40

Rated operational current I_e /AC-15/ AC-14 at 230 V	Auxiliary contacts Ident. No. acc. to EN 50011	Version	SD	Screw terminals 		Spring-type terminals 	
				Article No.	Price per PU	Article No.	Price per PU
A			d				
							

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

Diode, varistor or RC element, attachable

No auxiliary switch blocks can be mounted

Rated control supply voltage $U_s = 24$ V DC,
operating range **0.7 to 1.25 x U_s**

Power consumption of the solenoid coils **2.8 W** at 24 V

10	40E	4	--	5	3RH2140-1HB40	5	3RH2140-2HB40
	31E	3	1	5	3RH2131-1HB40	5	3RH2131-2HB40
	22E	2	2	5	3RH2122-1HB40	5	3RH2122-2HB40

Rated control supply voltage $U_s = 24$ V DC,
operating range **0.85 to 1.85 x U_s**

Power consumption of the solenoid coils **1.6 W** at 24 V

10	40E	4	--	5	3RH2140-1MB40-0KT0	5	3RH2140-2MB40-0KT0
	31E	3	1	2	3RH2131-1MB40-0KT0	5	3RH2131-2MB40-0KT0
	22E	2	2	5	3RH2122-1MB40-0KT0	5	3RH2122-2MB40-0KT0

Other voltages [according to page 3/74](#) on request.

Accessories, [see page 3/76 onwards](#).

SIRIUS 3RH2 contactor relays, 4- and 8-pole

DC operation for direct control from the PLC 

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switch blocks





PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41A



3RH21...-1.B40



3RH21...-2.B40

Rated operational current I_e /AC-15/ AC-14 at 230 V	Auxiliary contacts Ident. No. acc. to EN 50011	Version	SD	Screw terminals 		Spring-type terminals 	
				Article No.	Price per PU	Article No.	Price per PU
		 NO  NC	d				

A

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00**With integrated coil circuit (diode)**

No auxiliary switch blocks can be mounted

Rated control supply voltage $U_s = 24$ V DC,
operating range **0.7 to 1.25 x U_s**

Power consumption of the solenoid coils **2.8 W** at 24 V

10	40E	4	--	2	3RH2140-1JB40	▶	3RH2140-2JB40
	31E	3	1	▶	3RH2131-1JB40	▶	3RH2131-2JB40
	22E	2	2	▶	3RH2122-1JB40	2	3RH2122-2JB40

Rated control supply voltage $U_s = 24$ V DC,
operating range **0.85 to 1.85 x U_s**

Power consumption of the solenoid coils **1.6 W** at 24 V

10	40E	4	--	5	3RH2140-1VB40	5	3RH2140-2VB40
	31E	3	1	5	3RH2131-1VB40	5	3RH2131-2VB40
	22E	2	2	5	3RH2122-1VB40	5	3RH2122-2VB40

With integrated coil circuit (suppressor diode)

No auxiliary switch blocks can be mounted

Rated control supply voltage $U_s = 24$ V DC,
operating range **0.7 to 1.25 x U_s**

Power consumption of the solenoid coils **2.8 W** at 24 V

10	40E	4	--	5	3RH2140-1KB40	5	3RH2140-2KB40
	31E	3	1	▶	3RH2131-1KB40	▶	3RH2131-2KB40
	22E	2	2	▶	3RH2122-1KB40	▶	3RH2122-2KB40

Rated control supply voltage $U_s = 24$ V DC,
operating range **0.85 to 1.85 x U_s**

Power consumption of the solenoid coils **1.6 W** at 24 V

10	40E	4	--	5	3RH2140-1SB40	5	3RH2140-2SB40
	31E	3	1	2	3RH2131-1SB40	5	3RH2131-2SB40
	22E	2	2	2	3RH2122-1SB40	5	3RH2122-2SB40

Other voltages according to page 3/74 on request.

Accessories, see page 3/76 onwards.

Contactors Relays

3TH4 contactor relays, 8- and 10-pole

Overview

Standards

IEC/EN 60947-1, IEC/EN 60947-5-1

The 3TH42 and 3TH43 contactor relays are suitable for use in any climate. They are finger-safe according to IEC 60529.

Note:

The 3TH42 and 3TH43 contactor relays feature positively-driven operation in accordance with IEC 60947-5-1, Ed. 3.1.

Terminal designations according to EN 50011

In terms of their terminal designations, identification numbers and identification letters, the 3TH42 and 3TH43 contactor relays conform to the standard EN 50011 for Specific Contactor Relays.

Contact reliability

High contact stability at low voltages and currents as a result of double-break contacts, suitable for solid-state circuits with currents ≥ 1 mA at a voltage of ≥ 17 V.

Surge suppression

The 3TH42 and 3TH43 contactor relays can be equipped with RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) for damping opening surges. The surge suppressors can be mounted directly on the coil (see page 5/23).

Note:

The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

Mounting

Note:

With 3TH4 contactor relays with AC operation, an overvoltage of $1.1 \times U_s$, an ambient temperature ≥ 45 °C and 100% ON-period of all contactors, a minimum clearance of 5 mm between the contactors shall be observed in the case of side-by-side mounting.

Technical specifications

Contactors relays

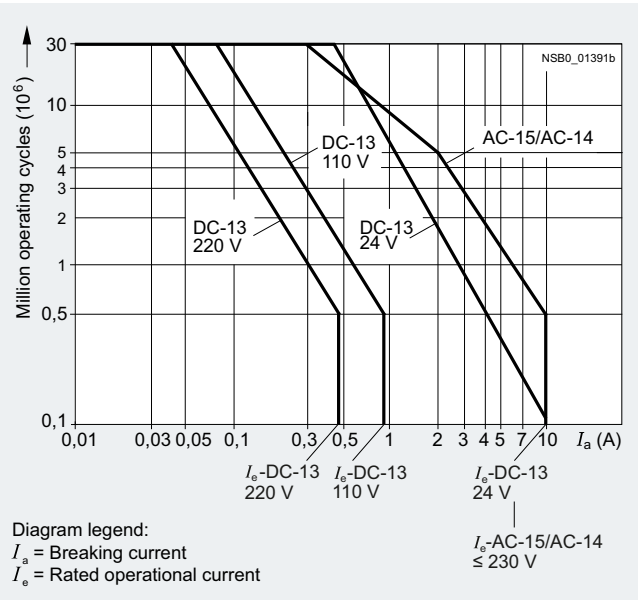
Type **3TH42, 3TH43**

Contact endurance for AC-15/AC-14 and DC-13 utilization categories

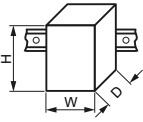
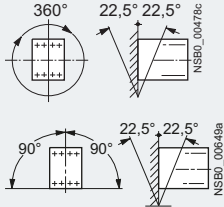


The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

If magnetic circuits other than the contactor coil systems or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary.

RC elements or freewheel diodes are suitable as protective measures for the circuits.



3TH4 contactor relays, 8- and 10-pole

Contactor relays	Type	3TH42	3TH43
General data			
Dimensions (W x H x D)			
<ul style="list-style-type: none"> AC operation DC operation 		mm 45 x 78 x 97 mm 45 x 78 x 130	55 x 78 x 97 55 x 78 x 130
Permissible mounting position			
The contactor relays are designed for operation on a vertical mounting surface.			
<ul style="list-style-type: none"> AC operation DC operation 			
Upright mounting position AC and DC operation			
			Special version required
Mechanical endurance	Basic units	Operating cycles	30 million
Rated insulation voltage U_i (pollution degree 3)		V	690
Rated impulse withstand voltage U_{imp}		kV	8
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		V	Up to 500
Permissible ambient temperature			
<ul style="list-style-type: none"> During operation During storage 	°C	-25 ... +55 °C -55 ... +80	
Degree of protection acc. to IEC 60529			
<ul style="list-style-type: none"> On front Connecting terminal 			IP20 (with screw terminals) IP20 (with screw terminals) Finger-safe (for screw terminals)
Touch protection acc. to IEC 60529			
Shock resistance			
<ul style="list-style-type: none"> Rectangular pulse - AC operation - DC operation Sine pulse - AC operation - DC operation 		g/ms g/ms g/ms g/ms	7.7/5 and 4.4/10 9.3/5 and 5.4/10 12/5 and 6.8/10 14.7/5 and 8.5/10
Short-circuit protection			
Short-circuit test			
<ul style="list-style-type: none"> With fuse links of operational class gG With short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1 - LV HRC, type 3NA - DIAZED, type 5SB - NEOZED Type 5SE, quick With miniature circuit breakers With short-circuit current $I_k = 400$ A acc. to IEC 60947-5-1 - C characteristic - B characteristic 	A A A A A		16 16 20 16 16
and rated data			
Basic units			
Rated control supply voltage U_s			Max. 600 V AC, 230 V DC (acc. to UL 240 V DC)
Rated voltage			600 V AC, 600 V DC
Switching capacity			A 600, P 600
Conductor cross-sections			
Auxiliary conductors and coil terminals (1 or 2 conductors can be connected)			
<ul style="list-style-type: none"> Solid or stranded Finely stranded with end sleeve Terminal screw 	mm ² mm ²		 Screw terminals 2 x (0.5 ... 1) ¹⁾ ; 2 x (1 ... 2.5) ¹⁾ ; 1 x 4 2 x (0.75 ... 2.5) M3.5

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Contactors Relays

3TH4 contactor relays, 8- and 10-pole

Contactors relays	Type	3TH42, 3TH43
Control		
Solenoid coil operating range		
• AC operation		0.8 ... 1.1 x U_s ¹⁾
• DC operation (except 24 V)		0.8 ... 1.1 x U_s
- At 24 V DC		0.8 ... 1.2 x U_s
Solenoid coil power consumption (for cold coil and 1.0 x U_s)		
• AC operation, 50 Hz, standard version		
- Closing	VA/p.f.	68/0.82
- Closed	VA/p.f.	10/0.29
• AC operation, 50/60 Hz, standard version		
- Closing, 50 Hz	VA/p.f.	77/0.81
- Closed, 50 Hz	VA/p.f.	11/0.28
- Closing, 60 Hz	VA/p.f.	71/0.75
- Closed, 60 Hz	VA/p.f.	9/0.27
• AC operation, 50 Hz, USA/Canada		
- Closing	VA/p.f.	68/0.82
- Closed	VA/p.f.	10/0.29
• AC operation, 60 Hz, USA/Canada		
- Closing	VA/p.f.	75/0.76
- Closed	VA/p.f.	9.4/0.29 ... 0.3
• AC operation, 50 Hz, Japan		
- Closing	VA/p.f.	80/0.8
- Closed	VA/p.f.	10.7/0.29
• AC operation, 60 Hz, Japan		
- Closing	VA/p.f.	75 ... 90/0.73
- Closed	VA/p.f.	8.5 ... 10.7/0.29 ... 0.3
• DC operation up to 250 V	W	6.2
Closing = Closed		
Permissible residual current of the electronics (with 0 signal)		
• For AC operation		$\leq 8 \text{ mA} \times (220 \text{ V}/U_s)$
• For DC operation		$\leq 1.25 \text{ mA} \times (220 \text{ V}/U_s)$
Operating times at 1.0 x U_s²⁾		
<u>AC operation</u>		
• Closing		
- ON-delay NO	ms	10 ... 25
- OFF-delay NC	ms	7 ... 20
• Opening		
- OFF-delay NO	ms	5 ... 18
- ON-delay NC	ms	7 ... 20
<u>DC operation</u>		
• Closing		
- ON-delay NO	ms	30 ... 70
- OFF-delay NC	ms	28 ... 65
• Opening		
- OFF-delay NO	ms	10 ... 20
- ON-delay NC	ms	15 ... 25
Arcing time	ms	10

¹⁾ Coils for USA, Canada and Japan: 0.85 to 1.1 x U_s at 60 Hz.

²⁾ The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 9x; diode assembly 2x to 6x; varistor +2 to 5 ms).

3TH4 contactor relays, 8- and 10-pole

Contactor relays	Type	3TH42, 3TH43	
Rated data of the auxiliary contacts			
Load rating with AC			
Rated operational currents I_e			
• AC-12	A	16	
• AC-15/AC-14, at rated operational voltage U_e			
	230 V A	10	
	400 V A	6	
	500 V A	4	
	690 V A	2	
Rated power of three-phase motors			
Acc. to utilization categories AC-2 and AC-3, 50 Hz			
	230/220 V kW	2.4	
	400/380 V kW	4	
	500 V kW	4	
	690/660 V kW	4	
Load rating with DC			
Rated operational currents I_e			
DC-12, at rated operational voltage U_e			
• 1 conducting path			
	Up to 48 V A	10	
	110 V A	2.1	
	220 V A	0.8	
	440 V A	0.6	
• 2 conducting paths in series			
	Up to 48 V A	10	
	110 V A	10	
	220 V A	1.6	
	440 V A	0.8	
• 3 conducting paths in series			
	Up to 48 V A	10	
	110 V A	10	
	220 V A	10	
	440 V A	1.3	
DC-13, at rated operational voltage U_e			
• 1 conducting path			
	Up to 24 V A	10	
	48 V A	5	
	110 V A	1	
	220 V A	0.45	
	440 V A	0.25	
	600 V A	0.2	
• 2 conducting paths in series			
	Up to 24 V A	10	
	48 V A	10	
	110 V A	2.5	
	220 V A	0.75	
	440 V A	0.5	
	600 V A	0.4	
• 3 conducting paths in series			
	Up to 24 V A	10	
	48 V A	10	
	110 V A	10	
	220 V A	2	
	440 V A	0.9	
	600 V A	0.8	
Switching frequency			
Switching frequency z in operating cycles/hour			
• Rated operation for utilization category	AC-12/DC-12	1/h	1 000
	AC-2	1/h	500
	AC-3	1/h	1 000
	AC-15/AC-14	1/h	3 600
	DC-13	1/h	3 600
• No-load switching frequency		1/h	10 000
Dependence of the switching frequency z' on the operational current I' and operational voltage U' : $z' = z \cdot (I'/I) \cdot (U_e/U')^{1.5} \cdot 1/h$			

Contactors Relays

3TH4 contactor relays, 8- and 10-pole

Selection and ordering data

8-pole contactor relays


AC operation  or DC operation 



3TH4280-0AP0



3TH4244-0BB4

Contacts	Rated operational current $I_e/AC-15/AC-14$ at				Contacts	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	230/ 220 V	400/ 380 V	500 V	690/ 660 V						
Number	A	A	A	A			Article No.	Price per PU		
					NO	NC	NO	NC	d	

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

AC operation, rated control supply voltage $U_s = 50 \text{ Hz } 230/220 \text{ V AC}^{1)}$

8	10	6	4	2	80E	8	--	--	--	X	3TH4280-0AP0	1	1 unit	41A
					71E	7	1	--	--	X	3TH4271-0AP0	1	1 unit	41A
					62E	6	2	--	--	X	3TH4262-0AP0	1	1 unit	41A
					53E	5	3	--	--	X	3TH4253-0AP0	1	1 unit	41A
					44E	4	4	--	--	X	3TH4244-0AP0	1	1 unit	41A
					44E, U	3	3	1	1	X	3TH4293-0AP0	1	1 unit	41A

DC operation, rated control supply voltage $U_s = 24 \text{ V DC}$

8	10	6	4	2	80E	8	--	--	--	X	3TH4280-0BB4	1	1 unit	41A
					71E	7	1	--	--	X	3TH4271-0BB4	1	1 unit	41A
					62E	6	2	--	--	X	3TH4262-0BB4	1	1 unit	41A
					53E	5	3	--	--	X	3TH4253-0BB4	1	1 unit	41A
					44E	4	4	--	--	X	3TH4244-0BB4	1	1 unit	41A
					44E, U	3	3	1	1	X	3TH4293-0BB4	1	1 unit	41A

¹⁾ Operating range at 220 V: 0.85 to $1.1 \times U_s$;
lower operating range limit according to IEC 60947.

Note:

The solenoid coils of the 3TH42 contactor relays are available in various voltages as spare parts (on request).

- AC operation: 3TY7403-0A..
- DC operation: 3TY4803-0B..

The contacts cannot be replaced on 3TH42 contactor relays.

Other voltages according to page 5/22 on request.

Accessories, see page 5/23.

10-pole contactor relays

AC operation  or DC operation 

3TH4355-0AP0



3TH4355-0BB4

Contacts		Rated operational current $I_{th}/AC-15/AC-14$ at				Contacts		SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
		230 V	400 V	500 V	690 V	Ident. No. acc. to EN 50011	Version		Article No.	Price per PU			
Number	A	A	A	A									

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

AC operation, rated control supply voltage $U_s = 50 \text{ Hz } 230/220 \text{ V AC}^{1)}$

10	10	6	4	2	100E	10	--	--	--	X	3TH4310-0AP0	1	1 unit	41A
					91E	9	1	--	--	X	3TH4391-0AP0	1	1 unit	41A
					82E	8	2	--	--	X	3TH4382-0AP0	1	1 unit	41A
					73E	7	3	--	--	X	3TH4373-0AP0	1	1 unit	41A
					73E, U	6	2	1	1	X	3TH4346-0AP0	1	1 unit	41A
					64E	6	4	--	--	X	3TH4364-0AP0	1	1 unit	41A
					55E	5	5	--	--	X	3TH4355-0AP0	1	1 unit	41A
					55E, U	4	4	1	1	X	3TH4394-0AP0	1	1 unit	41A

DC operation, rated control supply voltage $U_s = 24 \text{ V DC}$

10	10	6	4	2	100E	10	--	--	--	X	3TH4310-0BB4	1	1 unit	41A
					91E	9	1	--	--	X	3TH4391-0BB4	1	1 unit	41A
					82E	8	2	--	--	X	3TH4382-0BB4	1	1 unit	41A
					73E	7	3	--	--	X	3TH4373-0BB4	1	1 unit	41A
					73E, U	6	2	1	1	X	3TH4346-0BB4	1	1 unit	41A
					64E	6	4	--	--	X	3TH4364-0BB4	1	1 unit	41A
					55E	5	5	--	--	X	3TH4355-0BB4	1	1 unit	41A
					55E, U	4	4	1	1	X	3TH4394-0BB4	1	1 unit	41A

¹⁾ Operating range at 220 V: 0.85 to $1.1 \times U_s$;
lower operating range limit according to IEC 60947.

Note:

The solenoid coils of the 3TH43 contactor relays are available in various voltages as spare parts (on request).

- AC operation: 3TY7403-0A..
- DC operation: 3TY4803-0B..

The contacts cannot be replaced on 3TH43 contactor relays.

Other voltages according to page 5/22 on request.

Accessories, see page 5/23.

Contactors Relays

3TH4 contactor relays, 8- and 10-pole

Options

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s		Control supply voltage at	3TH42/3TH43
AC operation			
Solenoid coils for 50 and 60 Hz AC			
50 Hz	60 Hz		
24 V AC	29 V AC	B0	
36 V AC	42 V AC	G0	
42 V AC	50 V AC	D0	
48 V AC	58 V AC	H0	
60 V AC	72 V AC	E0	
110 V AC	132 V AC	F0	
125/127 V AC	150/152 V AC	L0	
230/220 V AC	276 V AC	P0 ¹⁾	
240 V AC	288 V AC	U0	
400/380 V AC	480/460 V AC	V0 ¹⁾	
415 V AC	500 V AC	R0	
500 V AC	600 V AC	S0	
50/60 Hz			
24 V AC		C2	
42 V AC		D2	
110 V AC		G2	
115 V AC		J2	
120 V AC		K2	
220 V AC		N2	
230 V AC		L2	
240 V AC		P2	
440 V AC		R2	
For Japan			
50 Hz	60 Hz		
100 V AC	100 ... 110 V AC	G6 ²⁾	
200 V AC	200 ... 220 V AC	N6 ²⁾	
For USA and Canada			
50 Hz	60 Hz		
110 V AC	120 V AC	K6 ²⁾	
220 V AC	240 V AC	P6 ²⁾	

¹⁾ Operating range at 220 V or 380 V: 0.85 to 1.1 x U_s .

²⁾ Operating range at 60 Hz: 0.85 to 1.1 x U_s .

Rated control supply voltage U_s		3TH42/3TH43
DC operation		
12 V DC		A4
24 V DC		B4
30 V DC		C4
36 V DC		V4
42 V DC		D4
48 V DC		W4
60 V DC		E4
110 V DC		F4
125 V DC		G4
220 V DC		M4
230 V DC		P4
240 V DC		Q4

Contactor Relays

3TH4 Contactor Relays, 8- and 10-Pole

Accessories for 3TH4 contactor relays

Selection and ordering data

Version	Rated control supply voltage U_s		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	AC	DC						
	V	V	d					

Surge suppressors¹⁾ for 3TH4 contactor relays



3TX7402-3.

Noise suppression diodes With line spacer, for mounting onto the coil terminal	--	24 ... 250	2	3TX7402-3A		1	1 unit	41B
Diode assemblies (diode and Zener diode) With line spacer, DC operation, for mounting onto the coil terminal	--	24 ... 250	2	3TX7402-3D		1	1 unit	41B
Varistors²⁾ With line spacer, for mounting onto the coil terminal	24 ... 48 48 ... 127 127 ... 240 240 ... 400 400 ... 600	24 ... 70 70 ... 150 150 ... 250 -- --	2 2 2 20 20	3TX7402-3G 3TX7402-3H 3TX7402-3J 3TX7402-3K 3TX7402-3L		1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	41B 41B 41B 41B 41B
RC elements With line spacer, for mounting onto the coil terminal	24 ... 48 48 ... 127 127 ... 240 240 ... 400 400 ... 600	24 ... 70 70 ... 150 150 ... 250 -- --	2 2 2 5 20	3TX7402-3R 3TX7402-3S 3TX7402-3T 3TX7402-3U 3TX7402-3V		1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	41B 41B 41B 41B 41B
Covers for switch position indicator	--	--	X	3TX4210-0P		1	1 unit	41B

¹⁾ The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

²⁾ Includes the peak value of the alternating voltage on the DC side.

For contactors	Version	Rated control supply voltage U_s 50/60 Hz AC	Time setting range (minimum times)	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG

ON-delay devices



3TX4180-0A

3TH42, 3TH43	NTC thermistors Time tolerance +100%, -50%	220 ... 230	0.1	5	3TX4180-0A		1	1 unit	41B
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Coupling links for control by PLC for 3TH4 contactor relays

3TX4090
Mounted to contactor

3TH42, 3TH43	Operating range: 17 ... 30 V DC Power consumption: 0.5 W at 24 V DC • For direct mounting on the contactor coil - Without surge suppressor - With surge suppressor			15 2	3TX4090-0C 3TX4090-0D		1 1	1 unit 1 unit	41B 41B
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Contactor Relays

3TH2 miniature contactor relays, 4- and 8-pole

Overview

Standards

IEC/EN 60947-1, IEC/EN 60947-5-1

The 3TH2 miniature contactor relays are climate-proof, and the versions with screw terminals are finger-safe according to IEC 60529.

The terminal designations comply with EN 50011.

Connections

The 3TH20 miniature contactor relays with four auxiliary contacts are available with SIGUT screw terminals, 6.3 mm x 0.8 mm flat connectors, and solder pin connections.

The miniature contactor relays with 6.3 mm x 0.8 mm flat connectors can be used in the plug-in base with solder pin connections for printed circuit boards. The miniature contactor relays are coded, and the plug-in base is codable in order to ensure non-interchangeability.

The 3TH22 miniature contactor relays with eight integrated contacts are available with screw terminals. The terminal designations comply with EN 50011.

Contact reliability

High contact stability at low voltages and currents, particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage of ≥ 17 V.

Accessories

Auxiliary switch blocks

The miniature contactor relays with four contacts with screw terminals can be expanded by up to four contacts by adding mountable auxiliary switch blocks ([see page 5/30](#)).

A cover (with unit labeling plate) must be removed from the front of the miniature contactor relays for this purpose. The auxiliary switch block is then easy to mount. The auxiliary switch blocks can be removed again by unlocking them with a laterally arranged orange slide.

The miniature contactor relays with screw terminals with four contacts according to EN 50011 with the identification number 40E can be expanded with 80E, 71E, 62E, 53E or 44E auxiliary switch blocks to miniature contactor relays with eight contacts according to EN 50011. The identification numbers 80E, 71E, 62E, 53E or 44E on the coded auxiliary switch blocks apply to the complete contactors. They cannot be combined with miniature contactor relays with identification number 31E and 33E.

All miniature contactor relays with screw terminals with four contacts according to EN 50011, identification number 40E, 31E or 22E, can be expanded with auxiliary switch blocks with identification number 40, 31, 22, 20, 11 or 02 to miniature contactor relays with six or eight contacts according to EN 50005. The identification numbers on the auxiliary switch blocks apply only to the attached auxiliary switch blocks.

Surge suppression

RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode for short break times) can be plugged onto all contactors and auxiliary switch blocks with screw terminals from the front in order to dampen opening surges in the coil ([see page 5/31](#)).

The unit labeling plate must be removed for this purpose. It can be snapped onto the attached surge suppressor.

Additional load module

The 3TX4490-1J additional load module ([see page 5/31](#)) can be used by programmable logic controllers to increase permissible residual current, and to limit residual voltage in semiconductor outputs.

This module ensures the safe shut-down of 3TH2 contactor relays and 3TF2 contactors with direct control via 230 V AC semiconductor outputs. It is accommodated in the same enclosure as the 3TX4490-3. surge suppressors and can be plugged into the contactor.

Technical specifications

Type	3TH2
Size	00

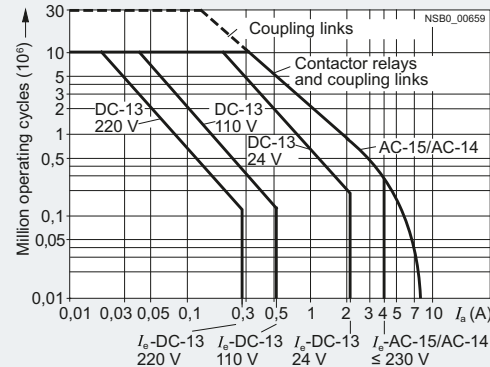
Contact endurance for AC-15/AC-14 and DC-13 utilization categories

The contact endurance is mainly dependent on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

If magnetic circuits other than the contactor coil systems or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary. RC elements or freewheel diodes are suitable as protective measures for the circuits.

Legend for diagram:

I_e = Rated operational current
 I_a = Breaking current



Positively-driven operation of contacts in miniature contactor relays

3TH20:

Yes, in the basic unit and the auxiliary switch block as well as between the basic unit and the mounted auxiliary switch block (**removable**) acc. to:

- ZH1/457
- IEC 60947-5-1, Appendix L

3TH22:

Yes, in the basic unit and the auxiliary switch block as well as between the basic unit and the mounted auxiliary switch block (**permanently mounted**) acc. to:

- ZH1/457
- IEC 60947-5-1, Appendix L
- SUVA

Explanations:

There is positively-driven operation if it is ensured that the NC and NO contacts cannot be closed at the same time.

ZH1/457

Safety rules for control units on power-operated presses in the metal-working industry.

IEC 60947-5-1, Annex L

Standard for Low-voltage switchgear and controlgear - Control circuit devices and switching elements
 Special requirements for positively-driven contacts

SUVA

Accident prevention regulations of the "Schweizer Unfallverhütungsanstalt" (Swiss Institute for Accident Insurance)

		Miniature contactor relays		Auxiliary switch block
		3TH20...-....	3TH22...-....	3TX4...-..
		00		
Type				
Size				
General data				
Dimensions (W x H x D)	mm	45 x 48 x 63	45 x 48 x 91	45 x 33 x 28
• With 3TX4490 surge suppressor	mm	45 x 48 x 88	45 x 48 x 116	--
Permissible mounting position	AC and DC operation	Any		
Mechanical endurance	• AC operation • DC operation	Operat- ing cycles	10 million 30 million	
Rated insulation voltage U_i (pollution degree 3)		V	690	500
• Screw terminals		V	500	--
• Flat connector 6.3 mm x 0.8 mm		V	500	--
• Solder pin connections		V	500	--
Rated impulse withstand voltage U_{imp} (pollution degree 3)		kV	6, control circuit 4	
• Screw terminals		kV	6	--
• Flat connector 6.3 mm x 0.8 mm		kV	6	--
• Solder pin connections		kV	6	--
Protective separation between coil and contacts (according to IEC 60947-1, Appendix N)	V		Up to 300	
Permissible ambient temperature¹⁾	• During operation • During storage	°C	-25 ... +55 -55 ... +80	
Degree of protection acc. to IEC 60529	• On front • Connecting terminal		IP20 (with screw terminals) IP20 (with screw terminals)	
Touch protection acc. to IEC 60529			Finger-safe (for screw terminals)	
Shock resistance				
• Rectangular pulse	- AC operation - DC operation	g/ms	7/5 and 4/10 10/5 and 6/10	
• Sine pulse	- AC operation - DC operation	g/ms	9/5 and 6/10 13/5 and 8/10	

¹⁾ Applies to 50/60 Hz coil: Operating range at 60 Hz: 0.85 to 1.1 x U_s ; at 50 Hz, 1.1 x U_s , with side-by-side mounting and 100% ON period the max. ambient temperature is +40 °C.



Contactors Relays

3TH2 miniature contactor relays, 4- and 8-pole

Type	3TH2		
Size	00		
Short-circuit protection			
Short-circuit test with fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE With short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1	A	6	
Conductor cross-sections			
Auxiliary conductors (1 or 2 conductors connectable)			
• Solid	mm ²	2 x (0.5 ... 2.5), 1 x 4	
• Finely stranded with end sleeve	mm ²	2 x (0.5 ... 1.5), 1 x 2.5	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14), 1 x 12	
• Pin-end connector (DIN 46231)	mm ²	1 x 1 ... 2.5	
• Terminal screw		M3	
• Prescribed tightening torque for terminal screws	Nm lb.in	0.8 ... 1.3 7 ... 11	
Auxiliary conductors (1 or 2 conductors connectable)			
• When using a plug-in sleeve 6.3–1	mm ²	0.5 ... 1	
• Solid with 6.3–2.5	mm ²	1 ... 2.5	
Solder pin connections (only for printed circuit boards)			
• Solder pin cross-section (does not apply to plug-in bases)	mm ²	0.8 x 1.2	
• Solder pin cross-section, plug-in base	mm ²	0.32 x 1.0	
Control			
Solenoid coil operating range¹⁾		0.8 ... 1.1 x U_s	
Solenoid coil power consumption (for cold coil and 1.0 x U_s)			
• AC operation, 50 Hz	Closing P.f.	VA	15 0.41
	Closed P.f.	VA	6.8 0.42
• AC operation, 60 Hz	Closing P.f.	VA	14.4 0.36
	Closed P.f.	VA	6.1 0.46
• AC operation, 50/60 Hz ¹⁾	Closing P.f.	VA	16.5/13.2 0.43/0.38
	Closed P.f.	VA	8.0/5.4 0.48/0.42
• DC operation	Closing = Closed	W	3
Permissible residual current of the electronics (with 0 signal)			
	AC operation	mA	$\leq 3 \times (220 \text{ V}/U_s)$
	DC operation	mA	$\leq 1 \times (220 \text{ V}/U_s)$
Operating times at 1.0 x U_s²⁾			
• AC operation			
- Closing	ON-delay NO	ms	6 ... 17
	OFF-delay NC	ms	5 ... 12
- Opening	OFF-delay NO	ms	3 ... 24
	ON-delay NC	ms	5 ... 20
• DC operation			
- Closing	ON-delay NO	ms	18 ... 42
	OFF-delay NC	ms	15 ... 26
- Opening	OFF-delay NO	ms	3 ... 5
	ON-delay NC	ms	4 ... 10
• Arcing time		ms	10

¹⁾ Applies to 50/60 Hz coil
Operating range at 60 Hz: 0.85 to 1.1 x U_s ;
at 50 Hz, 1.1 x U_s , with side-by-side mounting and 100% ON period the
max. ambient temperature is +40 °C.

²⁾ The OFF-delay times of the NO contacts and the ON-delay times of the
NC contacts increase if the contactor coils are attenuated against
voltage peaks (suppression diode 6x to 10x;
diode assembly 2x to 6x; varistor +2 to 5 ms).

3TH2 miniature contactor relays, 4- and 8-pole

Type	3TH2		
Size	00		
Rated data of the auxiliary contacts			
Load rating with AC			
Utilization category AC-12			
Rated operational current I_e (at 60 °C)	A		10
Utilization categories AC-15 and AC-14			
Rated operational current I_e at rated operational voltage U_e	230/220 V	A	4
	400/380 V	A	3
	500 V	A	2
	690/660 V	A	1
Rated power of three-phase motors			
According to utilization categories AC-2 and AC-3	110 V	kW	0.2
	230/220 V	kW	0.55
	400/380 V	kW	1.1
	500 V	kW	1.5
	690/660 V	kW	1.5
Load rating with DC			
Utilization category DC-12			
Rated operational current I_e at rated operational voltage U_e	A		10
• 1 conducting path ¹⁾	Up to 24 V	A	4
	60 V	A	2
	110 V	A	1.1
	240/220 V	A	0.5
• 2 conducting paths in series	Up to 24 V	A	10
	60 V	A	10
	110 V	A	4
	240/220 V	A	2
• 3 conducting paths in series	Up to 24 V	A	10
	60 V	A	10
	110 V	A	6
	240/220 V	A	2.5
Utilization category DC-13			
Rated operational current I_e at rated operational voltage U_e			
• 1 conducting path	Up to 24 V	A	2.1
	60 V	A	0.9
	110 V	A	0.52
	240/220 V	A	0.27
• 2 conducting paths in series	Up to 24 V	A	10
	60 V	A	3.5
	110 V	A	1.3
	240/220 V	A	0.9
• 3 conducting paths in series	Up to 24 V	A	10
	60 V	A	4.7
	110 V	A	3
	240/220 V	A	1.2
Switching frequency			
Switching frequency z in operating cycles/hour			
• Rated operation for utilization category	AC-12/DC-12	1/h	1 000
	AC-2	1/h	500
	AC-3	1/h	1 000
Dependence of the switching frequency z' on the operational current I' and operational voltage U': $z' = z \cdot (I_e/I') \cdot (U_e/U)^{1.5} \cdot 1/h$	AC-15/AC-14	1/h	1 200
	DC-13	1/h	1 200
• No-load switching frequency		1/h	10 000

¹⁾ Contact endurance 0.1×10^6 operating cycles.


Contactors Relays

3TH2 miniature contactor relays, 4- and 8-pole

Selection and ordering data

AC operation or DC operation

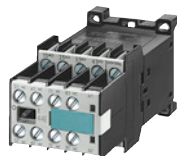
- Size 00
- Screw terminals
- For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Con- tacts	Rated operational current I_e /AC-15/AC-14 at				Contacts Ident. No. acc. to EN 50011	Version	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	230/ 220 V	400/ 380 V	500 V	690/ 660 V								
Number	A	A	A	A				Article No.	Price per PU			

Miniature contactor relays with screw terminals



3TH20..-0A..



3TH22..-0A..

AC operation, rated control supply voltage $U_s = 50$ Hz 230/220 V AC¹⁾

4	4	3	2	1	40E	4	--	2	3TH2040-0AP0	1	1 unit	41A
					31E	3	1	▶	3TH2031-0AP0	1	1 unit	41A
					22E	2	2	▶	3TH2022-0AP0	1	1 unit	41A

With permanently mounted auxiliary switch blocks

8	4	3	2	--	80E	8	0	20	3TH2280-0AP0	1	1 unit	41A
					71E	7	1	20	3TH2271-0AP0	1	1 unit	41A
					62E	6	2	2	3TH2262-0AP0	1	1 unit	41A
					53E	5	3	20	3TH2253-0AP0	1	1 unit	41A
					44E	4	4	2	3TH2244-0AP0	1	1 unit	41A

DC operation, rated control supply voltage $U_s = 24$ V DC

4	4	3	2	1	40E	4	--	▶	3TH2040-0BB4	1	1 unit	41A
					31E	3	1	▶	3TH2031-0BB4	1	1 unit	41A
					22E	2	2	▶	3TH2022-0BB4	1	1 unit	41A

With permanently mounted auxiliary switch blocks

8	4	3	2	--	80E	8	0	20	3TH2280-0BB4	1	1 unit	41A
					71E	7	1	2	3TH2271-0BB4	1	1 unit	41A
					62E	6	2	2	3TH2262-0BB4	1	1 unit	41A
					53E	5	3	20	3TH2253-0BB4	1	1 unit	41A
					44E	4	4	2	3TH2244-0BB4	1	1 unit	41A

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.



Accessories, see pages 5/30 and 5/31.

Other voltages according to page 5/29 on request.

3TH2 miniature contactor relays, 4- and 8-pole

AC operation  or **DC operation** 

- Size 00
- Flat connectors or solder pin connection
- For screw fixing and snap-on mounting onto TH 35 standard mounting rail (diagonal)

Con- tacts	Rated operational current I_e /AC-15/AC-14 at				Contacts Ident. No. acc. to EN 50011	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	230/ 220 V	400/ 380 V	500 V	690/ 660 V								
Number	A	A	A	A								
						 						

Miniature contactor relays with 6.3 mm x 0.8 mm flat connectors

Flat connectors 

3TH20..-3...

AC operation, rated control supply voltage $U_s = 50$ Hz 230/220 V AC¹⁾

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

4	4	3	2	--	40E	4	--	20	3TH2040-3AP0	1	1 unit	41A
					31E	3	1	20	3TH2031-3AP0	1	1 unit	41A
					22E	2	2	20	3TH2022-3AP0	1	1 unit	41A

For screw fixing (diagonal)

4	4	3	2	--	40E	4	--	20	3TH2040-7AP0	1	1 unit	41A
					31E	3	1	20	3TH2031-7AP0	1	1 unit	41A
					22E	2	2	5	3TH2022-7AP0	1	1 unit	41A



3TH20..-7...

DC operation, rated control supply voltage $U_s = 24$ V DC


For screw fixing and snap-on mounting onto TH 35 standard mounting rail

4	4	3	2	--	40E	4	--	X	3TH2040-3BB4	1	1 unit	41A
					31E	3	1	20	3TH2031-3BB4	1	1 unit	41A
					22E	2	2	20	3TH2022-3BB4	1	1 unit	41A

For screw fixing (diagonal)

4	4	3	2	--	40E	4	--	20	3TH2040-7BB4	1	1 unit	41A
					31E	3	1	5	3TH2031-7BB4	1	1 unit	41A
					22E	2	2	20	3TH2022-7BB4	1	1 unit	41A

Miniature contactor relays with solder pin connections for printed circuit boards

Solder pin connections 

3TH20..-6...

AC operation, rated control supply voltage $U_s = 50$ Hz 230/220 V AC¹⁾

For screw fixing (diagonal)

4	4	3	2	--	40E	4	--	X	3TH2040-6AP0	1	1 unit	41A
					31E	3	1	20	3TH2031-6AP0	1	1 unit	41A
					22E	2	2	X	3TH2022-6AP0	1	1 unit	41A

DC operation, rated control supply voltage $U_s = 24$ V DC

For screw fixing (diagonal)

4	4	3	2	--	40E	4	--	20	3TH2040-6BB4	1	1 unit	41A
					31E	3	1	20	3TH2031-6BB4	1	1 unit	41A
					22E	2	2	20	3TH2022-6BB4	1	1 unit	41A

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

Accessories, see pages 5/30 and 5/31.

Options

Rated control supply voltages, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type	3TH20..-0... 3TF28	3TH20..-3..., 3TH20..-6..., 3TH20..-7..., 3TH22
	Size	00	

Rated control supply voltage U_s	Contactor type	3TH20..-0... 3TF28	3TH20..-3..., 3TH20..-6..., 3TH20..-7..., 3TH22
	Size	00	

AC operation**Solenoid coils for 50 and 60 Hz AC**

50 Hz	60 Hz		
24 V AC	29 V AC	B0	--
110 V AC	132 V AC	F0	--
230/220 V AC	276 V AC	P0 ¹⁾	P0 ¹⁾

¹⁾ Operating range at AC-1 and 220 V: 0.85 to 1.15 × U_s ;
lower operating range limit according to IEC 60947.

DC operation

24 V DC	B4	B4
110 V DC	F4	--
220 V DC	M4	--

Please inquire about further voltages.

Other voltages on request.

Contactor Relays

3TH2 Miniature Contactor Relays, 4- and 8-Pole

Accessories for 3TH2 miniature contactor relays

For contactors	Rated control supply voltage U_s		Power consumption of LED at U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
	Type	V AC								V DC
Surge suppressors¹⁾										
For plugging onto 3TH2 miniature contactor relays with and without auxiliary switch blocks										
Version without LED										
RC elements										
3TH2...-0...	24 ... 48	24 ... 70	--	5	3TX4490-3R		1	1 unit	41B	
	48 ... 127	70 ... 150	--	5	3TX4490-3S		1	1 unit	41B	
	127 ... 240	150 ... 250	--	5	3TX4490-3T		1	1 unit	41B	
	240 ... 400	--	--	5	3TX4490-3U		1	1 unit	41B	
	400 ... 600	--	--	5	3TX4490-3V		1	1 unit	41B	
Varistors										
3TH2...-0...	≤ 48	24 ... 70	--	▶ 5	3TX4490-3G		1	1 unit	41B	
	48 ... 127	70 ... 150	--	5	3TX4490-3H		1	1 unit	41B	
	127 ... 240	150 ... 250	--	5	3TX4490-3J		1	1 unit	41B	
	240 ... 400	--	--	5	3TX4490-3K		1	10 units	41B	
	400 ... 600	--	--	5	3TX4490-3L		1	10 units	41B	
Noise suppression diode										
3TH2...-0...	--	12 ... 250	--	▶ 5	3TX4490-3A		1	1 unit	41B	
Diode assemblies (diode and Zener diode)										
For DC operation and short break times										
3TH2...-0...	--	24 ... 250	--	5	3TX4490-3B		1	1 unit	41B	
Version with LED										
Varistors										
3TH2...-0...	24 ... 48	12 ... 24	10 ... 120	5	3TX4490-4G		1	1 unit	41B	
	48 ... 127	24 ... 70	20 ... 470	5	3TX4490-4H		1	1 unit	41B	
	127 ... 240	70 ... 150	50 ... 700	5	3TX4490-4J		1	1 unit	41B	
	--	150 ... 250	160 ... 950	20	3TX4490-4K		1	1 unit	41B	
Noise suppression diodes										
3TH2...-0...	--	24 ... 70	20 ... 470	5	3TX4490-4A		1	1 unit	41B	
	--	70 ... 150	50 ... 700	5	3TX4490-4B		1	1 unit	41B	
	--	150 ... 250	160 ... 950	5	3TX4490-4C		1	1 unit	41B	
Additional load modules										
For plugging onto 3TH2 miniature contactor relays with and without auxiliary switch blocks										
To increase the permissible residual current and limit the residual voltage of SIMATIC semiconductor outputs, identical dimensions to 3TX4490-3 surge suppressors.										
3TH2...-0A..	230/220, 50 Hz	--	--	20	3TX4490-1J		1	1 unit	41B	
	230, 60 Hz	--	--							
	230, 50/60 Hz	--	--							
	Operating range 0.8 ... 1.1 x U_s	--	--							
Plug-in bases with solder pin connections for printed circuit boards, width 45 mm										
Rated insulation voltage U_i : 400 V (for pollution degree 3); rated impulse withstand voltage U_{imp} : 6 kV; rated operational current I_0 : 6 A; Ⓢ and Ⓜ rated data: max. 300 V, 6 A										
3TH20...-3...	for 3TH2 miniature contactor			--	20	3TX4491-2A		1	5 units	41A
3TH20...-7...	relays with flat connectors 6.3 mm ... 0.8 mm			--						
Release tools										
For releasing miniature contactor relays from 3TX4491-2A plug-in bases				20	3TX4491-2K		1	1 unit	41A	
3TH20...-7...	--			--						

¹⁾ The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; varistor +2 to 5 ms).

Coupling Relays

SIRIUS 3RQ3 coupling relays, narrow design

Overview



SIRIUS 3RQ3 coupling relays

SIRIUS 3RQ3 coupling relays in narrow design are used for coupling control signals from and to a controller, and they are available in different versions:

- Coupling relays with relay output (not plug-in)
- Coupling relays with plug-in relays
- Coupling relays with semiconductor output (not plug-in)

Coupling relays with relay output (not plug-in)

AC and DC operation

IEC/EN 60947-5-1

The input and output coupling relays differ with regard to the positioning of the terminals and the LEDs.

Coupling relays with plug-in relays

AC and DC operation

IEC 60947-1

The coupling relays are plug-in, so the relay can be replaced quickly at the end of its service life without detaching the wiring.

Coupling relays with semiconductor output (not plug-in)

AC and DC operation

IEC 60947-1, EN 60664-1 and EN 50005;
coupling relays with semiconductor output: EN 60747-5;
programmable controllers: IEC 61131-2

The input and output coupling relays differ with regard to the positioning of the terminals and the LEDs.

The coupling relays with semiconductor output have extremely high contact reliability, so they are especially suitable for electronic systems.

For test purposes, versions are available with manual-0-automatic switches.

SIRIUS 3RQ3 coupling relays, narrow design

Article No. scheme

Product versions		Article number	
Coupling relays with relay output (not plug-in)		3RQ30 □ 8 – □ A □ 0 □	
Design and type of output	Output coupler, without manual/automatic switch	1	
	Input coupler	3	
Type of electrical connection	Screw terminals	1	
	Spring-type terminals (push-in)	2	
Control supply voltage	24 V AC/DC		B
	115 V AC/DC		E
	230 V AC/DC		F
Material of switching contacts	e.g.		
	0 = AgSnO ₂		□
	1 = AgSnO ₂ hard gold-plated		□
Example		3RQ30 1 8 – 1 A B 0 1	

Product versions		Article number	
Coupling relays with relay output (not plug-in)		3RQ30 1 8 – 2 A □ 0 8 – 0 A A 0	
Railway version with extended operating range 0.7 ... 1.2 x U _s			
Control supply voltage	24 V DC		M
	110 V DC		N
Example		3RQ30 1 8 – 2 A M 0 8 – 0 A A 0	

Product versions		Article number	
Coupling relays with plug-in relays		3RQ31 1 8 – □ A □ 0 □	
Type of electrical connection	Screw terminals	1	
	Spring-type terminals (push-in)	2	
Control supply voltage	24 V AC/DC		B
	115 V AC/DC		E
	230 V AC/DC		F
	24 V DC		M
Material of switching contacts	AgSnO ₂		0
	AgSnO ₂ hard gold-plated		1
Example		3RQ31 1 8 – 1 A B 0 1	

Product versions		Article number		Control supply voltage	Switching voltage of the semiconductor output	
Coupling relays with semiconductor output (not plug-in)		3RQ30 □ □ – □ S □ □ 0				
	Current carrying capacity of the semiconductor output					
Output coupler	• Without manual/automatic switch	1 mA ... 0.5 A	3RQ30 5 0 – □ S M 5 0	11 ... 30 V DC	10 ... 60 V DC	
		5 mA ... 2 A	3RQ30 5 2 – □ S M 3 0	11 ... 30 V DC	10 ... 30 V DC	
		1 mA ... 2 A	3RQ30 5 2 – □ S M 4 0	11 ... 30 V DC	10 ... 60 V DC	
		5 mA ... 2 A	3RQ30 5 2 – □ S M 5 0	11 ... 30 V DC	20 ... 264 V AC	
		1 mA ... 3 A	3RQ30 5 3 – □ S G 3 0	110 ... 230 V AC/DC	10 ... 30 V DC	
	• With manual/automatic switch	5 mA ... 5 A	3RQ30 5 5 – □ S M 3 0	11 ... 30 V DC	10 ... 30 V DC	
		5 mA ... 5 A	3RQ30 6 5 – □ S M 3 0	11 ... 30 V DC	10 ... 30 V DC	
		Input coupler	10 mA ... 0.5 A	3RQ30 7 0 – □ S B 3 0	11 ... 30 V AC/DC	10 ... 30 V DC
				3RQ30 7 0 – □ S G 3 0	110 ... 230 V AC/DC	10 ... 30 V DC
		Type of electrical connection	Screw terminals	1		
Spring-type terminals (push-in)	2					
Example		3RQ30 7 0 – 1 S B 3 0				

Note:

These Article No. schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Coupling Relays

SIRIUS 3RQ3 coupling relays, narrow design

Benefits

General

- All versions with screw terminals or spring-type terminals (push-in technology)
- TOP wiring with spring-type terminals (push-in) for quick and reliable wiring
- Low space requirements in the control cabinet thanks to a consistent width of 6.2 mm
- Reduced inventory due to fewer variants
- Clearly visible functional state of the coupling relay by green LED
- Integrated reverse polarity protection and EMC arc-suppression diode
- Standardized accessories across the entire 3RQ3 series
- Universal bridging option using connecting combs for all terminals
- Galvanic isolation plate for isolating different voltages for neighboring units
- Clip-on labels available as set for individual labeling

Coupling relays with relay output (not plug-in)

- Relays fixed in enclosure for increased contact reliability
- Device variants with hard gold-plated contacts, hence high contact reliability at low currents

Coupling relays with plug-in relays

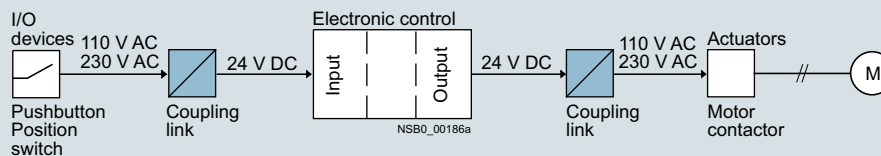
- Fast replacement of the relays with existing wiring
- Shorter installation times thanks to certified complete units
- Individual relays available as spare parts
- Device variants with hard gold-plated contacts, hence high contact reliability at low currents

Coupling relays with semiconductor output (not plug-in)

- Long service life since there is no mechanical wear
- High switching frequency thanks to short make-break times
- Vibration-resistant
- No contact bounce
- Extremely high contact reliability
- Noise-free switching
- Low control power required
- Switching of DC and capacitive loads

Application

- Electrical separation between the input and output circuit
- Adjustment of different signal levels
- Signal amplification



Application example motor controller

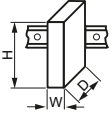
Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16198/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16198/faq>

Operating instructions, see
<https://support.industry.siemens.com/cs/ww/en/ps/16198/man>

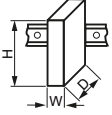
Coupling relays with relay output (not plug-in)

Article number	3RQ30.8- .AB00	3RQ30.8- .AB01	3RQ30.8- .AE00	3RQ30.8- .AE01	3RQ30.8- .AF00	3RQ30.8- .AF01	3RQ3018- 2AM08-0AA0	3RQ3018- 2AN08-0AA0	
General technical specifications									
Width x height x depth	 mm 6.2 x 93 x 72.5								
Insulation voltage for overvoltage category III acc. to IEC 60664 for pollution degree 3	V 300								
Max. permissible voltage for protective separation between control circuit and auxiliary circuit	V 300								
Ambient temperature									
• During operation	°C -25 ... +60							-40 ... +70	
• During storage	°C -40 ... +85								
Degree of protection	IP20								
Version of the fuse link required for short-circuit protection of the auxiliary switch	Fuse gG: 4 A								
Operational current of the auxiliary contacts									
• At AC-15									
- At 24 V	A 3								
- At 250 V	A 3								
• At DC-13									
- At 24 V	A 1								
- At 125 V	A 0.2								
- At 250 V	A 0.1								
Contact reliability of the auxiliary contacts (one contact failure per 100 million)	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA		
Mechanical endurance (operating cycles) typical	10 000 000								
Electrical endurance (operating cycles) for AC-15 at 230 V typical	100 000								
Operating range factor of the control supply voltage, rated value									
• At AC									
- At 50 Hz	0.8 ... 1.25		0.8 ... 1.1						
- At 60 Hz	0.8 ... 1.25		0.8 ... 1.1						
• At DC	0.8 ... 1.25		0.8 ... 1.1			0.7 ... 1.25			
Active power input	W 0.3		0.5			1		0.3	0.6
Thermal current	A 6								

Coupling Relays

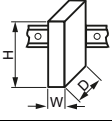


SIRIUS 3RQ3 coupling relays, narrow design

Coupling relays with plug-in relay

Article number		3RQ3118- .AB00	3RQ3118- .AB01	3RQ3118- .AE00	3RQ3118- .AE01	3RQ3118- .AF00	3RQ3118- .AF01	3RQ3118- .AM00	3RQ3118- .AM01
General technical specifications									
Width x height x depth	mm	6.2 x 93 x 76							
									
Insulation voltage for overvoltage category III acc. to IEC 60664 for pollution degree 3	V	300							
Max. permissible voltage for protective separation between control circuit and auxiliary circuit	V	300							
Ambient temperature									
• During operation	°C	-25 ... +60							
• During storage	°C	-40 ... +85							
Degree of protection		IP20							
Version of the fuse link required for short-circuit protection of the auxiliary switch		Fuse gG: 4 A							
Operational current of the auxiliary contacts									
• At AC-15									
- At 24 V	A	3							
- At 250 V	A	3							
• At DC-13									
- At 24 V	A	1							
- At 125 V	A	0.2							
- At 250 V	A	0.1							
Contact reliability of the auxiliary contacts (one contact failure per 100 million)		17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA	17 V, 5 mA	5 V, 1 mA
Mechanical endurance (operating cycles) typical		10 000 000							
Electrical endurance (operating cycles) for AC-15 at 230 V typical		100 000							
Operating range factor of the control supply voltage, rated value									
• At AC									
- At 50 Hz		0.8 ... 1.25		0.8 ... 1.1		--			
- At 60 Hz		0.8 ... 1.25		0.8 ... 1.1		--			
• At DC		0.8 ... 1.25		0.8 ... 1.1		0.8 ... 1.25			
Active power input	W	0.3		0.5		1		0.3	
Thermal current	A	6							

SIRIUS 3RQ3 coupling relays, narrow design

Coupling relays with semiconductor output (not plug-in)

Article number	3RQ3050- .SM50	3RQ3052- .SM30	3RQ3052- .SM40	3RQ3052- .SM50	3RQ3053- .SG30	3RQ3055- .SM30	3RQ3065- .SM30	3RQ3070- .SB30	3RQ3070- .SG30	
General technical specifications										
Width x height x depth	mm 6.2 x 93 x 72.5						6.2 x 93 x 75	6.2 x 93 x 72.5		
										
Insulation voltage for overvoltage category III acc. to IEC 60664 for pollution degree 3	V	50	300			50	--			
Ambient temperature										
• During operation	°C	-25 ... +60								
• During storage	°C	-40 ... +85								
Degree of protection		IP20								
Switching voltage of the semiconductor output										
• At AC	V	--	20 ... 264			--				
• At DC	V	10 ... 60	10 ... 30	10 ... 60	--	10 ... 30				
Current carrying capacity of the semiconductor output										
• At AC		--	5 mA ... 2 A			--				
• At DC		1 mA ... 0.5 A	5 mA ... 2 A	1 mA ... 2 A	--	1 mA ... 3 A	5 mA ... 5 A	10 mA ... 0.5 A		
Operating range factor of the control supply voltage, rated value										
• At AC										
- At 50 Hz		--	1 ... 1			--	1 ... 1			
- At 60 Hz		--	1 ... 1			--	1 ... 1			
• At DC		1 ... 1								
Active power input	W	0.3	0.25			0.3	0.5			
Thermal current	A	0.5	2	3			5	0.5		
Article number	3RQ3...-1....					3RQ3...-2....				
Type of electrical connection for auxiliary and control circuits	 Screw terminals					 Spring-type terminals (push-in)				
Type of connectable conductor cross-sections										
• Solid	1x (0.25 ... 2.5) mm ²									
• Finely stranded										
- Without end sleeves	--					1x (0.25 ... 2.5) mm ²				
- With end sleeves	1x (0.25 ... 1.5) mm ²									
• Solid for AWG cables	1x (20 ... 14)									

Coupling Relays

SIRIUS 3RQ3 coupling relays, narrow design

Selection and ordering data

Type of voltage	Control supply voltage		Number of CO contacts for auxiliary contacts	Material of switching contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
	At AC										At DC
	At 50 Hz	At 60 Hz									
	V	V	V		d						

Coupling relays with relay output (not plug-in)

Output coupling links

AC/DC	24	24	24	1	AgSnO2	2	3RQ3018-□AB00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3018-□AB01			
	115	115	115	1	AgSnO2	2	3RQ3018-□AE00	1	5 units	41H
					AgSnO2	2	3RQ3018-□AF00			
DC	--	--	24	1	AgSnO2	2	3RQ3018-2AM08-0AA0	1	5 units	41H
					AgSnO2	2	3RQ3018-2AN08-0AA0			

Input coupling links

AC/DC	24	24	24	1	AgSnO2	2	3RQ3038-□AB00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3038-□AB01			
	115	115	115	1	AgSnO2	2	3RQ3038-□AE00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3038-□AE01			
230	230	230	1	AgSnO2	2	3RQ3038-□AF00	1	5 units	41H	
				AgSnO2 hard gold-plated	2	3RQ3038-□AF01				

Coupling relays with plug-in relay

Output coupling links

AC/DC	24	24	24	1	AgSnO2	2	3RQ3118-□AB00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3118-□AB01			
	115	115	115	1	AgSnO2	2	3RQ3118-□AE00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3118-□AE01			
230	230	230	1	AgSnO2	2	3RQ3118-□AF00	1	5 units	41H	
				AgSnO2 hard gold-plated	2	3RQ3118-□AF01				
DC	--	--	24	1	AgSnO2	2	3RQ3118-□AM00	1	5 units	41H
					AgSnO2 hard gold-plated	2	3RQ3118-□AM01			

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

Type of voltage	Control supply voltage		Current carrying capacity of the semiconductor output		Operating mode selectable via switch position	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
	At AC		At DC	At AC								At DC
	At 50 Hz	At 60 Hz										
						d						

Coupling relays with semiconductor output (not plug-in)

Output coupling links

DC	--	--	11 ... 30 V	--	1 mA ... 0.5 A	--	2	3RQ3050-□SM50	1	5 units	41H	
					5 mA ... 2 A	--	2	3RQ3052-□SM30				
					1 mA ... 2 A	--	2	3RQ3052-□SM40				
					5 mA ... 2 A	--	2	3RQ3052-□SM50				
					--	5 mA ... 5 A	--	2				3RQ3055-□SM30
					Manual/Off/Automatic	--	2	3RQ3065-□SM30				
AC/DC	110 ... 230 V	110 ... 230 V	110 ... 230 V	--	1 mA ... 3 A	--	2	3RQ3053-□SG30	1	5 units	41H	

Input coupling links





AC/DC	11 ... 30 V	11 ... 30 V	11 ... 30 V	--	10 mA ... 0.5 A	--	2	3RQ3070-□SB30	1	5 units	41H
	110 ... 230 V	110 ... 230 V	110 ... 230 V	--	10 mA ... 0.5 A	--	2	3RQ3070-□SG30			

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

SIRIUS 3RQ3 coupling relays, narrow design

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Galvanic isolation plates						
		For electrical separation of different potentials when devices of different types are installed side by side	2	3RQ3900-0A	1 10 units	41H
3RQ3900-0A						
Connecting combs						
		For linking the same potentials, current carrying capacity for infeed max. 6 A	2	3RQ3901-0A	1 10 units	41H
3RQ3901-0B		• 2-pole	2	3RQ3901-0B	1 10 units	41H
		• 4-pole	2	3RQ3901-0C	1 10 units	41H
		• 8-pole	2	3RQ3901-0D	1 10 units	41H
		• 16-pole	2	3RQ3901-0D	1 10 units	41H
Clip-on labels¹⁾						
		For terminal and equipment labeling, white	2	3RQ3902-0A	100 2 000 units	41H
3RQ3902-0A		• 5 x 5 mm	2	3RQ3902-0A	100 2 000 units	41H
		• 6 x 12 mm	2	3RQ3902-0B	100 1 200 units	41H
Tools for opening spring-type terminals						
		Screwdriver For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	2	3RA2908-1A	1 1 unit	41B
3RA2908-1A						

¹⁾ PC labeling system for individual inscription of unit labeling plates available from Conta-Clip Verbindungstechnik GmbH (see page 16/16).

Coupling relays with plug-in relay	Control supply voltage	Material of switching contacts	Number of CO contacts for auxiliary contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	V			d					
Replacement modules for 3RQ3118 coupling relays with plug-in relay									
3RQ3118-.AM00	24 DC	AgSnO2	1	2	3TX7014-7BM00		1 15 units		41H
3RQ3118-.AM01		AgSnO2 hard gold-plated		2	3TX7014-7BM02		1 15 units		41H
3RQ3118-.AB00	24 AC/DC	AgSnO2	1	2	3TX7014-7BM00		1 15 units		41H
3RQ3118-.AB01		AgSnO2 hard gold-plated		2	3TX7014-7BM02		1 15 units		41H
3RQ3118-.AE00	115 AC/DC	AgSnO2	1	2	3TX7014-7BP00		1 15 units		41H
3RQ3118-.AF00	230 AC/DC	AgSnO2							
3RQ3118-.AE01	115 AC/DC	AgSnO2 hard gold-plated	1	2	3TX7014-7BP02		1 15 units		41H
3RQ3118-.AF01	230 AC/DC	AgSnO2 hard gold-plated							

Coupling Relays

SIRIUS 3RQ2 coupling relays with industrial enclosure **NEW**

Overview



SIRIUS 3RQ2 coupling relays, screw terminals, 3 changeover contacts

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RQ2

Conversion tool, e.g. from 3RS18 to 3RQ2, see www.siemens.com/sirius/conversion-tool

3RQ2 coupling relays in their 22.5 mm industrial enclosure serve to couple control signals to and from a controller and replace the 3RS18 coupling relays. The 3RQ2 has an impressively high-quality industrial enclosure finished in modern titanium gray so that it fits in visually with the SIRIUS series of relays.

The series consists of devices with up to three changeover contacts with screw or spring-type terminals (push-in) and, with its wide voltage range from 24 to 240 V AC/DC, is a genuine highlight in the coupling relay market.

Thanks to terminal assignment that is identical to the previous version, existing products can easily be converted.

The reduced variety of components simplifies product selection and standardization.

Numerous accessories are available for the 3RQ2 coupling relays, for example replacement terminals, push-in lugs for wall mounting and coding pins.

Article No. scheme

Product versions		Article number						
Coupling relays, standard		3RQ2000	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Connection methods	Screw terminals		1					
	Spring-type terminals (push-in)		2					
Outputs	1 CO contact			A				
	2 CO contacts			B				
	3 CO contacts			C				
Rated control supply voltage	24 ... 240 V AC/DC				W			
Material of switching contacts	0 = AgSnO ₂							0
	1 = AgNi + Au							1
Example		3RQ2000	-	1	C	W	0	1

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

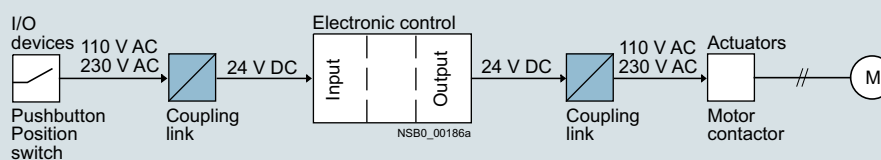
For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Permanent wiring thanks to removable terminals in screw or spring-type technology (push-in)
- Replacement of individual terminals minimizes wiring effort
- A product for all voltages from 24 to 240 V AC/DC
- Reduced costs thanks to fewer versions
- Especially high contact reliability even at low currents thanks to versions with hard gold-plated contacts
- International standards and certifications including CE, UL/CSA, EAC and confirmations for rail, and more

Application

- Electrical separation between the input and output circuit
- Signal amplification
- Adjustment of different signal levels
- Contact multiplication



Application example motor controller

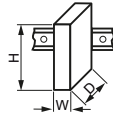
NEW SIRIUS 3RQ2 coupling relays with industrial enclosure**Technical specifications****More information**

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/25158/td>

Operating instructions, see
<https://support.industry.siemens.com/cs/ww/en/ps/25158/man>

Type

3RQ2000-AW00
3RQ2000-BW00
3RQ2000-CW00

3RQ2000-CW01**General data****Dimensions (W x H x D)**

mm

22.5 x 100 x 90

Insulation voltage for overvoltage category III acc. to IEC 60664 for pollution degree 3

V

300

Max. permissible voltage for protective separation between control circuit and auxiliary circuit acc. to IEC 60947-1

V

300

Ambient temperature

- During operation °C -25 ... +60
- During storage °C -40 ... +80

Degree of protection

IP20

Control circuit**Control supply voltage**

V

24 ... 240 AC/DC; 50/60 Hz

Operating range factor of control supply voltage

0.7 ... 1.1

Load circuit**Thermal current of the non-solid-state contact blocks, maximum**

A

5

Current carrying capacity of the output relay

- At AC-15 at 250 V A 3
- At DC-13 at 24 V A 1
- At DC-13 at 125 V A 0.2
- At DC-13 at 250 V A 0.1

Mechanical endurance (operating cycles) typical

10 000 000


Electrical endurance (operating cycles) for AC-15 at 230 V, typical

100 000

Material of switching contactsAgSnO₂

AgNi + Au

Article number

3RQ2000-1**3RQ2000-2****Type of electrical connection**
 **Screw terminals**
 **Spring-type terminals (push-in)**
Type of connectable conductor cross-sections

- Solid mm² 1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²) 1x (0.5 ... 4 mm²)
- Finely stranded with end sleeve mm² 1x (0.5 ... 4 mm²), 2x (0.5 ... 1.5 mm²) 1x (0.5 ... 2.5 mm²)
- Solid for AWG cables AWG 1x (20 ... 12), 2x (20 ... 14) 1x (20 ... 12)

Tightening torque

Nm

0.6 ... 0.8





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Coupling Relays

SIRIUS 3RQ2 coupling relays with industrial enclosure **NEW**

Selection and ordering data

PU (UNIT, SET, M) = 1
 PS* = 1 UNIT
 PG = 41A








	Control supply voltage		Number of CO contacts for auxiliary contacts	Material of switching contacts	SD	Screw terminals 		Spring-type terminals (push-in) 	
	at AC at 50 Hz	At DC				Article No.	Price per PU	Article No.	Price per PU
	V	V	W		d				
Coupling relays in industrial enclosure, 22.5 mm									
 3RQ2000-1CW00	24 ... 240	24 ... 240	1	AgSnO2	2	3RQ2000-1AW00	2	3RQ2000-2AW00	
			2	AgSnO2	2	3RQ2000-1BW00	2	3RQ2000-2BW00	
			3	AgSnO2	2	3RQ2000-1CW00	2	3RQ2000-2CW00	
			3	AgNi + Au	2	3RQ2000-1CW01	2	3RQ2000-2CW01	
 3RQ2000-2CW00									

Accessories

More information

Operating instructions, see <https://support.industry.siemens.com/cs/ww/en/ps/25158/man>

Conversion tool, e.g. from 3RS18 to 3RQ2, see www.siemens.com/sirius/conversion-tool

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Terminals for SIRIUS devices in the industrial standard mounting rail enclosure						
 3ZY1122-1BA00	Removable terminals		Screw terminals 			
	• 2-pole, up to 1 x 4 mm ² or 2 x 2.5 mm ²	2	3ZY1122-1BA00	1	6 units	41L
	Spring-type terminals (push-in) 					
	• 2-pole, up to 1 x 4 mm ² or 2 x 1.5 mm ²	2	3ZY1122-2BA00	1	6 units	41L
Accessories for enclosures						
 3ZY1450-1AB00	2	3ZY1450-1AB00	1	5 units	41H	
Hinged cover replacement cover, without terminal labeling, titanium gray, 22.5 mm wide						
 3ZY1311-0AA00	2	3ZY1311-0AA00	1	10 units	41L	
Push-in lugs For wall mounting						
 3ZY1440-1AA00	2	3ZY1440-1AA00	1	12 units	41L	
Coding pins For removable terminals of SIRIUS devices in the industrial standard mounting rail enclosure; they enable the mechanical coding of terminals						
Tools for opening spring-type terminals						
 3RA2908-1A	2	3RA2908-1A	1	1 unit	41B	
Screwdrivers For all SIRIUS devices with spring-type terminals 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated						

NEW SIRIUS 3RQ2 coupling relays with industrial enclosure**More information****Code conversion table**

SIRIUS 3RS18 coupling relays				Comparison type SIRIUS 3RQ2 coupling relays			
Screw terminals	Spring-type terminals	Version	Contacts	Screw terminals	Spring-type terminals (push-in)	Version	Contacts
3RS1800-1AQ00	3RS1800-2AQ00	24 V AC/DC; 110 ... 120 V AC	1 CO contact	3RQ2000-1AW00	3RQ2000-2AW00	24 ... 240 V AC/DC	1 CO contact
3RS1800-1AP00	3RS1800-2AP00	24 V AC/DC; 220 ... 240 V AC	2 CO contacts	3RQ2000-1BW00	3RQ2000-2BW00	24 ... 240 V AC/DC	2 CO contacts
3RS1800-1BW00	3RS1800-2BW00	24 ... 240 V AC/DC					
3RS1800-1BQ00	3RS1800-2BQ00	24 V AC/DC; 110 ... 120 V AC	3 CO contacts	3RQ2000-1CW00	3RQ2000-2CW00	24 ... 240 V AC/DC	3 CO contacts
3RS1800-1BP00	3RS1800-2BP00	24 V AC/DC; 220 ... 240 V AC					
3RS1800-1HW00	3RS1800-2HW00	24 ... 240 V AC/DC	3 CO contacts, hard gold-plated	3RQ2000-1CW01	3RQ2000-2CW01	24 ... 240 V AC/DC	3 CO contacts, hard gold-plated
3RS1800-1HQ00	3RS1800-2HQ00	24 V AC/DC; 110 ... 120 V AC					
3RS1800-1HP00	3RS1800-2HP00	24 V AC/DC; 220 ... 240 V AC					
3RS1800-1HW01	3RS1800-2HW01	24 ... 240 V AC/DC					
3RS1800-1HQ01	3RS1800-2HQ01	24 V AC/DC; 110 ... 120 V AC					
3RS1800-1HP01	3RS1800-2HP01	24 V AC/DC; 220 ... 240 V AC					

Coupling Relays

LZS coupling relays with plug-in relays

Overview

Coupling relays with plug-in relays can be ordered as complete units or as individual modules for customer assembly.

Function

The coupling relays with semiconductor output have low power consumption and are therefore particularly well suited to solid-state systems. In the versions equipped with LEDs, these indicate the switching state. The LZS:PT/MT coupling relays have a test button. This can be used to force the relays into the switching state and to lock it without electrical control. This is indicated by a raised petrol-colored lever.

Control with solid-state output

In the case of solid-state outputs (e.g. proximity switch) with overload and short-circuit protection, you must make allowance during configuration for the temporarily flowing capacitor charging currents! This is possible, for example, by using a suitable LZS coupling relay with plug-in relay.

Surge suppression

The 24 V DC relays LZX:RT and LZX:PT with LEDs can be supplied with, all others without integral surge suppression (free-wheel diode connected in parallel with A1/A2). The positive control supply voltage must be connected to coil terminal A1.

Mounting

The relays are plugged into the base and this is snapped onto a TH 35 standard mounting rail according to IEC 60715.

A fixing bracket can be ordered for the MT series that additionally fixes the relay into a plug-in base (under conditions of increased mechanical stress). For the RT and PT series, a combined fixing and ejection bracket is available which can be used to disassemble the relay where access is difficult, for example, when relays are mounted side-by-side.

They can be mounted as required.

Logical separation

The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for coil. Logical separation is not necessarily protective separation.

Protective separation

For protective separation, transfer of the voltage of one circuit to another circuit is prevented to a suitable degree of safety (requirements and tests are described in IEC 60947-1 in Appendix N).

Notes on the previous LZX series

The complete units and accessory parts of the LZX series are no longer listed in this catalog. The complete units of the LZS series are fully compatible with the corresponding units of the LZX series. Prices for the LZS series are lower than for the previous LZX series.

The LZX plug-in relays are available unchanged and are used accordingly in both the LZS and the LZX series.

Note:

Due to differences in geometry, the LED modules, plug-in bases, fixing brackets and labels can be combined and/or used only in the respective series, LZS or LZX.

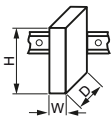


The LZS series offers not only service-proven screw connections but also versions with plug-in terminals (push-in).

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16204/td>

Manuals, see
<https://support.industry.siemens.com/cs/ww/en/ps/16204/man>

Relay type		LZX:RT print relay, 8-pole, (12.7 mm) 1 CO / 2 CO				LZX:PT industrial relay, 8-, 11- and 14-pole, (22.5 mm) 2 CO / 3 CO / 4 CO			
General data									
Dimensions (W x H x D)									
<ul style="list-style-type: none"> LZS:RT.A4 / LZS:PT.A5 LZS:RT.B4 / LZS:PT.B5 LZS:RT.D4 / LZS:PT.D5 		mm	15.5 x 78 x 71				28 x 74 x 72		
		mm	15.5 x 77 x 71				28 x 77 x 79		
		mm	15.5 x 98 x 71				28 x 98 x 79		
Rated control supply voltage U_s¹⁾	V	24 DC	24 AC	115 AC	230 AC	24 DC	24 AC	115 AC	230 AC
Rated insulation voltage U_i (Pollution degree 3)	V	250							
Overvoltage category Acc. to IEC 60664-1		III							
Protective separation Between coil and contacts Acc. to IEC 60947-1, Appendix N		Up to 250 V (with plug-in base LZS:RT78726) No (for complete units with standard base)				No			
Degree of protection		IP67				IP50			
Permissible ambient temperature	• During operation	°C	-40 ... +70						
	• During storage	°C	-40 ... +80						
Conductor cross-sections									
Connection type		 Screw terminals							
<ul style="list-style-type: none"> Solid Finely stranded with end sleeve Corresponding opening tool 	mm ²	2 x 2.5							
	mm ²	2 x 1.5							
	Screwdriver, size 3.0 ... 3.5 mm x 0.5 mm (3RA2908-1A)								
Connection type		 Plug-in terminals (push-in)							
<ul style="list-style-type: none"> Solid Finely stranded without end sleeve Finely stranded with end sleeve 	mm ²	1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5							
	mm ²	1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5							
	mm ²	1 x (0.75 ... 1.0), 2 x 0.75, 1 x 1.5							

¹⁾ AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.

Coupling Relays

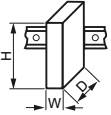

LZS coupling relays with plug-in relays

Relay type		LZX:RT print relay, 8-pole, (12.7 mm) 1 CO / 2 CO				LZX:PT industrial relay, 8-, 11- and 14-pole, (22.5 mm) 2 CO / 3 CO / 4 CO			
Rated control supply voltage U_s ¹⁾	V	24 DC	24 AC	115 AC	230 AC	24 DC	24 AC	115 AC	230 AC
Control side									
Operating range factor		0.9 ... 1.4		0.9 ... 1.1		0.9 ... 1.4		0.9 ... 1.1	
Power consumption at U_s									
• AC	VA	--	0.75		--	1			
• DC	W	0.4	--		0.75	--			
Release voltage	V	2.4	7.2	34.5	69	3.6	7.2	34.5	69
Protection circuit		Freewheel diode for complete unit				Freewheel diode in LED module			
Load side									
Switching voltage									
AC/DC	V	24 ... 250							
Rated currents²⁾									
• Conventional thermal current I_{th}									
- 1 CO contact	A	16		--		--			
- 2 CO contacts	A	6		--		12			
- 3 CO contacts	A	--		--		10			
- 4 CO contacts	A	--		--		6			
• Rated operational current I_g /AC-15 acc. to utilization categories (IEC 60947-5-1)	A	RT3 (1 CO contact): 6 RT4 (2 CO contacts): 2.5				PT2 (2 CO contacts): 5 PT3 (3 CO contacts): 5 PT5 (4 CO contacts): 4 (DC coils), 2 (AC coils)			
• Rated operational current I_g DC-13 with suppressor diode acc. to utilization categories (IEC 60947-5-1)	A	2 at 24 V, 0.27 at 230 V				PT2, PT3, PT5: 4 at 24 V, 0.5 at 230 V			
Short-circuit protection									
Short-circuit test with fuse links of operational class gG with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1									
• DIAZED, type 5SB	A	10				6			
Min. contact load (reliability: 1 ppm)									
		Standard 17 V, 10 mA; hard gold-plated 17 V/0.1 mA				Standard 17 V, 10 mA; hard gold-plated 20 V/1 mA			
Mechanical endurance	Oper- ating cycles	30 x 10 ⁶	10 x 10 ⁶						
Electrical endurance (resistive load at 250 V AC)	Oper- ating cycles	1 x 10 ⁵							

¹⁾ AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.

²⁾ Capacitive loads can result in micro-welding on the contacts.

LZS coupling relays with plug-in relays

Relay type	LZS industrial relays: MT, 11-pole (35.5 mm) 3 CO contacts				
General data					
Dimensions (W x H x D)		mm	36 x 69 x 36		
Rated control supply voltage U_s¹⁾	V	24 DC	24 AC	115 AC	230 AC
Rated insulation voltage U_i (Pollution degree 3)	V	250			
Overvoltage category Acc. to IEC 60664-1		III			
Protective separation Between coil and contacts Acc. to IEC 60947-1, Appendix N		No			
Degree of protection of relays/bases		IP50			
• Relays		IP20			
• Bases					
Permissible ambient temperature					
• During operation	°C	-40 ... +60	-45 ... +50		
• During storage	°C	-45 ... +80			
Conductor cross-sections					
Connection type		 Screw terminals			
• Solid	mm ²	2 x 2.5			
• Finely stranded with or without end sleeve	mm ²	2 x 1.5			
• Corresponding opening tool		Screwdriver, size 1 or Pozidriv 1			
Control side					
Operating range	V	18 ... 38	19.2 ... 38	92 ... 137	184 ... 264
Power consumption					
• AC	VA	--	2.3		
• DC	W	1.2	--		
Release voltage	V	2.4	9.6	46	92
Protection circuit		--			
Load side					
Switching voltage					
• AC/DC	V	24 ... 250			
Rated currents²⁾					
• Conventional thermal current I_{th}	A	10			
• Rated operational current I_g /DC-13 acc. to utilization categories (IEC 60947-5-1)	A	2 at 24 V, 0.27 at 230 V			
• Rated operational current I_g /AC-15 acc. to utilization categories (IEC 60947-5-1)	A	5 at 24 V and 230 V			
Short-circuit protection					
Short-circuit test with fuse links of operational class gG with short-circuit current $I_k = 1$ kA acc. to IEC 60947-5-1					
• DIAZED, type 5SB	A	10			
Min. contact load (reliability: 1 ppm)		12 V DC/10 mA			
Mechanical endurance	Operat- ing cycles	20 x 10 ⁶			
Electrical endurance (resistive load at 250 V AC)	Operat- ing cycles	4 x 10 ⁵			





¹⁾ AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.

²⁾ Capacitive loads can result in micro-welding on the contacts.

Coupling Relays

LZS coupling relays with plug-in relays

Selection and ordering data

Version	Rated control supply voltage U_s (at AC: 50/60 Hz)	Contacts, number of CO contacts	Width mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Complete units, 11- and 14-pole, PT series										
 LZS:PT3A5L24	Complete units with plug-in base				Screw terminals 					
	For snap-on mounting onto TH 35 standard mounting rail									
	Comprising:									
	<ul style="list-style-type: none"> • Coupling relays with plug-in relays • Standard plug-in base with screw terminals • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels 									
	3 CO contacts	24 DC 24 AC 115 AC 230 AC	3	28	2	LZS:PT3A5L24 LZS:PT3A5R24 LZS:PT3A5S15 LZS:PT3A5T30		1	5 units	41H
					2			1	5 units	41H
					2			1	5 units	41H
					2			1	5 units	41H
	4 CO contacts	24 DC 24 AC 115 AC 230 AC	4	28	2	LZS:PT5A5L24 LZS:PT5A5R24 LZS:PT5A5S15 LZS:PT5A5T30		1	5 units	41H
					2			1	5 units	41H
				2			1	5 units	41H	
				2			1	5 units	41H	
Complete units with plug-in base With logical separation										
For snap-on mounting onto TH 35 standard mounting rail										
Comprising:										
<ul style="list-style-type: none"> • Coupling relays with plug-in relays • Plug-in base with logical separation and screw terminals • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels 										
4 CO contacts	24 DC 24 AC 115 AC 230 AC	4	28	2	LZS:PT5B5L24 LZS:PT5B5R24 LZS:PT5B5S15 LZS:PT5B5T30		1	5 units	41H	
				2			1	5 units	41H	
				2			1	5 units	41H	
				2			1	5 units	41H	
Complete units, 8- and 14-pole, PT series										
 LZS:PT5D5L24	Complete units with plug-in base With logical separation				Plug-in terminals (push-in) 					
	For snap-on mounting onto TH 35 standard mounting rail									
	Comprising:									
	<ul style="list-style-type: none"> • Coupling relays with plug-in relays • Plug-in base with logical separation and plug-in terminals (push-in) • LED module (24 V DC version: LED module with freewheel diode) • Fixing/ejection brackets • Labels 									
	2 CO contacts	24 DC 230 AC	2	28	2	LZS:PT2D5L24 LZS:PT2D5T30		1	5 units	41H
					2			1	5 units	41H
	4 CO contacts	24 DC 24 AC 115 AC 230 AC	4	28	2	LZS:PT5D5L24 LZS:PT5D5R24 LZS:PT5D5S15 LZS:PT5D5T30		1	5 units	41H
					2			1	5 units	41H
					2			1	5 units	41H
					2			1	5 units	41H

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

LZS coupling relays with plug-in relays

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm	d					

Individual modules for customer assembly, PT series

Industrial relays, 8-, 11-, and 14-pole**Mini industrial relays**

- With test bracket and mechanical switch position indicator, without LED¹⁾



LZX:PT370024

<ul style="list-style-type: none"> • With hard gold-plating 	24 DC	2	22.5	▶	LZX:PT270024		1	1 unit	41H	
		3		▶	LZX:PT370024		1	1 unit	41H	
		4		▶	LZX:PT570024		1	1 unit	41H	
	24 AC	2	22.5	▶	LZX:PT270524		1	1 unit	41H	
		3		▶	LZX:PT370524		1	1 unit	41H	
		4		▶	LZX:PT570524		1	1 unit	41H	
	115 AC	2	22.5	5	▶	LZX:PT270615		1	1 unit	41H
		3		▶	LZX:PT370615	1		1 unit	41H	
		4		▶	LZX:PT570615	1		1 unit	41H	
	230 AC	2	22.5	▶	LZX:PT270730		1	1 unit	41H	
		3		▶	LZX:PT370730		1	1 unit	41H	
		4		▶	LZX:PT570730		1	1 unit	41H	
<ul style="list-style-type: none"> • Without test bracket 	24 DC 230 AC	4	22.5	▶	LZX:PT580024		1	1 unit	41H	
				▶	LZX:PT580730		1	1 unit	41H	
	24 DC 230 AC	4	22.5	▶	LZX:PT520024		1	1 unit	41H	
				5	▶		LZX:PT520730	1	1 unit	41H

Plug-in bases for PT relays**Standard plug-in bases**

For mounting onto TH 35 standard mounting rail



LZS:PT78740

				Screw terminals 					
--	2 3 4	28	▶	LZS:PT78720		1	1 unit	41H	
				LZS:PT78730		1	1 unit	41H	
				LZS:PT78740		1	1 unit	41H	

Plug-in bases with logical separation

For mounting onto TH 35 standard mounting rail



LZS:PT78722

--	2	28	▶	LZS:PT78722		1	1 unit	41H
	4		▶	LZS:PT78742		1	1 unit	41H

Plug-in bases with logical separation

For mounting onto TH 35 standard mounting rail



LZS:PT7874P

				Plug-in terminals (push-in) 					
--	2	28	▶	LZS:PT7872P		1	1 unit	41H	
	4		▶	LZS:PT7874P		1	1 unit	41H	

¹⁾ The test bracket is designed to be non-latching. If the test bracket is pressed further until 90° has been reached, two small lugs break off and the test bracket can be latched in position.

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.


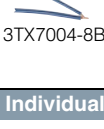

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

Coupling Relays





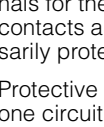
LZS coupling relays with plug-in relays

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm	d					

Individual modules for customer assembly, PT series

More individual modules										
LED modules										
• Red										
 LZS:PTML0024	- With freewheel diode	24 DC	--	12.5	▶	LZS:PTML0024		1	1 unit	41H
	- Without freewheel diode	24 AC/DC			▶	LZS:PTML0524		1	1 unit	41H
		110 ... 230 AC/DC			▶	LZS:PTML0730		1	1 unit	41H
• Green										
 LZS:PTMG0024	- With freewheel diode	24 DC	--	12.5	▶	LZS:PTMG0024		1	1 unit	41H
	- Without freewheel diode	24 AC/DC			▶	LZS:PTMG0524		1	1 unit	41H
		110 ... 230 AC/DC			▶	LZS:PTMG0730		1	1 unit	41H
Fixing/ejection brackets for PT base with logical separation										
 LZS:PT17021	Screw terminals and plug-in terminals (push-in)	--	--	26	▶	LZS:PT17021		100	10 units	41H
	Fixing/ejection brackets for standard plug-in base without logical separation									
 LZS:PT17024	Screw terminals	--	--	26	▶	LZS:PT17024		100	10 units	41H
	Labels									
 LZS:PT17040		--	--	26	▶	LZS:PT17040		100	10 units	41H
	RC elements									
 LZS:PTMU0730	6 ... 60 AC	--	--	26	▶	LZS:PTMU0524		1	1 unit	41H
	110 ... 230 AC				▶	LZS:PTMU0730		1	1 unit	41H
Freewheel diodes with connection to A1										
 LZS:PTMT00A0	6 ... 230 DC	--	--	26	▶	LZS:PTMT00A0		1	1 unit	41H
	Connecting cables, 24-pole									
 3TX7004-8BA00	Current carrying capacity 12 A, with supply cable, blue				2	3TX7004-8BA00		1	1 unit	41H
	--	--	--	--						
Connecting combs for PT screw base										
 LZS:PT170R6	6-pole, 10 A current carrying capacity, natural-colored				5	LZS:PT170R6		1	10 units	41H
	--	--	--	--						
Connecting brackets for PT push-in base										
 LZS:PT170P1	2-pole, 10 A current carrying capacity, natural-colored				5	LZS:PT170P1		1	10 units	41H
	--	--	--	--						

Individual modules for customer assembly, MT series

Industrial relays, 11-pole										
Industrial relays with test bracket										
 LZX:MT326024	Without LED	24 DC	3	35.5	2	LZX:MT321024		1	1 unit	41H
	With LED				▶	LZX:MT323024		1	1 unit	41H
	Without LED	24 AC	3	35.5	2	LZX:MT326024		1	1 unit	41H
	With LED				15	LZX:MT328024		1	1 unit	41H
	Without LED	115 AC	3	35.5	15	LZX:MT326115		1	1 unit	41H
	With LED				15	LZX:MT328115		1	1 unit	41H
 LZX:MT326230	Without LED	230 AC	3	35.5	2	LZX:MT326230		1	1 unit	41H
	With LED				2	LZX:MT328230		1	1 unit	41H
Plug-in bases										
 LZS:MT78750	For mounting onto TH 35 standard mounting rail					Screw terminals				
	--	--	--	38	▶	LZS:MT78750		1	1 unit	41H
Fixing brackets										
 LZS:MT28800		--	--	38	▶	LZS:MT28800		1	1 unit	41H







Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

SITOP DC power supplies such as 6EP1331-5BA00 or 6EP1331-5BA10 can be used for unavailable coil voltages, see page 15/3.

LZS coupling relays with plug-in relays

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Complete units, 8-pole, 5 mm pinning, RT series										
 LZS:RT4A4T30	Complete units with standard plug-in base				Screw terminals 					
	For snap-on mounting onto TH 35 standard mounting rail									
	Comprising:									
	• Coupling relays with plug-in relays									
	• Standard plug-in base with screw terminals									
	• LED module (24 V DC version: LED module with freewheel diode)									
	• Fixing/ejection brackets									
	• Labels									
	1 CO contact	24 DC 24 AC 115 AC 230 AC	1	15.5	2	LZS:RT3A4L24 LZS:RT3A4R24 LZS:RT3A4S15 LZS:RT3A4T30		1	5 units	41H
	2 CO contacts	24 DC 24 AC 115 AC 230 AC	2	15.5	2	LZS:RT4A4L24 LZS:RT4A4R24 LZS:RT4A4S15 LZS:RT4A4T30		1	5 units	41H
 LZS:RT4B4T30	Complete units with plug-in base With logical separation				Plug-in terminals (push-in) 					
	For snap-on mounting onto TH 35 standard mounting rail									
	Comprising:									
	• Coupling relays with plug-in relays									
	• Plug-in base with logical separation and screw terminals									
	• LED module (24 V DC version: LED module with freewheel diode)									
	• Fixing/ejection brackets									
	• Labels									
	1 CO contact	24 DC 24 AC 115 AC 230 AC	1	15.5	2	LZS:RT3B4L24 LZS:RT3B4R24 LZS:RT3B4S15 LZS:RT3B4T30		1	5 units	41H
	2 CO contacts	24 DC 24 AC 115 AC 230 AC	2	15.5	2	LZS:RT4B4L24 LZS:RT4B4R24 LZS:RT4B4S15 LZS:RT4B4T30		1	5 units	41H
 LZS:RT3D4L24	Complete units with plug-in base With logical separation				Plug-in terminals (push-in) 					
	For snap-on mounting onto TH 35 standard mounting rail									
	Comprising:									
	• Coupling relays with plug-in relays									
	• Plug-in base with logical separation and plug-in terminals (push-in)									
	• LED module (24 V DC version: LED module with freewheel diode)									
	• Fixing/ejection brackets									
	• Labels									
	1 CO contact	24 DC 24 AC 115 AC 230 AC	1	15.5	2	LZS:RT3D4L24 LZS:RT3D4R24 LZS:RT3D4S15 LZS:RT3D4T30		1	5 units	41H
	2 CO contacts	24 DC 24 AC 115 AC 230 AC	2	15.5	2	LZS:RT4D4L24 LZS:RT4D4R24 LZS:RT4D4S15 LZS:RT4D4T30		1	5 units	41H

Note:

Logical separation: The terminals for the contacts and the terminals for the coil are arranged on separate levels, e.g. above for contacts and below for the coil. Logical separation is not necessarily protective separation.

Protective separation: Protective separation prevents voltage of one circuit affecting another circuit with sufficient protection (IEC 61140).

Coupling Relays

LZS coupling relays with plug-in relays

Version	Rated control supply voltage U_s at 50/60 Hz AC	Contacts, number of CO contacts	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		mm	d					

Individual modules for customer assembly, RT series

Print relays, 8-pole, 5 mm pinning

	Print relays With hard gold-plating Version with 1 CO contact										
	LZX:RT314024	24 DC 230 AC	1	12.7	▶ 15	LZX:RT315024 LZX:RT315730		1 1	1 unit 1 unit	41H 41H	
	Print relays Version with 1 CO contact										
		24 DC 24 AC 115 AC 230 AC	1	12.7	▶ 15 15 ▶	LZX:RT314024 LZX:RT314524 LZX:RT314615 LZX:RT314730		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41H 41H 41H 41H	
	LZX:RT78725	Version with 2 CO contacts									
			12 DC 24 DC	2	12.7	5 ▶	LZX:RT424012 LZX:RT424024		1 1	1 unit 1 unit	41H 41H
	Version with 2 CO contacts										
		24 AC 115 AC 230 AC			▶ ▶ ▶	LZX:RT424524 LZX:RT424615 LZX:RT424730		1 1 1	1 unit 1 unit 1 unit	41H 41H 41H	
	LZX:RT78726	Standard plug-in bases For mounting onto TH 35 standard mounting rail									
			--	--	15.5	▶	Screw terminals LZX:RT78725		1	1 unit	41H
	Plug-in bases with logical separation For mounting onto TH 35 standard mounting rail										
		--	--	15.5	▶	LZX:RT78726		1	1 unit	41H	
	Plug-in bases with logical separation For mounting onto TH 35 standard mounting rail										
		--	--	15.5	▶	Plug-in terminals (push-in) LZX:RT7872P		1	1 unit	41H	
	LED modules										
	• Red										
		With freewheel diode	24 DC	--	15.5	▶	LZX:PTML0024		1	1 unit	41H
		Without freewheel diode	24 AC/DC 110 ... 230 AC/DC	--		▶ ▶	LZX:PTML0524 LZX:PTML0730		1 1	1 unit 1 unit	41H 41H
	• Green										
		With freewheel diode	24 DC	--	15.5	▶	LZX:PTMG0024		1	1 unit	41H
	Without freewheel diode	24 AC/DC 110 ... 230 AC/DC	--		▶ ▶	LZX:PTMG0524 LZX:PTMG0730		1 1	1 unit 1 unit	41H 41H	
	Fixing/ejection brackets for RT base										
		--	--	15.5	▶	LZX:RT17016		100	10 units	41H	
	Labels										
		--	--	15.5	▶	LZX:RT17040		100	10 units	41H	
	RC elements										
		6 ... 60 AC 110 ... 230 AC	--	15.5	▶ ▶	LZX:PTMU0524 LZX:PTMU0730		1 1	1 unit 1 unit	41H 41H	
	Freewheel diodes with connection to A1										
		6 ... 230 DC	--	15.5	▶	LZX:PTMT00A0		1	1 unit	41H	
	Connecting cables, 24-pole										
		Current carrying capacity 12 A, with supply cable, blue	--	--	--	2	3TX7004-8BA00		1	1 unit	41H
	Connecting combs for RT screw base										
		8-pole, 10 A current carrying capacity, natural-colored	--	--	--	▶	LZX:RT170R8		1	10 units	41H
	Connecting brackets for push-in base										
		2-pole, 10 A current carrying capacity, natural-colored	--	--	--	5	LZX:RT170P1		100	10 units	41H

Note:

SITOP DC power supplies such as 6EP1331-5BA00 or 6EP1331-5BA10 can be used for unavailable coil voltages, see page 15/3.

Switching Devices – Soft Starters and Solid-State Switching Devices

**Price groups**

PG 14O, 41B, 41C, 41E, 41L, 41H, 42G, 42H, 42J, 42S

6/2 **Introduction****SIRIUS 3RW soft starters**

6/4 General data

High Performance soft starters

6/12 **3RW55 soft starters NEW**

- 6/21 - Inline circuit
- 6/23 - Inside-delta circuit
- 6/25 - Accessories

6/27 3RW44 soft starters

- 6/36 - Inline circuit
- 6/39 - Inside-delta circuit
- 6/41 - Accessories

General Performance soft starters

6/42 **3RW52 soft starters NEW**

- 6/50 - Inline circuit
- 6/52 - Inside-delta circuit
- 6/54 - Accessories

Basic Performance soft starters

6/56 3RW40 soft starters

- 6/65 - Inline circuit
- 6/68 - Accessories
- 6/71 3RW30 soft starters
- 6/80 - Inline circuit
- 6/81 - Accessories

Spare parts

- 6/83 - for 3RW55 **NEW**
- 6/86 - for 3RW44
- 6/89 - for 3RW52 **NEW**
- 6/92 - for 3RW40

Software

- 14/4 Simulation Tool for Soft Starters (STS)
- 14/5 **SIRIUS Soft Starter ES (TIA Portal) NEW**
- 14/8 SIRIUS 3RW44 Soft Starter block library for SIMATIC PCS 7

Solid-state switching devices for resistive/inductive loads

6/93 General data

Solid-state relays

6/98 General data

6/99 SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

6/104 SIRIUS 3RF20 solid-state relays, single-phase, 45 mm

6/108 SIRIUS 3RF22 solid-state relays, three-phase, 45 mm

Solid-state contactors

6/111 General data

6/112 SIRIUS 3RF23 solid-state contactors, single-phase

6/122 SIRIUS 3RF24 solid-state contactors, three-phase

Function modules

6/126 General data

6/133 SIRIUS converters for 3RF2

6/134 SIRIUS load monitoring for 3RF2

6/135 SIRIUS heating current monitoring for 3RF2

6/136 SIRIUS power controllers for 3RF2

6/137 SIRIUS power regulators for 3RF2

Solid-state switching devices for switching motorsSolid-state contactors

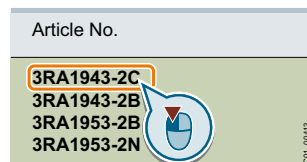
6/138 General data

6/142 SIRIUS 3RF34 solid-state contactors, three-phase

6/146 SIRIUS 3RF34 solid-state reversing contactors, three-phase

clickable

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.



Or directly on the Internet, e.g.
www.siemens.com/product?3RA1943-2C

Switching Devices – Soft Starters and Solid-State Switching Devices

Introduction

Overview

More information

Homepage, see www.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW
 TIA Selection Tool Cloud (TST Cloud), see <http://mall.industry.siemens.com/spice/TSTWeb/?kmat=Sirius3rwFolder>

Industry Online Support (SIOS), see <https://support.industry.siemens.com/cs/ww/en/view/109747404>
 Simulation Tool for Soft Starters (STS), see page 6/7 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>



3RW55



3RW44



3RW52



3RW40



3RW30

Page

3RW soft starters

High Performance soft starters

3RW55 soft starters

- TIA integration optional
- Plug-in communication modules for PROFINET, PROFIBUS and Modbus
- Removable HMI module with color display, local interface and slot for a micro SD memory card
- Extended protection functions
- Up to 560 kW at 400 V (can be used in supply systems up to 690 V)
- Automatic parameterization for simple commissioning and reliability even under changing load conditions
- Hybrid switching devices and three-phase motor control for minimum power loss and optimum/symmetrical motor control
- Pump stop for reduced mechanical stress and optimum pump stop control

6/12

3RW44 soft starters

- TIA Integration optional
- PROFIBUS and PROFINET
- Integrated display
- External display/control module optional
- Extended protection functions
- Up to 1200 kW at 400 V (can be used in supply systems up to 690 V)

6/27

General Performance soft starters

3RW52 soft starters

- TIA integration optional
- Plug-in communication modules for PROFINET, PROFIBUS and Modbus
- HMI modules optional
- Soft starting and stopping
- Current limiting
- Motor overload protection
- Up to 560 kW at 400 V (can be used in supply systems up to 600 V)
- Hybrid switching devices and three-phase motor control
- Soft Torque for reduced mechanical loading and optimum pump stop control
- Parameterization using potentiometers

6/42

Basic Performance soft starters

3RW40 soft starters

- Soft starting and stopping
- Current limiting
- Motor overload protection
- Up to 250 kW at 400 V (can be used in supply systems up to 600 V)

6/56

3RW30 soft starters

- Soft starting with voltage ramp
- Up to 55 kW at 400 V (can be used in supply systems up to 480 V)

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Use of soft starters in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS 3RW soft starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see [Application Manual](#).

For more information, see [page 1/7](#).



		Article No.	Page
SIRIUS solid-state switching devices for switching resistive/inductive loads			
Solid-state relays			
Solid-state relays	<ul style="list-style-type: none"> • Widths of 22.5 mm and 45 mm • Compact and space-saving design • "Zero-point switching" version • Mounting onto existing heat sinks 	3RF21 3RF20 3RF22	6/99 6/104 6/108
Solid-state contactors			
Solid-state contactors	<ul style="list-style-type: none"> • Complete units comprising a solid-state relay and an optimized heat sink, "ready to use" • Compact and space-saving design • Versions for resistive loads "zero-point switching" and inductive loads "instantaneous switching" • Special versions "Low Noise" and "Short-Circuit Proof" 	3RF23 3RF24	6/112 6/122
Function modules			
	For extending the functionality of the 3RF21 solid-state relays and the 3RF23 solid-state contactors for many different applications:		
Converters	<ul style="list-style-type: none"> • For converting an analog input signal into an on/off ratio; can also be used on 3RF22 and 3RF24 three-phase switching devices 	3RF2900-0EA18	6/133
Load monitoring	<ul style="list-style-type: none"> • For load monitoring of one or more loads (partial loads) 	3RF29...-0FA08, 3RF29.0-0GA..	6/134
Heating current monitoring	<ul style="list-style-type: none"> • For load monitoring of one or more loads (partial loads); remote teach 	3RF29...-0JA..	6/135
Power controllers	<ul style="list-style-type: none"> • For setting the current by means of a solid-state switching device depending on a setpoint value set by the power controller. There is a choice of full-wave control and generalized phase control. 	3RF29...-0KA.	6/136
Power regulators	<ul style="list-style-type: none"> • For regulating the current by means of a solid-state switching device, depending on a setpoint value set by the power regulator. Closed-loop control: full-wave control or generalized phase control 	3RF29.0-0HA..	6/137
SIRIUS solid-state switching devices for switching motors			
Solid-state contactors			
Solid-state contactors, solid-state reversing contactors	<ul style="list-style-type: none"> • Complete units in the insulated enclosure with integrated heat sink, "ready to use" • Compact and space-saving design • Version for motors, "instantaneous switching" 	3RF34	6/142, 6/146

Use of SIRIUS solid-state switching devices for switching motors in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS 3RF solid-state switching devices for switching motors in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, [see Application Manual](#).

For more information, [see page 1/7](#).

SIRIUS 3RW Soft Starters

General data

Overview

More information

Homepage, see www.siemens.com/soft-starter

Industry Mall, see www.siemens.com/product?3RW

TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/TSTWeb?kmat=Sirius3reFolder>

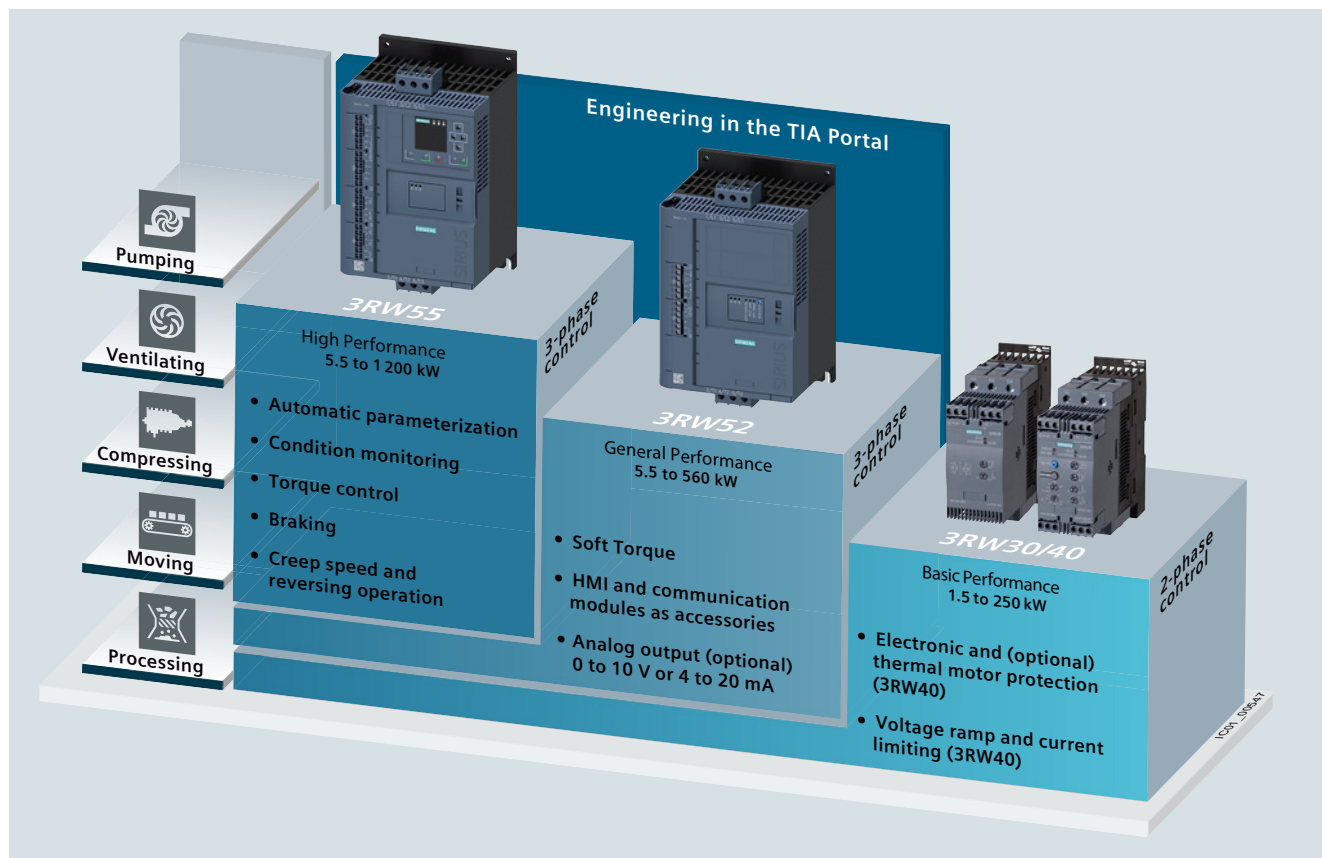
Industry Online Support (SIOS), see

<https://support.industry.siemens.com/cs/ww/en/view/109747404>

Simulation Tool for Soft Starters (STS), see page 6/7 or

<https://support.industry.siemens.com/cs/ww/en/view/101494917>

SIRIUS 3RW soft starters - as versatile as your application





Applications

High Performance

General Performance

Basic Performance

3RW55

3RW44

3RW52

3RW40

3RW30

Selection aid for soft starters

Normal starting (CLASS 10)

Pumps	●	●	●	●	●
Pumps with special pump stop (to prevent water hammer)	●	●	○		
Heat pumps	●	●	●	●	●
Hydraulic pumps	●	●	●	●	○
Presses	●	●	●	●	○
Conveyor belts	●	●	●	●	○
Roller conveyors	●	●	●	●	○
Screw conveyors	●	●	●	●	○
Escalators	●	●	●	●	
Piston compressors	●	●	●	●	
Screw compressors	●	●	●	●	
Small fans ¹⁾	●	●	●	●	
Centrifugal blowers	●	●	●	●	
Bow thrusters	●	●	●	●	

Heavy starting (CLASS 20)

Stirrers	●	●	○	○	
Extruders	●	●	○	○	
Lathes	●	●	○	○	
Milling machines	●	●	○	○	

Very heavy starting (CLASS 30)

Large fans ²⁾	●	●			
Circular saws/bandsaws	●	●			
Centrifuges	●	●			
Mills	●	●			
Crushers	●	●			

● Recommended soft starter

○ Possible soft starter

¹⁾ The mass inertia of the fan is <10 times the mass inertia of the motor.²⁾ The mass inertia of the fan is ≥10 times the mass inertia of the motor.

SIRIUS 3RW Soft Starters

General data



SIRIUS soft starters	High Performance		General Performance	Basic Performance		
	3RW55	3RW44	3RW52	3RW40	3RW30	
General technical specifications						
Operational current at 40 °C	A	13 ... 987	29 ... 1 214	13 ... 987	12.5 ... 432	3 ... 106
Operational voltage	V	200 ... 690 ¹⁾	200 ... 690 ¹⁾	200 ... 600	200 ... 600	200 ... 480
Operating power for three-phase motors						
• At 400 V, at 40 °C	- Inline circuit	kW	5.5 ... 315	15 ... 710	5.5 ... 315	1.5 ... 55
	- Inside-delta circuit	kW	11 ... 560	22 ... 1 200	11 ... 560	--
• At 460/480 V at 50 °C	- Inline circuit	hp	7.5 ... 400	15 ... 950	7.5 ... 400	1.5 ... 75
	- Inside-delta circuit	hp	10 ... 750	30 ... 1 700	10 ... 750	--
Ambient temperature²⁾	°C	-25 ... +60	0 ... +60	-25 ... +60	-25 ... +60	-25 ... +60
Soft starting/stopping		✓	✓	✓	✓	✓ ³⁾
Voltage ramp		✓	✓	✓	✓	✓
Starting voltage	%	20 ... 100	20 ... 100	30 ... 100	40 ... 100	40 ... 100
Ramp-up and ramp-down time	s	0 ... 360	0 ... 360	0 ... 20	0 ... 20	0 ... 20 ³⁾
Pump stop (torque control)⁴⁾						
• Starting torque	%	10 ... 100	20 ... 100	--	--	--
• Torque limit	%	20 ... 200	20 ... 200	--	--	--
Soft Torque (torque limit)		--	--	✓	--	--
Integral bypass contact system		✓	✓	✓	✓	✓
Intrinsic device protection		✓	✓	✓	✓	--
Motor overload protection		✓	✓	✓	✓ ⁵⁾	--
Thermistor motor protection evaluation		✓	✓	✓ ⁶⁾	✓ ⁶⁾	--
Analog output		✓	--	✓ ⁶⁾	--	--
Remote RESET		✓	✓	✓	✓ ⁶⁾	--
Adjustable current limiting		✓	✓	✓	✓	--
Inside-delta circuit¹⁾		✓	✓	✓	--	--
Breakaway pulse		✓	✓	--	--	--
Automatic parameterization		✓	--	--	--	--
Pump cleaning		✓	--	--	--	--
Reversing duty		✓	--	--	--	--
Condition monitoring		✓	--	--	--	--
User account administration⁸⁾		✓	--	--	--	--
Creep speed in both directions of rotation		✓	✓	--	--	--
DC braking⁴⁾⁷⁾		✓	✓	--	--	--
Combined braking⁴⁾⁷⁾		✓	✓	--	--	--
Motor heating		✓	✓	--	--	--
Communication function⁹⁾		✓	✓	✓	--	--
HMI module installable in the cabinet door		✓	✓ ⁹⁾	✓ ⁹⁾	--	--
Operating measured value display		✓	✓	✓ ⁹⁾	--	--
Logbooks		✓	✓ ⁸⁾	✓ ⁹⁾	--	--
Event list		✓	✓	--	--	--
Slave pointer function		✓	✓	--	--	--
Trace function⁸⁾		✓	✓	--	--	--
Programmable control inputs and outputs						
Number of parameter sets		3	3	1	1	1
• Parameterizable via software ⁸⁾		✓	✓	--	--	--
Number of controlled phases		3	3	3	2	2
Heavy starting CLASS 30⁴⁾		✓	✓	--	--	--

✓ Function available

-- Function not available

1) Inside-delta circuit only up to line voltage 600 V.

2) Note derating above 40 °C.

3) Only soft starting available for 3RW30.

4) Calculate soft starter and motor with size allowance where required.

5) When using the motor overload protection according to ATEX, an upstream contactor is required.

6) Special device versions only.

7) Not possible in inside-delta circuit.

8) With software Soft Starter ES (TIA Portal).

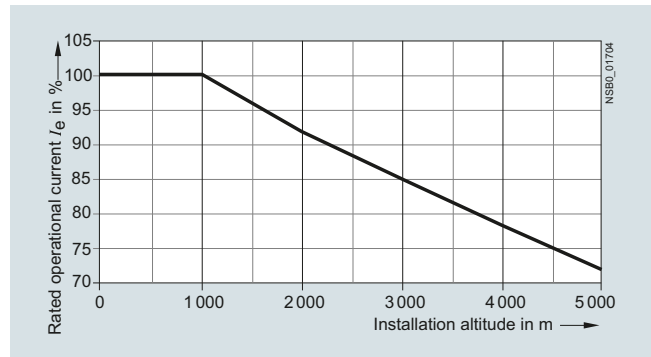
9) Only in conjunction with special accessories.

Constraints

The 3RW soft starters should always be designed on the basis of the required rated operational current of the motor. The motor ratings listed in the selection and ordering data are rough guide values and designed for basic starting conditions (CLASS 10). For other starting conditions we recommend the Simulation Tool for Soft Starters (STS).

Motor rating data in kW and hp is based on IEC 60947-4-1.

At an installation altitude above 2 000 m, max. permissible operational voltage is reduced to 480 V.



Installation altitude for SIRIUS 3RW soft starters

The selection and ordering data were determined for the following constraints (stand-alone installation without additional fan)

SIRIUS soft starters	High Performance 3RW55	3RW44	General Performance 3RW52	Basic Performance 3RW40	3RW30
Constraints					
Maximum starting time	s 20	10			3
Maximum starting current in % of motor current	I_e 300				
Maximum number of starts per hour	1/h 5				20

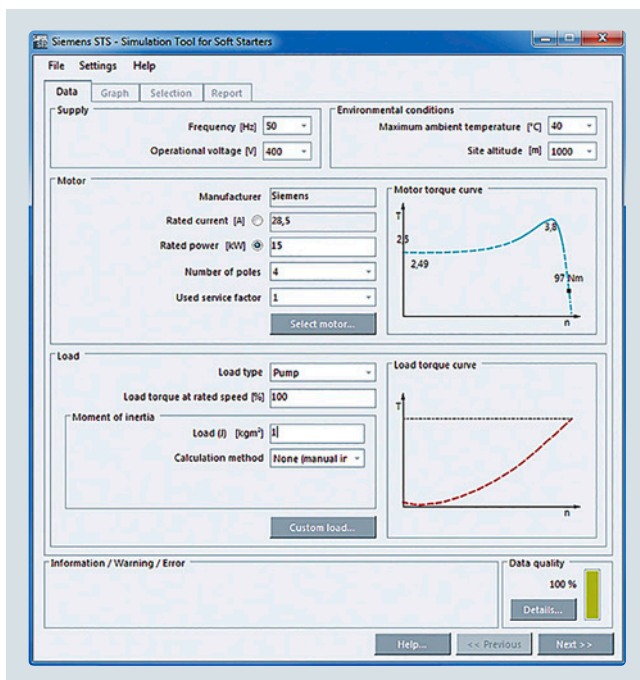
Simulation Tool for Soft Starters (STS)

The Simulation Tool for Soft Starters (STS) provides a convenient means of designing soft starters using a simple, quick and easy-to-use interface.

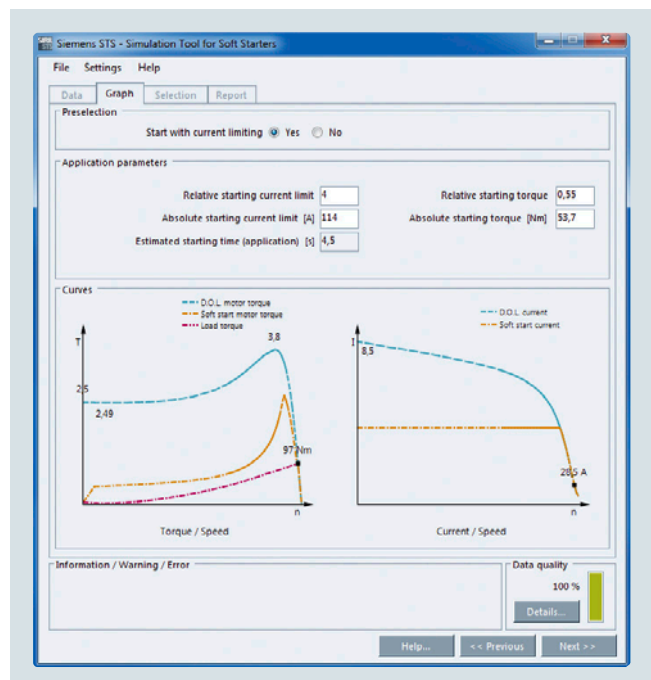
Entering the motor and load data will simulate the application and prompt suggestions for suitable soft starters.

Link to the free download of the [Simulation Tool for Soft Starters \(STS\)](#).

- Simple, quick and user-friendly interface
- Detailed and up-to-date Siemens motor database, including IE3 and IE4 motors.
- Simulation of heavy starting up to CLASS 30
- Update-capable (e.g. motors, load types, functions)
- Fast simulations with minimum input data
- Immediate, graphical curve charts of start operations with limit values
- Table view of suitable soft starters for the application



Easy input of motor and load data



Graphic display of start operations

SIRIUS 3RW Soft Starters

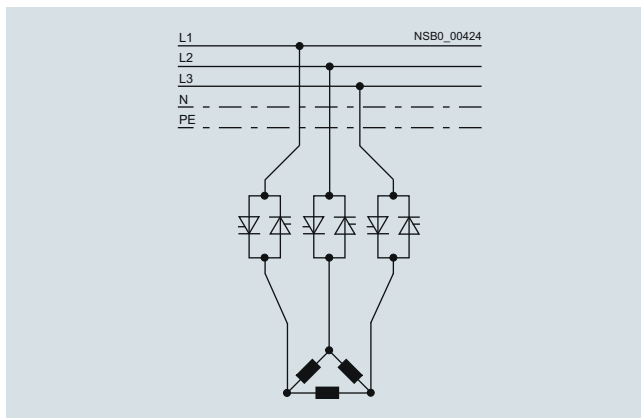
General data

Circuit concept

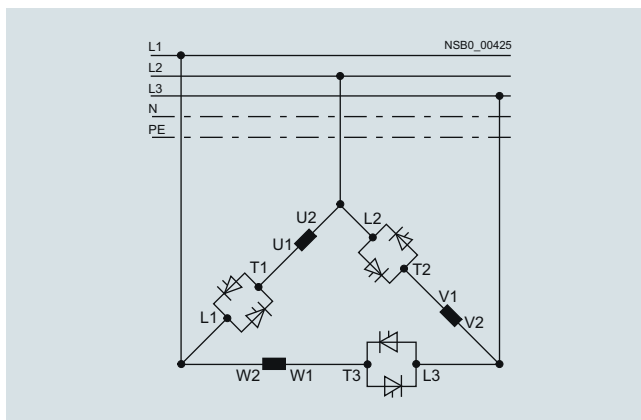
Three-phase controlled SIRIUS 3RW soft starters can be operated in two different types of circuit:

- **Inline circuit**
The controls for isolating and protecting the motor are simply connected in series with the soft starter. The motor is connected to the soft starter with three leads.
- **Inside-delta circuit**
The wiring is similar to that of wye-delta starters. The phases of the soft starter are connected in series with the individual motor windings. The soft starter then only has to carry the phase current, amounting to about 58% of the rated motor current (conductor current).

Comparison of the types of circuit



Inline circuit: Rated current I_e corresponds to the rated motor current I_n , three cables to the motor



Inside-delta circuit: Rated current I_e corresponds to approx. 58% of the rated motor current I_n , six cables to the motor (as for wye-delta starters)

Which circuit?

Using the inline circuit involves the lowest wiring outlay. If the soft starter to motor connections are long, this circuit is preferable.

The wiring complexity is twice as high when using the inside-delta circuit, but a smaller device can be used with the same rating. Thanks to the choice of operating mode between the inline circuit and inside-delta circuit, it is always possible to select the most favorable solution.

The braking function is possible only in the inline circuit. The inside-delta circuit cannot be used in 690 V line supplies.

Configuration

The electronic 3RW soft starters are designed for normal starting. In case of heavy starting or increased starting frequency, a larger unit must be selected. The 3RW44 and 3RW52 soft starters may be used in isolated supply networks (IT systems) up to 600 V AC and the 3RW55 soft starter even up to 690 V.

For long starting times it is recommended to have a PTC sensor or temperature switch in the motor. This also applies for the "torque control", "pump stop" and "DC braking" stopping modes, because during the stopping time in these modes, an additional current loading applies in contrast to coasting down.

No capacitive elements are permitted in the motor feeder between the SIRIUS 3RW soft starter and the motor (e.g. no reactive-power compensation equipment). In addition, neither static systems for reactive-power compensation nor dynamic PFC (Power Factor Correction) must be operated in parallel during starting and ramp-down of the soft starter. This is important to prevent faults arising on the compensation equipment and/or the soft starter.

All elements of the main circuit (such as fuses and controls) should be dimensioned for direct-on-line starting, following the load short-circuit conditions. Fuses and switching devices must be ordered separately. The harmonic component load for starting currents must be taken into consideration for the selection of motor starter protectors/circuit breakers (selection of release). Please observe the maximum switching frequencies specified in the technical specifications.

Notes:

When three-phase motors are switched on, voltage drops occur as a rule on starters of all types (direct-on-line starters, wye-delta starters, soft starters). The infeed transformer must always be dimensioned such that the voltage dip when starting the motor remains within the permissible tolerance. If the infeed transformer is dimensioned with only a small margin, it is best for the control voltage to be supplied from a separate circuit (independently of the main voltage) in order to avoid the potential switching off of the soft starter.

For dimensioning soft starters, we recommend our Simulation Tool for Soft Starters (STS), [see page 6/7](#) or our Technical Support:

<https://support.industry.siemens.com/My/ww/en/requests>

Recommended parameters for the initial commissioning of our SIRIUS 3RW soft starters are listed in every report of our Simulation Tool for Soft Starters (STS). In addition, our High Performance soft starters provide support by means of their commissioning wizards.

Motor feeders with soft starters

The type of coordination according to which the motor feeder with soft starter is mounted depends on the application-specific requirements. Normally, fuseless mounting (combination of motor starter protector and soft starter) is sufficient.

If type of coordination "2" is to be fulfilled, then semiconductor fuses must be fitted in the motor feeder.

ToC
1

Type of coordination "1" according to IEC 60947-4-1: After a short-circuit incident, the unit is defective and therefore unsuitable for further use (protection of persons and system guaranteed).

ToC
2

Type of coordination "2" according to IEC 60947-4-1: After a short-circuit incident the unit is suitable for further use (protection of persons and system guaranteed).

The type of coordination refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

The types of coordination are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Feeder tests and results

To keep the scope of feeder tests with SIRIUS 3RW soft starters within economically reasonable limits, tests were conducted with feeder components (motor starter protectors/circuit breakers, fuses) that cover the greatest number of use cases (different soft starter versions depending on, for example, line voltage, type of circuit, or necessary overdimensioning). For the combined tests that were conducted, the values for the short-circuit breaking capacity I_q in kA were determined and documented.

If the short-circuit breaking capacity is the same, of course, smaller motor starter protectors or fuses can also be used for the selected soft starter provided the dimensioning of the short-circuit components is suitable for the connected three-phase motor and the line protection for the cables used. For type of coordination "2" (with semiconductor protection), it is also necessary to compare the characteristics because the protection function would no longer be completely ensured if too small a fuse were selected. If the soft starter does not have a motor protection function, the motor protection must also be dimensioned appropriately.

Line protection and motor protection

Line protection and motor protection are not ensured in all operating cases, depending on:

- how the motor feeder is constructed (e.g. with fuses or motor starter protectors),
- whether the SIRIUS 3RW soft starters are operated within the specification relevant for the tests (IEC 60947-4-2)
- or whether the documented constraints (see page 6/7) have been observed.

There are operating states of the thyristors (caused, for example, by high starting frequencies or heavy starting) that do not permit an overload to be disconnected by the SIRIUS 3RW soft starter. These cases are very rare but cannot be ruled out in all cases.

In accordance with IEC 60947-4-2, the SIRIUS 3RW soft starters are dimensioned and checked for operation with up to 8 times the rated operational current I_e . For currents larger than this, reliable disconnection of an overcurrent by the SIRIUS 3RW soft starter is not ensured. Such large overcurrents have to be disconnected by an upstream switching element (e.g. by a motor starter protector/circuit breaker or a fuse in conjunction with an optional line contactor).

Motor protection by the SIRIUS 3RW soft starter is ensured for currents up to 8 times the rated operational current I_e in any case. Line protection is covered by the line-side motor starter protector/circuit breaker or fuse. These motor feeder components must be dimensioned accordingly and the cable cross-sections must be chosen to match.

Line protection

Line protection in motor feeders with soft starters is always covered by a fuse or a motor starter protector/circuit breaker both in case of an overload and in case of a short-circuit. The motor starter protector/circuit breaker must have an overload release. That is the case for motor starter protectors (e.g. SIRIUS 3RV20).

Circuit breakers without an overload release (e.g. SIRIUS 3RV23 motor starter protectors) must not be used because they do not provide overload protection. The feeder tests for these were therefore not performed. If the motor feeder with SIRIUS 3RW soft starters is configured without a fuse, motor starter protectors must be used that ensure tripping on an overload.

Motor protection

If fuses are used to provide protection against overload and short-circuit of the cables, the motor is protected by the SIRIUS 3RW soft starter. If the constraints (simple starting conditions CLASS 10, listed maximum values for starting current, starting time and number of starts per hour) of page 6/7 are observed, the motor feeders can be configured according to IEC as described in the section about soft starters (an optional line contactor is not required). If these preconditions are met, the SIRIUS 3RW soft starters are able to trip on overloads to protect the motor in any case.

In other starting conditions and on heavy starting, the following must be considered:

- Tested fuseless switchgear assemblies comprising SIRIUS 3RW soft starters and motor starter protectors only comply with CLASS 10.
To configure motor feeders, for example, for CLASS 20 or CLASS 30, fuses must be used together with SIRIUS 3RW soft starters.
- In applications with high starting frequencies or heavy starting as of CLASS 20, we recommend combining fuses with the use of a line contactor on the line side so that a motor overload is disconnected by the fault signaling contact of the soft starter in any case (that is, even in rare cases in which disconnection by the SIRIUS 3RW soft starter is no possible due to the operating state of the thyristors).

If circuit breakers with an overload release are used (e.g. SIRIUS 3RV20 motor starter protector), we recommend activating the motor protection function of the SIRIUS 3RW soft starter to protect the motor and setting the soft starter to the rated operational current I_e of the motor. We recommend setting the circuit breaker in such a way that it provides line protection but does not usually trip before the soft starter when a motor overload occurs.

SIRIUS 3RW Soft Starters

General data

Article No. scheme

Product versions		Article number								
Device type	High Performance soft starters	3RW55	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		3RW44	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	General Performance soft starters	3RW52	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Basic Performance soft starters	3RW40	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3RW30		<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Size/rated operational current I_e	e.g. 15 = 25 A in size S1		<input type="checkbox"/>	<input type="checkbox"/>						
Connection type	e.g. 1 = screw terminal					<input type="checkbox"/>				
Soft starter functionality	e.g. AC = with bypass and analog output, three-phase controlled						<input type="checkbox"/>	<input type="checkbox"/>		
Rated control supply voltage U_s	e.g. 0 = 24 V AC/DC								<input type="checkbox"/>	
Rated operational voltage U_e	e.g. 4 = 200 ... 480 V AC									<input type="checkbox"/>
Example		3RW52	1	5	-	1	A	C	0	4

Note:

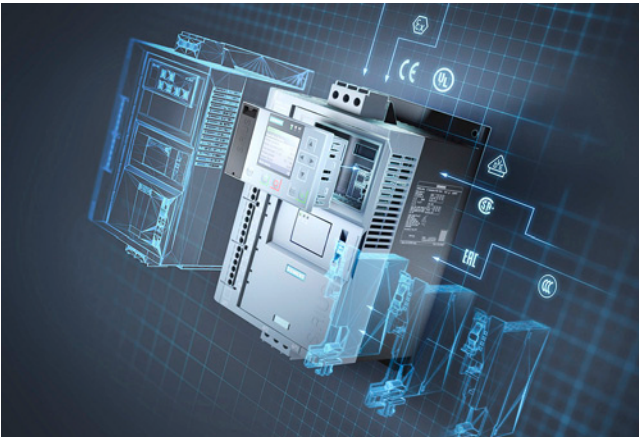
The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

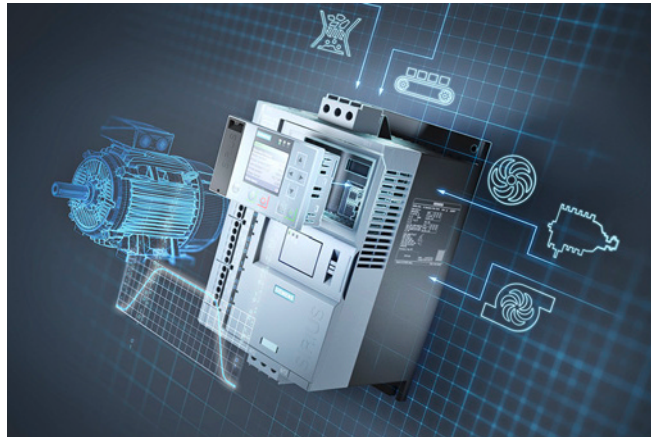
Can be flexibly deployed in many applications

Strong portfolio:
comprehensive, coordinated soft starter portfolio



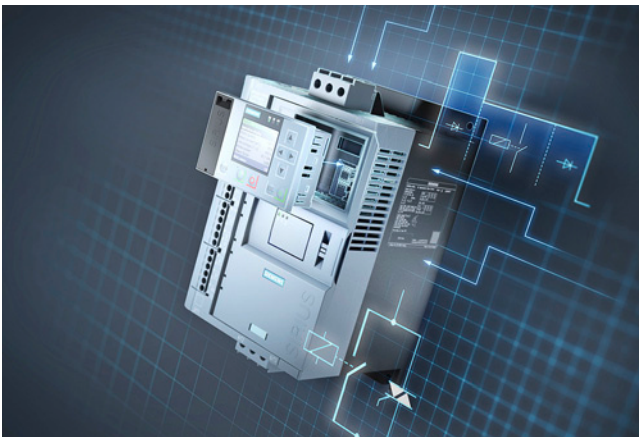
- The right hardware for all requirements, soft starters for tasks ranging from simple to demanding starting in Basic, General and High Performance versions
- Extensive portfolio for individual expansion: Optional HMIs for installation in the device or mounting on the control cabinet door
Communication via PROFINET/PROFIBUS and Modbus
- Designer enclosure with removable terminals, space-saving thanks to compact design and rugged thanks to coated printed circuit boards
- Can be used worldwide thanks to numerous certificates and approvals, IEC, UL, CSA, CCC

Intelligent operation:
concentrated, application-specific functionality



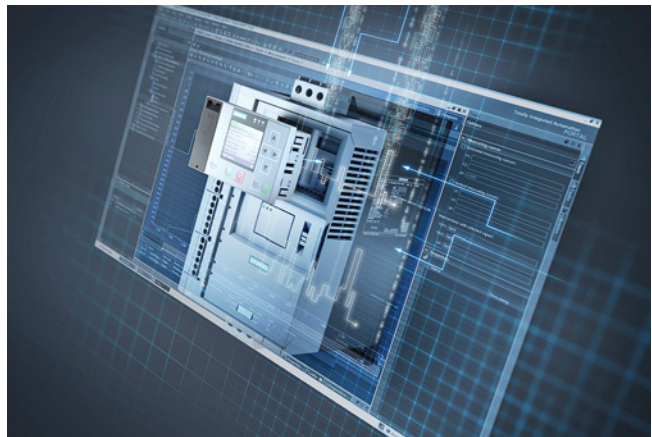
- Can be used in a wide variety of applications: Pumping, ventilating, compressing, moving and processing
- Integrated, self-learning automatic parameterization depending on motor starting conditions
- Application-specific functionality such as pump cleaning and pump stop
- Condition monitoring: Current and energy monitoring with warning and alarm limits, starting time monitoring

Efficient switching:
hybrid switching technology on board



- Energy-efficient switching and mechanical protection of the drive train thanks to soft starters with hybrid switching technology
- Low-wear switching extends the service life of the devices
- Soft starting prevents current peaks, thereby increasing the network stability
- Protection against disturbances in the application. Mechanical protection for the drive train

Ready for a digital future:
data available whenever and wherever needed



- Support from tools and data during engineering
- Simulation Tool for Soft Starters for support during product selection
- Very simple, standardized commissioning and configuration via Soft Starter ES in TIA Portal
- Integration in the automation system via communication interfaces
- Data availability and analysis: large volumes of data at any time and anywhere, even into MindSphere

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW55 Soft Starters

General data **NEW**

Overview

More information

Homepage, see www.siemens.com/soft-starter

Industry Mall, see www.siemens.com/product?3RW

TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/tstweb/?KMAT=3rw55>

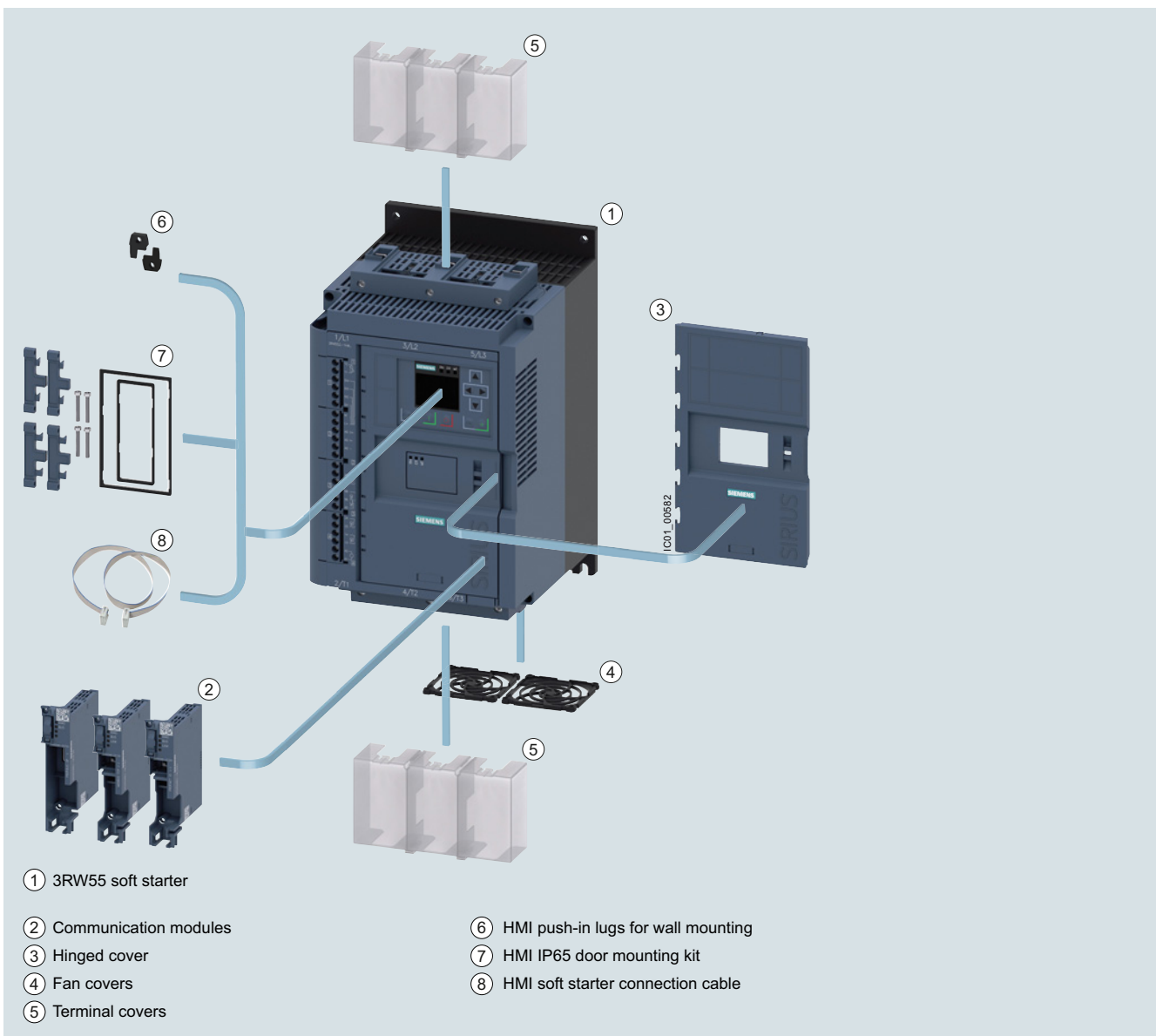
Simulation Tool for Soft Starters (STS), see page 6/7 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

SIRIUS Soft Starter ES (TIA Portal), see page 14/5

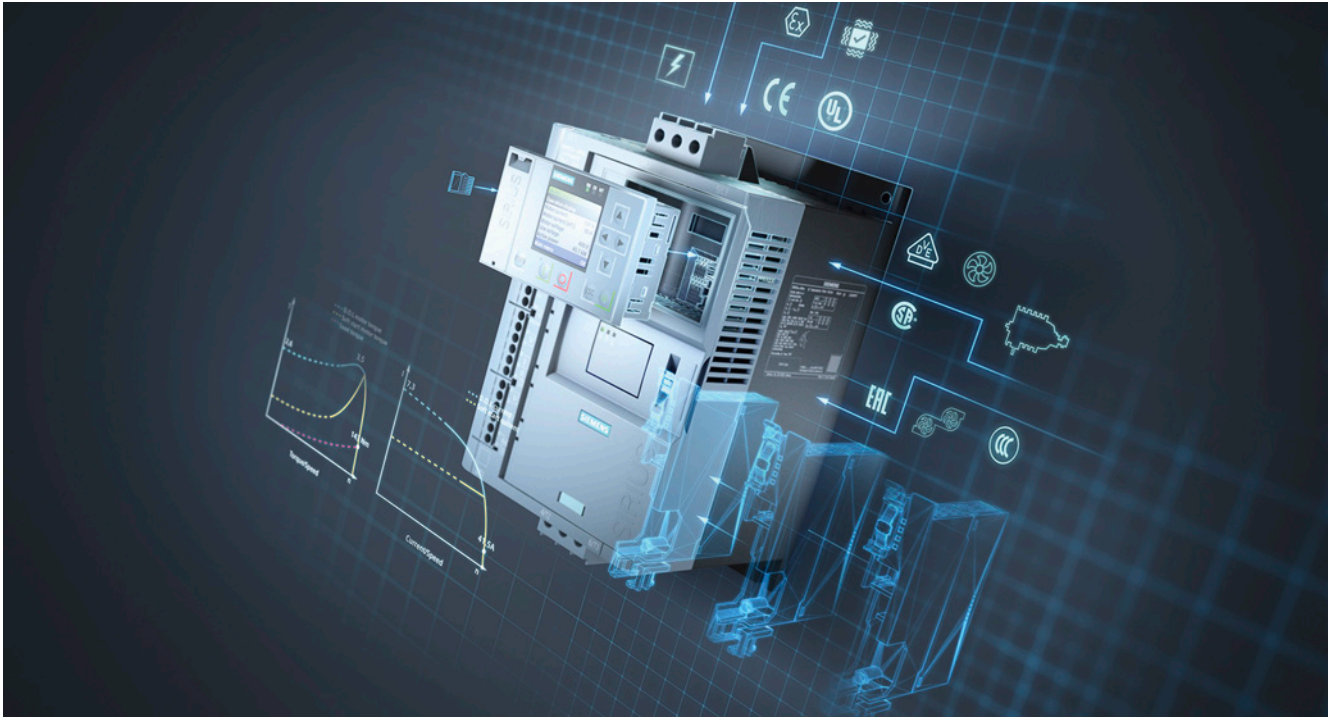


Equipped with the utmost functionality, the SIRIUS 3RW55 High Performance soft starters confidently handle even difficult starting and stopping operations. Thanks to innovative torque control, the device can be used for drives with an output of between 5.5 kW and 560 kW (at 400 V).

The functions have been specially designed to offer maximum user friendliness. By means of the detachable HMI (with color display, local interface and a slot for MicroSD memory card) and plug-in communication modules (PROFINET, PROFIBUS, Modbus), they ensure maximum flexibility. With their modern hybrid switching technology, the SIRIUS 3RW55 soft starters offer efficient switching for long-term, energy-saving use.



3RW55 High Performance soft starter with accessories (see page 6/25)

Benefits


Product characteristics / function	Performance features / benefits
Automatic parameterization	Extremely simple commissioning and reliability even under changing load conditions
Hybrid switching devices and three-phase motor control	Minimum power loss and optimum/symmetrical motor control
Integration into TIA Portal – communication modules optional	Efficient configuration and maximum flexibility in automation engineering
HMI with color display, local interface, slot for micro SD card	Maximum flexibility with regard to user interface and intuitive menu guidance
Pump stop and torque control	Reduced mechanical loading and optimum pump stop control

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW55 Soft Starters

General data **NEW**

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/25099/td>
 Manual "SIRIUS 3RW55 Soft Starter", see <https://support.industry.siemens.com/cs/ww/en/view/109753752>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/25099/faq>

Simulation Tool for Soft Starters (STS), see page 6/7 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

Type	3RW551.-.HA.4 3RW551.-.HA.5	3RW552.-.HA.6 3RW553.-.HA.6	3RW552.-.HA.4 3RW553.-.HA.4	3RW554.-.HA.4	3RW554.-.HA.6
Installation/fixing/dimensions					
Width x height x depth					
	mm	170 × 275 × 152	185 × 306 × 203		210 × 393 × 203
Type of fixing	Screw fixing				
Mounting position	Vertical (can be rotated +/-90° and tilted +/- 22.5° forward or backward)				
Distance to be maintained with side-by-side mounting					
• Above	mm	100			
• At the side	mm	5			
• Below	mm	75			
Maximum installation altitude above sea level¹⁾	m	5 000	2 000	5 000	2 000
Ambient conditions					
Ambient temperature					
• During operation ²⁾	°C	-25 ... +60			
• During storage	°C	-40 ... +80			
Environmental category according to IEC 60721					
• During operation	3K6 (no ice formation, no condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6				
• During storage	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not enter the devices), 1M4				
• During transport	2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)				

¹⁾ Derating from 1 000 m, see [Manual or characteristic curve on page 6/7](#).

²⁾ Note derating above 40 °C.

Type		3RW55...-HA0.	3RW55...-HA1.
Control circuit/control			
Control supply voltage			
• At AC/DC, rated value	V	24/24	--/--
• At AC	V	--/--	110 ... 250
• Relative negative tolerance/ relative positive tolerance with DC	%	-20/20	--/--
• Relative negative tolerance/ relative positive tolerance with AC	%	-20/20	-15/10
Frequency of the control supply voltage	Hz	50 ... 60	
• Relative negative tolerance/ relative positive tolerance	%	-10/10	
Type of overvoltage protection		Varistors	
Type of short-circuit protection for control circuit¹⁾		Fuse 4 A gG ($I_{cu} = 1$ kA), fuse 6 A quick-response ($I_{cu} = 1$ kA), MCB C1 ($I_{cu} = 600$ A), MCB C6 ($I_{cu} = 300$ A)	

¹⁾ Not included in scope of supply

Type		3RW55...-HA.4	3RW55...-HA.5	3RW55...-HA.6
Power electronics				
Operational voltage, rated value	V	200 ... 480	200 ... 600	200 ... 690
• Relative negative tolerance/ relative positive tolerance	%	-15/10		
Operational voltage for inside-delta circuit, rated value	V	200 ... 480	200 ... 600	--
• Relative negative tolerance/ relative positive tolerance	%	-15/10		--/--
Operating frequency, rated value	Hz	50 ... 60		
• Relative negative tolerance/ relative positive tolerance	%	-10/10		
Minimum load [% of I_M]¹⁾	%	10		
Maximum cable length between soft starter and motor	m	800		

¹⁾ Relative to set I_e .

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW55 Soft Starters

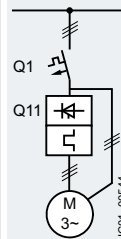
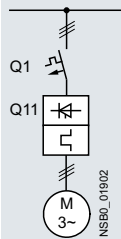
General data **NEW**

Motor feeders according to IEC with 3RV2/3VA motor starter protectors/circuit breakers (without semiconductor protection)

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, [see table](#)

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).



Soft starters	Motor starter protectors/circuit breakers for 400 V systems				Motor starter protectors/circuit breakers for 500 V systems					
	Q11 Type	Q1 Type	I_q kA	Q1 Type	I_q kA	Q1 Type	I_q kA	Q1 Type	I_q kA	
Type of coordination "1"	1	Inline circuit				Inside-delta circuit				
		3RW5513	3RV2032-4TA10	65	3RV2032-4TA10	18	3RV2032-4DA10	65	3RV2032-4DA10	18
		3RW5514	3RV2032-4DA10	65	3RV2032-4DA10	15	3RV2032-4EA10	65	3RV2032-4EA10	15
		3RW5515	3RV2032-4EA10	65	3RV2032-4EA10	15	3RV2032-4VA10	65	3RV2032-4VA10	15
		3RW5516	3RV2032-4VA10	65	3RV2032-4VA10	10	3RV2032-4JA10	65	3RV2032-4JA10	10
		3RW5517	3RV2032-4WA10	65	3RV2032-4WA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
		3RW5521	--	--	--	--	--	--	--	--
		3RW5524	3RV2032-4JA10	65	3RV2032-4JA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
		3RW5525	3VA2163-7MN32-0AA0	65	3VA2163-7MN32-0AA0	65	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	65
		3RW5526	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	65	3VA2216-7MN32-0AA0	65	3VA2216-7MN32-0AA0	65
		3RW5527	3VA2216-7MN32-0AA0	15	3VA2216-7MN32-0AA0	10	3VA2220-7MN32-0AA0	15	3VA2220-7MN32-0AA0	10
		3RW5534	3VA2216-7MN32-0AA0	65	--	--	3VA2220-7MN32-0AA0	65	--	--
		3RW5535	3VA2220-7MN32-0AA0	65	--	--	3VA2325-7MN32-0AA0	65	--	--
		3RW5536	3VA2325-7MN32-0AA0	30	3VA2325-7MN32-0AA0	10	3VA2440-7MN32-0AA0	30	3VA2440-7MN32-0AA0	10
		3RW5543	3VA2325-7MN32-0AA0	65	3VA2325-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
		3RW5544	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65
		3RW5545	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
		3RW5546	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
		3RW5547	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65
		3RW5548	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65

Note:

In 690 V systems, in motor feeder tests with soft starters demonstrable short-circuit breaking capacities can only be achieved with the use of fuses ($I_q > 5$ to 10 kA).

Motor feeders to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity $I_{q} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).

Soft starters	gG class fuse		Line contactor (optional)		gG class fuse		Line contactor (optional)		
	for systems up to 690 V	for systems up to 480 V	for systems up to 480 V	for systems up to 690 V	for systems up to 600 V	for systems up to 480 V in the supply cable	for systems up to 600 V in the supply cable	for systems up to 480 V in the delta	for systems up to 600 V in the delta
Q11	F1	Q21	Q21	F1	Q21	Q21	Q21	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "1" <small>ToC 1</small>	Inline circuit				Inside-delta circuit				
	3RW5513	3NA3820-6	3RT2025	3RT2025	3NA3820-6	3RT2027	3RT2035	3RT2025	3RT2025
	3RW5514	3NA3820-6	3RT2026	3RT2027	3NA3820-6	3RT2027	3RT2037	3RT2026	3RT2027
	3RW5515	3NA3822-6	3RT2027	3RT2037	3NA3822-6	3RT2036	3RT2037	3RT2027	3RT2037
	3RW5516	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2037	3RT2038	3RT2035	3RT2037
	3RW5517	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2038	3RT2046	3RT2035	3RT2037
	3RW5521	3NA3824-6	--	3RT2037	3NA3824-6	--	3RT2037	--	3RT2037
	3RW5524	3NA3824-6	3RT2036	3RT2037	3NA3824-6	3RT2046	3RT2047	3RT2036	3RT2037
	3RW5525	3NA3830-6	3RT2037	3RT2046	3NA3830-6	3RT2047	3RT1054	3RT2037	3RT2046
	3RW5526	3NA3132-6	3RT2038	3RT2046	3NA3132-6	3RT1055	3RT1055	3RT2038	3RT2046
	3RW5527	3NA3136-6	3RT2046	3RT2047	3NA3136-6	3RT1056	3RT1056	3RT2046	3RT2047
	3RW5534	3NA3244-6	3RT1054	3RT1054	3NA3244-6	3RT1064	3RT1064	3RT1054	3RT1054
	3RW5535	3NA3244-6	3RT1055	3RT1055	3NA3244-6	3RT1065	3RT1065	3RT1055	3RT1055
	3RW5536	3NA3365-6	3RT1056	3RT1064	3NA3365-6	3RT1066	3RT1075	3RT1056	3RT1064
	3RW5543	2 x 3NA3354-6	3RT1064	3RT1064	2 x 3NA3354-6	3RT1075	3RT1075	3RT1064	3RT1064
	3RW5544	2 x 3NA3354-6	3RT1065	3RT1065	2 x 3NA3354-6	3RT1076	3RT1076	3RT1065	3RT1065
	3RW5545	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF68	3TF68	3RT1075	3RT1075
3RW5546	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF69	3TF69	3RT1075	3RT1075	
3RW5547	2 x 3NA3365-6	3RT1076	3RT1276	2 x 3NA3365-6	3TF69	3TF69	3RT1076	3RT1276	
3RW5548	2 x 3NA3365-6	3TF68	3TF68	2 x 3NA3365-6	--	--	3TF68	3TF68	

Note:

In inside-delta circuits, motor feeders with soft starters can only be operated in systems with up to 600 V.

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW55 Soft Starters

General data **NEW**

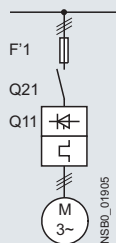
Motor feeders to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_{q} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).



Soft starters	gR class fuse		Line contactor (optional)	
	for systems up to 690 V		for systems up to 480 V	for systems up to 690 V
Q11	F'1		Q21	Q21
Type	Type		Type	Type
Type of coordination "2"	Inline circuit			
	<div style="border: 1px solid black; padding: 2px; display: inline-block;"> <small>ToC</small> 2 </div>			
3RW5513	3NE1815-0		3RT2025	3RT2025
3RW5514	3NE1802-0		3RT2026	3RT2027
3RW5515	3NE1817-0		3RT2027	3RT2037
3RW5516	3NE1818-0		3RT2035	3RT2037
3RW5517	3NE1820-0		3RT2035	3RT2037
3RW5521	3NE1817-0	--		3RT2037
3RW5524	3NE1021-2	3RT2036		3RT2037
3RW5525	3NE1022-0	3RT2037		3RT2046
3RW5526	3NE1224-0	3RT2038		3RT2046
3RW5527	3NE1224-0	3RT2046		3RT2047
3RW5534	3NE1225-0	3RT1054		3RT1054
3RW5535	3NE1227-0	3RT1055		3RT1055
3RW5536	3NE1230-0	3RT1056		3RT1064
3RW5543	--	3RT1064		3RT1064
3RW5544	3NE1331-0	3RT1065		3RT1065
3RW5545	3NE1334-2	3RT1075		3RT1075
3RW5546	3NE1334-2	3RT1075		3RT1075
3RW5547	3NE1436-2	3RT1076		3RT1276
3RW5548	3NE1437-2	3TF68		3TF68

Note:

In inside-delta circuits, a gR class full-range fuse could not provide the semiconductor protection of the delta-connected soft starter with a short-circuit breaking capacity that is adequate for practical use. In this case, we recommend using aR class partial-range fuses for semiconductor protection for type of coordination "2" ([see page 6/19](#)).

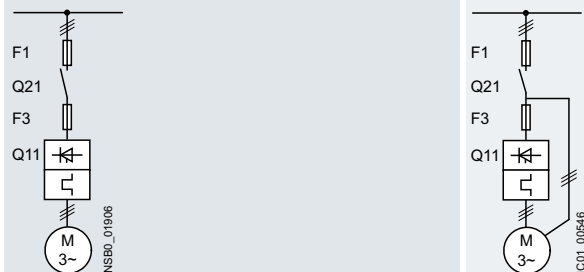
Motor feeders according to IEC with 3NE8 / 3NE3 / 3NC3 fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity $I_{q} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/9.



Soft starters	gG class fuse				aR class fuse		Line contactor (optional)		gG class fuse		aR class fuse		Line contactor (optional)	
	for systems up to 690 V	for systems up to 690 V	for systems up to 480 V	for systems up to 690 V	for systems up to 600 V	for systems up to 600 V	for systems up to 480 V in the supply cable	for systems up to 600 V in the supply cable	for systems up to 480 V in the delta	for systems up to 600 V in the delta	for systems up to 480 V in the supply cable	for systems up to 600 V in the supply cable	for systems up to 480 V in the delta	for systems up to 600 V in the delta
Q11	F1	F3	Q21	Q21	F1	F3	Q21	Q21	Q21	Q21	Q21	Q21	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "2"	Inline circuit				Inside-delta circuit									
	3RW5513	3NA3820-6	3NE8017-1	3RT2025	3RT2025	3NA3820-6	3NE8017-1	3RT2027	3RT2035	3RT2025	3RT2025	3RT2025	3RT2025	3RT2025
	3RW5514	3NA3820-6	3NE8020-1	3RT2026	3RT2027	3NA3820-6	3NE8020-1	3RT2027	3RT2037	3RT2026	3RT2026	3RT2026	3RT2026	3RT2026
	3RW5515	3NA3822-6	3NE8021-1	3RT2027	3RT2037	3NA3822-6	3NE8021-1	3RT2036	3RT2037	3RT2027	3RT2027	3RT2027	3RT2027	3RT2027
	3RW5516	3NA3824-6	3NE8022-1	3RT2035	3RT2037	3NA3824-6	3NE8022-1	3RT2037	3RT2038	3RT2035	3RT2035	3RT2035	3RT2035	3RT2035
	3RW5517	3NA3824-6	3NE8024-1	3RT2035	3RT2037	3NA3824-6	3NE8024-1	3RT2038	3RT2046	3RT2035	3RT2035	3RT2035	3RT2035	3RT2035
	3RW5521	3NA3824-6	3NE8021-1	--	3RT2037	3NA3824-6	3NE8021-1	--	3RT2037	--	--	--	--	3RT2037
	3RW5524	3NA3824-6	3NE8024-1	3RT2036	3RT2037	3NA3824-6	3NE8024-1	3RT2046	3RT2047	3RT2036	3RT2037	3RT2037	3RT2037	3RT2037
	3RW5525	3NA3830-6	3NE3227	3RT2037	3RT2046	3NA3830-6	3NE3227	3RT2047	3RT1054	3RT2037	3RT2037	3RT2037	3RT2037	3RT2046
	3RW5526	3NA3132-6	3NE3227	3RT2038	3RT2046	3NA3132-6	3NE3227	3RT1055	3RT1055	3RT2038	3RT2038	3RT2038	3RT2038	3RT2046
	3RW5527	3NA3136-6	3NE3227	3RT2046	3RT2047	3NA3136-6	3NE3227	3RT1056	3RT1056	3RT2046	3RT2046	3RT2046	3RT2046	3RT2047
	3RW5534	3NA3244-6	3NE3231	3RT1054	3RT1054	3NA3244-6	3NE3231	3RT1064	3RT1064	3RT1054	3RT1054	3RT1054	3RT1054	3RT1054
	3RW5535	3NA3244-6	3NE3233	3RT1055	3RT1055	3NA3244-6	3NE3233	3RT1065	3RT1065	3RT1055	3RT1055	3RT1055	3RT1055	3RT1055
	3RW5536	3NA3365-6	3NE3334-0B	3RT1056	3RT1064	3NA3365-6	3NE3334-0B	3RT1066	3RT1075	3RT1056	3RT1056	3RT1056	3RT1056	3RT1064
	3RW5543	2 x 3NA3354-6	--	3RT1064	3RT1064	2 x 3NA3354-6	--	3RT1075	3RT1075	3RT1064	3RT1064	3RT1064	3RT1064	3RT1064
	3RW5544	2 x 3NA3354-6	3NE3335	3RT1065	3RT1065	2 x 3NA3354-6	3NE3335	3RT1076	3RT1076	3RT1065	3RT1065	3RT1065	3RT1065	3RT1065
	3RW5545	2 x 3NA3365-6	--	3RT1075	3RT1075	2 x 3NA3365-6	--	3TF68	3TF68	3RT1075	3RT1075	3RT1075	3RT1075	3RT1075
3RW5546	2 x 3NA3365-6	--	3RT1075	3RT1075	2 x 3NA3365-6	--	3TF69	3TF69	3RT1075	3RT1075	3RT1075	3RT1075	3RT1075	
3RW5547	2 x 3NA3365-6	3NE3340-8	3RT1076	3RT1276	2 x 3NA3365-6	3NE3340-8	3TF69	3TF69	3RT1076	3RT1076	3RT1076	3RT1076	3RT1276	
3RW5548	2 x 3NA3365-6	3NC3342-1U	3TF68	3TF68	2 x 3NA3365-6	3NC3342-1U	--	--	3TF68	3TF68	3TF68	3TF68	3TF68	

Note:

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2/3VA motor starter protectors/circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 6/16). In these cases, optional line contactors can be dispensed with.

In inside-delta circuits, motor feeders with soft starters can only be operated in systems with up to 600 V.

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW55 Soft Starters

General data **NEW**

Reversing operation with reversing contactors

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).

(for an example circuit, [see 3RW55 Manual, Appendix A.3](#))

Soft starters	Reversing contactor assembly		Reversing contactor	
	for systems up to 480 V	for systems up to 690 V	for systems up to 480 V	for systems up to 690 V
Q11	Q21 / Q22	Q21 / Q22	Q21 / Q22	Q21 / Q22
Type	Type	Type	Type	Type
3RW5513	3RA2325	3RA2325	3RT2025	3RT2025
3RW5514	3RA2326	3RA2327	3RT2026	3RT2027
3RW5515	3RA2327	3RA2337	3RT2027	3RT2037
3RW5516	3RA2335	3RA2337	3RT2035	3RT2037
3RW5517	3RA2335	3RA2337	3RT2035	3RT2037
3RW5521	--	3RA2337	--	3RT2037
3RW5524	3RA2336	3RA2337	3RT2036	3RT2037
3RW5525	3RA2337	3RA2346	3RT2037	3RT2046
3RW5526	3RA2338	3RA2346	3RT2038	3RT2046
3RW5527	3RA2346	3RA2347	3RT2046	3RT2047
3RW5534	--	--	3RT1054	3RT1054
3RW5535	--	--	3RT1055	3RT1055
3RW5536	--	--	3RT1056	3RT1064
3RW5543	--	--	3RT1064	3RT1064
3RW5544	--	--	3RT1065	3RT1065
3RW5545	--	--	3RT1075	3RT1075
3RW5546	--	--	3RT1075	3RT1075
3RW5547	--	--	3RT1076	3RT1276
3RW5548	--	--	3TF68	3TF68

DC braking with braking contactors

(for an example circuit, [see 3RW55 Manual, Appendix A.3](#))

Soft starters	DC braking contactor	DC braking contactor assembly		DC braking contactor assembly	
	for systems up to 400 V with 2 NC contacts + 2 NO contacts parallel	for systems up to 480 V with 3 NC contacts parallel	for systems up to 480 V with 3 NO contacts parallel	for systems up to 690 V with 3 NC contacts parallel	for systems up to 690 V with 3 NO contacts parallel
Q11	Q93	Q91	Q92	Q91	Q92
Type	Type	Type	Type	Type	Type
3RW5513	3RT2517	3RT2015	3RT2016	3RT2015	3RT2016
3RW5514	3RT2518	3RT2015	3RT2017	3RT2015	3RT2023
3RW5515	3RT2526	3RT2015	3RT2025	3RT2015	3RT2025
3RW5516	3RT2526	3RT2015	3RT2025	3RT2015	3RT2027
3RW5517	3RT2535	3RT2015	3RT2027	3RT2015	3RT2027
3RW5521	--	--	--	3RT2015	3RT2025
3RW5524	3RT2535	3RT2016	3RT2027	3RT2016	3RT2035
3RW5525	--	3RT2024	3RT2027	3RT2024	3RT2037
3RW5526	--	3RT2025	3RT2035	3RT2025	3RT2037
3RW5527	--	3RT2027	3RT2036	3RT2027	3RT2037
3RW5534	--	3RT2035	3RT2037	3RT2035	3RT2038
3RW5535	--	3RT2036	3RT2038	3RT2036	3RT2046
3RW5536	--	3RT2037	3RT2046	3RT2037	3RT2047
3RW5543	--	3RT2045	3RT2047	3RT2045	3RT1054
3RW5544	--	3RT2045	3RT1055	3RT2045	3RT1055
3RW5545	--	3RT2446	3RT1056	3RT2446	3RT1056
3RW5546	--	3RT1055	3RT1056	3RT1055	3RT1064
3RW5547	--	3RT1456	3RT1065	3RT1456	3RT1065
3RW5548	--	3RT1456	3RT1066	3RT1456	3RT1075

SIRIUS 3RW Soft Starters

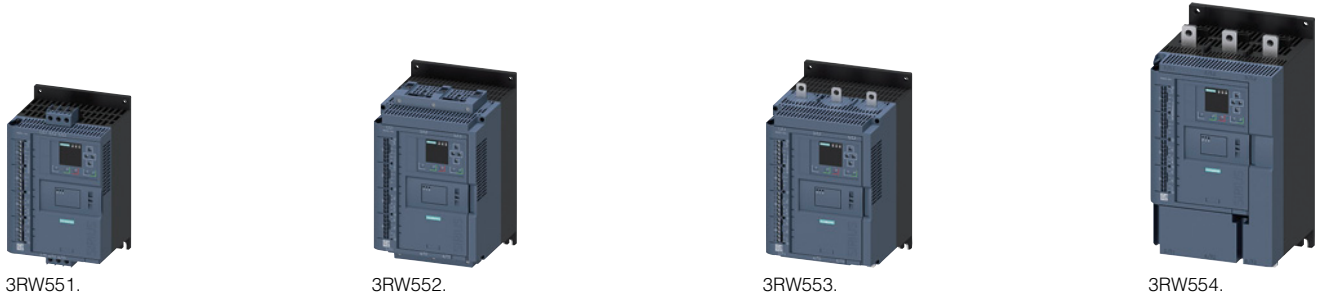
High Performance Soft Starters

3RW55 Soft Starters

NEW IE3/IE4 ready Inline circuit

Selection and ordering data

For normal starting (CLASS 10E)



At 40 °C					At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors				Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V	At 690 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V						
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 480 V															
13	3	5.5	--	--	11.5	3	3	7.5	--	5	3RW5513-□HA□4		1	1 unit	42S
18	4	7.5	--	--	15.9	3	3	10	--	5	3RW5514-□HA□4		1	1 unit	42S
25	5.5	11	--	--	22.3	5	5	15	--	5	3RW5515-□HA□4		1	1 unit	42S
32	7.5	15	--	--	28.4	7.5	7.5	15	--	5	3RW5516-□HA□4		1	1 unit	42S
38	11	18.5	--	--	33.5	10	10	20	--	5	3RW5517-□HA□4		1	1 unit	42S
47	11	22	--	--	41.6	10	15	30	--	5	3RW5524-□HA□4		1	1 unit	42S
63	18.5	30	--	--	55.5	15	20	40	--	5	3RW5525-□HA□4		1	1 unit	42S
77	22	37	--	--	68	20	20	50	--	5	3RW5526-□HA□4		1	1 unit	42S
93	22	45	--	--	82.5	25	25	60	--	5	3RW5527-□HA□4		1	1 unit	42S

Type of electrical connection for the control circuit

Screw terminals
Spring-type terminals

1
3

Control supply voltage

24 V AC/DC
110 ... 250 V AC

0
1

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C					At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors				Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V	At 690 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V						
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 480 V															
113	30	55	--	--	101	30	30	75	--	5	3RW5534-□HA□4		1	1 unit	42S
143	37	75	--	--	128	30	40	75	--	5	3RW5535-□HA□4		1	1 unit	42S
171	45	90	--	--	153	40	50	100	--	5	3RW5536-□HA□4		1	1 unit	42S
210	55	110	--	--	186	50	60	125	--	5	3RW5543-□HA□4		1	1 unit	42S
250	75	132	--	--	220	60	75	150	--	5	3RW5544-□HA□4		1	1 unit	42S
315	90	160	--	--	279	75	100	200	--	5	3RW5545-□HA□4		1	1 unit	42S
370	110	200	--	--	328	100	125	250	--	5	3RW5546-□HA□4		1	1 unit	42S
470	132	250	--	--	416	125	150	300	--	5	3RW5547-□HA□4		1	1 unit	42S
570	160	315	--	--	504	150	200	400	--	5	3RW5548-□HA□4		1	1 unit	42S

Type of electrical connection for the control circuit

Spring-type terminals
Screw terminals

2
6

Control supply voltage

24 V AC/DC
110 ... 250 V AC

0
1

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW55 Soft Starters

Inline circuit **IE3/IE4 ready** **NEW**

For normal starting (CLASS 10E)



3RW551.



3RW552.



3RW553.



3RW554.

At 40 °C					At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors				Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V	At 690 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V						
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 600 V															
13	3	5.5	7.5	--	11.5	3	3	7.5	10	5	3RW5513-□HA□5		1	1 unit	42S
18	4	7.5	11	--	15.9	3	3	10	15	5	3RW5514-□HA□5		1	1 unit	42S
25	5.5	11	15	--	22.3	5	5	15	20	5	3RW5515-□HA□5		1	1 unit	42S
32	7.5	15	18.5	--	28.4	7.5	7.5	15	25	5	3RW5516-□HA□5		1	1 unit	42S
38	11	18.5	22	--	33.5	10	10	20	30	5	3RW5517-□HA□5		1	1 unit	42S
Operational voltage 200 ... 690 V															
25	5.5	11	15	22	22.3	5	5	15	20	5	3RW5521-□HA□6		1	1 unit	42S
47	11	22	30	45	41.6	10	15	30	40	5	3RW5524-□HA□6		1	1 unit	42S
63	18.5	30	37	55	55.5	15	20	40	50	5	3RW5525-□HA□6		1	1 unit	42S
77	22	37	45	75	68	20	20	50	60	5	3RW5526-□HA□6		1	1 unit	42S
93	22	45	55	90	82.5	25	25	60	75	5	3RW5527-□HA□6		1	1 unit	42S

Type of electrical connection for the control circuit

- Screw terminals
- Spring-type terminals

1
3

0
1

Control supply voltage

- 24 V AC/DC
- 110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 690 V: Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C					At 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors				Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V	At 690 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V						
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 690 V															
113	30	55	75	110	101	30	30	75	75	5	3RW5534-□HA□6		1	1 unit	42S
143	37	75	90	132	128	30	40	75	100	5	3RW5535-□HA□6		1	1 unit	42S
171	45	90	110	160	153	40	50	100	125	5	3RW5536-□HA□6		1	1 unit	42S
210	55	110	132	200	186	50	60	125	150	5	3RW5543-□HA□6		1	1 unit	42S
250	75	132	160	250	220	60	75	150	200	5	3RW5544-□HA□6		1	1 unit	42S
315	90	160	200	315	279	75	100	200	250	5	3RW5545-□HA□6		1	1 unit	42S
370	110	200	250	355	328	100	125	250	300	5	3RW5546-□HA□6		1	1 unit	42S
470	132	250	315	400	416	125	150	300	400	5	3RW5547-□HA□6		1	1 unit	42S
570	160	315	355	560	504	150	200	400	500	5	3RW5548-□HA□6		1	1 unit	42S

Type of electrical connection for the control circuit

- Spring-type terminals
- Screw terminals

2
6

0
1

Control supply voltage

- 24 V AC/DC
- 110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 690 V: Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

SIRIUS 3RW Soft Starters

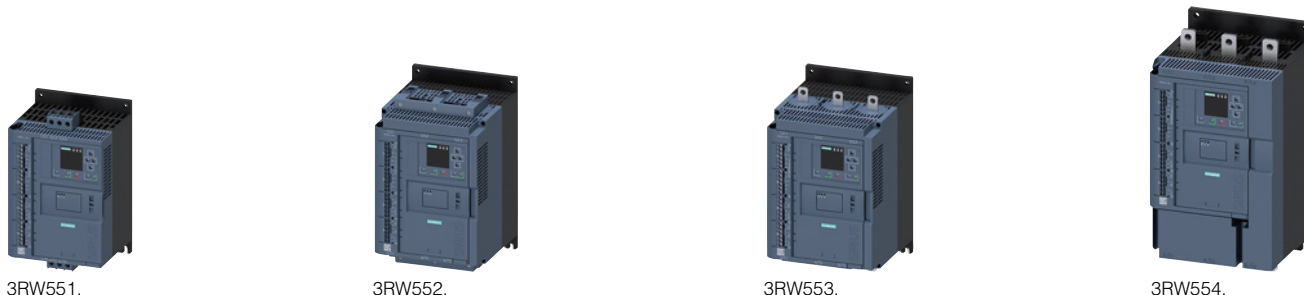
High Performance Soft Starters

3RW55 Soft Starters

NEW IE3/IE4 ready Inside-delta circuit

Selection and ordering data

For normal starting (CLASS 10E)



At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V	d				
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage for inside-delta circuit 200 ... 480 V													
22.5	5.5	11	--	19.9	5	5	15	--	5	3RW5513-□HA□4	1	1 unit	42S
31.2	7.5	15	--	28	5	5	15	--	5	3RW5514-□HA□4	1	1 unit	42S
43.3	11	18.5	--	39	7.5	7.5	20	--	5	3RW5515-□HA□4	1	1 unit	42S
55.4	15	22	--	49	10	10	30	--	5	3RW5516-□HA□4	1	1 unit	42S
65.8	18.5	30	--	58	15	15	40	--	5	3RW5517-□HA□4	1	1 unit	42S
81.4	22	45	--	72	20	25	50	--	5	3RW5524-□HA□4	1	1 unit	42S
109	30	55	--	96	25	30	60	--	5	3RW5525-□HA□4	1	1 unit	42S
133	37	75	--	118	30	40	75	--	5	3RW5526-□HA□4	1	1 unit	42S
161	45	90	--	143	40	50	100	--	5	3RW5527-□HA□4	1	1 unit	42S

Type of electrical connection for the control circuit

Screw terminals
Spring-type terminals

Control supply voltage

24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

1
3
0
1

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V	d				
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage for inside-delta circuit 200 ... 480 V													
195	55	110	--	175	50	60	125	--	5	3RW5534-□HA□4	1	1 unit	42S
247	75	132	--	222	60	75	150	--	5	3RW5535-□HA□4	1	1 unit	42S
296	90	160	--	265	75	100	200	--	5	3RW5536-□HA□4	1	1 unit	42S
363	110	200	--	322	100	125	250	--	5	3RW5543-□HA□4	1	1 unit	42S
433	132	250	--	381	125	150	300	--	5	3RW5544-□HA□4	1	1 unit	42S
545	160	315	--	483	150	200	400	--	5	3RW5545-□HA□4	1	1 unit	42S
640	200	355	--	568	150	200	450	--	5	3RW5546-□HA□4	1	1 unit	42S
814	250	400	--	721	200	250	600	--	5	3RW5547-□HA□4	1	1 unit	42S
987	315	560	--	873	300	350	750	--	5	3RW5548-□HA□4	1	1 unit	42S

Type of electrical connection for the control circuit

Spring-type terminals
Screw terminals

Control supply voltage

24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

2
6
0
1

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW55 Soft Starters

Inside-delta circuit **IE3/IE4 ready** **NEW**

For normal starting (CLASS 10E)



3RW551.



3RW552.



3RW553.

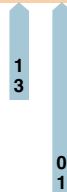


3RW554.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V	d					
A	kW	kW	kW	A	hp	hp	hp	hp						
Operational voltage for inside-delta circuit 200 ... 600 V														
22.5	5.5	11	15	19.9	5	5	15	20	5	3RW5513-□HA□5		1	1 unit	42S
31.2	7.5	15	18.5	28	5	5	15	25	5	3RW5514-□HA□5		1	1 unit	42S
43.3	11	18.5	22	39	7.5	7.5	20	30	5	3RW5515-□HA□5		1	1 unit	42S
55.4	15	22	30	49	10	10	30	40	5	3RW5516-□HA□5		1	1 unit	42S
65.8	18.5	30	37	58	15	15	40	50	5	3RW5517-□HA□5		1	1 unit	42S
43.3	11	18.5	22	39	7.5	7.5	20	30	5	3RW5521-□HA□6		1	1 unit	42S
81.4	22	45	45	72	20	25	50	60	5	3RW5524-□HA□6		1	1 unit	42S
109	30	55	55	96	25	30	60	75	5	3RW5525-□HA□6		1	1 unit	42S
133	37	75	90	118	30	40	75	100	5	3RW5526-□HA□6		1	1 unit	42S
161	45	90	110	143	40	50	100	125	5	3RW5527-□HA□6		1	1 unit	42S

Type of electrical connection for the control circuit

Screw terminals
Spring-type terminals



Control supply voltage

24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 600 V:
Standard delivery time SD = 2 days (d).

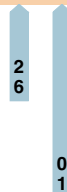
Note:

For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V	d					
A	kW	kW	kW	A	hp	hp	hp	hp						
Operational voltage for inside-delta circuit 200 ... 600 V														
195	55	110	132	175	50	60	125	150	5	3RW5534-□HA□6		1	1 unit	42S
247	75	132	160	222	60	75	150	200	5	3RW5535-□HA□6		1	1 unit	42S
296	90	160	200	265	75	100	200	250	5	3RW5536-□HA□6		1	1 unit	42S
363	110	200	250	322	100	125	250	300	5	3RW5543-□HA□6		1	1 unit	42S
433	132	250	315	381	125	150	300	350	5	3RW5544-□HA□6		1	1 unit	42S
545	160	315	355	483	150	200	400	500	5	3RW5545-□HA□6		1	1 unit	42S
640	200	355	450	568	150	200	450	600	5	3RW5546-□HA□6		1	1 unit	42S
814	250	400	500	721	200	250	600	750	5	3RW5547-□HA□6		1	1 unit	42S
987	315	560	630	873	300	350	750	950	5	3RW5548-□HA□6		1	1 unit	42S

Type of electrical connection for the control circuit

Spring-type terminals
Screw terminals



Control supply voltage


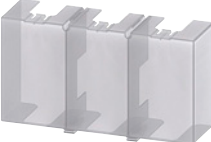
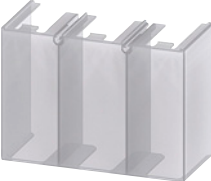


24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW55 soft starter with screw terminals for operational voltage up to 600 V:
Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

Selection and ordering data

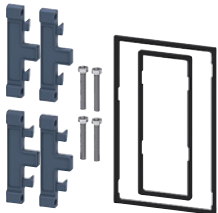


Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fan covers									
 3RW5983-0FC00	Fan cover	3RW551(1x), 3RW552, 3RW553 (2x)	--	--	1	3RW5983-0FC00	1	1 unit	42S
		3RW554	--	--	1	3RW5984-0FC00	1	1 unit	42S
Terminal covers									
 3RW5983-0TC20	Terminal cover	3RW552, 3RW553 (2x)	--	--	1	3RW5983-0TC20	1	1 unit	42S
		3RW554 (2x)	--	--	1	3RW5984-0TC20	1	1 unit	42S
 3RW5984-0TC20									
Enclosure components									
 3RW5950-0GL20	Hinged cover	3RW55	Without cutout	--	1	3RW5950-0GL20	1	1 unit	42S
Communication modules									
 3RW5980-0CS00	Communication module	3RW55	PROFINET Standard	--	1	3RW5980-0CS00	1	1 unit	42S
			PROFIBUS	--	1	3RW5980-0CP00	1	1 unit	42S
			Modbus TCP	--	1	3RW5980-0CT00	1	1 unit	42S

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW55 Soft Starters

Accessories **NEW**

Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
HMI modules									
 <p>3RW5980-0HD00</p>	Door mounting kit	3RW55	IP65	For HMI modules	1	3RW5980-0HD00	1	1 unit	42S
	Connection cables								
 <p>3UF793</p>	HMI connection cable	3RW55	5 m, round	For door mounting	1	3RW5980-0HC60	1	1 unit	42S
			2.5 m, round		▶	3UF7933-0BA00-0	1	1 unit	42J
			1.0 m, round		▶	3UF7937-0BA00-0	1	1 unit	42J
			0.5 m, round		▶	3UF7932-0BA00-0	1	1 unit	42J
Further accessories									
 <p>3ZY1311-0AA00</p>	Push-in lugs for wall mounting	--	Two lugs are required per device	--	2	3ZY1311-0AA00	1	10 units	41L

6

Overview

More information

Homepage, see www.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW
 TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/tstweb/?KMAT=3rw44>

Simulation Tool for Soft Starters (STS), see page 6/7 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

SIRIUS Soft Starter ES (TIA Portal), see page 14/5

SIRIUS 3RW44 Soft Starter block library for SIMATIC PCS 7, see page 14/8



The SIRIUS 3RW44 High Performance soft starters are suitable for the torque-controlled soft starting and stopping as well as braking of three-phase asynchronous motors.

In addition to soft starting and stopping, the SIRIUS 3RW44 soft starters provide numerous functions for higher-level requirements. Soft starters are available in a performance range up to 710 kW (at 400 V) in the inline circuit and up to 1 200 kW (at 400 V) in the inside-delta circuit.

Combinations of various starting, operating and stopping possibilities ensure optimum adaptation to the application-specific requirements.

Benefits



3RW442.



3RW443.



3RW444.



3RW445.



3RW446.

Product characteristics / function

Soft starting with breakaway pulse, torque control or adjustable current limiting

Keypad with a menu-prompted, multi-line graphic display with background lighting

Various setting options for the starting parameters such as starting torque, starting voltage, starting and stopping time, and much more in three separate parameter sets

Integral bypass contact system

Communication interface to the PC

Connection to PROFIBUS and PROFINET with optional PROFIBUS DP or PROFINET module

Performance features / benefits

Optimum adaptation to the requirements of the application

Simple and fast commissioning and maintenance

Efficient configuration and maximum flexibility in automation engineering

Reduction of power loss during operation

More accurate setting of the parameters as well as control and monitoring

Fast integration into higher-level controls

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW44 Soft Starters

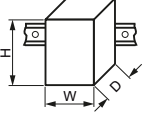
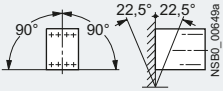
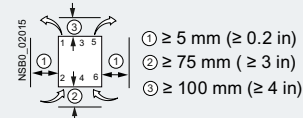
General data

Technical specifications

More information

Manual "SIRIUS 3RW44 Soft Starters", see <https://support.industry.siemens.com/cs/ww/en/view/21772518>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16214/faq>

Catalog LV 10, see www.siemens.com/lowvoltage/lv10

Type		3RW442.	3RW443.	3RW444.	3RW445.	3RW446.	
Mechanics and environment							
Mounting dimensions (W x H x D)							
<ul style="list-style-type: none"> • Screw terminals • Spring-type terminals 		mm	170 x 184 x 270	170 x 198 x 270	210 x 230 x 298	510 x 638.5 x 290	576 x 667 x 290
		mm	170 x 184 x 270	170 x 198 x 270	210 x 230 x 298	510 x 638.5 x 290	576 x 667 x 290
Permissible ambient temperature							
During operation	°C	0 ... +60; (derating from +40)					
During storage	°C	-25 ... +80					
Weight	kg	6.5	7.9	11.5	50	78	
Permissible mounting position							
							
Installation type							
Stand-alone installation							
							
Permissible installation altitude							
	m	5000 (derating from 1 000, see characteristic curve on page 6/7)					
Degree of protection							
IP00							

Type	Terminal		3RW44...BC3.	3RW44...BC4.
Control electronics				
Rated values				
Rated control supply voltage	A1/A2/PE	V	115 AC	230 AC
• Tolerance		%	-15/+10	
Rated frequency		Hz	50 ... 60	
• Tolerance		%	± 10	

Type		3RW44...BC.4	3RW44...BC.5	3RW44...BC.6
Power electronics				
Rated operational voltage for inline circuit¹⁾	V AC	200 ... 460	400 ... 600	400 ... 690
Tolerance	%	-15/+10		
Maximum blocking voltage (thyristor)	V AC	1 400	1 800	
Rated operational voltage for inside-delta circuit	V AC	200 ... 460	400 ... 600	
Tolerance	%	-15/+10		
Rated frequency	Hz	50 ... 60		
Tolerance	%	± 10		
Uninterrupted duty at 40 °C (% of I_e)	%	115		
Minimum load (% of set motor current I_M)	%	8		
Maximum cable length between soft starter and motor	m	500 ²⁾		

¹⁾ 3RW44 soft starters may be used in isolated supply networks (IT systems) up to 600 V AC.

²⁾ At the project configuration stage, it is important to make allowance for the voltage drop on the motor cable up to the motor connection.

Type		3RW4422	3RW4423	3RW4424	3RW4425	3RW4426	3RW4427
Power electronics							
Rated operational current I_e	A	29	36	47	57	77	93
Load rating with rated operational current I_e	<ul style="list-style-type: none"> According to IEC and UL/CSA¹⁾, for individual mounting, AC-53a - At 40 / 50 / 60 °C 						
	A	29/26/23	36/32/29	47/42/37	57/51/45	77/68/59	93/82/72
Smallest adjustable rated motor current I_M	A	5	7	9	11	15	18
For the motor overload protection							
Power loss							
<ul style="list-style-type: none"> In operation after completed starting with uninterrupted rated operational current (40/50/60 °C) approx. During starting with current limit set to 350% I_M (40 / 50 / 60 °C) 							
	W	8/7.5/7	10/9/8.5	32/31/29	36/34/31	45/41/37	55/51/47
	W	400/345/290	470/410/355	600/515/440	725/630/525	940/790/660	1160/980/830
Permissible rated motor current and starts per hour at 40 / 50 / 60 °C							
<ul style="list-style-type: none"> For normal starting (CLASS 10) - Rated motor current $I_M^{(2)}$, start-up time 10 s - Starts per hour³⁾ - Rated motor current $I_M^{(2)}$, start-up time 20 s - Starts per hour³⁾ 							
	A	29/26/23	36/32.5/29	47/42/37	57/51/45	77/68/59	93/82/72
	1/h	20	15	20	20	20	20
	A	29/26/23	36/32.5/29	47/42/37	57/51/45	77/68/59	93/82/72
	1/h	10	6	10	10	8	8

¹⁾ Measurement at 60 °C according to UL/CSA not required.

²⁾ Current limit on soft starter set to 350% I_M , ON period = 70%.
Maximum adjustable rated motor current I_M dependent on CLASS setting.

³⁾ For intermittent duty S4 with ON period = 70%, $T_u = 40 / 50 / 60$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW4434	3RW4435	3RW4436
Power electronics				
Rated operational current I_e	A	113	134	162
Load rating with rated operational current I_e	<ul style="list-style-type: none"> According to IEC and UL/CSA¹⁾, for individual mounting, AC-53a - At 40 / 50 / 60 °C 			
	A	113/100/88	134/117/100	162/145/125
Smallest adjustable rated motor current I_M	A	22	26	32
For the motor overload protection				
Power loss				
<ul style="list-style-type: none"> In operation after completed starting with uninterrupted rated operational current (40/50/60 °C) approx. During starting with current limit set to 350% I_M (40 / 50 / 60 °C) 				
	W	64/58/53	76/67/58	95/83/71
	W	1 350/1 140/970	1 700/1 400/1 140	2 460/1 980/1 620
Permissible rated motor current and starts per hour at 40 / 50 / 60 °C				
<ul style="list-style-type: none"> For normal starting (CLASS 10) - Rated motor current $I_M^{(2)}$, start-up time 10 s - Starts per hour³⁾ - Rated motor current $I_M^{(2)}$, start-up time 20 s - Starts per hour³⁾ 				
	A	113/100/88	134/117/100	162/145/125
	1/h	20	15	20
	A	113/100/88	134/117/100	162/145/125
	1/h	9	6	7

¹⁾ Measurement at 60 °C according to UL/CSA not required.

²⁾ Current limit on soft starter set to 350% I_M , ON period = 70%.
Maximum adjustable rated motor current I_M dependent on CLASS setting.

³⁾ For intermittent duty S4 with ON period = 70%, $T_u = 40 / 50 / 60$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW4443	3RW4444	3RW4445	3RW4446	3RW4447
Power electronics						
Rated operational current I_e	A	203	250	313	356	432
Load rating with rated operational current I_e	<ul style="list-style-type: none"> According to IEC and UL/CSA¹⁾, for individual mounting, AC-53a - At 40 / 50 / 60 °C 					
	A	203/180/156	250/215/185	313/280/250	356/315/280	432/385/335
Smallest adjustable rated motor current I_M	A	40	50	62	71	86
For the motor overload protection						
Power loss						
<ul style="list-style-type: none"> In operation after completed starting with uninterrupted rated operational current (40/50/60 °C) approx. During starting with current limit set to 350% I_M (40 / 50 / 60 °C) 						
	W	89/81/73	110/94/83	145/126/110	174/147/126	232/194/159
	W	3 350/2 600/2 150	4 000/2 900/2 350	4 470/4 000/3 400	5 350/4 050/3 500	5 860/5 020/4 200
Permissible rated motor current and starts per hour at 40 / 50 / 60 °C						
<ul style="list-style-type: none"> For normal starting (CLASS 10) - Rated motor current $I_M^{(2)}$, start-up time 10 s - Starts per hour³⁾ - Rated motor current $I_M^{(2)}$, start-up time 20 s - Starts per hour³⁾ 						
	A	203/180/156	250/215/185	313/280/250	356/315/280	432/385/335
	1/h	20	20	19	17	16
	A	203/180/156	250/215/185	313/280/250	356/315/280	432/385/335
	1/h	9	10	6	4	5

¹⁾ Measurement at 60 °C according to UL/CSA not required.

²⁾ Current limit on soft starter set to 350% I_M , ON period = 70%.
Maximum adjustable rated motor current I_M dependent on CLASS setting.

³⁾ For intermittent duty S4 with ON period = 70%, $T_u = 40 / 50 / 60$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW44 Soft Starters

General data

Type		3RW4453	3RW4454	3RW4455	3RW4456	3RW4457	3RW4458
Power electronics							
Rated operational current I_e	A	551	615	693	780	880	970
Load rating with rated operational current I_e							
• According to IEC and UL/CSA ¹⁾ , for individual mounting, AC-53a - At 40 / 50 / 60 °C	A	551/494/438	615/551/489	693/615/551	780/693/615	880/780/693	970/850/760
Smallest adjustable rated motor current I_M	A	110	123	138	156	176	194
For the motor overload protection							
Power loss							
• In operation after completed starting with uninterrupted rated operational current (40/50/60 °C) approx.	W	159/135/113	186/156/130	220/181/152	214/176/146	250/204/168	270/215/179
• During starting with current limit set to 350% I_M							
- At 40 °C	W	7 020	8 100	9 500	11 100	13 100	15 000
- At 50 °C	W	6 111	7 020	8 100	9 500	11 000	12 500
- At 60 °C	W	5 263	5 996	7 020	8 100	8 100	10 700
Permissible rated motor current and starts per hour at 40 / 50 / 60 °C							
• For normal starting (CLASS 10)							
- Rated motor current $I_M^{(2)}$, start-up time 10 s	A	551/494/438	615/551/489	693/615/551	780/693/615	880/780/693	970/850/760
- Starts per hour ³⁾	1/h	20	20	16	13	8	5
- Rated motor current $I_M^{(2)}$, start-up time 20 s	A	551/494/438	615/551/489	693/615/551	780/693/615	880/780/693	970/850/760
- Starts per hour ³⁾	1/h	10	9	6	4	0.3	0.3

1) Measurement at 60 °C according to UL/CSA not required.

2) Current limit on soft starter set to 350% I_M , ON period = 70%. Maximum adjustable rated motor current I_M dependent on CLASS setting.

3) For intermittent duty S4 with ON period = 70%, $T_u = 40 / 50 / 60$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW4465	3RW4466
Power electronics			
Rated operational current I_e	A	1 076	1 214
Load rating with rated operational current I_e			
• According to IEC and UL/CSA ¹⁾ , for individual mounting, AC-53a - At 40 / 50 / 60 °C	A	1 076/970/880	1 214/1 076/970
Smallest adjustable rated motor current I_M	A	215	242
For the motor overload protection			
Power loss			
• In operation after completed starting with uninterrupted rated operational current (40/50/60 °C) approx.	W	510/420/360	630/510/420
• During starting with current limit set to 350% I_M			
- At 40 °C	W	15 000	17 500
- At 50 °C	W	13 000	15 000
- At 60 °C	W	11 500	13 000
Permissible rated motor current and starts per hour at 40 / 50 / 60 °C			
• For normal starting (CLASS 10)			
- Rated motor current $I_M^{(2)}$, start-up time 10 s	A	1 076/970/880	1 214/1 076/970
- Starts per hour ³⁾	1/h	11	6
- Rated motor current $I_M^{(2)}$, start-up time 20 s	A	1 076/970/880	1 214/1 076/970
- Starts per hour ³⁾	1/h	3	0.5

1) Measurement at 60 °C according to UL/CSA not required.

2) Current limit on soft starter set to 350% I_M , ON period = 70%. Maximum adjustable rated motor current I_M dependent on CLASS setting.

3) For intermittent duty S4 with ON period = 70%, $T_u = 40 / 50 / 60$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Motor feeders with soft starters

The type of coordination according to which the motor feeder with soft starter is mounted depends on the application-specific requirements. Normally, fuseless mounting (combination of motor starter protector and soft starter) is sufficient.

If type of coordination "2" is to be fulfilled, then semiconductor fuses must be fitted in the motor feeder.

ToC 1

Type of coordination "1" according to IEC 60947-4-1: After a short-circuit incident, the unit is defective and therefore unsuitable for further use (protection of persons and system guaranteed).

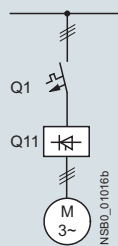
ToC 2

Type of coordination "2" according to IEC 60947-4-1: After a short-circuit incident the unit is suitable for further use (protection of persons and system guaranteed).

The type of coordination refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

The types of coordination are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Inline circuit fuseless version



Soft starters

ToC 1

Q11	Rated current
Type	A

Motor starter protectors/circuit breakers¹⁾

Q1	I_q	Rated current
Type	kA	A

Type of coordination "1"

Soft starter	Rated current (A)	Motor starter protector/circuit breaker	I_q (kA)	Rated current (A)
3RW4422	29	3RV2021-4EA10	42	32
3RW4423	36	3RV2021-4FA10	42	40
3RW4424	47	3RV2031-4WA10	32	52
3RW4425	57	3RV2031-4JA10	32	65
3RW4426	77	3RV2031-4RA10	32	80
3RW4427	93	3RV2042-4MA10	32	100
3RW4434	113	3VA2216-5MN32	55	160
3RW4435	134	3VA2216-5MN32	55	160
3RW4436	162	3VA2220-7MN32	55	200
3RW4443	203	3VA2325-7MN32	110	250
3RW4444	250	3VA2325-7MN32	110	250
3RW4445	313	3VA2440-7MN32	110	400
3RW4446	356	3VA2450-7MN32	110	500
3RW4447	432	3VA2450-7MN32	110	500
3RW4453	551	3VL6780-3SB36	65	800
3RW4454	615	3VL6780-3SB36	65	800
3RW4455	693	3VL6780-3SB36	65	800
3RW4456	780	3VL7710-3SB36	65	1 000
3RW4457	880	3VL7710-3SB36	65	1 000
3RW4458	970	3VL7712-3SB36	65	1 250
3RW4465	1 076	3VL7712-3SB36	65	1 250
3RW4466	1 214	3VL7712-3SB36	65	1 250

¹⁾ The rated motor current must be considered when selecting the devices.

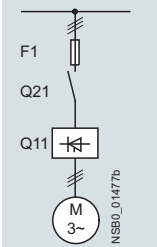
SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW44 Soft Starters

General data

Inline circuit fused version (line protection only)

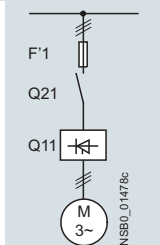


Soft starters		Line protection, maximum			Line contactors up to 400 V (optional)		Braking contactors ¹⁾²⁾	
Q11 Type	Rated current A	690 V + 5% F1 Type	Rated current A	Size	Q21 Type	(example circuit, see Manual 3RW44) Q91 Type Q92 Type		
Type of coordination "1"³⁾: $I_q = 65 \text{ kA}$								
3RW4422	29	3NA3820-6	50	00	3RT2027	3RT2526	--	
3RW4423	36	3NA3822-6	63	00	3RT2035	3RT2526	--	
3RW4424	47	3NA3824-6	80	00	3RT2036	3RT2535	--	
3RW4425	57	3NA3830-6	100	00	3RT2037	3RT2535	--	
3RW4426	77	3NA3132-6	125	1	3RT2038	3RT2024	3RT2035	
3RW4427	93	3NA3136-6	160	1	3RT2046	3RT2025	3RT2036	
3RW4434	113	3NA3244-6	250	2	3RT1054	3RT2027	3RT2037	
3RW4435	134	3NA3244-6	250	2	3RT1055	3RT2036	3RT2038	
3RW4436	162	3NA3365-6	500	3	3RT1056	3RT2037	3RT2038	
3RW4443	203	2 x 3NA3354-6	2 x 355	3	3RT1064	3RT2037	3RT1054	
3RW4444	250	2 x 3NA3354-6	2 x 355	3	3RT1065	3RT2037	3RT1055	
3RW4445	313	2 x 3NA3365-6	2 x 500	3	3RT1075	3RT1054	3RT1056	
3RW4446	356	2 x 3NA3365-6	2 x 500	3	3RT1075	3RT1054	3RT1056	
3RW4447	432	2 x 3NA3365-6	2 x 500	3	3RT1076	3RT1055	3RT1064	
3RW4453	551	2 x 3NA3365-6	2 x 500	3	3TF68	3RT1064	3RT1066	
3RW4454	615	2 x 3NA3365-6	2 x 500	3	3TF68	3RT1064	3RT1075	
3RW4455	693	2 x 3NA3365-6	2 x 500	3	3TF69	3RT1065	3RT1075	
3RW4456	780	2 x 3NA3365-6	2 x 500	3	3TF69	3RT1065	3RT1075	
3RW4457	880	2 x 3NA3365-6	2 x 500	3	--	3RT1075	3RT1076	
3RW4458	970	3 x 3NA3365-6	3 x 500	3	--	3RT1075	3RT1076	
3RW4465	1 076	3 x 3NA3365-6	3 x 500	3	--	3RT1075	3TF68	
3RW4466	1 214	3 x 3NA3365-6	3 x 500	3	--	3RT1076	3TF68	

1) If the ramp-down function "Combined braking" is selected, no braking contactor is required.
If the ramp-down function "DC braking" is selected, a braking contactor must be used in addition (type, see table).
For applications with large centrifugal masses ($J_{Load} > J_{Motor}$) the function "DC braking" is recommended.

2) Additional auxiliary relay K4:
LZS:RT4A4T30
(3RW44 soft starter with rated control supply voltage 230 V AC),
LZS:RT4A4S15
(3RW44 soft starter with rated control supply voltage 115 V AC).

3) The type of coordination "1" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

Inline circuit fused version with 3NE1 SITOR all-range fuse (semiconductor and line protection)

 For matching fuse bases, see [Catalog LV 10](#):

- "Fuse systems" →
"SITOR Semiconductor Fuses"
or www.siemens.com/sitor
- "Switch disconnectors"

Soft starters		All-range fuses				Line contactors up to 480 V (optional)	Braking contactors ¹⁾²⁾	
Q11 Type	Rated current A	F'1 Type	Rated current A	Voltage V	Size	Q21 Type	Q91 Type	Q92 Type
Type of coordination "2"³⁾: $I_q = 65 \text{ kA}$								
3RW4422	29	3NE 1020-2	80	690 + 5%	00	3RT2027	3RT2526	--
3RW4423	36	3NE 1020-2	80	690 + 5%	00	3RT2035	3RT2526	--
3RW4424	47	3NE 1021-2	100	690 + 5%	00	3RT2036	3RT2535	--
3RW4425	57	3NE 1022-2	125	690 + 5%	00	3RT2037	3RT2535	--
3RW4426	77	3NE 1022-2	125	690 + 5%	00	3RT2038	3RT2024	3RT2035
3RW4427	93	3NE 1224-2	160	690 + 5%	1	3RT2046	3RT2025	3RT2036
3RW4434	113	3NE 1225-2	200	690 + 5%	1	3RT1054	3RT2027	3RT2037
3RW4435	134	3NE 1227-2	250	690 + 5%	1	3RT1055	3RT2036	3RT2038
3RW4436	162	3NE 1227-2	250	690 + 5%	1	3RT1056	3RT2037	3RT2038
3RW4443	203	3NE 1230-2	315	600 + 10%	1	3RT1064	3RT2037	3RT1054
3RW4444	250	3NE 1331-2	350	460 + 10%	2	3RT1065	3RT2037	3RT1055
3RW4445	313	3NE 1333-2	450	690 + 5%	2	3RT1075	3RT1054	3RT1056
3RW4446	356	3NE 1334-2	500	690 + 5%	2	3RT1075	3RT1054	3RT1056
3RW4447	432	3NE 1435-2	560	690 + 5%	3	3RT1076	3RT1055	3RT1064
3RW4453	551	2 x 3NE 1334-2	500	690 + 10%	2	3TF68	3RT1064	3RT1066
3RW4454	615	2 x 3NE 1334-2	500	690 + 10%	2	3TF68	3RT1064	3RT1075
3RW4455	693	2 x 3NE 1334-2	500	690 + 10%	2	3TF69	3RT1065	3RT1075
3RW4456	780	2 x 3NE 1435-2	560	690 + 10%	3	3TF69	3RT1065	3RT1075
3RW4457	880	2 x 3NE 1435-2	560	690 + 10%	3	--	3RT1075	3RT1076
3RW4458	970	2 x 3NE 1435-2	560	690 + 10%	3	--	3RT1075	3RT1076
3RW4465	1 076	3 x 3NE 1334-2	500	690 + 10%	2	--	3RT1075	3TF68
3RW4466	1 214	3 x 3NE 1435-2	560	690 + 10%	3	--	3RT1076	3TF68

1) If the ramp-down function "Combined braking" is selected, no braking contactor is required.
If the ramp-down function "DC braking" is selected, a braking contactor must be used in addition (type, see table).
For applications with large centrifugal masses ($J_{Load} > J_{Motor}$) the function "DC braking" is recommended.

2) Additional auxiliary relay K4:
LZS:RT4A4T30
(3RW44 soft starter with rated control supply voltage 230 V AC),
LZS:RT4A4S15
(3RW44 soft starter with rated control supply voltage 115 V AC).

3) The type of coordination "2" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

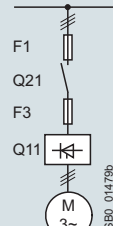
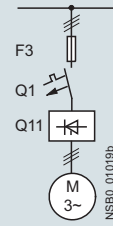
SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW44 Soft Starters

General data

Inline circuit fused version with 3NE or 3NC SITOR semiconductor fuse
(semiconductor protection by fuse, line and overload protection by circuit breaker)



For matching fuse bases, see [Catalog LV 10](#):

- "Fuse systems" → "SITOR Semiconductor Fuses" or www.siemens.com/sitor
- "Switch disconnectors"

Soft starters		Semiconductor fuses, minimum			Semiconductor fuses (cylinder)		
Q11 Type	Rated current A	690 V + 10% F3 Type	Rated current A	Size	F3 Type	Rated current A	Size
Type of coordination "2"¹⁾: I_q = 65 kA							
3RW4422	29	3NE4120	80	0	3NC2280	80	22 x 58
3RW4423	36	3NE4121	100	0	3NC2200	100	22 x 58
3RW4424	47	3NE4121	100	0	3NC2200	100	22 x 58
3RW4425	57	3NE4122	125	0	--	--	--
3RW4426	77	3NE4124	160	0	--	--	--
3RW4427	93	3NE3224	160	1	--	--	--
3RW4434	113	3NE3225	200	1	--	--	--
3RW4435	134	3NE3225	200	1	--	--	--
3RW4436	162	3NE3227	250	1	--	--	--
3RW4443	203	3NE3230-0B	315	1	--	--	--
3RW4444	250	3NE3230-0B	315	1	--	--	--
3RW4445	313	3NE3233	450	1	--	--	--
3RW4446	356	3NE3333	450	2	--	--	--
3RW4447	432	3NE3335	560	2	--	--	--
3RW4453	551	2 x 3NE3335	560	2	--	--	--
3RW4454	615	2 x 3NE3335	560	2	--	--	--
3RW4455	693	2 x 3NE3335	560	2	--	--	--
3RW4456	780	2 x 3NE3336	630	2	--	--	--
3RW4457	880	2 x 3NE3336	630	2	--	--	--
3RW4458	970	2 x 3NE3336	630	2	--	--	--
3RW4465	1 076	2 x 3NE3340-8	900	2	--	--	--
3RW4466	1 214	2 x 3NE3340-8	900	2	--	--	--

Soft starters		Line contactors up to 480 V		Braking contactors ²⁾³⁾		Motor starter protectors/circuit breakers		Line protection, maximum		
Q11 Type	Rated current A	(optional) Q21 Type	Q91 Type	Q92 Type	400 V + 10% Q1 Type	Rated current A	690 V + 5% F1 Type	Rated current A	Size	
Type of coordination "2"¹⁾: I_q = 65 kA										
3RW4422	29	3RT2027	3RT2526	--	3RV2021-4EA10	32	3NA3820-6	50	00	
3RW4423	36	3RT2035	3RT2526	--	3RV2021-4FA10	40	3NA3822-6	63	00	
3RW4424	47	3RT2036	3RT2535	--	3RV2031-4WA10	52	3NA3824-6	80	00	
3RW4425	57	3RT2037	3RT2535	--	3RV2031-4JA10	65	3NA3830-6	100	00	
3RW4426	77	3RT2038	3RT2024	3RT2035	3RV2031-4RA10	80	3NA3132-6	125	1	
3RW4427	93	3RT2046	3RT2025	3RT2036	3RV2042-4MA10	100	3NA3136-6	160	1	
3RW4434	113	3RT1054	3RT2027	3RT2037	3VA2216-5MN32	160	3NA3244-6	250	2	
3RW4435	134	3RT1055	3RT2036	3RT2038	3VA2216-5MN32	160	3NA3244-6	250	2	
3RW4436	162	3RT1056	3RT2037	3RT2038	3VA2220-7MN32	200	3NA3365-6	500	3	
3RW4443	203	3RT1064	3RT2037	3RT1054	3VA2325-7MN32	250	2 x 3NA3354-6	2 x 355	3	
3RW4444	250	3RT1065	3RT2037	3RT1055	3VA2325-7MN32	250	2 x 3NA3354-6	2 x 355	3	
3RW4445	313	3RT1075	3RT1054	3RT1056	3VA2440-7MN32	400	2 x 3NA3365-6	2 x 500	3	
3RW4446	356	3RT1075	3RT1054	3RT1056	3VA2450-7MN32	500	2 x 3NA3365-6	2 x 500	3	
3RW4447	432	3RT1076	3RT1055	3RT1064	3VA2450-7MN32	500	2 x 3NA3365-6	2 x 500	3	
3RW4453	551	3TF68	3RT1064	3RT1066	3VL6780	800	2 x 3NA3365-6	2 x 500	3	
3RW4454	615	3TF68	3RT1064	3RT1075	3VL6780	800	2 x 3NA3365-6	2 x 500	3	
3RW4455	693	3TF69	3RT1065	3RT1075	3VL6780	800	2 x 3NA3365-6	2 x 500	3	
3RW4456	780	3TF69	3RT1065	3RT1075	3VL7710	1 000	2 x 3NA3365-6	2 x 500	3	
3RW4457	880	--	3RT1075	3RT1076	3VL7710	1 000	2 x 3NA3365-6	2 x 500	3	
3RW4458	970	--	3RT1075	3RT1076	3VL7712	1 250	3 x 3NA3365-6	3 x 500	3	
3RW4465	1 076	--	3RT1075	3TF68	3VL7712	1 250	3 x 3NA3365-6	3 x 500	3	
3RW4466	1 214	--	3RT1076	3TF68	3VL7712	1 250	3 x 3NA3365-6	3 x 500	3	

¹⁾ The type of coordination "2" refers to soft starters in combination with the stipulated protective device (motor starter protector/fuse), not to any additional components in the feeder.

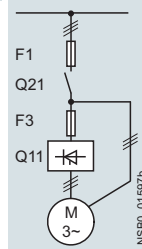
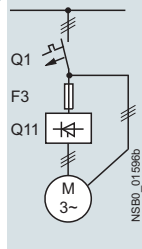
²⁾ If the ramp-down function "Combined braking" is selected, no braking contactor is required. If the ramp-down function "DC braking" is selected, a braking contactor must be used in addition (type, see table).

For applications with large centrifugal masses ($J_{Load} > J_{Motor}$) the function "DC braking" is recommended.

³⁾ Additional auxiliary relay K4:
LZS:RT4A4T30
(3RW44 soft starter with rated control supply voltage 230 V AC),
LZS:RT4A4S15
(3RW44 soft starter with rated control supply voltage 115 V AC).

Inside-delta circuit fused version with 3NE or 3NC SITOR fuses

(semiconductor protection by fuse, line and overload protection by motor starter protector/circuit breaker)



For matching fuse bases, see Catalog LV 10:

- "Fuse systems" → "SITOR Semiconductor Fuses" or www.siemens.com/sitor
- "Switch disconnectors"

Soft starters		Semiconductor fuses, minimum			Semiconductor fuses (cylinder)		
Q11 Type	Rated current A	F3 Type	Rated current A	Size	F3 Type	Rated current A	Size
Type of coordination "2"¹⁾							
3RW4422	50	3NE4120	80	0	3NC2280	80	22 x 58
3RW4423	62	3NE4121	100	0	3NC2200	100	22 x 58
3RW4424	81	3NE4121	100	0	3NC2200	100	22 x 58
3RW4425	99	3NE4122	125	0	--	--	--
3RW4426	133	3NE4124	160	0	--	--	--
3RW4427	161	3NE3224	160	1	--	--	--
3RW4434	196	3NE3225	200	1	--	--	--
3RW4435	232	3NE3225	200	1	--	--	--
3RW4436	281	3NE3227	250	1	--	--	--
3RW4443	352	3NE3230-0B	315	1	--	--	--
3RW4444	433	3NE3230-0B	315	1	--	--	--
3RW4445	542	3NE3233	450	1	--	--	--
3RW4446	617	3NE3333	450	2	--	--	--
3RW4447	748	3NE3335	560	2	--	--	--
3RW4453	954	2 x 3NE3335	560	2	--	--	--
3RW4454	1 065	2 x 3NE3335	560	2	--	--	--
3RW4455	1 200	2 x 3NE3335	560	2	--	--	--
3RW4456	1 351	2 x 3NE3336	630	2	--	--	--
3RW4457	1 524	2 x 3NE3336	630	2	--	--	--
3RW4458	1 680	2 x 3NE3336	630	2	--	--	--
3RW4465	1 864	2 x 3NE3340-8	900	2	--	--	--
3RW4466	2 103	2 x 3NE3340-8	900	2	--	--	--

Soft starters		Line contactors up to 480 V		Motor starter protectors/circuit breakers		Line protection, maximum		
Q11 Type	Rated current A	(optional) Q21 Type	400 V + 10%	Rated current A	690 V + 5% F1 Type	Rated current A	Size	
Type of coordination "2"¹⁾								
3RW4422	50	3RT2036	3RV2032-4VA10	45	3NA3824-6	80	00	
3RW4423	62	3RT2037	3RV2032-4JA10	65	3NA3830-6	100	00	
3RW4424	81	3RT2046	3RV2042-4YA10	93	3NA3132-6	125	1	
3RW4425	99	3RT2047	3RV2042-4MA10	100	3NA3136-6	160	1	
3RW4426	133	3RT1055	3VA2216-.MS32-0AA0	160	3NA3240-6	200	2	
3RW4427	161	3RT1056	3VA2220-.MS32-0AA0	200	3NA3244-6	250	2	
3RW4434	196	3RT1064	3VA2325-.MS32-0AA0	250	3NA3360-6	400	3	
3RW4435	232	3RT1065	3VA2325-.MS32-0AA0	250	3NA3360-6	400	3	
3RW4436	281	3RT1066	3VA2440-.MS32-0AA0	400	2 x 3NA3360-6	2 x 400	3	
3RW4443	352	3RT1075	3VA2440-.MS32-0AA0	400	2 x 3NA3365-6	2 x 500	3	
3RW4444	433	3RT1076	3VA2450-.MS32-0AA0	500	2 x 3NA3365-6	2 x 500	3	
3RW4445	542	3TF6844	3VL5763	630	3 x 3NA3365-6	3 x 500	3	
3RW4446	617	3TF6844	3VL6780	800	3 x 3NA3365-6	3 x 500	3	
3RW4447	748	3TF69	3VL6780	800	3 x 3NA3365-6	3 x 500	3	
3RW4453	954	--	3VL7710	1 000	3 x 3NA3365-6	3 x 500	3	
3RW4454	1 065	--	3VL7712	1 250	3 x 3NA3365-6	3 x 500	3	
3RW4455	1 200	--	3VL8716	1 600	3 x 3NA3365-6	3 x 500	3	
3RW4456	1 351	--	3VL8716	1 600	3 x 3NA3372	3 x 630	3	
3RW4457	1 524	--	3VL8716	1 600	3 x 3NA3372	3 x 630	3	
3RW4458	1 680	--	3WL1220	2 000	2 x 3NA3480	2 x 1000	4	
3RW4465	1 864	--	3WL1225	2 500	2 x 3NA3482	2 x 1250	4	
3RW4466	2 103	--	3WL1225	2 500	2 x 3NA3482	2 x 1250	4	

¹⁾ The type of coordination "2" refers to soft starters in combination with the stipulated protective device (circuit breaker/fuse), not to any additional components in the feeder.
If the F3 semiconductor fuse is not used, the type of coordination "2" is reduced to type of coordination "1" for soft starters in combination with the stipulated protective device.

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW44 Soft Starters

Inline circuit **IE3/IE4 ready**

Selection and ordering data

For normal starting (CLASS 10)



3RW442.



3RW443.



3RW444.



3RW445.



3RW446.

3RW ambient temperature 40 °C				3RW ambient temperature 50 °C				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rated values of three-phase motors				Rated values of three-phase motors									
Operational current I_e	Rating at operational voltage U_e			Operational current I_e	Rating at operational voltage U_e			d					
	230 V	400 V	500 V		200 V	230 V	460 V						
A	kW	kW	kW	A	hp	hp	hp	hp					
Inline circuit, rated operational voltage 200 ... 460 V													
29	5.5	15	--	26	7.5	7.5	15	--	5	3RW4422-□BC□4	1	1 unit	42H
36	7.5	18.5	--	32	10	10	20	--	5	3RW4423-□BC□4	1	1 unit	42H
47	11	22	--	42	10	15	25	--	5	3RW4424-□BC□4	1	1 unit	42H
57	15	30	--	51	15	15	30	--	5	3RW4425-□BC□4	1	1 unit	42H
77	18.5	37	--	68	20	20	50	--	5	3RW4426-□BC□4	1	1 unit	42H
93	22	45	--	82	25	25	60	--	5	3RW4427-□BC□4	1	1 unit	42H

Article No. supplement for connection types

- With screw terminals
- With spring-type terminals

113	30	55	--	100	30	30	75	--	5	3RW4434-□BC□4	1	1 unit	42H
134	37	75	--	117	30	40	75	--	5	3RW4435-□BC□4	1	1 unit	42H
162	45	90	--	145	40	50	100	--	5	3RW4436-□BC□4	1	1 unit	42H
203	55	110	--	180	50	60	125	--	5	3RW4443-□BC□4	1	1 unit	42H
250	75	132	--	215	60	75	150	--	5	3RW4444-□BC□4	1	1 unit	42H
313	90	160	--	280	75	100	200	--	5	3RW4445-□BC□4	1	1 unit	42H
356	110	200	--	315	100	125	250	--	5	3RW4446-□BC□4	1	1 unit	42H
432	132	250	--	385	125	150	300	--	5	3RW4447-□BC□4	1	1 unit	42H
551	160	315	--	494	150	200	400	--	15	3RW4453-□BC□4	1	1 unit	42H
615	200	355	--	551	150	200	450	--	15	3RW4454-□BC□4	1	1 unit	42H
693	200	400	--	615	200	250	500	--	15	3RW4455-□BC□4	1	1 unit	42H
780	250	450	--	693	200	250	600	--	15	3RW4456-□BC□4	1	1 unit	42H
880	250	500	--	780	250	300	700	--	15	3RW4457-□BC□4	1	1 unit	42H
970	315	560	--	850	300	350	750	--	15	3RW4458-□BC□4	1	1 unit	42H
1 076	355	630	--	970	350	400	850	--	15	3RW4465-□BC□4	1	1 unit	42H
1 214	400	710	--	1 076	350	450	950	--	15	3RW4466-□BC□4	1	1 unit	42H

Article No. supplement for connection types

- With spring-type terminals
- With screw terminals

Article No. supplement for rated control supply voltage U_s ²⁾

- 115 V AC
- 230 V AC

¹⁾ 3RW442. to 3RW444. soft starters with screw terminals: Standard delivery time SD = 1 day (d).

²⁾ Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW44 Soft Starters

IE3/IE4 ready Inline circuit

For normal starting (CLASS 10)



3RW442.

3RW443.

3RW444.

3RW445.

3RW446.

3RW ambient temperature 40 °C				3RW ambient temperature 50 °C				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rated values of three-phase motors													
Operational current I _e	Rating at operational voltage U _e				Operational current I _e	Rating at operational voltage U _e				d			
	230 V	400 V	500 V	690 V		200 V	230 V	460 V	575 V				
A	kW	kW	kW	kW	A	hp	hp	hp	hp				
Inline circuit, rated operational voltage 400 ... 600 V													
29	--	15	18.5	--	26	--	--	15	20	5		1	1 unit 42H
36	--	18.5	22	--	32	--	--	20	25	5		1	1 unit 42H
47	--	22	30	--	42	--	--	25	30	5		1	1 unit 42H
57	--	30	37	--	51	--	--	30	40	5		1	1 unit 42H
77	--	37	45	--	68	--	--	50	50	5		1	1 unit 42H
93	--	45	55	--	82	--	--	60	75	5		1	1 unit 42H

Article No. supplement for connection types

- With screw terminals
- With spring-type terminals

113	--	55	75	--	100	--	--	75	75	5		1	1 unit 42H
134	--	75	90	--	117	--	--	75	100	5		1	1 unit 42H
162	--	90	110	--	145	--	--	100	125	5		1	1 unit 42H
203	--	110	132	--	180	--	--	125	150	5		1	1 unit 42H
250	--	132	160	--	215	--	--	150	200	5		1	1 unit 42H
313	--	160	200	--	280	--	--	200	250	5		1	1 unit 42H
356	--	200	250	--	315	--	--	250	300	5		1	1 unit 42H
432	--	250	315	--	385	--	--	300	400	5		1	1 unit 42H
551	--	315	355	--	494	--	--	400	500	15		1	1 unit 42H
615	--	355	400	--	551	--	--	450	600	15		1	1 unit 42H
693	--	400	500	--	615	--	--	500	700	15		1	1 unit 42H
780	--	450	560	--	693	--	--	600	750	15		1	1 unit 42H
880	--	500	630	--	780	--	--	700	850	15		1	1 unit 42H
970	--	560	710	--	850	--	--	750	900	15		1	1 unit 42H
1 076	--	630	800	--	970	--	--	850	1 100	15		1	1 unit 42H
1 214	--	710	900	--	1 076	--	--	950	1 200	15		1	1 unit 42H

Article No. supplement for connection types

- With spring-type terminals
- With screw terminals

Article No. supplement for rated control supply voltage U_s²⁾

- 115 V AC
- 230 V AC

¹⁾ Soft starter with screw terminals: 3RW442. to 3RW444. Standard delivery time SD = 2 days (d), 3RW445. to 3RW446. Standard delivery time SD = 5 days (d).
²⁾ Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

For the constraints for the motor outputs specified here, see page 6/7.



SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW44 Soft Starters

Inline circuit **IE3/IE4 ready**

For normal starting (CLASS 10)



3RW442.

3RW443.

3RW444.

3RW445.

3RW446.

3RW ambient temperature 40 °C					3RW ambient temperature 50 °C				SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Rated values of three-phase motors					Rated values of three-phase motors										
Operational current I_e	Rating at operational voltage U_e				Operational current I_e	Rating at operational voltage U_e									
	230 V	400 V	500 V	690 V		200 V	230 V	460 V	575 V						
A	kW	kW	kW	kW	A	hp	hp	hp	hp	d					
Inline circuit, rated operational voltage 400 ... 690 V															
29	--	15	18.5	30	26	--	--	15	20	5	3RW4422-□BC□6		1	1 unit	42H
36	--	18.5	22	37	32	--	--	20	25	5	3RW4423-□BC□6		1	1 unit	42H
47	--	22	30	45	42	--	--	25	30	5	3RW4424-□BC□6		1	1 unit	42H
57	--	30	37	55	51	--	--	30	40	5	3RW4425-□BC□6		1	1 unit	42H
77	--	37	45	75	68	--	--	50	50	5	3RW4426-□BC□6		1	1 unit	42H
93	--	45	55	90	82	--	--	60	75	5	3RW4427-□BC□6		1	1 unit	42H

Article No. supplement for connection types

- With screw terminals
- With spring-type terminals

113	--	55	75	110	100	--	--	75	75	5	3RW4434-□BC□6		1	1 unit	42H
134	--	75	90	132	117	--	--	75	100	5	3RW4435-□BC□6		1	1 unit	42H
162	--	90	110	160	145	--	--	100	125	5	3RW4436-□BC□6		1	1 unit	42H
203	--	110	132	200	180	--	--	125	150	5	3RW4443-□BC□6		1	1 unit	42H
250	--	132	160	250	215	--	--	150	200	5	3RW4444-□BC□6		1	1 unit	42H
313	--	160	200	315	280	--	--	200	250	5	3RW4445-□BC□6		1	1 unit	42H
356	--	200	250	355	315	--	--	250	300	5	3RW4446-□BC□6		1	1 unit	42H
432	--	250	315	400	385	--	--	300	400	5	3RW4447-□BC□6		1	1 unit	42H
551	--	315	355	560	494	--	--	400	500	15	3RW4453-□BC□6		1	1 unit	42H
615	--	355	400	630	551	--	--	450	600	15	3RW4454-□BC□6		1	1 unit	42H
693	--	400	500	710	615	--	--	500	700	15	3RW4455-□BC□6		1	1 unit	42H
780	--	450	560	800	693	--	--	600	750	15	3RW4456-□BC□6		1	1 unit	42H
880	--	500	630	900	780	--	--	700	850	15	3RW4457-□BC□6		1	1 unit	42H
970	--	560	710	1 000	850	--	--	750	900	15	3RW4458-□BC□6		1	1 unit	42H
1 076	--	630	800	1 100	970	--	--	850	1 100	15	3RW4465-□BC□6		1	1 unit	42H
1 214	--	710	900	1 200	1 076	--	--	950	1 200	15	3RW4466-□BC□6		1	1 unit	42H

Article No. supplement for connection types

- With spring-type terminals
- With screw terminals

Article No. supplement for rated control supply voltage U_s ¹⁾

- 115 V AC
- 230 V AC

¹⁾ Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

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SIRIUS 3RW Soft Starters

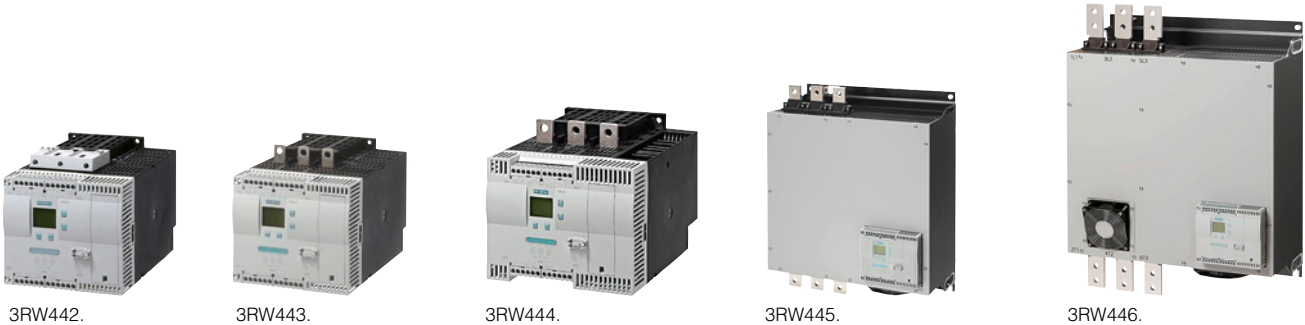
High Performance Soft Starters

3RW44 Soft Starters

IE3/IE4 ready Inside-delta circuit

Selection and ordering data

For normal starting (CLASS 10)



3RW ambient temperature 40 °C					3RW ambient temperature 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rated values of three-phase motors															
Operational current I _e	Rating at operational voltage U _e				Operational current I _e	Rating at operational voltage U _e				d					
	230 V	400 V	500 V	690 V		200 V	230 V	460 V	575 V						
A	kW	kW	kW	kW	A	hp	hp	hp	hp						
Inside-delta circuit, rated operational voltage 200 ... 460 V															
50	15	22	--	--	45	10	15	30	--	5	3RW4422-□BC□4		1	1 unit	42H
62	18.5	30	--	--	55	15	20	40	--	5	3RW4423-□BC□4		1	1 unit	42H
81	22	45	--	--	73	20	25	50	--	5	3RW4424-□BC□4		1	1 unit	42H
99	30	55	--	--	88	25	30	60	--	5	3RW4425-□BC□4		1	1 unit	42H
133	37	75	--	--	118	30	40	75	--	5	3RW4426-□BC□4		1	1 unit	42H
161	45	90	--	--	142	40	50	100	--	5	3RW4427-□BC□4		1	1 unit	42H

Article No. supplement for connection types

- With screw terminals
- With spring-type terminals

196	55	110	--	--	173	50	60	125	--	5	3RW4434-□BC□4		1	1 unit	42H
232	75	132	--	--	203	60	75	150	--	5	3RW4435-□BC□4		1	1 unit	42H
281	90	160	--	--	251	75	100	200	--	5	3RW4436-□BC□4		1	1 unit	42H
352	110	200	--	--	312	100	125	250	--	5	3RW4443-□BC□4		1	1 unit	42H
433	132	250	--	--	372	125	150	300	--	5	3RW4444-□BC□4		1	1 unit	42H
542	160	315	--	--	485	150	200	400	--	5	3RW4445-□BC□4		1	1 unit	42H
617	200	355	--	--	546	150	200	450	--	5	3RW4446-□BC□4		1	1 unit	42H
748	250	400	--	--	667	200	250	600	--	5	3RW4447-□BC□4		1	1 unit	42H
954	315	560	--	--	856	300	350	750	--	15	3RW4453-□BC□4		1	1 unit	42H
1 065	355	630	--	--	954	350	400	850	--	15	3RW4454-□BC□4		1	1 unit	42H
1 200	400	710	--	--	1 065	350	450	950	--	15	3RW4455-□BC□4		1	1 unit	42H
1 351	450	800	--	--	1 200	450	500	1 050	--	15	3RW4456-□BC□4		1	1 unit	42H
1 524	500	900	--	--	1 351	450	600	1 200	--	15	3RW4457-□BC□4		1	1 unit	42H
1 680	560	1 000	--	--	1 472	550	650	1 300	--	15	3RW4458-□BC□4		1	1 unit	42H
1 864	630	1 100	--	--	1 680	650	750	1 500	--	15	3RW4465-□BC□4		1	1 unit	42H
2 103	710	1 200	--	--	1 864	700	850	1 700	--	15	3RW4466-□BC□4		1	1 unit	42H

Article No. supplement for connection types

- With spring-type terminals
- With screw terminals

Article No. supplement for rated control supply voltage U_s²⁾

- 115 V AC
- 230 V AC

¹⁾ 3RW442. to 3RW444. soft starters with screw terminals: Standard delivery time SD = 1 day (d).
²⁾ Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

SIRIUS 3RW Soft Starters

High Performance Soft Starters

3RW44 Soft Starters

Inside-delta circuit **IE3/IE4 ready**

For normal starting (CLASS 10)



3RW ambient temperature 40 °C					3RW ambient temperature 50 °C					SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rated values of three-phase motors					Rated values of three-phase motors										
Operational current I _e	Rating at operational voltage U _e				Operational current I _e	Rating at operational voltage U _e				d					
	230 V	400 V	500 V	690 V		200 V	230 V	460 V	575 V						
A	kW	kW	kW	kW	A	hp	hp	hp	hp						
Inside-delta circuit, rated operational voltage 400 ... 600 V															
50	--	22	30	--	45	--	--	30	40	5	3RW4422-□BC□5		1	1 unit	42H
62	--	30	37	--	55	--	--	40	50	5	3RW4423-□BC□5		1	1 unit	42H
81	--	45	45	--	73	--	--	50	60	5	3RW4424-□BC□5		1	1 unit	42H
99	--	55	55	--	88	--	--	60	75	5	3RW4425-□BC□5		1	1 unit	42H
133	--	75	90	--	118	--	--	75	100	5	3RW4426-□BC□5		1	1 unit	42H
161	--	90	110	--	142	--	--	100	125	5	3RW4427-□BC□5		1	1 unit	42H

Article No. supplement for connection types

- With screw terminals
- With spring-type terminals

196	--	110	132	--	173	--	--	125	150	5	3RW4434-□BC□5		1	1 unit	42H
232	--	132	160	--	203	--	--	150	200	5	3RW4435-□BC□5		1	1 unit	42H
281	--	160	200	--	251	--	--	200	250	5	3RW4436-□BC□5		1	1 unit	42H
352	--	200	250	--	312	--	--	250	300	5	3RW4443-□BC□5		1	1 unit	42H
433	--	250	315	--	372	--	--	300	350	5	3RW4444-□BC□5		1	1 unit	42H
542	--	315	355	--	485	--	--	400	500	5	3RW4445-□BC□5		1	1 unit	42H
617	--	355	450	--	546	--	--	450	600	5	3RW4446-□BC□5		1	1 unit	42H
748	--	400	500	--	667	--	--	600	750	5	3RW4447-□BC□5		1	1 unit	42H
954	--	560	630	--	856	--	--	750	950	15	3RW4453-□BC□5		1	1 unit	42H
1 065	--	630	710	--	954	--	--	850	1 050	15	3RW4454-□BC□5		1	1 unit	42H
1 200	--	710	800	--	1 065	--	--	950	1 200	15	3RW4455-□BC□5		1	1 unit	42H
1 351	--	800	900	--	1 200	--	--	1 050	1 350	15	3RW4456-□BC□5		1	1 unit	42H
1 524	--	900	1 000	--	1 351	--	--	1 200	1 500	15	3RW4457-□BC□5		1	1 unit	42H
1 680	--	1 000	1 200	--	1 472	--	--	1 300	1 650	15	3RW4458-□BC□5		1	1 unit	42H
1 864	--	1 100	1 350	--	1 680	--	--	1 500	1 900	15	3RW4465-□BC□5		1	1 unit	42H
2 103	--	1 200	1 500	--	1 864	--	--	1 700	2 100	15	3RW4466-□BC□5		1	1 unit	42H

Article No. supplement for connection types

- With spring-type terminals
- With screw terminals

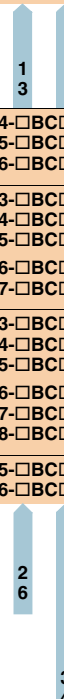
Article No. supplement for rated control supply voltage U_s²⁾

- 115 V AC
- 230 V AC

¹⁾ Soft starter with screw terminals: 3RW442. to 3RW444. Standard delivery time SD = 2 days (d), 3RW445. to 3RW446. Standard delivery time SD = 5 days (d).
²⁾ Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

For the constraints for the motor outputs specified here, see page 6/7.



6

Selection and ordering data

More information

Manual "SIRIUS 3RW44 Soft Starters", see
<https://support.industry.siemens.com/cs/ww/en/view/21772518>

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
USB PC cables						
 3UF7941-0AA00-0		For PC/PG communication with SIRIUS 3RW44 soft starters Through the system interface, for connecting to the USB interface of the PC/PG	▶	3UF7941-0AA00-0	1	1 unit 42J
Communication modules						
 3RW4900-0KC00		PROFIBUS communication module For 3RW44 soft starter integration in the PROFIBUS network with DPV1 slave functionality. With firmware version E04 and higher (or date of manufacture 01.05.2009 and later) of the module, DPV1 operation of the soft starter on a Y-link is also possible (only DPV0 operation possible with < E04).	▶	3RW4900-0KC00	1	1 unit 42H
 3RW4900-0NC00		PROFINET communication module For 3RW44 soft starter integration in the PROFINET network, suitable for devices with firmware version E12 or higher	▶	3RW4900-0NC00	1	1 unit 42H
External display and operator module						
 3RW4900-0AC00		For indicating and operating the functions provided by the soft starter using an externally mounted display and operator module in degree of protection IP54 (e.g. in the control cabinet door)	▶	3RW4900-0AC00	1	1 unit 42H
Connection cables						
		From the device interface (serial) of the 3RW44 soft starter to the external display and operator module				
		• Length 0.5 m, flat	▶	3UF7932-0AA00-0	1	1 unit 42J
		• Length 0.5 m, round	▶	3UF7932-0BA00-0	1	1 unit 42J
		• Length 1.0 m, round	▶	3UF7937-0BA00-0	1	1 unit 42J
		• Length 2.5 m, round	▶	3UF7933-0BA00-0	1	1 unit 42J
Box terminal blocks for soft starters						
 3RT1956-4G		Box terminal block (2 units are required for each device)				
	3RW442.	Included in the scope of supply				
	3RW443.	• Up to 70 mm ²	▶	3RT1955-4G	1	1 unit 41B
		• Up to 120 mm ²	▶	3RT1956-4G	1	1 unit 41B
		Auxiliary conductor connection for box terminals	5	3TX7500-0A	1	1 unit 41B
	3RW444.	• Up to 240 mm ² (with auxiliary conductor connection)	▶	3RT1966-4G	1	1 unit 41B
Covers for soft starters						
Terminal covers for box terminals						
Additional touch protection to be fitted at the box terminals (2 units required per device)						
	3RW442. and 3RW443.		▶	3RT1956-4EA2	1	1 unit 41B
	3RW444.		▶	3RT1966-4EA2	1	1 unit 41B
Terminal covers for cable lugs and busbar connections						
 3RT1956-4EA1		For complying with the voltage clearances and as touch protection (2 units required per contactor) Also fits on mounted box terminals.	▶	3RT1956-4EA1	1	1 unit 41B
	3RW444.		▶	3RT1966-4EA1	1	1 unit 41B

SIRIUS 3RW Soft Starters

General Performance Soft Starters

3RW52 Soft Starters

General data **NEW**

Overview

More information

Homepage, see www.siemens.com/soft-starter

Industry Mall, see www.siemens.com/product?3RW

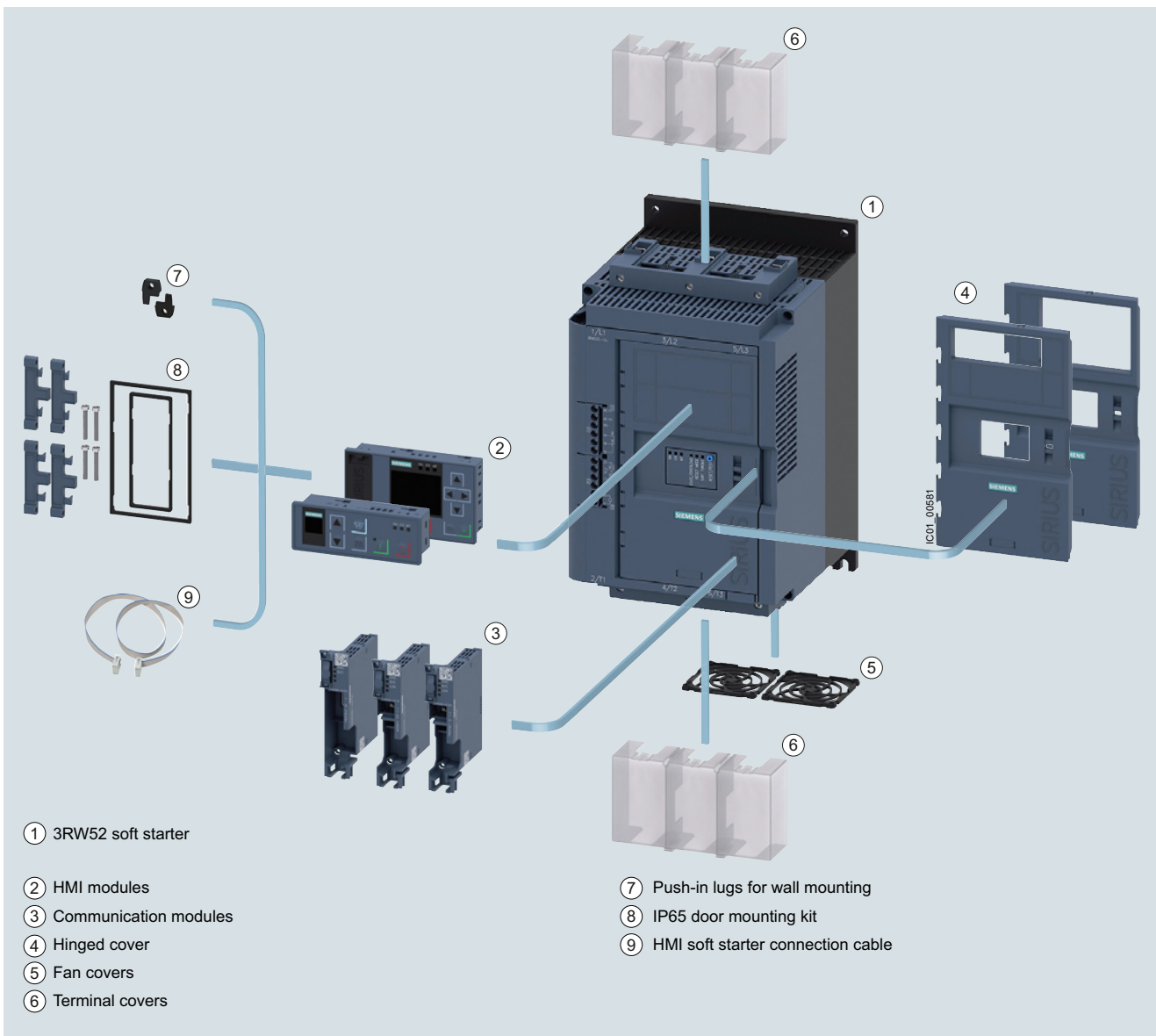
TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/tstweb/?KMAT=3rw52>

Simulation Tool for Soft Starters (STS), see page 6/7 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>
SIRIUS Soft Starter ES (TIA Portal) for diagnostics, see page 14/5



SIRIUS 3RW52 General Performance soft starters are the ideal solution for standard applications. With ideal 3-phase motor control, they cover the performance range from 5.5 to 560 kW (at 400 V).

With optional HMI modules, plug-in communication modules (PROFINET, PROFIBUS, Modbus) and either an analog output or thermistor motor protection, they ensure maximum flexibility. With their modern hybrid switching technology, the SIRIUS 3RW52 soft starters offer efficient switching for long-term, energy-saving use.



① 3RW52 soft starter

② HMI modules

③ Communication modules

④ Hinged cover

⑤ Fan covers

⑥ Terminal covers

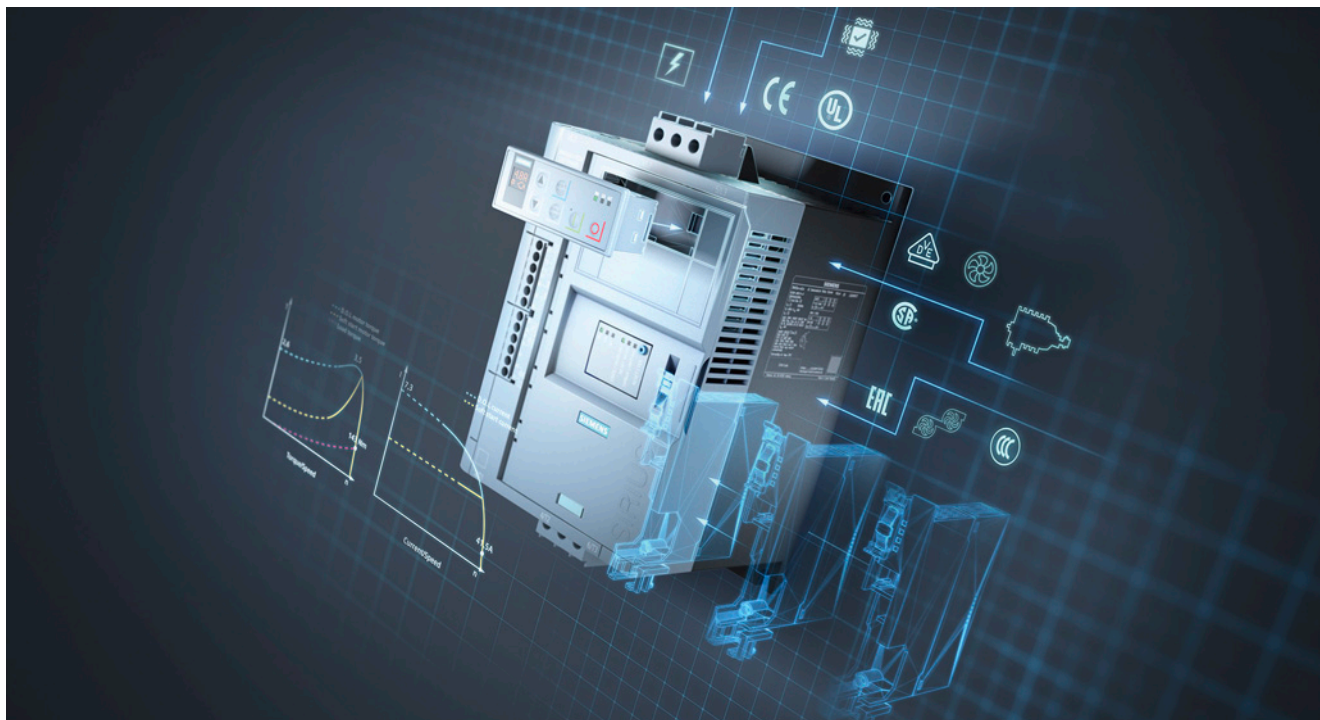
⑦ Push-in lugs for wall mounting

⑧ IP65 door mounting kit

⑨ HMI soft starter connection cable

General Performance soft starters with accessories (see page 6/54), for expansion with HMI module or communication modules.

Benefits



6

Product characteristics / function

Hybrid switching devices and three-phase motor control

TIA-Integration – communication modules and HMI modules optional

Soft Torque

Parameterization using potentiometers

Wide range for control supply and main voltage

Performance features / benefits

Minimum power loss and optimum/symmetrical motor control

Efficient configuration and maximum flexibility in automation engineering

Reduced mechanical loading and optimum pump stop

Simple and fast commissioning

Low variance, high system availability even with weak supply networks

SIRIUS 3RW Soft Starters

General Performance Soft Starters

3RW52 Soft Starters

General data **NEW**

Technical specifications

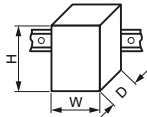
More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/25100/td>
 Manual "SIRIUS 3RW52 Soft Starter", see <https://support.industry.siemens.com/cs/ww/en/view/109753751>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/25100/faq>

Simulation Tool for Soft Starters (STS), see page 6/7 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

Type	3RW5213 3RW5214 3RW5215	3RW5216 3RW5217	3RW5224 3RW5225	3RW5226 3RW5227 3RW5234 3RW5235 3RW5236	3RW5243 3RW5244 3RW5245 3RW5246 3RW5247 3RW5248
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Installation/fixing/dimensions

Width x height x depth	mm	170 × 275 × 152	185 × 306 × 203	210 × 393 × 203
				

Type of fixing	Screw fixing				
Mounting position	For vertical mounting surface can be rotated +/-10° and tilted forward or backward	For vertical mounting surface can be rotated +/-90°, for vertical mounting surface can be tilted +/- 22.5° forward or backward	For vertical mounting surface can be rotated +/-10° and tilted forward or backward	For vertical mounting surface can be rotated +/-90°, for vertical mounting surface can be tilted +/- 22.5° forward or backward	

Distance to be maintained with side-by-side mounting				
• Above	mm	100		
• At the side	mm	5		
• Below	mm	75		
Maximum installation altitude above sea level ¹⁾	m	5 000		

Ambient conditions

Ambient temperature				
• During operation ²⁾	°C	-25 ... +60		
• During storage	°C	-40 ... +80		
Environmental category according to IEC 60721				
• During operation		3K6 (no ice formation, no condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6		
• During storage		1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not enter the devices), 1M4		
• During transport		2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)		

¹⁾ Derating above 1 000 m, see Manual or characteristic curve on page 6/7.

²⁾ Note derating above 40 °C.

Type		3RW521...C0.	3RW521...C1.	3RW522...C0. 3RW523...C0.	3RW522...C1. 3RW523...C1.	3RW524...C0.	3RW524...C1.
Control circuit/control							
Control supply voltage							
• At AC/DC, rated value	V	24/24	--/--	24/24	--/--	24/24	--/--
• At AC	V	--	110 ... 250	--	110 ... 250	--	110 ... 250
• Relative negative tolerance/ relative positive tolerance with AC	%	-20/20	-15/10	-20/20	-15/10	-20/20	-15/10
• Relative negative tolerance/ relative positive tolerance with DC	%	-20/20	--/--	-20/20	--/--	-20/20	--/--
Frequency of the control supply voltage							
• Relative negative tolerance/relative positive tolerance	Hz	50 ... 60					
	%	-10/10					
Control supply current in standby mode, rated value	mA	160	30	160	30	160	30
Holding current in bypass mode, rated value	mA	360	75	380	75	470	100
Maximum locked-rotor current on closing the bypass contacts	A	0.75	0.17	7.6	2.5	7.6	2.2
Maximum inrush current peak on applying the control supply voltage	A	3.3	12.2	3.3	12.2	3.3	12.2
Duration of inrush current peak on applying the control supply voltage	ms	12.1	2.2	12.1	2.2	12.1	2.2
Type of overvoltage protection	Varistors						
Type of short-circuit protection for control circuit¹⁾	Fuse 4 A gG ($I_{cu}=1$ kA), fuse 6 A quick-response ($I_{cu}=1$ kA), MCB C1 ($I_{cu} = 600$ A), MCB C6 ($I_{cu} = 300$ A)						

¹⁾ Not included in scope of supply

Type		3RW52...C.4	3RW52...C.5
Power electronics			
Operational voltage, rated value			
• Relative negative tolerance/ relative positive tolerance	V	200 ... 480	
	%	-15/10	
Operational voltage for inside-delta circuit, rated value			
• Relative negative tolerance/ relative positive tolerance	V	200 ... 480	
	%	-15/10	
Operating frequency			
• Relative negative tolerance/ relative positive tolerance	Hz	50 ... 60	
	%	-10/10	
Minimum load [% of I_M]¹⁾	%	15	
Maximum cable length between soft starter and motor	m	800	

¹⁾ Relative to set I_e .

SIRIUS 3RW Soft Starters

General Performance Soft Starters

3RW52 Soft Starters

General data **NEW**

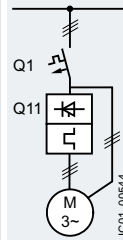
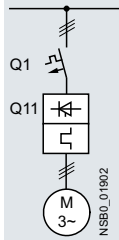
Motor feeders according to IEC with 3RV2/3VA motor starter protectors/circuit breakers

Without semiconductor protection

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, [see table](#)

Note:

For general recommendations for constructing motor feeders
with soft starters, [see page 6/9](#).



Soft starters

Q11
Type

Motor starter protectors/circuit breakers

for 400 V systems

Q1

Type

I_q
kA

for 500 V systems

Q1

Type

I_q
kA

Motor starter protectors/circuit breakers

for 400 V systems

Q1

Type

I_q
kA

for 500 V systems

Q1

Type

I_q
kA

Type of coordination "1"

ToC 1

Inline circuit

Inside-delta circuit

Soft starters	Motor starter protectors/circuit breakers for 400 V systems	I_q kA	Motor starter protectors/circuit breakers for 500 V systems	I_q kA	Motor starter protectors/circuit breakers for 400 V systems	I_q kA	Motor starter protectors/circuit breakers for 500 V systems	I_q kA
Q11 Type	Q1 Type		Q1 Type		Q1 Type		Q1 Type	
3RW5213	3RV2032-4TA10	65	3RV2032-4TA10	18	3RV2032-4DA10	65	3RV2032-4DA10	18
3RW5214	3RV2032-4DA10	65	3RV2032-4DA10	15	3RV2032-4EA10	65	3RV2032-4EA10	15
3RW5215	3RV2032-4EA10	65	3RV2032-4EA10	15	3RV2032-4VA10	65	3RV2032-4VA10	15
3RW5216	3RV2032-4VA10	65	3RV2032-4VA10	10	3RV2032-4JA10	65	3RV2032-4JA10	10
3RW5217	3RV2032-4WA10	65	3RV2032-4WA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5224	3RV2032-4JA10	65	3RV2032-4JA10	10	3RV2032-4RA10	65	3RV2032-4RA10	10
3RW5225	3VA2163-7MN32-0AA0	65	3VA2163-7MN32-0AA0	65	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	65
3RW5226	3VA2110-7MN32-0AA0	65	3VA2110-7MN32-0AA0	65	3VA2216-7MN32-0AA0	65	3VA2216-7MN32-0AA0	65
3RW5227	3VA2216-7MN32-0AA0	15	3VA2216-7MN32-0AA0	10	3VA2220-7MN32-0AA0	15	3VA2220-7MN32-0AA0	10
3RW5234	3VA2216-7MN32-0AA0	65	--	--	3VA2220-7MN32-0AA0	65	--	--
3RW5235	3VA2220-7MN32-0AA0	65	--	--	3VA2325-7MN32-0AA0	65	--	--
3RW5236	3VA2325-7MN32-0AA0	30	3VA2325-7MN32-0AA0	10	3VA2440-7MN32-0AA0	30	3VA2440-7MN32-0AA0	10
3RW5243	3VA2325-7MN32-0AA0	65	3VA2325-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65
3RW5244	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65
3RW5245	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5246	3VA2440-7MN32-0AA0	65	3VA2440-7MN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65
3RW5247	3VA2450-7MN32-0AA0	65	3VA2450-7MN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65
3RW5248	3VA2580-6HN32-0AA0	65	3VA2580-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65	3VA2510-6HN32-0AA0	65

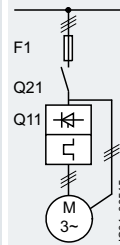
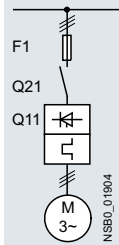
Motor feeders according to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity $I_{q} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).



Soft starters	gG class fuse			Line contactor (optional)			gG class fuse		Line contactor (optional)	
	for systems up to 600 V	for systems up to 480 V	for systems up to 600 V	for systems up to 480 V in the supply cable	for systems up to 600 V in the supply cable	for systems up to 480 V in the delta	for systems up to 600 V in the delta			
Q11	F1	Q21	Q21	F1	Q21	Q21	Q21	Q21	Q21	
Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	
Type of coordination "1"	Inline circuit			Inside-delta circuit						
	ToC 1									
3RW5213	3NA3820-6	3RT2025	3RT2025	3NA3820-6	3RT2027	3RT2035	3RT2025	3RT2025	3RT2025	
3RW5214	3NA3820-6	3RT2026	3RT2027	3NA3820-6	3RT2027	3RT2037	3RT2026	3RT2027	3RT2027	
3RW5215	3NA3822-6	3RT2027	3RT2037	3NA3822-6	3RT2036	3RT2037	3RT2027	3RT2037	3RT2037	
3RW5216	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2037	3RT2038	3RT2035	3RT2037	3RT2037	
3RW5217	3NA3824-6	3RT2035	3RT2037	3NA3824-6	3RT2038	3RT2046	3RT2035	3RT2037	3RT2037	
3RW5224	3NA3824-6	3RT2036	3RT2037	3NA3824-6	3RT2046	3RT2047	3RT2036	3RT2037	3RT2037	
3RW5225	3NA3830-6	3RT2037	3RT2046	3NA3830-6	3RT2047	3RT1054	3RT2037	3RT2046	3RT2046	
3RW5226	3NA3132-6	3RT2038	3RT2046	3NA3132-6	3RT1055	3RT1055	3RT2038	3RT2046	3RT2046	
3RW5227	3NA3136-6	3RT2046	3RT2047	3NA3136-6	3RT1056	3RT1056	3RT2046	3RT2047	3RT2047	
3RW5234	3NA3244-6	3RT1054	3RT1054	3NA3244-6	3RT1064	3RT1064	3RT1054	3RT1054	3RT1054	
3RW5235	3NA3244-6	3RT1055	3RT1055	3NA3244-6	3RT1065	3RT1065	3RT1055	3RT1055	3RT1055	
3RW5236	3NA3365-6	3RT1056	3RT1064	3NA3365-6	3RT1066	3RT1075	3RT1056	3RT1064	3RT1064	
3RW5243	2 x 3NA3354-6	3RT1064	3RT1064	2 x 3NA3354-6	3RT1075	3RT1075	3RT1064	3RT1064	3RT1064	
3RW5244	2 x 3NA3354-6	3RT1065	3RT1065	2 x 3NA3354-6	3RT1076	3RT1076	3RT1065	3RT1065	3RT1065	
3RW5245	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF68	3TF68	3RT1075	3RT1075	3RT1075	
3RW5246	2 x 3NA3365-6	3RT1075	3RT1075	2 x 3NA3365-6	3TF69	3TF69	3RT1075	3RT1075	3RT1075	
3RW5247	2 x 3NA3365-6	3RT1076	3RT1276	2 x 3NA3365-6	3TF69	3TF69	3RT1076	3RT1276	3RT1276	
3RW5248	2 x 3NA3365-6	3TF68	3TF68	2 x 3NA3365-6	--	--	3TF68	3TF68	3TF68	

SIRIUS 3RW Soft Starters

General Performance Soft Starters

3RW52 Soft Starters

General data **NEW**

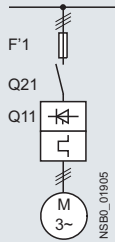
Motor feeders according to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_{q} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).



Soft starters	gG class fuse	Line contactor (optional)	
	for systems up to 600 V	for systems up to 480 V	for systems up to 600 V
Q11	F'1	Q21	Q21
Type	Type	Type	Type
Type of coordination "2"	Inline circuit		
3RW5213	3NE1815-0	3RT2025	3RT2025
3RW5214	3NE1802-0	3RT2026	3RT2027
3RW5215	3NE1817-0	3RT2027	3RT2037
3RW5216	3NE1818-0	3RT2035	3RT2037
3RW5217	3NE1820-0	3RT2035	3RT2037
3RW5224	3NE1021-2	3RT2036	3RT2037
3RW5225	3NE1022-0	3RT2037	3RT2046
3RW5226	3NE1224-0	3RT2038	3RT2046
3RW5227	3NE1224-0	3RT2046	3RT2047
3RW5234	3NE1225-0	3RT1054	3RT1054
3RW5235	3NE1227-0	3RT1055	3RT1055
3RW5236	3NE1230-0	3RT1056	3RT1064
3RW5243	3NE1230-2	3RT1064	3RT1064
3RW5244	3NE1331-0	3RT1065	3RT1065
3RW5245	3NE1334-2	3RT1075	3RT1075
3RW5246	3NE1334-2	3RT1075	3RT1075
3RW5247	3NE1436-2	3RT1076	3RT1276
3RW5248	3NE1437-2	3TF68	3TF68

Note:

In inside-delta circuits, a gR class full-range fuse could not provide the semiconductor protection of the delta-connected soft starter with a short-circuit breaking capacity that is adequate for practical use. In this case, we recommend using aR class partial-range fuses for semiconductor protection for type of coordination "2" ([see page 6/49](#)).

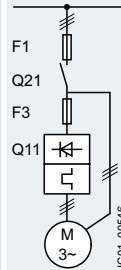
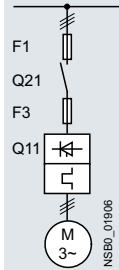
Motor feeders according to IEC with 3NE8 / 3NE4 / 3NE3 fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
 short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/9.



Soft starters	Inline circuit				Inside-delta circuit									
	gG class fuse	aR class fuse	Line contactor (optional)		gG class fuse	aR class fuse	Line contactor (optional)							
	for systems up to 600 V	for systems up to 690 V	for systems up to 480 V	for systems up to 600 V	for systems up to 600 V	for systems up to 600 V	for systems up to 480 V in the supply cable	for systems up to 600 V in the supply cable	for systems up to 480 V in the delta	for systems up to 600 V in the delta				
Q11	F1	F3	Q21	Q21	F1	F3	Q21	Q21	Q21	Q21	Q21			
Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type	Type			
Type of coordination "2"	Inline circuit				Inside-delta circuit									
3RW5213	3NA3820-6	3NE8017-1	3RT2025	3RT2025	3NA3820-6	3NE8017-1	3RT2027	3RT2035	3RT2025	3RT2025				
3RW5214	3NA3820-6	3NE8020-1	3RT2026	3RT2027	3NA3820-6	3NE8020-1	3RT2027	3RT2037	3RT2026	3RT2027				
3RW5215	3NA3822-6	3NE8021-1	3RT2027	3RT2037	3NA3822-6	3NE8021-1	3RT2036	3RT2037	3RT2027	3RT2037				
3RW5216	3NA3824-6	3NE8022-1	3RT2035	3RT2037	3NA3824-6	3NE8022-1	3RT2037	3RT2038	3RT2035	3RT2037				
3RW5217	3NA3824-6	3NE8024-1	3RT2035	3RT2037	3NA3824-6	3NE8024-1	3RT2038	3RT2046	3RT2035	3RT2037				
3RW5224	3NA3824-6	3NE8024-1	3RT2036	3RT2037	3NA3824-6	3NE8024-1	3RT2046	3RT2047	3RT2036	3RT2037				
3RW5225	3NA3830-6	3NE8024-1	3RT2037	3RT2046	3NA3830-6	3NE8024-1	3RT2047	3RT1054	3RT2037	3RT2046				
3RW5226	3NA3132-6	3NE8024-1	3RT2038	3RT2046	3NA3132-6	3NE8024-1	3RT1055	3RT1055	3RT2038	3RT2046				
3RW5227	3NA3136-6	3NE4124	3RT2046	3RT2047	3NA3136-6	3NE4124	3RT1056	3RT1056	3RT2046	3RT2047				
3RW5234	3NA3244-6	3NE3332-0B	3RT1054	3RT1054	3NA3244-6	3NE3332-0B	3RT1064	3RT1064	3RT1054	3RT1054				
3RW5235	3NA3244-6	3NE3334-0B	3RT1055	3RT1055	3NA3244-6	3NE3334-0B	3RT1065	3RT1065	3RT1055	3RT1055				
3RW5236	3NA3365-6	3NE3335	3RT1056	3RT1064	3NA3365-6	3NE3335	3RT1066	3RT1075	3RT1056	3RT1064				
3RW5243	2 x 3NA3354-6	3NE3333	3RT1064	3RT1064	2 x 3NA3354-6	3NE3333	3RT1075	3RT1075	3RT1064	3RT1064				
3RW5244	2 x 3NA3354-6	3NE3336	3RT1065	3RT1065	2 x 3NA3354-6	3NE3336	3RT1076	3RT1076	3RT1065	3RT1065				
3RW5245	2 x 3NA3365-6	3NE3336	3RT1075	3RT1075	2 x 3NA3365-6	3NE3336	3TF68	3TF68	3RT1075	3RT1075				
3RW5246	2 x 3NA3365-6	3NE3336	3RT1075	3RT1075	2 x 3NA3365-6	3NE3336	3TF69	3TF69	3RT1075	3RT1075				
3RW5247	2 x 3NA3365-6	3NE3340-8	3RT1076	3RT1276	2 x 3NA3365-6	3NE3340-8	3TF69	3TF69	3RT1076	3RT1276				
3RW5248	2 x 3NA3365-6	3NE3340-8	3TF68	3TF68	2 x 3NA3365-6	3NE3340-8	--	--	3TF68	3TF68				

Note:

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2/3VA motor starter protectors/circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 6/46). In these cases, optional line contactors can be dispensed with.



SIRIUS 3RW Soft Starters

General Performance Soft Starters

3RW52 Soft Starters

Inline circuit **IE3/IE4 ready** **NEW**

Selection and ordering data

For normal starting (CLASS 10A)



3RW521.



3RW522.



3RW523.



3RW524.

At 40 °C				At 50 °C				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V							At 575/600 V
A	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 480 V														
13	3	5.5	--	11.5	2	3	7.5	--	5	3RW5213-□□C□4	1	1 unit	42S	
18	4	7.5	--	15.9	3	5	10	--	5	3RW5214-□□C□4	1	1 unit	42S	
25	5.5	11	--	22.3	5	7.5	15	--	5	3RW5215-□□C□4	1	1 unit	42S	
32	7.5	15	--	28.4	7.5	10	20	--	5	3RW5216-□□C□4	1	1 unit	42S	
38	11	18.5	--	33.5	10	10	20	--	5	3RW5217-□□C□4	1	1 unit	42S	
47	11	22	--	41.6	10	10	30	--	5	3RW5224-□□C□4	1	1 unit	42S	
63	18.5	30	--	55.5	15	20	40	--	5	3RW5225-□□C□4	1	1 unit	42S	
77	22	37	--	68	20	25	50	--	5	3RW5226-□□C□4	1	1 unit	42S	
93	22	45	--	82.5	25	30	60	--	5	3RW5227-□□C□4	1	1 unit	42S	



Type of electrical connection for the control circuit

Screw terminals
Spring-type terminals

Product function

Analog output
Thermistor motor protection

Control supply voltage

24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C				At 50 °C				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V							At 575/600 V
A	kW	kW	kW	A	hp	hp	hp	hp	d					
Operational voltage 200 ... 480 V														
113	30	55	--	101	30	30	75	--	5	3RW5234-□□C□4	1	1 unit	42S	
143	37	75	--	128	40	40	100	--	5	3RW5235-□□C□4	1	1 unit	42S	
171	45	90	--	153	50	50	100	--	5	3RW5236-□□C□4	1	1 unit	42S	
210	55	110	--	186	60	60	150	--	5	3RW5243-□□C□4	1	1 unit	42S	
250	75	132	--	220	60	75	150	--	5	3RW5244-□□C□4	1	1 unit	42S	
315	90	160	--	279	75	100	200	--	5	3RW5245-□□C□4	1	1 unit	42S	
370	110	200	--	328	100	125	250	--	5	3RW5246-□□C□4	1	1 unit	42S	
470	132	250	--	416	150	150	350	--	5	3RW5247-□□C□4	1	1 unit	42S	
570	160	315	--	504	150	200	400	--	5	3RW5248-□□C□4	1	1 unit	42S	



Type of electrical connection for the control circuit

Spring-type terminals
Screw terminals

Product function

Analog output
Thermistor motor protection

Control supply voltage

24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

SIRIUS 3RW Soft Starters

General Performance Soft Starters

3RW52 Soft Starters

NEW IE3/IE4 ready Inline circuit

For normal starting (CLASS 10A)



At 40 °C				At 50 °C				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V	d				
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 600 V													
13	3	5.5	7.5	11.5	2	3	7.5	10	5	3RW5213-□□C□5	1	1 unit	42S
18	4	7.5	11	15.9	3	5	10	10	5	3RW5214-□□C□5	1	1 unit	42S
25	5.5	11	15	22.3	5	7.5	15	20	5	3RW5215-□□C□5	1	1 unit	42S
32	7.5	15	18.5	28.4	7.5	10	20	25	5	3RW5216-□□C□5	1	1 unit	42S
38	11	18.5	22	33.5	10	10	20	30	5	3RW5217-□□C□5	1	1 unit	42S
47	11	22	30	41.6	10	10	30	40	5	3RW5224-□□C□5	1	1 unit	42S
63	18.5	30	37	55.5	15	20	40	50	5	3RW5225-□□C□5	1	1 unit	42S
77	22	37	45	68	20	25	50	60	5	3RW5226-□□C□5	1	1 unit	42S
93	22	45	55	82.5	25	30	60	75	5	3RW5227-□□C□5	1	1 unit	42S

Type of electrical connection for the control circuit

- Screw terminals
- Spring-type terminals

Product function

- Analog output
- Thermistor motor protection

Control supply voltage

- 24 V AC/DC
- 110 ... 250 V AC



¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 600 V: Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C				At 50 °C				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V	d				
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 600 V													
113	30	55	75	101	30	30	75	100	5	3RW5234-□□C□5	1	1 unit	42S
143	37	75	90	128	40	40	100	125	5	3RW5235-□□C□5	1	1 unit	42S
171	45	90	110	153	50	50	100	150	5	3RW5236-□□C□5	1	1 unit	42S
210	55	110	132	186	60	60	150	150	5	3RW5243-□□C□5	1	1 unit	42S
250	75	132	160	220	60	75	150	200	5	3RW5244-□□C□5	1	1 unit	42S
315	90	160	200	279	75	100	200	250	5	3RW5245-□□C□5	1	1 unit	42S
370	110	200	250	328	100	125	250	300	5	3RW5246-□□C□5	1	1 unit	42S
470	132	250	315	416	150	150	350	450	5	3RW5247-□□C□5	1	1 unit	42S
570	160	315	355	504	150	200	400	500	5	3RW5248-□□C□5	1	1 unit	42S

Type of electrical connection for the control circuit

- Spring-type terminals
- Screw terminals

Product function

- Analog output
- Thermistor motor protection

Control supply voltage

- 24 V AC/DC
- 110 ... 250 V AC



¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 600 V: Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

SIRIUS 3RW Soft Starters

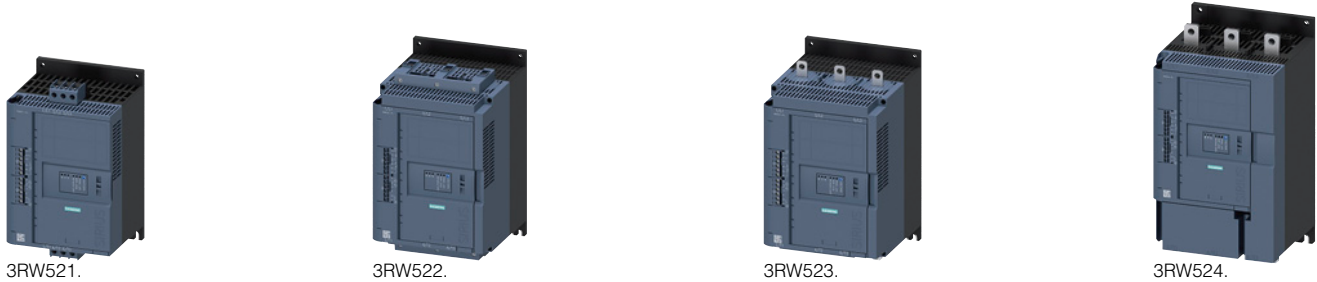
General Performance Soft Starters

3RW52 Soft Starters

Inside-delta circuit **IE3/IE4 ready** **NEW**

Selection and ordering data

For normal starting (CLASS 10A)



At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V	d				
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 480 V													
22.5	5.5	11	--	19.9	5	5	10	--	5	3RW5213-□□C□4	1	1 unit	42S
31.5	7.5	15	--	28	7.5	7.5	20	--	5	3RW5214-□□C□4	1	1 unit	42S
43.3	11	18.5	--	39	10	10	25	--	5	3RW5215-□□C□4	1	1 unit	42S
55.4	15	22	--	49	15	15	30	--	5	3RW5216-□□C□4	1	1 unit	42S
65.8	18.5	30	--	58	15	20	40	--	5	3RW5217-□□C□4	1	1 unit	42S
81.4	22	45	--	72	20	25	50	--	5	3RW5224-□□C□4	1	1 unit	42S
109	30	55	--	96	30	30	75	--	5	3RW5225-□□C□4	1	1 unit	42S
133	37	75	--	118	30	40	75	--	5	3RW5226-□□C□4	1	1 unit	42S
161	45	90	--	143	40	50	100	--	5	3RW5227-□□C□4	1	1 unit	42S

Type of electrical connection for the control circuit

Screw terminals
Spring-type terminals

Product function

Analog output
Thermistor motor protection

Control supply voltage

24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.



At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors								
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V	d				
A	kW	kW	kW	A	hp	hp	hp	hp					
Operational voltage 200 ... 480 V													
196	55	110	--	175	50	60	125	--	5	3RW5234-□□C□4	1	1 unit	42S
248	75	132	--	222	75	75	150	--	5	3RW5235-□□C□4	1	1 unit	42S
296	90	160	--	265	75	100	200	--	5	3RW5236-□□C□4	1	1 unit	42S
364	110	200	--	322	100	125	250	--	5	3RW5243-□□C□4	1	1 unit	42S
433	132	250	--	381	125	150	300	--	5	3RW5244-□□C□4	1	1 unit	42S
546	160	315	--	483	150	200	400	--	5	3RW5245-□□C□4	1	1 unit	42S
641	200	355	--	568	200	200	450	--	5	3RW5246-□□C□4	1	1 unit	42S
814	250	400	--	721	250	250	600	--	5	3RW5247-□□C□4	1	1 unit	42S
987	315	560	--	873	300	350	750	--	5	3RW5248-□□C□4	1	1 unit	42S

Type of electrical connection for the control circuit

Spring-type terminals
Screw terminals

Product function

Analog output
Thermistor motor protection

Control supply voltage

24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 480 V:
Standard delivery time SD = 1 day (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.



SIRIUS 3RW Soft Starters

General Performance Soft Starters

3RW52 Soft Starters

NEW IE3/IE4 ready Inside-delta circuit

For normal starting (CLASS 10A)



3RW521.



3RW522.



3RW523.



3RW524.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V	d					
A	kW	kW	kW	A	hp	hp	hp	hp						
Operational voltage 200 ... 600 V														
22.5	5.5	11	15	19.9	5	5	10	15	5	3RW5213-□□C□5		1	1 unit	42S
31.5	7.5	15	18.5	28	7.5	7.5	20	25	5	3RW5214-□□C□5		1	1 unit	42S
43.3	11	18.5	22	39	10	10	25	30	5	3RW5215-□□C□5		1	1 unit	42S
55.4	15	22	30	49	15	15	30	40	5	3RW5216-□□C□5		1	1 unit	42S
65.8	18.5	30	37	58	15	20	40	50	5	3RW5217-□□C□5		1	1 unit	42S
81.4	22	45	45	72	20	25	50	60	5	3RW5224-□□C□5		1	1 unit	42S
109	30	55	55	96	30	30	75	75	5	3RW5225-□□C□5		1	1 unit	42S
133	37	75	90	118	30	40	75	100	5	3RW5226-□□C□5		1	1 unit	42S
161	45	90	110	143	40	50	100	125	5	3RW5227-□□C□5		1	1 unit	42S

Type of electrical connection for the control circuit

- Screw terminals
- Spring-type terminals

Product function

- Analog output
- Thermistor motor protection

Control supply voltage

- 24 V AC/DC
- 110 ... 250 V AC

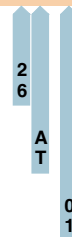


¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 600 V: Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

At 40 °C for inside-delta circuit				At 50 °C for inside-delta circuit				SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Operational current	Operating power for three-phase motors			Operational current	Rating [hp] for three-phase motors									
	At 230 V	At 400 V	At 500 V		At 200/208 V	At 220/230 V	At 460/480 V	At 575/600 V	d					
A	kW	kW	kW	A	hp	hp	hp	hp						
Operational voltage 200 ... 600 V														
196	55	110	132	175	50	60	125	150	5	3RW5234-□□C□5		1	1 unit	42S
248	75	132	160	222	75	75	150	200	5	3RW5235-□□C□5		1	1 unit	42S
296	90	160	200	265	75	100	200	250	5	3RW5236-□□C□5		1	1 unit	42S
364	110	200	250	322	100	125	250	300	5	3RW5243-□□C□5		1	1 unit	42S
433	132	250	315	381	125	150	300	350	5	3RW5244-□□C□5		1	1 unit	42S
546	160	315	355	483	150	200	400	500	5	3RW5245-□□C□5		1	1 unit	42S
641	200	355	450	568	200	200	450	600	5	3RW5246-□□C□5		1	1 unit	42S
814	250	400	500	721	250	250	600	800	5	3RW5247-□□C□5		1	1 unit	42S
987	315	560	630	873	300	350	750	950	5	3RW5248-□□C□5		1	1 unit	42S



Type of electrical connection for the control circuit

- Spring-type terminals
- Screw terminals

Product function

- Analog output
- Thermistor motor protection

Control supply voltage

- 24 V AC/DC
- 110 ... 250 V AC

¹⁾ 3RW52 soft starter with screw terminals for operational voltage up to 600 V: Standard delivery time SD = 2 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/7.

SIRIUS 3RW Soft Starters

General Performance Soft Starters



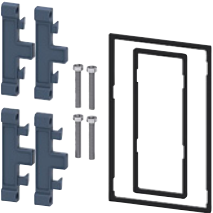



3RW52 Soft Starters

Accessories **NEW**

Selection and ordering data

Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Fan covers									
	Fan cover	3RW5216/17 (1x), 3RW5226/27, 3RW523 (2x)	--	--	1	3RW5983-0FC00		1	1 unit 42S
3RW5983-0FC00		3RW524	--	--	1	3RW5984-0FC00		1	1 unit 42S
Terminal covers									
	Terminal cover	3RW522, 3RW523 (2x)	--	--	1	3RW5983-0TC20		1	1 unit 42S
3RW5983-0TC20		3RW524 (2x)	--	--	1	3RW5984-0TC20		1	1 unit 42S
									
3RW5984-0TC20									
Enclosure components									
	Hinged cover	3RW52	With cutout for HMI module High Feature	--	1	3RW5950-0GL30		1	1 unit 42S
3RW5950-0GL30									
			With cutout for HMI module Standard	--	1	3RW5950-0GL40		1	1 unit 42S
3RW5950-0GL40									
Communication modules									
	Communication module	3RW52	PROFINET Standard	--	1	3RW5980-0CS00		1	1 unit 42S
			PROFIBUS	--	1	3RW5980-0CP00		1	1 unit 42S
			Modbus TCP	--	1	3RW5980-0CT00		1	1 unit 42S
3RW5980-0CS00									

NEW Accessories

Product designation	Manufacturer's Article No. of the soft starter	Type of product	Application	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
HMI modules									
	HMI module	3RW52	High Feature	--	1	3RW5980-0HF00	1	1 unit	42S
3RW5980-0HF00			Standard	--	1	3RW5980-0HS00	1	1 unit	42S
									
3RW5980-0HS00									
	Door mounting kit	3RW52	IP65	For HMI modules	1	3RW5980-0HD00	1	1 unit	42S
3RW5980-0HD00									
Connection cables									
	HMI connection cable	3RW52	5 m, round	For door mounting	1	3RW5980-0HC60	1	1 unit	42S
3UF793.-0BA00-0			2.5 m, round			▶ 3UF7933-0BA00-0	1	1 unit	42J
			1.0 m, round			▶ 3UF7937-0BA00-0	1	1 unit	42J
			0.5 m, round			▶ 3UF7932-0BA00-0	1	1 unit	42J
			0.1 m, flat	For mounting in the device	▶	3UF7931-0AA00-0	1	1 unit	42J
3UF7931-0AA00-0									
Further accessories									
	Push-in lugs for wall mounting	--	Two lugs are required per device	--	2	3ZY1311-0AA00	1	10 units	41L
3ZY1311-0AA00									

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

General data

Overview

More information

Homepage, see www.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW

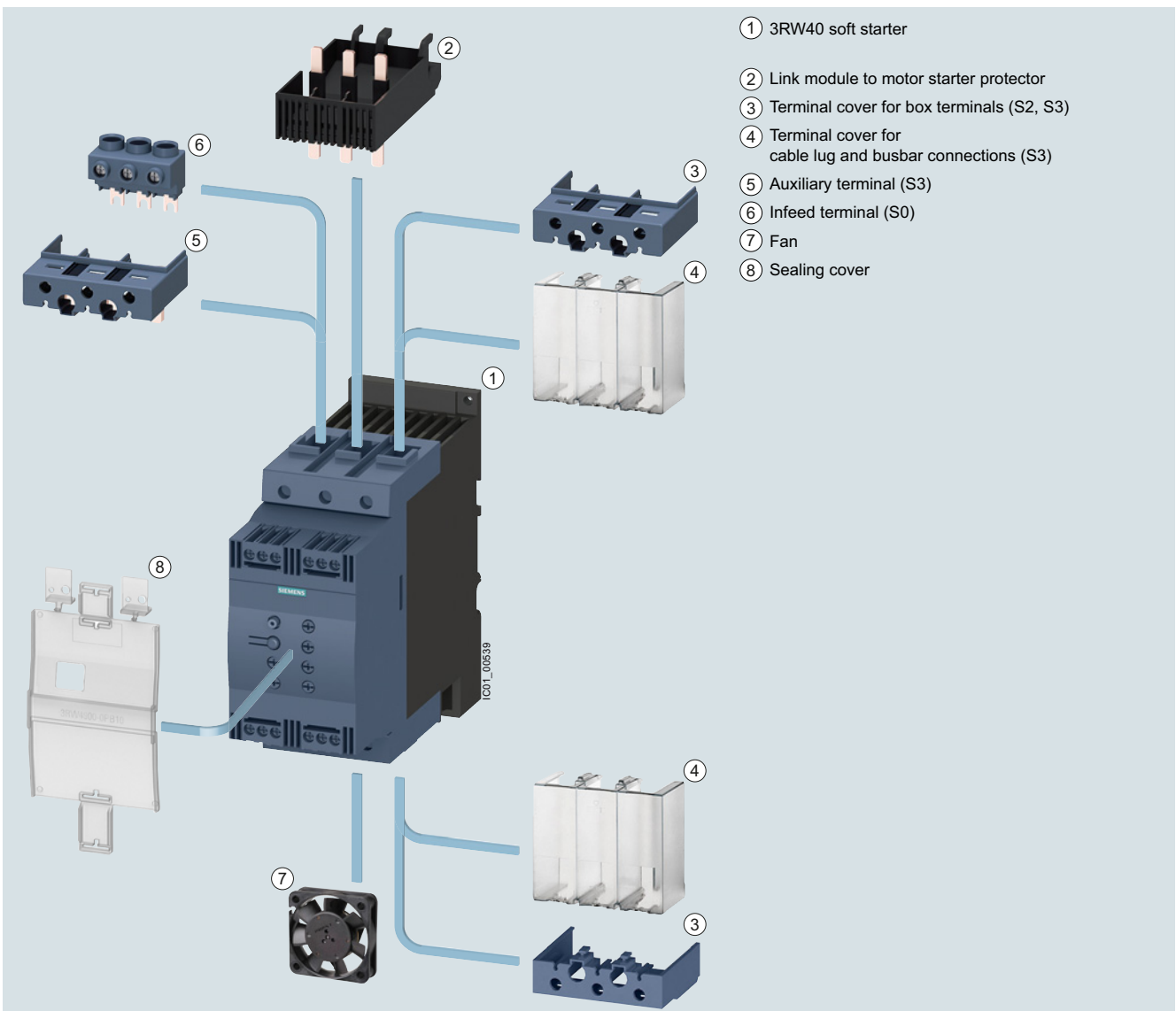
TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/tstweb/?KMAT=3rw40>
 Simulation Tool for Soft Starters (STS), see page 6/7 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>



The SIRIUS 3RW40 Basic Performance soft starters are suitable for soft starting and stopping of three-phase asynchronous motors.

Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire start-up time and disturbing direct current components are eliminated in addition. This not only enables the two-phase starting of motors up to 250 kW (at 400 V) but also avoids the current and torque peaks which occur e.g. with wye-delta starters.

The SIRIUS 3RW40 soft starters are suitable for the starting of explosion-proof motors with "increased safety" type of protection EEx e according to ATEX Directive 94/9/EC.



3RW40 Basic Performance soft starter with accessories (see page 6/68)

Benefits



3RW402.



3RW403.



3RW404.



3RW405.



3RW407.

Product characteristics / function	Performance features / benefits
Small and compact design	Space-saving, clearly arranged control panel layout
Motor overload and intrinsic device protection without additional wiring	Adjustable trip classes, integrated diagnostics functions
Integrated bypass contact system	Reduction of power loss during operation
Certified according to ATEX Directive 94/9/EC	Suitable for the starting of explosion-proof motors with "increased safety" type of protection EEx e.
Optional thermistor motor protection up to a rating of 55 kW	Full motor protection

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

General data

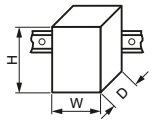
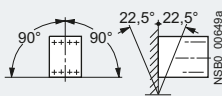
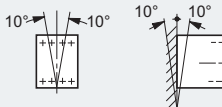
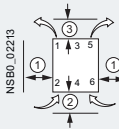
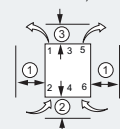
Technical specifications

More information

Manual "SIRIUS 3RW30/3RW40 Soft Starters", see <https://support.industry.siemens.com/cs/ww/en/view/38752095>

Catalog LV 10, see www.siemens.com/lowvoltage/lv10

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/25251/faq>

Type		3RW402.	3RW403.	3RW404.	3RW405.	3RW407.	
Mechanics and environment							
Mounting dimensions (W x H x D)							
<ul style="list-style-type: none"> • Screw terminals • Spring-type terminals 		mm	45 x 125 x 154	55 x 144 x 170	70 x 160 x 188	120 x 198 x 250	160 x 230 x 278
		mm	45 x 150 x 154	55 x 144 x 170	70 x 160 x 188	120 x 198 x 250	160 x 230 x 278
Permissible ambient temperature							
During operation	°C	-25 ... +60; (derating from +40)					
During storage	°C	-40 ... +80					
Weight							
	kg	0.77	1.35	1.9	4.9 (3RW4055)	8.9 (3RW4056)	
Permissible mounting position¹⁾							
<ul style="list-style-type: none"> • With auxiliary fan (for 3RW402. ... 3RW404.) 							
	<ul style="list-style-type: none"> • Without auxiliary fan (for 3RW402. ... 3RW404.) 						-- (fan integrated in the soft starter)
Installation type¹⁾							
Stand-alone installation		3RW402.	 <ul style="list-style-type: none"> ① ≥ 15 mm (≥ 0.59 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in) 			3RW405., 3RW407.	<ul style="list-style-type: none"> ① ≥ 5 mm (≥ 0.2 in) ② ≥ 75 mm (≥ 3 in) ③ ≥ 100 mm (≥ 4 in)
		3RW403., 3RW404.	 <ul style="list-style-type: none"> ① ≥ 30 mm (≥ 1.18 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in) 				
Permissible installation altitude							
	m	5 000 (Derating from 1 000, see characteristic curve on page 6/7)					
Degree of protection							
		IP20 for 3RW402.; all others IP00					

¹⁾ In the case of deviations, please observe derating, see Manual in the chapter "Configuring".

Type	Terminal	3RW402., 3RW403., 3RW404.	3RW405., 3RW407.
Control electronics			
Rated values			
Rated control supply voltage	A1/A2	V	24 AC/DC 110 ... 230 AC/DC
• Tolerance		%	± 20 -15/+10
Rated frequency		Hz	50/60
• Tolerance		%	± 10

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

General data

Type		3RW402.-..B.4, 3RW403.-..B.4, 3RW404.-..B.4	3RW402.-..B.5, 3RW403.-..B.5, 3RW404.-..B.5	3RW405.-..BB.4, 3RW407.-..BB.4	3RW405.-..BB.5, 3RW407.-..BB.5
Power electronics					
Rated operational voltage	V AC	200 ... 480	400 ... 600	200 ... 460	400 ... 600
Tolerance	%	-15/+10			
Maximum blocking voltage (thyristor)	V AC	1 600		1 400	1 800
Rated frequency	Hz	50/60			
Tolerance	%	± 10			
Uninterrupted duty at 40 °C (% of I_e)	%	115			
Minimum load (% of smallest adjustable rated motor current I_M)	%	20 (at least 2 A)			
Maximum cable length between soft starter and motor	m	300			

Type		3RW4024	3RW4026	3RW4027	3RW4028
Power electronics					
Load rating with rated operational current I_e					
• According to IEC and UL/CSA ¹⁾ , for individual mounting, AC-53a					
- At 40 °C	A	12.5	25.3	32.2	38
- At 50 °C	A	11	23	29	34
- At 60 °C	A	10	21	26	31
Smallest adjustable rated motor current I_M					
For the motor overload protection	A	5	10	17	23
Power loss					
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W	2	8	13	19
• During starting with current limit set to 300% I_M (40 °C)	W	68	188	220	256
Permissible rated motor current and starts per hour at 40 / 50 °C					
• For normal starting (CLASS 10)					
- Rated motor current $I_M^{(2)}$, start-up time 3 s	A	12.5/11	25/23	32/29	38/34
- Starts per hour ³⁾	1/h	50/50	23/23	23/23	19/19
- Rated motor current $I_M^{(2)}$, start-up time 4 s	A	12.5/11	25/23	32/29	38/34
- Starts per hour ³⁾	1/h	36/36	15/15	16/16	12/12

¹⁾ Measurement at 60 °C according to UL/CSA not required.

²⁾ Current limit on soft starter set to 300% I_M , $T_u = 40 / 50$ °C. Maximum adjustable rated motor current I_M dependent on CLASS setting.

³⁾ For intermittent duty S4 with ON period = 30%, $T_u = 40 / 50$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency in other mounting position, direct mounting, side-by-side mounting, and implementation of optional auxiliary fan, see [Manual in the chapter "Configuring"](#).

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

General data

Type		3RW4036	3RW4037	3RW4038	3RW4046	3RW4047
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA ¹⁾ , for individual mounting, AC-53a						
- At 40 °C	A	45	63	72	80	106
- At 50 °C	A	42	58	62.1	73	98
- At 60 °C	A	39	53	60	66	90
Smallest adjustable rated motor current I_M						
For the motor overload protection						
	A	23	26	35	43	46
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.						
	W	6	12	15	12	21
• During starting with current limit set to 300% I_M (40 °C)						
	W	316	444	500	576	768
Permissible rated motor current and starts per hour at 40 / 50 °C						
• For normal starting (CLASS 10)						
- Rated motor current $I_M^{(2)}$, start-up time 3 s						
	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour ³⁾	1/h	38/38	23/23	22/22	22/22	15/15
- Rated motor current $I_M^{(2)}$, start-up time 4 s						
	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour ³⁾	1/h	26/26	15/15	15/15	15/15	10/10

¹⁾ Measurement at 60 °C according to UL/CSA not required.

²⁾ Current limit on soft starter set to 300% I_M , $T_u = 40 / 50$ °C. Maximum adjustable rated motor current I_M dependent on CLASS setting.

³⁾ For intermittent duty S4 with ON period = 30%, $T_u = 40 / 50$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency in other mounting position, direct mounting, side-by-side mounting, and implementation of optional auxiliary fan, see Manual in the chapter "Configuring".

Type		3RW4055	3RW4056	3RW4073	3RW4074	3RW4075	3RW4076
Power electronics							
Load rating with rated operational current I_e							
• According to IEC and UL/CSA ¹⁾ , for individual mounting, AC-53a							
- At 40 °C	A	134	162	230	280	356	432
- At 50 °C	A	117	145	205	248	315	385
- At 60 °C	A	100	125	180	215	280	335
Smallest adjustable rated motor current I_M							
For the motor overload protection							
	A	59	87	80	130	131	207
Power loss							
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.							
	W	60	75		90	125	165
• During starting with current limit set to 350% ²⁾ I_M (40 °C)							
	W	1 043	1 355	2 448	3 257	3 277	3 600
Permissible rated motor current and starts per hour at 40 / 50 °C							
• For normal starting (CLASS 10)							
- Rated motor current $I_M^{(2)}$, start-up time 10 s							
	A	134/117	162/145	230/205	280/248	356/315	432/385
- Starts per hour ³⁾	1/h	20/20	8/8	14/14	20/20	16/16	17/17
- Rated motor current $I_M^{(2)}$, start-up time 20 s							
	A	134/117	162/145	230/205	280/248	356/315	432/385
- Starts per hour ³⁾	1/h	7/7	1.4/1.4	3/3	8/8	5/5	5/5

¹⁾ Measurement at 60 °C according to UL/CSA not required.

²⁾ Current limit on soft starter set to 350% I_M , $T_u = 40 / 50$ °C. Maximum adjustable rated motor current I_M dependent on CLASS setting.

³⁾ For intermittent duty S4 with ON period = 70%, $T_u = 40 / 50$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

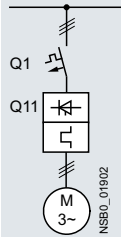
Motor feeders according to IEC with 3RV2/3VA motor starter protectors/circuit breakers

Without semiconductor protection

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, [see table](#)

Note:

For general recommendations for constructing motor feeders
with soft starters, [see page 6/9](#).



Soft starters	Motor starter protectors/circuit breakers				
	for 400 V systems		for 500 V systems ¹⁾		
Q11 Type	Q1 Type	I_q kA	Q1 Type	I_q kA	
Type of coordination "1" 	Inline circuit				
	3RW4024	3RV2021-4AA10	55	3RV2021-4AA10	10
	3RW4026	3RV2021-4DA10	55	3RV2021-4DA10	10
	3RW4027	3RV2021-4EA10	55	3RV2021-4EA10	10
	3RW4028	3RV2021-4FA10	55	3RV2021-4FA10	10
	3RW4036	3RV2031-4WA10	10	3RV2031-4WA10	10
	3RW4037	3RV2031-4JA10	10	3RV2031-4JA10	5
	3RW4038	3RV2031-4KA10	10	3RV2031-4KA10	5
	3RW4046	3RV2041-4RA10	11	3RV2041-4RA10	5
	3RW4047	3RV2041-4MA10	11	3RV2041-4MA10	5
	3RW4055	3VA2216-5MN32	55	3VL3720-1DC36	12
	3RW4056	3VA2220-5MN32	55	3VL3720-1DC36	12
	3RW4073	3VA2325-7MN32	100	3VL5731-3DC36	35
	3RW4074	3VA2440-7MN32	110	3VL5740-3DC36	35
	3RW4075	3VA2450-7MN32	110	3VL5740-3DC36	35
	3RW4076	3VA2450-7MN32	110	3VL5040-3DC36	35

¹⁾ For 3RW405 and 3RW407 for systems up to 600 V.

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

General data

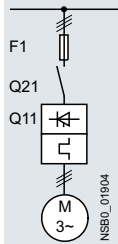
Motor feeders according to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity $I_{q} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).



Soft starters	gG class fuse	Line contactor (optional)		
		for systems up to 400 V	for systems up to 480 V	for systems up to 600 V
Q11	F1	Q21	Q21	Q21
Type	Type	Type	Type	Type
Type of coordination "1"	Inline circuit			
3RW4024	3NA3820-6	3RT2025	3RT2025/ 3RT2018 (in size S00)	3RT2025
3RW4026	3NA3822-6	3RT2026	3RT2027	3RT2037
3RW4027	3NA3824-6	3RT2027	3RT2028	3RT2037
3RW4028	3NA3824-6	3RT2028	3RT2035	3RT2037
3RW4036	3NA3130-6	3RT2036	3RT2036	3RT2038
3RW4037	3NA3132-6	3RT2037	3RT2037	3RT2046
3RW4038	3NA3132-6	3RT2038	3RT2038	3RT2046
3RW4046	3NA3136-6	3RT2045	3RT2045	3RT2047
3RW4047	3NA3136-6	3RT2047	3RT2047	3RT1054
3RW4055	3NA3244-6	3RT1055	3RT1055	3RT1055
3RW4056	3NA3244-6	3RT1056	3RT1056	3RT1056
3RW4073	2 x 3NA3354-6	3RT1065	3RT1065	3RT1065
3RW4074	2 x 3NA3354-6	3RT1066	3RT1066	3RT1066
3RW4075	2 x 3NA3365-6	3RT1075	3RT1075	3RT1075
3RW4076	2 x 3NA3365-6	3RT1076	3RT1076	3RT1076

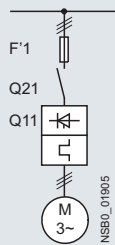
Motor feeders to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_{q} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).



Soft starters	gG class fuse	Line contactor (optional)		
		for systems up to 400 V	for systems up to 480 V	for systems up to 600 V
Q11	F'1	Q21	Q21	Q21
Type	Type	Type	Type	Type
Type of coordination "2"	Inline circuit			
3RW4024	3NE1814-0	3RT2025	3RT2025/ 3RT2018 (in size S00)	3RT2025
3RW4026	3NE1803-0	3RT2026	3RT2027	3RT2037
3RW4027	3NE1020-2	3RT2027	3RT2028	3RT2037
3RW4028	3NE1020-2	3RT2028	3RT2035	3RT2037
3RW4036	3NE1020-2	3RT2036	3RT2036	3RT2038
3RW4037	3NE1820-0	3RT2037	3RT2037	3RT2046
3RW4038	3NE1820-0	3RT2038	3RT2038	3RT2046
3RW4046	3NE1021-0	3RT2045	3RT2045	3RT2047
3RW4047	3NE1022-0	3RT2047	3RT2047	3RT1054
3RW4055	3NE1227-2	3RT1055	3RT1055	3RT1055
3RW4056	3NE1227-2	3RT1056	3RT1056	3RT1056
3RW4073	3NE1331-2	3RT1065	3RT1065	3RT1065
3RW4074	3NE1333-2	3RT1066	3RT1066	3RT1066
3RW4075	3NE1334-2	3RT1075	3RT1075	3RT1075
3RW4076	3NE1435-2	3RT1076	3RT1076	3RT1076

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

General data

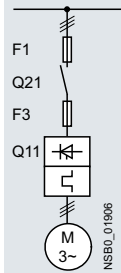
Motor feeders according to IEC with 3NE8 / 3NE4 / 3NE3 / 3NC fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).



Soft starters	gG class fuse		aR class fuse		Cylindrical fuses	Line contactor (optional)		
	for systems up to 600 V	for systems up to 600 V	for systems up to 600 V	for systems up to 600 V		for systems up to 480 V	for systems up to 480 V	for systems up to 600 V
Q11	F1	F3	F3	F3	F3	Q21	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "2"	Inline circuit							
3RW4024	3NA3820-6	--	3NE4101	3NE8015-1	3NC2240	3RT2025	3RT2025/ 3RT2018 (in size S00)	3RT2025
3RW4026	3NA3822-6	--	3NE4102	3NE8017-1	3NC2263	3RT2026	3RT2027	3RT2037
3RW4027	3NA3824-6	--	3NE4118	3NE8018-1	3NC2280	3RT2027	3RT2028	3RT2037
3RW4028	3NA3824-6	--	3NE4118	3NE8020-1	3NC2280	3RT2028	3RT2035	3RT2037
3RW4036	3NA3130-6	--	3NE4120	3NE8020-1	3NC2280	3RT2036	3RT2036	3RT2038
3RW4037	3NA3132-6	--	3NE4121	3NE8021-1	--	3RT2037	3RT2037	3RT2046
3RW4038	3NA3132-6	3NE3221	--	3NE8022-1	--	3RT2038	3RT2038	3RT2046
3RW4046	3NA3136-6	3NE3222	--	3NE8022-1	--	3RT2045	3RT2045	3RT2047
3RW4047	3NA3136-6	3NE3224	--	3NE8024-1	--	3RT2047	3RT2047	3RT1054
3RW4055	3NA3244-6	3NE3227	--	--	--	3RT1055	3RT1055	3RT1055
3RW4056	3NA3244-6	3NE3227	--	--	--	3RT1056	3RT1056	3RT1056
3RW4073	2 x 3NA3354-6	3NE3232-0B	--	--	--	3RT1065	3RT1065	3RT1065
3RW4074	2 x 3NA3354-6	3NE3233	--	--	--	3RT1066	3RT1066	3RT1066
3RW4075	2 x 3NA3365-6	3NE3335	--	--	--	3RT1075	3RT1075	3RT1075
3RW4076	2 x 3NA3365-6	3NE3337-8	--	--	--	3RT1076	3RT1076	3RT1076

Note:

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2/3VA motor starter protectors/circuit breakers can also be used, possibly with reduced short-circuit breaking capacity ([see page 6/61](#)). In these cases, optional line contactors can be dispensed with.

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

IE3/IE4 ready Inline circuit

Selection and ordering data

For normal starting (CLASS 10)


3RW402.



3RW403.



3RW404.

3RW ambient temperature 40 °C				3RW ambient temperature 50 °C				Size	SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rated values of three-phase motors				Rated values of three-phase motors										
Operational current I_e	Rating at operational voltage U_e			Operational current I_e	Rating at operational voltage U_e									
	230 V	400 V	500 V		200 V	230 V	460 V	575 V						
A	kW	kW	kW	A	hp	hp	hp	hp	d					
Rated operational voltage U_e 200 ... 480 V														
12.5	3	5.5	--	11	3	3	7.5	--	S0	2	3RW4024-□BB□4	1	1 unit	42G
25	5.5	11	--	23	5	5	15	--	S0	2	3RW4026-□BB□4	1	1 unit	42G
32	7.5	15	--	29	7.5	7.5	20	--	S0	2	3RW4027-□BB□4	1	1 unit	42G
38	11	18.5	--	34	10	10	25	--	S0	2	3RW4028-□BB□4	1	1 unit	42G
45	11	22	--	42	10	15	30	--	S2	2	3RW4036-□BB□4	1	1 unit	42G
63	18.5	30	--	58	15	20	40	--	S2	2	3RW4037-□BB□4	1	1 unit	42G
72	22	37	--	62	20	20	40	--	S2	2	3RW4038-□BB□4	1	1 unit	42G
80	22	45	--	73	20	25	50	--	S3	2	3RW4046-□BB□4	1	1 unit	42G
106	30	55	--	98	30	30	75	--	S3	2	3RW4047-□BB□4	1	1 unit	42G
Rated operational voltage U_e 400 ... 600 V														
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	5	3RW4024-□BB□5	1	1 unit	42G
25	--	11	15	23	--	--	15	20	S0	5	3RW4026-□BB□5	1	1 unit	42G
32	--	15	18.5	29	--	--	20	25	S0	5	3RW4027-□BB□5	1	1 unit	42G
38	--	18.5	22	34	--	--	25	30	S0	5	3RW4028-□BB□5	1	1 unit	42G
45	--	22	30	42	--	--	30	40	S2	5	3RW4036-□BB□5	1	1 unit	42G
63	--	30	37	58	--	--	40	50	S2	5	3RW4037-□BB□5	1	1 unit	42G
72	--	37	45	62	--	--	40	60	S2	5	3RW4038-□BB□5	1	1 unit	42G
80	--	45	55	73	--	--	50	60	S3	5	3RW4046-□BB□5	1	1 unit	42G
106	--	55	75	98	--	--	75	75	S3	5	3RW4047-□BB□5	1	1 unit	42G

Article No. supplement for connection types

- With screw terminals
- With spring-type terminals²⁾

Article No. supplement for rated control supply voltage U_s

- 24 V AC/DC
- 110 ... 230 V AC/DC

- ¹⁾ Soft starter U_e 200 to 480 V with screw terminals: Standard delivery time SD = 1 day (d).
- ²⁾ Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

 1
2

 0
1

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

Inline circuit **IE3/IE4 ready**

For normal starting (CLASS 10)



3RW402.



3RW403.



3RW404.

3RW ambient temperature 40 °C				3RW ambient temperature 50 °C				Size	SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rated values of three-phase motors				Rated values of three-phase motors										
Operational current I_e	Rating at operational voltage U_e			Operational current I_e	Rating at operational voltage U_e			d						
	230 V	400 V	500 V		200 V	230 V	460 V		575 V					
A	kW	kW	kW	A	hp	hp	hp	hp						
Rated operational voltage U_e 200 ... 480 V, with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC														
12.5	3	5.5	--	11	3	3	7.5	--	S0	5	3RW4024-□TB04	1	1 unit	42G
25	5.5	11	--	23	5	5	15	--	S0	5	3RW4026-□TB04	1	1 unit	42G
32	7.5	15	--	29	7.5	7.5	20	--	S0	5	3RW4027-□TB04	1	1 unit	42G
38	11	18.5	--	34	10	10	25	--	S0	5	3RW4028-□TB04	1	1 unit	42G
45	11	22	--	42	10	15	30	--	S2	5	3RW4036-□TB04	1	1 unit	42G
63	18.5	30	--	58	15	20	40	--	S2	5	3RW4037-□TB04	1	1 unit	42G
72	22	37	--	62	20	20	40	--	S2	5	3RW4038-□TB04	1	1 unit	42G
80	22	45	--	73	20	25	50	--	S3	5	3RW4046-□TB04	1	1 unit	42G
106	30	55	--	98	30	30	75	--	S3	5	3RW4047-□TB04	1	1 unit	42G
Rated operational voltage U_e 400 ... 600 V, with thermistor motor protection, rated control supply voltage U_s 24 V AC/DC														
12.5	--	5.5	7.5	11	--	--	7.5	10	S0	5	3RW4024-□TB05	1	1 unit	42G
25	--	11	15	23	--	--	15	20	S0	5	3RW4026-□TB05	1	1 unit	42G
32	--	15	18.5	29	--	--	20	25	S0	5	3RW4027-□TB05	1	1 unit	42G
38	--	18.5	22	34	--	--	25	30	S0	5	3RW4028-□TB05	1	1 unit	42G
45	--	22	30	42	--	--	30	40	S2	5	3RW4036-□TB05	1	1 unit	42G
63	--	30	37	58	--	--	40	50	S2	5	3RW4037-□TB05	1	1 unit	42G
72	--	37	45	62	--	--	40	60	S2	5	3RW4038-□TB05	1	1 unit	42G
80	--	45	55	73	--	--	50	60	S3	5	3RW4046-□TB05	1	1 unit	42G
106	--	55	75	98	--	--	75	75	S3	5	3RW4047-□TB05	1	1 unit	42G

Article No. supplement for connection types

- With screw terminals
- With spring-type terminals²⁾

¹⁾ Soft starter U_e 200 to 480 V with screw terminals:
Standard delivery time SD = 1 day (d).

²⁾ Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

1
2

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

IE3/IE4 ready Inline circuit

For normal starting (CLASS 10)


3RW405.



3RW407.

3RW ambient temperature 40 °C				3RW ambient temperature 50 °C					Size	SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rated values of three-phase motors				Rated values of three-phase motors											
Operational current I_e	Rating at operational voltage U_e			Operational current I_e	Rating at operational voltage U_e				d						
	230 V	400 V	500 V		200 V	230 V	460 V	575 V							
A	kW	kW	kW	A	hp	hp	hp	hp							
Rated operational voltage U_e 200 ... 460 V															
134	37	75	--	117	30	40	75	--	S6	5	3RW4055-□BB□4	1	1 unit	42G	
162	45	90	--	145	40	50	100	--		5	3RW4056-□BB□4	1	1 unit	42G	
230	75	132	--	205	60	75	150	--	S12	5	3RW4073-□BB□4	1	1 unit	42G	
280	90	160	--	248	75	100	200	--		5	3RW4074-□BB□4	1	1 unit	42G	
356	110	200	--	315	100	125	250	--		5	3RW4075-□BB□4	1	1 unit	42G	
432	132	250	--	385	125	150	300	--		5	3RW4076-□BB□4	1	1 unit	42G	
Rated operational voltage U_e 400 ... 600 V															
134	--	75	90	117	--	--	75	100	S6	5	3RW4055-□BB□5	1	1 unit	42G	
162	--	90	110	145	--	--	100	150		5	3RW4056-□BB□5	1	1 unit	42G	
230	--	132	160	205	--	--	150	200	S12	5	3RW4073-□BB□5	1	1 unit	42G	
280	--	160	200	248	--	--	200	250		5	3RW4074-□BB□5	1	1 unit	42G	
356	--	200	250	315	--	--	250	300		5	3RW4075-□BB□5	1	1 unit	42G	
432	--	250	315	385	--	--	300	400		5	3RW4076-□BB□5	1	1 unit	42G	

Article No. supplement for connection types²⁾

- With spring-type terminals
- With screw terminals

Article No. supplement for rated control supply voltage U_s ³⁾

- 115 V AC
- 230 V AC

¹⁾ Soft starter U_e 200 to 460 V with screw terminals:
Standard delivery time SD = 1 day (d),
soft starter U_e 400 to 600 V with screw terminals:
Standard delivery time SD = 2 days (d).

²⁾ Main circuit connection: busbar connection.

³⁾ Control by way of the internal 24 V DC supply and direct control via PLC possible.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

2
6

3
4


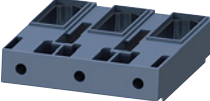

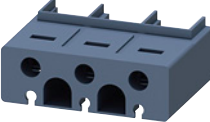
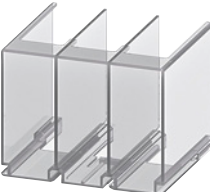

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

Accessories

Selection and ordering data

Conductor cross-section		Tightening torque	For soft starters size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solid or stranded	Finely stranded with end sleeve								
mm ²	mm ²	AWG	Nm	d					
Three-phase infeed terminals									
	2.5 ... 25	2.5 ... 16	10 ... 4	3 ... 4	S0 (3RW402.)		1	1 unit	41E
3RW2925-5AB									
Box terminal blocks for soft starters									
For soft starters Type		Version Size		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				d					
	For round and ribbon cables (2 units required for each device)								
3RT1956-4G	3RW405.	S6	<ul style="list-style-type: none"> Up to 70 mm² Up to 120 mm² 	5	3RT1955-4G 3RT1956-4G		1	1 unit	41B
			Auxiliary conductor connection for box terminals		3TX7500-0A		1	1 unit	41B
	3RW407.	S12	<ul style="list-style-type: none"> Up to 240 mm² (with auxiliary conductor connection) 		3RT1966-4G		1	1 unit	41B
Auxiliary terminals									
	Auxiliary terminals, 3-pole								
3RT2946-4F	3RW404.	S3		5	3RT2946-4F		1	1 unit	41B
Covers for soft starters									
		Terminal covers for box terminals							
		Additional touch protection to be fitted at the box terminals (2 units required per device)							
3RT2936-4EA2	3RW403.	S2			3RT2936-4EA2		1	1 unit	41B
	3RW404.	S3			3RT2946-4EA2		1	1 unit	41B
	3RW405.	S6			3RT1956-4EA2		1	1 unit	41B
	3RW407.	S12		2	3RT1966-4EA2		1	1 unit	41B
		Terminal covers for cable lugs and busbar connections							
		For complying with the voltage clearances and as touch protection if box terminal is removed (2 units required per device)							
3RT1946-4EA1	3RW404.	S3		5	3RT1946-4EA1		1	1 unit	41B
	3RW405.	S6			3RT1956-4EA1		1	1 unit	41B
	3RW407.	S12		2	3RT1966-4EA1		1	1 unit	41B
		Sealing covers							
		Also fits in case of S6 and S12 on mounted box terminals							
3RW4900-0PB10	3RW402. to 3RW404.	S0, S2, S3		5	3RW4900-0PB10		1	1 unit	42G
	3RW405. and 3RW407.	S6, S12		5	3RW4900-0PB00		1	1 unit	42G

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

Accessories

For motor starter protectors	For soft starters	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Size		d					

Standard mounting rail adapters



3RA2932-1CA00

		For mechanical fixing of motor starter protector and soft starter; for snapping onto standard mounting rail or for screw fixing						
S2	S2	Single-unit packaging	2	3RA2932-1CA00		1	1 unit	41B

For soft starters	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	Size					

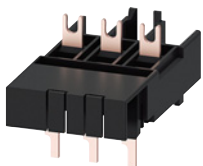
Fans (to increase switching frequency and for device mounting in positions different to the standard position)

3RW4928-8VB00,
3RW4947-8VB00

3RW402.	S0	▶	3RW4928-8VB00	1	1 unit	42G
3RW403., 3RW404.	S2, S3	▶	3RW4947-8VB00	1	1 unit	42G

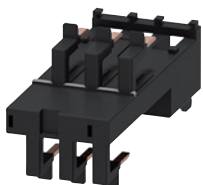
For soft starters	Motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	Size	Size					

Link modules to motor starter protectors¹⁾



3RA2921-1BA00

3RW402.	S0	S00/S0	2	3RA2921-1BA00	1	1 unit	41B
3RW4036.	S2	S2	▶	3RA2931-1AA00	1	1 unit	41B
3RW4046., 3RW4047.	S3	S3	▶	3RA1941-1AA00	1	1 unit	41B



3RA2921-2GA00

3RW402.	S0	S0	2	3RA2921-2GA00	1	1 unit	41B
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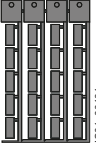
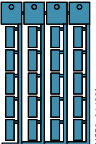
¹⁾ Can be used in size S0 up to maximum 32 A.
Can be used in size S2 up to maximum 65 A in combination with 3RA2932-1CA00 standard mounting rail adapter (specially for soft starters).
Can be used in size S3 only with mounting plate.

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW40 Soft Starters

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-type terminals in sizes S00 and S0						
						
3RA2908-1A						
Screwdrivers	2	3RA2908-1A		1	1 unit	41B
For all SIRIUS devices with spring-type terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated						
Blank labels						
						
3RT2900-1SB20						
Unit labeling plates¹⁾						
For SIRIUS devices						
• 20 mm x 7 mm, titanium gray						
	20	3RT2900-1SB20		100	340 units	41B
						
3RT1900-1SB20						
• 20 mm x 7 mm, pastel turquoise						
	20	3RT1900-1SB20		100	340 units	41B

¹⁾ PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH, see page 16/16.

Overview

More information

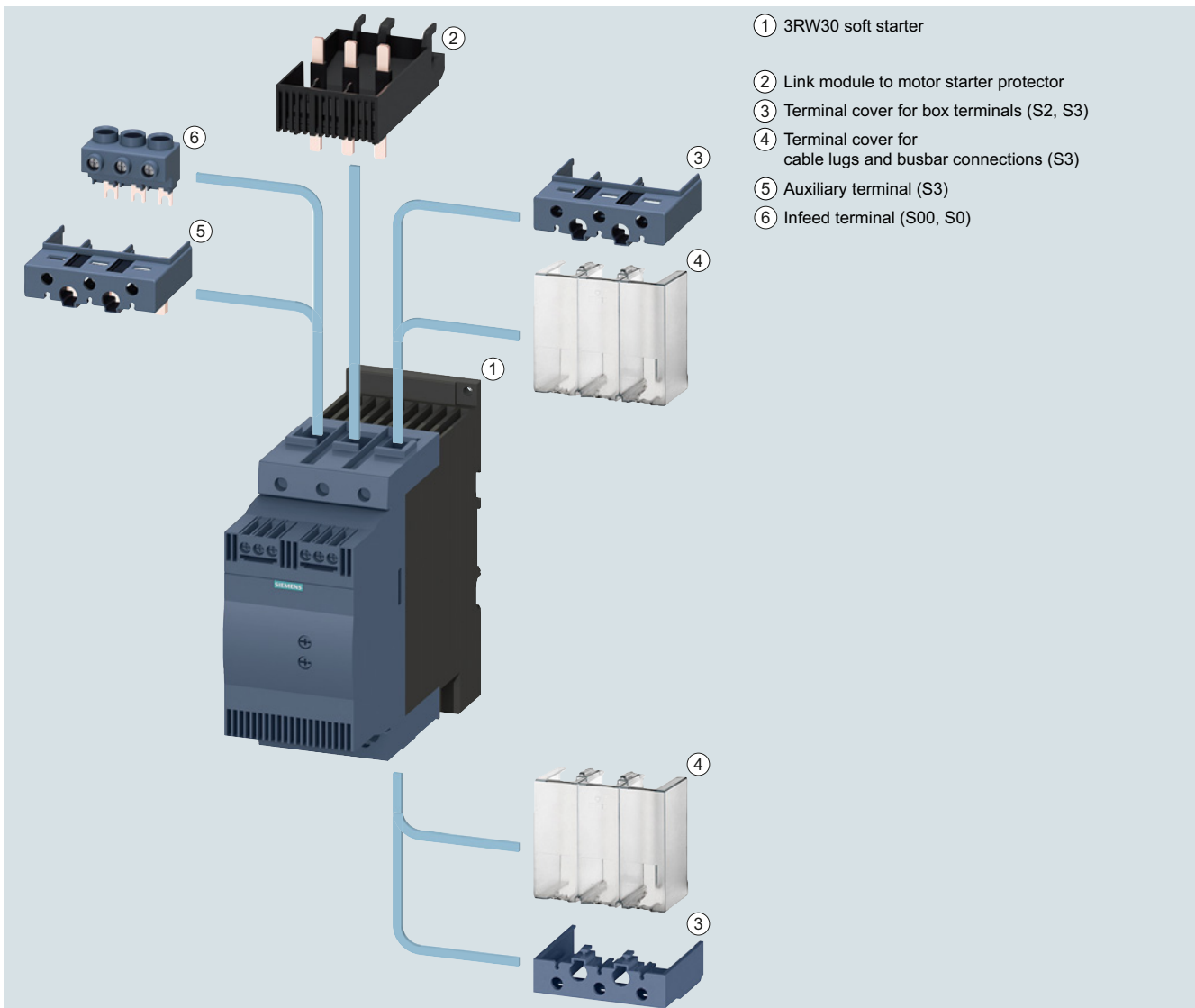
Homepage, see www.siemens.com/soft-starter
 Industry Mall, see www.siemens.com/product?3RW

TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/tstweb/?KMAT=3rw30>
 Simulation Tool for Soft Starters (STS), see page 6/7 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>



The SIRIUS 3RW30 Basic Performance soft starters are suitable for soft starting of three-phase asynchronous motors.

Due to two-phase control, the current is kept at minimum values in all three phases throughout the entire start-up time and disturbing direct current components are eliminated in addition. This not only enables the two-phase starting of motors up to 55 kW (at 400 V) but also avoids the current and torque peaks which occur e.g. with wye-delta starters.



- ① 3RW30 soft starter
- ② Link module to motor starter protector
- ③ Terminal cover for box terminals (S2, S3)
- ④ Terminal cover for cable lugs and busbar connections (S3)
- ⑤ Auxiliary terminal (S3)
- ⑥ Infeed terminal (S00, S0)

3RW30 Basic Performance soft starter with accessories (see page 6/81)

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW30 Soft Starters

General data

Benefits



3RW301.



3RW302.



3RW303.



3RW304.



3RW3003-2CB54

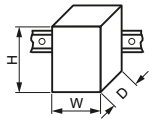
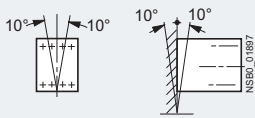
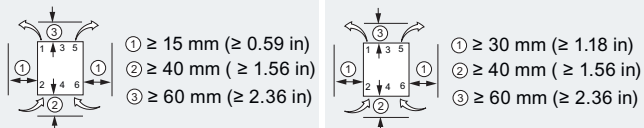
Product characteristics / function	Performance features / benefits
Small and compact design	Space-saving, clearly arranged control panel layout
Parameterization using potentiometers	Simple and fast commissioning
Integrated bypass contact system	Reduction of power loss during operation
"Polarity Balancing" control method	Avoidance of direct current components in two-phase controlled soft starters.

Technical specifications

More information

Manual "SIRIUS 3RW30/3RW40 Soft Starters", see <https://support.industry.siemens.com/cs/ww/en/view/38752095>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16213/faq>

Catalog LV 10, see www.siemens.com/lowvoltage/lv10

Type		3RW301.	3RW302.	3RW303.	3RW304.	
Mechanics and environment						
Mounting dimensions (W x H x D)						
<ul style="list-style-type: none"> • Screw terminals • Spring-type terminals 		mm	45 x 95 x 151	45 x 125 x 151	55 x 144 x 168	70 x 160 x 186
		mm	45 x 117 x 151	45 x 150 x 151	55 x 144 x 168	70 x 160 x 186
Permissible ambient temperature						
During operation	°C	-25 ... +60; (derating from +40)				
During storage	°C	-40 ... +80				
Weight						
	kg	0.58	0.69	1.20	1.71	
Permissible mounting position¹⁾ (auxiliary fan not available)						
						
Installation type¹⁾						
Stand-alone installation						
Permissible installation altitude						
	m	5 000 (Derating from 1 000, see characteristic curve on page 6/7)				
Degree of protection						
IP20 for 3RW301. and 3RW302.; IP00 for 3RW303. and 3RW304.						

¹⁾ In the case of deviations, please observe derating, see Manual in the chapter "Configuring".

Type	Terminal	3RW301., 3RW302.	3RW303., 3RW304.			
Control electronics						
Rated values						
Rated control supply voltage	A1/A2	V	24	110 ... 230	24	110 ... 230
• Tolerance		%	± 20	-15/+10	± 20	-15/+10
Rated frequency		Hz	50/60			
• Tolerance		%	± 10			

Type		3RW301.	3RW302.	3RW303.	3RW304.
Power electronics					
Rated operational voltage					
	V AC	200 ... 480			
Tolerance	%	-15/+10			
Rated frequency					
	Hz	50/60			
Tolerance	%	± 10			
Uninterrupted duty at 40 °C (% of I_e)					
	%	115			
Minimum load (% of I_e)					
	%	10 (at least 1 A)			
Maximum cable length between soft starter and motor					
	m	300			

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW30 Soft Starters

General data

Type		3RW3013	3RW3014	3RW3016	3RW3017	3RW3018
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA ¹⁾ , for individual mounting, AC-53a						
- At 40 °C	A	3.6	6.5	9	12.5	17.6
- At 50 °C	A	3.3	6	8	12	17
- At 60 °C	A	3	5.5	7	11	14
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.						
	W	0.25	0.5	1	2	4
• During starting with 300% I_M (40 °C)						
	W	24	52	80	80	116
Permissible rated motor current and starts per hour						
• For normal starting (CLASS 10) at 40 / 50 °C						
- Rated motor current $I_M^{(2)}$, start-up time 3 s	A	3.6/3.3	6.5/6.0	9/8	12.5/12.0	17.6/17.0
- Starts per hour ³⁾	1/h	200/150	87/60	50/50	85/70	62/46
- Rated motor current $I_M^{(2)}$, start-up time 4 s	A	3.6/3.3	6.5/6.0	9/8	12.5/12.0	17.6/17.0
- Starts per hour ³⁾	1/h	150/100	64/46	35/35	62/47	45/32

1) Measurement at 60 °C according to UL/CSA not required.

2) At 300% I_M , $T_U = 40 / 50$ °C.

3) For intermittent duty S4 with ON period = 30%, $T_U = 40 / 50$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW3026	3RW3027	3RW3028
Power electronics				
Load rating with rated operational current I_e				
• According to IEC and UL/CSA ¹⁾ , for individual mounting, AC-53a				
- At 40 °C	A	25.3	32.2	38
- At 50 °C	A	23	29	34
- At 60 °C	A	21	26	31
Power loss				
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.				
	W	8	13	19
• During starting with 300% I_M (40 °C)				
	W	188	220	256
Permissible rated motor current and starts per hour				
• For normal starting (CLASS 10) at 40 / 50 °C				
- Rated motor current $I_M^{(2)}$, start-up time 3 s	A	25/23	32/29	38/34
- Starts per hour ³⁾	1/h	23/23	23/23	19/19
- Rated motor current $I_M^{(2)}$, start-up time 4 s	A	25/23	32/29	38/34
- Starts per hour ³⁾	1/h	15/15	16/16	12/12

1) Measurement at 60 °C according to UL/CSA not required.

2) At 300% I_M , $T_U = 40 / 50$ °C.

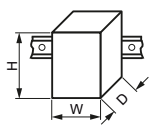
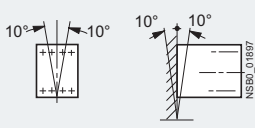
3) For intermittent duty S4 with ON period = 30%, $T_U = 40 / 50$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode. Factors for permissible switching frequency with deviating mounting position, direct mounting, side-by-side mounting, see Manual in the chapter "Configuring".

Type		3RW3036	3RW3037	3RW3038	3RW3046	3RW3047
Power electronics						
Load rating with rated operational current I_e						
• According to IEC and UL/CSA ¹⁾ , for individual mounting, AC-53a						
- At 40 °C	A	45	65	72	80	106
- At 50 °C	A	42	58	62.1	73	98
- At 60 °C	A	39	53	60	66	90
Power loss						
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.						
	W	6	12	15	12	21
• During starting with 300% I_M (40 °C)						
	W	316	444	500	576	768
Permissible rated motor current and starts per hour						
• For normal starting (CLASS 10) at 40 / 50 °C						
- Rated motor current $I_M^{(2)}$, start-up time 3 s	A	45/42	63/58	72/62	80/73	106/108
- Starts per hour ³⁾	1/h	38/38	23/23	22/22	22/22	15/15
- Rated motor current $I_M^{(2)}$, start-up time 4 s	A	45/42	63/58	72/62	80/73	106/98
- Starts per hour ³⁾	1/h	26/26	15/15	15/15	15/15	10/10

1) Measurement at 60 °C according to UL/CSA not required.

2) At 300% I_M , $T_U = 40 / 50$ °C.

3) For intermittent duty S4 with ON period = 30%, $T_U = 40 / 50$ °C, stand-alone installation vertical. The quoted switching frequencies do not apply for automatic mode.

Type		3RW3003-1CB54	3RW3003-2CB54
Mechanics and environment			
Mounting dimensions (W x H x D)		mm	22.5 x 100 x 120
<ul style="list-style-type: none"> Screw terminals Spring-type terminals 		mm	-- 22.5 x 101.6 x 120
Permissible ambient temperature		°C	-25 ... +60; (derating from +40)
During operation		°C	-40 ... +80
During storage			
Weight		kg	0.207
Permissible mounting position			
Permissible installation altitude		m	5 000 (Derating from 1 000, see characteristic curve on page 6/7)
Degree of protection acc. to IEC 60529			IP20 (IP00 terminal compartment)
Control electronics			
Rated values			
Rated control supply voltage	V		24 ... 230 AC/DC
• Tolerance	%		± 10
Rated frequency at AC	Hz		50/60
• Tolerance	%		± 10
Power electronics			
Rated operational voltage	V AC		200 ... 400
Tolerance	%		± 10
Rated frequency	Hz		50/60
Tolerance	%		± 10
Uninterrupted duty (% of I_e)	%		100
Minimum load¹⁾ (% of I_e); at 40 °C	%		9
Maximum conductor length between soft starter and motor	m		100 ²⁾
Load rating with rated operational current I_e			
• According to IEC and UL/CSA for individual mounting at 40/50/60 °C, AC-53a	A		3/2.6/2.2
• According to IEC and UL/CSA for side-by-side-mounting at 40/50/60 °C, AC-53a	A		2.6/2.2 /1.8
Power loss			
• In operation after completed starting with uninterrupted rated operational current (40 °C) approx.	W		6.5
• With utilization of maximum switching frequency	W		3
Permissible starts per hour (cannot be increased by using a fan)			
• For intermittent duty S4 $T_{ij} = 40$ °C, stand-alone installation vertical	1/h		1 500
• ON period = 70% for 300% I_e	1/s		0.2
Dead time after uninterrupted duty with I_e before restart	s		0

¹⁾ The rated motor current (specified on the motor's name plate) should at least amount to the specified percentage of the SIRIUS soft starter unit's rated operational current I_e .

²⁾ If this value is exceeded, problems with line capacities may arise, which can result in false firing.

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW30 Soft Starters

General data

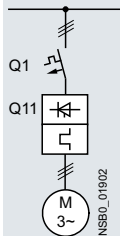
Motor feeders according to IEC with 3RV2 motor starter protectors

Without semiconductor protection

Type of coordination "1", CLASS 10,
short-circuit breaking capacity I_q in kA, [see table](#)

Note:

For general recommendations for constructing motor feeders
with soft starters, [see page 6/9](#).



Soft starters

Q11
Type

Motor starter protectors/circuit breakers

for 400 V systems

Q1
Type

I_q
kA

Type of
coordination
"1"

ToC
1

3RW3003	3RV2011-1EA10	50
3RW3013	3RV2011-1FA10	5
3RW3014	3RV2011-1HA10	5
3RW3016	3RV2011-1JA10	5
3RW3017	3RV2011-1KA10	5
3RW3018	3RV2021-4BA10	5
3RW3026	3RV2021-4DA10	55
3RW3027	3RV2021-4EA10	55
3RW3028	3RV2021-4FA10	55
3RW3036	3RV2031-4WA10	10
3RW3037	3RV2031-4JA10	10
3RW3038	3RV2031-4KA10	10
3RW3046	3RV2041-4RA10	11
3RW3047	3RV2041-4MA10	11

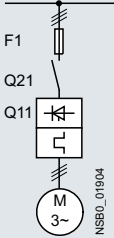
Motor feeders according to IEC with 3NA3 fuses

gG class full-range fuses for cable and line protection according to IEC 60269-2, without semiconductor protection

Type of coordination "1",
short-circuit breaking capacity $I_q = 65$ kA

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).

				
Soft starters	gG class fuse	Line contactor (optional)		
	for systems up to 480 V	for systems up to 400 V	for systems up to 480 V	
Q11 Type	F1 Type	Q21 Type	Q21 Type	
Type of coordination "1"	Inline circuit			
3RW3003 ¹⁾	3NA3805 ²⁾	3RT2015	3RT2015	
3RW3013	3NA3803-6	3RT2015	3RT2015	
3RW3014	3NA3805-6	3RT2015	3RT2016	
3RW3016	3NA3807-6	3RT2016	3RT2017	
3RW3017	3NA3810-6	3RT2018	3RT2025	
3RW3018	3NA3814-6	3RT2026	3RT2026	
3RW3026	3NA3822-6	3RT2026	3RT2027	
3RW3027	3NA3824-6	3RT2027	3RT2028	
3RW3028	3NA3824-6	3RT2028	3RT2035	
3RW3036	3NA3130-6	3RT2036	3RT2036	
3RW3037	3NA3132-6	3RT2037	3RT2037	
3RW3038	3NA3132-6	3RT2038	3RT2038	
3RW3046	3NA3136-6	3RT2045	3RT2045	
3RW3047	3NA3136-6	3RT2047	3RT2047	

¹⁾ $I_q = 50$ kA at 400 V.

²⁾ 3NA3805-1 (NH00), 5SB261 (DIAZED), 5SE2201-6 (NEOZED).

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW30 Soft Starters

General data

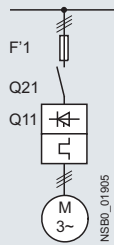
Motor feeders according to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_{q} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).



Soft starters	gG class fuse	Line contactor (optional)	
	for systems up to 480 V	for systems up to 400 V	for systems up to 480 V
Q11 Type	F'1 Type	Q21 Type	Q21 Type
Type of coordination "2"	Inline circuit		
3RW3003¹⁾	3NE1813-0 ²⁾	3RT2015	3RT2015
3RW3013	3NE1813-0	3RT2015	3RT2015
3RW3014	3NE1813-0	3RT2015	3RT2016
3RW3016	3NE1813-0	3RT2016	3RT2017
3RW3017	3NE1813-0	3RT2018	3RT2025
3RW3018	3NE1814-0	3RT2026	3RT2026
3RW3026	3NE1803-0	3RT2026	3RT2027
3RW3027	3NE1020-2	3RT2027	3RT2028
3RW3028	3NE1020-2	3RT2028	3RT2035
3RW3036	3NE1020-2	3RT2036	3RT2036
3RW3037	3NE1820-0	3RT2037	3RT2037
3RW3038	3NE1820-0	3RT2038	3RT2038
3RW3046	3NE1021-0	3RT2045	3RT2045
3RW3047	3NE1022-0	3RT2047	3RT2047

¹⁾ $I_{q} = 50 \text{ kA}$ at 400 V.

²⁾ No SITOR fuse required!
Alternatively: 3NA3803 (NH00), 5SB221 (DIAZED), 5SE2206 (NEOZED).

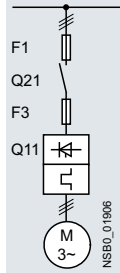
Motor feeders according to IEC with 3NE8 / 3NE4 / 3NE3 / 3NC fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/9](#).



Soft starters	gG class fuse		aR class fuse		Cylindrical fuses		Line contactor (optional)	
	for systems up to 480 V	Type	for systems up to 480 V	Type	for systems up to 480 V	Type	for systems up to 400 V	for systems up to 480 V
Q11	F1	Type	F3	Type	F3	Type	Q21	Q21
Type	Type	Type	Type	Type	Type	Type	Type	Type
Type of coordination "2"	Inline circuit							
3RW3003¹⁾	3NA3805 ²⁾	--	--	--	3NE8015-1	3NC1010	3RT2015	3RT2015
3RW3013	3NA3803-6	--	3NE4101	--	3NE8015-1	3NC2220	3RT2015	3RT2015
3RW3014	3NA3805-6	--	3NE4101	--	3NE8015-1	3NC2220	3RT2015	3RT2016
3RW3016	3NA3807-6	--	3NE4101	--	3NE8015-1	3NC2220	3RT2016	3RT2017
3RW3017	3NA3810-6	--	3NE4101	--	3NE8015-1	3NC2250	3RT2018	3RT2025
3RW3018	3NA3814-6	--	3NE4101	--	3NE8003-1	3NC2263	3RT2026	3RT2026
3RW3026	3NA3822-6	--	3NE4102	--	3NE8017-1	3NC2263	3RT2026	3RT2027
3RW3027	3NA3824-6	--	3NE4118	--	3NE8018-1	3NC2280	3RT2027	3RT2028
3RW3028	3NA3824-6	--	3NE4118	--	3NE8020-1	3NC2280	3RT2028	3RT2035
3RW3036	3NA3130-6	--	3NE4120	--	3NE8020-1	3NC2280	3RT2036	3RT2036
3RW3037	3NA3132-6	--	3NE4121	--	3NE8021-1	--	3RT2037	3RT2037
3RW3038	3NA3132-6	3NE3221	--	--	3NE8022-1	--	3RT2038	3RT2038
3RW3046	3NA3136-6	3NE3222	--	--	3NE8022-1	--	3RT2045	3RT2045
3RW3047	3NA3136-6	3NE3224	--	--	3NE8024-1	--	3RT2047	3RT2047

¹⁾ $I_q = 50 \text{ kA}$ at 400 V.

²⁾ 3NA3805-1 (NH00), 5SB261 (DIAZED).

Note:

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2/3VA motor starter protectors/circuit breakers can also be used, possibly with reduced short-circuit breaking capacity ([see page 6/76](#)). In these cases, optional line contactors can be dispensed with.

SIRIUS 3RW Soft Starters

Basic Performance Soft Starters

3RW30 Soft Starters

Inline circuit **IE3/IE4 ready**

Selection and ordering data

For simple starting conditions



3RW ambient temperature 40 °C				3RW ambient temperature 50 °C				Size	SD ¹⁾	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rated values of three-phase motors				Rated values of three-phase motors										
Operational current I_e	Rating at operational voltage U_e			Operational current I_e	Rating at operational voltage U_e			d						
	230 V	400 V	500 V		200 V	230 V	460 V							575 V
A	kW	kW	kW	A	hp	hp	hp	hp						
Rated operational voltage U_e 200 ... 480 V														
3.6	0.75	1.5	--	3	0.5	0.5	1.5	--	S00	2	3RW3013-□BB□4	1	1 unit	42G
6.5	1.5	3	--	6	1	1	3	--	S00	2	3RW3014-□BB□4	1	1 unit	42G
9	2.2	4	--	8	2	2	5	--	S00	2	3RW3016-□BB□4	1	1 unit	42G
12.5	3	5.5	--	12	3	3	7.5	--	S00	2	3RW3017-□BB□4	1	1 unit	42G
17.6	4	7.5	--	17	3	3	10	--	S00	2	3RW3018-□BB□4	1	1 unit	42G
25	5.5	11	--	23	5	5	15	--	S0	2	3RW3026-□BB□4	1	1 unit	42G
32	7.5	15	--	29	7.5	7.5	20	--	S0	2	3RW3027-□BB□4	1	1 unit	42G
38	11	18.5	--	34	10	10	25	--	S0	2	3RW3028-□BB□4	1	1 unit	42G
45	11	22	--	42	10	15	30	--	S2	2	3RW3036-□BB□4	1	1 unit	42G
63	18.5	30	--	58	15	20	40	--	S2	2	3RW3037-□BB□4	1	1 unit	42G
72	22	37	--	62	20	20	40	--	S2	2	3RW3038-□BB□4	1	1 unit	42G
80	22	45	--	73	20	25	50	--	S3	2	3RW3046-□BB□4	1	1 unit	42G
106	30	55	--	98	30	30	75	--	S3	2	3RW3047-□BB□4	1	1 unit	42G

Article No. supplement for connection types

- With screw terminals
- With spring-type terminals²⁾

Article No. supplement for rated control supply voltage U_s

- 24 V AC/DC
- 110 ... 230 V AC/DC

Soft starters for simple starting conditions and high switching frequency, rated operational voltage U_e 200 ... 400 V, rated control supply voltage U_s 24 ... 230 V AC/DC

3	0.55	1.1	--	A	0.5	0.5	--	--	22.5 mm					
										▶	3RW3003-1CB54	1	1 unit	42G
										▶	3RW3003-2CB54	1	1 unit	42G

- With screw terminals
 - With spring-type terminals
- ¹⁾ Soft starter U_e 200 to 480 V with screw terminals: Standard delivery time SD = 1 day (d).
- ²⁾ Main connection from size S2: screw terminals.

Note:

For the constraints for the motor outputs specified here, see page 6/7.

1
2

0
1

Accessories

More information

Manual "SIRIUS 3RW30/3RW40 Soft Starters", see
<https://support.industry.siemens.com/cs/ww/en/view/38752095>

Conductor cross-section			Tightening torque	For soft starters size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded								
mm ²	mm ²	AWG	Nm	d						

Three-phase infeed terminals



3RV2925-5AB

2.5 ... 25	2.5 ... 16	10 ... 4	3 ... 4	S00 (3RW301.), S0 (3RW302.)	▶	3RV2925-5AB		1	1 unit	41E
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For soft starters Type	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					

Auxiliary terminals



3RT2946-4F

Auxiliary terminals, 3-pole			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RW304.	Size							
			d					

3RW304.	S3	5	3RT2946-4F		1	1 unit	41B
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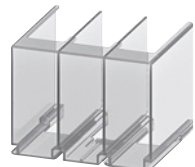
Covers for soft starters



3RT2936-4EA2

Terminal covers for box terminals			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RW303.	Size							
Additional touch protection to be fitted at the box terminals (2 units required per device)								
			d					

3RW303.	S2	▶	3RT2936-4EA2		1	1 unit	41B
3RW304.	S3	▶	3RT2946-4EA2		1	1 unit	41B



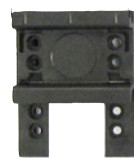
3RT1946-4EA1

Terminal covers for cable lugs and busbar connections			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RW304.	Size							
For complying with the voltage clearances and as touch protection if box terminal is removed (2 units required per device)								
			d					

3RW304.	S3	5	3RT1946-4EA1		1	1 unit	41B
---------	-----------	---	---------------------	--	---	--------	-----

For motor starter protectors	For soft starters	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Size		d					

Mounting rails for mounting contactors for the customer assembly of 3RA21 load feeders with busbar adapters for 60 mm systems



8US1998-7CB45

--	S0	For the discrete configuration of direct-on-line starters, an additional mounting rail is needed for the contactor in addition to the existing mounting rail on the busbar adapter for the motor starter protector.	2	8US1998-7CB45		1	10 units	140
		For pushing onto the device adapter, including fixing screws						

Standard mounting rail adapters



3RA2932-1CA00

S2	S2	For mechanical fixing of motor starter protector and soft starter; for snapping onto standard mounting rail or for screw fixing	2	3RA2932-1CA00		1	1 unit	41B
		Single-unit packaging						

SIRIUS 3RW Soft Starters

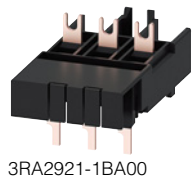
Basic Performance Soft Starters

3RW30 Soft Starters

Accessories

For soft starters	Motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type	Size	Size					

Link modules to motor starter protectors¹⁾



3RA2921-1BA00

3RW301.	S00	S00	2				
3RW302.	S0	S00/S0	2				
3RW3036.	S2	S2	▶				
3RW3046., 3RW3047.	S3	S3	▶				

Screw terminals



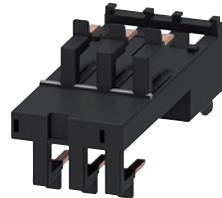
3RA2921-1BA00					1	1 unit	41B
3RA2921-1BA00					1	1 unit	41B
3RA2931-1AA00					1	1 unit	41B
3RA1941-1AA00					1	1 unit	41B

Spring-type terminals



3RW301.	S00	S00	2				
3RW302.	S0	S0	2				

3RA2911-2GA00					1	1 unit	41B
3RA2921-2GA00					1	1 unit	41B



3RA2921-2GA00

¹⁾ Can be used in size S0 up to maximum 32 A. Can be used in size S2 up to maximum 65 A in combination with 3RA2932-1CA00 standard mounting rail adapter (specially for soft starters). Can be used in size S3 only on mounting plate.

Version	Functionality Functions	Use	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
---------	-------------------------	-----	----	-------------	--------------	-------------------	-----	----

Covers and push-in lugs (only for 3RW3003)



3RP1902

Sealable covers	For securing against unauthorized adjustment of setting knobs	For devices with 1 or 2 CO contacts	5	3RP1902		1	5 units	41H
------------------------	---	-------------------------------------	---	----------------	--	---	---------	-----



3RP1903

Push-in lugs for screw fixing	--	For devices with 1 or 2 CO contacts	5	3RP1903		1	10 units	41H
--------------------------------------	----	-------------------------------------	---	----------------	--	---	----------	-----

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Tools for opening spring-type terminals in sizes S00 and S0



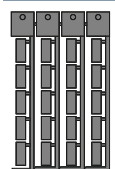
3RA2908-1A

Screwdrivers	For all SIRIUS devices with spring-type terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated		2	3RA2908-1A		1	1 unit	41B
---------------------	---	--	---	-------------------	--	---	--------	-----

Spring-type terminals



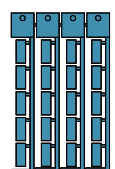
Blank labels



3RT2900-1SB20

Unit labeling plates¹⁾	For SIRIUS devices		20	3RT2900-1SB20		100	340 units	41B
--	--------------------	--	----	----------------------	--	-----	-----------	-----

- 20 mm x 7 mm, titanium gray



3RT1900-1SB20

			20	3RT1900-1SB20		100	340 units	41B
--	--	--	----	----------------------	--	-----	-----------	-----

- 20 mm x 7 mm, pastel turquoise

¹⁾ PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH, see page 16/16.






Overview

More information

Homepage, see www.siemens.com/soft-starter
Industry Mall, see www.siemens.com/product?3RW

Industry Online Support (SIOS), see
<https://support.industry.siemens.com/cs/ww/en/view/109747404>

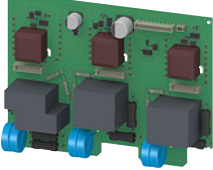

Selection and ordering data

Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power semiconductor modules								
	Power semiconductor module	3RW5524-.HA.4 (3x)	480 V, 47 A	1	3RW5952-0SF04		1	1 unit 42S
		3RW5525-.HA.4, 3RW5526-.HA.4 (3x)	480 V, 77 A	1	3RW5952-0SH04		1	1 unit 42S
		3RW5527-.HA.4 (3x)	480 V, 93 A	1	3RW5952-0SJ04		1	1 unit 42S
		3RW5534-.HA.4, 3RW5535-.HA.4 (3x)	480 V, 143 A	1	3RW5953-0SL04		1	1 unit 42S
		3RW5536-.HA.4 (3x)	480 V, 171 A	1	3RW5953-0SM04		1	1 unit 42S
		3RW5543-.HA.4 (3x)	480 V, 210 A	1	3RW5954-0SN04		1	1 unit 42S
		3RW5544-.HA.4 (3x)	480 V, 250 A	1	3RW5954-0SP04		1	1 unit 42S
		3RW5545-.HA.4, 3RW5546-.HA.4 (3x)	480 V, 370 A	1	3RW5954-0SR04		1	1 unit 42S
		3RW5547-.HA.4, 3RW5548-.HA.4 (3x)	480 V, 570 A	1	3RW5954-0ST04		1	1 unit 42S
	3RW5952-0SF04							
		3RW5521-.HA.6, 3RW5524-.HA.6 (3x)	690 V, 47 A	1	3RW5952-0SF06		1	1 unit 42S
		3RW5525-.HA.6, 3RW5526-.HA.6 (3x)	690 V, 77 A	1	3RW5952-0SH06		1	1 unit 42S
		3RW5527-.HA.6 (3x)	690 V, 93 A	1	3RW5952-0SJ06		1	1 unit 42S
		3RW5534-.HA.6, 3RW5535-.HA.6 (3x)	690 V, 143 A	1	3RW5953-0SL06		1	1 unit 42S
		3RW5536-.HA.6 (3x)	690 V, 171 A	1	3RW5953-0SM06		1	1 unit 42S
		3RW5543-.HA.6 (3x)	690 V, 210 A	1	3RW5954-0SN06		1	1 unit 42S
		3RW5544-.HA.6 (3x)	690 V, 250 A	1	3RW5954-0SP06		1	1 unit 42S
		3RW5545-.HA.6, 3RW5546-.HA.6 (3x)	690 V, 370 A	1	3RW5954-0SR06		1	1 unit 42S
		3RW5547-.HA.6, 3RW5548-.HA.6 (3x)	690 V, 570 A	1	3RW5954-0ST06		1	1 unit 42S
	3RW5953-0SM06							
		3RW5521-.HA.6, 3RW5524-.HA.6 (3x)	690 V, 47 A	1	3RW5952-0SF06		1	1 unit 42S
		3RW5525-.HA.6, 3RW5526-.HA.6 (3x)	690 V, 77 A	1	3RW5952-0SH06		1	1 unit 42S
		3RW5527-.HA.6 (3x)	690 V, 93 A	1	3RW5952-0SJ06		1	1 unit 42S
		3RW5534-.HA.6, 3RW5535-.HA.6 (3x)	690 V, 143 A	1	3RW5953-0SL06		1	1 unit 42S
		3RW5536-.HA.6 (3x)	690 V, 171 A	1	3RW5953-0SM06		1	1 unit 42S
		3RW5543-.HA.6 (3x)	690 V, 210 A	1	3RW5954-0SN06		1	1 unit 42S
		3RW5544-.HA.6 (3x)	690 V, 250 A	1	3RW5954-0SP06		1	1 unit 42S
		3RW5545-.HA.6, 3RW5546-.HA.6 (3x)	690 V, 370 A	1	3RW5954-0SR06		1	1 unit 42S
		3RW5547-.HA.6, 3RW5548-.HA.6 (3x)	690 V, 570 A	1	3RW5954-0ST06		1	1 unit 42S
	3RW5954-0ST06							
Bypass units								
	Bypass unit	3RW552, 3RW553	--	1	3RW5953-0BY00		1	1 unit 42S
		3RW5543, 3RW5544, 3RW5545	210 A to 315 A	1	3RW5954-0BP00		1	1 unit 42S
		3RW5546, 3RW5547, 3RW5548	370 A to 570 A	1	3RW5954-0BT00		1	1 unit 42S
3RW5953-0BY00								
Control units								
	Control unit	3RW55...-HA0.	24 V	1	3RW5950-1UY00		1	1 unit 42S
		3RW55...-HA1.	110 - 250 V	1	3RW5950-1UY10		1	1 unit 42S
3RW5950-1UY00								

SIRIUS 3RW Soft Starters

Spare Parts






for 3RW55 **NEW**

Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Printed circuit boards									
 3RW5951-0PA04  3RW5954-0PY06	Printed circuit board	3RW5513-.HA.4	480 V, 13 A	1	3RW5951-0PA04		1	1 unit	42S
		3RW5514-.HA.4	480 V, 18 A	1	3RW5951-0PB04		1	1 unit	42S
		3RW5515-.HA.4	480 V, 25 A	1	3RW5951-0PC04		1	1 unit	42S
		3RW5516-.HA.4	480 V, 32 A	1	3RW5951-0PD04		1	1 unit	42S
		3RW5517-.HA.4	480 V, 38 A	1	3RW5951-0PE04		1	1 unit	42S
		3RW552-.HA.4, 3RW553-.HA.4	480 V	1	3RW5953-0PY04		1	1 unit	42S
		3RW554-.HA.4	480 V	1	3RW5954-0PY04		1	1 unit	42S
		3RW5513-.HA.5	600 V, 13 A	1	3RW5951-0PA05		1	1 unit	42S
		3RW5514-.HA.5	600 V, 18 A	1	3RW5951-0PB05		1	1 unit	42S
		3RW5515-.HA.5	600 V, 25 A	1	3RW5951-0PC05		1	1 unit	42S
		3RW5516-.HA.5	600 V, 32 A	1	3RW5951-0PD05		1	1 unit	42S
		3RW5517-.HA.5	600 V, 38 A	1	3RW5951-0PE05		1	1 unit	42S
		3RW552-.HA.6, 3RW553-.HA.6	690 V	1	3RW5953-0PY06		1	1 unit	42S
		3RW554-.HA.6	690 V	1	3RW5954-0PY06		1	1 unit	42S
	Fans								
	 3RW5983-0FF00	Fan	3RW551 (1x), 3RW552, 3RW553 (2x)	--	1	3RW5983-0FF00		1	1 unit
		3RW554	--	1	3RW5984-0FF00		1	1 unit	42S
Terminals									
 3RW5982-0TB00	Box terminal block	3RW552 (2x)	--	1	3RW5982-0TB00		1	1 unit	42S
	 3RW5980-1TR00	Removable control terminals	3RW551.-1HA..., 3RW552.-1HA..., 3RW553.-6HA..., 3RW554.-6HA... (2x)	contains 2 blocks each with 6 terminals	1	Screw terminals  3RW5980-1TR00		1	1 unit
		3RW551.-3HA..., 3RW552.-3HA..., 3RW553.-2HA..., 3RW554.-2HA... (2x)	contains 2 blocks each with 6 terminals	1	Spring-type terminals  3RW5980-2TR00		1	1 unit	42S
Enclosure components									
 3RW5953-0GB00	Enclosure base	3RW552, 3RW553 3RW554	--	1	3RW5953-0GB00		1	1 unit	42S
				1	3RW5954-0GB00		1	1 unit	42S
 3RW5950-0GD20	Cover for control cable duct	3RW55	Titanium gray	1	3RW5950-0GD20		1	1 unit	42S

SIRIUS 3RW Soft Starters

Spare Parts

NEW for 3RW55

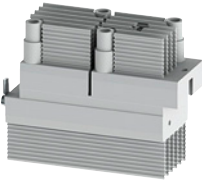
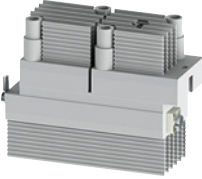


Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure components (continued)								
	Front cover	3RW554	--	1	3RW5954-0GF00		1	1 unit 42S
3RW5954-0GF00								
	Hinged cover	3RW55	With cutout for HMI module High Feature	1	3RW5950-0GL30		1	1 unit 42S
3RW5950-0GL30								
HMI modules								
	HMI module	3RW55	High Feature	1	3RW5980-0HF00		1	1 unit 42S
3RW5980-0HF00								
	Interface cover	3RW55	--	1	3RW5980-0HL00		1	1 unit 42S
3RW5980-0HL00								
Connection cables for HMI								
	Connection cables	--	0.1 m, flat	▶	3UF7931-0AA00-0		1	1 unit 42J
3UF7931-0AA00-0								
Transport packaging								
	Transport packaging	3RW551	--	1	3RW5951-0VY00		1	1 unit 42S
		3RW552, 3RW553	--	1	3RW5953-0VY00		1	1 unit 42S
		3RW554	--	1	3RW5954-0VY00		1	1 unit 42S
3RW5953-0VY00								

SIRIUS 3RW Soft Starters

Spare Parts




for 3RW44

Selection and ordering data

	For soft starters	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Type		d					
Power semiconductor modules								
	3RW4443	690 V, 203 A (2 units required per device)	1	3RW4743-0LC00		1	1 unit	42H
	3RW4444, 3RW4445	690 V, 313 A (2 units required per device)	1	3RW4745-0LC00		1	1 unit	42H
	3RW4446	690 V, 356 A (2 units required per device)	1	3RW4746-0LC00		1	1 unit	42H
	3RW4447	690 V, 432 A (2 units required per device)	1	3RW4747-0LC00		1	1 unit	42H
	3RW4453, 3RW4454, 3RW4455	690 V, 693 A (2 units required per device)	3	3RW4755-0LC00		1	1 unit	42H
	3RW4456, 3RW4457, 3RW4458	690 V, 970 A (2 units required per device)	3	3RW4758-0LC00		1	1 unit	42H
	3RW4465, 3RW4466	690 V, 1 214 A (2 units required per device)	3	3RW4766-0LC00		1	1 unit	42H
NTC power semiconductor modules								
	3RW4443	690 V, 203 A	1	3RW4743-0NC00		1	1 unit	42H
	3RW4444, 3RW4445	690 V, 313 A	1	3RW4745-0NC00		1	1 unit	42H
	3RW4446	690 V, 356 A	1	3RW4746-0NC00		1	1 unit	42H
	3RW4447	690 V, 432 A	1	3RW4747-0NC00		1	1 unit	42H
	3RW4453, 3RW4454, 3RW4455	690 V, 693 A	3	3RW4755-0NC00		1	1 unit	42H
	3RW4456, 3RW4457, 3RW4458	690 V, 970 A	3	3RW4758-0NC00		1	1 unit	42H
	3RW4465, 3RW4466	690 V, 1 214 A	3	3RW4766-0NC00		1	1 unit	42H
Bypass units								
	3RW4453, 3RW4454, 3RW4455	--	2	3RW4755-0KC00		1	1 unit	42H
	3RW4456, 3RW4457	--	2	3RW4766-0KC00		1	1 unit	42H
	3RW4458, 3RW4465, 3RW4466	--	2	3RW4766-0KC01		1	1 unit	42H
Control units with screw terminals								
	3RW4422-.BC4.	230 V	1	3RW4722-1SC44		1	1 unit	42H
	3RW4423-.BC4.	230 V	1	3RW4723-1SC44		1	1 unit	42H
	3RW4424-.BC4.	230 V	1	3RW4724-1SC44		1	1 unit	42H
	3RW4425-.BC4.	230 V	1	3RW4725-1SC44		1	1 unit	42H
	3RW4426-.BC4.	230 V	1	3RW4726-1SC44		1	1 unit	42H
	3RW4427-.BC4.	230 V	1	3RW4727-1SC44		1	1 unit	42H
	3RW4434-.BC4.	230 V	1	3RW4734-6SC44		1	1 unit	42H
	3RW4435-.BC4.	230 V	1	3RW4735-6SC44		1	1 unit	42H
	3RW4436-.BC4.	230 V	1	3RW4736-6SC44		1	1 unit	42H
	3RW4443-.BC4.	230 V	1	3RW4743-6SC44		1	1 unit	42H
	3RW4444-.BC4.	230 V	1	3RW4744-6SC44		1	1 unit	42H
	3RW4445-.BC4.	230 V	1	3RW4745-6SC44		1	1 unit	42H
	3RW4446-.BC4.	230 V	1	3RW4746-6SC44		1	1 unit	42H
	3RW4447-.BC4.	230 V	1	3RW4747-6SC44		1	1 unit	42H
	3RW4453-.BC4.	230 V	1	3RW4753-6SC44		1	1 unit	42H
	3RW4454-.BC4.	230 V	1	3RW4754-6SC44		1	1 unit	42H
	3RW4455-.BC4.	230 V	1	3RW4755-6SC44		1	1 unit	42H
	3RW4456-.BC4.	230 V	1	3RW4756-6SC44		1	1 unit	42H
	3RW4457-.BC4.	230 V	1	3RW4757-6SC44		1	1 unit	42H
	3RW4458-.BC4.	230 V	1	3RW4758-6SC44		1	1 unit	42H
	3RW4465-.BC4.	230 V	1	3RW4765-6SC44		1	1 unit	42H
	3RW4466-.BC4.	230 V	1	3RW4766-6SC44		1	1 unit	42H

SIRIUS 3RW Soft Starters Spare Parts

for 3RW44

	For soft starters	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Type			d						
TSE printed circuit boards									
 3RW4756-0WC70	3RW4453.-BC.4, 3RW4454.-BC.4, 3RW4455.-BC.4, 3RW4456.-BC.4	460 V	2	3RW4756-0WC70		1	1 unit	42H	
	3RW4457.-BC.4, 3RW4458.-BC.4, 3RW4465.-BC.4, 3RW4466.-BC.4	460 V	2	3RW4766-0WC70		1	1 unit	42H	
	3RW4453.-BC.5, 3RW4453.-BC.6, 3RW4454.-BC.5, 3RW4454.-BC.6, 3RW4455.-BC.5, 3RW4455.-BC.6, 3RW4456.-BC.5, 3RW4456.-BC.6	690 V	2	3RW4756-0WC50		1	1 unit	42H	
	3RW4457.-BC.5, 3RW4457.-BC.6, 3RW4458.-BC.5, 3RW4458.-BC.6, 3RW4465.-BC.5, 3RW4465.-BC.6, 3RW4466.-BC.5, 3RW4466.-BC.6	690 V	2	3RW4766-0WC50		1	1 unit	42H	
	Firing printed circuit boards								
	 3RW4727-0VC70	3RW442.-BC.4	460 V	2	3RW4727-0VC70		1	1 unit	42H
		3RW443.-BC.4, 3RW4443.-BC.4	460 V	2	3RW4743-0VC70		1	1 unit	42H
		3RW4444.-BC.4, 3RW4445.-BC.4	460 V	2	3RW4745-0VC70		1	1 unit	42H
		3RW4446.-BC.4, 3RW4447.-BC.4	460 V	2	3RW4747-0VC70		1	1 unit	42H
		3RW445.-BC.4, 3RW446.-BC.4	460 V	2	3RW4766-0VC70		1	1 unit	42H
		3RW442.-BC.5	600 V	2	3RW4727-0VC80		1	1 unit	42H
		3RW443.-BC.5, 3RW4443.-BC.5	600 V	2	3RW4743-0VC80		1	1 unit	42H
3RW442.-BC.6		690 V	2	3RW4727-0VC50		1	1 unit	42H	
3RW443.-BC.6, 3RW4444.-BC.5, 3RW4445.-BC.5		690 V	2	3RW4745-0VC50		1	1 unit	42H	
3RW4443.-BC.6, 3RW4446.-BC.5, 3RW4447.-BC.5, 3RW4447.-BC.6		690 V	2	3RW4746-0VC50		1	1 unit	42H	
3RW4444.-BC.6, 3RW4445.-BC.6, 3RW4446.-BC.6		690 V	2	3RW4747-0VC50		1	1 unit	42H	
3RW445.-BC.5, 3RW445.-BC.6, 3RW446.-BC.5, 3RW446.-BC.6		690 V	2	3RW4766-0VC50		1	1 unit	42H	
Fans									
 3RW4957-8VX.0, 3RW4966-8VX.0		3RW442.-BC3. ¹⁾ , 3RW443.-BC3.	115 V	▶	3RW4936-8VX30		1	1 unit	42G
		3RW442.-BC4. ¹⁾ , 3RW443.-BC4.	230 V	▶	3RW4936-8VX40		1	1 unit	42G
		3RW444.-BC3.	115 V	▶	3RW4947-8VX30		1	1 unit	42G
		3RW444.-BC4.	230 V	▶	3RW4947-8VX40		1	1 unit	42G
		3RW445.-BC3., 3RW446.-BC3. ²⁾	115 V	▶	3RW4957-8VX30		1	1 unit	42H
	3RW445.-BC4., 3RW446.-BC4. ²⁾	230 V	▶	3RW4957-8VX40		1	1 unit	42H	
	3RW446.-BC3. ³⁾	115 V	▶	3RW4966-8VX30		1	1 unit	42H	
	3RW446.-BC4. ³⁾	230 V	▶	3RW4966-8VX40		1	1 unit	42H	

¹⁾ The 3RW4422 and 3RW4423 soft starters do not need fans.
These devices are adequately designed for natural convection.

²⁾ 3RW446. mounting on output side.

³⁾ For mounting on front side.






Overview

More information

Homepage, see www.siemens.com/soft-starter
Industry Mall, see www.siemens.com/product?3RW

Industry Online Support (SIOS), see
<https://support.industry.siemens.com/cs/ww/en/view/109747404>

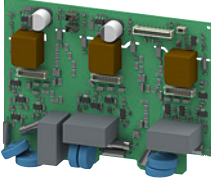
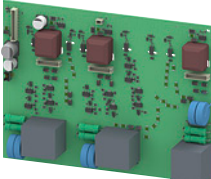



Selection and ordering data

Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Power semiconductor modules									
	Power semiconductor module	3RW5224-..C.4 (3x)	480 V, 47 A	1	3RW5952-0SF04		1	1 unit	42S
		3RW5225-..C.4, 3RW5226-..C.4 (3x)	480 V, 77 A	1	3RW5952-0SH04		1	1 unit	42S
		3RW5227-..C.4 (3x)	480 V, 93 A	1	3RW5952-0SJ04		1	1 unit	42S
		3RW5234-..C.4, 3RW5235-..C.4 (3x)	480 V, 143 A	1	3RW5953-0SL04		1	1 unit	42S
		3RW5236-..C.4 (3x)	480 V, 171 A	1	3RW5953-0SM04		1	1 unit	42S
		3RW5224-..C.5 (3x)	600 V, 47 A	1	3RW5952-0SF05		1	1 unit	42S
		3RW5225-..C.5, 3RW5226-..C.5 (3x)	600 V, 77 A	1	3RW5952-0SH05		1	1 unit	42S
		3RW5227-..C.5 (3x)	600 V, 93 A	1	3RW5952-0SJ05		1	1 unit	42S
		3RW5234-..C.5, 3RW5235-..C.5 (3x)	600 V, 143 A	1	3RW5953-0SL05		1	1 unit	42S
		3RW5236-..C.5 (3x)	600 V, 171 A	1	3RW5953-0SM05		1	1 unit	42S
		3RW5243 (3x)	600 V, 210 A	1	3RW5924-0SN05		1	1 unit	42S
		3RW5244, 3RW5245 (3x)	600 V, 315 A	1	3RW5924-0SQ05		1	1 unit	42S
		3RW5246, 3RW5247 (3x)	600 V, 470 A	1	3RW5924-0SS05		1	1 unit	42S
		3RW5248 (3x)	600 V, 570 A	1	3RW5924-0ST05		1	1 unit	42S
3RW5952-0SF04									
									
3RW5953-0SM05									
									
3RW5924-0ST05									
Bypass units									
	Bypass unit	3RW522, 3RW523	--	1	3RW5953-0BY00		1	1 unit	42S
		3RW5243, 3RW5244, 3RW5245	210 A to 315 A	1	3RW5954-0BP00		1	1 unit	42S
		3RW5246, 3RW5247, 3RW5248	370 A to 570 A	1	3RW5954-0BT00		1	1 unit	42S
3RW5953-0BY00									
Control units									
	Control unit	3RW52-..-AC0.	24 V analog output	1	3RW5920-1UA00		1	1 unit	42S
		3RW52-..-AC1.	110 - 250 V analog output	1	3RW5920-1UA10		1	1 unit	42S
		3RW52-..-TC0.	24 V thermistor input	1	3RW5920-1UT00		1	1 unit	42S
		3RW52-..-TC1.	110 - 250 V thermistor input	1	3RW5920-1UT10		1	1 unit	42S
3RW5920-1UA00									

SIRIUS 3RW Soft Starters

Spare Parts




for 3RW52 **NEW**

Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Printed circuit boards								
 3RW5923-0PY04  3RW5924-0PY05	Printed circuit board	3RW5213-..C.4	480 V, 13 A	1	3RW5921-0PA04	1	1 unit	42S
		3RW5214-..C.4	480 V, 18 A	1	3RW5921-0PB04	1	1 unit	42S
		3RW5215-..C.4	480 V, 25 A	1	3RW5921-0PC04	1	1 unit	42S
		3RW5216-..C.4	480 V, 32 A	1	3RW5921-0PD04	1	1 unit	42S
		3RW5217-..C.4	480 V, 38 A	1	3RW5921-0PE04	1	1 unit	42S
		3RW522-..C.4, 3RW523-..C.4	480 V	1	3RW5923-0PY04	1	1 unit	42S
		3RW524-..C.4	480 V	1	3RW5924-0PY04	1	1 unit	42S
		3RW5213-..C.5	600 V, 13 A	1	3RW5921-0PA05	1	1 unit	42S
		3RW5214-..C.5	600 V, 18 A	1	3RW5921-0PB05	1	1 unit	42S
		3RW5215-..C.5	600 V, 25 A	1	3RW5921-0PC05	1	1 unit	42S
		3RW5216-..C.5	600 V, 32 A	1	3RW5921-0PD05	1	1 unit	42S
		3RW5217-..C.5	600 V, 38 A	1	3RW5921-0PE05	1	1 unit	42S
		3RW522-..C.5, 3RW523-..C.5	600 V	1	3RW5923-0PY05	1	1 unit	42S
		3RW524-..C.5	600 V	1	3RW5924-0PY05	1	1 unit	42S
Fans								
 3RW5983-0FF00	Fans	3RW5216/17 (1x), 3RW5526/27, 3RW553 (2x)	--	1	3RW5983-0FF00	1	1 unit	42S
		3RW524	--	1	3RW5984-0FF00	1	1 unit	42S
Terminals								
 3RW5982-0TB00	Box terminal block	3RW522 (2x)	--	1	3RW5982-0TB00	1	1 unit	42S
 3RW5980-1TR00	Removable control terminals	3RW521-..1.C.., 3RW522-..1.C.., 3RW523-..6.C.., 3RW524-..6.C..	contains 2 blocks each with 6 terminals	1	3RW5980-1TR00	1	1 unit	42S
		3RW521-..3.C.., 3RW522-..3.C.., 3RW523-..2.C.., 3RW524-..2.C..	contains 2 blocks each with 6 terminals	1	3RW5980-2TR00	1	1 unit	42S
Enclosure components								
 3RW5953-0GB00	Enclosure base	3RW552, 3RW553	--	1	3RW5953-0GB00	1	1 unit	42S
		3RW554	--	1	3RW5954-0GB00	1	1 unit	42S
 3RW5950-0GD20	Cover for control cable duct	3RW52	Titanium gray	1	3RW5950-0GD20	1	1 unit	42S

SIRIUS 3RW Soft Starters

Spare Parts

NEW for 3RW52

Product designation	Manufacturer's Article No. of the soft starter	Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Enclosure components								
	Front cover	3RW524	--	1	3RW5954-0GF00		1	1 unit 42S
3RW5954-0GF00								
	Hinged cover	3RW52	Without cutout	1	3RW5950-0GL20		1	1 unit 42S
3RW5950-0GL20								
Transport packaging								
	Transport packaging	3RW521	--	1	3RW5951-0VY00		1	1 unit 42S
		3RW522, 3RW523	--	1	3RW5953-0VY00		1	1 unit 42S
		3RW524	--	1	3RW5954-0VY00		1	1 unit 42S
3RW5953-0VY00								

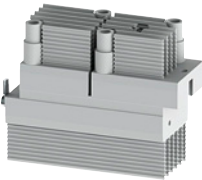
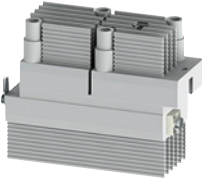






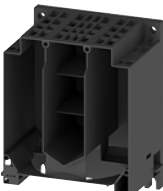
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SIRIUS 3RW Soft Starters

Spare Parts

for 3RW40

Selection and ordering data

	For soft starters Type	Size	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power semiconductor modules									
	3RW4073	S12	600 V, 230 A	1	3RW4773-0LB00		1	1 unit	42G
	3RW4074	S12	600 V, 280 A	1	3RW4774-0LB00		1	1 unit	42G
	3RW4075	S12	600 V, 356 A	1	3RW4775-0LB00		1	1 unit	42G
	3RW4076	S12	600 V, 432 A	1	3RW4776-0LB00		1	1 unit	42G
3RW4773-0LB00									
NTC power semiconductor modules									
	3RW4073	S12	600 V, 230 A	1	3RW4773-0NB00		1	1 unit	42G
	3RW4074	S12	600 V, 280 A	1	3RW4774-0NB00		1	1 unit	42G
	3RW4075	S12	600 V, 356 A	1	3RW4775-0NB00		1	1 unit	42G
	3RW4076	S12	600 V, 432 A	1	3RW4776-0NB00		1	1 unit	42G
3RW4773-0NB00									
Control units with screw terminals									
	3RW4055-.BB3.	S6	115 V	1	3RW4755-6SB30		1	1 unit	42G
	3RW4055-.BB4.	S6	230 V	1	3RW4755-6SB40		1	1 unit	42G
	3RW4056-.BB3.	S6	115 V	1	3RW4756-6SB30		1	1 unit	42G
	3RW4056-.BB4.	S6	230 V	1	3RW4756-6SB40		1	1 unit	42G
	3RW4073-.BB3.	S12	115 V	1	3RW4773-6SB30		1	1 unit	42G
	3RW4073-.BB4.	S12	230 V	1	3RW4773-6SB40		1	1 unit	42G
	3RW4074-.BB3.	S12	115 V	1	3RW4774-6SB30		1	1 unit	42G
	3RW4074-.BB4.	S12	230 V	1	3RW4774-6SB40		1	1 unit	42G
	3RW4075-.BB3.	S12	115 V	1	3RW4775-6SB30		1	1 unit	42G
	3RW4075-.BB4.	S12	230 V	1	3RW4775-6SB40		1	1 unit	42G
	3RW4076-.BB3.	S12	115 V	1	3RW4776-6SB30		1	1 unit	42G
	3RW4076-.BB4.	S12	230 V	1	3RW4776-6SB40		1	1 unit	42G
3RW4755-6SB40									
Firing printed circuit boards									
	3RW405-.BB.4	S6	460 V	2	3RW4756-0VB70		1	1 unit	42G
	3RW405-.BB.5	S6	600 V	2	3RW4756-0VB80		1	1 unit	42G
	3RW407-.BB.4	S12	460 V	2	3RW4776-0VB70		1	1 unit	42G
	3RW407-.BB.5	S12	600 V	2	3RW4776-0VB80		1	1 unit	42G
3RW4756-0VB70									
Fans									
	3RW405-.BB3.	S6	115 V	▶	3RW4936-8VX30		1	1 unit	42G
	3RW405-.BB4.	S6	230 V	▶	3RW4936-8VX40		1	1 unit	42G
	3RW407-.BB3.	S12	115 V	▶	3RW4947-8VX30		1	1 unit	42G
	3RW407-.BB4.	S12	230 V	▶	3RW4947-8VX40		1	1 unit	42G
3RW4936-8VX.0, 3RW4947-8VX.0									
Removable control terminals									
	3RW40	S6/S12	2 blocks each with 6 terminals	1	Spring-type terminals 				
					3RW4776-2HB00		1	1 unit	42G
	3RW4776-6HB00	S6/S12	2 blocks each with 6 terminals	1	Screw terminals 				
					3RW4776-6HB00		1	1 unit	42G
Enclosure base									
	3RW407.	S12	--	3	3RW4776-0UB00		1	1 unit	42G
3RW4776-0UB00									

Overview

More information

Homepage, see www.siemens.com/solid-state-switching-devices
 Industry Mall, see www.siemens.com/product?3RF

Online configurator, see www.siemens.com/sirius/configurators

SIRIUS 3RF solid-state switching devices

Three-phase solid-state contactor and single-phase solid-state relay

The SIRIUS 3RF2 solid-state switching devices reliably switch a wide range of different loads with alternating voltages in 50 and 60 Hz systems.

SIRIUS 3RF2 solid-state switching devices for resistive/inductive loads:

- Solid-state relays
- Solid-state contactors
- Function modules

SIRIUS 3RF2 – for almost unending activity

Conventional electromechanical switching devices are often overtaxed by the rise in the number of switching operations. A high switching frequency results in frequent failure and short replacement cycles. However, this does not have to be the case, because with the latest generation of our SIRIUS 3RF2 solid-state switching devices we provide you with solid-state relays and contactors with a particularly long endurance – for almost unending activity even under the toughest conditions and under high mechanical load, but also in noise-sensitive areas.

Proven time and again in service

SIRIUS 3RF2 solid-state switching devices have firmly established themselves in industrial applications. They are used above all in applications where loads are switched frequently – mainly with resistive load controllers, with the control of electrical heat or the control of valves and motors in conveyor systems. In addition to its use in areas with high switching frequencies, their silent switching means that SIRIUS is also ideally suited for use in noise-sensitive areas, such as offices or hospitals.

The most reliable solution for any application

Compared to mechanical switching devices, our SIRIUS 3RF2 solid-state switching devices stand out due to their considerably longer service life. Thanks to the high product quality, their switching is extremely precise, reliable and, above all, insusceptible to faults. With its variable connection methods and a wide spread of control voltages, the SIRIUS 3RF2 family is universally applicable. Depending on the individual requirements of the application, our modular switching devices can also be quite easily expanded by the addition of standardized function modules.

Always on the sunny side with SIRIUS

Because SIRIUS 3RF2 offers even more:

- The space-saving and compact side-by-side mounting ensures reliable operation up to an ambient temperature of +60 °C.
- Thanks to fast configuration and the ease of mounting and commissioning, you save not only time but also expenses.

Also for switching motors

(see page 6/138)

In order to achieve higher productivity, the switching frequency is continuously increased. It is no problem for our SIRIUS solid-state contactors for switching motors. With induction motors up to 7.5 kW, they can reliably withstand even the highest switching frequencies. Even a continuous change in the direction of rotation is possible with the solid-state reversing contactors. Both versions can be perfectly combined with components from the SIRIUS modular system. Connecting with SIRIUS motor starter protectors or SIRIUS overload relays can be implemented without any further steps.

SIRIUS 3RF3 solid-state switching devices for switching motors:

- Solid-state contactors
- Solid-state reversing contactors

Connection methods

The solid-state switching devices are available with screw terminals (box terminals), spring-type terminals or ring terminal lugs.



Screw terminals



Spring-type terminals



Ring terminal lug connection

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

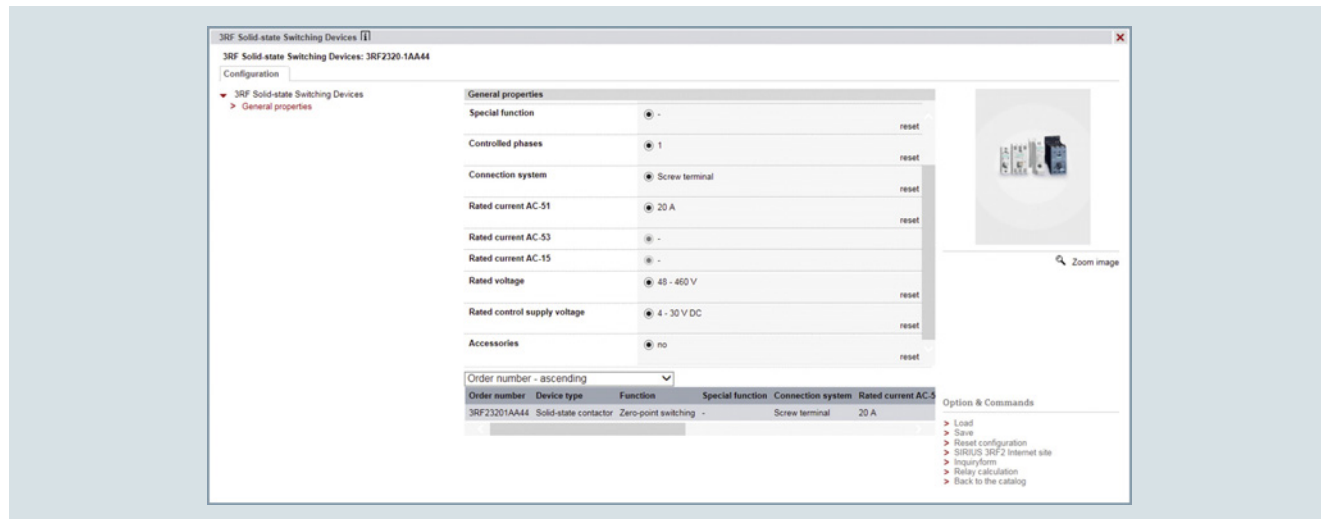
Solid-State Switching Devices for Resistive/Inductive Loads

General data

Online Configurator

- Simple selection of individual solid-state switching devices by means of technical characteristics (e.g. zero-point switching, spring-type terminal and rated current)
- Once configuration is complete, you receive the article numbers corresponding to the products.

see
www.siemens.com/sirius/configurators



Article No. scheme

Product versions		Article number								
Device type	Solid-state relays	3RF20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Single-phase, 45-mm width		
		3RF21	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Single-phase, 22.5-mm width		
		3RF22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Three-phase, 45-mm width		
	Solid-state contactors	3RF23	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Single-phase		
		3RF24	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Three-phase		
Type current	e.g. 20 = 20 A		<input type="checkbox"/>	<input type="checkbox"/>						
Connection type	Screw terminals						1			
	Spring-type terminals						2			
	Ring terminal lug connection						3			
Switching function	Zero-point switching						A			
	Instantaneous switching						B			
	Zero-point switching						C	Low Noise		
	Zero-point switching						D	Short-circuit-proof with B MCB		
Single-phase or number of controlled phases	Single-phase						A			
	Two-phase						B			
	Three-phase						C			
	Reversing contactor						D			
Rated control supply voltage U_s	24 V DC						0			
	24 V AC/DC						1			
	110 ... 230 V AC						2			
	110 V AC						3			
	4 ... 30 V DC						4			
	230 V AC						5			
Rated operational voltage U_e	24 ... 230 V AC						2			
	48 ... 460 V AC						4			
	48 ... 600 V AC						5			
	48 ... 600 V AC						6	Blocking voltage 1 600 V		
Example		3RF21	2	0	-	1	A	A	0	6

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Solid-State Switching Devices for Resistive/Inductive Loads

General data

Overview of the SIRIUS 3RF2 solid-state switching devices

Type	Solid-state relays			Solid-state contactors		Function modules					
	Single-phase		Three-phase	Single-phase	Three-phase	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
	22.5 mm	45 mm	45 mm	Single-phase	Three-phase		Basic	Extended			
Usage											
Simple use of existing solid-state relays	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	--	--	--	--	--	--
Complete unit "Ready to use"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	--	--	--	--	--
Space-saving	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	--	--	--
Can be extended with modular function modules	<input checked="" type="checkbox"/>	--	1)	<input checked="" type="checkbox"/>	1)	--	--	--	--	--	--
Frequent switching and monitoring of loads and solid-state relays/solid-state contactors	--	--	--	--	--	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring of up to 6 partial loads	--	--	--	--	--	--	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--
Monitoring of more than 6 partial loads	--	--	--	--	--	--	--	<input checked="" type="checkbox"/>	--	--	--
Control of the heating power through an analog input	--	--	--	--	--	<input checked="" type="checkbox"/>	--	--	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Power control	--	--	--	--	--	--	--	--	--	--	<input checked="" type="checkbox"/>
Commissioning											
Easy setting of setpoint values with "Teach" button	--	--	--	--	--	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
"Remote Teach" input for setting setpoints	--	--	--	--	--	--	--	--	<input checked="" type="checkbox"/>	--	--
Mounting											
Mounting onto mounting rails or mounting plates	--	--	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	--	--	--	--	--
Can be snapped directly onto a solid-state relay or contactor	--	--	--	--	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
For use with "Coolplate" heat sink	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	--	--	--	--	--	--	--
Cable routing											
Connection of load circuit as for controlgear	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Connection of load circuit from above	--	<input checked="" type="checkbox"/>	--	--	--	--	--	--	--	--	--

✓ Function available

☐ Function possible

-- Function not possible

1) The converter can also be used with three-phase devices.

Solid-State Switching Devices for Resistive/Inductive Loads

General data

Benefits

Features

- Considerable space savings thanks to a width of only 22.5 mm
- Variety of connection methods: Screw terminal, spring-type terminal or ring terminal lug, there is no problem – they are all finger-safe
- Flexible for all applications with function modules for retrofitting
- Possibility of fuseless short-circuit proof design

Benefits

- Saves time and costs with fast mounting and commissioning, short start-up times and easy wiring
- Extremely long life, low maintenance, rugged and reliable
- Space-saving and safe thanks to side-by-side mounting up to an ambient temperature of +60 °C
- Modular design: Standardized function modules and heat sinks can be used in conjunction with solid-state relays to satisfy individual requirements
- Safety due to life-long, vibration-resistant and shock-resistant spring-type terminal connection method even under tough conditions

Application

Application areas

Example: Plastics processing industry

Thanks to their high switching endurance SIRIUS 3RF2 solid-state switching devices are ideal for controlling electrical heat. This is because the more precise the temperature regulation process has to be, the higher the switching frequency. The accurate regulation of electrical heat is used for example in many processes in the plastics processing industry:

- Band heaters heat the extrudate to the correct temperature in plastic extruders
- Heat emitters heat plastic blanks to the correct temperature
- Heat drums dry plastic granules
- Heating channels keep molds at the correct temperature in order to manufacture different plastic parts without defects

The powerful SIRIUS 3RF2 solid-state relays and contactors can be used for the simultaneous control of several heating loads. By using a load monitoring module the individual partial loads can easily be monitored, and in the event of a failure a signal is generated to be sent to the controller.

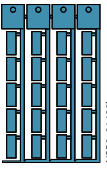
Use in fuseless load feeders

Compared with the fused configuration of load feeders, short-circuit and line protection using miniature circuit breakers is easy to achieve with SIRIUS 3RF2 solid-state relays and contactors.

A special version of the solid-state contactors can be protected against damage in the case of a short circuit with a miniature circuit breaker with type B tripping characteristic. This allows the low-cost and simple design of fuseless load feeders with full protection of the switchgear.

Selection and ordering data

Inscription labels for 3RF2 series

Designation	Labeling area (W x H)	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm x mm		d					
Blank labels								
 3RT1900-1SB20 (1 frame = 20 units)	Unit labeling plates for "SIRIUS"¹⁾	10 x 7	Pastel turquoise	15	3RT1900-1SB10	100	816 units	41B
		20 x 7	Pastel turquoise	20	3RT1900-1SB20	100	340 units	41B
	Adhesive labels for SIRIUS	19 x 6	Pastel turquoise	15	3RT1900-1SB60	100	3 060 units	41B
		19 x 6	Zinc yellow	15	3RT1900-1SD60	100	3 060 units	41B

¹⁾ PC labeling systems for individual inscription of unit labeling plates are available from: murrplastik Systemtechnik GmbH, see page 16/16.

More information**Notes on integration in the load feeders**

The SIRIUS solid-state switching devices are very easy to integrate into the load feeders thanks to their industrial connection method and design.

Particular attention must however be paid to the circumstances of the installation and ambient conditions, as the performance of the solid-state switching devices is largely dependent on these. Depending on the version, certain restrictions must be observed. Detailed information in relation to solid-state contactors, e.g. on minimum spacing, and in relation to solid-state relays on the choice of heat sink can be found in the technical specifications and in the product data sheets, [see https://support.industry.siemens.com/cs/ww/en/ps/16222](https://support.industry.siemens.com/cs/ww/en/ps/16222).

Short-circuit and overload protection

Despite the rugged power semiconductors that are used, solid-state switching devices respond more sensitively to short circuits in the load feeder. Consequently, special precautions have to be taken against destruction, depending on the type of design.

Siemens generally recommends using SITOR semiconductor protection fuses. These fuses also provide protection against destruction in the event of a short circuit even when the solid-state contactors and solid-state relays are fully utilized.

Alternatively, if there is lower loading, protection can also be provided by standard fuses or miniature circuit breakers. This protection is achieved by overdimensioning the solid-state switching devices accordingly. The technical specifications and the product data sheets contain details both about the solid-state fuse protection itself and about use of the devices with conventional protection equipment.

Electromagnetic compatibility (EMC)

The solid-state switching devices are suitable for interference-free operation in industrial networks without further measures. If they are used in public networks, it may be necessary for conducted interference to be reduced by means of filters.

This does not include the solid-state contactors for resistive loads of the special type 3RF23...-CA.. "Low Noise". These comply with the class B limit values up to a rated current of 16 A. If other versions are used, and at currents of over 16 A, standard filters can be used in order to comply with the limit values. The decisive factors when it comes to selecting the filters are essentially the current loading and the other parameters (operational voltage, design type, etc.) in the load feeder.

Suitable filters can be ordered from EPCOS AG, [see page 16/16](#).

Product information and technical specifications

For product data sheets with detailed technical specifications, dimensional drawings and characteristic curves, [see https://support.industry.siemens.com/cs/ww/en/ps/16222](https://support.industry.siemens.com/cs/ww/en/ps/16222).

For additional information, please enter the article number of the required device under the tab "Product List".

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays

General data

Overview

Solid-state relays (without heat sink)

SIRIUS solid-state relays are suitable for surface mounting on existing cooling surfaces. Mounting is quick and easy, involving just two screws. The special technology of the power semiconductor ensures there is excellent thermal contact with the heat sink. Depending on the nature of the heat sink, the capacity reaches up to 88 A on resistive loads.

The solid-state relays are available in three different versions:

- 3RF21 single-phase solid-state relay with a width of 22.5 mm
- 3RF20 single-phase solid-state relay with a width of 45 mm
- 3RF22 three-phase solid-state relay with a width of 45 mm

The 3RF21 and 3RF22 solid-state relays can be expanded with various function modules to adapt them to individual applications.

Version for resistive loads "zero-point switching"

This standard version is often used for switching space heaters on and off.

Version for inductive loads "instantaneous switching"

In this version the solid-state relay is specifically matched to inductive loads. Whether it is a matter of frequent actuation of the valves in a filling plant or starting and stopping small operating mechanisms in packet distribution systems, operation is carried out safely and noiselessly.

Special "Low Noise" version

Thanks to a special control circuit, this special version can be used in public networks up to 16 A without any additional measures such as interference suppressor filters. As a result, in terms of emitted interference, it conforms to limit value curve class B according to IEC 60947-4-3.

Single-phase solid-state relays with a width of 22.5 mm

With its compact design and a width of just 22.5 mm, which stays the same even at currents of up to 88 A, the 3RF21 solid-state relay offers an ultra small footprint. The logical connection method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

Single-phase solid-state relays with a width of 45 mm

The solid-state relays with a width of 45 mm provide for connection of the power supply lead and the load from above. This makes it easy to replace existing solid-state relays in existing arrangements. The connection of the control cable is as space-saving as the 22.5 mm design, as it is simply plugged on.

Three-phase solid-state relays with a width of 45 mm

With its compact design and a width of just 45 mm, which stays the same even at currents of up to 55 A, the 3RF22 solid-state relay offers an ultra small footprint. The logical connection method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

The three-phase solid-state relays are available with

- Two-phase control (suitable in particular for circuits without connection to the neutral conductor) and
- Three-phase control (suitable for star circuits with connection to the neutral conductor or for applications in which the system requires all phases to be switched)

Selection notes

When selecting solid-state relays, in addition to information about the network, the load and the ambient conditions it is also necessary to know details of the planned design. The solid-state relays can only conform to their specific technical specifications if they are mounted with appropriate care on an adequately dimensioned heat sink.

Mounting solid-state relays directly on a mounting plate made of sheet steel is inadequate in terms of heat dissipation.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select the relay design and choose a solid-state relay with higher rated current than the load
- Determine the thermal resistance of the proposed heat sink
- Check the correct relay size with the aid of the diagrams
- In systems that have high voltage peaks or at voltages of 575 V and higher, use of versions with a blocking voltage of 1600 V is recommended

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays

SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

Overview

Single-phase solid-state relays (without heat sink) with a width of 22.5 mm

With its compact design and a width of just 22.5 mm, which stays the same even at currents of up to 88 A, the 3RF21 solid-state relay offers an ultra small footprint. The logical connection

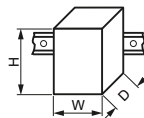
method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

Technical specifications

More information

System Manual "SIRIUS Modular System – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16224/faq>

Type		3RF21...-1....	3RF21...-2....	3RF21...-3....
Dimensions (W x H x D)		22.5 x 85 x 48 mm	22.5 x 85 x 48 mm	22.5 x 85 x 48 mm

General data




Ambient temperature				
• During operation, derating from 40 °C	°C	-25 ... + 60		
• During storage	°C	-55 ... + 80		
Installation altitude	m	0 ... 1 000; derating from 1 000		
Shock resistance acc. to IEC 60068-2-27	g/ms	15/11		
Vibration resistance acc. to IEC 60068-2-6	g	2		
Degree of protection		IP20		IP00 (IP20 when using the terminal cover 3RA2900-3PA88)

Electromagnetic compatibility (EMC)

• Emitted interference				
- Conducted interference voltage acc. to IEC 60947-4-3		Class A for industrial applications		
- Emitted, high-frequency interference voltage acc. to IEC 60947-4-3		Class B for residential, business and commercial applications		
• Interference immunity				
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2		
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1		
- Burst acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge acc. to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2		

Mounting

• Screws (not included in the scope of supply)	Nm	2 x M4		
• Tightening torque	Nm	1.5		

Connection type		 Screw terminals	 Spring-type terminals	 Ring terminal lug connection
Connection, main contacts				
• Conductor cross-sections				
- Solid	mm ²	2 x (1.5 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾	2 x (0.5 ... 2.5)	--
- Finely stranded with end sleeve	mm ²	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , 1 x 10	2 x (0.5 ... 1.5)	--
- Finely stranded without end sleeve	mm ²	--	2 x (0.5 ... 2.5)	--
- Solid or stranded, AWG cables	AWG	2 x (14 ... 10)	2 x (18 ... 14)	--
• Terminal screws		M4	--	M5
• Tightening torque	Nm	2 ... 2.5	--	2.5 ... 2
	lb.in	7 ... 10.3	--	10.3 ... 7
• Cable lugs				
- According to DIN 46234		--	--	5-2.5, 5-6, 5-10, 5-16, 5-25
- According to JIS C 2805		--	--	R 2-5, R 5.5-5, R 8-5, R 14-5
- Width, maximum	mm	--	--	12
Connection, auxiliary/control contacts				
• Conductor cross-sections	mm	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)	0.5 ... 2.5	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)
	AWG	20 ... 12	20 ... 12	20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw		M3	--	M3
• Tightening torque	Nm	0.5 ... 0.6	--	0.5 ... 0.6
	lb.in	4.5 ... 5.3	--	4.5 ... 5.3

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays

SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

Type	I_{\max}^1 at $R_{\text{thha}}/T_u = 40\text{ °C}$		I_e acc. to IEC 60947-4-3 at $R_{\text{thha}}/T_u = 40\text{ °C}$		I_e acc. to UL/CSA at $R_{\text{thha}}/T_u = 50\text{ °C}$		Power loss at I_{\max} W	Minimum load current A	Off-state current mA
	A	K/W	A	K/W	A	K/W			
Main circuit									
3RF2120-.....	20	2.0	20	1.7	20	1.3	28.6	0.1	10
3RF2130-1....	30	1.1	30	0.79	30	0.56	44.2	0.5	10
3RF2150-1....	50	0.68	50	0.48	50	0.33	66	0.5	10
3RF2150-2....	50	0.68	20	2.6	20	2.9	66	0.5	10
3RF2150-3....	50	0.68	50	0.48	50	0.33	66	0.5	10
3RF2170-1....	70	0.40	50	0.77	50	0.6	94	0.5	10
3RF2190-1....	88	0.33	50	0.94	50	0.85	118	0.5	10
3RF2190-2....	88	0.33	20	2.8	20	3.5	118	0.5	10
3RF2190-3....	88	0.33	88	0.22	83	0.19	118	0.5	10

¹⁾ The current I_{\max} provides information about the performance of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Note:

The required heat sinks for the corresponding load currents can be determined from the characteristic curves (see page 6/97, "More Information"). The minimum thickness values for the mounting surface must be observed.

Type	Rated peak withstand current I_{tsm}		I^2t value A ² s
	A		
Main circuit			
3RF2120-.....	200		200
3RF2130-...A.2	300		450
3RF2130-...A.4	300		450
3RF2130-...A.5	300		450
3RF2130-...A.6	400		800
3RF2150-.....	600		1 800
3RF2170-...A.2	1 200		7 200
3RF2170-...A.4	1 200		7 200
3RF2170-...A.5	1 200		7 200
3RF2170-...A.6	1 150		6 600
3RF2190-.....	1 150		6 600

Type		3RF21...-...2	3RF21...-...4	3RF21...-...5	3RF21...-...6
Main circuit					
Rated operational voltage U_e	V AC	24 ... 230	48 ... 460		
• Operating range	V AC	20 ... 253	40 ... 506	40 ... 660	
• Rated frequency	Hz	50/60 ± 10%			
Rated insulation voltage U_i	V	600			
Blocking voltage	V	800	1 200		1 600
Rate of voltage rise	V/μs	1 000			

Type		3RF21...-...0.	3RF21...-...1.	3RF21...-...2.	3RF21...-...4.
Control circuit					
Method of operation		DC operation	AC/DC operation	AC operation	DC operation
Rated control supply voltage U_s	V	24	24 AC 24 DC	110 ... 230	4 ... 30
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10%	50/60 ± 10%	--
Control supply voltage, max.	V	30	26.5 AC 30 DC	253	30
Typical actuating current	mA	20 / Low Power: 6.5 ¹⁾	20	15	20
Response voltage	V	15	14 AC 15 DC	90	4
Drop-out voltage	V	5	5 AC 5 DC	40	1
Operating times					
• ON-delay	ms	1 + max. one half-wave ²⁾	10 + max. one half-wave ²⁾	40 + max. one half-wave ²⁾	1 + max. one half-wave ²⁾
• OFF-delay	ms	1 + max. one half-wave	15 + max. one half-wave	40 + max. one half-wave	1 + max. one half-wave

¹⁾ Applies to the "Low Power" version 3RF21...-AA...-0KNO.

²⁾ Only for zero-point switching devices.



Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays

SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

Selection and ordering data

Single-phase solid-state relays (without heat sink) with a width of 22.5 mm

	Type current/ performance capacity ¹⁾	Rated control supply voltage U_s	SD	Screw terminals ²⁾		PU (UNIT, SET, M)	PS*	PG	
	A	V	d	Article No.	Price per PU				
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC									
	20	24 DC	2	3RF2120-1AA02		1	1 unit	41C	
	30		2	3RF2130-1AA02		1	1 unit	41C	
	50		2	3RF2150-1AA02		1	1 unit	41C	
	70		2	3RF2170-1AA02		1	1 unit	41C	
	90		5	3RF2190-1AA02		1	1 unit	41C	
	20	110 ... 230 AC	2	3RF2120-1AA22		1	1 unit	41C	
	30		2	3RF2130-1AA22		1	1 unit	41C	
	50		5	3RF2150-1AA22		1	1 unit	41C	
	70		5	3RF2170-1AA22		1	1 unit	41C	
	90		5	3RF2190-1AA22		1	1 unit	41C	
	3RF2120-1AA02	20	4 ... 30 DC	2	3RF2120-1AA42		1	1 unit	41C
		30		2	3RF2130-1AA42		1	1 unit	41C
	Zero-point switching, rated operational voltage U_e 48 ... 460 V AC								
		20	24 DC	2	3RF2120-1AA04		1	1 unit	41C
	30	2		3RF2130-1AA04		1	1 unit	41C	
	50	2		3RF2150-1AA04		1	1 unit	41C	
	70	2		3RF2170-1AA04		1	1 unit	41C	
	90	2		3RF2190-1AA04		1	1 unit	41C	
	20	24 AC/DC	5	3RF2150-1AA14		1	1 unit	41C	
	30								
	20	110 ... 230 AC	2	3RF2120-1AA24		1	1 unit	41C	
	30		2	3RF2130-1AA24		1	1 unit	41C	
	50		5	3RF2150-1AA24		1	1 unit	41C	
	70		2	3RF2170-1AA24		1	1 unit	41C	
	90		5	3RF2190-1AA24		1	1 unit	41C	
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC									
	70	24 DC Low Power	5	3RF2170-1AA05-0KNO		1	1 unit	41C	
	20	4 ... 30 DC	5	3RF2120-1AA45		1	1 unit	41C	
	30		5	3RF2130-1AA45		1	1 unit	41C	
	50		5	3RF2150-1AA45		1	1 unit	41C	
	70		2	3RF2170-1AA45		1	1 unit	41C	
	90		5	3RF2190-1AA45		1	1 unit	41C	
Zero-point switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC									
	30	24 DC	2	3RF2130-1AA06		1	1 unit	41C	
	50		2	3RF2150-1AA06		1	1 unit	41C	
	70		5	3RF2170-1AA06		1	1 unit	41C	
	90		5	3RF2190-1AA06		1	1 unit	41C	
	30		110 ... 230 AC	5	3RF2130-1AA26		1	1 unit	41C
	50	5		3RF2150-1AA26		1	1 unit	41C	
	70	5		3RF2170-1AA26		1	1 unit	41C	
	90	5		3RF2190-1AA26		1	1 unit	41C	

¹⁾ The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

²⁾ Please note that this version can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm².

Other rated control supply voltages on request.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays

SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

Type current/ performance capacity ¹⁾	Rated control supply voltage U_s	SD	Screw terminals ²⁾	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.	Price per PU		
Instantaneous switching, rated operational voltage U_e 24 ... 230 V AC						
50	110 ... 230 AC	5	3RF2150-1BA22		1	1 unit 41C
Instantaneous switching, rated operational voltage U_e 48 ... 460 V AC						
20	24 DC	5	3RF2120-1BA04		1	1 unit 41C
30		5	3RF2130-1BA04		1	1 unit 41C
50		5	3RF2150-1BA04		1	1 unit 41C
70		5	3RF2170-1BA04		1	1 unit 41C
90		5	3RF2190-1BA04		1	1 unit 41C
Instantaneous switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC						
50	24 DC	5	3RF2150-1BA06		1	1 unit 41C
Low Noise³⁾ · Zero-point switching, rated operational voltage U_e 48 ... 460 V AC						
70	24 DC	5	3RF2170-1CA04		1	1 unit 41C

¹⁾ The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

²⁾ Please note that this version can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm².

³⁾ See page 6/98.

Other rated control supply voltages on request.

Type current/ performance capacity ¹⁾	Rated control supply voltage U_s	SD	Spring-type terminals ²⁾	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.	Price per PU		
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC						
20	24 DC	2	3RF2120-2AA02		1	1 unit 41C
50		5	3RF2150-2AA02		1	1 unit 41C
90		5	3RF2190-2AA02		1	1 unit 41C
20	110 ... 230 AC	5	3RF2120-2AA22		1	1 unit 41C
50		5	3RF2150-2AA22		1	1 unit 41C
90		5	3RF2190-2AA22		1	1 unit 41C
20	4 ... 30 DC	5	3RF2120-2AA42		1	1 unit 41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC						
20	24 DC	2	3RF2120-2AA04		1	1 unit 41C
50		5	3RF2150-2AA04		1	1 unit 41C
90		5	3RF2190-2AA04		1	1 unit 41C
50	24 AC/DC	5	3RF2150-2AA14		1	1 unit 41C
20	110 ... 230 AC	5	3RF2120-2AA24		1	1 unit 41C
50		5	3RF2150-2AA24		1	1 unit 41C
90		5	3RF2190-2AA24		1	1 unit 41C
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC						
20	4 ... 30 DC	5	3RF2120-2AA45		1	1 unit 41C
Zero-point switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC						
50	24 DC	5	3RF2150-2AA06		1	1 unit 41C
90		5	3RF2190-2AA06		1	1 unit 41C
50	110 ... 230 AC	5	3RF2150-2AA26		1	1 unit 41C
90		5	3RF2190-2AA26		1	1 unit 41C



3RF2120-2AA02

¹⁾ The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.


²⁾ Please note that the version with spring-type terminals can only be used for a rated current of up to approx. 20 A and a conductor cross-section of 2.5 mm². Higher currents can be achieved by connecting two conductors per terminal.

Other rated control supply voltages on request.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays







SIRIUS 3RF21 solid-state relays, single-phase, 22.5 mm

Type current/ performance capacity ¹⁾	Rated control supply voltage U_s	SD	Ring terminal lug connection	PU (UNIT, SET, M)	PS*	PG	
A	V	d	Article No.	Price per PU			
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC							
	20	24 DC	5	3RF2120-3AA02	1	1 unit	41C
	50		5	3RF2150-3AA02	1	1 unit	41C
	90		5	3RF2190-3AA02	1	1 unit	41C
	20	110 ... 230 AC	5	3RF2120-3AA22	1	1 unit	41C
	50		5	3RF2150-3AA22	1	1 unit	41C
	90		5	3RF2190-3AA22	1	1 unit	41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC							
	20	24 DC	5	3RF2120-3AA04	1	1 unit	41C
	50		5	3RF2150-3AA04	1	1 unit	41C
	90		5	3RF2190-3AA04	1	1 unit	41C
	20	110 ... 230 AC	5	3RF2120-3AA24	1	1 unit	41C
	50		5	3RF2150-3AA24	1	1 unit	41C
	90		5	3RF2190-3AA24	1	1 unit	41C
	90	4 ... 30 DC	5	3RF2190-3AA44	1	1 unit	41C
Zero-point switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC							
	50	24 DC	5	3RF2150-3AA06	1	1 unit	41C
	90		5	3RF2190-3AA06	1	1 unit	41C
	50	110 ... 230 AC	5	3RF2150-3AA26	1	1 unit	41C
	90		5	3RF2190-3AA26	1	1 unit	41C

¹⁾ The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Other rated control supply voltages on request.

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
		Spring-type terminals				
	2	Screwdrivers For all SIRIUS devices with spring-type terminals Length approx. 200 mm, size 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	3RA2908-1A	1	1 unit	41B
3RA2908-1A						
		Ring terminal lug connection				
	2	Terminal covers For 3RF21 solid-state relays in ring terminal lug connection (With this terminal cover, degree of protection IP20 can be achieved in the terminal compartment in the case of ring terminal lug connections. It can also be used for screw terminals after simple adaptation)	3RF2900-3PA88	1	10 units	41C
3RF2900-3PA88						
Control connectors						
		Screw terminals				
	5	Replacement control connectors For 3RF20/21/22 Screw terminals	3RF2900-1TA88	1	50 units	41C
		Spring-type terminals				
	5	Replacement control connectors For 3RF20/21/22 Spring-type terminals	3RF2900-2TA88	1	50 units	41C
	5	Control connectors For 3RF20/21/22 Spring-type terminals with two clamping points per contact	3RF2900-2TB88	1	10 units	41C

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays

SIRIUS 3RF20 solid-state relays, single-phase, 45 mm

Overview

Single-phase solid-state relays (without heat sink) with a width of 45 mm

The solid-state relays with a width of 45 mm provide for connection of the power supply lead and the load from above. This makes it easy to replace existing solid-state relays in existing arrangements.

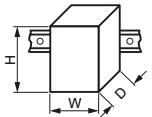
The connection of the control cable is as space-saving as the 22.5 mm design, as it is simply plugged on.

Technical specifications

More information

System Manual "SIRIUS Modular System – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16225/faq>

Type		3RF20..-1....	3RF20..-4....
Dimensions (W x H x D)	 mm	45 x 58 x 48	45 x 58 x 48

General data

Ambient temperature

- | | | |
|---|----|-------------|
| • During operation, derating from 40 °C | °C | -25 ... +60 |
| • During storage | °C | -55 ... +80 |

Installation altitude

	m	0 ... 1 000; derating from 1 000
--	---	----------------------------------

Shock resistance acc. to IEC 60068-2-27	g/ms	15 /11
--	------	--------

Vibration resistance acc. to IEC 60068-2-6	g	2
---	---	---

Degree of protection

		IP20
--	--	------

Electromagnetic compatibility (EMC)

- | | | | |
|---|-----|---|---|
| • Emitted interference | | | |
| - Conducted interference voltage acc. to IEC 60947-4-3 | | | Class A for industrial applications |
| - Emitted, high-frequency interference voltage acc. to IEC 60947-4-3 | | | Class B for residential, business and commercial applications |
| • Interference immunity | | | |
| - Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3) | kV | | Contact discharge 4; air discharge 8; behavior criterion 2 |
| - Induced RF fields according to IEC 61000-4-6 | MHz | 0.15 ... 80; 140 dBµV; behavior criterion 1 | |
| - Burst acc. to IEC 61000-4-4 | kV | 2/5.0 kHz; behavior criterion 2 | |
| - Surge acc. to IEC 61000-4-5 | kV | Conductor - ground 2; conductor - conductor 1; behavior criterion 2 | |

Mounting

- | | | |
|--|----|--------|
| • Screws (not included in the scope of supply) | | 2 x M4 |
| • Tightening torque | Nm | 1.5 |

Connection type


Screw terminals

Spring-type terminals

Connection, main contacts

- | | | Screw terminals | Spring-type terminals |
|-----------------------------------|-----------------|--|-----------------------|
| • Conductor cross-sections | | | |
| - Solid | mm ² | 2 x (1.5 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ | -- |
| - Finely stranded with end sleeve | mm ² | 2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , 1 x 10 | -- |
| - Solid or stranded, AWG cables | AWG | 2 x (14 ... 10) | -- |
| • Terminal screw | | M4 | -- |
| • Tightening torque | Nm | 2 ... 2.5 | -- |
| | lb.in | 7 ... 10.3 | -- |

Connection, auxiliary/control contacts

- | | | | |
|----------------------------|-----------------|--------------------------------------|-------------|
| • Conductor cross-sections | mm ² | 1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) | 0.5 ... 2.5 |
| | AWG | 20 ... 12 | 20 ... 12 |
| • Stripped length | mm | 7 | 10 |
| • Terminal screw | | M3 | -- |
| • Tightening torque | Nm | 0.5 ... 0.6 | -- |
| | lb.in | 4.5 ... 5.3 | -- |

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays

SIRIUS 3RF20 solid-state relays, single-phase, 45 mm

Type	$I_{max}^{1)}$ at $R_{thha}/T_u = 40\text{ °C}$		I_e acc. to IEC 60947-4-3 at $R_{thha}/T_u = 40\text{ °C}$		I_e acc. to UL/CSA at $R_{thha}/T_u = 50\text{ °C}$		Power loss at I_{max}	Minimum load current	Off-state current
	A	K/W	A	K/W	A	K/W			
Main circuit									
3RF2020-1.A..	20	2.0	20	1.7	20	1.3	28.6	0.1	10
3RF2030-1.A..	30	1.1	30	0.79	30	0.56	44.2	0.5	10
3RF2050-1.A..	50	0.68	50	0.48	50	0.33	66	0.5	10
3RF2070-1.A..	70	0.40	50	0.77	50	0.6	94	0.5	10
3RF2090-1.A..	88	0.33	50	0.94	50	0.85	118	0.5	10

¹⁾ The current I_{max} provides information about the performance of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Note:

The required heat sinks for the corresponding load currents can be determined from the characteristic curves (see page 6/97, "More information"). The minimum thickness values for the mounting surface must be observed.

Type	Rated peak withstand current I_{tsm}		I^2t value
	A	A ² s	
Main circuit			
3RF2020-1.A..	200		200
3RF2030-1.A.2	300		450
3RF2030-1.A.4	300		450
3RF2030-1.A.6	400		800
3RF2050-1.A..	600		1 800
3RF2070-1.A.2	1 200		7 200
3RF2070-1.A.4	1 200		7 200
3RF2070-1.A.5	1 200		7 200
3RF2070-1.A.6	1 150		6 600
3RF2090-1.A..	1 150		6 600

Type		3RF20.0-1.A.2	3RF20.0-1.A.4	3RF20.0-1.A.5	3RF20.0-1.A.6
Main circuit					
Rated operational voltage U_e	V AC	24 ... 230	48 ... 460	48 ... 600	
• Operating range	V AC	20 ... 253	40 ... 506	40 ... 660	
• Rated frequency	Hz	50/60 ± 10%			
Rated insulation voltage U_i	V	600			
Blocking voltage	V	800	1 200		1 600
Rate of voltage rise	V/μs	1 000			

Type		3RF20.0-1.A0.	3RF20.0-1.A2.	3RF20.0-1.A4.
Control circuit				
Method of operation		DC operation	AC operation	DC operation
Rated control supply voltage U_s	V	24	110 ... 230	4 ... 30
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10%	--
Control supply voltage, max.	V	30	253	30
Typical actuating current	mA	20	15	20
Response voltage	V	15	90	4
Drop-out voltage	V	5	40	1
Operating times				
• ON-delay	ms	1 + max. one half-wave ¹⁾	40 + max. one half-wave ¹⁾	1 + max. one half-wave ¹⁾
• OFF-delay	ms	1 + max. one half-wave	40 + max. one half-wave	1 + max. one half-wave

¹⁾ Only for zero-point switching devices.


Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays

SIRIUS 3RF20 solid-state relays, single-phase, 45 mm

Selection and ordering data

Single-phase solid-state relays (without heat sink) with a width of 45 mm

Type current/ performance capacity ¹⁾	Rated control supply voltage U_s	SD	Screw terminals ²⁾	⊕	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.		Price per PU		
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC							
	20	24 DC	2	3RF2020-1AA02		1	1 unit 41C
	30		2	3RF2030-1AA02		1	1 unit 41C
	50		2	3RF2050-1AA02		1	1 unit 41C
	70		2	3RF2070-1AA02		1	1 unit 41C
	90		2	3RF2090-1AA02		1	1 unit 41C
	20	110 ... 230 AC	2	3RF2020-1AA22		1	1 unit 41C
	30		2	3RF2030-1AA22		1	1 unit 41C
	50		5	3RF2050-1AA22		1	1 unit 41C
	70		5	3RF2070-1AA22		1	1 unit 41C
	90		5	3RF2090-1AA22		1	1 unit 41C
3RF2020-1AA02	20	4 ... 30 DC	5	3RF2020-1AA42		1	1 unit 41C
	30		5	3RF2030-1AA42		1	1 unit 41C
Zero-point switching, rated operational voltage U_e 48 ... 460 V AC							
20	24 DC	2	3RF2020-1AA04		1	1 unit 41C	
30		2	3RF2030-1AA04		1	1 unit 41C	
50		2	3RF2050-1AA04		1	1 unit 41C	
70		2	3RF2070-1AA04		1	1 unit 41C	
90		2	3RF2090-1AA04		1	1 unit 41C	
20	110 ... 230 AC	5	3RF2020-1AA24		1	1 unit 41C	
30		5	3RF2030-1AA24		1	1 unit 41C	
50		5	3RF2050-1AA24		1	1 unit 41C	
70		5	3RF2070-1AA24		1	1 unit 41C	
90		5	3RF2090-1AA24		1	1 unit 41C	
50	4 ... 30 DC	2	3RF2050-1AA44		1	1 unit 41C	
Zero-point switching, rated operational voltage U_e 48 ... 600 V AC							
20	4 ... 30 DC	5	3RF2020-1AA45		1	1 unit 41C	
50		5	3RF2050-1AA45		1	1 unit 41C	
70		2	3RF2070-1AA45		1	1 unit 41C	
90		5	3RF2090-1AA45		1	1 unit 41C	
Zero-point switching · Blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC							
30	24 DC	5	3RF2030-1AA06		1	1 unit 41C	
50		5	3RF2050-1AA06		1	1 unit 41C	
70		5	3RF2070-1AA06		1	1 unit 41C	
90		5	3RF2090-1AA06		1	1 unit 41C	
30	110 ... 230 AC	5	3RF2030-1AA26		1	1 unit 41C	
50		5	3RF2050-1AA26		1	1 unit 41C	
70		5	3RF2070-1AA26		1	1 unit 41C	
90		5	3RF2090-1AA26		1	1 unit 41C	
Instantaneous switching, rated operational voltage U_e 48 ... 460 V AC							
30	24 DC	5	3RF2030-1BA04		1	1 unit 41C	

¹⁾ The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

²⁾ Please note that this version can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm².

Solid-State Switching Devices for Resistive/Inductive Loads Solid-State Relays

SIRIUS 3RF20 solid-state relays, single-phase, 45 mm

Type current/ performance capacity ¹⁾	Rated control supply voltage U_s	SD	Screw terminals + spring-type terminals (control current side)	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.	Price per PU		
Zero-point switching, rated operational voltage U_e 24 ... 230 V AC						
50	24 DC	5	3RF2050-4AA02	1	1 unit	41C



3RF2050-4AA02

¹⁾ The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

For accessories, see page 6/103.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays

SIRIUS 3RF22 solid-state relays, three-phase, 45 mm

Overview

Three-phase solid-state relays (without heat sink) with a width of 45 mm

With its compact design and a width of just 45 mm, which stays the same even at currents of up to 55 A, the 3RF22 solid-state relay offers an ultra small footprint. The logical connection method, with the power infeed from above and load connection from below, ensures tidy installation in the control cabinet.

Important features:

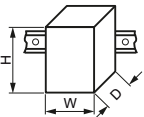
- LED display
- Variety of connection methods
- Plug-in control connection
- Degree of protection IP20 (with ring terminal lug connection IP00)
- Zero-point switching, two- or three-phase controlled

Technical specifications

More information

System Manual "SIRIUS Modular System – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16226/faq>

Type		3RF22..-1....	3RF22..-2....	3RF22..-3....
Dimensions (W x H x D)		45 x 95 x 47	45 x 95 x 47	45 x 95 x 47

General data

Ambient temperature

- | | | |
|---|----|-------------|
| • During operation, derating from 40 °C | °C | -25 ... +60 |
| • During storage | °C | -55 ... +80 |

Installation altitude	m	0 ... 1 000; > 1 000 ask Technical Support
------------------------------	---	--

Shock resistance acc. to IEC 60068-2-27	g/ms	15/11
--	------	-------

Vibration resistance acc. to IEC 60068-2-6	g	2
---	---	---

Degree of protection		IP20	IP00
-----------------------------	--	------	------

Insulation strength at 50/60 Hz (main/control circuit to floor)	V rms	4 000
--	-------	-------




Electromagnetic compatibility (EMC)

- | | | |
|---|-----|---|
| • Emitted interference | | Class A for industrial applications ¹⁾ |
| - Conducted interference voltage acc. to IEC 60947-4-3 | | |
| • Interference immunity | | Contact discharge 4; air discharge 8; behavior criterion 2 |
| - Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3) | kV | 0.15 ... 80; 140 dBμV; behavior criterion 1 |
| - Induced RF fields according to IEC 61000-4-6 | MHz | 2/5.0 kHz; behavior criterion 2 |
| - Burst acc. to IEC 61000-4-4 | kV | Conductor - ground 2; conductor - conductor 1; behavior criterion 2 |
| - Surge acc. to IEC 61000-4-5 | kV | |

Mounting

- | | | |
|--|----|--------|
| • Screws (not included in the scope of supply) | Nm | 2 x M4 |
| • Tightening torque | | 1.5 |

Connection type

	 Screw terminals	 Spring-type terminals	 Ring terminal lug connection
Connection, main contacts			
• Conductor cross-sections			
- Solid	mm ²	2 x (1.5 ... 2.5) ²⁾ , 2 x (2.5 ... 6) ²⁾	2 x (0.5 ... 2.5)
- Finely stranded with end sleeve	mm ²	2 x (1 ... 2.5) ²⁾ , 2 x (2.5 ... 6) ²⁾ , 1 x 10	2 x (0.5 ... 1.5)
- Finely stranded without end sleeve	mm ²	--	2 x (0.5 ... 2.5)
- Solid or stranded, AWG cables	AWG	2 x (14 ... 10)	2 x (18 ... 14)
• Stripped length	mm	10	10
• Terminal screws		M4	--
- Tightening torque, Ø 5 ... 6 mm, PZ 2	Nm	2 ... 2.5	M5
	lb.in	18 ... 22	2.5 ... 2
• Cable lugs			18 ... 22
- According to DIN 46234		--	5-2.5 ... 5-25
- According to JIS C 2805		--	R 2-5 ... R 14-5
- Width, maximum	mm	--	12
Connection, auxiliary/control contacts			
• Conductor cross-sections, with or without end sleeve	mm	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)
• Stripped length	AWG	20 ... 12	20 ... 12
• Terminal screw	mm	7	7
- Tightening torque, Ø 3.5, PZ 1	Nm	M3	M3
	lb.in	0.5 ... 0.6	0.5 ... 0.6
		4.5 ... 5.3	4.5 ... 5.3

¹⁾ These products were built as Class A devices. The use of these devices in residential areas could result in radio interference. In this case the user may be required to introduce additional interference suppression measures.

²⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays

SIRIUS 3RF22 solid-state relays, three-phase, 45 mm

Type	$I_{\max}^{1)}$ at $R_{\text{thha}}/T_u = 40\text{ °C}$		I_e acc. to IEC 60947-4-3 at $R_{\text{thha}}/T_u = 40\text{ °C}$		I_e acc. to UL/CSA at $R_{\text{thha}}/T_u = 50\text{ °C}$		Power loss at I_{\max} W	Minimum load current A	Max. off-state current mA
	A	K/W	A	K/W	A	K/W			
Main circuit									
3RF2230-1AB..	30	0.57	30	0.57	30	0.44	81	0.5	10
3RF2230-2AB..			20	1.36	20	1.15			
3RF2230-3AB..			30	0.57	30	0.44			
3RF2255-1AB..	55	0.18	50	0.27	50	0.19	151	0.5	10
3RF2255-2AB..			20	1.83	20	1.58			
3RF2255-3AB..			50	0.27	50	0.19			
3RF2230-1AC..	30	0.33	30	0.33	30	0.25	122	0.5	10
3RF2230-2AC..			20	0.86	20	0.72			
3RF2230-3AC..			30	0.33	30	0.25			
3RF2255-1AC..	55	0.09	50	0.15	50	0.1	226	0.5	10
3RF2255-2AC..			20	1.19	20	1.02			
3RF2255-3AC..			50	0.15	50	0.1			

¹⁾ The current I_{\max} provides information about the performance of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

Note:

The required heat sinks for the corresponding load currents can be determined from the characteristic curves (see page 6/97, "More information"). The minimum thickness values for the mounting surface must be observed.

Type	Rated peak withstand current I_{ISM}	I^2t value
	A	A ² s
Main circuit		
3RF2230-....5	300	450
3RF2255-....5	600	1 800

Type	3RF22...-AB.5		3RF22...-AC.5
Main circuit			
Controlled phases	Two-phase		Three-phase
Rated operational voltage U_e	V AC	48 ... 600	
• Operating range	V AC	40 ... 660	
• Rated frequency	Hz	50/60 ± 10%	
Rated insulation voltage U_i	V	600	
Rated impulse withstand voltage U_{imp}	kV	6	
Blocking voltage	V	1 200	
Rate of voltage rise	V/μs	1 000	

Type	3RF22...-A.3.		3RF22...-A.4.
Control circuit			
Method of operation	AC operation		DC operation
Rated control supply voltage U_s	V	110	4 ... 30
Rated frequency of the control supply voltage	Hz	50/60 ± 10%	--
Control supply voltage, max.	V	121	30
Typical actuating current	mA	15	30
Response voltage	V	90	4
Drop-out voltage	V	< 40	1
Operating times			
• ON-delay	ms	40 + max. one half-wave	1 + max. one half-wave
• OFF-delay	ms	40 + max. one half-wave	1 + max. one half-wave

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Relays

SIRIUS 3RF22 solid-state relays, three-phase, 45 mm

Selection and ordering data

Type current/ performance capacity ¹⁾	Rated control supply voltage U_s	SD	Screw terminals ²⁾	⊕	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.		Price per PU		

Zero-point switching, rated operational voltage U_e 48 ... 600 V AC



3RF2230-1AB45

Two-phase controlled

30	110 AC	5	3RF2230-1AB35		1	1 unit	41C
55		5	3RF2255-1AB35		1	1 unit	41C
30	4 ... 30 DC	5	3RF2230-1AB45		1	1 unit	41C
55		5	3RF2255-1AB45		1	1 unit	41C

Three-phase controlled

30	110 AC	5	3RF2230-1AC35		1	1 unit	41C
55		5	3RF2255-1AC35		1	1 unit	41C
30	4 ... 30 DC	2	3RF2230-1AC45		1	1 unit	41C
55		5	3RF2255-1AC45		1	1 unit	41C

¹⁾ The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

²⁾ Please note that the version with an M4 screw connection can only be used for a rated current of up to approx. 50 A and a conductor cross-section of 10 mm².

Type current/ performance capacity ¹⁾	Rated control supply voltage U_s	SD	Spring-type terminals ²⁾	⊕	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.		Price per PU		

Zero-point switching, rated operational voltage U_e 48 ... 600 V AC



3RF2230-2AB45

Two-phase controlled

30	4 ... 30 DC	5	3RF2230-2AB45		1	1 unit	41C
55		5	3RF2255-2AB45		1	1 unit	41C

Three-phase controlled

30	4 ... 30 DC	5	3RF2230-2AC45		1	1 unit	41C
55		5	3RF2255-2AC45		1	1 unit	41C

¹⁾ The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

²⁾ Please note that the version with spring-type terminals can only be used for a rated current of up to approx. 20 A and a conductor cross-section of 2.5 mm². Higher currents can be achieved by connecting two conductors per terminal.

Type current/ performance capacity ¹⁾	Rated control supply voltage U_s	SD	Ring terminal lug connection	⊕	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.		Price per PU		

Zero-point switching, rated operational voltage U_e 48 ... 600 V AC



3RF2230-3AB45

Two-phase controlled

30	4 ... 30 DC	5	3RF2230-3AB45		1	1 unit	41C
55		5	3RF2255-3AB45		1	1 unit	41C

Three-phase controlled

30	4 ... 30 DC	5	3RF2230-3AC45		1	1 unit	41C
55		5	3RF2255-3AC45		1	1 unit	41C

¹⁾ The type current provides information about the performance capacity of the solid-state relay. The actual permitted rated operational current I_e can be smaller depending on the connection method and cooling conditions.

For accessories, see page 6/103.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

General data

Overview

Solid-state contactors (with integrated heat sink)

The complete units consist of a solid-state relay plus optimized heat sink, and are therefore ready to use. They offer defined rated currents to make selection as easy as possible. Depending on the version, current strengths of up to 70 A are achieved. Like all of our solid-state switching devices, one of their particular advantages is their compact and space-saving design.

With their insulated mounting foot they can easily be snapped onto a standard mounting rail, or they can be mounted on support plates with fixing screws. The heat sink can be grounded through a screw terminal.

The solid-state contactors are available in 2 different versions:

- 3RF23 single-phase solid-state contactors
- 3RF24 three-phase solid-state contactors

Single-phase versions

The 3RF23 solid-state contactors can be expanded with various function modules to adapt them to individual applications.

Version for resistive loads "zero-point switching"

This standard version is often used for switching space heaters on and off.

Version for inductive loads "instantaneous switching"

In this version the solid-state contactor is specifically matched to inductive loads. Whether it is a matter of frequent actuation of the valves in a filling plant or starting and stopping small operating mechanisms in packet distribution systems, operation is carried out safely and noiselessly.

Special "low noise" version

Thanks to a special control circuit, this special version can be used in public networks up to 16 A without any additional measures such as interference suppressor filters. As a result, in terms of emitted interference, it conforms to limit value curve class B according to IEC 60947-4-3.

Special "short-circuit proof" version

Skillful matching of the power semiconductor with the performance capacity of the solid-state contactor means that "short-circuit strength" can be achieved with a standard miniature circuit breaker. In combination with a B-type MCB or a conventional line protection fuse, the result is a short-circuit proof feeder.

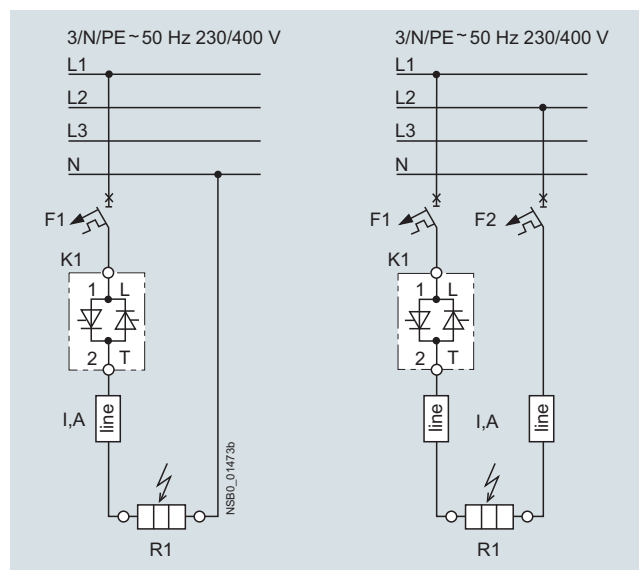
In order to achieve problem-free short-circuit protection by means of miniature circuit breakers, however, certain constraints must be observed. As the magnitude and duration of the short-circuit current are determined not only by the short-circuit breaking response of the miniature circuit breaker but also the properties of the wiring system, such as the internal resistance of the input to the network and damping by controls and cables, particular attention must also be paid to these parameters. The necessary cable lengths are therefore shown for the main factor, the line resistance, in the table below.

In systems that have high voltage peaks or at voltages of 575 V and higher, use of versions with a blocking voltage of 1 600 V is recommended

The following miniature circuit breakers with a B characteristic and 10 kA or 6 kA breaking capacity protect the 3RF23...-DA.. solid-state contactors in the event of short-circuits on the load and the specified conductor cross-sections and lengths:

Rated current of the miniature circuit breaker	Example of type ¹⁾	Max. conductor cross-section	Minimum cable length from contactor to load
6 A	5SY4106-6	1 mm ²	5 m
10 A	5SY4110-6	1.5 mm ²	8 m
16 A	5SY4116-6	1.5 mm ²	12 m
		2.5 mm ²	20 m
20 A	5SY4120-6	2.5 mm ²	20 m
25 A	5SY4125-6	2.5 mm ²	26 m

¹⁾ The miniature circuit breakers can be used up to a maximum rated voltage of 480 V!



Solid-state contactor protection

The setup and installation above can also be used for the solid-state relays with an I^2t value of at least 6 600 A²s.

Three-phase versions

The three-phase solid-state contactors for resistive loads up to 50 A are available with

- Two-phase control (suitable in particular for circuits without connection to the neutral conductor) and
- Three-phase control (suitable for star circuits with connection to the neutral conductor or for applications in which the system requires all phases to be switched)

The converter function module can be snapped onto both versions for the simple power control of AC loads by means of analog signals.

- Check the correct contactor size with the aid of the rated current diagram, taking account of the installation conditions

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

Overview

Single-phase solid-state contactors with heat sink

Their compact design with optimized heat sink enables small complete units with currents up to 70 A. They also offer all the

special features of the solid-state relay in terms of time and space savings.




Technical specifications

More information

System Manual "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16228/faq>

Type	3RF23...-A...	3RF23...-B...	3RF23...-C...	3RF23...-D...
Dimensions (W x H x D)	See page 6/113			
General data				
Ambient temperature				
• During operation, derating from 40 °C	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Installation altitude	m	0 ... 1 000; derating from 1 000		
Shock resistance acc. to IEC 60068-2-27	g/ms	15/11		
Vibration resistance acc. to IEC 60068-2-6	g	2		
Degree of protection	IP20 (for ring terminal lug connection when using the terminal cover 3RA2900-3PA88, otherwise IP00)			
Electromagnetic compatibility (EMC)				
• Emitted interference according to IEC 60947-4-3		Class A for industrial applications		
- Conducted interference voltage		Class A for industrial applications; Class B for residential, business and commercial applications up to 16 A, AC-51 Low Noise		Class A for industrial applications
- Emitted, high-frequency interference voltage		Class B for residential, business and commercial applications		
• Interference immunity		Contact discharge 4; air discharge 8; behavior criterion 2		
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV			
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dB μ V; behavior criterion 1		
- Burst acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge acc. to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2		




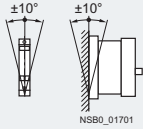
Type	3RF23...-1....	3RF23...-2....	3RF23...-3....	
General data				
Connection type	 Screw terminals	 Spring-type terminals	 Ring terminal lug connection	
Connection, main contacts				
• Conductor cross-section				
- Solid	mm ²	2 x (1.5 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾	2 x (0.5 ... 2.5)	
- Finely stranded with end sleeve	mm ²	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , 1 x 10	2 x (0.5 ... 1.5)	
- Finely stranded without end sleeve	mm ²	--	2 x (0.5 ... 2.5)	
- Solid or stranded, AWG cables	AWG	2 x (14 ... 10)	2 x (18 ... 14)	
• Terminal screws		M4	M5	
• Tightening torque	Nm lb.in	2 ... 2.5 7 ... 10.3	--	2 ... 2.5 7 ... 10.3
• Cable lugs		--	--	5-2.5, 5-6, 5-10, 5-16, 5-25
- According to DIN 46234		--	--	R 2-5, R 5.5-5, R 8-5, R 14-5
- According to JIS C 2805		--	--	12
- Width, maximum	mm	--	--	--
Connection, auxiliary/control contacts				
• Conductor cross-section	mm AWG	1 x (0.5 ... 2.5) ¹⁾ , 2 x (0.5 ... 1.0)	0.5 ... 2.5 20 ... 12	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0) 20 ... 12
• Stripped length	mm	7	10	7
• Terminal screw		M3	--	M3
• Tightening torque	Nm lb.in	0.5 ... 0.6 4.5 ... 5.3	--	0.5 ... 0.6 4.5 ... 5.3

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

Type	3RF23...-1....	3RF23...-2....	3RF23...-3....
General data			
Connection type	 Screw terminals	 Spring-type terminals	 Ring terminal lug connection
Grounding screw (not included in the scope of supply)			
• Size (standard screw)	M5		
Permissible mounting position	 NSB0_01701		

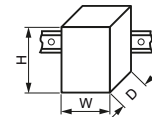
Type	3RF23...-....2	3RF23...-....4	3RF23...-....5	3RF23...-....6
Main circuit				
Rated operational voltage U_e	V AC	24 ... 230	48 ... 460	48 ... 600
• Operating range	V AC	20 ... 253	40 ... 506	40 ... 660
• Rated frequency	Hz	50/60 ± 10%		
Rated insulation voltage U_i	V	600		
Blocking voltage	V	800	1 200	1 600
Rate of voltage rise	V/μs	1 000		

Type	3RF23...-....0.	3RF23...-....1.	3RF23...-....2.	3RF23...-....4.		
Control circuit						
Method of operation	DC operation	AC/DC operation	AC operation	DC operation		
Rated control supply voltage U_s	V	24 DC	24 AC	24 DC	110 ... 230 AC	4 ... 30 DC
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10%	--	50/60 ± 10%	--
Actuating voltage, max.	V	30	26.5 AC	30 DC	253	30
Typical actuating current	mA	20 / Low Power: 10^{-1}	20	20	15	20
Response voltage	V	15	14 AC	15 DC	90	4
Drop-out voltage	V	5	5 AC	5 DC	40	1
Operating times						
• ON-delay	ms	1 + max. one half-wave ²⁾	10 + max. one half-wave ²⁾	40 + max. one half-wave ²⁾	40 + max. one half-wave ²⁾	1 + max. one half-wave ²⁾
• OFF-delay	ms	1 + max. one half-wave	15 + max. one half-wave	40 + max. one half-wave	40 + max. one half-wave	1 + max. one half-wave

¹⁾ Applies to the "Low Power" version 3RF23...-AA...-0KN0.

²⁾ Only for zero-point switching devices.

Type	Type current/performance capacity ¹⁾ I_{AC-51}	Dimensions (W x H x D) incl. heat sink Product version E06 and later
	A	mm
Main circuit		
3RF2310-.AA..	10.5	22.5 x 100 x 86
3RF2320-.AA.. 3RF2320-.CA.. 3RF2320-.DA..	20	22.5 x 100 x 118.5
3RF2330-.AA.. 3RF2330-.CA.. 3RF2330-.DA..	30	45 x 100 x 133.5
3RF2340-.AA..	40	67.5 x 100 x 137
3RF2350-.AA..	50	67.5 x 100 x 137
3RF2370-.AA..	70	80 x 100 x 149.5



¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

Type	Type current AC-51/performance capacity ¹⁾			Power loss at I_{max}	Minimum load current	Off-state current	Rated peak withstand current I_{tsm}	I^2t value
	at I_{max} at 40 °C	Acc. to IEC 60947-4-3 at 40 °C	Acc. to UL/CSA at 50 °C					
	A	A	A	W	A	mA	A	A ² s
Main circuit								
3RF2310-.AA.2 3RF2310-.AA.4 3RF2310-.AA.5 3RF2310-.AA.6	10.5	7.5	9.6	11	0.1	10	200	200
							400	800
3RF2320-.AA.2 3RF2320-.AA.4 3RF2320-.AA.5 3RF2320-.AA.6 3RF2320-.CA.2 3RF2320-.CA.4 3RF2320-.DA.2 3RF2320-.DA.4	20	13.2	17.6	20	0.5	10	600	1 800
						25	600	1 800
						10	1 150	6 600
3RF2330-.AA.2 3RF2330-.AA.4 3RF2330-.AA.5 3RF2330-.AA.6 3RF2330-.CA.2 3RF2330-.DA.4	30	22	27	33	0.5	10	600	1 800
						25	600	1 800
		18.5	26	33	0.5	10	1 150	6 600
3RF2340-.AA.2 3RF2340-.AA.4 3RF2340-.AA.5 3RF2340-.AA.6	40	33	36	44	0.5	10	1 200	7 200
							1 150	6 600
3RF2350-.AA.2 3RF2350-.AA.4 3RF2350-.AA.5 3RF2350-.AA.6	50	36	45	54	0.5	10	1 150	6 600
3RF2370-.AA.2 3RF2370-.AA.4 3RF2370-.AA.5 3RF2370-.AA.6	70	70	62	83	0.5	10	1 150	6 600

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.

Type	Type current AC-51/ performance capacity ¹⁾			Type current AC-15/ performance capacity ¹⁾		Power loss at I_{max}	Minimum load current	Off-state current	Rated peak withstand current I_{tsm}	I^2t value
	at I_{max} at 40 °C	Acc. to IEC 60947-4-3 at 40 °C	Acc. to UL/CSA at 50 °C	10 × I_e for 60 ms	Parameters					
	A	A	A	A		W	A	mA	A	A ² s
Main circuit										
3RF2310-.BA.2 3RF2310-.BA.4 3RF2310-.BA.6	10.5	7.5	9.6	6	1 200 1/h 50% ON period	11	0.1	10	200	200
									400	800
3RF2320-.BA.2 3RF2320-.BA.4 3RF2320-.BA.6	20	13.2	17.6	12	1 200 1/h 50% ON period	20	0.5	10	600	1 800
3RF2330-.BA.2 3RF2330-.BA.4 3RF2330-.BA.6	30	22	27	15	1 200 1/h 50% ON period	33	0.5	10	600	1 800
3RF2340-.BA.2 3RF2340-.BA.4 3RF2340-.BA.6	40	33	36	20	1 200 1/h 50% ON period	44	0.5	10	1 200	7 200
									1 150	6 600
3RF2350-.BA.2 3RF2350-.BA.4 3RF2350-.BA.6	50	36	45	25	1 200 1/h 50% ON period	54	0.5	10	1 150	6 600
3RF2370-.BA.2 3RF2370-.BA.4 3RF2370-.BA.6	70	70	62	27.5	1 200 1/h 50% ON period	83	0.5	10	1 150	6 600

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase



Selection and ordering data

Selection notes

The solid-state contactors are selected on the basis of details of the network, the load and the ambient conditions. As the solid-state contactors are already equipped with an optimally matched heat sink, the selection process is considerably simpler than that for solid-state relays.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select a solid-state contactor with the same or higher rated current than the load

Type current/ performance capacity ¹⁾ I_{max}	Rated control supply voltage U_s	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	
A	V	d	Article No.		Price per PU			
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC								
 3RF2310-1	10.5	24 DC	2	3RF2310-1AA02	1	1 unit	41C	
	20		2	3RF2320-1AA02	1	1 unit	41C	
	30		2	3RF2330-1AA02	1	1 unit	41C	
	40		2	3RF2340-1AA02	1	1 unit	41C	
	50		2	3RF2350-1AA02	1	1 unit	41C	
	20	24 DC Low Power	2	3RF2320-1AA02-0KN0	1	1 unit	41C	
	10.5	24 AC/DC	2	3RF2310-1AA12	1	1 unit	41C	
	10.5	110 ... 230 AC	2	3RF2310-1AA22	1	1 unit	41C	
	20		2	3RF2320-1AA22	1	1 unit	41C	
	30		2	3RF2330-1AA22	1	1 unit	41C	
	40		5	3RF2340-1AA22	1	1 unit	41C	
	50		2	3RF2350-1AA22	1	1 unit	41C	
	Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
	 3RF2320-1	10.5	24 DC	2	3RF2310-1AA04	1	1 unit	41C
20			2	3RF2320-1AA04	1	1 unit	41C	
30			2	3RF2330-1AA04	1	1 unit	41C	
40			2	3RF2340-1AA04	1	1 unit	41C	
50			2	3RF2350-1AA04	1	1 unit	41C	
10.5		24 DC Low Power	2	3RF2310-1AA04-0KN0	1	1 unit	41C	
10.5		24 AC/DC	2	3RF2310-1AA14	1	1 unit	41C	
20			5	3RF2320-1AA14	1	1 unit	41C	
30			2	3RF2330-1AA14	1	1 unit	41C	
40			5	3RF2340-1AA14	1	1 unit	41C	
50			5	3RF2350-1AA14	1	1 unit	41C	
10.5		110 ... 230 AC	2	3RF2310-1AA24	1	1 unit	41C	
20			2	3RF2320-1AA24	1	1 unit	41C	
30			2	3RF2330-1AA24	1	1 unit	41C	
40			2	3RF2340-1AA24	1	1 unit	41C	
50			2	3RF2350-1AA24	1	1 unit	41C	
10.5		4 ... 30 DC	2	3RF2310-1AA44	1	1 unit	41C	
20			2	3RF2320-1AA44	1	1 unit	41C	
30			2	3RF2330-1AA44	1	1 unit	41C	





¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/97, "More information".

Other rated control supply voltages on request.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

Type current/ performance capacity ¹⁾ I_{max}	Rated control supply voltage U_s	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.	Price per PU		
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC						
30	110 ... 230 AC	5	3RF2330-1AA25	1	1 unit	41C
10.5	4 ... 30 DC	5	3RF2310-1AA45	1	1 unit	41C
20		2	3RF2320-1AA45	1	1 unit	41C
30		2	3RF2330-1AA45	1	1 unit	41C
40		2	3RF2340-1AA45	1	1 unit	41C
50		2	3RF2350-1AA45	1	1 unit	41C
Zero-point switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC						
 10.5	24 DC	5	3RF2310-1AA06	1	1 unit	41C
20		2	3RF2320-1AA06	1	1 unit	41C
30		2	3RF2330-1AA06	1	1 unit	41C
40		5	3RF2340-1AA06	1	1 unit	41C
50		5	3RF2350-1AA06	1	1 unit	41C
10.5	110 ... 230 AC	5	3RF2310-1AA26	1	1 unit	41C
20		5	3RF2320-1AA26	1	1 unit	41C
30		5	3RF2330-1AA26	1	1 unit	41C
40		5	3RF2340-1AA26	1	1 unit	41C
50		5	3RF2350-1AA26	1	1 unit	41C
3RF2340-1						
Low Noise²⁾, zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 230 V AC						
 20	24 DC	5	3RF2320-1CA02	1	1 unit	41C
30		5	3RF2330-1CA02	1	1 unit	41C
20	110 ... 230 AC	5	3RF2320-1CA22	1	1 unit	41C
3RF2320-1						
Low Noise²⁾, zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC						
20	24 DC	5	3RF2320-1CA04	1	1 unit	41C
20	110 ... 230 AC	5	3RF2320-1CA24	1	1 unit	41C
20	4 ... 30 DC	2	3RF2320-1CA44	1	1 unit	41C
Short-circuit-proof with B MCB · zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC						
20	24 DC	2	3RF2320-1DA02	1	1 unit	41C
20	110 ... 230 AC	5	3RF2320-1DA22	1	1 unit	41C
Short-circuit-proof with B MCB · zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC						
 20	24 DC	2	3RF2320-1DA04	1	1 unit	41C
20	110 ... 230 AC	5	3RF2320-1DA24	1	1 unit	41C
20	4 ... 30 DC	2	3RF2320-1DA44	1	1 unit	41C
30		2	3RF2330-1DA44	1	1 unit	41C
3RF2320-1						

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/97, "More information".




²⁾ See page 6/111.

Other rated control supply voltages on request.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

	Type current/ performance capacity ¹⁾ I_{max}	Operational current $I_e/AC-15^{2)}$	Rated control supply voltage U_s	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG	
	A	A	V	d	Article No.		Price per PU			
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC										
 3RF2310-1	10.5	6	24 DC	2	3RF2310-1BA02		1	1 unit	41C	
	20	12		2	3RF2320-1BA02		1	1 unit	41C	
	30	15		5	3RF2330-1BA02		1	1 unit	41C	
	40	20		5	3RF2340-1BA02		1	1 unit	41C	
	50	25		5	3RF2350-1BA02		1	1 unit	41C	
	50	27.5		5	3RF2370-1BA02		1	1 unit	41C	
	10.5	6	110 ... 230 AC	5	3RF2310-1BA22		1	1 unit	41C	
	20	12		5	3RF2320-1BA22		1	1 unit	41C	
	30	15		5	3RF2330-1BA22		1	1 unit	41C	
	40	20		5	3RF2340-1BA22		1	1 unit	41C	
	50	25		5	3RF2350-1BA22		1	1 unit	41C	
	50	27.5		5	3RF2370-1BA22		1	1 unit	41C	
	Instantaneous switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC									
	 3RF2320-1	10.5	6	24 DC	2	3RF2310-1BA04		1	1 unit	41C
20		12		2	3RF2320-1BA04		1	1 unit	41C	
30		15		2	3RF2330-1BA04		1	1 unit	41C	
40		20		5	3RF2340-1BA04		1	1 unit	41C	
50		25		5	3RF2350-1BA04		1	1 unit	41C	
50		27.5		5	3RF2370-1BA04		1	1 unit	41C	
10.5		6	110 ... 230 AC	5	3RF2310-1BA24		1	1 unit	41C	
20		12		5	3RF2320-1BA24		1	1 unit	41C	
30		15		5	3RF2330-1BA24		1	1 unit	41C	
40		20		5	3RF2340-1BA24		1	1 unit	41C	
50		25		5	3RF2350-1BA24		1	1 unit	41C	
50		27.5		5	3RF2370-1BA24		1	1 unit	41C	
20		12	4 ... 30 DC	5	3RF2320-1BA44		1	1 unit	41C	
30		15		5	3RF2330-1BA44		1	1 unit	41C	
50	25		5	3RF2350-1BA44		1	1 unit	41C		
Instantaneous switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC										
 3RF2340-1	10.5	6	24 DC	5	3RF2310-1BA06		1	1 unit	41C	
	20	12		2	3RF2320-1BA06		1	1 unit	41C	
	30	15		5	3RF2330-1BA06		1	1 unit	41C	
	40	20		5	3RF2340-1BA06		1	1 unit	41C	
	50	25		5	3RF2350-1BA06		1	1 unit	41C	
	50	27.5		5	3RF2370-1BA06		1	1 unit	41C	
	10.5	6	110 ... 230 AC	5	3RF2310-1BA26		1	1 unit	41C	
	20	12		5	3RF2320-1BA26		1	1 unit	41C	
	30	15		5	3RF2330-1BA26		1	1 unit	41C	
	40	20		5	3RF2340-1BA26		1	1 unit	41C	
	50	25		5	3RF2350-1BA26		1	1 unit	41C	
	50	27.5		5	3RF2370-1BA26		1	1 unit	41C	

1) The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/97, "More information".


2) Utilization category AC-15:
Electromagnetic loads, e.g. valves according to IEC 60947-5-1.
Parameters: max. 1 200 1/h, 50% ON period, 10-times inrush current for 60 ms.

Other rated control supply voltages on request.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

Type current/ performance capacity ¹⁾ I_{max}	Rated control supply voltage U_s	SD	Spring-type terminals 	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.	Price per PU		
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC						
10.5	24 DC	5	3RF2310-2AA02		1	1 unit 41C
20		2	3RF2320-2AA02		1	1 unit 41C
10.5	110 ... 230 AC	5	3RF2310-2AA22		1	1 unit 41C
20		5	3RF2320-2AA22		1	1 unit 41C
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC						
10.5	24 DC	2	3RF2310-2AA04		1	1 unit 41C
20		2	3RF2320-2AA04		1	1 unit 41C
10.5	110 ... 230 AC	5	3RF2310-2AA24		1	1 unit 41C
20		5	3RF2320-2AA24		1	1 unit 41C
Zero-point switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC						
10.5	24 DC	5	3RF2310-2AA06		1	1 unit 41C
20		2	3RF2320-2AA06		1	1 unit 41C
10.5	110 ... 230 AC	5	3RF2310-2AA26		1	1 unit 41C
20		5	3RF2320-2AA26		1	1 unit 41C
Low Noise²⁾, zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC						
20	24 DC	5	3RF2320-2CA02		1	1 unit 41C
20	110 ... 230 AC	5	3RF2320-2CA22		1	1 unit 41C
Low Noise²⁾, zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC						
20	24 DC	5	3RF2320-2CA04		1	1 unit 41C
20	110 ... 230 AC	5	3RF2320-2CA24		1	1 unit 41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC						
20	110 ... 230 AC	5	3RF2320-2DA22		1	1 unit 41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC						
20	24 DC	5	3RF2320-2DA04		1	1 unit 41C
20	110 ... 230 AC	5	3RF2320-2DA24		1	1 unit 41C

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/97, "More information".



²⁾ See page 6/111.

Other rated control supply voltages on request.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

	Type current/ performance capacity ¹⁾ I_{max}	Rated control supply voltage U_s	SD	Ring terminal lug connection	⊕ PU (UNIT, SET, M)	PS*	PG			
	A	V	d	Article No.				Price per PU		
Zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC										
	10.5	24 DC	5	3RF2310-3AA02		1	1 unit	41C		
	20		5	3RF2320-3AA02		1	1 unit	41C		
	30		5	3RF2330-3AA02		1	1 unit	41C		
	40		5	3RF2340-3AA02		1	1 unit	41C		
	50		5	3RF2350-3AA02		1	1 unit	41C		
	70		2	3RF2370-3AA02		1	1 unit	41C		
	10.5	110 ... 230 AC	5	3RF2310-3AA22		1	1 unit	41C		
	20		5	3RF2320-3AA22		1	1 unit	41C		
	30		5	3RF2330-3AA22		1	1 unit	41C		
	40		5	3RF2340-3AA22		1	1 unit	41C		
	50		5	3RF2350-3AA22		1	1 unit	41C		
	70		5	3RF2370-3AA22		1	1 unit	41C		
	Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC									
			10.5	24 DC		5	3RF2310-3AA04		1	1 unit
20		5	3RF2320-3AA04		1	1 unit	41C			
30		2	3RF2330-3AA04		1	1 unit	41C			
40		5	3RF2340-3AA04		1	1 unit	41C			
50		2	3RF2350-3AA04		1	1 unit	41C			
70		2	3RF2370-3AA04		1	1 unit	41C			
10.5		110 ... 230 AC	5	3RF2310-3AA24		1	1 unit	41C		
20			5	3RF2320-3AA24		1	1 unit	41C		
30			5	3RF2330-3AA24		1	1 unit	41C		
40			5	3RF2340-3AA24		1	1 unit	41C		
50			5	3RF2350-3AA24		1	1 unit	41C		
70			5	3RF2370-3AA24		1	1 unit	41C		
20			4 ... 30 DC	5		3RF2320-3AA44		1	1 unit	41C
30				5		3RF2330-3AA44		1	1 unit	41C
50		5		3RF2350-3AA44	1	1 unit		41C		
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC										
40		4 ... 30 DC	5	3RF2340-3AA45		1	1 unit	41C		
70			2	3RF2370-3AA45		1	1 unit	41C		
Zero-point switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC										
	10.5	24 DC	5	3RF2310-3AA06		1	1 unit	41C		
	20		5	3RF2320-3AA06		1	1 unit	41C		
	30		5	3RF2330-3AA06		1	1 unit	41C		
	40		5	3RF2340-3AA06		1	1 unit	41C		
	50		5	3RF2350-3AA06		1	1 unit	41C		
	70		5	3RF2370-3AA06		1	1 unit	41C		
	10.5	110 ... 230 AC	5	3RF2310-3AA26		1	1 unit	41C		
	20		5	3RF2320-3AA26		1	1 unit	41C		
	30		5	3RF2330-3AA26		1	1 unit	41C		
	40		5	3RF2340-3AA26		1	1 unit	41C		
	50		5	3RF2350-3AA26		1	1 unit	41C		
	70		5	3RF2370-3AA26		1	1 unit	41C		


¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/97, "More information".

Other rated control supply voltages on request.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

Type current/ performance capacity ¹⁾ I_{max}	Operational current $I_e/AC-15^{2)}$	Rated control supply voltage U_s	SD	Ring terminal lug connection 	PU (UNIT, SET, M)	PS*	PG
A	A	V	d	Article No.	Price per PU		
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
70	27.5	24 DC	5	3RF2370-3BA02	1	1 unit	41C
70	27.5	110 ... 230 AC	5	3RF2370-3BA22	1	1 unit	41C
Instantaneous switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
70	27.5	24 DC	5	3RF2370-3BA04	1	1 unit	41C
70	27.5	110 ... 230 AC	5	3RF2370-3BA24	1	1 unit	41C
Instantaneous switching · Integrated heat sink, blocking voltage 1 600 V, rated operational voltage U_e 48 ... 600 V AC							
70	27.5	24 DC	5	3RF2370-3BA06	1	1 unit	41C
70	27.5	110 ... 230 AC	5	3RF2370-3BA26	1	1 unit	41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 24 ... 230 V AC							
20	--	24 DC	5	3RF2320-3DA02	1	1 unit	41C
20	--	110 ... 230 AC	5	3RF2320-3DA22	1	1 unit	41C
Short-circuit-proof with B MCB, zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 460 V AC							
20	--	24 DC	5	3RF2320-3DA04	1	1 unit	41C
20	--	110 ... 230 AC	5	3RF2320-3DA24	1	1 unit	41C

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/97, "More information".

²⁾ Utilization category AC-15:
Electromagnetic loads, e.g. valves according to IEC 60947-5-1.
Parameters: max. 1 200 1/h, 50% ON period, 10-times inrush current for 60 ms.







Other rated control supply voltages on request.

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF23 solid-state contactors, single-phase

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
 3RA2908-1A	2	Spring-type terminals  3RA2908-1A		1	1 unit	41B
		Screwdrivers For all SIRIUS devices with spring-type terminals Length approx. 200 mm, size 3.0 mm x 0.5 mm, titanium gray/black, partially insulated				
 3RF2900-3PA88	2	Ring terminal lug connection  3RF2900-3PA88		1	10 units	41C
		Terminal covers For 3RF23 solid-state contactors with ring terminal lug connection (With this terminal cover, degree of protection IP20 can be achieved in the terminal compartment in the case of ring terminal lug connections. It can also be used for screw terminals after simple adaptation)				
Control connectors						
		Screw terminals 				
	5	Replacement control connectors For 3RF23/24 Screw terminals	3RF2900-1TA88	1	50 units	41C
	5	Replacement control connectors For 3RF23/24 Spring-type terminals	Spring-type terminals 	1	50 units	41C
	5	Control connector For 3RF23/24 Spring-type terminals with two clamping points per contact	3RF2900-2TB88	1	10 units	41C

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF24 solid-state contactors, three-phase

Overview

Three-phase solid-state contactors with heat sink

Their compact design with optimized heat sink enables small complete units with currents up to 50 A. They also offer all the




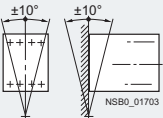
special features of the solid-state relay in terms of time and space savings.

Technical specifications

More information

System Manual "SIRIUS Modular System – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16230/faq>

Type		3RF24..-1....	3RF24..-2....	3RF24..-3....
Dimensions (W x H x D)		See page 6/123		
General data				
Ambient temperature				
• During operation, derating from 40 °C	°C	-25 ... +60		
• During storage	°C	-55 ... +80		
Installation altitude	m	0 ... 1 000; derating from 1 000		
Shock resistance acc. to IEC 60068-2-27	g/ms	15/11		
Vibration resistance acc. to IEC 60068-2-6	g	2		
Degree of protection		IP20		IP00
Insulation strength at 50/60 Hz (main/control circuit to floor)	V rms	4 000		
Electromagnetic compatibility (EMC)				
• Emitted interference according to IEC 60947-4-3				
- Conducted interference voltage		Class A for industrial applications ¹⁾		
• Interference immunity				
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2		
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dBµV; behavior criterion 1		
- Burst acc. to IEC 61000-4-4	kV	2/5.0 kHz; behavior criterion 2		
- Surge acc. to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2		
Connection type		 Screw terminals	 Spring-type terminals	 Ring terminal lug connection
Connection, main contacts				
• Conductor cross-section				
- Solid	mm ²	2 x (1.5 ... 2.5) ²⁾ , 2 x (2.5 ... 6) ²⁾		2 x (0.5 ... 2.5)
- Finely stranded with end sleeve	mm ²	2 x (1 ... 2.5) ²⁾ , 2 x (2.5 ... 6) ²⁾ , 1 x 10		2 x (0.5 ... 1.5)
- Finely stranded without end sleeve	mm ²	--		--
- Solid or stranded, AWG cables	AWG	2 x (14 ... 10)		2 x (18 ... 14)
• Stripped length	mm	10		10
• Terminal screws		M4		M5
- Tightening torque	Nm	2 ... 2.5		2 ... 2.5
	lb.in	18 ... 22		18 ... 22
• Cable lugs		--		5-2.5 ... 5-25
- According to DIN 46234		--		R 2-5 ... R 14-5
- According to JIS C 2805		--		12
- Width, maximum	mm	--		--
Connection, auxiliary/control contacts				
• Conductor cross-section	mm	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)		1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)
	AWG	20 ... 12		20 ... 12
• Stripped length	mm	7		7
• Terminal screw		M3		M3
- Tightening torque,	Nm	0.5 ... 0.6		0.5 ... 0.6
∅ 3.5, PZ 1	lb.in	4.5 ... 5.3		4.5 ... 5.3
Grounding screw		Not included in the scope of supply		
• Size (standard screw)		M5		
Permissible mounting position				

¹⁾ These products were built as Class A devices. The use of these devices in residential areas could result in radio interference. In this case the user may be required to introduce additional interference suppression measures. The versions 3RF24..-1AC55 comply with Class B for residential, business and commercial applications.

²⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Solid-State Switching Devices for Resistive/Inductive Loads

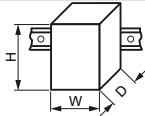
Solid-State Contactors

SIRIUS 3RF24 solid-state contactors, three-phase

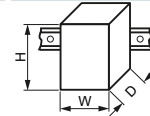
Type	Type current/ performance capacity ¹⁾ I_{AC-51} at 40 °C	Rated operational current I_e		Power loss at I_{AC-51}	Minimum load current	Max. off-state current	Rated peak withstand current I_{tsm}	I^2t value
	A	Acc. to IEC 60947-4-3 at 40 °C	Acc. to UL/CSA at 50 °C	W	A	mA	A	A ² s
Main circuit								
3RF2410-.AB.5	10.5	7		23	0.1	10	200	200
3RF2420-.AB.5	22	15		44	0.5	10	600	1 800
3RF2430-.AB.5	30	22		61	0.5	10	1 200	7 200
3RF2440-.AB.5	40	30		80	0.5	10	1 150	6 600
3RF2450-.AB.5	50	38		107	0.5	10	1 150	6 600
3RF2410-.AC.5	10.5	7		31	0.5	10	300	450
3RF2420-.AC.5	22	15		66	0.5	10	600	1 800
3RF2430-.AC.5	30	22		91	0.5	10	1 200	7 200
3RF2440-.AC.5	40	30		121	0.5	10	1 150	6 600
3RF2450-.AC.5	50	38		160	0.5	10	1 150	6 600

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions.

Type	Type current I_{AC-51}	Dimensions (W x H x D) (including heat sink)
	A	mm
Main circuit		
3RF2410-.AB..	10.5	45 x 100 x 105
3RF2410-.AC..		
3RF2420-.AB..	22	67 x 100 x 112.5
3RF2420-.AC..	22	89.5 x 100 x 112.5
3RF2430-.AB..	30	



Type	Type current I_{AC-51}	Dimensions (W x H x D) (including heat sink)
	A	mm
Main circuit		
3RF2430-.AC..	30	113.5 x 100 x 121
3RF2440-.AB..	40	
3RF2440-.AC..	40	157.5 x 100 x 121
3RF2450-.AB..	50	
3RF2450-.AC..	50	157.5 x 180 x 121



Type		3RF24...-AB.5	3RF24...-AC.5
Main circuit			
Controlled phases		Two-phase	Three-phase
Rated operational voltage U_e	V AC	48 ... 600	
• Operating range	V AC	40 ... 660	
• Rated frequency	Hz	50/60 ± 10%	
Rated insulation voltage U_i	V	600	
Rated impulse withstand voltage U_{imp}	kV	6	
Blocking voltage	V	1 200	
Rate of voltage rise	V/μs	1 000	

Type		3RF24...-...3.	3RF24...-...4.	3RF24...-...5.
Control circuit				
Method of operation		AC operation	DC operation	AC operation
Rated control supply voltage U_s	V	110	4 ... 30	190 ... 230
Rated frequency of the control supply voltage	Hz	50/60 ± 10%	--	50/60 ± 10%
Actuating voltage, max.	V	121	30	253
Typical actuating current	mA	15	30	15
Response voltage	V	90	4	180
Drop-out voltage	V	< 40	< 1	< 40
Operating times				
• ON-delay	ms	40 + max. one half-wave	1 + max. one half-wave	40 + max. one half-wave
• OFF-delay	ms	40 + max. one half-wave	1 + max. one half-wave	40 + max. one half-wave

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF24 solid-state contactors, three-phase

Selection and ordering data

Type current/ performance capacity ¹⁾ I_{max}	Rated control supply voltage U_s	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.		Price per PU		
Zero-point switching · Integrated heat sink, rated operational voltage U_e 48 ... 600 V AC							
Two-phase controlled							
10.5	4 ... 30 DC	2	3RF2410-1AB45		1	1 unit	41C
20		2	3RF2420-1AB45		1	1 unit	41C
30		2	3RF2430-1AB45		1	1 unit	41C
40		5	3RF2440-1AB45		1	1 unit	41C
50		2	3RF2450-1AB45		1	1 unit	41C
10.5	110 AC	5	3RF2410-1AB35		1	1 unit	41C
20		5	3RF2420-1AB35		1	1 unit	41C
30		5	3RF2430-1AB35		1	1 unit	41C
40		5	3RF2440-1AB35		1	1 unit	41C
50		5	3RF2450-1AB35		1	1 unit	41C
10.5	230 AC	5	3RF2410-1AB55		1	1 unit	41C
20		5	3RF2420-1AB55		1	1 unit	41C
30		2	3RF2430-1AB55		1	1 unit	41C
40		5	3RF2440-1AB55		1	1 unit	41C
50		5	3RF2450-1AB55		1	1 unit	41C
Three-phase controlled							
10.5	4 ... 30 DC	2	3RF2410-1AC45		1	1 unit	41C
20		2	3RF2420-1AC45		1	1 unit	41C
30		2	3RF2430-1AC45		1	1 unit	41C
40		2	3RF2440-1AC45		1	1 unit	41C
50		2	3RF2450-1AC45		1	1 unit	41C
10.5	110 AC	5	3RF2410-1AC35		1	1 unit	41C
20		5	3RF2420-1AC35		1	1 unit	41C
30		5	3RF2430-1AC35		1	1 unit	41C
40		5	3RF2440-1AC35		1	1 unit	41C
50		5	3RF2450-1AC35		1	1 unit	41C
10.5	230 AC	5	3RF2410-1AC55		1	1 unit	41C
20		5	3RF2420-1AC55		1	1 unit	41C
30		5	3RF2430-1AC55		1	1 unit	41C
40		5	3RF2440-1AC55		1	1 unit	41C
50		5	3RF2450-1AC55		1	1 unit	41C



3RF2420-1AB45



3RF2410-1AC45

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/97, "More information".

Solid-State Switching Devices for Resistive/Inductive Loads

Solid-State Contactors

SIRIUS 3RF24 solid-state contactors, three-phase

Type current/ performance capacity ¹⁾ I_{max}	Rated control supply voltage U_s	SD	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.	Price per PU		

**Zero-point switching · Integrated heat sink,
rated operational voltage U_e 48 ... 600 V AC**



3RF2410-2AB45

Two-phase controlled

10	4 ... 30 DC	5	3RF2410-2AB45	1	1 unit	41C
20		5	3RF2420-2AB45	1	1 unit	41C
10	230 AC	5	3RF2410-2AB55	1	1 unit	41C
20		5	3RF2420-2AB55	1	1 unit	41C

Three-phase controlled

10	4 ... 30 DC	5	3RF2410-2AC45	1	1 unit	41C
20		5	3RF2420-2AC45	1	1 unit	41C
10	230 AC	5	3RF2410-2AC55	1	1 unit	41C
20		5	3RF2420-2AC55	1	1 unit	41C

Type current/ performance capacity ¹⁾ I_{max}	Rated control supply voltage U_s	SD	Ring terminal lug connection	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.	Price per PU		

**Zero-point switching · Integrated heat sink,
rated operational voltage U_e 48 ... 600 V AC**

Two-phase controlled

50	4 ... 30 DC	5	3RF2450-3AB45	1	1 unit	41C
50	230 AC	5	3RF2450-3AB55	1	1 unit	41C

Three-phase controlled

50	4 ... 30 DC	5	3RF2450-3AC45	1	1 unit	41C
50	230 AC	5	3RF2450-3AC55	1	1 unit	41C

¹⁾ The type current provides information about the performance of the solid-state contactor. The actual permitted rated operational current I_e can be smaller depending on the connection method and installation conditions. For derating characteristic curves, see page 6/97, "More information".

For accessories, see page 6/121.

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

General data

Overview

Function modules for SIRIUS 3RF2 solid-state switching devices

A great variety of applications demand an expanded range of functionality. With our function modules, these requirements can be met really easily. The modules are mounted simply by clicking them into place; straight away the necessary connections are made with the solid-state relay or contactor.

The plug-in connection to control the solid-state switching devices can simply remain in use. The external connections have screw terminals.

The following function modules are available:

- Converters
- Load monitoring
- Heating current monitoring
- Power controllers
- Power regulators

With the exception of the converter, the function modules can be used only with single-phase solid-state switching devices.

Recommended assignment of the function modules to the 3RF21 single-phase solid-state relays

Type	Accessories					
	Converters	Load monitoring Basic	Load monitoring Extended ¹⁾	Heating current monitoring ¹⁾	Power controllers ¹⁾	Power regulators ¹⁾
Type current = 20 A						
3RF2120-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-1A.22	--	--	3RF2920-0GA33	--	--	--
3RF2120-1A.24	--	--	3RF2920-0GA36	--	--	--
3RF2120-1A.42	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2120-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2120-2A.22	--	--	--	--	--	--
3RF2120-2A.24	--	--	--	--	--	--
3RF2120-2A.42	3RF2900-0EA18	--	--	--	--	--
3RF2120-2A.45	3RF2900-0EA18	--	--	--	--	--
3RF2120-3A.02	3RF2900-0EA18	--	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-3A.04	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2120-3A.22	--	--	3RF2920-0GA33	--	3RF2920-0KA13	3RF2920-0HA13
3RF2120-3A.24	--	--	3RF2920-0GA36	--	3RF2920-0KA16	3RF2920-0HA16
Type current = 30 A						
3RF2130-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2130-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2130-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2130-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2130-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2130-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2130-1A.42	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2130-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2130-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
Type current = 50 A						
3RF2150-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2150-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2150-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2150-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2150-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1B.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2150-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.14	3RF2900-0EA18	--	--	--	--	--
3RF2150-2A.22	--	--	--	--	--	--
3RF2150-2A.24	--	--	--	--	--	--
3RF2150-2A.26	--	--	--	--	--	--
3RF2150-3A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2150-3A.04	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-3A.06	3RF2900-0EA18	--	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2150-3A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2150-3A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2150-3A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36

¹⁾ For line voltages in the range from 110 to 230 V, the versions of the 3RF29...-0A13 function modules can also be combined with more voltage-resistant versions of the solid-state relays (3RF21...-....4, -....5 or -....6).

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

General data

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring ¹⁾	Power controllers ¹⁾	Power regulators ¹⁾
		Basic	Extended ¹⁾			
Type current = 70 A						
3RF2170-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2170-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1A.05	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2170-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2170-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2170-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2170-1C.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
Type current = 90 A						
3RF2190-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2190-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-1A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2190-1A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2190-1A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2190-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2190-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2190-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2190-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2190-2A.22	--	--	--	--	--	--
3RF2190-2A.24	--	--	--	--	--	--
3RF2190-2A.26	--	--	--	--	--	--
3RF2190-3A.02	3RF2900-0EA18	--	3RF2990-0GA13	--	3RF2990-0KA13	3RF2990-0HA13
3RF2190-3A.04	3RF2900-0EA18	--	3RF2990-0GA16	3RF2932-0JA16	3RF2990-0KA16	3RF2990-0HA16
3RF2190-3A.06	3RF2900-0EA18	--	3RF2990-0GA16	3RF2932-0JA16	3RF2990-0KA16	3RF2990-0HA16
3RF2190-3A.22	--	--	3RF2990-0GA33	--	--	3RF2990-0HA33
3RF2190-3A.24	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2190-3A.26	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2190-3A.44	3RF2900-0EA18	--	3RF2990-0GA16	3RF2932-0JA16	3RF2990-0KA16	3RF2990-0HA16

¹⁾ For line voltages in the range from 110 to 230 V, the versions of the 3RF29...-0A13 function modules can also be combined with more voltage-resistant versions of the solid-state relays (3RF21...-...4, ...5 or ...6).

Recommended assignment of the function modules to the 3RF22 three-phase solid-state relays

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
		Basic	Extended			
Type current up to 55 A						
3RF22...-1A...	3RF2900-0EA18	--	--	--	--	--
3RF22...-2A...	3RF2900-0EA18	--	--	--	--	--
3RF22...-3A...	3RF2900-0EA18	--	--	--	--	--

Recommended assignment of the function modules to the 3RF23 single-phase solid-state contactors

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring ¹⁾	Power controllers ¹⁾	Power regulators ¹⁾
		Basic	Extended ¹⁾			
Type current = 10.5 A						
3RF2310-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.12	3RF2900-0EA18	--	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-1A.14	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2310-1A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-1A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-1A.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16

¹⁾ For line voltages in the range from 110 to 230 V, the versions of the 3RF29...-0A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23...-...4, ...5 or ...6).

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

General data

Type	Accessories					
	Converters	Load monitoring Basic	Extended ¹⁾	Heating current monitoring ¹⁾	Power controllers ¹⁾	Power regulators ¹⁾
Type current = 10.5 A						
3RF2310-1B.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1B.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-1B.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2310-1B.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-1B.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2310-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2310-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2310-2A.22	--	--	--	--	--	--
3RF2310-2A.24	--	--	--	--	--	--
3RF2310-2A.26	--	--	--	--	--	--
3RF2310-3A.02	3RF2900-0EA18	--	3RF2920-0GA13	3RF2916-0JA13	3RF2920-0KA13	3RF2920-0HA13
3RF2310-3A.04	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-3A.06	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2310-3A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2310-3A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2310-3A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
Type current = 20 A						
3RF2320-1A.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1A.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.14	3RF2900-0EA18	--	3RF2920-0GA16	--	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1A.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1A.45	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1B.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1B.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1B.06	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1B.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1B.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1B.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1B.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1C.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1C.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1C.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1C.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1C.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1D.02	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-1D.04	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-1D.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-1D.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-1D.44	3RF2900-0EA18	3RF2920-0FA08	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-2A.02	3RF2900-0EA18	--	--	--	--	--
3RF2320-2A.04	3RF2900-0EA18	--	--	--	--	--
3RF2320-2A.06	3RF2900-0EA18	--	--	--	--	--
3RF2320-2A.22	--	--	--	--	--	--
3RF2320-2A.24	--	--	--	--	--	--
3RF2320-2A.26	--	--	--	--	--	--
3RF2320-2C.02	3RF2900-0EA18	--	--	--	--	--
3RF2320-2C.04	3RF2900-0EA18	--	--	--	--	--
3RF2320-2C.22	--	--	--	--	--	--
3RF2320-2C.24	--	--	--	--	--	--
3RF2320-2D.22	--	--	--	--	--	--
3RF2320-2D.24	--	--	--	--	--	--
3RF2320-3A.02	3RF2900-0EA18	--	3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-3A.04	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-3A.06	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-3A.22	--	--	3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-3A.24	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-3A.26	--	--	3RF2920-0GA36	--	--	3RF2920-0HA36
3RF2320-3A.44	3RF2900-0EA18	--	3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16

¹⁾ For line voltages in the range from 110 to 230 V, the versions of the 3RF29...-0.A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23...-4, ...5 or ...6).

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

General data

Type	Accessories						
	Converters	Load monitoring Basic ¹⁾		Extended ²⁾	Heating current monitoring ²⁾	Power controllers ²⁾	Power regulators ²⁾
Type current = 20 A							
3RF2320-3D.02	3RF2900-0EA18	--		3RF2920-0GA13	--	3RF2920-0KA13	3RF2920-0HA13
3RF2320-3D.04	3RF2900-0EA18	--		3RF2920-0GA16	3RF2932-0JA16	3RF2920-0KA16	3RF2920-0HA16
3RF2320-3D.22	--	--		3RF2920-0GA33	--	--	3RF2920-0HA33
3RF2320-3D.24	--	--		3RF2920-0GA36	--	--	3RF2920-0HA36
Type current = 30 A							
3RF2330-1A.02	3RF2900-0EA18	--		3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2330-1A.04	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.06	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.14	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.22	--	--		3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2330-1A.24	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1A.25	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1A.26	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1A.44	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1A.45	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1B.02	3RF2900-0EA18	--		3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2330-1B.04	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1B.06	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1B.22	--	--		3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2330-1B.24	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1B.26	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-1B.44	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-1C.02	3RF2900-0EA18	--		3RF2950-0GA13	--	--	3RF2950-0HA13
3RF2330-1D.44	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-3A.02	3RF2900-0EA18	--		3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2330-3A.04	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-3A.06	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
3RF2330-3A.22	--	--		3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2330-3A.24	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-3A.26	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2330-3A.44	3RF2900-0EA18	--		3RF2950-0GA16	3RF2932-0JA16	3RF2950-0KA16	3RF2950-0HA16
Type current = 40 A							
3RF2340-1A.02	3RF2900-0EA18	--		3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2340-1A.04	3RF2900-0EA18	--		3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1A.06	3RF2900-0EA18	--		3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1A.14	3RF2900-0EA18	--		3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1A.22	--	--		3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2340-1A.24	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-1A.26	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-1A.45	3RF2900-0EA18	--		3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1B.02	3RF2900-0EA18	--		3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2340-1B.04	3RF2900-0EA18	--		3RF2950-0GA13	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1B.06	3RF2900-0EA18	--		3RF2950-0GA13	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-1B.22	--	--		3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2340-1B.24	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-1B.26	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-3A.02	3RF2900-0EA18	--		3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2340-3A.04	3RF2900-0EA18	--		3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-3A.06	3RF2900-0EA18	--		3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2340-3A.22	--	--		3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2340-3A.24	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-3A.26	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2340-3A.45	3RF2900-0EA18	--		3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
Type current = 50 A							
3RF2350-1A.02	3RF2900-0EA18	--		3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2350-1A.04	3RF2900-0EA18	--		3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1A.06	3RF2900-0EA18	--		3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1A.14	3RF2900-0EA18	--		3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1A.22	--	--		3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2350-1A.24	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1A.26	--	--		3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1A.45	3RF2900-0EA18	--		3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16

¹⁾ The technical specifications must be taken into account when selecting the function modules. More combinations may be possible if the solid-state relays and contactors are not fully loaded, e.g. a load monitor for 20 A can also be operated with a solid-state contactor for 30 A if the load current during operation does not exceed 20 A.

²⁾ For line voltages in the range from 110 to 230 V, the versions of the 3RF29...0A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23...-...4, -...5 or -...6).

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

General data

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring ¹⁾	Power controllers ¹⁾	Power regulators ¹⁾
		Basic	Extended ¹⁾			
Type current = 50 A						
3RF2350-1B.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2350-1B.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1B.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2350-1B.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1B.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-1B.44	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-3A.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2350-3A.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-3A.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2350-3A.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2350-3A.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-3A.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2350-3A.44	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
Type current = 70 A						
3RF2370-1B.02	3RF2900-0EA18	--	3RF2950-0GA13	--	3RF2950-0KA13	3RF2950-0HA13
3RF2370-1B.04	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2370-1B.06	3RF2900-0EA18	--	3RF2950-0GA16	--	3RF2950-0KA16	3RF2950-0HA16
3RF2370-1B.22	--	--	3RF2950-0GA33	--	--	3RF2950-0HA33
3RF2370-1B.24	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2370-1B.26	--	--	3RF2950-0GA36	--	--	3RF2950-0HA36
3RF2370-3A.02	3RF2900-0EA18	--	3RF2990-0GA13	--	3RF2990-0KA13	3RF2990-0HA13
3RF2370-3A.04	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3A.06	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3A.22	--	--	3RF2990-0GA33	--	--	3RF2990-0HA33
3RF2370-3A.24	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2370-3A.26	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2370-3A.45	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3B.02	3RF2900-0EA18	--	3RF2990-0GA13	--	3RF2990-0KA13	3RF2990-0HA13
3RF2370-3B.04	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3B.06	3RF2900-0EA18	--	3RF2990-0GA16	--	3RF2990-0KA16	3RF2990-0HA16
3RF2370-3B.22	--	--	3RF2990-0GA33	--	--	3RF2990-0HA33
3RF2370-3B.24	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36
3RF2370-3B.26	--	--	3RF2990-0GA36	--	--	3RF2990-0HA36

¹⁾ For line voltages in the range from 110 to 230 V, the versions of the 3RF29...-0A13 function modules can also be combined with more voltage-resistant versions of the solid-state contactors (3RF23...-...4, -...5 or -...6).

Recommended assignment of the function modules to the 3RF24 three-phase solid-state contactors

Type	Accessories					
	Converters	Load monitoring		Heating current monitoring	Power controllers	Power regulators
		Basic	Extended			
Type current up to 50 A						
3RF24...-1..4.	3RF2900-0EA18	--	--	--	--	--
3RF24...-2..4.	--	--	--	--	--	--
3RF24...-3..4.	3RF2900-0EA18	--	--	--	--	--
3RF24...-...5.	--	--	--	--	--	--

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

General data

Technical specifications

More information

System Manual "SIRIUS Modular System – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16231/faq>

Type		3RF29..-0EA..	3RF29..-0FA..	3RF29..-0GA..	3RF29..-0HA..	3RF29..-0JA..	3RF29..-0KA..
Dimensions (W x H x D)	mm	22.5 x 84 x 38	22.5 x 102 x 39	45 x 112 x 44	45 x 112 x 44	45 x 112 x 44	45 x 112 x 44

General data

Ambient temperature

• During operation, derating from 40 °C	°C	-25 ... +60
• During storage	°C	-55 ... +80

Installation altitude	m	0 ... 1 000; derating from 1 000
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Shock resistance acc. to IEC 60068-2-27	g/ms	15/11
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Vibration resistance acc. to IEC 60068-2-6	g	2
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Degree of protection		IP20
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Electromagnetic compatibility (EMC)

• Emitted interference		
- Conducted interference voltage acc. to IEC 60947-4-3		Class A for industrial applications ¹⁾
- Emitted, high-frequency interference voltage acc. to IEC 60947-4-3		Class B for residential, business and commercial applications
• Interference immunity		
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	Contact discharge 4; air discharge 8; behavior criterion 2
- Induced RF fields according to IEC 61000-4-6	MHz	0.15 ... 80; 140 dB μ V; behavior criterion 1
- Burst acc. to IEC 61000-4-4		2 kV/5.0 kHz; behavior criterion 2
- Surge acc. to IEC 61000-4-5	kV	Conductor - ground 2; conductor - conductor 1; behavior criterion 2

Connection type

Auxiliary/control contacts

• Conductor cross-section	mm ²	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0), 1 x (AWG 20 ... 12)
• Stripped length	mm	7
• Terminal screw		M3
• Tightening torque	Nm lb.in	0.5 ... 0.6 4.5 ... 5.3

Connection type

Converters

• Diameter	mm	--	7	17
------------	----	----	---	----

¹⁾ Note limitations for power controller and power regulator function modules. These modules were built as Class A devices. The use of these devices in residential areas could result in radio interference. In this case the user may be required to introduce additional interference suppression measures.

Type		3RF29..-0EA18	3RF29..-0FA08	3RF29..-0GA.3	3RF29..-0GA.6
Main circuit					
Rated operational voltage U_e	V AC	-- ¹⁾		110 ... 230	400 ... 600
• Operating range	V AC	--		93.5 ... 253	340 ... 660
• Rated frequency	Hz	--		50/60	
Rated insulation voltage U_i	V	--		600	
Voltage measuring					
• Measuring range	V	--		93.5 ... 253	340 ... 660
Mains voltage, fluctuation compensation	%	--		20	

¹⁾ Versions are independent of the main circuit.

Type		3RF29..-0HA.3 3RF29..-0KA.3	3RF29..-0HA.6 3RF29..-0KA.6	3RF29..-0JA.3	3RF29..-0JA.6
Main circuit					
Rated operational voltage U_e	V AC	110 ... 230	400 ... 600	110 ... 230	400 ... 600
• Operating range	V AC	93.5 ... 253	340 ... 660	93.5 ... 253	340 ... 660
• Rated frequency	Hz	50/60			
Rated insulation voltage U_i	V	600			
Voltage measuring					
• Measuring range	V	93.5 ... 253	340 ... 660	93.5 ... 253	340 ... 660
Mains voltage, fluctuation compensation	%	20			

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

General data

Type		3RF29...0.	3RF29...1.	3RF29...3.
Control circuit				
Method of operation		DC operation	AC/DC operation	AC operation
Rated control supply voltage U_s	V	24		110
Rated actuating current	mA	15		
Rated frequency of the control supply voltage	Hz	--	50/60	
Actuating voltage, max.	V	30		121
Rated actuating current At maximum voltage	mA	15		
Response voltage	V	15		90
• For operating current	mA	2		
Drop-out voltage	V	5		15

Type		3RF2906-0FA08	3RF2920-0FA08	3RF2920-0GA..	3RF2950-0GA..	3RF2990-0GA..
Current measurement						
Rated operational current I_e	A	6	20		50	90
Current measurement						
• Teach range	A	0.25 ... 6	0.65 ... 20	0.56 ... 20	1.62 ... 50	2.93 ... 90
• Measuring range	A	0 ... 6.6	0 ... 22		0 ... 55	0 ... 99
• Minimum partial load current	A	0.25	0.65		1.6	2.9
Number of partial loads		1 ... 6		1 ... 12		

Type		3RF2920-0HA..	3RF2950-0HA..	3RF2990-0HA..	3RF2916-0JA..	3RF2932-0JA..
Current measurement						
Rated operational current I_e	A	20	50	90	16	32
Current measurement						
• Teach range	A	4 ... 20	10 ... 50	18 ... 90	0.42 ... 16	0.8 ... 32
• Measuring range	A	0 ... 22	0 ... 55	4 ... 99	0 ... 16	0 ... 32
• Minimum partial load current	A	--			0.42	0.8
Number of partial loads		--			1 ... 6	

Type		3RF2904-0KA..	3RF2920-0KA..	3RF2950-0KA..	3RF2990-0KA..
Current measurement					
Rated operational current I_e	A	4	20	50	90
Current measurement					
• Teach range	A	0.15 ... 4	0.65 ... 20	1.6 ... 50	2.9 ... 90
• Measuring range	A	0 ... 4	0 ... 22	0 ... 55	0 ... 99
• Minimum partial load current	A	--	0.65	1.6	2.9
Number of partial loads		--	1 ... 6		

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

SIRIUS converters for 3RF2

Overview

Converters for 3RF2 solid-state switching devices

These modules are used to convert analog control signals, such as those output from many temperature controllers for example, into a pulse-width-modulated digital signal. The connected solid-state contactors and relays can therefore regulate the output of a load as a percentage.


Application

This function module is used for conversions from an analog input signal to an on/off ratio with time basis 1 s. The module can only be used in conjunction with 3RF21 and 3RF23 single-phase solid-state switching devices or 3RF22 and 3RF24 three-phase devices. It can be used on versions with 24 V DC and 24 V AC/DC control supply voltage.

Note:

The use of single-pole solid-state switching devices with converters, power controllers or power regulators on AC loads in full-wave control mode is not recommended. Since the function modules do not synchronize with each other, this may lead to fluctuations in the heating power; optimum compensation can no longer be ensured, especially for setpoints < 50%.

Selection and ordering data

	Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
	A	V	d	Article No.	Price per PU			
Converters								
		Rated control supply voltage 24 V AC/DC						
3RF2900-0EA18	--	--	2	3RF2900-0EA18		1	1 unit	41C

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

SIRIUS load monitoring for 3RF2

Overview

Load monitoring for 3RF2 single-phase solid-state switching devices

Many faults can be quickly detected by monitoring a load circuit connected to the solid-state switching device, as made possible with this module. Examples include the failure of load elements (up to 6 in the basic version or up to 12 in the extended version), alloyed power semiconductors, a lack of voltage or a break in a load circuit. A fault is indicated by one or more LEDs and reported to the controller by way of a PLC-compatible output.

The principle of operation is based on permanent monitoring of the current intensity. This figure is continuously compared with the reference value stored once during commissioning by the simple press of a button. In order to detect the failure of one of several loads, the current difference must be 1/6 (in the basic version) or 1/12 (in the extended version) of the reference value. In the event of a fault, an output is actuated and one or more LEDs indicate the fault.

Application

The device is used for monitoring one or more loads (partial loads). The function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor. The devices with spring-type terminals in the load circuit are not suitable.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.	Price per PU			
Basic load monitoring							
Rated control supply voltage 24 V DC							
6	--	2	3RF2906-0FA08		1	1 unit	41C
20	--	2	3RF2920-0FA08		1	1 unit	41C
• With mounted 3RF2900-0RA88 cover							
6	--	2	3RF2906-0FA08-0KH0		1	1 unit	41C
20	--	2	3RF2920-0FA08-0KH0		1	1 unit	41C
Extended load monitoring							
Rated control supply voltage 24 V AC/DC							
20	110 ... 230	2	3RF2920-0GA13		1	1 unit	41C
20	400 ... 600	2	3RF2920-0GA16		1	1 unit	41C
50	110 ... 230	2	3RF2950-0GA13		1	1 unit	41C
50	400 ... 600	2	3RF2950-0GA16		1	1 unit	41C
90	110 ... 230	2	3RF2990-0GA13		1	1 unit	41C
90	400 ... 600	2	3RF2990-0GA16		1	1 unit	41C
Rated control supply voltage 110 V AC							
20	110 ... 230	2	3RF2920-0GA33		1	1 unit	41C
20	400 ... 600	2	3RF2920-0GA36		1	1 unit	41C
50	110 ... 230	2	3RF2950-0GA33		1	1 unit	41C
50	400 ... 600	2	3RF2950-0GA36		1	1 unit	41C
90	110 ... 230	2	3RF2990-0GA33		1	1 unit	41C
90	400 ... 600	2	3RF2990-0GA36		1	1 unit	41C



3RF2920-0FA08



3RF2920-0GA13

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
Sealable covers for function modules (not for converters)						
	5	3RF2900-0RA88		1	10 units	41C



3RF2900-0RA88

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

SIRIUS heating current monitoring for 3RF2

Overview

Heating current monitoring for 3RF2 single-phase solid-state switching devices

Many faults can be quickly detected by monitoring a load circuit connected to the solid-state switching device, as made possible with this module. Examples include the failure of up to six load elements, alloyed power semiconductors, a lack of voltage, or a break in the load circuit. A fault is indicated by LEDs and reported to the controller via relay output (NC).

The principle of operation is based on permanent monitoring of the current intensity. This figure is continuously compared with the reference value stored once during commissioning. In order to detect the failure of one of several loads, the current difference must be 1/6 of the reference value. In the event of a fault, an output is actuated and the LEDs indicate the fault.

The heating current monitoring has a teach input and therefore differs from the load monitoring. This remote teaching function enables simple adjustment to changing loads without manual intervention.

Special version:

Deviations from the standard version

3RF29...-0JA1.-1KK0

If the current is below 50% of the lower teach current during the teach routine, the device will go into "Standby" mode; the LOAD LED will flicker. The device thus detects a non-connected load, e.g. channels not required for tool heaters, and does not signal a fault. This mode can be reset by re-teaching.

Application

The device is used for monitoring one or more loads (partial loads). The function module can only be used in conjunction with a 3RF21 solid-state relay or a 3RF23 solid-state contactor. The devices with spring-type terminals in the load circuit are not suitable.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
A	V	d	Article No.	Price per PU		
Heating current monitoring¹⁾						
Rated control supply voltage 24 V AC/DC						
16	110 ... 230	2	3RF2916-0JA13	1	1 unit	41C
16	110 ... 230	5	3RF2916-0JA13-1KK0	1	1 unit	41C
16	400 ... 600	2	3RF2916-0JA16-1KK0	1	1 unit	41C
32	110 ... 230	2	3RF2932-0JA13-1KK0	1	1 unit	41C
32	400 ... 600	2	3RF2932-0JA16	1	1 unit	41C
32	400 ... 600	2	3RF2932-0JA16-1KK0	1	1 unit	41C



3RF2932-0JA13

¹⁾ Supplied without control connector. The control connector can be purchased from Wieland by quoting Article No. 8213 B/6VR (PCB connector), see page 16/16.

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
Sealable covers for function modules (not for converters)	5	3RF2900-0RA88		1	10 units	41C



3RF2900-0RA88

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

SIRIUS power controllers for 3RF2

Overview

Power controllers for 3RF2 single-phase solid-state switching devices

The power controller is a function module for the autonomous power control of complex heating systems and inductive loads. The following functions have been integrated:

- **Power controller**
For adjusting the power of the connected load. The setpoint value is selected via a rotary knob on the module as a percentage of the 100% power value stored.
- **Inrush current limitation**
With the aid of an adjustable voltage ramp, the inrush current is limited by means of phase control. This is useful above all with loads such as lamps or infrared lamps which have an inrush transient current.
- **Load circuit monitoring**
For detecting load failure, partial load faults, alloyed power semiconductors, lack of voltage or a break in the load circuit.

Note:

With the phase control operating mode, a partial load fault is detected by cyclic "scanning" of the load; the exact mode of operation is described in the data sheets!

Special version: Deviations from the standard version

3RF2904-0KA13-0KC0

During the teach routine, the connected solid-state relay or contactor is not activated; i.e. no current will flow. No current reference value is stored. No partial-load monitoring!

3RF29...-0KA1.-0KT0

No partial-load monitoring!

Application

The power controller can be used for:

- Complex heating systems
- Inductive loads
- Loads with temperature-dependent resistor
- Loads with ageing after long-time service
- Simple indirect control of temperature

Power control

The power controller adjusts the power in the connected load by means of a solid-state switching device depending on the setpoint selection. It does not compensate for changes in the mains voltage or load resistance. The setpoint value can be predefined externally as a 0 to 10 V signal or internally by means of a potentiometer. Depending on the setting of the potentiometer (t_R), the control is carried out according to the principle of full-wave control or generalized phase control.

Note:

In the case of ohmic loads, the power is set linear to the setpoint value. During operation of inductive loads, the power control is no longer proportional and linear due to the phase shift between current and voltage.

Full-wave control

In this operating mode the output is adjusted to the required setpoint value by changing the on-to-off period. The period duration is predefined at 1 s.

[See note about AC loads on page 6/133.](#)

Generalized phase control

In this operating mode the output is adjusted to the required setpoint value by changing the current flow angle. In order to observe the limit values of the conducted interference voltage for industrial networks, at loads up to 20 kVA, the load circuit must include an additional filter, and for loads above 20 kVA, a reactor with a rating of at least 200 μ H must be used. You will find details about the filters in the FAQ "Filters for 3RF29 power regulators and power controllers to comply with the limits for electromagnetic emitted interference":

<https://support.industry.siemens.com/cs/ww/en/view/109751887>.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
			Article No.	Price per PU			
A	V	d					
Power controllers							
Rated control supply voltage 24 V AC/DC							
4	110 ... 230	2	3RF2904-0KA13-0KC0		1	1 unit	41C
4		2	3RF2904-0KA13-0KT0		1	1 unit	41C
20		2	3RF2920-0KA13		1	1 unit	41C
50		2	3RF2950-0KA13		1	1 unit	41C
90		2	3RF2990-0KA13		1	1 unit	41C
20	400 ... 600	2	3RF2920-0KA16		1	1 unit	41C
50		2	3RF2950-0KA16		1	1 unit	41C
50		2	3RF2950-0KA16-0KT0		1	1 unit	41C
90		2	3RF2990-0KA16		1	1 unit	41C



3RF2920-0KA13

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Optional accessories



3RF2900-0RA88

Sealable covers for function modules (not for converters)	5	3RF2900-0RA88		1	10 units	41C
--	---	----------------------	--	---	----------	-----

Solid-State Switching Devices for Resistive/Inductive Loads

Function Modules

SIRIUS power regulators for 3RF2

Overview

Power regulators for 3RF2 single-phase solid-state switching devices

The power regulator is a function module for the autonomous power control of complex heating systems.

The following functions have been integrated:

- **Power controller with proportional-action control**
For adjusting the power of the connected load. The setpoint value is selected via a rotary knob on the module as a percentage of the 100% power value stored. Changes in the mains voltage or in the load resistance are compensated in this case.
- **Inrush current limitation**
With the aid of an adjustable voltage ramp, the inrush current is limited by means of phase control. This is useful above all with loads such as lamps which have an inrush transient current.
- **Load circuit monitoring**
For detecting load failure, alloyed power semiconductors, lack of voltage or a break in the load circuit. Partial load monitoring is not possible. Load fluctuations are compensated.

Application

The power regulator can be used for:

- Complex heating systems
- Heating elements with temperature-dependent resistor
- Heating elements with ageing after long-time service
- Simple indirect control of temperature

Power control

The power regulator adjusts the power in the connected load by means of a solid-state switching device depending on the taught power and the selected setpoint. Changes in the mains voltage or in the load resistance are thus compensated by the power regulator. The setpoint value can be predefined externally as a 0 to 10 V signal or internally by means of a potentiometer. Depending on the setting of the potentiometer (t_R), the adjustment is carried out according to the principle of full-wave control or generalized phase control.

Note:

In the case of ohmic loads, the power is set linear to the setpoint value. During operation of inductive loads, the power control is no longer proportional and linear due to the phase shift between current and voltage.

Full-wave control

In this operating mode the output is adjusted to the required setpoint value by changing the on-to-off period. The period duration is predefined at 1 s.

See note about AC loads on page 6/133.

Generalized phase control

In this operating mode the output is adjusted to the required setpoint value by changing the current flow angle. In order to observe the limit values of the conducted interference voltage for industrial networks, at loads up to 20 kVA, the load circuit must include an additional filter, and for loads above 20 kVA, a reactor with a rating of at least 200 μ H must be used. You will find details about the filters in the FAQ "Filters for 3RF29 power regulators and power controllers to comply with the limits for electromagnetic emitted interference":

<https://support.industry.siemens.com/cs/ww/en/view/109751887>.

Selection and ordering data

Rated operational current I_e	Rated operational voltage U_e	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
							Article No.
A	V	d					
Power regulators							
Rated control supply voltage 24 V AC/DC							
20	110 ... 230	2	3RF2920-0HA13	1	1 unit	41C	
20	400 ... 600	2	3RF2920-0HA16	1	1 unit	41C	
50	110 ... 230	2	3RF2950-0HA13	1	1 unit	41C	
50	400 ... 600	2	3RF2950-0HA16	1	1 unit	41C	
90	110 ... 230	2	3RF2990-0HA13	1	1 unit	41C	
90	400 ... 600	2	3RF2990-0HA16	1	1 unit	41C	
Rated control supply voltage 110 V AC							
20	110 ... 230	2	3RF2920-0HA33	1	1 unit	41C	
20	400 ... 600	2	3RF2920-0HA36	1	1 unit	41C	
50	110 ... 230	2	3RF2950-0HA33	1	1 unit	41C	
50	400 ... 600	2	3RF2950-0HA36	1	1 unit	41C	
90	110 ... 230	2	3RF2990-0HA33	1	1 unit	41C	
90	400 ... 600	2	3RF2990-0HA36	1	1 unit	41C	
Version		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					
Optional accessories							
Sealable covers for function modules (not for converters)							
		5	3RF2900-0RA88	1	10 units	41C	



3RF2920-0HA13



3RF2900-0RA88

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

General data

Overview

More information

Homepage, see www.siemens.com/solid-state-switching-devices
Industry Mall, see www.siemens.com/product?3RF

Online configurator, see www.siemens.com/sirius/configurators

Solid-state contactors for switching motors



Solid-state contactor for direct-on-line starting

The solid-state contactors for switching motors are intended for frequently switching on and off three-phase current operating mechanisms up to 7.5 kW and reversing up to 3.0 kW. The devices are constructed with complete insulation and can be mounted directly on SIRIUS motor starter protectors, overload relays and current monitoring relays, resulting in a very simple integration into motor feeders.

These three-phase solid-state contactors are equipped with a three-phase control which is particularly suitable for typical motor current circuits without connecting to the neutral conductor.

Important features:

- Insulated enclosure with integrated heat sink
- Degree of protection IP20
- Integrated mounting foot to snap on a standard mounting rail or for assembly onto a support plate
- Variety of connection methods
- Plug-in control connection
- Display via LEDs
- Wide voltage range for AC control supply voltage

Switching functions

The solid-state contactors for switching motors are "Instantaneous switching", because this method is particularly suited for inductive loads. By distributing the ON point over the entire sine curve of the mains voltage, disturbances are reduced to a minimum.

Connection methods

You can choose between the following connection methods for the solid-state contactors for switching motors:

Screw terminals

The screw connection system is the standard among industrial controls. Open terminals and a plus-minus screw are just two features of this technology. Two conductors of up to 6 mm² can be connected in just one terminal.

Spring-type terminals

This innovative technology manages without any screw connection. This means that very high vibration resistance is achieved. Two conductors of up to 2.5 mm² can be connected to each terminal.

Motor feeders

The devices can use a link module to directly connect to a motor starter protector. Also possible is the mounting of a 3RB30/3RB31 electronic overload relay (see page 7/98) or a 3RR2 current monitoring relay (see pages 10/62 and 10/70) using a link adapter. The simultaneous mounting of a motor starter protector and an overload or current monitoring relay is not recommended for space and heat development reasons.

Rapid-switching fuseless and fused motor feeders can thereby be implemented in a time-saving manner.

Selecting solid-state contactors

The solid-state contactors are selected on the basis of details of the network, the load and the ambient conditions.

The following procedure is recommended:

- Determine the rated current of the load and the mains voltage
- Select a solid-state contactor with the same or higher rated current than the load
- Testing of the maximum permissible switching frequency based on the characteristic curves (see "More Information" → "Product Information"). To do this, the starting current, the starting time and the motor loaded in in the operating phase must be known.
- If the permissible switching frequency is under the desired frequency, it is possible to achieve an increase only by overdimensioning the motor and the solid-state contactor!

Alternatively, the tool for "Selection of solid-state contactors for switching motors" can be used. The correct device size can be determined by entering the network and motor data along with the application and ambient conditions, see www.siemens.com/solid-state-switching-devices.

Short-circuit protection

Despite the rugged power semiconductors that are used, solid-state switching devices respond more sensitively to short circuits in the load feeder. Consequently, special precautions have to be taken against destruction, depending on the type of design.

Siemens generally recommends using SITOR semiconductor fuses. These fuses also provide protection against destruction in the event of a short circuit even when the solid-state contactors and solid-state relays are fully utilized.

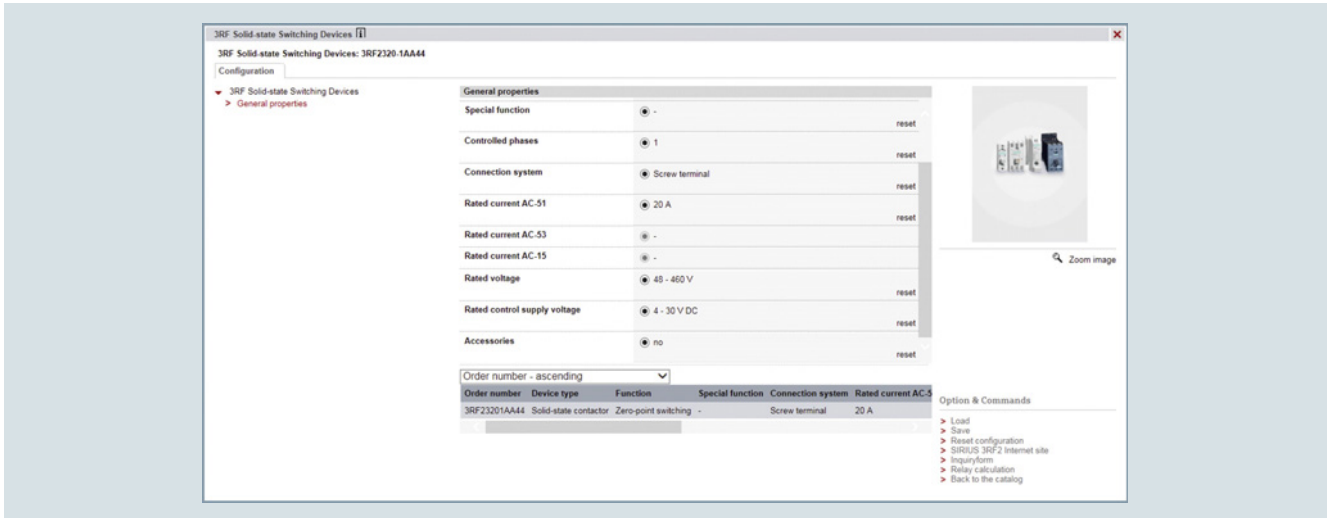
Alternatively, if there is lower loading, protection can also be provided by standard fuses or miniature circuit breakers. This protection is achieved by overdimensioning the solid-state switching devices accordingly.

Online Configurator

- Simple selection of individual solid-state switching devices by means of technical characteristics (e.g. zero-point switching, spring-type terminal and rated current)
- Once configuration is complete, you receive the article numbers corresponding to the products.

see

www.siemens.com/sirius/configurators



Article No. scheme

Product versions		Article number								
Solid-state contactors		3RF34	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Three-phase		
Rated operational current	3.8 A	0 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Only for reversing contactor		
	5.2 A (5.4 A for reversing contactor)	0 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	9.2 A (7.4 A for reversing contactor)	1 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	12.5 A	1 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Only for solid-state contactor		
	16 A	1 6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Only for solid-state contactor		
Connection type	Screw terminals	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	Spring-type terminals	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Switching function	Instantaneous switching		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B		
Number of controlled phases	Three-phase		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	B		
	Reversing contactor		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	D		
Rated control supply voltage U_s	24 V DC		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0		
	110 ... 230 V AC		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2		
Rated operational voltage U_e	48 ... 460 V AC		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4		
	48 ... 600 V AC		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6 Blocking voltage 1 600 V, solid-state contactor only		
Example		3RF34	1	0	-	1	B	B	0	4

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

General data

Benefits

- Units with integrated heat sink, "ready to use"
- Compact and space-saving design
- Reversing contactors with integrated interlocking

Application

Use in load feeders

There is no typical design of a load feeder with solid-state relays or solid-state contactors; instead, the great variety of connection methods and control voltages offers universal application opportunities.

SIRIUS solid-state relays and solid-state contactors can be installed in fuseless or fused feeders, as required.

See Configuration Manual "Load Feeders – Configuring the SIRIUS Modular System – Selection Data for Fuseless and Fused Load Feeders",
<https://support.industry.siemens.com/cs/ww/en/view/39714188>.

Standards and approvals

- IEC 60947-4-2
- UL 508, CSA for North America¹⁾
- CE marking for Europe
- C-Tick approval for Australia
- CCC approval for China

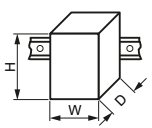
¹⁾ Please note: Use overvoltage protection device;
 max. cut-off-voltage 6 000 V;
 min. energy handling capability 100 J.

Solid-State Switching Devices for Switching Motors



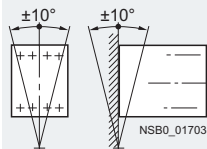
Solid-State Contactors

General data

Technical specifications

Type		3RF3405-1BB.. 3RF3403-1BD.. 3RF3405-1BD..	3RF3410-1BB.. 3RF3412-1BB.. 3RF3416-1BB.. 3RF3410-1BD..	3RF3405-2BB..	3RF3410-2BB.. 3RF3412-2BB.. 3RF3416-2BB..	
Dimensions (W x H x D)		mm mm	45 x 95 x 96.5 45 x 95 x 108.5	90 x 95 x 96.5 90 x 95 x 108.5	45 x 95 x 96.5 --	90 x 95 x 96.5 --

General technical specifications

Ambient temperature					
• During operation, derating from 40 °C	°C		-25 ... +60		
• During storage	°C		-55 ... +80		
Installation altitude	m		0 ... 1 000; derating over 1 000 m on request		
Shock resistance acc. to IEC 60068-2-27	g/ms		15/11		
Vibration resistance acc. to IEC 60068-2-6	g		2		
Degree of protection			IP20		
Insulation strength at 50/60 Hz (main/control circuit to floor)	V rms		4 000		
Electromagnetic compatibility (EMC)					
• Emitted interference according to IEC 60947-4-2					
- Conducted interference voltage					Class A for industrial applications ¹⁾
- Emitted, high-frequency interference voltage					Class A for industrial applications
• Interference immunity					
- Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV		Contact discharge: 4; air discharge: 8; Behavior criterion 2		
- Induced RF fields according to IEC 61000-4-6	MHz		0.15 ... 80; 140 dBµV; behavior criterion 1		
- Burst acc. to IEC 61000-4-4	kV		2; at 5 kHz; behavior criterion 2		
- Surge acc. to IEC 61000-4-5 ²⁾	kV		Conductor - ground: 2; conductor - conductor: 1; behavior criterion 2		
Connection type			Screw terminals		Spring-type terminals
Operating devices			Standard screwdriver size 2 and Pozidriv 2		3.0 x 0.5 and 3.5 x 0.5
Conductor cross-sections, main contacts					
• Solid	mm ²		2 x (1.5 ... 2.5) ³⁾ , 2 x (2.5 ... 6) ³⁾		2 x (0.5 ... 2.5)
• Finely stranded with end sleeve	mm ²		2 x (1 ... 2.5) ³⁾ , 2 x (2.5 ... 6) ³⁾ , 1 x 10		2 x (0.5 ... 1.5)
• Finely stranded without end sleeve	mm ²		--		2 x (0.5 ... 2.5)
• AWG cables, solid or stranded	AWG		2 x (14 ... 10)		2 x (18 ... 14)
Conductor cross-sections, auxiliary/control contacts					
• With/without end sleeve	mm ²		1 x (0.5 ... 2.5), 2 x (0.5 ... 1.0)		0.5 ... 2.5
• AWG cables, solid or stranded	AWG		20 ... 12		20 ... 12
Permissible mounting position					

¹⁾ These products were built as Class A devices. The use of these devices in residential areas could result in radio interference. In this case the user may be required to introduce additional interference suppression measures.

²⁾ The following applies for reversing contactors: To maintain the values, a 3TX7462-3L surge suppressor should be used between phases L1 and L3 as close as possible to the reversing contactor.

³⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

More information

For more information, see

- System Manual "SIRIUS – System Overview", <https://support.industry.siemens.com/cs/WW/en/view/60311318>
- Manual "SIRIUS – 3RF34 Solid-State Switching Devices", <https://support.industry.siemens.com/cs/ww/en/view/60298187>

Product information and technical specifications

For product data sheets with detailed technical specifications, dimensional drawings and characteristic curves, see <https://support.industry.siemens.com/cs/ww/en/ps/16237>.

For additional information, please enter the article number of the required device under the tab "Product List".

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

SIRIUS 3RF34 solid-state contactors, three-phase

Overview

These three-phase controlled, instantaneous switching solid-state contactors in the insulating enclosure are offered in a width of 45 mm up to 5.2 A – and in a width of 90 mm up to 16 A. They allow the operation of motors up to 7.5 kW.¹⁾

¹⁾ In accordance with the product standard IEC 60947-4-2, the motor contactors are designed for motors with maximum starting current conditions of $I/I_e \leq 8$.

For configuring motors with higher starting current conditions (typically $I/I_e \geq 8$) the data in the manual "SIRIUS – 3RF34 Solid-State Switching Devices" must be taken into account, see

<https://support.industry.siemens.com/cs/ww/en/view/60298187>.

Technical specifications

More information

System Manual "SIRIUS Modular System – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16239/faq>

Manual "SIRIUS – 3RF34 Solid-State Switching Devices", see <https://support.industry.siemens.com/cs/ww/en/view/60298187>

Type		3RF3405-.BB..	3RF3410-.BB..	3RF3412-.BB..	3RF3416-.BB..
Fuseless design with 3RV2 motor starter protector, CLASS 10					
Rated operational current I_{AC-53a}¹⁾ acc. to IEC 60947-4-2					
• At 40 °C	A	5.2 (4.5)	9.2	12.5	16
• UL/CSA, at 50 °C	A	4.6 (4.0)	8.4	11.5	14
• At 60 °C	A	4.2 (3.5)	7.6	10.5	12.5
Power loss at I_{AC-53a}					
• At 40 °C	W	10 (8)	16	22	28
Short-circuit protection with type of coordination "1" at operational voltage U_e up to 440 V					
• Motor starter protector, type		3RV2011-1GA10	3RV2011-1JA10	3RV2011-1KA10	3RV2011-4AA10
• Current I_q	kA	50	5		3

¹⁾ The reduced values in brackets apply to a directly mounted motor starter protector and simultaneous side-by-side mounting.

Type		3RF3405-.BB.4	3RF3405-.BB.6	3RF3410-.BB..	3RF3412-.BB.4	3RF3412-.BB.6	3RF3416-.BB..
Fused design with directly connected 3RB3 overload relay							
Rated operational current I_{AC-53a} acc. to IEC 60947-4-2							
• At 40 °C	A	4		7.8	9.5		11
• UL/CSA, at 50 °C	A	3.6		7	8.5		10
• At 60 °C	A	3.2		6.2	7.6		9
Power loss at I_{AC-53a}							
• At 40 °C	W	7		13	16		18
Minimum load current	A	0.1	0.5				
Max. off-state current	mA	10					
Rated peak withstand current I_{tsm}	A	200	600		1 200	1 150	
I^2t value	A ² s	200	1 800		7 200	6 600	

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

SIRIUS 3RF34 solid-state contactors, three-phase

Type		3RF34...-BB.4	3RF34...-BB.6
Main circuit			
Controlled phases		Three-phase	
Rated operational voltage U_e	V AC	48 ... 480	48 ... 600
• Operating range	V AC	40 ... 506	40 ... 660
• Rated frequency	Hz	50/60 ± 10%	
Rated insulation voltage U_i	V	600	
Rated impulse withstand voltage U_{imp}	kV	6	
Blocking voltage	V	1 200	1 600
Rate of voltage rise	V/μs	1 000	

Type		3RF34...-BB0.	3RF34...-BB2.
Control circuit			
Method of operation		DC operation	AC operation
Rated control supply voltage U_s	V	24	110 ... 230
Rated frequency of the control supply voltage	Hz	--	50/60 ± 10%
Control supply voltage, max.	V	30	253
Typical actuating current	mA	20	15
Response voltage	V	15	90
Drop-out voltage	V	5	< 40
Operating times			
• ON-delay	ms	1	5
• OFF-delay	ms	1 + max. one half-wave	30 + max. one half-wave

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

SIRIUS 3RF34 solid-state contactors, three-phase **IE3/IE4 ready**


Selection and ordering data

More information

System Manual "SIRIUS Modular System – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>


Manual "SIRIUS – 3RF34 Solid-State Switching Devices", see <https://support.industry.siemens.com/cs/ww/en/view/60298187>

Motor contactors · Instantaneous switching · Three-phase controlled

Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	SD	Screw terminals 		PU (UNIT, SET, M)	PS*	PG	
				Article No.	Price per PU				
Rated operational voltage U_e									
48 ... 480 V AC									
5.2	2.2	24 DC	2	3RF3405-1BB04		1	1 unit	41C	
9.2	4.0		5						3RF3410-1BB04
12.5	5.5		5						3RF3412-1BB04
16	7.5		5						3RF3416-1BB04
5.2	2.2	110 ... 230 AC	5	3RF3405-1BB24		1	1 unit	41C	
9.2	4.0		5						3RF3410-1BB24
12.5	5.5		5						3RF3412-1BB24
16	7.5		5						3RF3416-1BB24




3RF3405-1BB

Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	SD	Spring-type terminals 		PU (UNIT, SET, M)	PS*	PG	
				Article No.	Price per PU				
Rated operational voltage U_e									
48 ... 600 V AC, blocking voltage 1 600 V									
5.2	2.2	24 DC	5	3RF3405-1BB06		1	1 unit	41C	
9.2	4.0		5						3RF3410-1BB06
12.5	5.5		5						3RF3412-1BB06
16	7.5		5						3RF3416-1BB06
5.2	2.2	110 ... 230 AC	5	3RF3405-1BB26		1	1 unit	41C	
9.2	4.0		5						3RF3410-1BB26
12.5	5.5		5						3RF3412-1BB26
16	7.5		5						3RF3416-1BB26




3RF3410-1BB

Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	SD	Spring-type terminals 		PU (UNIT, SET, M)	PS*	PG	
				Article No.	Price per PU				
Rated operational voltage U_e									
48 ... 480 V AC									
5.2	2.2	24 DC	5	3RF3405-2BB04		1	1 unit	41C	
9.2	4.0		5						3RF3410-2BB04
12.5	5.5		5						3RF3412-2BB04
16	7.5		5						3RF3416-2BB04
5.2	2.2	110 ... 230 AC	5	3RF3405-2BB24		1	1 unit	41C	
9.2	4.0		5						3RF3410-2BB24
12.5	5.5		5						3RF3412-2BB24
16	7.5		5						3RF3416-2BB24



3RF3405-2BB

Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	SD	Spring-type terminals 		PU (UNIT, SET, M)	PS*	PG	
				Article No.	Price per PU				
Rated operational voltage U_e									
48 ... 600 V AC, blocking voltage 1 600 V									
5.2	2.2	24 DC	5	3RF3405-2BB06		1	1 unit	41C	
9.2	4.0		5						3RF3410-2BB06
12.5	5.5		5						3RF3412-2BB06
16	7.5		5						3RF3416-2BB06
5.2	2.2	110 ... 230 AC	5	3RF3405-2BB26		1	1 unit	41C	
9.2	4.0		5						3RF3410-2BB26
12.5	5.5		5						3RF3412-2BB26
16	7.5		5						3RF3416-2BB26



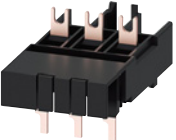





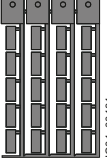
3RF3410-2BB

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

SIRIUS 3RF34 solid-state contactors, three-phase

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Link modules between solid-state contactor and motor starter protector						
 <p>3RA2921-1BA00</p>	2	Link modules Between solid-state contactor and motor starter protector with screw terminals For 3RV2 motor starter protectors size S00/S0	Screw terminals 	1	1 unit	41B
		3RA2921-1BA00				
Link adapters between solid-state contactor and overload relay						
 <p>3RF3900-0QA88</p>	5	Link adapters For direct mounting of 3RB3 overload relays or 3RR2 current monitoring relays to the solid-state contactor with screw terminals The adapter is snapped onto the enclosure of the 3RF34 contactor and accommodates the fixing hooks of the 3RB3 overload relays or the 3RR2 current monitoring relays for direct mounting.	3RF3900-0QA88	1	1 unit	41C
Insulation stop for securely holding back the conductor insulation, on conductors up to 1 mm²						
 <p>3RT2916-4JA02</p>	5	Insulation stop strip For all SIRIUS devices with spring-type terminals Can be inserted in cable entry of the spring-type terminal (no more than 2 strips per contactor required; removable in pairs) For terminals with a conductor cross-section up to 2.5 mm ²	Spring-type terminals 	1	20 units	41B
3RT2916-4JA02						
Tools for opening spring-type terminals						
 <p>3RA2908-1A</p>	2	Screwdrivers For all SIRIUS devices with spring-type terminals Length approx. 200 mm, size 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	3RA2908-1A	1	1 unit	41B
3RA2908-1A						
Blank labels						
 <p>3SB2900-1SB20</p>	20	Unit labeling plates For SIRIUS devices ¹⁾ • 10 mm x 7 mm, titanium gray	3RT2900-1SB10	100	816 units	41B
	20	• 20 mm x 7 mm, titanium gray	3RT2900-1SB20	100	340 units	41B
	5	Adhesive labels For SIRIUS devices • 19 mm x 6 mm, titanium gray	3RT2900-1SB60	100	3 060 units	41B

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/16.

Solid-State Switching Devices for Switching Motors

Solid-State Contactors

SIRIUS 3RF34 solid-state reversing contactors, three-phase

Overview

The integration of four conducting paths to a reverse switch, combined in one enclosure makes this device a particularly compact solution. Compared to conventional systems, for which two contactors are required, it is possible to save up to 50%

in width with the three-phase reversing contactors. Devices with a width of 45 mm cover motors up to 2.2 kW – and those with a width of 90 mm cover motors up to 3 kW.¹⁾

¹⁾ In accordance with the product standard IEC 60947-4-2, the motor contactors are designed for motors with maximum starting current conditions of $I/I_e \leq 8$. For configuring motors with higher starting current conditions (typically $I/I_e \geq 8$) the data in the manual "SIRIUS – 3RF34 Solid-State Switching Devices" must be taken into account, see <https://support.industry.siemens.com/cs/ww/en/view/60298187>.

Technical specifications

More information

System Manual "SIRIUS Modular System – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16241/faq>

Manual "SIRIUS – 3RF34 Solid-State Switching Devices", see <https://support.industry.siemens.com/cs/ww/en/view/60298187>

Type		3RF3403-.BD.4	3RF3405-.BD.4	3RF3410-.BD.4
Fuseless design with 3RV2 motor starter protector, CLASS 10				
Rated operational current I_{AC-53a}¹⁾ acc. to IEC 60947-4-2				
• At 40 °C	A	3.8 (3.4)	5.4 (4.8)	7.4
• UL/CSA, at 50 °C	A	3.5 (3.1)	5 (4.3)	6.8
• At 60 °C	A	3.2 (2.8)	4.6 (3.8)	6.2
Power loss at I_{AC-53a}				
• At 40 °C	W	7 (6)	9 (8)	13
Short-circuit protection with type of coordination "1" at operational voltage U_e up to 440 V				
• Motor starter protector, type		3RV2011-1FA10	3RV2011-1GA10	3RV2011-1JA10
• Current I_q	kA	50		10

¹⁾ The reduced values in brackets apply to a directly mounted motor starter protector and simultaneous side-by-side mounting.

Type		3RF3403-.BD.4	3RF3405-.BD.4	3RF3410-.BD.4
Fused design with directly connected 3RB3 overload relay				
Rated operational current I_{AC-53a} acc. to IEC 60947-4-2				
• At 40 °C	A	3.8	5.4	7.4
• UL/CSA, at 50 °C	A	3.5	5	6.8
• At 60 °C	A	3.2	4.6	6.2
Power loss at I_{AC-53a}				
• At 40 °C	W	6	8	16
Minimum load current	A	0.5		
Max. off-state current	mA	10		
Rated peak withstand current I_{tsm}	A	200	600	
I^2t value	A ² s	200	1 800	

Solid-State Switching Devices for Switching Motors Solid-State Contactors

SIRIUS 3RF34 solid-state reversing contactors, three-phase

Type	3RF34...BD.4	
Main circuit		
Controlled phases	Three-phase	
Rated operational voltage U_e¹⁾	V AC	48 ... 480
• Operating range	V AC	40 ... 506
• Rated frequency	Hz	50/60 ± 10%
Rated insulation voltage U_i	V	600
Rated impulse withstand voltage U_{imp}	kV	6
Blocking voltage	V	1 200
Rate of voltage rise	V/μs	1 000

¹⁾ To reduce the risk of a phase short circuit due to overvoltage, we recommend using a varistor type 3TX7462-3L between the phases L1 and L3 as close as possible to the switchgear.

We recommend a design with semiconductor protection as short-circuit protection.

Type	3RF34...BD0.	3RF34...BD2.
Control circuit		
Method of operation	DC operation	AC operation
Rated control supply voltage U_s	V	24
Rated frequency of the control supply voltage	Hz	--
Control supply voltage, maximum	V	30
Typical actuating current	mA	15
Response voltage	V	15
Drop-out voltage	V	5
Operating times¹⁾		
• ON-delay	ms	5
• OFF-delay	ms	5 + max. one half-wave
• Interlocking time	ms	60 ... 100
		20
		10 + max. one half-wave
		50 ... 100

¹⁾ Notice! Risk of phase short circuit in automatic mode.
The control inputs must not be actuated until a delay of 40 ms has expired after the main voltage is applied.




Solid-State Switching Devices for Switching Motors

Solid-State Contactors

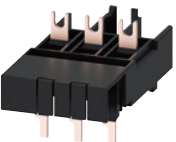


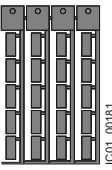
SIRIUS 3RF34 solid-state reversing contactors, three-phase **IE3/IE4 ready**

Selection and ordering data

Reversing contactors · Instantaneous switching · Three-phase controlled

Rated operational current I_e	Rated power at I_e and U_e	Rated control supply voltage U_s	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	
								Article No.
A	400 V kW	V	d					
Rated operational voltage U_e 48 ... 480 V AC								
	3.8	1.5	24 DC	2	3RF3403-1BD04	1	1 unit 41C	
	5.4	2.2		5		3RF3405-1BD04	1	1 unit 41C
	7.4	3.0		5		3RF3410-1BD04	1	1 unit 41C
	3.8	1.5	110 ... 230 AC	5	3RF3403-1BD24	1	1 unit 41C	
	5.4	2.2		5		3RF3405-1BD24	1	1 unit 41C
	7.4	3.0		5		3RF3410-1BD24	1	1 unit 41C

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Link modules between solid-state contactor and motor starter protector						
		Link modules Between solid-state reversing contactor and motor starter protector with screw terminals For 3RV2 motor starter protectors, size S00/S0	Screw terminals 	1	1 unit	41B
	2	3RA2921-1BA00				
Link adapters between solid-state contactor and overload relay						
		Link adapters For direct mounting of 3RB3 overload relays or 3RR2 current monitoring relays to the solid-state contactor with screw terminals		1	1 unit	41C
	5	3RF3900-0QA88				
Blank labels						
		Unit labeling plates For SIRIUS devices ¹⁾		100	816 units	41B
	20	• 10 mm × 7 mm, titanium gray				
	20	• 20 mm × 7 mm, titanium gray				
5		Adhesive labels For SIRIUS devices		100	3 060 units	41B
	5	• 19 mm × 6 mm, titanium gray				

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/16.

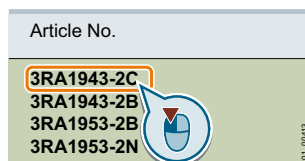
Protection Equipment

7



clickable

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.



Or directly on the Internet, e.g.
www.siemens.com/product?3RA1943-2C

	Price groups PG 140, 41B, 41E, 41F, 41G, 41H, 41J, 42F, 42J		Overload relays
7/2	Introduction	7/79	General data <u>SIRIUS 3RU2 thermal overload relays</u>
	Motor starter protectors/ circuit breakers <u>SIRIUS 3RV2 motor starter protectors/ circuit breakers</u>	7/86	3RU2 for standard applications
7/7	General data	7/96	Accessories <u>SIRIUS 3RB3 electronic overload relays</u>
7/28	For motor protection NEW	7/98	3RB30, 3RB31 for standard applications
7/35	For motor protection with overload relay function	7/108	Accessories <u>SIRIUS 3RB2 electronic overload relays</u>
7/37	For starter combinations	7/110	3RB20, 3RB21 for standard applications
7/39	For transformer protection NEW	7/120	Accessories for 3RB20, 3RB21
7/41	For system protection according to UL 489/CSA C22.2 No.5	7/122	3RB22, 3RB23 for high-feature applications
7/42	For transformer protection according to UL 489/CSA C22.2 No.5	7/130	3RB24 for IO-Link for high-feature applications
	Accessories	7/137	Current measuring modules for 3RB22, 3RB23, 3RB24
7/43	- Mountable accessories	7/141	Accessories for 3RB22, 3RB23, 3RB24
7/46	- Busbar accessories		
7/50	- Rotary operating mechanisms		Note:
7/52	- Mounting accessories NEW		Conversion tool, e.g. from
7/59	- Enclosures and front plates		- 3RV1 to 3RV2
7/62	3RV29 infeed system		- 3RU11 to 3RU21
	<u>SIRIUS 3RV1 motor starter protectors/ circuit breakers</u>		- 3RB20/3RB21 to 3RB30/3RB31
7/67	For fuse monitoring		see
7/68	For distance protection		www.siemens.com/sirius/conversion-tool
7/69	For motor protection <u>SIRIUS 3RV1 molded case motor starter protectors up to 800 A</u>		
7/70	General data		
7/75	For motor protection		
7/76	For starter combinations		
	Accessories		
7/77	- Mountable accessories		
7/78	- Rotary operating mechanisms, mounting accessories		

Protection Equipment

Introduction

Overview



Type	3RV20	3RV21	3RV23	3RV24	3RV27	3RV28
SIRIUS 3RV2 motor starter protectors/circuit breakers						
Applications						
• System protection	✓ ¹⁾	✓ ¹⁾	--	--	✓	✓
• Motor protection	✓	--	--	--	--	--
• Motor protection with overload relay function	--	✓	--	--	--	--
• Starter combinations	--	--	✓	--	--	--
• Transformer protection	--	--	--	✓	--	✓
Size	S00, S0, S2, S3	S00, S0, S2, S3	S00, S0, S2, S3	S00, S0, S2	S00, S0, S3	S00, S0
Rated current I_n						
• Size S00	A Up to 16	Up to 16	Up to 16	Up to 16	Up to 15	Up to 15
• Size S0	A Up to 40	Up to 32	Up to 40	Up to 25	Up to 22	Up to 22
• Size S2	A Up to 80	Up to 80	Up to 80	Up to 65	--	--
• Size S3	A Up to 100	Up to 100	Up to 100	--	Up to 70	--
Rated operational voltage U_e acc. to IEC	V 690 AC ²⁾	690 AC ²⁾	690 AC ²⁾	690 AC ²⁾	690 AC	690 AC
Rated frequency	Hz 50/60	50/60	50/60	50/60	50/60	50/60
Trip class	CLASS 10 (S00 ... S3), CLASS 20 (S2, S3)	CLASS 10	--	CLASS 10	--	--
Thermal overload releases	A 0.11 ... 0.16 to 80 ... 100	0.11 ... 0.16 to 80 ... 100	None ³⁾	0.11 ... 0.16 to 54 ... 65	0.16 ... 70 Non-adjustable	0.16 to 22 Non-adjustable
Electronic releases						
A multiple of the rated current	13 times	13 times	13 times	20 times	13 times	20 times
Short-circuit breaking capacity I_{cu} at 400 V AC	kA 20/55/65/100	55/65/100	20/55/65/100	55/65/100	⁴⁾	⁴⁾
Pages	7/28 ... 7/34	7/35, 7/36	7/37, 7/38	7/39, 7/40	7/41	7/42

Accessories

For sizes	S00	S0	S2	S3	S00	S0	S2	S3	S00	S0	S2	S3	S00	S0	S2	S00	S0	S3	S00	S0
Auxiliary switches	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ⁵⁾	✓	✓
Signaling switches	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--
Undervoltage releases	✓	✓	✓	✓	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shunt releases	✓	✓	✓	✓	--	--	--	--	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Isolator modules	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	--	--	--	--
Insulated three-phase busbar system	✓	✓	✓	--	--	--	--	--	✓	✓	✓	--	✓	✓	✓	--	--	--	--	--
Busbar adapters	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--
Door-coupling rotary operating mechanisms	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Link modules	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--
Enclosures for surface mounting	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	✓	✓	✓	--	--	--	--	--
Enclosures for flush mounting	✓	✓	--	--	✓	✓	--	--	✓	✓	--	--	✓	✓	--	--	--	--	--	--
Front plates	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	--
Infeed system	✓	✓	--	--	--	--	--	--	✓	✓	--	--	✓	✓	--	--	--	--	--	--
Sealable scale covers for setting knobs	✓	✓	✓	✓	✓	✓	✓	✓	--	--	--	--	✓	✓	✓	--	--	--	--	--
Remote motorized operating mechanisms	--	--	--	✓	--	--	--	✓	--	--	--	✓	--	--	--	--	--	--	--	--

Pages 7/43 ... 7/66

- ✓ Has this function or can use this accessory
 -- Does not have this function or cannot use this accessory

- ¹⁾ For symmetrical loading of the three phases.
²⁾ With molded-plastic enclosure 500 V AC. For DC applications, see "Technical Specifications" → "DC short-circuit breaking capacity", page 7/19.
³⁾ For overload protection of the motors, appropriate overload relays must be used.
⁴⁾ According to UL 489 at 480 Y/277 V AC: 65 kA or 50 kA.
⁵⁾ Only lateral auxiliary switches can be used



Type	3RV1611-0BD10	3RV1611-1.G14	3RV1011
SIRIUS 3RV1 motor starter protectors/circuit breakers			
Applications			
• System protection	--	--	--
• Motor protection	--	--	✓
• Motor protection with overload relay function	--	--	--
• Starter combinations	--	--	--
• Transformer protection	--	--	--
• Fuse monitoring	✓	--	--
• Voltage transformer circuit breakers for distance protection	--	✓	--
Size	S00	S00	S00
Rated current I_n			
• Size S00	0.2	Up to 3	Up to 12
Rated operational voltage U_e acc. to IEC	690 AC ¹⁾	400 AC	690 AC
Rated frequency	50/60	16 ² / ₃ ... 60	50/60
Trip class	--	--	CLASS 10
Thermal overload releases	0.2	1.4 ... 3	0.11 ... 0.16 to 9 ... 12
Electronic releases			
A multiple of the rated current	6 times	4 ... 7 times	13 times
Short-circuit breaking capacity I_{cu} at 400 V AC	100	50	100/50
Pages	7/67	7/68	7/69
Accessories			
For sizes	S00	S00	S00
Pages	7/67, 7/68		

- ✓ Has this function or can use this accessory
 -- Does not have this function or cannot use this accessory

¹⁾ With molded-plastic enclosure 500 V AC. For DC applications, see "Technical Specifications" → "DC short-circuit breaking capacity", page 7/20.

Protection Equipment

Introduction



Type	3RV10			3RV13					
SIRIUS 3RV1 molded case motor starter protectors									
Applications									
• Motor protection	✓			--					
• Starter combinations	--			✓					
Switching capacity	Standard switching capacity			Standard switching capacity					Increased switching capacity
Type	3RV1063	3RV1073	3RV1083	3RV1363	3RV1373	3RV1383	3RV1364	3RV1374	
Rated current I_n	A 100 ... 200	400	630	100 ... 250	400, 630	630, 800	100 ... 250	400	
Rated operational voltage U_e acc. to IEC	690 AC			690 AC					
Rated frequency	Hz 50/60			50/60					
Trip class	CLASS 10A, 10, 20, 30			-- ¹⁾					
Thermal overload releases	A 40 ... 100 to A 252 ... 630			without ¹⁾					
Electronic releases A multiple of the rated current	Adjustable, 6 ... 13 times			1 ... 10 times					
Short-circuit breaking capacity I_{cu} at 400 V AC	kA 120	120	100	120	120	100	200	200	
Trip unit (release)	TU 4			TU 3					
Pages	7/75			7/76					

Accessories								
For molded case motor starter protectors	3RV1063	3RV1073	3RV1083	3RV1363	3RV1373	3RV1383	3RV1364	3RV1374
Auxiliary switches	✓	✓	✓	✓	✓	✓	✓	✓
Undervoltage releases	✓	✓	✓	✓	✓	✓	✓	✓
Shunt releases	✓	✓	✓	✓	✓	✓	✓	✓
Rotary operating mechanisms	✓	✓	✓	✓	✓	✓	✓	✓
Connection methods								
• Extended terminals on the front	✓	✓	--	✓	✓	--	✓	✓
• Cable terminals on the front	✓	✓	✓	✓	✓	✓	✓	✓
• Rear terminals	✓	✓	✓	✓	✓	✓	✓	✓
Pages	7/77, 7/78							

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

¹⁾ For overload protection of the motors, appropriate overload relays must be used.


**Thermal overload relays
for standard applications**
**Electronic overload relays
for standard applications**

3RU21

3RB30

3RB31

Type

SIRIUS overload relays**Applications**

• System protection	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾
• Motor protection	✓	✓	✓
• Alternating current, three-phase	✓	✓	✓
• Alternating current, single-phase	✓	--	--
• Direct current	✓	--	--
Size contactor	S00, S0, S2, S3	S00, S0, S2, S3	S00, S0, S2, S3
Rated operational current I_e			
• Size S00	A Up to 16	Up to 16	Up to 16
• Size S0	A Up to 40	Up to 40	Up to 40
• Size S2	A Up to 80	Up to 80	Up to 80
• Size S3	A Up to 100	Up to 115	Up to 115
Rated operational voltage U_e	V 690 AC	690 AC	690 AC
Rated frequency	Hz 50/60	50/60	50/60
Trip class	CLASS 10, 10A	CLASS 10E, 20E	CLASS 5E, 10E, 20E, 30E (adjustable)
Thermal overload releases	A 0.11 ... 0.16 to A 80 ... 100	--	--
Electronic overload releases	A -- A --	0.1 ... 0.4 to 32 ... 115	0.1 ... 0.4 to 32 ... 115
Pages	7/92 ... 7/95	7/105, 7/106	7/107

Accessories

For sizes	S00	S0	S2	S3	S00	S0	S2	S3	S00	S0	S2	S3
Terminal supports for stand-alone installation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mechanical RESET	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cable releases for RESET	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Electrical remote RESET	✓	✓	✓	✓	--	--	--	--	Integrated in the unit			
Terminal covers												
• For box terminals	--	--	✓	✓	--	--	✓	✓	--	--	✓	✓
Sealable covers for setting knobs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pages	7/96, 7/97				7/108, 7/109				7/108, 7/109			

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

¹⁾ The units are responsible in the main circuit for overload protection of the assigned electrical loads (e.g. motors), feeder cable, and other switching and protection devices in the respective load feeder.

Protection Equipment

Introduction



	Electronic overload relays for standard applications		for high-feature applications	Electronic overload relays for IO-Link applications
Type	3RB20	3RB21	3RB22, 3RB23	3RB24
SIRIUS overload relays				
Applications				
• System protection	✓ ¹⁾	✓ ¹⁾	✓ ¹⁾	
• Motor protection	✓	✓	✓	
• Alternating current, three-phase	✓	✓	✓	
• Alternating current, single-phase	--	--	✓	
• Direct current	--	--	--	
Size contactor	S3 ... S12	S3 ... S12	S00 ... S12	
Rated operational current I_e				
• Sizes S00 and S0	--	--	Up to 25 and 45 mm width with current measuring modules 3RB2906-2BG1/3RB2906-2DG1	
• Size S2	--	--	Up to 100 and 55 mm width with current measuring module 3RB2906-2JG1	
• Size S3	--	--	Up to 200 and 120 mm width with current measuring modules 3RB2956-2TH2/3RB2956-2TG2	
• Size S6	Up to 200	Up to 200	Up to 630 and 145 mm width with current measuring module 3RB2966-2WH2	
• Size S10/S12	Up to 630	Up to 630	Up to 820 with current measuring module 3RB2906-2BG1 and transformer 3UF1868-3GA00	
• Size 14 (3TF68/3TF69)	Up to 630	Up to 630		
Rated operational voltage U_e	690/1 000 AC	690/1 000 AC	690/1 000 AC ²⁾	
Rated frequency	50/60	50/60	50/60	
Trip class	CLASS 10, 20	CLASS 5, 10, 20, 30 adjustable	CLASS 5, 10, 20, 30 adjustable	
Thermal overload releases	--	--	--	
Electronic overload releases	50 ... 200 to 160 ... 630	50 ... 200 to 160 ... 630	0.3 ... 3 to 63 ... 630	
Pages	7/117, 7/118	7/119	7/128, 7/129, 7/140	7/136, 7/140

Accessories											
For sizes	S6	S10/S12	S6	S10/S12	S00	S0	S2	S3	S6	S10/S12	
Terminal supports for stand-alone installation	3)	3)	3)	3)	3)	3)	3)	3)	3)	3)	
Mechanical RESET	✓	✓	✓	✓	--	--	--	--	--	--	
Cable releases for RESET	✓	✓	✓	✓	--	--	--	--	--	--	
Electrical remote RESET	--	--	Integrated in the unit		Integrated in the unit						
Terminal covers	✓	✓	✓	✓	--	--	--	✓	✓	✓	
Sealable covers for setting knobs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Operator panel for 3RB24 evaluation module	--	--	--	--	✓	✓	✓	✓	✓	✓	
Pages	7/120, 7/121		7/120, 7/121		7/140 ... 7/142						

✓ Has this function or can use this accessory

-- Does not have this function or cannot use this accessory

¹⁾ The units are responsible in the main circuit for overload protection of the assigned electrical loads (e.g. motors), feeder cable, and other switching and protection devices in the respective load feeder.

²⁾ With reference to the 3RB29.6 current measuring modules.

³⁾ Stand-alone installation without accessories is possible.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Overview

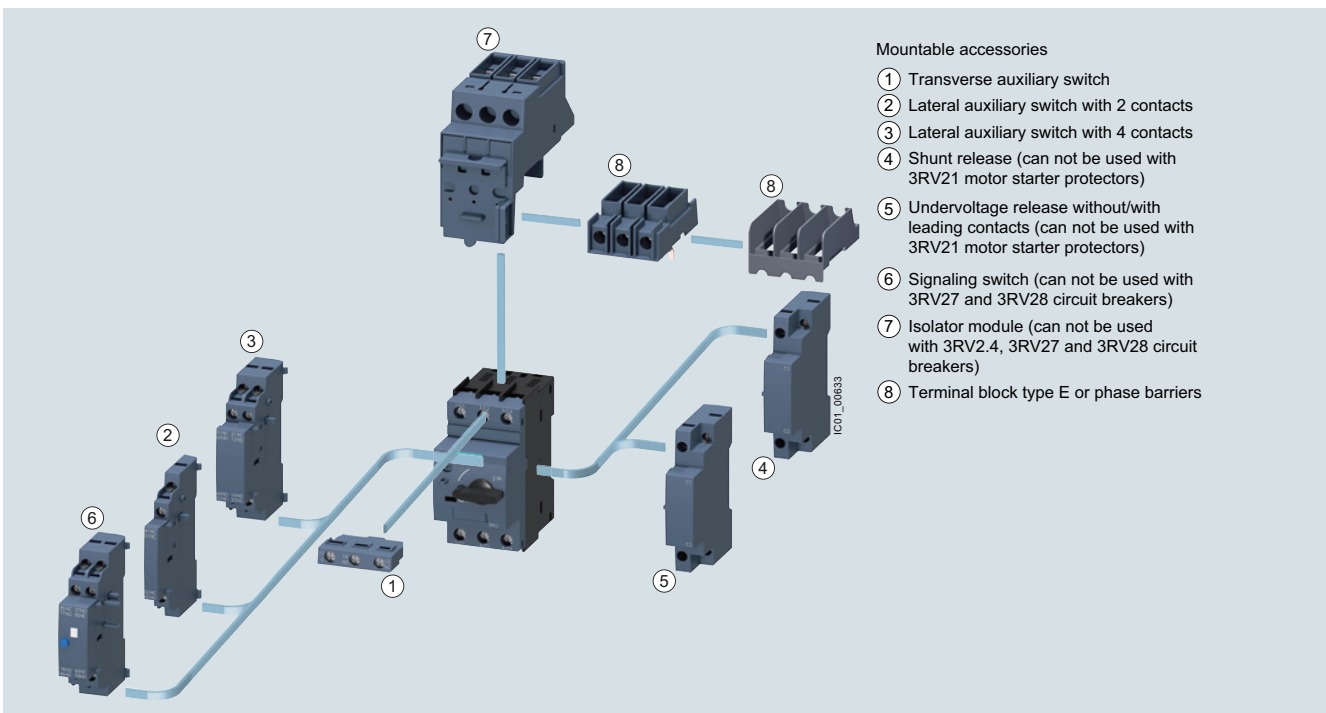
More information

Homepage, see www.siemens.com/sirius-circuit-breaker
 Industry Mall, see www.siemens.com/product?3RV2
 TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/TSTWeb?kmat=MotorStarterProtector>
 Conversion tool, e.g. from 3RV1 to 3RV2, see www.siemens.com/sirius/conversion-tool

Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>
 System Manual "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>
 Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60279172>
 Certificates, see <https://support.industry.siemens.com/cs/ww/en/ps/16245/cert>

The following illustration shows 3RV2 motor starter protectors/circuit breakers with the accessories which can be mounted for the sizes S00 to S3, see also "Introduction" → "Overview", page 7/2.

Accessories, see page 7/43 onwards.



Mountable accessories for SIRIUS 3RV2 motor starter protectors/circuit breakers



SIRIUS motor starter protector with spring-type terminals, size S0 (left) and SIRIUS motor starter protector with screw terminals, size S00 (right)

The SIRIUS 3RV2 motor starter protectors/circuit breakers are compact, current limiting motor starter protectors/circuit breakers which are optimized for load feeders. The motor starter protectors/circuit breakers are used for switching and protecting three-phase motors of up to 55/45 kW at 400 V AC and for other loads with rated currents of up to 100 A.

The new 3RV2 motor starter protectors/circuit breakers are usually approved according to IEC and UL/CSA. According to UL 508/UL 60947-4-1, the 3RV2 motor starter protectors/circuit breakers in sizes S00 to S3 are approved as:

- "Manual Motor Controllers"
- "Manual Motor Controllers" for "Group Installations"
- "Manual Motor Controllers Suitable for Tab Conductor Protection in Group Installations"
- "Self-Protected Combination Motor Controllers (Type E)"
Please note that for this approval the 3RV20 motor starter protectors must be equipped with additional infeed terminals or phase barriers. For more information, see "Accessories" on page 7/52.

Corresponding short-circuit values, see pages 7/10 to 7/18.

The 3RV27 and 3RV28 are approved as circuit breakers according to UL 489; they are a special version of the 3RV2 motor starter protectors.

Thanks to their dimensions, the 3RV1011 motor starter protectors are suitable for installation in enclosures or under cramped installation conditions.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Type of construction

The 3RV2 motor starter protectors are available in four sizes:

- Size S00 – width 45 mm, max. rated current 16 A, at 400 V AC suitable for three-phase motors up to 7.5 kW
- Size S0 – width 45 mm, max. rated current 40 A, at 400 V AC suitable for three-phase motors up to 18.5 kW
- Size S2 – width 55 mm, max. rated current 80 A, at 400 V AC suitable for three-phase motors up to 37 kW
- Size S3 – width 70 mm, max. rated current 100 A, at 400 V AC suitable for three-phase motors up to 45/55 kW

Circuit breakers acc. to UL 489

The 3RV27 and 3RV28 circuit breakers are available in two or three sizes:

- Size S00 – width 45 mm, max. rated current 15 A, for 480 Y/277 V AC
- Size S0 – width 45 mm, max. rated current 22 A, for 480 Y/277 V AC
- Size S3 – width 70 mm, max. rated current 70 A, for 480 Y/277 V AC

Connection methods

The 3RV2 motor starter protectors/circuit breakers can be supplied with screw terminals and spring-type terminals.



Screw terminals



Spring-type terminals

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Use in hazardous areas

The 3RV20 motor starter protectors for motor protection in sizes S00, S0, S2 and S3 have certification in accordance with both the European explosion protection directive ATEX and the international explosion protection standard (IECEx).

In accordance with the European directive (ATEX), the 3RV20 are able to switch and protect explosion-proof motors of type of protection "Increased Safety EEx e".

In accordance with the international guideline (IECEx), the 3RV20 are able to switch and protect motors of the types "Increased Safety Ex e" or "Flameproof enclosure Ex d".

Article No. scheme

Product versions	Article number
Motor starter protectors/circuit breakers	3RV2 □ □ □ - □ □ □ □ □ - □ □ □ □
Type of motor starter protector/circuit breaker	□
Size	□
Breaking capacity	□
Setting range for overload release	□ □
Trip class (CLASS)	□
Connection methods	□
With or without auxiliary switch	□
Special versions	□ □ □ □
Example	3RV2 0 1 1 - 1 A A 1 0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Application

Operating conditions

3RV2 motor starter protectors/circuit breakers are suitable for use in any climate. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. When installed in dusty and damp areas, suitable enclosures must be provided.

3RV2 motor starter protectors/circuit breakers can optionally be fed from the top or from below.

The permissible ambient temperatures, the maximum switching capacities, the tripping currents and other boundary conditions can be found in the technical specifications and tripping characteristics.

3RV2 motor starter protectors/circuit breakers are suitable for operation in IT systems (IT networks). In this case, the different short-circuit breaking capacity in the IT system must be taken into account, [see page 7/12](#).

Since operational currents, starting currents and current peaks are different even for motors with identical power ratings due to the inrush current, the motor ratings in the selection tables are only guide values. The specific rated and startup data of the motor to be protected is always paramount to the choice of the most suitable motor starter protector/circuit breaker. This also applies to motor starter protectors for transformer protection.

Possible uses

The 3RV motor starter protectors/circuit breakers can be used:

- For short-circuit protection
- For motor protection (also with overload relay function)
- For system protection
- For short-circuit protection for starter combinations
- For transformer protection
- As main and EMERGENCY STOP switches
- For operation in IT systems (IT networks)
- For switching of DC currents
- In areas subject to explosion hazard (ATEX)
- As circuit breakers according to UL 489 (3RV27 and 3RV28)
- For fuse monitoring
- For distance protection

Special versions of 3RV2 motor starter protectors/circuit breakers can be used for low ambient temperatures down to -50 °C or also for system protection. More detailed information is available on request.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RV2 motor starter protectors/circuit breakers in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, [see Application Manual](#).

For more information, [see page 1/7](#).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Technical specifications

More information

System Manual "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>
 Configuration Manual "Load Feeders – SIRIUS Modular System", see <https://support.industry.siemens.com/cs/ww/en/view/39714188>

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60279172>
 Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16245/td>
 UL reports of the individual devices, see www.siemens.com/sirius/manuals

Short-circuit breaking capacity I_{cu} , I_{cs} according to IEC 60947-2

The table shows the rated ultimate short-circuit breaking capacity I_{cu} and the rated service short-circuit breaking capacity I_{cs} of the 3RV motor starter protectors/circuit breakers with different operating voltages dependent on the rated current I_n of the motor starter protectors/circuit breakers.

Power can be supplied to the motor starter protectors/circuit breakers via the terminals at the top or at the bottom without restricting the rated data. If the short-circuit current at the place of installation exceeds the motor starter protector/circuit breaker's specified rated short-circuit breaking capacity, you will need to use a back-up fuse. It is also possible to install an

upstream motor starter protector/circuit breaker with a limiter function.

The maximum rated current of this back-up fuse is indicated in the tables. The rated ultimate short-circuit breaking capacity then applies as specified on the fuse.

Fuseless design

Motor starter protector/contactors assemblies for short-circuit currents up to 150 kA can be ordered as 3RA2 fuseless load feeders, see page 8/4 onwards.

Motor starter protectors/circuit breakers	Rated current I_n	Up to 240 V AC ¹⁾			Up to 400 V AC ^{1)/} 415 V AC ²⁾			Up to 440 V AC ^{1)/} 460 V AC ²⁾			Up to 500 V AC ^{1)/} 525 V AC ²⁾			Up to 690 V AC ¹⁾		
		I_{cu}	I_{cs}	Max. fuse (gG)	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾⁴⁾
Type	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
Size S00																
3RV1011	0.16 ... 1	100	100	--	100	100	--	100	100	--	100	100	--	100	100	--
	1.25, 1.6	100	100	--	100	100	--	100	100	--	100	100	--	2	2	20
	2; 2.5	100	100	--	100	100	--	100	100	--	10	10	35	2	2	35
	3.2; 4	100	100	--	100	100	--	50	12.5	40	3	3	40	2	2	40
	5; 6.3	100	100	--	100	100	--	50	12.5	50	3	3	50	2	2	40
	8	100	100	--	50	12.5	80	50	12.5	63	3	3	63	2	2	50
	10	100	100	--	50	12.5	80	10	10	63	3	3	63	2	2	50
	12	100	100	--	50	12.5	80	10	10	80	3	3	80	2	2	50
3RV2.11	0.16 ... 1.6	100	100	--	100	100	--	100	100	--	100	100	--	100	100	--
	2; 2.5	100	100	--	100	100	--	100	100	--	100	100	--	10	10	25
	3.2	100	100	--	100	100	--	100	100	--	100	100	--	10	10	32
	4; 5	100	100	--	100	100	--	100	100	--	100	100	--	6	4	32
	6.3	100	100	--	100	100	--	100	100	--	100	100	--	6	4	50
	8	100	100	--	100	100	--	50	50	63	42	42	63	6	4	50
	10	100	100	--	100	100	--	50	50	80	42	42	63	6	4	50
	12.5	100	100	--	100	100	--	50	50	80	42	42	80	6	4	63
	16	100	100	--	55	30	100	50	12.5	80	10	5	80	4	4	63
3RV1611-0BD10	0.2	100	100	--	100	100	--	100	100	--	100	100	--	100	100	--
Size S0																
3RV2.21	0.16 ... 1.6	100	100	--	100	100	--	100	100	--	100	100	--	100	100	--
	2; 2.5	100	100	--	100	100	--	100	100	--	100	100	--	10	10	25
	3.2	100	100	--	100	100	--	100	100	--	100	100	--	10	10	32
	4; 5	100	100	--	100	100	--	100	100	--	100	100	--	6	4	32
	6.3	100	100	--	100	100	--	100	100	--	100	100	--	6	4	50
	8	100	100	--	100	100	--	50	50	63	42	42	63	6	4	50
	10	100	100	--	100	100	--	50	50	80	42	42	63	6	4	50
	12.5	100	100	--	100	100	--	50	50	80	42	42	80	6	4	63
	16	100	100	--	55	25	100	50	12.5	80	10	5	80	4	2	63
	20	100	100	--	55	25	125	50	10	80	10	5	80	4	2	63
	22; 25	100	100	--	55	25	125	50	10	100	10	5	80	4	2	63
	28; 32	100	100	--	55	25	125	30	10	125	10	5	100	4	2	100
	36; 40	100	100	--	20	10	125	12	8	125	6	3	100	3	2	100

-- No back-up fuse required, since short-circuit resistant up to 100 kA

1) 10% overvoltage.

2) 5% overvoltage.

3) Back-up fuse only required if short-circuit current at the place of installation is $> I_{cu}$.

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Motor starter protectors/ circuit breakers	Rated current I_n	Up to 240 V AC ¹⁾			Up to 400 V AC ^{1)/} 415 V AC ²⁾			Up to 440 V AC ^{1)/} 460 V AC ²⁾			Up to 500 V AC ^{1)/} 525 V AC ²⁾			Up to 690 V AC ¹⁾		
		I_{cu}	I_{cs}	Max. fuse (gG)	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾	I_{cu}	I_{cs}	Max. fuse (gG) ³⁾⁴⁾
Type	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A	kA	kA	A
Size S2																
3RV2.31	14; 17	100	100	--	65	30	100	50	25	100	12	6	63	5	3	63
	20	100	100	--	65	30	100	50	25	100	12	6	80	5	3	80
	25	100	100	--	65	30	100	50	15	100	12	6	80	5	3	80
	32; 36	100	100	--	65	30	125	50	15	125	10	5	100	4	2	100
	40; 45	100	100	--	65	30	160	50	15	125	10	5	100	4	2	100
	52	100	100	--	65	30	160	50	15	125	10	5	125	4	2	125
	59; 65	100	100	--	65	30	160	50	15	160	8	4	125	4	2	125
73; 80	100	100	--	65	30	200	50	15	200	8	4	160	4	2	125	
Size S2, with increased switching capacity																
3RV2.32	14; 17	100	100	--	100	50	--	65	30	100	18	10	63	8	5	63
	20; 25	100	100	--	100	50	--	65	30	100	18	10	80	8	5	80
	32 ... 45	100	100	--	100	50	--	65	30	125	15	8	100	6	4	100
	52	100	100	--	100	50	--	65	30	125	15	8	125	6	4	125
	59; 65	100	100	--	100	50	--	50	15	160	10	5	125	6	4	125
73; 80	100	100	--	100	50	--	50	15	200	10	5	160	6	4	125	
Size S3																
3RV2.41	40	100	100	--	65	30	125	65	30	125	12	6	100	6	3	63
	50	100	100	--	65	30	125	65	30	125	12	6	100	6	3	80
	63	100	100	--	65	30	160	65	30	160	12	6	100	6	3	80
	75	100	100	--	65	30	160	65	30	160	8	4	125	5	3	100
	84 ... 100	100	100	--	65	30	160	65	30	160	8	4	125	5	3	125
Size S3, with increased switching capacity																
3RV2.42	40	100	100	--	100	50	--	100	50	--	18	9	160	12	6	80
	50	100	100	--	100	50	--	100	50	--	15	7.5	160	10	5	100
	63	100	100	--	100	50	--	70	50	200	15	7.5	160	7.5	4	100
	75	100	100	--	100	50	--	70	50	200	10	5	160	6	3	125
	84 ... 100	100	100	--	100	50	--	70	50	200	10	5	160	6	3	160
3RV2742⁵⁾	up to 70 A	100	100	--	100	50	--	On request								

-- No back-up fuse required, since short-circuit resistant up to 100 kA

1) 10% overvoltage.

2) 5% overvoltage.

3) Back-up fuse only required if short-circuit current at the place of installation is $> I_{cu}$.

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

5) The values for the 3RV2742 circuit breakers have been tested only up to 400 V/415 V AC.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Short-circuit breaking capacity I_{cuIT} in the IT system (IT network) according to IEC 60947-2

3RV motor starter protectors/circuit breakers are suitable for use in IT systems. The values of I_{cu} and I_{cs} apply for the three-pole short circuit. In the case of a double ground fault in different phases at the input and output side of a motor starter protector/circuit breaker, the special short-circuit breaking capacity I_{cuIT} applies. The specifications in the table below apply to 3RV motor starter protectors/circuit breakers.

If the short-circuit current at the place of installation exceeds the motor starter protector/circuit breaker's specified rated short-circuit breaking capacity, you will need to use a back-up fuse. The maximum rated current of this back-up fuse is indicated in the tables. The rated short-circuit breaking capacity then applies as specified on the fuse.

Motor starter protectors/ circuit breakers	Rated current I_n	Up to 240 V AC ¹⁾		Up to 400 V AC ^{1)/} 415 V AC ²⁾		Up to 440 V AC ^{1)/} 460 V AC ²⁾		Up to 500 V AC ^{1)/} 525 V AC ²⁾		Up to 690 V AC ¹⁾⁵⁾	
		I_{cuIT}	Max. fuse (gG) ³⁾	I_{cuIT}	Max. fuse (gG) ³⁾⁴⁾	I_{cuIT}	Max. fuse (gG) ³⁾	I_{cuIT}	Max. fuse (gG) ³⁾	I_{cuIT}	Max. fuse (gG) ³⁾
Type	A	kA	A	kA	A	kA	A	kA	A	kA	A
Size S00											
3RV1011	0.16 ... 0.4	100	--	100	--	100	--	100	--	100	--
	0.5	100	--	100	--	100	--	100	--	0.5	4
	0.63	100	--	100	--	6	6	6	6	0.5	6
	0.8	100	--	100	--	5	6	5	6	0.5	6
	1	100	--	4	10	2	10	2	10	0.5	10
	1.25	100	--	2	20	2	16	2	16	0.5	16
	1.6	100	--	2	20	2	20	2	20	1	16
	2	100	--	2	35	2	25	2	25	1	20
	2.5	100	--	2	35	2	25	2	25	1	25
	3.2	100	--	2	40	2	35	2	35	1	25
	4	100	--	2	40	2	35	2	35	1	35
	5	100	--	2	50	2	35	2	35	1	35
	6.3	100	--	2	50	2	40	2	40	1	40
	8	50	80	2	63	2	40	2	40	1	40
10	50	80	2	63	2	50	2	50	1	50	
12	50	80	2	80	2	50	2	50	1	50	
3RV2.11	0.16 ... 0.4	100	--	100	--	100	--	100	--	100	--
	0.5	100	--	100	--	100	--	100	--	0.5	4
	0.63; 0.8	100	--	100	--	100	--	100	--	0.5	6
	1	100	--	100	--	2	10	2	10	1.5	10
	1.25	100	--	100	--	2	16	2	16	1.5	16
	1.6	100	--	100	--	2	20	2	20	1.5	16
	2; 2.5	100	--	8	25	2	25	2	25	1.5	20
	3.2	100	--	8	32	2	32	2	32	1.5	25
	4; 5	100	--	4	32	1.5	32	1.5	32	1.5	25
	6.3; 8	100	--	4	50	1	40	1	40	1	35
	10	100	--	4	50	1	40	1	40	1	40
	12.5	100	--	4	63	1	50	1	50	1	40
	16	55	80	4	63	1	50	1	50	1	40
	Size S0										
3RV2.21	0.16 ... 0.4	100	--	100	--	100	--	100	--	100	--
	0.5	100	--	100	--	100	--	100	--	0.5	4
	0.63; 0.8	100	--	100	--	100	--	100	--	0.5	6
	1	100	--	100	--	2	10	2	10	1.5	10
	1.25	100	--	100	--	2	16	2	16	1.5	16
	1.6	100	--	100	--	2	20	2	20	1.5	16
	2; 2.5	100	--	8	25	2	25	2	25	1.5	20
	3.2	100	--	8	32	2	32	2	32	1.5	25
	4; 5	100	--	4	32	1.5	32	1.5	32	1.5	25
	6.3; 8	100	--	4	50	1	40	1	40	1	35
	10	100	--	4	50	1	40	1	40	1	40
	12.5	100	--	4	63	1	50	1	50	1	40
	16	55	80	4	63	1	50	1	50	1	40
	20 ... 25	55	80	4	63	1	50	1	50	1	50
	28; 32	55	80	2	63	1	63	1	63	1	63
	36; 40	20	80	2	63	1	63	1	63	1	63

-- No back-up fuse required, since short-circuit resistant up to 100 kA

1) 5% overvoltage.

2) Without overvoltage.

3) Back-up fuse only required if short-circuit current at installation location is $> I_{cuIT}$.

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

5) Overvoltage category II applies for applications in IT systems > 600 V.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Motor starter protectors/ circuit breakers	Rated current I_n A	Up to 240 V AC ¹⁾		Up to 400 V AC ^{1)/} 415 V AC ²⁾		Up to 440 V AC ^{1)/} 460 V AC ²⁾		Up to 500 V AC ^{1)/} 525 V AC ²⁾		Up to 690 V AC ^{1)/5)}	
		I_{culT} kA	Max. fuse (gG) ³⁾ A	I_{culT} kA	Max. fuse (gG) ^{3)/4)} A	I_{culT} kA	Max. fuse (gG) ³⁾ A	I_{culT} kA	Max. fuse (gG) ³⁾ A	I_{culT} kA	Max. fuse (gG) ³⁾ A
Type	A	kA	A	kA	A	kA	A	kA	A	kA	A
Size S2											
3RV2031, 3RV2131, 3RV2331	14 ... 25	100	--	8	100	6	80	6	80	4	63
	32 ... 45	100	--	6	125	4	100	4	100	3	80
	52 ... 80	100	--	4	160	3	125	3	125	2	100
Size S2, with increased switching capacity											
3RV2032, 3RV2332	14 ... 25	100	--	8	100	6	80	6	80	4	63
	32 ... 45	100	--	6	125	6	100	6	100	4	80
	52	100	--	6	160	6	125	6	125	4	100
	59 ... 80	100	--	6	160	4	125	4	125	4	100
Size S3											
3RV2.41	40	65	125	10	63	5	50	5	50	5	50
	50	65	125	8	80	3	63	3	63	3	63
	63	65	160	6	80	3	63	3	63	3	63
	75	65	160	5	100	2	80	2	80	2	80
	84; 100	65	160	5	125	2	100	2	100	2	100
Size S3, with increased switching capacity											
3RV2.42	40	100	--	12	80	6	63	6	63	6	63
	50	100	--	10	100	4	80	4	80	4	80
	63	100	--	7.5	100	4	80	4	80	4	80
	75	100	--	6	125	3	100	3	100	3	100
	84; 100	100	--	6	160	3	125	3	125	3	125

-- No back-up fuse required, since short-circuit resistant up to 100 kA

1) 10% overvoltage.

2) 5% overvoltage.

3) Back-up fuse only required if short-circuit current at installation location is $> I_{\text{culT}}$.

4) Alternatively, fuseless limiter combinations for 690 V AC can also be used.

5) Overvoltage category II applies for applications in IT systems > 600 V.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Limiting function with standard devices for 500 V AC and 690 V AC according to IEC 60947-2

The table shows the rated ultimate short-circuit breaking capacity I_{cu} and the rated service short-circuit breaking capacity I_{cs} with an upstream standard motor starter protector/circuit breaker that fulfills the limiter function at voltages 500 V AC and 690 V AC.

The short-circuit breaking capacity can be increased significantly with an upstream standard motor starter protector/circuit breaker with limiter function. The motor starter protector/circuit breaker which is connected downstream must be set to the rated current of the load.

With motor starter protector/circuit breaker assemblies, note the clearance to grounded parts and between the motor starter protectors/circuit breaker. Short-circuit proof wiring between the motor starter protectors/circuit breakers must be ensured. The motor starter protectors/circuit breakers can be mounted side by side in a modular arrangement.

Standard motor starter protectors/circuit breakers		Rated current I_n A	Up to 500 V AC ^{1)/525 V AC²⁾}		Up to 690 V AC ¹⁾⁵⁾	
With limiter Rated current I_n			I_{cu} kA	I_{cs} kA	I_{cu} kA	I_{cs} kA
Type	Type					
Size S00						
Size S0: 3RV2321-4EC10 $I_n = 32$ A	3RV2011	2 ... 6.3	--	--	50	25
		8	100	50	20	10
		10 ... 16	100	50	20 ³⁾	10 ³⁾
Size S2: 3RV2331-4WC10 $I_n = 52$ A	3RV2011	10 ... 16	--	--	50	25
Size S0						
Size S0: 3RV2321-4EC10 $I_n = 32$ A	3RV2021	16 ... 32	100	50	20 ³⁾	10 ³⁾
Size S2: 3RV2331-4WC10 $I_n = 52$ A	3RV2021	16 ... 32	--	--	50	20
Size S2, with increased switching capacity						
Size S2: 3RV2332-4RC10 $I_n = 80$ A	3RV2032	14 ... 80	100	50	70	35
Size S3, with increased switching capacity						
Size S3⁴⁾: 3RV2342-4MC10 $I_n = 100$ A	3RV2042	40 ... 100	100	50	50	25

-- No limiter required

1) 10% overvoltage.

2) 5% overvoltage.

3) Infeed to the limiter is always on the side 1L1/3L2/5L3.

4) Infeed to the limiter only on the side 2T1/4T2/6T3. At the infeed side phase barriers have to be used.

5) Use phase barriers on the infeed side

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Permissible rated data of devices approved for North America (UL/CSA)

Motor starter protectors of the 3RV2 series are approved for UL/CSA, and according to UL 508/UL 60947-4-1 and CSA C22.2 No. 14/CSA C22.2 No. 60947-4-1 they can be used on their own or as load feeders in combination with a contactor.

These motor starter protectors/circuit breakers can be used as "Manual Motor Controllers" for "Group Installations", as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" and as "Self-Protected Combination Motor Controllers (Type E)".

3RV motor starter protectors as "Manual Motor Controllers"

If used as a "Manual Motor Controller", the motor starter protector is always operated in combination with an upstream short-circuit protection device. Approved fuses or a circuit breaker according to UL 489/CSA C22.2 No. 5 may be used for this purpose. These devices must be dimensioned according to the National Electrical Code (UL) or Canadian Electrical Code (CSA).

The file numbers for the approval of the 3RV as a manual motor controller are as follows:

- UL File No. 47705, CCN: NLRV
- CSA Master Contract 165071, Product Class: 3211

Motor starter protectors/circuit breakers	hp rating ¹⁾ for FLA ²⁾ max.		Rated current I_n	240 V AC		480 V AC		600 V AC	
	Single-phase	Three-phase		UL $I_{bc}^{(3)}$	CSA $I_{bc}^{(3)}$	UL $I_{bc}^{(3)}$	CSA $I_{bc}^{(3)}$	UL $I_{bc}^{(3)}$	CSA $I_{bc}^{(3)}$
Type	V		A	kA	kA	kA	kA	kA	kA
Size S00									
3RV1011									
			0.16 ... 2	65	65	65	65	10	10
FLA ²⁾ max. 12 A, 600 V	115	1/2	2.5	65	65	65	65	10	10
	200	1 1/2	3.2	65	65	65	65	10	10
	230	2	4	65	65	65	65	10	10
	460	--	5	65	65	65	65	10	10
	575/600	--	6.3	65	65	65	65	10	10
			8	65	65	65	65	10	10
			10	65	65	65	65	10	10
			12	65	65	65	65	10	10
3RV2011, 3RV2111, 3RV2311, 3RV2411									
			0.16 ... 12.5	65	65	65	65	30	30
FLA ²⁾ max. 16 A, 480 V	115/120	1	16	65	65	65	65	--	--
12.5 A, 600 V	200/208	2							
	230/240	2							
	460/480	--							
	575/600	--							
3RV1611-0BD10									
			0.2	65	65	65	65	10	10
Size S0									
3RV2021, 3RV2121, 3RV2321, 3RV2421									
			0.16 ... 12.5	65	65	65	65	30	30
FLA ²⁾ max. 40 A, 480 V	115/120	3	16 ... 25	65	65	65	65	--/(30) ⁴⁾	--/(30) ⁴⁾
12.5 A, 600 V	200/208	5	28, 32	65	65	50	50	--	--
	230/240	7 1/2	36, 40	65	65	12	12	--	--
	460/480	--							
	575/600	--							
Size S2									
3RV2031, 3RV2331									
			14 ... 36	65	65	65	65	25	25
FLA ²⁾ max. 80 A, 600 V	115/120	7 1/2	40 ... 52	65	65	65	65	22	22
	200/208	15	59 ... 65	65	65	65 ⁵⁾	65 ⁵⁾	20 ⁵⁾	20 ⁵⁾
	230/240	15	73 ... 80	65	65	65 ⁵⁾	65 ⁵⁾	20 ⁵⁾	20 ⁵⁾
	460/480	--							
	575/600	--							
Size S2, with increased switching capacity									
3RV2032, 3RV2332									
			14 ... 36	100	100	100	100	25	25
FLA ²⁾ max. 80 A, 600 V	115/120	7 1/2	40 ... 52	100	100	100	100	22	22
	200/208	15	59 ... 65	100	100	100 ⁵⁾	100 ⁵⁾	25 ⁵⁾	25 ⁵⁾
	230/240	15	73 ... 80	100	100	100 ⁵⁾	100 ⁵⁾	25 ⁵⁾	25 ⁵⁾
	460/480	--							
	575/600	--							
Size S3									
3RV2.41, 3RV2.42									
			40 ... 75	65	65	65	65	30	30
FLA ²⁾ max. 100 A, 600 V	115/120	7 1/2	84 ... 100	65	65	65	65	10/30 ⁶⁾	10/30 ⁶⁾
	200/208	15							
	230/240	20							
	460/480	--							
	575/600	--							

-- No approval

1) hp rating = Power rating in horse power (maximum motor rating).

2) FLA = Full Load Amps/motor full load current.

3) Corresponds to "short-circuit breaking capacity" according to UL/CSA.

4) Values in brackets only apply to 3RV2.23 motor starter protectors.

5) With Class J fuse.

6) With Class J fuse 300 A.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

3RV20 motor starter protectors (up to 100 A) as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations"

The application as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" is only available for UL. CSA does not recognize this approval! When the motor starter protector is used as a "Manual Motor Controller Suitable for Tap Conductor Protection in Group Installations", it must always be combined with upstream short-circuit protection. Approved fuses or a circuit breaker according to UL 489 may be used for this purpose. These devices must be dimensioned according to the National Electrical Code.

The 3RV20 motor starter protectors are approved as "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations" under the following file number:

- UL File No. 47705, CCN: NLRV

Motor starter protectors/ circuit breakers	hp rating ¹⁾ for FLA ²⁾ max.		Rated current I_n A	240 V AC	480 Y/277 V AC	600 Y/347 V AC	
	Single-phase	Three-phase		UL I_{bc} ³⁾ kA	UL I_{bc} ³⁾ kA	UL I_{bc} ³⁾ kA	
Type	V						
Size S00							
3RV1011							
FLA ²⁾ max. 8 A, 480 V	115 200 230 460 575/600	1/3 3/4 1 -- --	-- 2 2 5 --	0.16 ... 0.8 1 1.25 2 2.5 3.2 4 5 6.3 8	65 65 65 65 65 65 65 65 65	65 65 65 65 65 65 65 65 65	10 10 10 10 10 10 10 10 10
3RV2011							
FLA ²⁾ max. 16 A, 480 V 12.5 A, 600 V	115/120 200/208 230/240 460/480 575/600	1 2 2 -- --	2 3 5 10 10	0.16 ... 12.5 16	65 65	65 65	30 --
Size S0							
3RV2021							
FLA ²⁾ max. 32 A, 480 V 12.5 A, 600 V	115/120 200/208 230/240 460/480 575/600	2 3 5 -- --	5 10 10 20 --	0.16 ... 12.5 16 ... 25 28; 32	65 65 50	65 65 50	30 -- --
Size S2							
3RV2031							
FLA ²⁾ max. 80 A, 480 V 52 A, 600 V	115/120 200/208 230/240 460/480 575/600	7 1/2 15 15 -- --	10 25 30 60 75	14 ... 36 40 ... 52 59 ... 65 73 80	65 65 65 65 65	65 65 30 20 10	25 22 -- -- --
Size S2, with increased switching capacity							
3RV2032							
FLA ²⁾ max. 80 A, 480 V 52 A, 600 V	115/120 200/208 230/240 460/480 575/600	7 1/2 15 15 -- --	10 25 30 60 75	14 ... 36 40 ... 52 59 ... 65 73 80	100 100 100 100 100	100 100 42 30 10	25 22 -- -- --
Size S3							
3RV204.							
FLA ²⁾ max. 100 A, 480 V 75 A, 600 V	115/120 200/208 230/240 460/480 575/600	7 1/2 15 20 -- --	15 30 40 75 75	40 ... 75 84 ... 100	65 65	65 65	30 --

-- No approval

¹⁾ hp rating = Power rating in horse power (maximum motor rating).

²⁾ FLA = Full Load Amps/motor full load current.

³⁾ Corresponds to "short-circuit breaking capacity" according to UL.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

3RV20 motor starter protectors (up to 100 A) as "Self-Protected Combination Motor Controllers (Type E)"

UL 508/UL 60947-4-1 approval demands 1-inch through air spacing and 2-inch over surface spacing at line side for "Self-Protected Combination Motor Controllers".

Therefore, 3RV20 motor starter protectors of sizes S00 to S3 are approved according to UL 508/UL 60947-4-1 in combination with the terminal blocks listed below.

CSA does not require these extended clearances. According to CSA, these terminal blocks can be omitted when the device is used as a "Self-Protected Combination Motor Controller".

The 3RV20 motor starter protectors are approved as "Self-Protected Combination Motor Controllers" under the following file numbers:

- UL File No. E156943, CCN: NKJH
- CSA Master Contract 165071, Product Class: 3211 08

Motor starter protectors/ circuit breakers		hp rating ¹⁾ for FLA ²⁾ max.		Rated current I_n A	Up to 240 V AC		Up to 480 Y/277 V AC		Up to 600 Y/347 V AC	
		Single-phase	Three-phase		UL $I_{bc}^{(3)}$ kA	CSA $I_{bc}^{(3)}$ kA	UL $I_{bc}^{(3)}$ kA	CSA $I_{bc}^{(3)}$ kA	UL $I_{bc}^{(3)}$ kA	CSA $I_{bc}^{(3)}$ kA
Type	V									
Size S00										
3RV2011 + 3RV2928-1H⁴⁾⁵⁾				0.16 ... 12.5 16	65 65	65 65	65 65	65 65	30 --	30 --
FLA ²⁾ max.	115/120	1	2							
16 A, 480 V;	200/208	2	3							
12.5 A, 600 V	230/240	2	5							
	460/480	--	10							
	575/600	--	10							
Size S0										
3RV2021 + 3RV2928-1H⁴⁾⁵⁾				0.16 ... 12.5 16 ... 25 28; 32	65 65 50	65 65 50	65 65 50	65 65 50	30 -- --	30 -- --
FLA ²⁾ max.	115/120	2	5							
32 A, 480 V	200/208	3	10							
12.5 A, 600 V	230/240	5	10							
	460/480	--	20							
	575/600	--	--							
Size S2										
3RV2031+ 3RV2938-1K⁴⁾				14 ... 36 40 ... 52 59 ... 73	65 65 65	65 65 65	65 65 20	65 65 20	25 22 --	25 22 --
FLA ²⁾ max.	115/120	7 1/2	10							
73 A, 480 V	200/208	15	25							
52 A, 600 V	230/240	15	30							
	460/480	--	60							
	575/600	--	75							
Size S2, with increased switching capacity										
3RV2032 + 3RV2938-1K⁴⁾				14 ... 36 40 ... 52 59 ... 73	100 100 100	100 100 100	100 100 30	100 100 30	25 22 --	25 22 --
FLA ²⁾ max.	115/120	7 1/2	10							
73 A, 480 V	200/208	15	25							
52 A, 600 V	230/240	15	30							
	460/480	--	60							
	575/600	--	75							
Size S3										
3RV2041/2042 + 3RT2946-4GA07⁴⁾				40 ... 75 84 ... 100	65 65	65 65	65 65	65 65	30 --	30 --
FLA ²⁾ max.	115/120	7 1/2	15							
100 A, 480 V	200/208	15	30							
75 A, 600 V	230/240	20	40							
	460/480	--	75							
	575/600	--	75							

-- No approval

1) hp rating = Power rating in horse power (maximum motor rating).

2) FLA = Full Load Amps/motor full load current.

3) Corresponds to "short-circuit breaking capacity" according to UL/CSA.

4) Not required for CSA.

5) Alternatively phase barrier 3RV2928-1K can be used.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

3RV27 and 3RV28 motor starter protectors as "circuit breakers"

These motor starter protectors are approved as circuit breakers according to UL 489 and CSA C22.2 No. 5. They can be used therefore as upstream short-circuit protective devices for "Manual Motor Controllers" and "Manual Motor Controllers Suitable for Tap Conductor Protection in Group Installations".

3RV27 and 3RV28 motor starter protectors are approved as "circuit breakers" under the following file numbers:

- UL File No. E235044, CCN: DIVQ
- CSA Master Contract 165071, Product Class: 1432 01

Motor starter protectors/ circuit breakers	Rated current I_n	240 V AC		480 Y/277 V AC		480 V AC		600 Y/347 V AC		600 V AC	
		UL $I_{bc}^{1)}$	CSA $I_{bc}^{1)}$	UL $I_{bc}^{1)}$	CSA $I_{bc}^{1)}$	UL $I_{bc}^{1)}$	CSA $I_{bc}^{1)}$	UL $I_{bc}^{1)}$	CSA $I_{bc}^{1)}$	UL $I_{bc}^{1)}$	CSA $I_{bc}^{1)}$
Type	A	kA	kA	kA	kA	kA	kA	kA	kA	kA	kA
Size S00											
3RV2711	0.16 ... 12.5 15	65 65	65 65	65 65	65 65	-- --	-- --	10 --	10 --	-- --	-- --
3RV2811	0.16 ... 12.5 15	65 65	65 65	65 65	65 65	-- --	-- --	10 --	10 --	-- --	-- --
Size S0											
3RV2721	20; 22	50	50	50	50	--	--	--	--	--	--
3RV2821	20; 22	50	50	50	50	--	--	--	--	--	--
Size S3											
3RV2742	10; 15 20 ... 30 35 ... 60 70	65 65 65 65	65 65 65 65	65 65 65 65	65 65 65 65	65 65 -- --	65 65 -- --	20 20 20 10	20 20 20 10	20 -- -- --	20 -- -- --

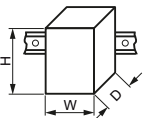
-- No approval

¹⁾ Corresponds to "short-circuit breaking capacity" according to UL.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

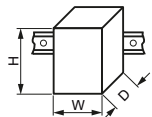

General data

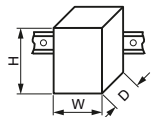
General data		3RV2.1.	3RV2.2.	3RV2.3.	3RV2.4.	3RV27, 3RV28
Type		S00	S0	S2	S3	S00, S0
Size						
Dimensions (W x H x D)	mm	45 x 97 x 92	45 x 97 x 92	55 x 140 x 149	70 x 165 x 169	45 x 144 x 92
• Screw terminals	mm	45 x 106 x 92	45 x 119 x 92	--	--	--
• Spring-type terminals						
Standards						
• IEC/EN 60947-1 (VDE 0660 Part 100)		Yes				
• IEC/EN 60947-2 (VDE 0660 Part 101)		Yes				
• IEC/EN 60947-4-1 (VDE 0660 Part 102)		Yes				
• UL 508/UL 60947-4-1, CSA C22.2 No. 14/CSA C22.2 No. 60947-4-1		Yes				--
• UL 489, CSA C22.2 No. 5		--				Yes
Number of poles		3				
Max. rated current I_n max (= max. rated operational current I_e)	A	16	40	80	100	22
Permissible ambient temperature						
• Storage/transport	°C	-50 ... +80				
• Operation	°C	-20 ... +70		--	--	--
	I_n : 0.16 ... 32 A	(current reduction above +60 °C)				
	I_n : 36 ... 40 A	°C	--	--	--	--
			-20 ... +40 (the devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required.)			
	I_n : 14 ... 80 A	°C	--	-20 ... +70 (current reduction above +60 °C)	--	--
	I_n : 40 ... 100 A	°C	--	--	-20 ... +70 (current reduction above +60 °C)	--
Permissible rated current at inside temperature of control cabinet						
• +60 °C	%	100				
• +70 °C	%	87				
Permissible rated current at ambient temperature of enclosure (applies to motor starter protector/circuit breaker inside enclosure: S00/S0 ≤ 32 A, S2 ≤ 52 A)						
• +35 °C	%	100		100	--	
• +60 °C	%	87		--	--	
Rated operational voltage U_e						
• Acc. to IEC	V AC	690 (when a molded-plastic enclosure is used only 500 V)				
• Acc. to UL/CSA	V AC	600				
Rated frequency	Hz	50/60				
Rated insulation voltage U_i	V	690			1 000	690
Rated impulse withstand voltage U_{imp}	kV	6			8	6
Utilization category						
• IEC 60947-2 (motor starter protector/circuit breaker)	A	AC-3				
• IEC 60947-4-1 (motor starter)						
Trip class CLASS	Acc. to IEC 60947-4-1	10		10/20		--
DC short-circuit breaking capacity (time constant $t = 5$ ms)						
• 1 conducting path 150 V DC	kA	10			On request	10
• 2 conducting paths in series 300 V DC	kA	10				10
• 3 conducting paths in series 450 V DC	kA	10				10
Power loss P_v per motor starter protector						
dependent upon rated current I_n (upper setting range)		I_n : 0.16 ... 0.63 A	W	5	--	5
		I_n : 0.8 ... 6.3 A	W	6	--	6
		I_n : 8 ... 16 A	W	7	--	7
		I_n : 14 ... 16 A	W	--	7	10
		I_n : 17 ... 25 A	W	--	8	12
		I_n : 28 ... 32 A	W	--	11	14
		I_n : 36 ... 40 A	W	--	14	15
		I_n : 45 ... 52 A	W	--	--	17
		I_n : 59 ... 65 A	W	--	--	19
		I_n : 73 ... 80 A	W	--	--	21
		I_n : 40 ... 50 A	W	--	--	21
		I_n : 63 ... 75 A	W	--	--	21
		I_n : 84 ... 93 A	W	--	--	32
		I_n : 100 A	W	--	--	38
Shock resistance	Acc. to IEC 60068-2-27 g/ms	25/11 (square and sine pulse)				

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

General data (continued)							
Type			3RV2.1.	3RV2.2.	3RV2.3.	3RV2.4.	3RV27, 3RV28
Size			S00	S0	S2	S3	S00, S0
Dimensions (W x H x D)			mm	mm	mm	mm	mm
• Screw terminals			45 x 97 x 92	45 x 97 x 92	55 x 140 x 149	70 x 165 x 169	45 x 144 x 92
• Spring-type terminals			45 x 106 x 92	45 x 119 x 92	--	--	--
Degree of protection	Acc. to IEC 60529		IP20			- IP20 (front side) - Terminal IP00 (use additional terminal covers for higher degree of protection)	
Touch protection	Acc. to IEC 60529		Finger-safe			Finger-safe, for vertical contact from the front	
Temperature compensation	Acc. to IEC 60947-4-1 °C		-20 ... +60				
Phase failure sensitivity	Acc. to IEC 60947-4-1		Yes (not for 3RV23 motor starter protectors)				No
Protection of motors in hazardous environments			Yes (only for 3RV20 motor starter protectors)				No
• EC type-examination certificate number according to European Directive 2014/34/EU (ATEX)			DMT 02 ATEX F 001  II (2) GD				No
• according to international standard IECEx			IECEx BVS14.0102 [Ex]				No
Isolating function	Acc. to IEC 60947-2		Yes				
Main and EMERGENCY STOP switch characteristics	Acc. to EN 60204-1 VDE 0113		Yes				
(with corresponding accessories)							
Protective separation between main and auxiliary circuits required for PELV-applications	Acc. to IEC 60947-1		Yes				
• Up to 400 V + 10%			Yes				
• Up to 415 V + 5% (higher voltages on request)			Yes				
Permissible mounting position			Any, acc. to IEC 60447 start command "I" right-hand side or top				
Mechanical endurance (operating cycles)			100 000		52 A: 50 000, 80 A: 20 000	25 000	100 000
Electrical endurance (operating cycles)			100 000		52 A: 50 000, 80 A: 20 000	25 000	100 000
Max. switching frequency per hour (motor starts)	1/h		15				

General data					
Type			3RV2742	3RV1611-0BD10¹⁾	3RV1011
Size			S3	S00	S00
Dimensions (W x H x D)			mm	mm	mm
			70 x 168 x 169	45 x 90 x 70	45 x 90 x 70
Standards			Yes		
• IEC/EN 60947-1 (VDE 0660 Part 100)			Yes		
• IEC/EN 60947-2 (VDE 0660 Part 101)			No	Yes	
• UL 508/UL 60947-4-1, CSA C22.2 No. 14/CSA 60947-4-1			Yes	No	
• UL 489, CSA C22.2 No.5					
Number of poles			3		
Max. rated current I_n max (= max. rated operational current I_e)	A		70	0.2	12
Permissible ambient temperature					
• Storage/transport	°C		-50 ... +80		
• Operation	°C		-20 ... +70 (current reduction above +60 °C)		
Permissible rated current at inside temperature of control cabinet					
• +60 °C	%		100		
• +70 °C	%		87		
Permissible rated current at ambient temperature of enclosure (applies to motor starter protector/circuit breaker inside enclosure)					
• +35 °C	%		--		100
• +60 °C	%		--		--
Rated operational voltage U_e					
• Acc. to IEC	V AC		690 (with molded-plastic enclosure 500 V)		
• Acc. to UL/CSA	V AC		600		
Rated frequency	Hz		50/60		
Rated insulation voltage U_i	V		1 000	690	
Rated impulse withstand voltage U_{imp}	kV		8	6	
Utilization category					
• IEC 60947-2 (motor starter protector/circuit breaker)			A		
• IEC 60947-4-1 (motor starter)			AC-3		
DC short-circuit breaking capacity					
(time constant $t = 5$ ms)					
• 1 conducting path 150 V DC	kA		On request		
• 2 conducting paths in series 300 V DC	kA				
• 3 conducting paths in series 450 V DC	kA				

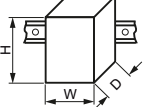
¹⁾ "Technical Specifications" for 3RV1611 voltage transformer circuit breakers, see page 7/25.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

General data (continued)

General data (continued)		3RV2742	3RV1611-0BD10 ¹⁾	3RV1011
Type		S3	S00	S00
Size		70 x 168 x 169	45 x 90 x 70	45 x 90 x 70
Dimensions (W x H x D)		mm		
Power loss P_v per motor starter protector dependent upon rated current I_n (upper setting range)	I_n : 0.2 A	W	--	5
	I_n : 10 A	W	8	--
	I_n : 15 ... 35 A	W	12	--
	I_n : 40 ... 70 A	W	20	--
$R_{\text{per conducting path}} = \frac{P}{I^2 \times 3}$	I_n : ... 1.25 A	W	--	5
	I_n : 1.65 ... 6.3 A	W	--	6
	I_n : 8 ... 12 A	W	--	7
Shock resistance	Acc. to IEC 60068-2-27	g/ms	25/11 (square and sine pulse)	
Degree of protection	Acc. to IEC 60529		- IP20 (front side) - Connecting terminal IP00	IP20
Touch protection	Acc. to IEC 60529		Finger-safe, for vertical contact from the front	Finger-safe
Temperature compensation	Acc. to IEC 60947-4-1	°C	-20 ... +60	
Phase failure sensitivity	Acc. to IEC 60947-4-1		No	Yes
Explosion protection – Safe operation of motors with "increased safety" type of protection EC type-examination certificate number according to directive 2014/34/EU (ATEX)			No	Yes
Isolating function	Acc. to IEC 60947-2		Yes	
Main and EMERGENCY STOP switch characteristics (with corresponding accessories)	Acc. to EN 60204-1		Yes	
Protective separation between main and auxiliary circuits, required for PELV applications • Up to 400 V + 10% • Up to 415 V + 5% (higher voltages on request)	Acc. to IEC 60947-1		Yes Yes	
Permissible mounting position			Any, acc. to IEC 60447 start command "I" right-hand side or top	
Mechanical endurance	Operating cycles		25 000	100 000
Electrical endurance	Operating cycles		25 000	100 000
Max. switching frequency per hour (motor starts)	1/h		15	

¹⁾ "Technical Specifications" for 3RV1611 voltage transformer circuit breakers, see page 7/25.

Rated data of the auxiliary switches and signaling switches

		Lateral auxiliary switch with 1 NO + 1 NC, 2 NO, 2 NC, 2 NO + 2 NC	Signaling switch	Transverse auxiliary switch with 1 CO	1 NO + 1 NC, 2 NO
Max. rated voltage • Acc. to NEMA (UL) • Acc. to NEMA (CSA)	V AC V AC	600 600		250 250	
Uninterrupted current	A	10		5	2.5
Switching capacity		1 NO + 1 NC, 2 NO, 2 NC: A600, Q300; 2 NO + 2 NC: A300, Q300	A600, Q300	B600, R300	C300, R300

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Front transverse auxiliary switches		Switching capacity for different voltages	
		1 CO	1 NO + 1 NC, 2 NO
Rated operational current I_e			
• At AC-15, alternating voltage			
- 24 V	A	4	2
- 230 V	A	3	0.5
• At AC-12 = I_{th} , alternating voltage			
- 24 V	A	10	2.5
- 230 V	A	10	2.5
• At DC-13, direct voltage L/R 200 ms			
- 24 V	A	1	1
- 48 V	A	--	0.3
- 60 V	A	--	0.15
- 110 V	A	0.22	--
- 220 V	A	0.1	--
Minimum load capacity	V	17	
	mA	1	

Front transverse solid-state compatible auxiliary switches		Switching capacity for different voltages	
		1 CO	
Rated operational voltage U_e	Alternating voltage	V	125
Rated operational current I_e /AC-14	At $U_e = 125$ V	A	0.1
Rated operational voltage U_e	Direct voltage L/R 200 ms	V	60
Rated operational current I_e /DC-13	At $U_e = 60$ V	A	0.3
Minimum load capacity	V	5	
	mA	1	

Lateral auxiliary switches with signaling switch		Switching capacity for different voltages: Lateral auxiliary switch with 1 NO + 1 NC, 2 NO, 2 NC, 2 NO + 2 NC, Signaling switch	
Rated operational current I_e			
• At AC-15, alternating voltage			
- 24 V	A	6	
- 230 V	A	4	
- 400 V	A	3	
- 690 V	A	1	
• At AC-12 = I_{th} , alternating voltage			
- 24 V	A	10	
- 230 V	A	10	
- 400 V	A	10	
- 690 V	A	10	
• At DC-13, direct voltage L/R 200 ms			
- 24 V	A	2	
- 110 V	A	0.5	
- 220 V	A	0.25	
- 440 V	A	0.1	
Minimum load capacity	V	17	
	mA	1	



Auxiliary releases		Undervoltage releases	Shunt releases
Power consumption			
• During pick-up			
- AC voltages	VA/W	20.2/13	
- DC voltages	W	20	13 ... 80
• During uninterrupted duty			
- AC voltages	VA/W	7.2/2.4	--
- DC voltages	W	2.1	--
Response voltage			
• Tripping	V	0.35 ... 0.7 $\times U_s$	0.7 ... 1.1 $\times U_s$
• Pick-up	V	0.85 ... 1.1 $\times U_s$	--
Opening time maximum	ms	20	

Short-circuit protection for auxiliary and control circuits		
Melting fuses operational class gG	A	10
Miniature circuit breakers C characteristic	A	6 (prospective short-circuit current < 0.4 kA)

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data



Conductor cross-sections of main circuit						
Type		3RV2.11	3RV2.21	3RV2.31-4B.1., 3RV2.31-4D.1., 3RV2.31-4E.1., 3RV2.31-4P.1., 3RV2.31-4S.1., 3RV2.31-4T.1., 3RV2.31-4U.1., 3RV2.31-4V.1.	3RV2.31-4J.1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.31-4W.1., 3RV2.31-4X.1., 3RV2431-4VA1., 3RV2.32	3RV27, 3RV28
Size		S00	S0	S2		S00, S0
Connection type		 Screw terminals				
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2		M4, Pozidriv size 2
Operating devices	mm	∅ 5 ... 6	∅ 5 ... 6	∅ 5 ... 6		∅ 5 ... 6
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3.0 ... 4.5		2.5 ... 3
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected						
• Solid or stranded	mm ²	2 x (0.75 ... 2.5) ¹⁾ , 2 x 4	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 10) ¹⁾	2 x (1 ... 25) ¹⁾ , 1 x (1 ... 35) ¹⁾	2 x (1 ... 35) ¹⁾ , 1 x (1 ... 50) ¹⁾	2 x (1 ... 10) ¹⁾ , max. 1 x 25
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , 1 x 10	2 x (1 ... 16) ¹⁾ , 1 x (1 ... 25) ¹⁾	2 x (1 ... 25) ¹⁾ , 1 x (1 ... 35) ¹⁾	1 x (1 ... 16), max. 6 + 16
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ , 2 x (18 ... 12) ¹⁾	2 x (18 ... 12) ¹⁾ , 2 x (14 ... 8) ¹⁾	2 x (18 ... 3) ¹⁾ , 1 x (18 ... 2) ¹⁾	2 x (18 ... 2) ¹⁾ , 1 x (18 ... 1) ¹⁾	2 x (14 ... 10)
Connection type		 Spring-type terminals				
Operating devices	mm	3.0 x 0.5				
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected						
• Solid or stranded	mm ²	2 x (0.5 ... 4)	2 x (1 ... 10)	--		
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--		
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--		
• AWG cables, solid or stranded	AWG	2 x (20 ... 12)	2 x (18 ... 8)	--		
Max. external diameter of the conductor insulation	mm	3.6	6.4	--		

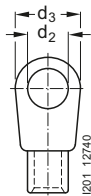
¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Conductor cross-sections of main circuit (continued)			
Type		3RV2.4/ 3RV2742	3RV1611-0BD10 ¹⁾ / 3RV1011
Size		S3	S00
Connection type		 Screw terminals with box terminal	 Screw terminals
Terminal screw		M6	Pozidriv size 2
Prescribed tightening torque	Nm	4.5 ... 6	0.8 ... 1.2
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected			
• Solid or stranded	mm ²	2 x (2.5 ... 16) ²⁾ , 2 x (10 ... 50) ²⁾ , 1 x (10 ... 70) ²⁾	2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (2.5 ... 35) ²⁾ , 1 x (2.5 ... 50) ²⁾	2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾
• AWG cables, solid or stranded	AWG	2 x (10 ... 1/0) ²⁾ , 1 x (10 ... 2/0) ²⁾	2 x (18 ... 14)
Ribbon cable conductors (number x width x thickness)	mm	2 x (6 x 9 x 0.8)	--
Removable box terminals³⁾			
• With copper bars ⁴⁾	mm	2 x 12 x 4	--
• With cable lugs ⁵⁾			
- Terminal screw		M6	
- Prescribed tightening torque	Nm	4.5 ... 6	
- Usable ring terminal lugs	mm	d ₂ = min. 6.3 d ₃ = max. 19	





1) "Technical Specifications" for 3RV16 voltage transformer circuit breakers, see page 7/25.

2) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

3) Cable lug and busbar connection possible after removing the box terminals. This does not apply for 3RV2742.

4) If bars larger than 12 mm x 10 mm are connected, a 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/54.

5) When conductors larger than 25 mm² are connected, the 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/54.

Conductor cross-sections for auxiliary and control circuits							
Type		3RV2.11	3RV1011/ 3RV1611- 0BD10 ¹⁾	3RV2.21	3RV2.3	3RV2.4	3RV27, 3RV28
Size		S00		S0	S2	S3	S00, S0, S3
Connection type		 Screw terminals					
Terminal screw		M3, Pozidriv size 2					
Operating devices	mm	∅ 5 ... 6					
Prescribed tightening torque	Nm	0.8 ... 1.2					
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected							
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾					
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾					
• AWG cables, solid or stranded	AWG	2 x (18 ... 14) ²⁾ , 2 x (20 ... 16) ²⁾					
Connection type		 Spring-type terminals					
Operating devices	mm	3.0 x 0.5					
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected							
• Solid or stranded	mm ²	2 x (0.5 ... 2.5)					
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)					
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5)					
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)					
Max. external diameter of the conductor insulation	mm	3.6					

1) "Technical Specifications" for 3RV16 voltage transformer circuit breakers, see page 7/25.

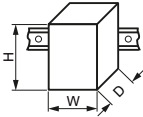
2) If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.


Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Voltage transformer circuit breakers

General data					
Type			3RV1611-1AG14	3RV1611-1CG14	3RV1611-1DG14
Size			S00	S00	S00
Dimensions (W x H x D)		mm	45 x 90 x 70	45 x 90 x 70	45 x 90 x 70
Rated current I_n	A		1.4	2.5	3
Ambient temperature					
• During storage/transport	°C		-50 ... +80		
• During operation	°C		-20 ... +60 (up to +70 °C possible with current reduction)		
Rated operational voltage U_e	V		400		
Rated frequency	Hz		16.66 ... 60		
Rated insulation voltage U_i	V		690		
Short-circuit breaking capacity I_{cu} at 400 V AC	kA		50		
Set value of the thermal overload release	A		1.4	2.5	3
Response value of the instantaneous electronic release	A		6 ± 20%	10.5 ± 20%	20 ± 20 %
Tripping time of the instantaneous electronic release	ms		Approx. 6 at 12 A	Approx. 6 at 20 A	Approx. 6 at 40 A
Internal resistance					
• In cold state	Ω		> 0.25 ± 6.5%		
• In heated state	Ω		> 0.30 ± 6.5%		
Shock resistance acc. to IEC 60068-2-27	g/ms		15		
Degree of protection acc. to IEC 60529			IP20		
Touch protection acc. to IEC 60529			Finger-safe for vertical contact from the front		
Endurance					
• Mechanical	Operating cycles		10 000		
• Electrical	Operating cycles		10 000		
Permissible mounting position			Any		

Type			3RV1611-1AG14	3RV1611-1CG14	3RV1611-1DG14
Conductor cross-sections, main circuit, 1 or 2 conductors					
Connection type			 Screw terminals		
Terminal screw			Pozidriv size 2		
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm ²		2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾ , 2 x (1 ... 4)		
• Finely stranded with end sleeve (DIN 46228-1)	mm ²		2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾		
Auxiliary switches for blocking the distance protection					
With defined lateral assignment for blocking distance protection			1 CO (for use as 1 NO or 1 NC)		
Rated operational voltage U_e	Alternating voltage	V	125		
Rated operational current I_e /AC-14	At $U_e = 125$ V	A	0.1		
Rated operational voltage U_e	Direct voltage L/R 200 ms	V	60		
Rated operational current I_e /DC-13	At $U_e = 60$ V	A	0.3		
Minimum load capacity		V	5		
		mA	1		
Short-circuit protection for auxiliary circuit					
Melting fuse	A		250 V type FF 2A (prospective short-circuit current < 1.1 kA)		



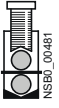
¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Terminals for "Self-Protected Combination Motor Controllers (Type E) according to UL 508/UL 60947-4-1"

Type	3RV2928-1H	
Prescribed tightening torque	Nm	2.5 ... 3
Conductor cross-sections		
<ul style="list-style-type: none"> • Front clamping point connected 		
<ul style="list-style-type: none"> - Solid 	mm ²	1 ... 10
<ul style="list-style-type: none"> - Finely stranded with end sleeve 	mm ²	1 ... 16
<ul style="list-style-type: none"> - Stranded 	mm ²	2.5 ... 25
<ul style="list-style-type: none"> - AWG cables, solid or stranded 	AWG	14 ... 3
<ul style="list-style-type: none"> - Terminal screw 		M4
<ul style="list-style-type: none"> • Rear clamping point connected 		
<ul style="list-style-type: none"> - Solid 	mm ²	1 ... 10
<ul style="list-style-type: none"> - Finely stranded with end sleeve 	mm ²	1 ... 16
<ul style="list-style-type: none"> - Stranded 	mm ²	1.5 ... 25
<ul style="list-style-type: none"> - AWG cables, solid or stranded 	AWG	14 ... 6
<ul style="list-style-type: none"> - Terminal screw 		M4
<ul style="list-style-type: none"> • Both clamping points connected 		
<ul style="list-style-type: none"> - Front clamping point: 		
<ul style="list-style-type: none"> - Solid 	mm ²	1 ... 10
<ul style="list-style-type: none"> - Finely stranded with end sleeve 	mm ²	1 ... 10 ¹⁾ , 1 ... 6 ¹⁾
<ul style="list-style-type: none"> - Stranded 	mm ²	2.5 ... 10
<ul style="list-style-type: none"> - AWG cables, solid or stranded 	AWG	14 ... 6
<ul style="list-style-type: none"> - Terminal screw 		M4
<ul style="list-style-type: none"> - Rear clamping point: 		
<ul style="list-style-type: none"> - Solid 	mm ²	1 ... 10
<ul style="list-style-type: none"> - Finely stranded with end sleeve 	mm ²	1 ... 10 ¹⁾ , 1 ... 16 ¹⁾
<ul style="list-style-type: none"> - Stranded 	mm ²	2.5 ... 10
<ul style="list-style-type: none"> - AWG cables, solid or stranded 	AWG	16 ... 3
<ul style="list-style-type: none"> - Terminal screw 		M4

¹⁾ The following connections are possible when both clamping points are connected:

- front 1 ... 10 mm² and rear 1 ... 10 mm²,
- front 1 ... 6 mm² and rear 1 ... 16 mm².

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

General data

Motor feeder connectors for motor starter protectors/ circuit breakers with screw terminals			
Version	Type	3RT1900-4RE01 Motor feeder connector S0	3RT1926-4RD01 Adapter S0
General data			
Rated insulation voltage U_i (pollution degree 3)	V	690	
Rated impulse withstand voltage U_{imp} (pollution degree 3)	kV	6	
Rated operational voltage U_e	V	440	
Rated frequency f For AC operation	Hz	50/60	
Rated operational current I_e AC-3 at 400 V	A	25	
Mechanical endurance	Operating cycles	10 million	
Electrical endurance at I_e	Operating cycles	1 million	
Protective separation according to IEC 60947-1 (pollution degree 3)	V	400	
Permissible ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-50 ... +80	
Degree of protection acc. to IEC 60529		IP20 (front side)	
Conductor cross-sections			
Connection type		⊕ Screw terminals	
• Solid	mm ²	1 x (0.5 ... 6)	
• Finely stranded without/with end sleeve	mm ²	1 x (0.5 ... 6)	
• Stranded	mm ²	1 x (0.5 ... 6)	
• AWG cables, solid or stranded	AWG	1 x (20 ... 10)	
• Tightening torque	Nm	0.6 ... 0.8	
• Corresponding opening tool		Cross-tip screwdriver PZ2	
Ⓢ and Ⓜ rated data			
Rated operational voltage U_e	V	480	
Rated insulation voltage U_i	V	600	
Uninterrupted current, at 40 °C	A	25	
Short-circuit protection ¹⁾			
• At 600 V	kA	5	
• CLASS RK5 fuse	A	100	
• Circuit breakers with overload protection acc. to UL 489	A	100	
Combination motor controllers type E according to UL 508			
	At 480 V	Type	3RV202
		A	22
		kA	65
	At 600 V	Type	3RV202
		A	22
		kA	10

¹⁾ For more information about short-circuit values, e.g. for protection against high short-circuit currents, see the UL reports of the individual devices, www.siemens.com/sirius/manuals.

Motor Starter Protectors/Circuit Breakers

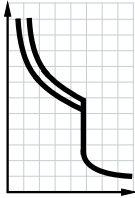
SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

For motor protection **IE3/IE4 ready**

Selection and ordering data

CLASS 10, without auxiliary switches

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41E



3RV2011-0AA10



3RV2011-0EA20

Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	SD	Spring-type terminals	
I_n				I_{cu}		Article No.	Price per PU	Article No.	Price per PU
A	kW	A	A	kA	d				
Size S00									
0.16	0.04	0.11 ... 0.16	2.1	100	▶	3RV2011-0AA10	▶	3RV2011-0AA20	
0.2	0.06	0.14 ... 0.2	2.6	100	▶	3RV2011-0BA10	▶	3RV2011-0BA20	
0.25	0.06	0.18 ... 0.25	3.3	100	▶	3RV2011-0CA10	▶	3RV2011-0CA20	
0.32	0.09	0.22 ... 0.32	4.2	100	▶	3RV2011-0DA10	▶	3RV2011-0DA20	
0.4	0.09	0.28 ... 0.4	5.2	100	▶	3RV2011-0EA10	▶	3RV2011-0EA20	
0.5	0.12	0.35 ... 0.5	6.5	100	▶	3RV2011-0FA10	▶	3RV2011-0FA20	
0.63	0.18	0.45 ... 0.63	8.2	100	▶	3RV2011-0GA10	▶	3RV2011-0GA20	
0.8	0.18	0.55 ... 0.8	10	100	▶	3RV2011-0HA10	▶	3RV2011-0HA20	
1	0.25	0.7 ... 1	13	100	▶	3RV2011-0JA10	▶	3RV2011-0JA20	
1.25	0.37	0.9 ... 1.25	16	100	▶	3RV2011-0KA10	▶	3RV2011-0KA20	
1.6	0.55	1.1 ... 1.6	21	100	▶	3RV2011-1AA10	▶	3RV2011-1AA20	
2	0.75	1.4 ... 2	26	100	▶	3RV2011-1BA10	▶	3RV2011-1BA20	
2.5	0.75	1.8 ... 2.5	33	100	▶	3RV2011-1CA10	▶	3RV2011-1CA20	
3.2	1.1	2.2 ... 3.2	42	100	▶	3RV2011-1DA10	▶	3RV2011-1DA20	
4	1.5	2.8 ... 4	52	100	▶	3RV2011-1EA10	▶	3RV2011-1EA20	
5	1.5	3.5 ... 5	65	100	▶	3RV2011-1FA10	▶	3RV2011-1FA20	
6.3	2.2	4.5 ... 6.3	82	100	▶	3RV2011-1GA10	▶	3RV2011-1GA20	
8	3	5.5 ... 8	104	100	▶	3RV2011-1HA10	▶	3RV2011-1HA20	
10	4	7 ... 10	130	100	▶	3RV2011-1JA10	▶	3RV2011-1JA20	
12.5	5.5	9 ... 12.5	163	100	▶	3RV2011-1KA10	▶	3RV2011-1KA20	
16	7.5	10 ²⁾ ... 16	208	55	▶	3RV2011-4AA10	▶	3RV2011-4AA20	

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ The setting range of the thermal overload releases has been extended.

Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

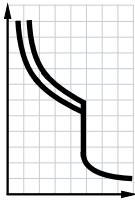
SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

IE3/IE4 ready

For motor protection

CLASS 10, without auxiliary switches

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41E



3RV221-4AA10



3RV221-4AA20

Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	SD	Spring-type terminals	
I_n				I_{cu}		Article No.	Price per PU	Article No.	Price per PU
A	kW	A	A	kA	d		d		
Size S0									
0.16	0.04	0.11 ... 0.16	2.1	100		NEW ▶ 3RV221-0AA10		--	
0.2	0.06	0.14 ... 0.2	2.6	100		NEW ▶ 3RV221-0BA10		--	
0.25	0.06	0.18 ... 0.25	3.3	100		NEW ▶ 3RV221-0CA10		--	
0.32	0.09	0.22 ... 0.32	4.2	100		NEW ▶ 3RV221-0DA10		--	
0.4	0.09	0.28 ... 0.4	5.2	100		NEW ▶ 3RV221-0EA10		--	
0.5	0.12	0.35 ... 0.5	6.5	100		NEW ▶ 3RV221-0FA10		--	
0.63	0.18	0.45 ... 0.63	8.2	100	2	3RV221-0GA10	2	3RV221-0GA20	
0.8	0.18	0.55 ... 0.8	10	100	2	3RV221-0HA10	2	3RV221-0HA20	
1	0.25	0.7 ... 1	13	100	2	3RV221-0JA10	2	3RV221-0JA20	
1.25	0.37	0.9 ... 1.25	16	100	2	3RV221-0KA10	2	3RV221-0KA20	
1.6	0.55	1.1 ... 1.6	21	100	2	3RV221-1AA10	2	3RV221-1AA20	
2	0.75	1.4 ... 2	26	100	2	3RV221-1BA10	2	3RV221-1BA20	
2.5	0.75	1.8 ... 2.5	33	100	2	3RV221-1CA10	2	3RV221-1CA20	
3.2	1.1	2.2 ... 3.2	42	100	2	3RV221-1DA10	2	3RV221-1DA20	
4	1.5	2.8 ... 4	52	100	2	3RV221-1EA10	2	3RV221-1EA20	
5	1.5	3.5 ... 5	65	100	2	3RV221-1FA10	2	3RV221-1FA20	
6.3	2.2	4.5 ... 6.3	82	100	2	3RV221-1GA10	2	3RV221-1GA20	
8	3	5.5 ... 8	104	100	2	3RV221-1HA10	2	3RV221-1HA20	
10	4	7 ... 10	130	100	2	3RV221-1JA10	2	3RV221-1JA20	
12.5	5.5	9 ... 12.5	163	100	2	3RV221-1KA10	2	3RV221-1KA20	
16	7.5	10 ²⁾ ... 16	208	55	▶	3RV221-4AA10	▶	3RV221-4AA20	
20	7.5	13 ²⁾ ... 20	260	55	▶	3RV221-4BA10	▶	3RV221-4BA20	
22	11	16 ²⁾ ... 22	286	55	▶	3RV221-4CA10	▶	3RV221-4CA20	
25	11	18 ²⁾ ... 25	325	55	▶	3RV221-4DA10	▶	3RV221-4DA20	
28	15	23 ... 28	364	55	▶	3RV221-4NA10	▶	3RV221-4NA20	
32 ³⁾	15	27 ... 32	400	55	▶	3RV221-4EA10	▶	3RV221-4EA20	
36 ⁴⁾	18.5	30 ... 36	432	20	▶	3RV221-4PA10		--	
40 ⁴⁾	18.5	34 ... 40	480	20	▶	3RV221-4FA10		--	

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ The setting range of the thermal overload releases has been extended.

³⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

⁴⁾ The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required. For use with IE3/IE4 motors we recommend using 3RV2 motor starter protectors size S2.

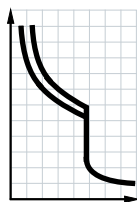
Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

For motor protection **IE3/IE4 ready**

CLASS 10, without auxiliary switches



3RV2031-4SA10



3RV2032-4RA10



3RV2042-4MA10

Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}		Article No.	Price per PU		
A	kW	A	A	kA	d				
Size S2									
14	5.5	9.5 ... 14	208	65	▶	3RV2031-4SA10		1	1 unit 41E
17	7.5	12 ... 17	260	65	▶	3RV2031-4TA10		1	1 unit 41E
20	7.5	14 ... 20	260	65	▶	3RV2031-4BA10		1	1 unit 41E
25	11	18 ... 25	325	65	▶	3RV2031-4DA10		1	1 unit 41E
32	15	22 ... 32	416	65	▶	3RV2031-4EA10		1	1 unit 41E
36	18.5	28 ... 36	520	65	▶	3RV2031-4PA10		1	1 unit 41E
40	18.5	32 ... 40	585	65	▶	3RV2031-4UA10		1	1 unit 41E
45	22	35 ... 45	650	65	▶	3RV2031-4VA10		1	1 unit 41E
52	22	42 ... 52	741	65	▶	3RV2031-4WA10		1	1 unit 41E
59	30	49 ... 59	845	65	▶	3RV2031-4XA10		1	1 unit 41E
65	30	54 ... 65	845	65	▶	3RV2031-4JA10		1	1 unit 41E
73	37	62 ... 73	949	65	▶	3RV2031-4KA10		1	1 unit 41E
80 ²⁾	37	70 ... 80	1 040	65	▶	3RV2031-4RA10		1	1 unit 41E
Size S2, with increased switching capacity									
14	5.5	9.5 ... 14	208	100	▶	3RV2032-4SA10		1	1 unit 41E
17	7.5	12 ... 17	260	100	▶	3RV2032-4TA10		1	1 unit 41E
20	7.5	14 ... 20	260	100	▶	3RV2032-4BA10		1	1 unit 41E
25	11	18 ... 25	325	100	▶	3RV2032-4DA10		1	1 unit 41E
32	15	22 ... 32	416	100	▶	3RV2032-4EA10		1	1 unit 41E
36	18.5	28 ... 36	520	100	▶	3RV2032-4PA10		1	1 unit 41E
40	18.5	32 ... 40	585	100	▶	3RV2032-4UA10		1	1 unit 41E
45	22	35 ... 45	650	100	▶	3RV2032-4VA10		1	1 unit 41E
52	22	42 ... 52	741	100	▶	3RV2032-4WA10		1	1 unit 41E
59	30	49 ... 59	845	100	▶	3RV2032-4XA10		1	1 unit 41E
65	30	54 ... 65	845	100	▶	3RV2032-4JA10		1	1 unit 41E
73	37	62 ... 73	949	100	▶	3RV2032-4KA10		1	1 unit 41E
80 ²⁾	37	70 ... 80	1 040	100	▶	3RV2032-4RA10		1	1 unit 41E
Size S3									
40	18.5	28 ... 40	520	65	1	3RV2041-4FA10		1	1 unit 41E
50	22	36 ... 50	650	65	1	3RV2041-4HA10		1	1 unit 41E
63	30	45 ... 63	819	65	1	3RV2041-4JA10		1	1 unit 41E
75	37	57 ... 75	975	65	1	3RV2041-4KA10		1	1 unit 41E
84	45	65 ... 84	1 170	65	1	3RV2041-4RA10		1	1 unit 41E
93	45	75 ... 93	1 300	65	1	3RV2041-4YA10		1	1 unit 41E
100 ³⁾	45, 55	80 ... 100	1 300	65	1	3RV2041-4MA10		1	1 unit 41E
Size S3, with increased switching capacity									
40	18.5	28 ... 40	520	100	1	3RV2042-4FA10		1	1 unit 41E
50	22	36 ... 50	650	100	1	3RV2042-4HA10		1	1 unit 41E
63	30	45 ... 63	819	100	1	3RV2042-4JA10		1	1 unit 41E
75	37	57 ... 75	975	100	1	3RV2042-4KA10		1	1 unit 41E
84	45	65 ... 84	1 170	100	1	3RV2042-4RA10		1	1 unit 41E
93	45	75 ... 93	1 300	100	1	3RV2042-4YA10		1	1 unit 41E
100 ³⁾	45, 55	80 ... 100	1 300	100	1	3RV2042-4MA10		1	1 unit 41E

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Suitable for use with IE3/IE4 motors up to a starting current of 720 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S3.

³⁾ Suitable for use with IE3/IE4 motors up to a starting current of 780 A. For higher starting currents we recommend using 3VA circuit breakers (see Catalog LV 10).

Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

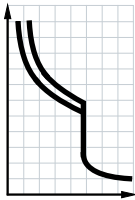
SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

IE3/IE4 ready

For motor protection

CLASS 10, with transverse auxiliary switch (1 NO + 1 NC)

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41E



3RV2011-4AA15
with integrated transverse
auxiliary switch



3RV2011-0EA25
with integrated transverse
auxiliary switch



3RV2021-4AA15
with integrated transverse
auxiliary switch



3RV2021-4AA25
with integrated transverse
auxiliary switch

Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	SD	Spring-type terminals	
I_n			$I >$	I_{cu}	d	Article No.	Price per PU	Article No.	Price per PU
A	kW	A	A	kA	d				
Size S00									
0.16	0.04	0.11 ... 0.16	2.1	100	▶	3RV2011-0AA15	▶	3RV2011-0AA25	
0.2	0.06	0.14 ... 0.2	2.6	100	▶▶	3RV2011-0BA15	▶▶	3RV2011-0BA25	
0.25	0.06	0.18 ... 0.25	3.3	100	▶▶▶	3RV2011-0CA15	▶▶▶	3RV2011-0CA25	
0.32	0.09	0.22 ... 0.32	4.2	100	▶▶▶▶	3RV2011-0DA15	▶▶▶▶	3RV2011-0DA25	
0.4	0.09	0.28 ... 0.4	5.2	100	▶▶▶▶▶	3RV2011-0EA15	▶▶▶▶▶	3RV2011-0EA25	
0.5	0.12	0.35 ... 0.5	6.5	100	▶▶▶▶▶▶	3RV2011-0FA15	▶▶▶▶▶▶	3RV2011-0FA25	
0.63	0.18	0.45 ... 0.63	8.2	100	▶▶▶▶▶▶▶	3RV2011-0GA15	▶▶▶▶▶▶▶	3RV2011-0GA25	
0.8	0.18	0.55 ... 0.8	10	100	▶▶▶▶▶▶▶▶	3RV2011-0HA15	▶▶▶▶▶▶▶▶	3RV2011-0HA25	
1	0.25	0.7 ... 1	13	100	▶▶▶▶▶▶▶▶▶	3RV2011-0JA15	▶▶▶▶▶▶▶▶▶	3RV2011-0JA25	
1.25	0.37	0.9 ... 1.25	16	100	▶▶▶▶▶▶▶▶▶▶	3RV2011-0KA15	▶▶▶▶▶▶▶▶▶▶	3RV2011-0KA25	
1.6	0.55	1.1 ... 1.6	21	100	▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1AA15	▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1AA25	
2	0.75	1.4 ... 2	26	100	▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1BA15	▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1BA25	
2.5	0.75	1.8 ... 2.5	33	100	▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1CA15	▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1CA25	
3.2	1.1	2.2 ... 3.2	42	100	▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1DA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1DA25	
4	1.5	2.8 ... 4	52	100	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1EA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1EA25	
5	1.5	3.5 ... 5	65	100	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1FA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1FA25	
6.3	2.2	4.5 ... 6.3	82	100	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1GA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1GA25	
8	3	5.5 ... 8	104	100	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1HA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1HA25	
10	4	7 ... 10	130	100	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1JA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1JA25	
12.5	5.5	9 ... 12.5	163	100	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1KA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-1KA25	
16	7.5	10 ²⁾ ... 16	208	55	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-4AA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2011-4AA25	
Size S0									
16	7.5	10 ²⁾ ... 16	208	55	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4AA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4AA25	
20	7.5	13 ²⁾ ... 20	260	55	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4BA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4BA25	
22	11	16 ²⁾ ... 22	286	55	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4CA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4CA25	
25	11	18 ²⁾ ... 25	325	55	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4DA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4DA25	
28	15	23 ... 28	364	55	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4NA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4NA25	
32 ³⁾	15	27 ... 32	400	55	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4EA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4EA25	
36 ⁴⁾	18.5	30 ... 36	432	20	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4PA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	---	
40 ⁴⁾	18.5	34 ... 40	480	20	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	3RV2021-4FA15	▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶▶	---	

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ The setting range of the thermal overload releases has been extended.

³⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

⁴⁾ The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required. For use with IE3/IE4 motors we recommend using 3RV2 motor starter protectors size S2.

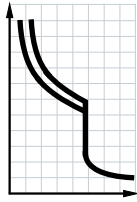
Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

For motor protection **IE3/IE4 ready**

CLASS 10, with integrated auxiliary switch (1 NO + 1 NC)






3RV2031-4SA15
With integrated
auxiliary switch



3RV2032-4SA15
With integrated
auxiliary switch



3RV2041-4FA15
With integrated
auxiliary switch

Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
I_n				I_{cu}		Article No.	Price per PU		
A	kW	A	A	kA	d				
Size S2									
14	5.5	9.5 ... 14	208	65	5	3RV2031-4SA15		1	1 unit 41E
17	7.5	12 ... 17	260	65	5	3RV2031-4TA15		1	1 unit 41E
20	7.5	14 ... 20	260	65	5	3RV2031-4BA15		1	1 unit 41E
25	11	18 ... 25	325	65	5	3RV2031-4DA15		1	1 unit 41E
32	15	22 ... 32	416	65	▶	3RV2031-4EA15		1	1 unit 41E
36	18.5	28 ... 36	520	65	▶▶	3RV2031-4PA15		1	1 unit 41E
40	18.5	32 ... 40	585	65	▶▶▶	3RV2031-4UA15		1	1 unit 41E
45	22	35 ... 45	650	65	▶▶▶▶	3RV2031-4VA15		1	1 unit 41E
52	22	42 ... 52	741	65	▶▶▶▶▶	3RV2031-4WA15		1	1 unit 41E
59	30	49 ... 59	845	65	▶▶▶▶▶▶	3RV2031-4XA15		1	1 unit 41E
65	30	54 ... 65	845	65	▶▶▶▶▶▶▶	3RV2031-4JA15		1	1 unit 41E
73	37	62 ... 73	949	65	▶▶▶▶▶▶▶▶	3RV2031-4KA15		1	1 unit 41E
80 ²⁾	37	70 ... 80	1 040	65	▶▶▶▶▶▶▶▶▶	3RV2031-4RA15		1	1 unit 41E
Size S2, with increased switching capacity									
14	5.5	9.5 ... 14	208	10	5	3RV2032-4SA15		1	1 unit 41E
17	7.5	12 ... 17	260	100	5	3RV2032-4TA15		1	1 unit 41E
20	7.5	14 ... 20	260	100	5	3RV2032-4BA15		1	1 unit 41E
25	11	18 ... 25	325	100	5	3RV2032-4DA15		1	1 unit 41E
32	15	22 ... 32	416	100	5	3RV2032-4EA15		1	1 unit 41E
36	18.5	28 ... 36	520	100	5	3RV2032-4PA15		1	1 unit 41E
40	18.5	32 ... 40	585	100	5	3RV2032-4UA15		1	1 unit 41E
45	22	35 ... 45	650	100	5	3RV2032-4VA15		1	1 unit 41E
52	22	42 ... 52	741	100	5	3RV2032-4WA15		1	1 unit 41E
59	30	49 ... 59	845	100	5	3RV2032-4XA15		1	1 unit 41E
65	30	54 ... 65	845	100	5	3RV2032-4JA15		1	1 unit 41E
73	37	62 ... 73	949	100	5	3RV2032-4KA15		1	1 unit 41E
80 ²⁾	37	70 ... 80	1 040	100	5	3RV2032-4RA15		1	1 unit 41E
Size S3									
40	18.5	28 ... 40	520	65	5	3RV2041-4FA15		1	1 unit 41E
50	22	36 ... 50	650	65	5	3RV2041-4HA15		1	1 unit 41E
63	30	45 ... 63	819	65	2	3RV2041-4JA15		1	1 unit 41E
75	37	57 ... 75	975	65	5	3RV2041-4KA15		1	1 unit 41E
84	45	65 ... 84	1 170	65	X	3RV2041-4RA15		1	1 unit 41E
93	45	75 ... 93	1 300	65	X	3RV2041-4YA15		1	1 unit 41E
100 ³⁾	45, 55	80 ... 100	1 300	65	5	3RV2041-4MA15		1	1 unit 41E

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Suitable for use with IE3/IE4 motors up to a starting current of 720 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S3.

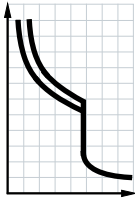
³⁾ Suitable for use with IE3/IE4 motors up to a starting current of 780 A. For higher starting currents we recommend using 3VA circuit breakers (see Catalog LV 10).

Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

IE3/IE4 ready For motor protection

CLASS 20, without auxiliary switches


3RV2031-4SB10






3RV2031-4WB10



3RV2042-4FB10



3RV2042-4KB10

Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
I_n				I_{cu}	d	Article No.	Price per PU		
A	kW	A	A	kA					
Size S2									
14	5.5	9.5 ... 14	208	65	2	3RV2031-4SB10	1	1 unit	41E
17	7.5	12 ... 17	260	65	2	3RV2031-4TB10	1	1 unit	41E
20	7.5	14 ... 20	260	65	▶	3RV2031-4BB10	1	1 unit	41E
25	11	18 ... 25	325	65	▶	3RV2031-4DB10	1	1 unit	41E
32	15	22 ... 32	416	65	▶	3RV2031-4EB10	1	1 unit	41E
36	18.5	28 ... 36	520	65	▶	3RV2031-4PB10	1	1 unit	41E
40	18.5	32 ... 40	585	65	▶	3RV2031-4UB10	1	1 unit	41E
45	22	35 ... 45	650	65	▶	3RV2031-4VB10	1	1 unit	41E
52	22	42 ... 52	741	65	▶	3RV2031-4WB10	1	1 unit	41E
59	30	49 ... 59	845	65	▶	3RV2031-4XB10	1	1 unit	41E
65	30	54 ... 65	845	65	▶	3RV2031-4JB10	1	1 unit	41E
Size S3, with increased switching capacity									
40	18.5	28 ... 40	520	100	2	3RV2042-4FB10	1	1 unit	41E
50	22	36 ... 50	650	100	2	3RV2042-4HB10	1	1 unit	41E
63	30	45 ... 63	819	100	2	3RV2042-4JB10	1	1 unit	41E
75	37	57 ... 75	975	100	2	3RV2042-4KB10	1	1 unit	41E
84	45	65 ... 84	1 170	100	2	3RV2042-4RB10	1	1 unit	41E
93	45	75 ... 93	1 300	100	2	3RV2042-4YB10	1	1 unit	41E
100 ²⁾	45, 55	80 ... 100	1 300	100	2	3RV2042-4MB10	1	1 unit	41E

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Suitable for use with IE3/IE4 motors up to a starting current of 780 A. For higher starting currents we recommend using 3VA circuit breakers (see Catalog LV 10).

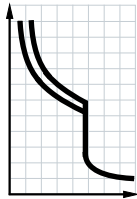
Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

For motor protection **IE3/IE4 ready**




CLASS 20, with integrated auxiliary switch (1 NO + 1 NC)



3RV2031-4SB15



3RV2031-4WB15

Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
I_n				I_{cu}		Article No.	Price per PU		
A	kW	A	A	kA	d				
Size S2									
14	5.5	9.5 ... 14	208	65	5	3RV2031-4SB15	1	1 unit	41E
17	7.5	12 ... 17	260	65	5	3RV2031-4TB15	1	1 unit	41E
20	7.5	14 ... 20	260	65	5	3RV2031-4BB15	1	1 unit	41E
25	11	18 ... 25	325	65	5	3RV2031-4DB15	1	1 unit	41E
32	15	22 ... 32	416	65	5	3RV2031-4EB15	1	1 unit	41E
36	18.5	28 ... 36	520	65	5	3RV2031-4PB15	1	1 unit	41E
40	18.5	32 ... 40	585	65	5	3RV2031-4UB15	1	1 unit	41E
45	22	35 ... 45	650	65	5	3RV2031-4VB15	1	1 unit	41E
52	22	42 ... 52	741	65	5	3RV2031-4WB15	1	1 unit	41E
59	30	49 ... 59	845	65	5	3RV2031-4XB15	1	1 unit	41E
65	30	54 ... 65	845	65	▶	3RV2031-4JB15	1	1 unit	41E

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

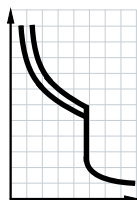
Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

IE3/IE4 ready For motor protection with overload relay function

Selection and ordering data

CLASS 10, with overload relay function (automatic RESET), without auxiliary switches


3RV2111-4FA10



3RV2111-0BA10

Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
I_n				I_{cu}		Article No.	Price per PU		
A	kW	A	A	kA	d				
Size S00²⁾									
0.16	0.04	0.11 ... 0.16	2.1	100	2	3RV2111-0AA10		1	1 unit 41E
0.2	0.06	0.14 ... 0.2	2.6	100	2	3RV2111-0BA10		1	1 unit 41E
0.25	0.06	0.18 ... 0.25	3.3	100	2	3RV2111-0CA10		1	1 unit 41E
0.32	0.09	0.22 ... 0.32	4.2	100	2	3RV2111-0HA10		1	1 unit 41E
0.4	0.09	0.28 ... 0.4	5.2	100	2	3RV2111-0EA10		1	1 unit 41E
0.5	0.12	0.35 ... 0.5	6.5	100	2	3RV2111-0FA10		1	1 unit 41E
0.63	0.18	0.45 ... 0.63	8.2	100	2	3RV2111-0GA10		1	1 unit 41E
0.8	0.18	0.55 ... 0.8	10	100	2	3RV2111-0HA10		1	1 unit 41E
1	0.25	0.7 ... 1	13	100	2	3RV2111-0JA10		1	1 unit 41E
1.25	0.37	0.9 ... 1.25	16	100	2	3RV2111-0KA10		1	1 unit 41E
1.6	0.55	1.1 ... 1.6	21	100	2	3RV2111-1AA10		1	1 unit 41E
2	0.75	1.4 ... 2	26	100	2	3RV2111-1BA10		1	1 unit 41E
2.5	0.75	1.8 ... 2.5	33	100	2	3RV2111-1CA10		1	1 unit 41E
3.2	1.1	2.2 ... 3.2	42	100	2	3RV2111-1DA10		1	1 unit 41E
4	1.5	2.8 ... 4	52	100	2	3RV2111-1EA10		1	1 unit 41E
5	1.5	3.5 ... 5	65	100	2	3RV2111-1FA10		1	1 unit 41E
6.3	2.2	4.5 ... 6.3	82	100	2	3RV2111-1GA10		1	1 unit 41E
8	3	5.5 ... 8	104	100	2	3RV2111-1HA10		1	1 unit 41E
10	4	7 ... 10	130	100	2	3RV2111-1JA10		1	1 unit 41E
12.5	5.5	9 ... 12.5	163	100	2	3RV2111-1KA10		1	1 unit 41E
16	7.5	10 ³⁾ ... 16	208	55	2	3RV2111-4AA10		1	1 unit 41E
Size S0²⁾									
16	7.5	10 ³⁾ ... 16	208	55	2	3RV2121-4AA10		1	1 unit 41E
20	7.5	13 ³⁾ ... 20	260	55	2	3RV2121-4BA10		1	1 unit 41E
22	11	16 ³⁾ ... 22	286	55	2	3RV2121-4CA10		1	1 unit 41E
25	11	18 ³⁾ ... 25	325	55	2	3RV2121-4DA10		1	1 unit 41E
28	15	23 ... 28	364	55	2	3RV2121-4NA10		1	1 unit 41E
32 ⁴⁾	15	27 ... 32	400	55	2	3RV2121-4EA10		1	1 unit 41E

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Accessories for mounting on the right and 3RV2915 three-phase busbars cannot be used.

³⁾ The setting range of the thermal overload releases has been extended.

⁴⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

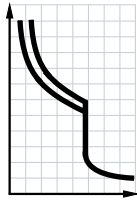
Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

For motor protection with overload relay function

CLASS 10, with overload relay function (automatic RESET), without auxiliary switches



3RV2131-4WB10



3RV2142-4FA10

Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
I_n				I_{cu}		Article No.	Price per PU			
A	kW	A	A	kA	d					
Size S2²⁾										
14	5.5	9.5 ... 14	208	65	2	3RV2131-4SA10		1	1 unit	41E
17	7.5	12 ... 17	260	65	2	3RV2131-4TA10		1	1 unit	41E
20	7.5	14 ... 20	260	65	2	3RV2131-4BA10		1	1 unit	41E
25	11	18 ... 25	325	65	2	3RV2131-4DA10		1	1 unit	41E
32	15	22 ... 32	416	65	2	3RV2131-4EA10		1	1 unit	41E
36	18.5	28 ... 36	520	65	2	3RV2131-4PA10		1	1 unit	41E
40	18.5	32 ... 40	585	65	2	3RV2131-4UA10		1	1 unit	41E
45	22	35 ... 45	650	65	2	3RV2131-4VA10		1	1 unit	41E
52	32	42 ... 52	741	65	2	3RV2131-4WA10		1	1 unit	41E
59	30	49 ... 59	845	65	2	3RV2131-4XA10		1	1 unit	41E
65	30	54 ... 65	845	65	2	3RV2131-4JA10		1	1 unit	41E
73	37	62 ... 73	949	65	2	3RV2131-4KA10		1	1 unit	41E
80 ³⁾	37	70 ... 80	1 040	65	2	3RV2131-4RA10		1	1 unit	41E
Size S3, with increased switching capacity²⁾										
40	18.5	28 ... 40	520	100	2	3RV2142-4FA10		1	1 unit	41E
50	22	36 ... 50	650	100	2	3RV2142-4HA10		1	1 unit	41E
63	30	45 ... 63	819	100	2	3RV2142-4JA10		1	1 unit	41E
75	37	57 ... 75	975	100	2	3RV2142-4KA10		1	1 unit	41E
84	45	65 ... 84	1 170	100	2	3RV2142-4RA10		1	1 unit	41E
93	45	75 ... 93	1 300	100	2	3RV2142-4YA10		1	1 unit	41E
100 ⁴⁾	45, 55	80 ... 100	1 300	100	2	3RV2142-4MA10		1	1 unit	41E

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Accessories for mounting on the right and 3RV2915 three-phase busbars cannot be used.

³⁾ Suitable for use with IE3/IE4 motors up to a starting current of 720 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S3.

⁴⁾ Suitable for use with IE3/IE4 motors up to a starting current of 780 A. For higher starting currents we recommend using 3VA circuit breakers (see Catalog LV 10).

Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

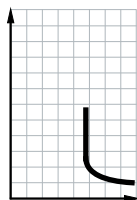
SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

IE3/IE4 ready For starter combinations

Selection and ordering data

Without auxiliary switches

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41E



3RV2311-4AC10



3RV2311-0JC20



3RV2321-4AC10



3RV2321-4AC20

Rated current	Suitable for three-phase motors ¹⁾ with P	Thermal overload release ²⁾	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals		Spring-type terminals	
						Article No.	Price per PU	Article No.	Price per PU
I_n			$I >$	I_{cu}	d				
A	kW	A	A	kA					
Size S00									
0.16	0.04	Without	2.1	100	5	3RV2311-0AC10	5	3RV2311-0AC20	
0.2	0.06	Without	2.6	100	5	3RV2311-0BC10	5	3RV2311-0BC20	
0.25	0.06	Without	3.3	100	5	3RV2311-0CC10	5	3RV2311-0CC20	
0.32	0.09	Without	4.2	100	5	3RV2311-0DC10	5	3RV2311-0DC20	
0.4	0.09	Without	5.2	100	5	3RV2311-0EC10	5	3RV2311-0EC20	
0.5	0.12	Without	6.5	100	5	3RV2311-0FC10	5	3RV2311-0FC20	
0.63	0.18	Without	8.2	100	5	3RV2311-0GC10	5	3RV2311-0GC20	
0.8	0.18	Without	10	100	5	3RV2311-0HC10	5	3RV2311-0HC20	
1	0.25	Without	13	100	2	3RV2311-0JC10	5	3RV2311-0JC20	
1.25	0.37	Without	16	100	2	3RV2311-0KC10	5	3RV2311-0KC20	
1.6	0.55	Without	21	100	2	3RV2311-1AC10	5	3RV2311-1AC20	
2	0.75	Without	26	100	2	3RV2311-1BC10	5	3RV2311-1BC20	
2.5	0.75	Without	33	100	2	3RV2311-1CC10	5	3RV2311-1CC20	
3.2	1.1	Without	42	100	2	3RV2311-1DC10	5	3RV2311-1DC20	
4	1.5	Without	52	100	2	3RV2311-1EC10	5	3RV2311-1EC20	
5	1.5	Without	65	100	2	3RV2311-1FC10	5	3RV2311-1FC20	
6.3	2.2	Without	82	100	2	3RV2311-1GC10	5	3RV2311-1GC20	
8	3	Without	104	100	2	3RV2311-1HC10	2	3RV2311-1HC20	
10	4	Without	130	100	2	3RV2311-1JC10	2	3RV2311-1JC20	
12.5	5.5	Without	163	100	2	3RV2311-1KC10	2	3RV2311-1KC20	
16	7.5	Without	208	55	2	3RV2311-4AC10	2	3RV2311-4AC20	
Size S0									
1.6	0.55	Without	21	100	5	3RV2321-1AC10	5	3RV2321-1AC20	
2	0.75	Without	26	100	5	3RV2321-1BC10	5	3RV2321-1BC20	
2.5	0.75	Without	33	100	5	3RV2321-1CC10	5	3RV2321-1CC20	
3.2	1.1	Without	42	100	5	3RV2321-1DC10	5	3RV2321-1DC20	
4	1.5	Without	52	100	5	3RV2321-1EC10	5	3RV2321-1EC20	
5	1.5	Without	65	100	5	3RV2321-1FC10	5	3RV2321-1FC20	
6.3	2.2	Without	82	100	2	3RV2321-1GC10	5	3RV2321-1GC20	
8	3	Without	104	100	2	3RV2321-1HC10	5	3RV2321-1HC20	
10	4	Without	130	100	2	3RV2321-1JC10	5	3RV2321-1JC20	
12.5	5.5	Without	163	100	2	3RV2321-1KC10	5	3RV2321-1KC20	
16	7.5	Without	208	55	2	3RV2321-4AC10	2	3RV2321-4AC20	
20	7.5	Without	260	55	2	3RV2321-4BC10	2	3RV2321-4BC20	
22	11	Without	286	55	2	3RV2321-4CC10	5	3RV2321-4CC20	
25	11	Without	325	55	2	3RV2321-4DC10	2	3RV2321-4DC20	
28	15	Without	364	55	5	3RV2321-4NC10	5	3RV2321-4NC20	
32 ³⁾	15	Without	400	55	2	3RV2321-4EC10	2	3RV2321-4EC20	
36 ⁴⁾	18.5	Without	432	20	2	3RV2321-4PC10		--	
40 ⁴⁾	18.5	Without	480	20	2	3RV2321-4FC10		--	

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ For overload protection of the motors, appropriate overload relays must be used.

³⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S2.

⁴⁾ The devices must not be mounted side-by-side and they must not be assembled with link modules with contactors. A lateral clearance of 9 mm is required. For use with IE3/IE4 motors we recommend using 3RV2 motor starter protectors size S2.

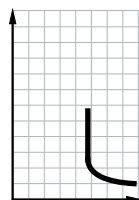
Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

For starter combinations **IE3/IE4 ready**

Without auxiliary switches



3RV2331-4SC10



3RV2331-4WC10



3RV2332-4SC10



3RV2332-4WC10



3RV2341-4FC10

Rated current	Suitable for three-phase motors ¹⁾ with P	Thermal overload release ²⁾	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}	d	Article No.	Price per PU		
A	kW	A	A	kA					
Size S2									
14	5.5	Without	208	65	2	3RV2331-4SC10		1	1 unit 41E
17	7.5	Without	260	65	2	3RV2331-4TC10		1	1 unit 41E
20	7.5	Without	260	65	2	3RV2331-4BC10		1	1 unit 41E
25	11	Without	325	65	2	3RV2331-4DC10		1	1 unit 41E
32	15	Without	416	65	▶	3RV2331-4EC10		1	1 unit 41E
36	18.5	Without	520	65	2	3RV2331-4PC10		1	1 unit 41E
40	18.5	Without	585	65	▶	3RV2331-4UC10		1	1 unit 41E
45	22	Without	650	65	▶	3RV2331-4VC10		1	1 unit 41E
52	22	Without	741	65	▶	3RV2331-4WC10		1	1 unit 41E
59	30	Without	845	65	2	3RV2331-4XC10		1	1 unit 41E
65	30	Without	845	65	▶	3RV2331-4JC10		1	1 unit 41E
73	37	Without	949	65	2	3RV2331-4KC10		1	1 unit 41E
80 ³⁾	37	Without	1 040	65	2	3RV2331-4RC10		1	1 unit 41E
Size S2, with increased switching capacity									
14	5.5	Without	208	100	2	3RV2332-4SC10		1	1 unit 41E
17	7.5	Without	260	100	2	3RV2332-4TC10		1	1 unit 41E
20	7.5	Without	260	100	2	3RV2332-4BC10		1	1 unit 41E
25	11	Without	325	100	2	3RV2332-4DC10		1	1 unit 41E
32	15	Without	416	100	2	3RV2332-4EC10		1	1 unit 41E
36	18.5	Without	520	100	2	3RV2332-4PC10		1	1 unit 41E
40	18.5	Without	585	100	2	3RV2332-4UC10		1	1 unit 41E
45	22	Without	650	100	2	3RV2332-4VC10		1	1 unit 41E
52	22	Without	741	100	2	3RV2332-4WC10		1	1 unit 41E
59	30	Without	845	100	2	3RV2332-4XC10		1	1 unit 41E
65	30	Without	845	100	2	3RV2332-4JC10		1	1 unit 41E
73	37	Without	949	100	2	3RV2332-4KC10		1	1 unit 41E
80 ³⁾	37	Without	1 040	100	2	3RV2332-4RC10		1	1 unit 41E
Size S3									
40	18.5	Without	520	65	2	3RV2341-4FC10		1	1 unit 41E
50	22	Without	650	65	2	3RV2341-4HC10		1	1 unit 41E
63	30	Without	819	65	2	3RV2341-4JC10		1	1 unit 41E
75	37	Without	975	65	2	3RV2341-4KC10		1	1 unit 41E
84	45	Without	1 170	65	2	3RV2341-4RC10		1	1 unit 41E
93	45	Without	1 300	65	2	3RV2341-4YC10		1	1 unit 41E
100 ⁴⁾	45, 55	Without	1 300	65	2	3RV2341-4MC10		1	1 unit 41E
Size S3, with increased switching capacity									
40	18.5	Without	520	100	2	3RV2342-4FC10		1	1 unit 41E
50	22	Without	650	100	2	3RV2342-4HC10		1	1 unit 41E
63	30	Without	819	100	2	3RV2342-4JC10		1	1 unit 41E
75	37	Without	975	100	2	3RV2342-4KC10		1	1 unit 41E
84	45	Without	1 170	100	2	3RV2342-4RC10		1	1 unit 41E
93	45	Without	1 300	100	2	3RV2342-4YC10		1	1 unit 41E
100 ⁴⁾	45, 55	Without	1 300	100	2	3RV2342-4MC10		1	1 unit 41E

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ For overload protection of the motors, appropriate overload relays must be used.

³⁾ Suitable for use with IE3/IE4 motors up to a starting current of 720 A. For higher starting currents we recommend using 3RV2 motor starter protectors size S3.

⁴⁾ Suitable for use with IE3/IE4 motors up to a starting current of 780 A. For higher starting currents we recommend using 3VA circuit breakers (see Catalog LV 10).

Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

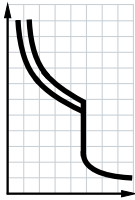
For transformer protection

Selection and ordering data

CLASS 10, without auxiliary switches

Motor starter protectors for the protection of transformers with high inrush current

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41E



3RV2411-0AA10



3RV2411-0AA20



3RV2421-4AA10



3RV2421-4AA20

Rated current	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	SD	Spring-type terminals
I_n		$I >$	I_{cu}	d	Article No.	Price per PU	Article No.
A	A	A	kA	d			Price per PU
Size S00							
0.16	0.11 ... 0.16	3.3	100	▶	3RV2411-0AA10	2	3RV2411-0AA20
0.2	0.14 ... 0.2	4.2	100	▶	3RV2411-0BA10	2	3RV2411-0BA20
0.25	0.18 ... 0.25	5.2	100	▶	3RV2411-0CA10	2	3RV2411-0CA20
0.32	0.22 ... 0.32	6.5	100	▶	3RV2411-0DA10	2	3RV2411-0DA20
0.4	0.28 ... 0.4	8.2	100	▶	3RV2411-0EA10	2	3RV2411-0EA20
0.5	0.35 ... 0.5	10	100	▶	3RV2411-0FA10	2	3RV2411-0FA20
0.63	0.45 ... 0.63	13	100	▶	3RV2411-0GA10	2	3RV2411-0GA20
0.8	0.55 ... 0.8	16	100	▶	3RV2411-0HA10	2	3RV2411-0HA20
1	0.7 ... 1	21	100	▶	3RV2411-0JA10	2	3RV2411-0JA20
1.25	0.9 ... 1.25	26	100	▶	3RV2411-0KA10	2	3RV2411-0KA20
1.6	1.1 ... 1.6	33	100	▶	3RV2411-1AA10	2	3RV2411-1AA20
2	1.4 ... 2	42	100	▶	3RV2411-1BA10	2	3RV2411-1BA20
2.5	1.8 ... 2.5	52	100	▶	3RV2411-1CA10	2	3RV2411-1CA20
3.2	2.2 ... 3.2	65	100	▶	3RV2411-1DA10	2	3RV2411-1DA20
4	2.8 ... 4	82	100	▶	3RV2411-1EA10	2	3RV2411-1EA20
5	3.5 ... 5	104	100	▶	3RV2411-1FA10	2	3RV2411-1FA20
6.3	4.5 ... 6.3	130	100	▶	3RV2411-1GA10	2	3RV2411-1GA20
8	5.5 ... 8	163	100	▶	3RV2411-1HA10	2	3RV2411-1HA20
10	7 ... 10	208	100	▶	3RV2411-1JA10	2	3RV2411-1JA20
12.5	9 ... 12.5	260	100	▶	3RV2411-1KA10	2	3RV2411-1KA20
16	10 ¹⁾ ... 16	286	55	▶	3RV2411-4AA10	2	3RV2411-4AA20
Size S0							
0.16	0.11 ... 0.16	3.3	100	NEW ▶	3RV2421-0AA10		--
0.2	0.14 ... 0.2	4.2	100	NEW ▶	3RV2421-0BA10		--
0.25	0.18 ... 0.25	5.2	100	NEW ▶	3RV2421-0CA10		--
0.32	0.22 ... 0.32	6.5	100	NEW ▶	3RV2421-0DA10		--
0.4	0.28 ... 0.4	8.2	100	NEW ▶	3RV2421-0EA10		--
0.5	0.35 ... 0.5	10	100	NEW ▶	3RV2421-0FA10		--
0.63	0.45 ... 0.63	13	100	NEW ▶	3RV2421-0GA10		--
0.8	0.55 ... 0.8	16	100	NEW ▶	3RV2421-0HA10		--
1	0.7 ... 1	21	100	NEW ▶	3RV2421-0JA10		--
1.25	0.9 ... 1.25	26	100	NEW ▶	3RV2421-0KA10		--
1.6	1.1 ... 1.6	33	100	NEW ▶	3RV2421-1AA10		--
2	1.4 ... 2	42	100	NEW ▶	3RV2421-1BA10		--
2.5	1.8 ... 2.5	52	100	NEW ▶	3RV2421-1CA10		--
3.2	2.2 ... 3.2	65	100	NEW ▶	3RV2421-1DA10		--
4	2.8 ... 4	82	100	NEW ▶	3RV2421-1EA10		--
5	3.5 ... 5	104	100	NEW ▶	3RV2421-1FA10		--
6.3	4.5 ... 6.3	130	100	NEW ▶	3RV2421-1GA10		--
8	5.5 ... 8	163	100	NEW ▶	3RV2421-1HA10		--
10	7 ... 10	208	100	NEW ▶	3RV2421-1JA10		--
12.5	9 ... 12.5	260	100	NEW ▶	3RV2421-1KA10		--
16	10 ¹⁾ ... 16	286	55	▶	3RV2421-4AA10	2	3RV2421-4AA20
20	13 ¹⁾ ... 20	325	55	▶	3RV2421-4BA10	▶	3RV2421-4BA20
22	16 ¹⁾ ... 22	364	55	▶	3RV2421-4CA10	▶	3RV2421-4CA20
25	18 ¹⁾ ... 25	400	55	▶	3RV2421-4DA10	2	3RV2421-4DA20

¹⁾ The setting range of the thermal overload releases has been extended.

Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

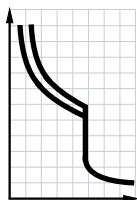
SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

For transformer protection





CLASS 10, without auxiliary switches

Motor starter protectors for the protection of transformers with high inrush current

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41E



3RV2431-4WA10

Rated current	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals 	SD	Spring-type terminals 	
I_n			I_{cu}		Article No.	Price per PU	Article No.	Price per PU
A	A	A	kA	d		d		
Size S2								
14	9.5 ... 14	328	65	2	3RV2431-4SA10		--	
17	12 ... 17	410	65	2	3RV2431-4TA10		--	
20	14 ... 20	410	65	2	3RV2431-4BA10		--	
25	18 ... 25	512	65	2	3RV2431-4DA10		--	
32	22 ... 32	656	65	▶ 2	3RV2431-4EA10		--	
36	28 ... 36	820	65	2	3RV2431-4PA10		--	
40	32 ... 40	820	65	2	3RV2431-4UA10		--	
45	35 ... 45	922	65	2	3RV2431-4VA10		--	
52	42 ... 52	1 025	65	2	3RV2431-4WA10		--	
59	49 ... 59	1 040	65	2	3RV2431-4XA10		--	
65	54 ... 65	1 040	65	2	3RV2431-4JA10		--	

Auxiliary switches and other accessories can be ordered separately (see "Accessories" from page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

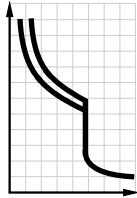
SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

For system protection according to UL 489/CSA C22.2 No. 5

Selection and ordering data

Without auxiliary switches

Circuit breakers for system protection and non-motor loads according to UL/CSA



3RV2711-0AD10



3RV2742-5FD10

Rated current ¹⁾ I_n ¹⁾ A	Thermal overload release (non-adjustable) A	Instantaneous electronic release A	Short-circuit breaking capacity at 480 Y/277 V AC ²⁾ 480 V AC kA	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size S00									
0.16	0.16	2.1	65	--	5	3RV2711-0AD10	1	1 unit	41E
0.2	0.2	2.6	65	--	5	3RV2711-0BD10	1	1 unit	41E
0.25	0.25	3.3	65	--	5	3RV2711-0CD10	1	1 unit	41E
0.32	0.32	4.2	65	--	5	3RV2711-0DD10	1	1 unit	41E
0.4	0.4	5.2	65	--	5	3RV2711-0ED10	1	1 unit	41E
0.5	0.5	6.5	65	--	5	3RV2711-0FD10	1	1 unit	41E
0.63	0.63	8.2	65	--	5	3RV2711-0GD10	1	1 unit	41E
0.8	0.8	10	65	--	5	3RV2711-0HD10	1	1 unit	41E
1	1	13	65	--	2	3RV2711-0JD10	1	1 unit	41E
1.25	1.25	16	65	--	5	3RV2711-0KD10	1	1 unit	41E
1.6	1.6	21	65	--	2	3RV2711-1AD10	1	1 unit	41E
2	2	26	65	--	2	3RV2711-1BD10	1	1 unit	41E
2.5	2.5	33	65	--	2	3RV2711-1CD10	1	1 unit	41E
3.2	3.2	42	65	--	2	3RV2711-1DD10	1	1 unit	41E
4	4	52	65	--	2	3RV2711-1ED10	1	1 unit	41E
5	5	65	65	--	2	3RV2711-1FD10	1	1 unit	41E
6.3	6.3	82	65	--	2	3RV2711-1GD10	1	1 unit	41E
8	8	104	65	--	2	3RV2711-1HD10	1	1 unit	41E
10	10	130	65	--	2	3RV2711-1JD10	1	1 unit	41E
12.5	12.5	163	65	--	2	3RV2711-1KD10	1	1 unit	41E
15	15	208	65	--	2	3RV2711-4AD10	1	1 unit	41E
Size S0									
20	20	260	50	--	2	3RV2721-4BD10	1	1 unit	41E
22	22	286	50	--	2	3RV2721-4CD10	1	1 unit	41E
Size S3³⁾									
10	10	150	65	65	5	3RV2742-5AD10	1	1 unit	41E
15	15	225	65	65	5	3RV2742-5BD10	1	1 unit	41E
20	20	260	65	65	5	3RV2742-5CD10	1	1 unit	41E
25	25	325	65	65	5	3RV2742-5DD10	1	1 unit	41E
30	30	390	65	65	5	3RV2742-5ED10	1	1 unit	41E
35	35	455	65	--	5	3RV2742-5FD10	1	1 unit	41E
40	40	520	65	--	5	3RV2742-5GD10	1	1 unit	41E
45	45	585	65	--	5	3RV2742-5HD10	1	1 unit	41E
50	50	650	65	--	5	3RV2742-5JD10	1	1 unit	41E
60	60	780	65	--	5	3RV2742-5LD10	1	1 unit	41E
70	70	910	65	--	5	3RV2742-5QD10	1	1 unit	41E

¹⁾ Rated value 100% according to UL 489 and IEC 60947-2 ("100% rated breaker").

²⁾ Values for 600 Y/347 V AC, see page 7/18.

³⁾ Transverse auxiliary switches cannot be used for 3RV2742.

Lateral and transverse auxiliary switches can be ordered separately (see "Accessories" page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

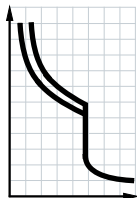
SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

For transformer protection according to UL 489/CSA C22.2 No.5



Selection and ordering data

Without auxiliary switches

Circuit breakers for system and transformer protection according to UL/CSA, specially designed for transformers with high inrush current



3RV2811-0AD10

Rated current ¹⁾	Thermal overload release (non-adjustable)	Instantaneous electronic release	Short-circuit breaking capacity at 480 Y/277 V AC ²⁾	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
I_n ¹⁾		$I >$	I_{bc}	d	Article No.	Price per PU		
A	A	A	kA					
Size S00								
0.16	0.16	3.3	65	5	3RV2811-0AD10		1	1 unit 41E
0.2	0.2	4.2	65	5	3RV2811-0BD10		1	1 unit 41E
0.25	0.25	5.2	65	5	3RV2811-0CD10		1	1 unit 41E
0.32	0.32	6.5	65	5	3RV2811-0DD10		1	1 unit 41E
0.4	0.4	8.2	65	5	3RV2811-0ED10		1	1 unit 41E
0.5	0.5	10	65	5	3RV2811-0FD10		1	1 unit 41E
0.63	0.63	13	65	5	3RV2811-0GD10		1	1 unit 41E
0.8	0.8	16	65	5	3RV2811-0HD10		1	1 unit 41E
1	1	21	65	2	3RV2811-0JD10		1	1 unit 41E
1.25	1.25	26	65	2	3RV2811-0KD10		1	1 unit 41E
1.6	1.6	33	65	2	3RV2811-1AD10		1	1 unit 41E
2	2	42	65	2	3RV2811-1BD10		1	1 unit 41E
2.5	2.5	52	65	2	3RV2811-1CD10		1	1 unit 41E
3.2	3.2	65	65	2	3RV2811-1DD10		1	1 unit 41E
4	4	82	65	2	3RV2811-1ED10		1	1 unit 41E
5	5	104	65	2	3RV2811-1FD10		1	1 unit 41E
6.3	6.3	130	65	2	3RV2811-1GD10		1	1 unit 41E
8	8	163	65	2	3RV2811-1HD10		1	1 unit 41E
10	10	208	65	2	3RV2811-1JD10		1	1 unit 41E
12.5	12.5	260	65	2	3RV2811-1KD10		1	1 unit 41E
15	15	286	65	2	3RV2811-4AD10		1	1 unit 41E
Size S0								
20	20	325	50	2	3RV2821-4BD10		1	1 unit 41E
22	22	364	50	5	3RV2821-4CD10		1	1 unit 41E

¹⁾ Rated value 100% according to UL 489 and IEC 60947-2 ("100% rated breaker").

²⁾ Values for 600 Y/347 V AC, see page 7/18.

Lateral and transverse auxiliary switches can be ordered separately (see "Accessories" page 7/44 onwards).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Mountable accessories

Overview

Mounting location and function

The 3RV2 motor starter protectors/circuit breakers have three main contact elements. In order to achieve maximum flexibility, auxiliary switches, signaling switches, auxiliary releases and isolator modules can be supplied separately.

These components are easily fitted to the switches without the use of any tools according to requirements.

Overview graphic, [see page 7/7](#).

<p>Front side</p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> A maximum of four auxiliary contacts with auxiliary switches can be mounted on each motor starter protector/circuit breaker Transverse auxiliary switches cannot be used for circuit breaker 3RV2742 (size S3). 	<p>Transverse auxiliary switches, solid-state compatible transverse auxiliary switches</p> <p>1 NO + 1 NC or 2 NO or 1 CO</p>	<p>An auxiliary switch block can be inserted transversely on the front. The overall width of the motor starter protectors/circuit breakers remains unchanged.</p>
<p>Left-hand side</p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> A maximum of four auxiliary contacts with auxiliary switches can be mounted on each motor starter protector/circuit breaker Lateral auxiliary switches (two contacts) and signaling switches can be mounted separately or together Signaling switches cannot be used for 3RV1011, 3RV27 and 3RV28 circuit breakers Only lateral auxiliary switches can be used for 3RV2742 (size S3) 	<p>Lateral auxiliary switches (2 contacts)</p> <p>1 NO + 1 NC or 2 NO or 2 NC</p> <p>Lateral auxiliary switches (4 contacts)</p> <p>2 NO + 2 NC</p>	<p>One of the three lateral auxiliary switches can be mounted on the left side per motor starter protector/circuit breaker. The contacts of the auxiliary switch close and open together with the main contacts of the motor starter protector/circuit breaker.</p> <p>The width of the lateral auxiliary switch with two contacts is 9 mm.</p> <p>One lateral auxiliary switch with four contacts can be mounted on the left side per motor starter protector/circuit breaker. The contacts of the auxiliary switch close and open together with the main contacts of the motor starter protector/circuit breaker.</p> <p>The width of the lateral auxiliary switch with four contacts is 18 mm.</p>
	<p>Signaling switches</p> <p>Tripping 1 NO + 1 NC Short circuit 1 NO + 1 NC</p>	<p>One signaling switch can be mounted on the left side of each motor starter protector.</p> <p>The signaling switch has two contact systems.</p> <p>One contact system always signals <u>tripping</u> irrespective of whether this was caused by a short circuit, an <u>overload</u> or an auxiliary release. The other contact system only switches in the event of a short circuit. There is no signaling as a result of <u>switching off</u> with the actuator.</p> <p>In order to be able to switch on the motor starter protector again after a short circuit, the signaling switch must be reset manually after the error cause has been eliminated.</p> <p>The width of the signaling switch is 18 mm.</p>
<p>Right-hand side</p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> One auxiliary release can be mounted per motor starter protector/circuit breaker Accessories cannot be mounted on the right-hand side of the 3RV21 motor starter protectors for motor protection with overload relay function 	<p>Auxiliary releases</p> <p>Shunt releases</p> <p>or</p> <p>Undervoltage releases</p> <p>or</p> <p>Undervoltage releases with leading auxiliary contacts 2 NO Own version for 3RV1011</p>	<p>For remote-controlled tripping of the motor starter protector/circuit breaker. The release coil should only be energized for short periods (see circuit diagrams).</p> <p>Trips the motor starter protector/circuit breaker when the voltage is interrupted and prevents the motor from being restarted accidentally when the voltage is restored. Used for remote-controlled tripping of the motor starter protector/circuit breaker.</p> <p>Particularly suitable for EMERGENCY STOP disconnection by way of corresponding EMERGENCY STOP pushbuttons according to EN 60204-1.</p> <p>Function and use as for the undervoltage release without leading auxiliary contacts, but with the following additional function: the auxiliary contacts will open in switch position OFF to deenergize the coil of the undervoltage release, thus interrupting energy consumption. In the "tripped" position, these auxiliary contacts are not guaranteed to open. The leading contacts permit the motor starter protector/circuit breaker to reclose.</p> <p>The width of the auxiliary release is 18 mm.</p>
<p>Top</p> <p><u>Notes:</u></p> <ul style="list-style-type: none"> Isolator modules cannot be used for 3RV1011, 3RV27 and 3RV28 circuit breakers Isolator module for size S2: <ul style="list-style-type: none"> only with 3RV2 motor starter protectors/circuit breakers up to max. 65 A not with the transverse auxiliary switch Terminal screws of the transverse auxiliary switch are covered by the isolator module; Recommendation: Lateral auxiliary switches should be used in combination with the isolator module, or the isolator module should not be mounted until the auxiliary switch has been wired up 	<p>Isolator modules</p>	<p>Isolator modules can be mounted to the upper connection side of the motor starter protectors.</p> <p>The supply cable is connected to the motor starter protector through the isolator module.</p> <p>The plug can only be unplugged when the motor starter protector is open and isolates all 3 poles of the motor starter protector from the network. The shock-protected isolation point is clearly visible and secured with a pad-lock to prevent reinsertion of the plug.</p>

For a complete overview of which accessories can be used for the various motor starter protectors/circuit breakers, [see page 7/2](#).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Mountable accessories

Selection and ordering data

PU (UNIT, SET, M) = 1
 PS* = 1 unit (unless otherwise specified)
 PG = 41E

Version	For motor starter protectors/circuit breakers	SD	Screw terminals 		Spring-type terminals 		
			Article No.	Price per PU	Article No.	Price per PU	
		Size	d				
Auxiliary switches¹⁾							
	Transverse auxiliary switches For front mounting	S00 ... S3	▶	3RV2901-1D	▶	--	
3RV2901-1E	1 CO 1 NO + 1 NC 2 NO		▶	3RV2901-1E	▶	3RV2901-2E	
	Solid-state compatible transverse auxiliary switches For mounting on the front, for operation in dusty atmosphere and in solid-state circuits with low operating currents						
3RV2901-2E							
		S00 ... S3	2	3RV2901-1G		--	
3RV2901-1G	1 CO						
	Covers for transverse auxiliary switches (PS* = 10 units)	S00 ... S3	2	3RV2901-0H		--	
3RV2901-0H							
	Lateral auxiliary switches For mounting on the left	S00 ... S3	▶	3RV2901-1A	▶	3RV2901-2A	
3RV2901-1A	1 NO + 1 NC 2 NO 2 NC 2 NO + 2 NC		▶	3RV2901-1B	▶	3RV2901-2B	
			2	3RV2901-1C	▶	3RV2901-2C	
3RV2901-2A				3RV2901-1J		--	
Signaling switches²⁾							
	Signaling switches	S00 ⁴⁾ ... S3	▶	3RV2921-1M	▶	3RV2921-2M	
3RV2921-1M	One signaling switch can be mounted on the left per motor starter protector. Separate tripped and short-circuit alarms, 1 NO + 1 NC each						
							
3RV2921-2M							
Isolator modules²⁾							
	Isolator modules	S00, S0 S2 ³⁾ S3 ⁴⁾	▶	3RV2928-1A		--	
3RV2928-1A	Visible isolating distance for isolating individual motor starter protectors from the network, lockable in disconnected position		▶	3RV2938-1A		--	
							
3RV2938-1A							

¹⁾ Each motor starter protector/circuit breaker can be fitted with one transverse and one lateral auxiliary switch. The lateral auxiliary switch with 2 NO + 2 NC is used without a transverse auxiliary switch.

²⁾ This accessory cannot be used for the 3RV27 and 3RV28 circuit breakers (sizes S00, S0, S3).

³⁾ The isolator module for size S2 can be used only with 3RV2 motor starter protectors/circuit breakers up to max. 65 A. Similarly, it cannot be used with the transverse auxiliary switch.

⁴⁾ Not for 3RV1011.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Mountable accessories

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41E



3RV2902-1AV0





3RV2902-2AV0



3RV2922-1CP0



3RV2902-2DB0

Rated control supply voltage U_s					For motor starter protectors/circuit breakers	SD	Screw terminals 		Spring-type terminals 	
AC 50 Hz	AC 60 Hz	AC 50/60 Hz	AC/DC 50/60 Hz, DC 5 s ON period ²⁾	DC			Article No.	Price per PU	Article No.	Price per PU
V	V	V	V	V	Size	d				
Auxiliary releases³⁾										
Undervoltage releases										
--	--	--	--	24	S00 ... S3	2	3RV2902-1AB4	--	--	--
24	24	--	--	--	S00 ... S3	2	3RV2902-1AB0	--	--	--
110	120	--	--	--	S00 ... S3	2	3RV2902-1AF0	--	--	--
--	208	--	--	--	S00 ... S3	2	3RV2902-1AM1	--	--	--
230	240	--	--	--	S00 ... S3	▶	3RV2902-1AP0	▶	3RV2902-2AP0	--
400	440	--	--	--	S00 ... S3	▶	3RV2902-1AV0	▶	3RV2902-2AV0	--
415	480	--	--	--	S00 ... S3	2	3RV2902-1AV1	--	--	--
500	600	--	--	--	S00 ... S3	2	3RV2902-1AS0	--	--	--
Undervoltage releases with leading auxiliary contacts 2 NO										
24	24	--	--	--	S00 ⁴⁾ ... S3	5	3RV2922-1CB0	--	--	--
230	240	--	--	--	S00 ⁴⁾ ... S3	2	3RV2922-1CP0	2	3RV2922-2CP0	--
400	440	--	--	--	S00 ⁴⁾ ... S3	2	3RV2922-1CV0	2	3RV2922-2CV0	--
415	480	--	--	--	S00 ⁴⁾ ... S3	2	3RV2922-1CV1	2	3RV2922-2CV1	--
Shunt releases										
--	--	20 ... 24	20 ... 70	--	S00 ... S3	▶	3RV2902-1DB0	▶	3RV2902-2DB0	--
--	--	90 ... 110	70 ... 190	--	S00 ... S3	2	3RV2902-1DF0	2	3RV2902-2DF0	--
--	--	210 ... 240	190 ... 330	--	S00 ... S3	▶	3RV2902-1DP0	▶	3RV2902-2DP0	--
--	--	350 ... 415	330 ... 500	--	S00 ... S3	2	3RV2902-1DV0	--	--	--
--	--	500	500	--	S00 ... S3	2	3RV2902-1DS0	--	--	--

¹⁾ The voltage range is valid for 100% (infinite) ON period. The response voltage lies at 0.9 of the lower limit of the voltage range.

²⁾ The voltage range is valid for 5 s ON period at AC 50/60 Hz and DC. The response voltage lies at 0.85 of the lower limit of the voltage range.

³⁾ One auxiliary release can be mounted on the right per motor starter protector/circuit breaker (does not apply to 3RV21 motor starter protectors with overload relay function).

⁴⁾ Not for 3RV1011.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Busbar accessories

Overview

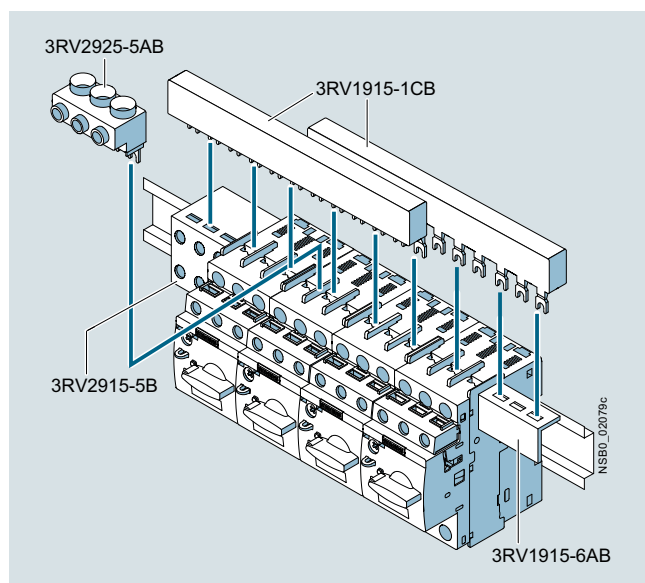
Insulated three-phase busbar system

Three-phase busbar systems provide an easy, time-saving and clearly arranged means of feeding 3RV2 motor starter protectors/circuit breakers with screw terminals. Different versions are available for sizes S00 to S2 and can be used for the various different types of motor starter protectors/circuit breakers (size S0 up to 32 A).

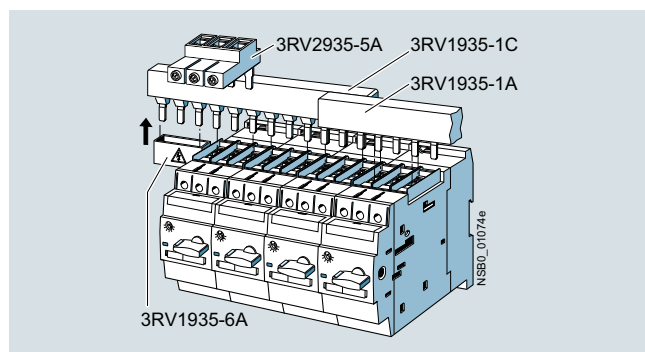
The 3RV1915 and 3RV1935 three-phase busbar systems are generally unsuitable for the 3RV21 motor starter protectors for motor protection with overload relay function and 3RV27 and 3RV28 circuit breakers according to UL 489/CSA C22.2 No. 5.

The busbars are suitable for between two and five motor starter protectors/circuit breakers. However, any kind of extension is possible by clamping the tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last motor starter protector/circuit breaker.

A combination of motor starter protectors/circuit breakers of size S00 and S0 is possible. The motor starter protectors/circuit breakers are supplied by appropriate infeed terminals.



SIRIUS three-phase busbar system size S00/S0



SIRIUS three-phase busbar system size S2

The three-phase busbar systems are finger-safe. They are designed for any short-circuit stress which can occur at the output side of connected motor starter protectors/circuit breakers.

The three-phase busbar systems can also be used to construct "Type E Starters" according to UL/CSA. Special infeed terminals must be used for this purpose, however (see "Selection and ordering data", page 7/48).

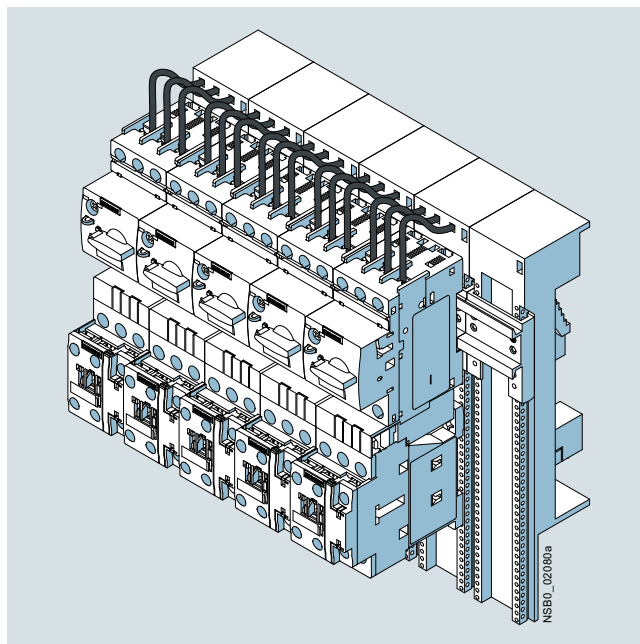
8US busbar adapters for 60 mm systems

The motor starter protectors/circuit breakers are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs.

Busbar adapters for busbar systems with 60 mm center-to-center clearance are suitable for copper busbars with a width of 12 mm to 30 mm. The busbars can be 5 mm or 10 mm thick.

The motor starter protectors/circuit breakers are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

For further busbar adapters for snap-mounting direct-on-line starters and reversing starters as well as additional accessories such as line terminals and outgoing terminals, flat copper profile, etc., see [Catalog LV 10](#).



SIRIUS load feeders with busbar adapters snapped onto busbars





Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Busbar accessories

Selection and ordering data

	Modular spacing mm	Number of motor starter protectors that can be connected			Rated current I_n at 690 V A	For motor starter protectors/circuit breakers Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		Without lateral accessories	With lateral auxiliary switch	Incl. auxiliary release								
Three-phase busbars¹⁾												
 3RV1915-1AB	45 ³⁾	2	--	--	63	S00, S0 ²⁾	▶	3RV1915-1AB		1	1 unit	41E
		3	--	--	63	S00, S0 ²⁾	▶	3RV1915-1BB		1	1 unit	41E
		4	--	--	63	S00, S0 ²⁾	▶	3RV1915-1CB		1	1 unit	41E
		5	--	--	63	S00, S0 ²⁾	▶	3RV1915-1DB		1	1 unit	41E
		3RV1915-1BB	55 ⁴⁾	--	2	--	63	S00, S0 ²⁾	▶	3RV1915-2AB		1
 3RV1915-1BB	55 ⁴⁾	--	3	--	63	S00, S0 ²⁾	▶	3RV1915-2BB		1	1 unit	41E
		--	4	--	63	S00, S0 ²⁾	▶	3RV1915-2CB		1	1 unit	41E
		--	5	--	63	S00, S0 ²⁾	▶	3RV1915-2DB		1	1 unit	41E
 3RV1915-1CB	63 ⁵⁾	2	--	--	108	S2	▶	3RV1935-1A		1	1 unit	41E
		3	--	--	108	S2	▶	3RV1935-1B		1	1 unit	41E
		4	--	--	108	S2	▶	3RV1935-1C		1	1 unit	41E
 3RV1915-1DB	75 ⁵⁾	--	--	2	63	S00, S0 ²⁾	▶	3RV1915-3AB		1	1 unit	41E
		--	--	4	63	S00, S0 ²⁾	▶	3RV1915-3CB		1	1 unit	41E
		--	2	2	108	S2	▶	3RV1935-3A		1	1 unit	41E
		--	3	3	108	S2	▶	3RV1935-3B		1	1 unit	41E
		--	4	4	108	S2	▶	3RV1935-3C		1	1 unit	41E

¹⁾ Not suitable for 3RV21 motor starter protectors for motor protection with overload relay function and for 3RV27 and 3RV28 circuit breakers according to UL 489/CSA C22.2 No. 5.

²⁾ Approved for motor starter protectors size S0 with $I_n \leq 32$ A.

³⁾ For 3RV2 motor starter protectors without accessories mounted on the side.

⁴⁾ For 3RV2 motor starter protectors with auxiliary switches with 1 NO + 1 NC, 2 NO and 2 NC mounted on the left (9 mm wide).

⁵⁾ For 3RV2 motor starter protectors with mounted accessories (18 mm wide). Auxiliary switches with 2 NO + 2 NC or signaling switch (mounted on the left) or with auxiliary release (mounted on the right).

Version	Modular spacing mm	For motor starter protectors/circuit breakers Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	45	S00, S0	▶	3RV1915-5DB		1	1 unit	41E

Connecting pieces for three-phase busbars



For connecting three-phase busbars for motor starter protectors of size S0 (left) to size S00 (right)

Conductor cross-section			Tightening torque Nm	For motor starter protectors/circuit breakers Size	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded								
mm ²	mm ²	AWG								

Three-phase infeed terminals



Connection from top

2.5 ... 25	4 ... 16	10 ... 4	4	S00 ²⁾	▶	3RV1915-5A		1	1 unit	41E
2.5 ... 25	2.5 ... 16	10 ... 4	3 ... 4	S00, S0	▶	3RV2925-5AB		1	1 unit	41E
2 x (2.5 ... 50) ¹⁾ , 1 x (2.5 ... 70) ¹⁾	2 x (2.5 ... 35) ¹⁾ , 1 x (2.5 ... 50) ¹⁾	2 x (10 ... 1/0) ¹⁾ , 1 x (10 ... 2/0) ¹⁾	4 ... 6	S2	▶	3RV2935-5A		1	1 unit	41E



Connection from below

Terminal is connected in place of a switch, take space requirement into account

2.5 ... 25	2.5 ... 16	10 ... 4	Input: 4, output: 2 ... 2.5	S00, S0	▶	3RV2915-5B		1	1 unit	41E
------------	------------	----------	--------------------------------------	---------	---	-------------------	--	---	--------	-----



¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

²⁾ For 3RV1011.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Busbar accessories

Conductor cross-section		AWG cables, solid or stranded	Tightening torque	For motor starter protectors/circuit breakers	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solid or stranded	Finely stranded with end sleeve									
mm ²	mm ²	AWG	Nm	Size	d					

Three-phase infeed terminals for constructing "Type E Starters"



3RV2925-5EB



3RV2935-5E

Connection from top

2.5 ... 25	2.5 ... 16	10 ... 4	3 ... 4	S00, S0	2
2 x (2.5 ... 50) ¹⁾	2 x (2.5 ... 35) ¹⁾	2 x (10 ... 1/0) ¹⁾	4 ... 6	S2	▶
1 x (2.5 ... 70) ¹⁾	1 x (2.5 ... 50) ¹⁾	1 x (10 ... 2/0) ¹⁾			

3RV2925-5EB

1

1 unit

41E

3RV2935-5E

1

1 unit

41E

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Version	For motor starter protectors/circuit breakers	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	d					

Covers for connection tags



3RV1915-6AB

Touch protection for empty positions

S00, S0

▶

3RV1915-6AB

1

10 units

41E

S2

▶

3RV1935-6A

1

5 units

41E

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Busbar accessories

Busbar adapters



8US1251-5DS10



8US1251-5DT11



8US1211-4TR00



8US1250-5AS10



8US1250-5AT10

For motor starter protectors/circuit breakers	Rated current	Connecting cable	Adapter length	Adapter width	Rated voltage	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	A	AWG	mm	mm	V	d					
Busbar adapters for 60 mm systems											
For copper busbars according to DIN 46433 Width: 12 mm and 30 mm Thickness: 5 mm and 10 mm and for T and double-T special profiles											
• For motor starter protectors/circuit breakers with screw terminals											
							Screw terminals				
S00, S0 ²⁾	25	12	200	45	690	2	8US1251-5DS10		1	1 unit	140
S00, S0	25	12	260	45	690	2	8US1251-5DT10		1	1 unit	140
S0	32	10	200	45	690	3	8US1251-5NS10		1	1 unit	140
S0 ²⁾	32	10	260	45	690	2	8US1251-5NT10		1	1 unit	140
S2	80	4	200	55	690	5	8US1261-5MS13		1	1 unit	140
S2	80	4	260	55	690	5	8US1261-6MT10		1	1 unit	140
S2 ¹⁾	80	4	260	118	690	5	8US1211-6MT10		1	1 unit	140
S3	100/70 ³⁾	4	215	72	690/600 ³⁾	2	8US1211-4TR00		1	1 unit	140
• For motor starter protectors/circuit breakers with spring-type terminals											
							Spring-type terminals				
S00, S0 ²⁾	25	12	200	45	690	2	8US1251-5DS11		1	1 unit	140
S00, S0 ²⁾	25	12	260	45	690	2	8US1251-5DT11		1	1 unit	140
S0	32	10	200	45	690	5	8US1251-5NS11		1	1 unit	140
S0 ²⁾	32	10	260	45	690	2	8US1251-5NT11		1	1 unit	140
Accessories											
Device holders											
For lateral mounting to busbar adapters	--	--	200	45	--	2	8US1250-5AS10		1	1 unit	140
	--	--	260	45	--	2	8US1250-5AT10		1	1 unit	140
Side modules											
For widening of busbar adapters	--	--	200	9	--	2	8US1998-2BJ10		1	10 units	140
Vibration and shock kits											
For high vibration and shock loads											
S00, S0	--	--	--	--	--	2	8US1998-1CA10		1	2 units	140
S2	--	--	--	--	--	5	8US1998-1DA10		1	1 unit	140

¹⁾ For the assembly of feeders for reversing starters comprising a motor starter protector and two contactors.

²⁾ Also approved for 3RV27, 3RV28 according to UL.

³⁾ Values according to UL/CSA:
- Rated current: 70 A at 600 V AC
- Short-circuit breaking capacity:
480 V AC: 65 kA, up to $I_n = 30$ A,
480 Y/277 V AC: 65 kA
600 Y/347 V AC: 20 kA.

For additional busbar adapters and accessories, see [Catalog LV 10](#).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

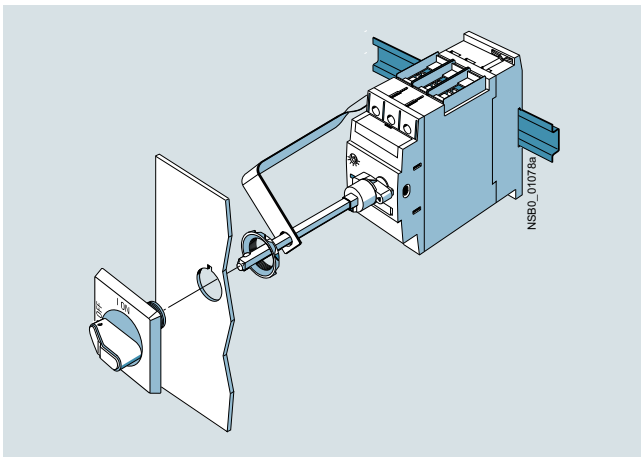
Accessories

Rotary operating mechanisms

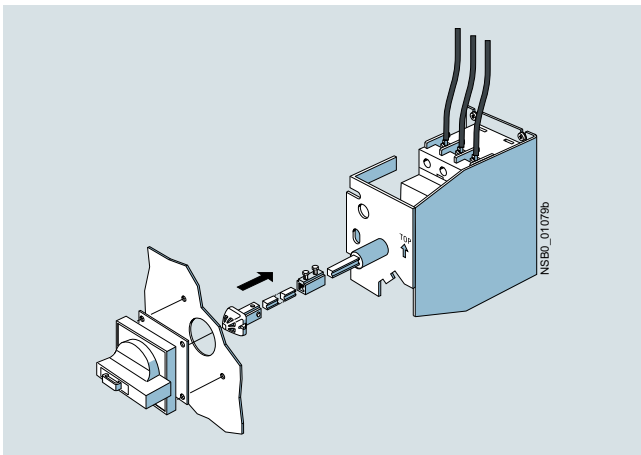
Overview

Door-coupling rotary operating mechanisms

Motor starter protectors/circuit breakers with a rotary operating mechanism can be mounted in a control cabinet and operated externally by means of a door-coupling rotary operating mechanism. When the cabinet door with motor starter protector/circuit breaker is closed, the operating mechanism is coupled. When the motor starter protector/circuit breaker closes, the coupling is locked which prevents the door from being opened unintentionally. This interlock can be defeated by the maintenance personnel. In the OPEN position, the rotary operating mechanism can be secured against reclosing with up to three padlocks. Inadvertent opening of the door is not possible in this case either.



SIRIUS 3RV2926-0K door-coupling rotary operating mechanism



SIRIUS 3RV2926-2B door-coupling rotary operating mechanism for arduous conditions

Remote motorized operating mechanism

3RV motor starter protectors are manually operated switching devices. They automatically trip in case of an overload or short circuit. Intentional remote-controlled tripping is possible by means of a shunt release or an undervoltage release. Reclosing is only possible directly at the motor starter protector/circuit breaker.

The remote motorized operating mechanism allows the motor starter protectors/circuit breakers to be opened and closed by electrical commands. This enables a load or an installation to be isolated from the network or reconnected to it from an operator panel.

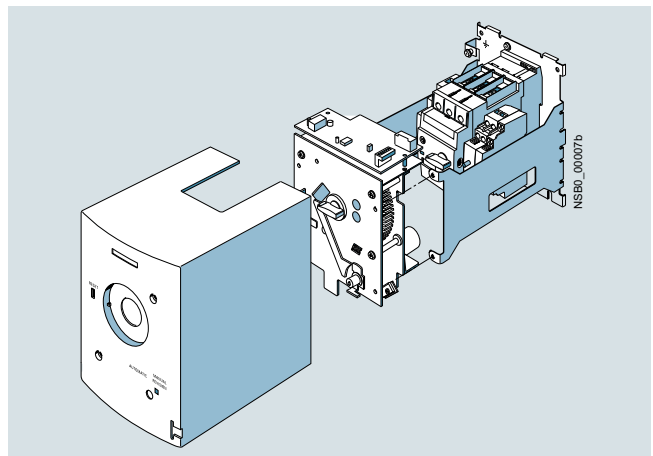
If the motor starter protector/circuit breaker is tripped as a result of overload or short circuit, it will be in the tripped position. For reclosing, the remote motorized operating mechanism must first be set manually or electrically to the 0 position (electrically by means of the Open command). Then it can be reclosed.

The remote motorized operating mechanism is available for motor starter protectors/circuit breakers in size S3 for the control voltages of 230 V AC. The motor starter protector/circuit breaker is fitted into the remote motorized operating mechanism as shown in the drawing.

In the "MANUAL" position, the motor starter protector/circuit breaker in the remote motorized operating mechanism can continue to be switched manually on site. In the "AUTOMATIC" position, the motor starter protector/circuit breaker is switched by means of electrical commands. The switching command must be applied for a minimum of 100 ms. The remote motorized operating mechanism closes the motor starter protector after a maximum of 1 s. On voltage failure during the switching operation it is ensured that the motor starter protector/circuit breaker remains in the "OPEN" or "CLOSED" position. In the "MANUAL" and "OFF" position, the remote motorized operating mechanism can be locked with a padlock.

RESET function

The RESET button on the motorized operating mechanism serves to reset any 3RV2921-1M signaling switch that might be installed.



SIRIUS 3RV1946-3AP0 remote motorized operating mechanism

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Rotary operating mechanisms

Technical specifications

Remote motorized operating mechanisms		
Type	3RV1946-3AP0	
Max. power consumption • At $U_s = 230$ V AC	VA	170
Operating range	0.85 ... 1.1 x U_s	
Minimum command duration at U_s	s	0.1
Max. command duration	Unlimited (uninterrupted operation)	
Max. total make/break time, remote-controlled	s	2
Ready to reclose after approx.	s	2.5
Switching frequency	1/h	25
Internal back-up fuse • 230 V AC	A	0.8
Connection type of control cables	Plug-in connectors with screw terminals	
Shock resistance acc. to IEC 60068-2-27	g/ms	25/11 (square and sine pulse)

Selection and ordering data

Version	Color of actuator	Version of extension shaft mm	For motor starter protectors/ circuit breakers Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Door-coupling rotary operating mechanisms



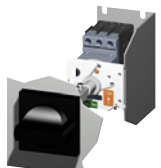
3RV2926-0B

Door-coupling rotary operating mechanisms consisting of an actuator, a coupling driver and a 130/330 mm long extension shaft (6 mm x 6 mm)

Designed for degree of protection IP64; the door locking device prevents accidental opening of the control cabinet door when the switch is set to ON. The OFF position can be locked with up to three padlocks.

Door-coupling rotary operating mechanisms	Black	130 330	S00 ¹⁾ ... S3 S00 ¹⁾ ... S3	▶	3RV2926-0B 3RV2926-0K		1 1	1 unit 1 unit	41E 41E
EMERGENCY STOP door-coupling rotary operating mechanisms	Red/yellow	130 330	S00 ¹⁾ ... S3 S00 ¹⁾ ... S3	▶	3RV2926-0C 3RV2926-0L		1 1	1 unit 1 unit	41E 41E

Door-coupling rotary operating mechanisms for arduous conditions



3RV2926-2B

The door-coupling rotary operating mechanisms consist of an actuator, a coupling driver, an extension shaft of 300 mm in length (8 mm x 8 mm), a spacer and two metal brackets into which the motor starter protector/circuit breaker is inserted.

The door-coupling rotary operating mechanisms are designed to degree of protection IP65. The door interlocking reliably prevents opening of the control cabinet door in the ON position of the motor starter protector/circuit breaker. The OFF position can be locked with up to three padlocks.

Laterally mountable auxiliary releases and two-pole auxiliary switches can be used.

The door-coupling rotary operating mechanisms thus meet the requirements for isolating functions according to IEC 60947-2.

Door-coupling rotary operating mechanisms	Gray	300	S00 ¹⁾ , S0 S2	▶	3RV2926-2B 3RV2936-2B		1 1	1 unit 1 unit	41E 41E
EMERGENCY STOP door-coupling rotary operating mechanisms	Red/yellow	300	S00 ¹⁾ , S0 S2 S3	▶	3RV2926-2C 3RV2936-2C 3RV2946-2C		1 1 1	1 unit 1 unit 1 unit	41E 41E 41E

3RV2936-2C

¹⁾ Not for 3RV1011.

Version	Rated control supply voltage U_s	For motor starter protectors/ circuit breakers Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Remote motorized operating mechanisms



3RV1946-3AP0

Remote motorized operating mechanisms	50/60 Hz, 230 V AC	S3	X	3RV1946-3AP0		1	1 unit	41E
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Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Mounting accessories

Overview

More information

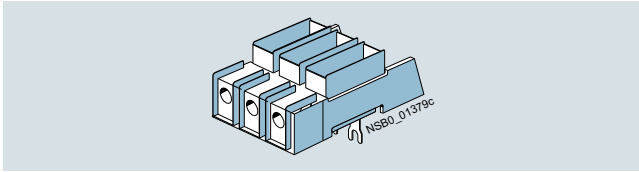
System Manual "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60279172>

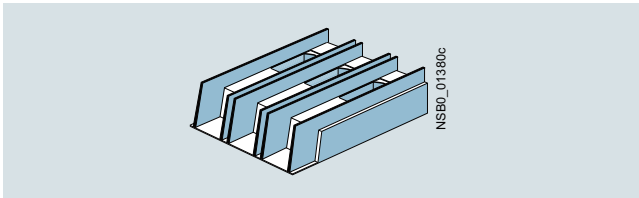
Accessories for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1

The 3RV20 motor starter protectors with screw terminals are approved according to UL 508/UL 60947-4-1 as "Self-Protected Combination Motor Controllers (Type E)".

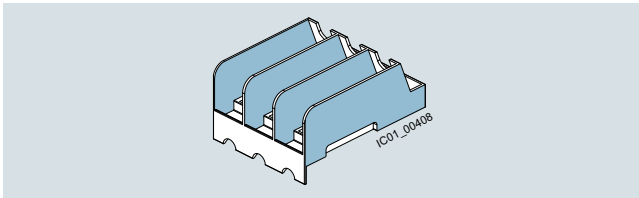
This requires increased through air and over surface spacing (1 inch and 2 inches respectively) at the input side of the device, which are achieved by mounting a terminal block or a phase barrier.



SIRIUS 3RV2928-1H terminal block



SIRIUS 3RT2946-4GA07 terminal block (type E)



SIRIUS 3RV2928-1K phase barrier

Motor starter protectors/ circuit breakers	Size	Essential accessories for "Self-Protected Combination Motor Controllers (Type E)" acc. to UL 508/UL 60947-4-1
3RV201., 3RV202.	S00/S0	3RV2928-1H terminal block or 3RV2928-1K phase barrier
3RV2031-4B.1., 3RV2031-4D.1., 3RV2031-4E.1., 3RV2031-4P.1., 3RV2031-4S.1., 3RV2031-4T.1., 3RV2031-4U.1., 3RV2031-4V.1.	S2	--
3RV2031-4J.1., 3RV2031-4K.1., 3RV2031-4R.1., 3RV2031-4W.1., 3RV2031-4X.1., 3RV2032	S2	3RV2938-1K phase barrier
3RV204.	S3	3RT2946-4GA07 terminal block

-- No accessories needed

Special three-phase infeed terminals are required for constructing "Type E Starters" with an insulated three-phase busbar system (see "Busbar accessories", page 7/48).

The 3RV29 infeed system also enables the assembly of "Type E Starters", see page 7/62 onwards.

Note:

According to CSA, these terminal blocks and the phase barriers can be omitted when the device is used as a "Self-Protected Combination Motor Controller (Type E)".

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Mounting accessories

Link modules

Feeders can be easily assembled from single devices with the help of the link modules. The following table shows the different combination options for devices with screw or spring-type terminals.

Combination devices	3RV2 motor starter protectors/ circuit breakers Size	3RT2 contactors; 3RW30, 3RW40 soft starters; 3RF34 solid-state contactors Size	Link modules	
			Screw terminals	Spring-type terminals
Link modules for connecting switching devices to 3RV2 motor starter protectors/circuit breakers¹⁾				
3RT2 contactors with AC or DC coil	S00	S00	3RA1921-1DA00	3RA2911-2AA00
	S0	S00		--
	S2	S2	3RA2931-1AA00	--
	S3 ²⁾	S3 ²⁾	3RA1941-1AA00	--
3RT2 contactors with AC coil	S00	S0	3RA2921-1AA00	--
	S0	S0		3RA2921-2AA00 ³⁾
3RT2 contactors with DC coil	S00	S0	3RA2921-1BA00	--
	S0	S0		3RA2921-2AA00
3RW30 soft starters	S00	S00	3RA2921-1BA00	3RA2911-2GA00
	S0	S00		--
3RW30/3RW40 soft starters	S00	S0	3RA2921-1BA00	--
	S0	S0		3RA2921-2GA00
	S2 ⁴⁾	S2 ⁴⁾	3RA2931-1AA00	--
	S3 ⁵⁾	S3 ⁵⁾	3RA1941-1AA00	--
3RF34 solid-state contactors	S00/S0	S00	3RA2921-1BA00	--
Hybrid link modules for connecting contactors with spring-type terminals to 3RV2 motor starter protectors/circuit breakers with screw terminals⁶⁾				
3RT2 contactors with AC or DC coil	S00	S00	3RA2911-2FA00	--
	S0	S0	3RA2921-2FA00	--

-- Version not possible

- 1) The link modules cannot be used for 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27, 3RV28 and 3RV1011 motor starter protectors/circuit breakers.
- 2) To assemble the feeder between a motor starter protector and a contactor in size S3, the 3RA2942-1AA00 standard mounting rail adapter must be used.
- 3) A spacer for height compensation on AC contactors, size S0, is optionally available, see page 7/56.
- 4) To assemble the feeder between a motor starter protector and a soft starter in size S2, the 3RA2932-1CA00 standard mounting rail adapter must be used.
- 5) It is only permissible to assemble the feeder between the motor starter protector and the soft starter in size S3 on a mounting plate.
- 6) The hybrid link modules for motor starter protector to contactor cannot be used for the 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV27 and 3RV28 motor starter protectors/circuit breakers. They are suitable only for constructing direct-on-line starters.

Notes:

- Link modules can be used in
 - Size S00: up to max. 16 A
 - Size S0: up to max. 32 A
 - Size S2: up to max. 65 A
- Hybrid link modules can be used in
 - Size S00: up to max. 16 A
 - Size S0: up to max. 32 A

Motor Starter Protectors/Circuit Breakers







SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Mounting accessories

Selection and ordering data

Accessories

Version	For motor starter protectors/ circuit breakers	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	d					
Covers							
	Terminal covers For cable lug and busbar connection for maintaining the required voltage clearances and as touch protection if box terminal is removed (2 units can be mounted per motor starter protector/circuit breaker)	S3	5	3RT1946-4EA1	1	1 unit	41B
3RV2 (size S3) with 3RT1946-4EA1 (left)							
	Scale covers Sealable, for covering the set current scale	3RV20, 3RV21, 3RV24: S00 ... S3	▶	3RV2908-0P	100	10 units	41E
3RV2908-0P							
	Covers for devices with screw terminals (box terminals) Additional touch protection to be fitted at the box terminals (2 units required per device)			Screw terminals			
3RT2936-4EA2	• Main current level	S2	▶	3RT2936-4EA2	1	1 unit	41B
		S3	▶	3RT2946-4EA2	1	1 unit	41B
Fixing accessories							
	Push-in lugs For screwing the motor starter protector/circuit breaker onto mounting plates Two units are required for each motor starter protector.	S00, S0	2	3RV2928-0B	100	10 units	41E
3RV2928-0B							
Tools for opening spring-type terminals							
	Screwdrivers For all SIRIUS devices with spring-type terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	S00 ... S3	2	3RA2908-1A	1	1 unit	41B
3RA2908-1A							
Terminal covers for box terminals on 3RV2742 and Type E terminal block 3RT2946-4GA07							
	Additional touch protection to be fitted at the box terminals 3RV2742 (2 units required per device) and at Type E terminal block 3RT2946-4GA07 • Main current level	S3	NEW X	3RV2948-1LA00	1	1 unit	41B
3RV2948-1LAA00							

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Mounting accessories

Version	For motor starter protectors/ circuit breakers	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Size	d					

Terminal blocks and phase barriers for "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1



3RV2928-1H

Note:

UL 508/UL 60947-4-1 approval demands 1-inch through air spacing and 2-inch over surface spacing for "Self-Protected Combination Motor Controllers (Type E)". The following terminal blocks or phase barriers must be used for the 3RV20 motor starter protectors with screw terminals. 3RV20 motor starter protectors with spring-type terminals must be assembled with the 3RV29 infeed system for approval as "Self-Protected Combination Motor Controllers (Type E)" according to UL 508/UL 60947-4-1.

The terminal block or phase barriers cannot be used in combination with the 3RV19.5 three-phase busbars.

For construction with three-phase busbars, see "Busbar accessories", page 7/46 onwards.



3RT2946-4GA07

Terminal blocks Type E

For extended clearance and creepage distances (1 and 2 inch)

S00, S0

▶

3RV2928-1H

1

1 unit

41E

S3

5

3RT2946-4GA07

1

1 unit

41B

Phase barriers

For extended clearance and creepage distances (1 and 2 inch)

S00, S0

▶

3RV2928-1K

1

1 unit

41E

S2

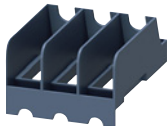
▶

3RV2938-1K

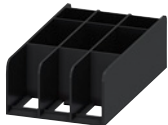
1

1 unit

41E



3RV2928-1K



3RV2938-1K

Auxiliary terminals, 3-pole



3RT2946-4F

For connection of auxiliary and control cables to the main conductor connections (for one side)

S3

5

3RT2946-4F

1

1 unit

41B

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Mounting accessories

Link modules

Actuating voltage of contactor	Size	3RV2 motor starter protectors/circuit breakers	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Link modules for motor starter protector to contactor¹⁾



3RA2921-1AA00

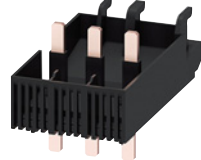
For mechanical and electrical connection between motor starter protector and contactor with screw terminals

Single-unit packaging

AC/DC	S00	S00/S0	▶	3RA1921-1DA00		1	1 unit	41B
AC	S0	S00/S0	▶	3RA2921-1AA00		1	1 unit	41B
DC	S0	S00/S0	▶	3RA2921-1BA00		1	1 unit	41B
AC/DC	S2	S2	▶	3RA2931-1AA00		1	1 unit	41B
AC/DC	S3	S3	▶	3RA1941-1AA00		1	1 unit	41B

Multi-unit packaging

AC/DC	S00	S00/S0	▶	3RA1921-1D		1	10 units	41B
AC	S0	S00/S0	▶	3RA2921-1A		1	10 units	41B
DC	S0	S00/S0	▶	3RA2921-1B		1	10 units	41B
AC/DC	S2	S2	▶	3RA2931-1A		1	5 units	41B
AC/DC	S3	S3	▶	3RA1941-1A		1	5 units	41B



3RA2931-1AA00



3RA2911-2AA00

For mechanical and electrical connection between motor starter protector and contactor with spring-type terminals

Single-unit packaging

AC/DC	S00	S00	▶	3RA2911-2AA00		1	1 unit	41B
AC ²⁾	S0	S0	▶	3RA2921-2AA00		1	1 unit	41B
DC	S0	S0	▶	3RA2921-2AA00		1	1 unit	41B

Multi-unit packaging

AC/DC	S00	S00	▶	3RA2911-2A		1	10 units	41B
AC ²⁾	S0	S0	▶	3RA2921-2A		1	10 units	41B
DC	S0	S0	▶	3RA2921-2A		1	10 units	41B

Spacers²⁾

For compensating the height on AC contactors

Single-unit packaging	S0	S0	▶	3RA2911-1CA00		1	1 unit	41B
Multi-unit packaging	S0	S0	▶	3RA2911-1C		1	5 units	41B



3RA2911-1CA00

¹⁾ The link modules for motor starter protector to contactor cannot be used for 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27, 3RV28 and 3RV1011 motor starter protectors/circuit breakers.

²⁾ A spacer for height compensation on AC contactors size S0 is optionally available.

Note:

Link modules can be used in

- Size S00: up to max. 16 A
- Size S0: up to max. 32 A
- Size S2: up to max. 65 A

Motor Starter Protectors/Circuit Breakers


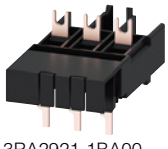
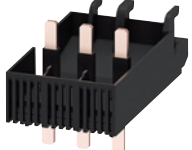


SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Mounting accessories

Size	3RV2 motor starter protectors/circuit breakers	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RW30, 3RW40 soft starters; 3RF34 solid-state contactors		d					

Link modules for motor starter protector to soft starter¹⁾ and motor starter protector to solid-state contactor¹⁾

Image	Description	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Connection between motor starter protector and soft starter/ solid-state contactor with screw terminals							
Screw terminals 							
 3RA2921-1BA00	Single-unit packaging						
	S00	S00/S0	2	3RA2921-1BA00	1	1 unit	41B
	S0	S00/S0	2	3RA2921-1BA00	1	1 unit	41B
	S2 ²⁾	S2	▶	3RA2931-1AA00	1	1 unit	41B
	S3 ³⁾	S3 ³⁾	▶	3RA1941-1AA00	1	1 unit	41B
 3RA2931-1AA00	Multi-unit packaging						
	S00	S00/S0	2	3RA2921-1B	1	10 units	41B
	S0	S00/S0	2	3RA2921-1B	1	10 units	41B
	S2 ²⁾	S2	▶	3RA2931-1A	1	5 units	41B
	S3 ³⁾	S3 ³⁾	▶	3RA1941-1A	1	5 units	41B
Connection between motor starter protector and soft starter with spring-type terminals							
Spring-type terminals 							
 3RA2921-2GA00	Single-unit packaging						
	S00	S00	2	3RA2911-2GA00	1	1 unit	41B
	S0	S0	2	3RA2921-2GA00	1	1 unit	41B

- ¹⁾ The link modules for motor starter protector to soft starter and motor starter protector to solid-state contactor cannot be used for 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27, 3RV28 and 3RV1011 motor starter protectors/ circuit breakers.
- ²⁾ To assemble the feeder between a motor starter protector and a soft starter in size S2, the 3RA2932-TCA00 standard mounting rail adapter must be used.
- ³⁾ It is only permissible to assemble the feeder between the motor starter protector and the soft starter in size S3 on a mounting plate.

Note:

Link modules can be used in

- Size S00: up to max. 16 A
- Size S0: up to max. 32 A
- Size S2: up to max. 65 A

Motor Starter Protectors/Circuit Breakers

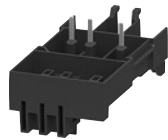
SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Mounting accessories

Actuating voltage of contactor	Size	3RV2 motor starter protectors/circuit breakers	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	3RT2 contactors		d					

Hybrid link modules for motor starter protector to contactor¹⁾



3RA2911-2FA00

Mechanical and electrical connection between motor starter protector with screw terminals and contactor with spring-type terminals

Single-unit packaging

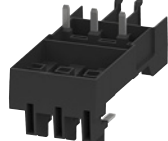
AC/DC S00 S00 ▶ **3RA2911-2FA00**

AC²⁾/DC S0 S0 ▶ **3RA2921-2FA00**

Multi-unit packaging

AC/DC S00 S00 ▶ **3RA2911-2F**

AC²⁾/DC S0 S0 ▶ **3RA2921-2F**



3RA2921-2FA00

Spacers²⁾

For compensating the height on AC contactors

Single-unit packaging S0 S0 ▶ **3RA2911-1CA00**

Multi-unit packaging S0 S0 ▶ **3RA2911-1C**



3RA2911-1CA00

¹⁾ The hybrid link modules for motor starter protector to contactor cannot be used for 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV27, 3RV28 and 3RV1011 motor starter protectors/circuit breakers. They are suitable only for constructing direct-on-line starters.

²⁾ A spacer for height compensation on AC contactors size S0 is optionally available.

Note:

Hybrid link modules in size S00 can be used up to max. 16 A and in size S0 up to max. 32 A.

For motor starter protectors/circuit breakers	Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Type		d	Article No.	Price per PU		

Motor feeder connectors for motor starter protectors/circuit breakers with screw terminals



3RT1926-4RD01

3RV2.2	Adapters for motor starter protectors/circuit breakers Ambient temperature $T_{u \max.} = 60 \text{ °C}$ Size S0, rated operational current I_e at 400 V 3 AC: 25 A	5	3RT1926-4RD01	1	1 unit	41B
--------	--	---	----------------------	---	--------	-----



3RT1900-4RE01

3RV2.2	Motor feeder connectors for motor starter protectors/circuit breakers Size S0	5	3RT1900-4RE01	1	1 unit	41B
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Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Enclosures and front plates

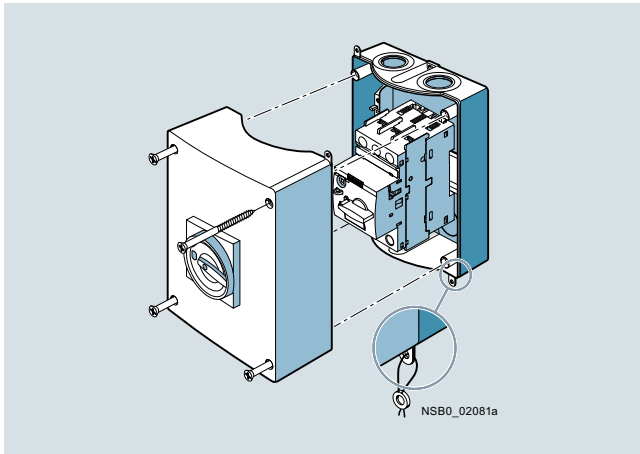
Overview

Enclosures

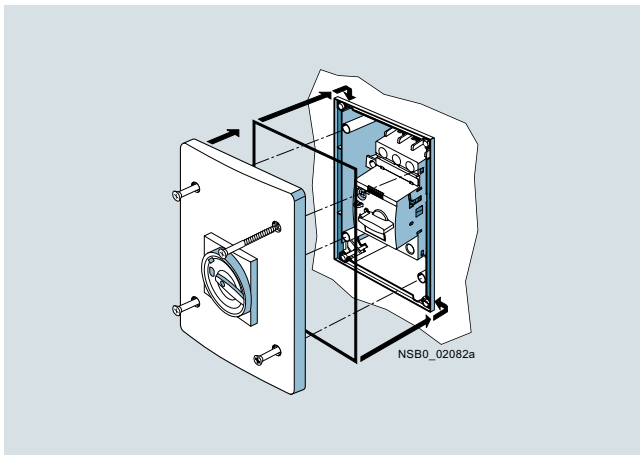
For stand-alone installation of 3RV20 to 3RV24 motor starter protectors size S00 ($I_{n\max} = 16\text{ A}$), S0 ($I_{n\max} = 32\text{ A}$) and S2 ($I_{n\max} = 65\text{ A}$), cast aluminum enclosures for surface mounting and molded-plastic enclosures for flush mounting are available in various dimensions.

When installed in a molded-plastic enclosure the motor starter protectors have a rated operational voltage U_e of 500 V.

The enclosures for surface mounting have the degree of protection IP55; the enclosures for flush mounting also comply with the degree of protection IP55 at the front (the flush-mounted section complies with IP20).



Enclosures for surface mounting



Enclosures (only for sizes S00 and S0)

All enclosures are equipped with N and PE terminals. There are two knock-out cable entries for cable glands at the top and two at the bottom; also on the rear corresponding cable entries are scored. There is a knockout on the top of the enclosure for indicator lights that are available as accessories.

The narrow enclosure can accommodate a motor starter protector without accessories, with transverse auxiliary switch and with lateral auxiliary switch. There is no provision for installing a motor starter protector with a signaling switch.

With size S00 to S2 circuit breakers the molded-plastic enclosures are equipped with a rotary operating mechanism.

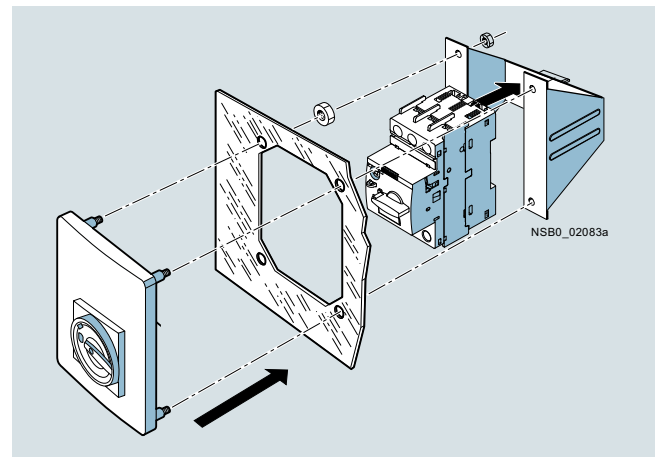
The enclosures can be supplied with either a black rotary operating mechanism or with an EMERGENCY STOP rotary operating mechanism with a red/yellow knob.

In the OFF setting, all rotary operating mechanisms can be locked with up to three padlocks. The enclosures are not suitable for 3RV1011 motor starter protectors.

Front plates

Motor starter protectors are frequently required to be actuated in any enclosure. Front plates equipped with a rotary operating mechanism for 3RV20 to 3RV24 motor starter protectors sizes S00 to S3 are available for this purpose.

A holder for the motor starter protectors sizes S00 and S0, into which the motor starter protectors can be snapped, is available for the front plates. The front plates are not suitable for 3RV1011 motor starter protectors.



Front plate (including holder) for sizes S00 and S0


Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Enclosures and front plates

Selection and ordering data

Version	Degree of protection	Integrated terminals	Width	For 3RV20 to 3RV24 motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			mm	Size	d					
Molded-plastic enclosures for surface mounting¹⁾										
	With rotary operating mechanism, lockable in 0 position	IP55	N and PE/ground	54	S00 ⁵⁾ , S0	▶		1	1 unit	41E
				(for motor starter protector + lateral auxiliary switch)						
				72	S00 ⁵⁾ , S0					
				72	S00 ⁵⁾ , S0	▶		1	1 unit	41E
				(for motor starter protector + lateral auxiliary switch ²⁾ + auxiliary release)						
				82	S2	▶		1	1 unit	41E
				(for motor starter protector + lateral auxiliary switch ²⁾ + auxiliary release)						
	With EMERGENCY STOP rotary operating mechanism, lockable in 0 position	IP55	N and PE/ground	54	S00 ⁵⁾ , S0	▶		1	1 unit	41E
				(for motor starter protector + lateral auxiliary switch)						
				72	S00 ⁵⁾ , S0					
				(for motor starter protector + lateral auxiliary switch ²⁾ + auxiliary release)						
				82	S2	2		1	1 unit	41E
				(for motor starter protector + lateral auxiliary switch ²⁾ + auxiliary release)						
Cast aluminum enclosures for surface mounting¹⁾										
	With rotary operating mechanism, lockable in 0 position	IP65	PE ³⁾	72	S00 ⁵⁾ , S0	▶		1	1 unit	41E
				(for motor starter protector + lateral auxiliary switch ²⁾ + auxiliary release)						
				72	S00 ⁵⁾ , S0	▶		1	1 unit	41E
				(for motor starter protector + lateral auxiliary switch ²⁾ + auxiliary release)						
				lockable in 0 position						
Molded-plastic enclosures for flush mounting⁴⁾										
	With rotary operating mechanism, lockable in 0 position	IP55 (front side)	N and PE/ground	72	S00 ⁵⁾ , S0	2		1	1 unit	41E
				(for motor starter protector + lateral auxiliary switch ²⁾ + auxiliary release)						
				72	S00 ⁵⁾ , S0	2		1	1 unit	41E
				(for motor starter protector + lateral auxiliary switch ²⁾ + auxiliary release)						
				lockable in 0 position						
	With actuator diaphragm	IP55 (front side)	N and PE/ground	72	S00 ⁶⁾	2		1	1 unit	41E
				(for motor starter protector + lateral auxiliary switch ²⁾ + auxiliary release)						
				lockable in 0 position						
Molded-plastic enclosures for surface mounting										
	With actuator diaphragm	IP55	N and PE/ground	85	S00 ⁶⁾	▶		1	1 unit	41E
				105	S00 ⁶⁾					
								1	1 unit	41E

¹⁾ The rear cable glands cannot be used on 3RV2.11-...2. and 3RV2.21-...2. devices with spring-type terminals.

²⁾ Only valid for lateral auxiliary switches with two auxiliary contacts.

³⁾ If required, an additional N terminal can be mounted (e.g. 8WA1011-1BG11).

⁴⁾ Not suitable for 3RV2.11-...2. and 3RV2.21-...2. devices with spring-type terminals.

⁵⁾ Not for 3RV1011.


⁶⁾ Only for 3RV1011.

Motor Starter Protectors/Circuit Breakers


SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

Accessories

Enclosures and front plates

Version	Degree of protection	For 3RV20 to 3RV24 motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		Size	d					
Front plates								
 <p>3RV1923-4B + 3RV1923-4G</p>	Molded-plastic front plates with rotary operating mechanism, lockable in 0 position For actuation of 3RV2 motor starter protectors in any enclosure	IP55 (front side)	S00 ¹⁾ , up to S3	▶	3RV1923-4B	1	1 unit	41E
	Molded-plastic front plates with EMERGENCY STOP rotary operating mechanism, red/yellow, lockable in 0 position EMERGENCY STOP actuation of 3RV2 motor starter protectors in any enclosure	IP55 (front side)	S00 ¹⁾ , up to S3	▶	3RV1923-4E	1	1 unit	41E
	Holders for front plates Holder is mounted on front plate, motor starter protector with and without accessories is snapped in.	--	S00 ¹⁾ , S0	▶	3RV1923-4G	1	1 unit	41E

¹⁾ Not for 3RV1011.

Version	Rated control supply voltage U_s	For 3RV20 to 3RV24 motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V	Size	d					
Indicator lights								
 <p>3RV1903-5B</p>	Indicator lights For all enclosures and front plates	110 ... 120	S00 to S3	5	3RV1903-5B	1	1 unit	41E
	• With LED lamp for versions	220 ... 240		2	3RV1903-5C	1	1 unit	41E
	• With LED lamp for versions	380 ... 415		2	3RV1903-5E	1	1 unit	41E
	• With glow lamp for versions	480 ... 500		5	3RV1903-5G	1	1 unit	41E
	• With colored lenses red, green, yellow-orange and clear							

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

3RV29 infeed system

Overview

The 3RV29 infeed system is a convenient means of energy supply and distribution for a group of several motor starter protectors or complete load feeders with screw or spring-type terminals in sizes S00 and S0. Motor starter protectors or load feeders with a rated current of maximum 32 A each can be used. 3RV21, 3RV27 and 3RV28 motor starter protectors/circuit breakers cannot be deployed in this system.

The system is based on a basic module complete with a lateral incoming unit (three-phase busbar with infeed). This infeed with spring-type terminals is mounted on the right or left, depending on the version, and can be supplied with a maximum conductor cross-section of 25 mm² (with end sleeve). A basic module has two sockets onto each of which a motor starter protector can be snapped.

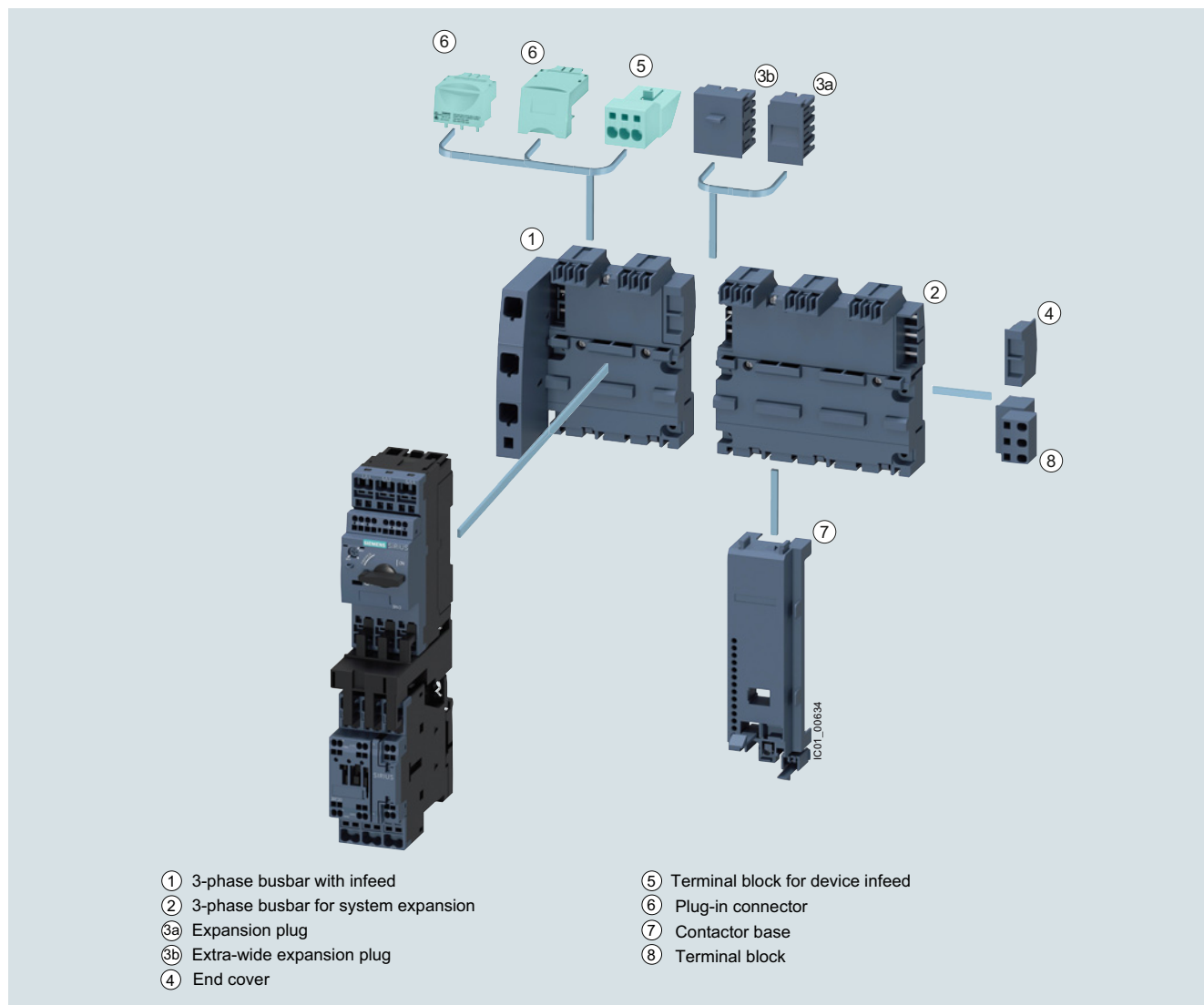
Expansion modules (three-phase busbars for system expansion) are available for extending the system. The individual modules are connected through an expansion plug.

The electrical connection between the three-phase busbars and the motor starter protectors is implemented through plug-in connectors. The complete system can be mounted on a TH 35

standard mounting rail to IEC 60715, and can be expanded as required up to a maximum current carrying capacity of 63 A.

The system is mounted extremely quickly and easily thanks to the simple plug-in technique. Thanks to the lateral infeed, the system also saves space in the control cabinet. The additional height required for the infeed unit is only 30 mm. The alternative infeed possibilities on each side offer a high degree of flexibility for configuring the control cabinet: Infeed on left-hand or right-hand side as well as infeed on one side and outfeed on the other side to supply further loads are all possible. A terminal block with spring-type connections in combination with a standard mounting rail enables the integration of not only SIRIUS motor starter protectors but also single-phase, two-phase and three-phase components such as 5SY miniature circuit breakers or SIRIUS relay components.

The 3RV29 infeed system is approved in accordance with IEC to 500 V. It is also UL-approved and authorized for "Self-Protected Combination Motor Controllers" (Type E starter) as well as for Type F starter (Type E starter + contactor).



SIRIUS 3RV29 infeed system

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

3RV29 infeed system

① Three-phase busbars with infeed

A three-phase busbar with infeed unit is required for connecting the incoming supply. These modules comprise one infeed module and two sockets which each accept one motor starter protector. A choice of two versions with infeed on the left or right is available. The infeed is connected to spring-type terminals. They permit an infeed with conductor cross-sections of up to 25 mm² with end sleeve. An end cover is supplied with each module.

② Three-phase busbars for system expansion

The three-phase busbars for system expansion support expansion of the system. There is a choice of modules with two or three sockets. The system can be expanded as required up to a maximum current carrying capacity of 63 A. An expansion plug is supplied with each module.

③a Expansion plug

The expansion plug is used for electrical connection of adjacent three-phase busbars. The current carrying capacity of this plug equals 63 A. One expansion plug is supplied with each three-phase busbar for system expansion. Additional expansion plugs are therefore only required as spare parts.

③b Extra-wide expansion plug

The wide expansion plug makes the electrical connection between two three-phase busbars, thus performing the same function as the 3RV2917-5BA00 expansion plug; the electrical characteristics (e.g. a current carrying capacity of 63 A) are identical.

The 3RV2917-5E expansion plug is 10 mm wider than the 3RV2917-5BA00 expansion plug, hence in the plugged state there is a distance of 10 mm between the connected three-phase busbars. This distance can be used to lay the auxiliary current and control current wiring ("wiring duct"). The motor starter protector and contactor can be wired from underneath, which means that the complete cable duct above the system can be omitted.

④ End cover

The end cover is used to cover the three-phase busbar at the open end of the system. This cover is therefore only required once for each system. An end cover is supplied with each three-phase busbar system with infeed. Further end covers are therefore only required as spare parts.

⑤ Terminal block for device infeed

A new addition to the system is a connector for outfeeding to a device slot within a module. This offers the option not only of connecting three-phase loads to the system, but also of integrating single-phase loads into the infeed system.

⑥ Plug-in connector

The plug-in connector is used for the electrical connection between the three-phase busbar and the 3RV2 motor starter protector. These plug-in connectors are available for screw or spring-type terminals.

⑦ Contactor base

Load feeders can be assembled in the system using the S00 and S0 contactor base. The contactor bases are suitable for contactors sizes S00 and S0 with spring-type and screw terminals and are simply snapped onto the three-phase busbars. Direct-on-line starters and reversing starters are possible. One contactor base is required for direct-on-line starters and two are required for reversing starters.

To assemble load feeders for reversing starters, the contactor bases can be arranged alongside each other (90 mm overall width). In this case the mechanical interlocking of the contactors is possible. The S0 contactor bases are also suitable for soft starters size S00 and S0 with screw terminal.

The infeed system is designed for mounting onto a TH 35 standard mounting rail with 7.5 mm overall depth. This standard mounting rail gives the contactor base a stable mounting surface to sit on. If standard mounting rails with a depth of 15 mm are used, the spacer connected to the bottom of the contactor base must be knocked out and plugged into the standard mounting rail mating piece, which is also located on the underside. Then the contactor base also has a stable mounting surface. When standard mounting rails with a depth of 7.5 mm are used, the spacer has no function and can be removed.

The link modules are used for direct start load feeders, in which case the use of a contactor base is not absolutely necessary. Motor starter protector and contactor assemblies can then be directly snapped onto the sockets of the three-phase busbars. For feeders of sizes S00 and S0, the corresponding 3RA1921-1....., 3RA2911-2....., 3RA2921-1..... or 3RA2921-2..... link modules should generally be used.

⑧ Terminal block

The 3RV2917-5D terminal block enables the integration of not only SIRIUS motor starter protectors but also single-phase, two-phase and three-phase components. The three phases can be fed out of the system using the terminal block; which means that single-phase loads can also be integrated in the system. The terminal block is plugged into the slot of the expansion plug and thus enables outfeeding from the middle or end of the infeed system. The terminal block can be rotated through 180° and be locked to the support modules of the infeed system. In addition, the 45 mm wide TH 35 3RV1917-7B standard mounting rail option for screwing onto the support plate facilitates plugging the single-phase, two-phase and three-phase components onto the infeed system.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

3RV29 infeed system

Technical specifications

More information

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60279172>

General data

Type					3RV29.7
Size					S00, S0
Standards					
• IEC 60947-2					✓
• IEC 60947-4-1					✓
• UL 508/UL 60947-4-1					✓
Rated current I_n	A				63
Permissible rated current at inside temperature of control cabinet					
Motor starter protectors	Size	Rated current	Inside temperature of control cabinet		
• 3RV2.11	S00	... 14 A	60 °C	%	100
		> 14 ... 16 A	40 °C	%	100
			60 °C	%	87
• 3RV2.21	S0	... 16 A	60 °C	%	100
		> 16 ... 25 A	40 °C	%	100
			60 °C	%	87
		> 25 ... 32 A	40 °C	%	87
Permissible ambient temperature					
• Storage/transport					°C -50 ... +80
• Operation					°C -20 ... +60
Rated operational voltage U_e					
• Acc. to IEC	10% overvoltage		V AC	500	
	5% overvoltage		V AC	525	
• Acc. to UL/CSA			V AC	600	
Rated frequency	Hz				50/60
Rated impulse withstand voltage U_{imp}	kV				6
Short-circuit strength	corresponds to the mounted motor starter protector or load feeder				
Degree of protection acc. to IEC 60529	IP20 (In the terminal compartment of the infeed without connected IP00 conductor)				
Touch protection acc. to IEC 60529	Finger-safe				

Conductor cross-sections

Type		Three-phase busbar with infeed 3RV2917-1A, 3RV2917-1E	Terminal block 3RV2917-5D	Terminal block for device infeed 3RV2917-5FA00
Conductor cross-sections (min./max.)				
• Solid or stranded	mm ²	4 ... 25	1.5 ... 6	1 ... 10
• Finely stranded with end sleeve	mm ²	4 ... 25	1.5 ... 4	1 ... 6
• Finely stranded without end sleeve	mm ²	6 ... 25	1.5 ... 6	--
• AWG cables	AWG	10 ... 3	15 ... 10	18 ... 8

-- No

Motor Starter Protectors/Circuit Breakers

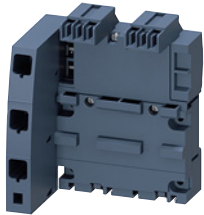
SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

3RV29 infeed system

Selection and ordering data

Type	Version	For 3RV20, 3RV23, 3RV24 motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		Size	d					

Three-phase busbars with infeed



3RV2917-1A

Three-phase busbars with infeed

Incl. 3RV2917-6A end cover

For 2 motor starter protectors with screw or spring-type terminals

- With infeed on the left
- With infeed on the right

S00, S0
S00, S0

2
2

3RV2917-1A
3RV2917-1E

1
1

1 unit
1 unit

41E
41E

Three-phase busbars for system expansion



3RV2917-4A

Three-phase busbars for system expansion

Incl. 3RV2917-5BA00 expansion plug

For motor starter protectors with screw or spring-type terminals

- For 2 motor starter protectors
- For 3 motor starter protectors

S00, S0
S00, S0

2
2

3RV2917-4A
3RV2917-4B

1
1

1 unit
1 unit

41E
41E

Plug-in connectors



3RV2917-5AA00

Plug-in connectors

To make contact with the motor starter protectors

- For spring-type terminals

- Single-unit packaging S00¹⁾³⁾
S0²⁾
- Multi-unit packaging S00¹⁾³⁾
S0²⁾

2
2

Spring-type terminals



3RV2917-5AA00
3RV2927-5AA00
3RV2917-5A
3RV2927-5A

1
1
1
1

1 unit
1 unit
10 units
10 units

41E
41E
41E
41E

- For screw terminals

- Single-unit packaging S00¹⁾³⁾
S0²⁾
- Multi-unit packaging S00¹⁾³⁾
S0²⁾

2
▶
2
▶

Screw terminals



3RV2917-5CA00
3RV1927-5AA00
3RV2917-5C
3RV1927-5A

1
1
1
1

1 unit
1 unit
10 units
10 units

41E
41E
41E
41E

3RV2917-5CA00

¹⁾ $I > 14$ A, please note derating.

²⁾ $I > 16$ A, please note derating.

³⁾ Not for 3RV1011.

Type	Version	For contactors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		Size	d					

Contactors bases



3RV2927-7AA00

Contactors bases

Single-unit packaging

For mounting direct-on-line or reversing starters

S00¹⁾
S00¹⁾, S0

2
2

3RV2917-7AA00
3RV2927-7AA00

1
1

1 unit
1 unit

41E
41E

¹⁾ Not for 3RV1011.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV2 Motor Starter Protectors/Circuit Breakers

3RV29 infeed system

Type	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal blocks							
	Terminal blocks For integration of single-phase, two-phase and three-phase components	Single-unit packaging	2	3RV2917-5D	1	1 unit	41E
TH 35 standard mounting rails, width 45 mm							
	TH 35 standard mounting rails Acc. to IEC 60715, width 45 mm For mounting onto three-phase busbars	Single-unit packaging	2	3RV1917-7B	1	1 unit	41E
Extra-wide expansion plugs							
	Extra-wide expansion plugs As accessory	Single-unit packaging	2	3RV2917-5E	1	1 unit	41E
Expansion plugs							
	Expansion plugs¹⁾ As spare part	Single-unit packaging	2	3RV2917-5BA00	1	1 unit	41E
End covers							
	End covers²⁾ As spare part	Multi-unit packaging	2	3RV2917-6A	100	10 units	41E
Terminal blocks for device infeed							
	Terminal blocks for device infeed	Single-unit packaging	2	3RV2917-5FA00	1	1 unit	41E

¹⁾ The expansion plug is included in the scope of supply of the 3RV2917-4, three-phase busbars for system expansion.

²⁾ The end cover is included in the scope of supply of the 3RV2917-1, three-phase busbars with infeed system.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV1 Motor Starter Protectors/Circuit Breakers

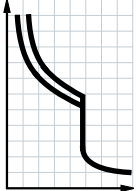



For fuse monitoring

Technical specifications

See pages 7/10, 7/12, 7/15, 7/20, 7/21 and 7/24

Selection and ordering data

Without auxiliary switches

	Rated current	Thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	I_n			I_{cu}	d	Article No.	Price per PU		
	A	A	A	kA					
Size S00									
	0.2	0.2	1.2	100	▶	3RV1611-0BD10	1	1 unit	41E




3RV1611-0BD10

Note:

The auxiliary switch required for signaling must be ordered separately.

Accessories

Version	Contacts	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
		d	Article No.	Price per PU		

Mountable auxiliary switches (essential accessories)



3RV2901-1E

Transverse auxiliary switches

With screw terminals, mountable on the front

1 NO + 1 NC ▶

3RV2901-1E

1

1 unit

41E



3RV2901-1A

Lateral auxiliary switches

With screw terminals, mountable on the left

1 NO + 1 NC ▶

3RV2901-1A

1

1 unit

41E

Additional auxiliary switches and other accessories, see "Accessories", page 7/43 onwards.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV1 Motor Starter Protectors/Circuit Breakers

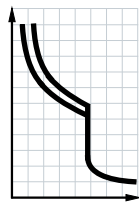
For distance protection

Technical specifications

See page 7/25

Selection and ordering data

Voltage transformer circuit breakers with transverse auxiliary switches (1 CO)



Rated current	Thermal overload release	Instantaneous electronic release	Auxiliary switch integrated in the motor starter protector, transverse	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
I_n		$I >$		I_{cu}	d	Article No.	Price per PU		
A	A	A		kA					

Size S00



3RV1611-1.G14

1.4	1.4	6	1 CO	50	5	3RV1611-1AG14	1	1 unit	41E
2.5	2.5	10.5	1 CO	50	▶	3RV1611-1CG14	1	1 unit	41E
3	3	20	1 CO	50	▶	3RV1611-1DG14	1	1 unit	41E

Accessories

Version	Contacts	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		d	Article No.	Price per PU		

Mountable auxiliary switches for other signaling purposes



3RV2901-1A

Lateral auxiliary switches With screw terminals, mountable on the left	1 NO + 1 NC	▶	3RV2901-1A	1	1 unit	41E
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Additional auxiliary switches and other accessories, see "Accessories", page 7/43 onwards.

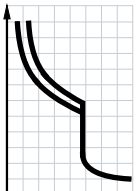
Motor Starter Protectors/Circuit Breakers


SIRIUS 3RV1 Motor Starter Protectors/Circuit Breakers

For motor protection

Selection and ordering data

CLASS 10, without auxiliary switches

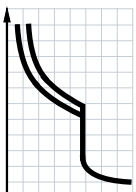



Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}	d	Article No.	Price per PU		
A	kW	A		kA					
Size S00									
0.16	0.04	0.11 ... 0.16	2.1	100	5	3RV1011-0AA10		1	1 unit 41E
0.2	0.06	0.14 ... 0.2	2.6	100	5	3RV1011-0BA10		1	1 unit 41E
0.25	0.06	0.18 ... 0.25	3.3	100	5	3RV1011-0CA10		1	1 unit 41E
0.32	0.09	0.22 ... 0.32	4.2	100	5	3RV1011-0DA10		1	1 unit 41E
0.4	0.09	0.28 ... 0.4	5.2	100	5	3RV1011-0EA10		1	1 unit 41E
0.5	0.12	0.35 ... 0.5	6.5	100	5	3RV1011-0FA10		1	1 unit 41E
0.63	0.18	0.45 ... 0.63	8.2	100	5	3RV1011-0GA10		1	1 unit 41E
0.8	0.18	0.55 ... 0.8	10	100	5	3RV1011-0HA10		1	1 unit 41E
1	0.25	0.7 ... 1	13	100	5	3RV1011-0JA10		1	1 unit 41E
1.25	0.37	0.9 ... 1.25	16	100	5	3RV1011-0KA10		1	1 unit 41E
1.6	0.55	1.1 ... 1.6	21	100	5	3RV1011-1AA10		1	1 unit 41E
2	0.75	1.4 ... 2	26	100	5	3RV1011-1BA10		1	1 unit 41E
2.5	0.75	1.8 ... 2.5	33	100	5	3RV1011-1CA10		1	1 unit 41E
3.2	1.1	2.2 ... 3.2	42	100	5	3RV1011-1DA10		1	1 unit 41E
4	1.5	2.8 ... 4	52	100	5	3RV1011-1EA10		1	1 unit 41E
5	1.5	3.5 ... 5	65	100	5	3RV1011-1FA10		1	1 unit 41E
6.3	2.2	4.5 ... 6.3	82	100	5	3RV1011-1GA10		1	1 unit 41E
8	3	5.5 ... 8	104	50	5	3RV1011-1HA10		1	1 unit 41E
10	4	7 ... 10	130	50	5	3RV1011-1JA10		1	1 unit 41E
12	5.5	9 ... 12	156	50	5	3RV1011-1KA10		1	1 unit 41E

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

The accessories of 3RV2 can be used with exceptions, see "Accessories" from page 7/43 onwards.

CLASS 10, with transverse auxiliary switch (1 NO + 1 NC)



Rated current	Suitable for three-phase motors ¹⁾ with P	Setting range for thermal overload release	Instantaneous electronic release	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
I_n			$I >$	I_{cu}	d	Article No.	Price per PU		
A	kW	A		kA					
Size S00									
0.16	0.04	0.11 ... 0.16	2.1	100	5	3RV1011-0AA15		1	1 unit 41E
0.2	0.06	0.14 ... 0.2	2.6	100	5	3RV1011-0BA15		1	1 unit 41E
0.25	0.06	0.18 ... 0.25	3.3	100	5	3RV1011-0CA15		1	1 unit 41E
0.32	0.09	0.22 ... 0.32	4.2	100	5	3RV1011-0DA15		1	1 unit 41E
0.4	0.09	0.28 ... 0.4	5.2	100	5	3RV1011-0EA15		1	1 unit 41E
0.5	0.12	0.35 ... 0.5	6.5	100	5	3RV1011-0FA15		1	1 unit 41E
0.63	0.18	0.45 ... 0.63	8.2	100	5	3RV1011-0GA15		1	1 unit 41E
0.8	0.18	0.55 ... 0.8	10	100	5	3RV1011-0HA15		1	1 unit 41E
1	0.25	0.7 ... 1	13	100	5	3RV1011-0JA15		1	1 unit 41E
1.25	0.37	0.9 ... 1.25	16	100	5	3RV1011-0KA15		1	1 unit 41E
1.6	0.55	1.1 ... 1.6	21	100	5	3RV1011-1AA15		1	1 unit 41E
2	0.75	1.4 ... 2	26	100	5	3RV1011-1BA15		1	1 unit 41E
2.5	0.75	1.8 ... 2.5	33	100	5	3RV1011-1CA15		1	1 unit 41E
3.2	1.1	2.2 ... 3.2	42	100	5	3RV1011-1DA15		1	1 unit 41E
4	1.5	2.8 ... 4	52	100	5	3RV1011-1EA15		1	1 unit 41E
5	1.5	3.5 ... 5	65	100	5	3RV1011-1FA15		1	1 unit 41E
6.3	2.2	4.5 ... 6.3	82	100	5	3RV1011-1GA15		1	1 unit 41E
8	3	5.5 ... 8	104	50	5	3RV1011-1HA15		1	1 unit 41E
10	4	7 ... 10	130	50	5	3RV1011-1JA15		1	1 unit 41E
12	5.5	9 ... 12	156	50	5	3RV1011-1KA15		1	1 unit 41E

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

The accessories of 3RV2 can be used with exceptions, see "Accessories" from page 7/43 onwards.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV1 Molded Case Motor Starter Protectors up to 800 A

General data

Overview

More information

Homepage, see www.siemens.com/sirius-circuit-breaker



SIRIUS 3RV1063-7AL10 molded case motor starter protector

The 3RV10 and 3RV13 molded case motor starter protectors for up to 800 A are compact, current-limiting motor starter protectors which can be used above all in motor feeders for special voltages of 440 V, 480 V and 690 V. They are used for switching and protecting three-phase motors and other loads with rated currents up to 800 A.

Note:

For motor feeders above 100 A and at 400 V and 500 V, the 3VL molded case motor starter protectors must be used, see [Catalog LV 10](#).

Type of construction

The molded case motor starter protectors are available in three widths:

- 3RV1.6. – width 105 mm, max. rated current 250 A, at 690 V AC suitable for three-phase motors up to 160 kW
- 3RV1.7. – width 140 mm, max. rated current 630 A, at 690 V AC suitable for three-phase motors up to 315 kW
- 3RV1.83 – width 210 mm, max. rated current 800 A, at 690 V AC suitable for three-phase motors up to 500 kW

The 3RV1 molded case motor starter protectors for up to 800 A can be mounted in horizontal, vertical or lying arrangement directly on a mounting plate or mounting rail. Their rated data are adversely affected as the result.

The phase barriers for better insulation between the phases are included in the scope of supply, and it is essential to use them.

The motor starter protectors can be supplied through top and bottom terminals without impairing their function, enabling them to be installed in any type of switchgear without any further steps.

Connection methods

The 3RV1 molded case motor starter protectors up to 800 A are suitable solely for screw connection.



Screw terminals

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Article No. scheme

Product versions	Article number
Molded case motor starter protectors	3RV1 □ □ □ - □ □ □ □ - □ □ □ □
Type of motor starter protector/ e.g. 0 = for motor protection circuit breaker	□
Rated current e.g. 6 = 100 A	□
Breaking capacity e.g. 3 = standard switching capacity	□
Setting range for overload release e.g. 7A = 40 ... 100 A	□ □
Trip class (CLASS) e.g. L = CLASS 10A, 10, 20, 30	□
Connection methods e.g. 1 = screw terminals	□
With or without auxiliary switch e.g. 0 = without	□
Special versions	□ □ □ □
Example	3RV1 0 6 3 - 7 A L 1 0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV1 Molded Case Motor Starter Protectors up to 800 A

General data

Benefits

- High short-circuit breaking capacity in the feeder
- Optimum usability in motor feeders for the special voltages 440 V, 480 V and 690 V
- Compact design
- The releases are available in electronic versions (100 A to 800 A).
- Available for motor or starter protection (short-circuit protection alone)

Application

Operating conditions

The 3RV1 molded case motor starter protectors for up to 800 A can be operated at ambient temperatures between -25 °C and +70 °C. They can be used according to IEC 60721-2-1 in the most difficult environmental conditions with a hot and damp climate.

Since operational currents, starting currents and current peaks are different even for motors with identical power ratings due to the inrush current, the motor ratings in the selection tables are only guide values. The specific rated and start up data of the motor to be protected is always paramount to the choice of the most suitable molded case motor starter protectors.

The 3RV1 molded case motor starter protectors up to 800 A have not been tested for use with frequency converters. The possibility of premature tripping in such applications cannot therefore be ruled out.

Possible uses

The 3RV1 molded case motor starter protectors for up to 800 A are suitable as switching and protection devices for motors. The following versions are available:

- For motor protection; the overload and short-circuit releases are designed for optimized protection and direct-on-line starting of three-phase AC squirrel-cage motors. The motor starter protectors have an electronic release which not only provides short-circuit and overload protection but is also sensitive to phase failure and phase unbalance and offers protection in the event of rotor blockage.
- For starter combinations; these molded case motor starter protectors are used for short-circuit protection in combinations of circuit breaker, motor contactor and overload relay. They are equipped with an electronic release (100 A to 800 A).

Standards and specifications

The electronic releases for motor protection comply with IEC 60947-4-1. Isolating features are also compliant with IEC 60947-2.

The 3RV1 molded case motor starter protectors comply in addition with IEC 60068-2-6 (shock and vibration strength) and are certified for the specifications of the major marine classification societies:

- RINA
- Det Norske Veritas
- Bureau Veritas
- Lloyds Register of Shipping
- Germanischer Lloyd
- American Bureau of Shipping

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RV1 motor starter protectors/circuit breakers in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, [see Application Manual](#).

For more information, [see page 1/7](#).

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV1 Molded Case Motor Starter Protectors up to 800 A

General data

Technical specifications

More information

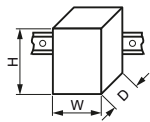
Reference Manual "Protection Equipment – Circuit Breakers · Molded Case Circuit Breakers", see <https://support.industry.siemens.com/cs/ww/en/view/35681461>

General data

Type

Dimensions

- W
- H
- D



		3RV1063	3RV1073	3RV1083	3RV1363	3RV1364	3RV1373	3RV1374	3RV1383	
Standard		IEC/EN 60947-2								
Motor protection		✓			--					
Starter combinations		--			✓					
Rated current I_n	A	160	400	630	250		400, 630		630, 800	
Number of poles		3								
Rated operational voltage U_e 50 ... 60 Hz AC	V	690								
Rated impulse withstand voltage U_{imp}	V	8								
Rated insulation voltage U_i	V	1 000			1 000					
Test voltage at industrial frequency for 1 min	V	3 500			3 500					
Rated ultimate short-circuit breaking capacity I_{cu}										
• At 220/230 V AC, 50 ... 60 Hz	kA	200			200					
• At 380/415 V AC, 50 ... 60 Hz	kA	120		100	120	200	120	200	100	
• At 440 V AC, 50 ... 60 Hz	kA	100		80	100	180	100	180	80	
• At 500 V AC, 50 ... 60 Hz	kA	85		65	85	150	85	150	65	
• At 690 V AC, 50 ... 60 Hz	kA	70		30	70	80	70	80	30	
Rated service short-circuit breaking capacity I_{cs} (% of I_{cu})										
• At 220/230 V AC, 50 ... 60 Hz	%	100		75	100				75	
• At 380/415 V AC, 50 ... 60 Hz	%	100		75	100				75	
• At 440 V AC, 50 ... 60 Hz	%	100		75	100				75	
• At 500 V AC, 50 ... 60 Hz	%	100		75	100		$100^{(1)}/75^{(2)}$	100	75	
• At 690 V AC, 50 ... 60 Hz	%	100		75	100		$100^{(1)}/50^{(2)}$	100	75	
Rated short-circuit making capacity (415 V)	kA	264		220	264	440	264	440	220	
Break time (415 V at I_{cu})	ms	5	6	7	5		6		7	
Category (IEC 60947-2)	A		B (400 A), A (630 A)	B	A		B (400 A), A (630 A)		B	
Isolating features		✓								
Trip class CLASS		10A, 10, 20, 30			--					
Releases										
• Electronic (motor protection)		✓			-- ³⁾					
• Electronic (starter combinations)		--			✓					
Permissible ambient temperature										
• Operation	°C	-25 ... +70 ⁴⁾								
• Storage	°C	-40 ... +70								
Mechanical endurance										
• Operating cycles		20 000			20 000					
• Operating cycles per hour		240	120		240		120			
Electrical endurance										
• Operating cycles		8 000	7 000	5 000	8 000		7 000		5 000	
• Operating cycles per hour (415 V AC)		120	60		120		60			

✓ Has this function

-- Does not have this function

¹⁾ Value applies for 3RV1373-7GN10 molded case motor starter protectors.

²⁾ Value applies for 3RV1373-7JN10 molded case motor starter protectors.

³⁾ For overload protection of the motors, appropriate overload relays must be used.

⁴⁾ From 50 °C, derating applies in some cases.

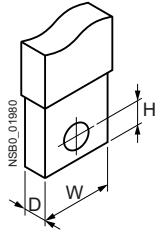
Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV1 Molded Case Motor Starter Protectors up to 800 A

General data

Main circuit terminals

Type	3RV1.6.	3RV1.7.	3RV1083-7JL10, 3RV1383-7JN10	3RV1383-7KN10
------	---------	---------	---------------------------------	---------------

Terminal dimensions**Front-accessible standard terminals****Busbars/cable lug**

Number	Unit(s)	11		2	
Dimensions					
• W	mm	25	35	40	50
• D	mm	8	10	5	
• H	mm	9.5	11	12	
• Lock hasp diameter	mm	8.5	10.5	7	

Front-extended terminals**Busbars**

Number	Unit(s)	1	2		
Dimensions					
• W	mm	20	30	40	50
• D	mm	10	7	5	5
• Lock hasp diameter	mm	10	11		14

Cable lug

Number	Unit(s)	1	2		
Dimensions					
• W	mm	20	30	40	50
• Lock hasp diameter	mm	10	11		14

Front-extended cable terminals for copper cable**Busbars, flexible**

Number	Unit(s)	1		--	
Dimensions W x D x N					
• W	mm	15.5	24	--	
• D	mm	0.8	1	--	
• N (= number of laminations)	mm	10		--	

Cable lug, flexible

Number	Unit(s)	1 or 2		--	
Dimensions					
• For 1 unit	mm ²	2.5 ... 120	16 ... 240	--	
• For 2 units	mm ²	2.5 ... 95	16 ... 150	--	

Cable lug, rigid

Number	Unit(s)	1	1 or 2	--	
Dimensions					
• For 1 unit	mm ²	2.5 ... 185	16 ... 300	--	
• For 2 units (for outside mounting)	mm ²	--	120 ... 240	--	

Rear terminals**Busbars**

Number	Unit(s)	1	2		
Dimensions					
• W	mm	20	30	40	50
• D	mm	10	7	5	
• Lock hasp diameter	mm	8.5	11	14	

Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV1 Molded Case Motor Starter Protectors up to 800 A

General data

Auxiliary switches

Type **3RV1991-1.A0**

Rated operational current I_e

• At 250 V AC/DC			
- At AC-14 (utilization category according to IEC 60947-5-1)			
Control supply voltage 125 V	A	6	
Control supply voltage 250 V	A	5	
- At DC-13 (utilization category according to IEC 60947-5-1)			
Control supply voltage 125 V	A	0.3	
Control supply voltage 250 V	A	0.15	
• At 24 V DC			
- Supply voltage 24 V	mA	≥ 0.75	
- Supply voltage 5 V	mA	≥ 1	

Auxiliary releases

Molded case motor starter protectors	Power consumption during pick-up	
	3RV1.6., 3RV1.7., 3RV1.83	
Version	AC	DC
Undervoltage releases	3RV1982-1A.0	
• 24 ... 30 V AC/DC	6 VA	3 W
• 110 ... 127 V AC/110 ... 125 V DC	6 VA	3 W
• 220 ... 240 V AC/220 ... 250 V DC	6 VA	3 W
Opening times	ms ≤ 25	≤ 15
Shunt releases	3RV1982-1E.0	
• 24 ... 30 V AC/DC	150 VA	150 W
• 110 ... 127 V AC/110 ... 125 V DC	150 VA	150 W
• 220 ... 240 V AC/220 ... 250 V DC	150 VA	150 W
Opening times	ms 15	15

Motor Starter Protectors/Circuit Breakers

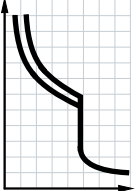



SIRIUS 3RV1 Molded Case Motor Starter Protectors up to 800 A

IE3/IE4 ready

For motor protection

Selection and ordering data

CLASS 10A, 10, 20, 30; without auxiliary switch

	Rated current	Current setting of the inverse-time delayed overload releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	Short-circuit breaking capacity at 400 V AC	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	I_n			I_{cu}		Article No.	Price per PU		
	A	A	A	kA	d				

With electronic releases



3RV10.3-7.L10

TU = trip unit (release)

Further accessories can be ordered separately (see "Accessories" page 7/77 onwards).

Standard switching capacity, adjustable short-circuit and overload release, TU 4

100	40 ... 100	600 ... 1 300	120	20	3RV1063-7AL10	1	1 unit	41E
160	64 ... 160	960 ... 2 080	120	20	3RV1063-7CL10	1	1 unit	41E
200	80 ... 200	1 200 ... 2 600	120	20	3RV1063-7DL10	1	1 unit	41E
400	160 ... 400	2 400 ... 5 200	120	20	3RV1073-7GL10	1	1 unit	41E
630	252 ... 630	3 780 ... 8 190	100	20	3RV1083-7JL10	1	1 unit	41E

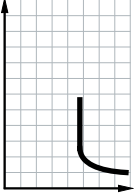



Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV1 Molded Case Motor Starter Protectors up to 800 A

For starter combinations **IE3/IE4 ready**

Selection and ordering data

Without auxiliary switches

	Rated current	Current setting of the inverse-time delayed overload releases "L" I_R	Operating current of the instantaneous short-circuit releases "I" I_i	Short-circuit breaking capacity at 400 V AC I_{cu}	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	I_n					Article No.	Price per PU		
A	A	A	A	kA	d				

With electronic releases



3RV13...-7.N10

Standard switching capacity, adjustable short-circuit release, TU 3

100	Without	100 ... 1 000	120	20	3RV1363-7AN10	1	1 unit	41E
160	Without	160 ... 1 600	120	20	3RV1363-7CN10	1	1 unit	41E
250	Without	250 ... 2 500	120	20	3RV1363-7EN10	1	1 unit	41E
400	Without	400 ... 4 000	120	20	3RV1373-7GN10	1	1 unit	41E
630	Without	630 ... 6 300	120	20	3RV1373-7JN10	1	1 unit	41E
630	Without	630 ... 6 300	100	20	3RV1383-7JN10	1	1 unit	41E
800	Without	800 ... 8 000	100	20	3RV1383-7KN10	1	1 unit	41E

Increased switching capacity, adjustable short-circuit release, TU 3

100	Without	100 ... 1 000	200	20	3RV1364-7AN10	1	1 unit	41E
160	Without	160 ... 1 600	200	20	3RV1364-7CN10	1	1 unit	41E
250	Without	250 ... 2 500	200	20	3RV1364-7EN10	1	1 unit	41E
400	Without	400 ... 4 000	200	20	3RV1374-7GN10	1	1 unit	41E

TU = trip unit (release)

Further accessories can be ordered separately (see "Accessories" page 7/77 onwards).


Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV1 Molded Case Motor Starter Protectors/Circuit Breakers

Accessories

Mountable accessories

Selection and ordering data


Type	Version	For molded case motor starter protectors	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU		

Auxiliary switches



3RV1991-1AA0

Auxiliary switches For front mounting	1 signaling switch Off-On + 1 tripped signal (250 V AC/DC)	3RV1.6. ... 3RV1.83	20	3RV1991-1AA0	1	1 unit	41E
	3 signaling switches Off-On + 1 tripped signal (250 V AC/DC)		20	3RV1991-1BA0	1	1 unit	41E
	3 signaling switches Off-On + 1 tripped signal (24 V DC)		20	3RV1991-1CA0	1	1 unit	41E
	Connection cables for auxiliary switches	Length 2 m, 6-pole	3RV1.6. ... 3RV1.83	20	3RV1991-1FA0	1	1 unit

Type	Rated control supply voltage U_s		For molded case motor starter protectors	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
		AC	DC					
		50/60 Hz						
		V	V					
				d	Article No.	Price per PU		

Auxiliary releases



3RV1982-1AA0

Undervoltage releases For front mounting	24 ... 30	24 ... 30	3RV1.6.	20	3RV1982-1AA0	1	1 unit	41E
	110 ... 127	110 ... 125	...	20	3RV1982-1AD0	1	1 unit	41E
	220 ... 240	220 ... 250	3RV1.83	20	3RV1982-1AF0	1	1 unit	41E



3RV1982-1EA0

Shunt releases For front mounting	24 ... 30	24 ... 30	3RV1.6.	20	3RV1982-1EA0	1	1 unit	41E
	110 ... 127	110 ... 125	...	20	3RV1982-1ED0	1	1 unit	41E
	220 ... 240	220 ... 250	3RV1.83	20	3RV1982-1EF0	1	1 unit	41E

Connection cables for undervoltage and shunt releases	Length 2 m, 6-pole	3RV1.6. ... 3RV1.83	20	3RV1992-1FA0	1	1 unit	41E
--	--------------------	------------------------	----	---------------------	---	--------	-----


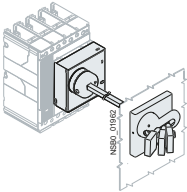
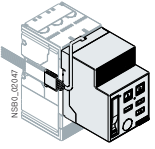



Motor Starter Protectors/Circuit Breakers

SIRIUS 3RV1 Molded Case Motor Starter Protectors/Circuit Breakers

Accessories

Rotary operating mechanisms, mounting accessories

Selection and ordering data

Version	For molded case motor starter protectors	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
			Article No.	Price per PU		
Rotary operating mechanisms						
	Lever-type rotary operating mechanisms	With adjustable distance, with lock/door interlocking (padlocks are not included in scope of supply)	3RV1.6., 3RV1.7.	20	3RV1976-0BA0	1 1 unit 41E
			3RV1.83	20	3RV1986-0BA0	1 1 unit 41E
3RV19.6-0BA0						
	Motorized operating mechanisms	With stored energy mechanism, 220 ... 250 V AC/DC	3RV1.6., 3RV1.7.	20	3RV1976-3AP3	1 1 unit 41E
			3RV1.83	20	3RV1986-3AP3	1 1 unit 41E
3RV19.6-3AP3						
Connections						
	Connections	Front-extended (1 set = 6 units)	3RV1.6.	20	3RV1965-1BA0	1 1 unit 41E
			3RV1.7.	20	3RV1975-1CA0	1 1 unit 41E
			3RV1.83-7J.10	20	3RV1985-1DA0	1 1 unit 41E
			3RV1.83-7KN10	20	3RV1985-1EA0	1 1 unit 41E
3RV1975-1CA0						
		Rear (1 set = 3 units)	3RV1.6.	20	3RV1965-3AA0	1 1 unit 41E
			3RV1.7.	20	3RV1975-3AA0	1 1 unit 41E
			3RV1.83	20	3RV1985-3AA0	1 1 unit 41E
3RV1965-3AA0						
	Cable terminals	Front-extended (1 set = 6 units)	3RV1.6.	20	3RV1965-2BA0	1 1 unit 41E
			3RV1.7.-7G.10	20	3RV1975-2CA0	1 1 unit 41E
			3RV1.73-7JN10	20	3RV1975-2DA0	1 1 unit 41E
3RV1975-2CA0						

Overview

More information

Homepage, see www.siemens.com/sirius-overloadrelays

Industry Mall, see

- www.siemens.com/product?3RU2
- www.siemens.com/product?3RB3
- www.siemens.com/product?3RB2

TIA Selection Tool Cloud (TST Cloud), see

<https://mall.industry.siemens.com/spice/TSTWeb?kmat=ElectronicOverloadRelay>

Configuration Manual "Load Feeders – SIRIUS Modular System", see

<https://support.industry.siemens.com/cs/ww/en/view/39714188>



Features

3RU21

3RB30/3RB31

3RB20/3RB21

3RB22/3RB23

3RB24

Benefits

General data

Sizes	S00 ... S3	S00 ... S3	S6 ... S12	S00 ... S12	S00 ... S12	
Seamless current range	0.11 ... 100 A	0.1 ... 115 A	50 ... 630 A	0.3 ... 630 A (up to 820 A) ¹⁾	0.3 ... 630 A (up to 820 A) ¹⁾	<ul style="list-style-type: none"> • Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, etc.) • Permit the mounting of slim and compact load feeders in widths of 45 mm (S00, S0), 55 mm (S2), 70 mm (S3), 120 mm (S6) and 145 mm (S10/S12); this does not include the current measuring modules for the 3RB22 to 3RB24 evaluation modules sizes S00 to S3 • Simplify configuration • Allows easy and consistent configuration with one series of overload relays (for small to large loads)
Protection functions						
Tripping due to overload	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> • Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload
Tripping due to phase unbalance	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> • Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to phase unbalance
Tripping due to phase failure	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> • Minimizes heating of three-phase motors during phase failure
Protection of single-phase loads	✓	--	--	✓	✓	<ul style="list-style-type: none"> • Enables the protection of single-phase loads
Tripping in the event of overheating by Integrated thermistor motor protection function	-- ²⁾	-- ²⁾	-- ²⁾	✓	✓	<ul style="list-style-type: none"> • Provides optimum temperature-dependent protection of loads against excessive temperature rises, e.g. for stator-critical motors or in the event of insufficient coolant flow, contamination of the motor surface or long starting or braking operations • Eliminates the need for additional special equipment • Saves space in the control cabinet • Reduces wiring outlay and costs
Tripping in the event of a ground fault by Internal ground-fault detection (activatable)	--	✓ (only 3RB31)	✓ (only 3RB21)	✓	✓	<ul style="list-style-type: none"> • Provides optimum protection of loads against high-resistance short circuits or ground faults due to moisture, condensed water, damage to the insulation material, etc. • Eliminates the need for additional special equipment • Saves space in the control cabinet • Reduces wiring outlay and costs

✓ Available

-- Not available

¹⁾ Motor currents up to 820 A can be recorded and evaluated by a current measuring module, e.g. 3RB2906-2BG1 (0.3 to 3 A), in combination with 3UF1868-3GA00 (820 A/1 A) series transformer. For 3UF18 transformers, see page 10/25.

²⁾ The SIRIUS 3RN thermistor motor protection devices can be used to provide additional temperature-dependent protection.

Overload Relays

General data



Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Features						
RESET function	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> Allows manual or automatic resetting of the device
Remote RESET function	✓ (by means of separate module)	✓ (only with 3RB31 and external auxiliary voltage 24 V DC)	✓ (only with 3RB21 and external auxiliary voltage 24 V DC)	✓ (electrically via external button)	✓ (electrically with button or via IO-Link)	<ul style="list-style-type: none"> Allows the remote resetting of the device
TEST function for auxiliary contacts	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> Allows easy checking of the function and wiring
TEST function for electronics	--	✓	✓	✓	✓	<ul style="list-style-type: none"> Allows checking of the electronics
Status display	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> Displays the current operating state
Large current adjustment button	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> Makes it easier to set the relay exactly to the correct current value
Integrated auxiliary contacts (1 NO + 1 NC)	✓	✓	✓	✓ (2 ×)	--	<ul style="list-style-type: none"> Allows the load to be switched off if necessary Can be used to output signals
Integrated auxiliary contacts (1 CO and 1 NO in series)	--	--	--	--	✓	<ul style="list-style-type: none"> Enables the controlling of contactors directly from the higher-level control system through IO-Link
IO-Link connection	--	--	--	--	✓	<ul style="list-style-type: none"> Reduction of wiring in the control cabinet Enables communication
Connection of optional hand-held device	--	--	--	--	✓	<ul style="list-style-type: none"> Enables local operation
Communication capability through IO-Link						
Full starter functionality through IO-Link	--	--	--	--	✓	<ul style="list-style-type: none"> Enables in combination with the SIRIUS 3RT contactors the assembly of communication-capable motor starters (direct-on-line, reversing and star-delta (wye-delta) starting)
Readout of diagnostics functions	--	--	--	--	✓	<ul style="list-style-type: none"> Enables the readout of diagnostics information such as overload, open circuit, ground fault, etc.
Readout of current values	--	--	--	--	✓	<ul style="list-style-type: none"> Enables the readout of current values and their direct processing in the higher-level control system
Readout of all set parameters	--	--	--	--	✓	<ul style="list-style-type: none"> Enables the readout of all set parameters, e.g. for plant documentation

✓ Available

-- Not available



Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Design of load feeders						
Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> Provides optimum protection of the loads and operating personnel in the event of short circuits due to insulation faults or faulty switching operations
Electrical and mechanical matching to 3RT contactors	✓	✓	✓	✓ ¹⁾	✓ ¹⁾	<ul style="list-style-type: none"> Simplifies configuration Reduces wiring outlay and costs Enables stand-alone installation as well as space-saving direct mounting
Straight-through transformers for main circuit²⁾ (in this case the cables are routed through the feed-through openings of the overload relay and connected directly to the box terminals of the contactor)	--	✓ (S2, S3)	✓ (S6)	✓ (S00 ... S6)	✓ (S00 ... S6)	<ul style="list-style-type: none"> Reduces the contact resistance (only one point of contact) Saves wiring costs (easy, no need for tools, and fast) Saves material costs Reduces installation costs
Spring-type connection system for main circuit²⁾	✓ (S00, S0)	✓ (S00, S0)	--	--	--	<ul style="list-style-type: none"> Enables fast connections Permits vibration-resistant connections Enables maintenance-free connections
Spring-type connection system for auxiliary circuits²⁾	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> Enables fast connections Permits vibration-resistant connections Enables maintenance-free connections
Full starter functionality through IO-Link	--	--	--	--	✓	<ul style="list-style-type: none"> Enables in combination with the SIRIUS 3RT contactors the assembly of communication-capable motor starters (direct-on-line, reversing and star-delta (wye-delta) starting)
Starter function	--	--	--	--	✓	<ul style="list-style-type: none"> Integration of feeders via IO-Link in the control system up to 630 A or 820 A

✓ Available

-- Not available

¹⁾ Exception: up to size S3, only stand-alone installation is possible.²⁾ Available as an alternative to screw terminals.

Overload Relays

General data



Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Other features						
Temperature compensation	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> Allows the use of the relays at high temperatures without derating Prevents premature tripping Allows compact installation of the control cabinet without distance between the devices/load feeders Simplifies configuration Enables space to be saved in the control cabinet
Very high long-term stability	✓	✓	✓	✓	✓	<ul style="list-style-type: none"> Provides safe protection for the loads even after years of use in severe operating conditions
Wide setting ranges	--	✓ (1:4)	✓ (1:4)	✓ (1:10)	✓ (1:10)	<ul style="list-style-type: none"> Minimize the configuration outlay and costs Minimize storage overheads, storage costs, tied-up capital
Fixed trip class	CLASS 10, CLASS 10A	3RB30: CLASS 10E or CLASS 20E	3RB20: CLASS 10E or CLASS 20E	--	--	<ul style="list-style-type: none"> Optimum motor protection for standard starts
Trip classes adjustable on the device CLASS 5E, 10E, 20E, 30E	--	3RB31: ✓	3RB21: ✓	✓	✓	<ul style="list-style-type: none"> Enables solutions for very fast starting motors requiring special protection (e.g. Ex motors) Enables heavy starting solutions Reduces the number of variants Minimizes the configuring outlay and costs Minimizes storage overhead, storage costs, and tied-up capital
Low power loss	--	✓	✓	✓	✓	<ul style="list-style-type: none"> Reduces power consumption and energy costs (up to 98% less power is used than for thermal overload relays) Minimizes temperature rises of the contactor and control cabinet – in some cases this may eliminate the need for control cabinet cooling. Direct mounting to contactor saves space, even for high motor currents (i.e. no heat decoupling is required)
Internal power supply	-- ¹⁾	✓	✓	--	--	<ul style="list-style-type: none"> Eliminates the need for configuration and connecting an additional control circuit
Supplied from an external source via IO-Link	--	--	--	--	✓	<ul style="list-style-type: none"> Eliminates the need for configuration and connecting an additional control circuit

✓ Available

-- Not available

¹⁾ SIRIUS 3RU11 and 3RU21 thermal overload relays use a bimetal contactor and therefore do not require a control supply voltage.



Features	3RU21	3RB30/3RB31	3RB20/3RB21	3RB22/3RB23	3RB24	Benefits
Other features (continued)						
Overload warning	--	--	--	✓	✓	<ul style="list-style-type: none"> Indicates imminent tripping of the relay directly on the device due to overload, phase unbalance or phase failure through flickering of the LEDs or in the case of the 3RB24 as a signal through IO-Link Allows the imminent tripping of the relay to be signaled Allows measures to be taken in time in the event of inverse-time delayed overloading of the load for an extended period over the current limit Eliminates the need for an additional device Saves space in the control cabinet Reduces wiring outlay and costs
Analog output	--	--	--	✓	✓	<ul style="list-style-type: none"> Allows the output of an analog output signal for actuating moving-coil instruments, feeding programmable logic controllers or transfer to bus systems Eliminates the need for an additional measuring transducer and signal converter Saves space in the control cabinet Reduces wiring outlay and costs

✓ Available
 -- Not available



Overload Relays

General data

Overview of overload relays – matching contactors

Overload relays	Current measurement	Current range	Contactors (type, size, rating in kW)								
			3RT201.	3RT202.	3RT203.	3RT204.	3RT105.	3RT106.	3RT107.	3TF68/3TF69	
Type	A		S00	S0	S2	S3	S6	S10	S12	14	
			3/4/5.5/7.5	5.5/7.5/11/15/18.5	15/18.5/22/30/37	37/45/55	55/75/90	110/132/160	200/250	375/450	

SIRIUS 3RU21 thermal overload relays



3RU211	Integrated	0.1 ... 16	✓	--	--	--	--	--	--	--
3RU212	Integrated	1.8 ... 40	--	✓	--	--	--	--	--	--
3RU213	Integrated	11 ... 80	--	--	✓	--	--	--	--	--
3RU214	Integrated	28 ... 100	--	--	--	✓	--	--	--	--

3RU21

SIRIUS 3RB30 electronic overload relays¹⁾



3RB301	Integrated	0.1 ... 16	✓	--	--	--	--	--	--	--
3RB302	Integrated	0.1 ... 40	--	✓	--	--	--	--	--	--
3RB303	Integrated	12.5 ... 80	--	--	✓	--	--	--	--	--
3RB304	Integrated	32 ... 115	--	--	--	✓	--	--	--	--

3RB30

SIRIUS 3RB31 electronic overload relays¹⁾



3RB311	Integrated	0.1 ... 16	✓	--	--	--	--	--	--	--
3RB312	Integrated	0.1 ... 40	--	✓	--	--	--	--	--	--
3RB313	Integrated	12.5 ... 80	--	--	✓	--	--	--	--	--
3RB314	Integrated	32 ... 115	--	--	--	✓	--	--	--	--

3RB31

SIRIUS 3RB20 electronic overload relays¹⁾



3RB205	Integrated	50 ... 200	--	--	--	--	✓	--	--	--
3RB206	Integrated	55 ... 630	--	--	--	--	--	✓	✓	✓
3RB201 + 3UF18	Integrated	630 ... 820	--	--	--	--	--	--	--	✓

3RB20

SIRIUS 3RB21 electronic overload relays¹⁾



3RB215	Integrated	50 ... 200	--	--	--	--	✓	--	--	--
3RB216	Integrated	55 ... 630	--	--	--	--	--	✓	✓	✓
3RB211 + 3UF18	Integrated	630 ... 820	--	--	--	--	--	--	--	✓

3RB21

SIRIUS 3RB22 to 3RB24 electronic overload relays¹⁾



3RB22, 3RB23, 3RB24	3RB2906	0.3 ... 25	✓	✓	--	--	--	--	--	--
	3RB2906	10 ... 100	✓	✓	✓	✓	--	--	--	--
	3RB2956	20 ... 200	--	✓	✓	✓	✓	--	--	--
	3RB2966	63 ... 630	--	--	--	--	--	✓	✓	✓
	3RB2906 + 3UF18	630 ... 820	--	--	--	--	--	--	--	✓

✓ Can be used
-- Cannot be used

¹⁾ "Technical specifications" for the use of overload relays with trip class \geq CLASS 20E, see "Short-circuit protection with fuses for motor feeders" in the Configuration Manual.

Connection methods3RU2 thermal overload relays

- Sizes S00 and S0:
 - Main and auxiliary circuit: Either screw or spring-type terminals
- Sizes S2 and S3:
 - Main circuit: Screw terminals with box terminal
 - Auxiliary circuit: Either screw or spring-type terminals

3RB3 electronic overload relays

- Sizes S00 and S0:
 - Main and auxiliary circuit: Either screw or spring-type terminals
- Sizes S2 and S3:
 - Main circuit: Screw terminals with box terminal or as straight-through transformer
 - Auxiliary circuit: Either screw or spring-type terminals

3RB2 electronic overload relays

3RB20 and 3RB21 overload relays:

- Size S6:
 - Main circuit: With busbar connection or as straight-through transformer
 - Auxiliary circuit: Either screw or spring-type terminals
- Sizes S10/S12:
 - Main circuit: With busbar connection
 - Auxiliary circuit: Either screw or spring-type terminals

3RB22 to 3RB24 evaluation modules:

- Screw or spring-type terminals

3RB29 current measuring modules:

- Up to size S3: Straight-through transformers
- As from size S6:
 - Main circuit: With busbar connection
 - Auxiliary circuit: Either screw or spring-type terminals



Screw terminals



Spring-type terminals



Busbar connections



Straight-through transformers

The various terminals and straight-through transformers are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

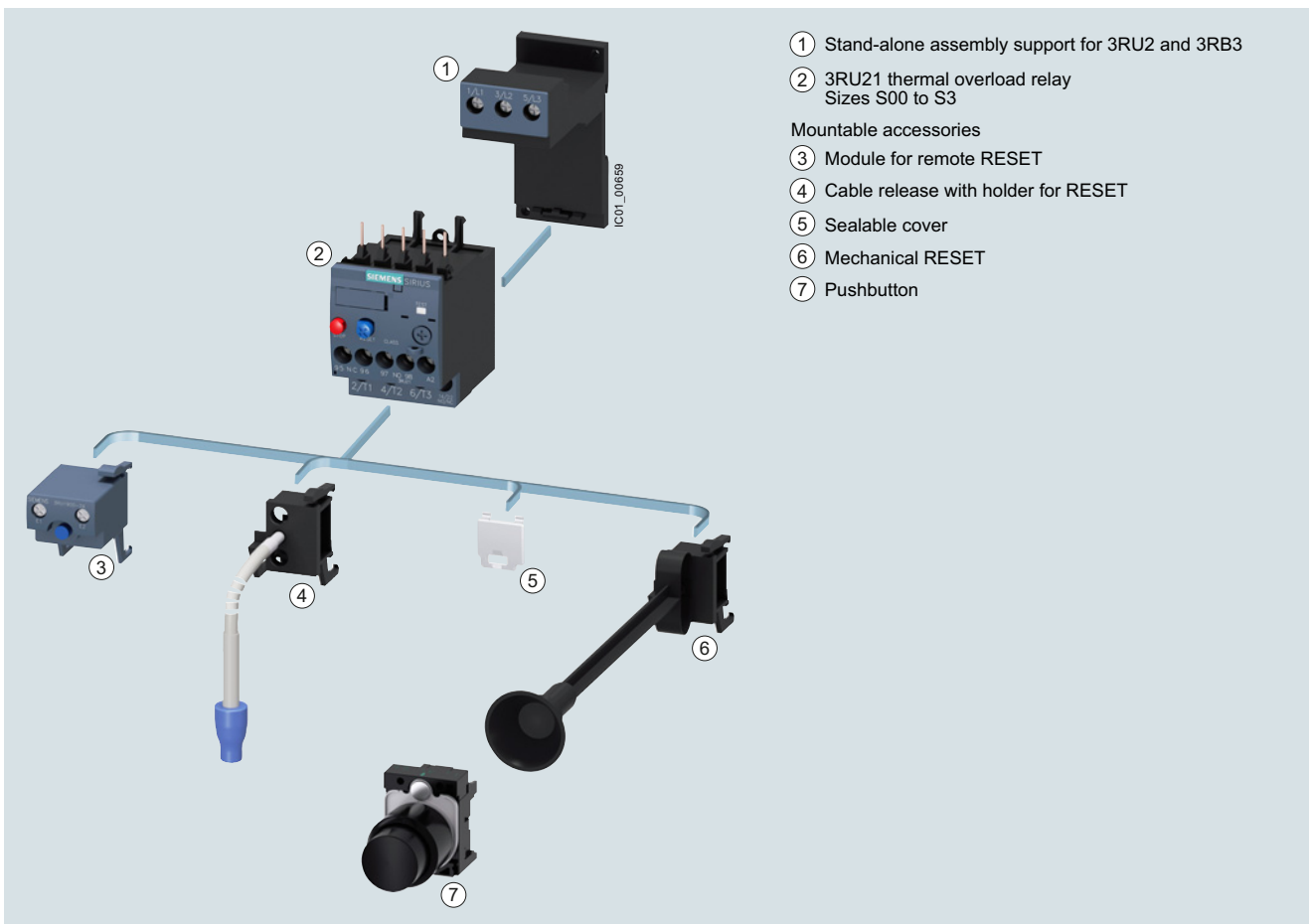
3RU2 for standard applications

Overview

More information

Homepage, see www.siemens.com/sirius-overloadrelays
 Industry Mall, see www.siemens.com/product?3RU2
 TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/TSTWeb?kmat=ElectronicOverloadRelay>
 Conversion tool, e.g. from 3RU11 to 3RU21, see www.siemens.com/sirius/conversion-tool

Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>
 Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60298164>
 Characteristics and certificates, see <https://support.industry.siemens.com/cs/ww/en/ps/16271>

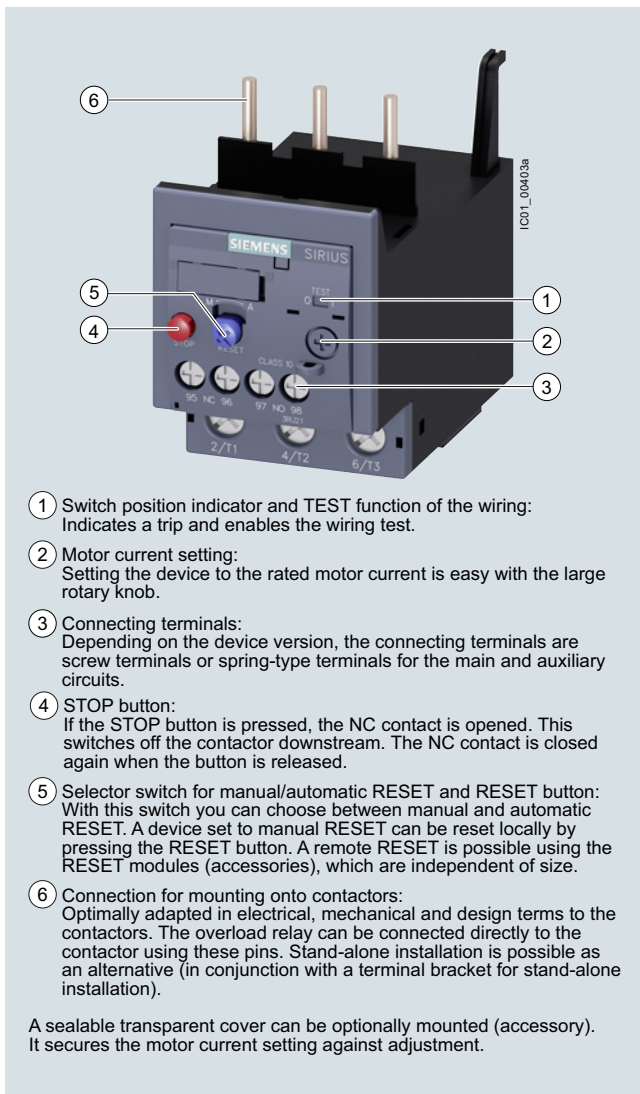


Mountable accessories for 3RU thermal overload relay

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

3RU2 for standard applications



- ① Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.
- ② Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.
- ③ Connecting terminals:
Depending on the device version, the connecting terminals are screw terminals or spring-type terminals for the main and auxiliary circuits.
- ④ STOP button:
If the STOP button is pressed, the NC contact is opened. This switches off the contactor downstream. The NC contact is closed again when the button is released.
- ⑤ Selector switch for manual/automatic RESET and RESET button:
With this switch you can choose between manual and automatic RESET. A device set to manual RESET can be reset locally by pressing the RESET button. A remote RESET is possible using the RESET modules (accessories), which are independent of size.
- ⑥ Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the contactors. The overload relay can be connected directly to the contactor using these pins. Stand-alone installation is possible as an alternative (in conjunction with a terminal bracket for stand-alone installation).

A sealable transparent cover can be optionally mounted (accessory). It secures the motor current setting against adjustment.

3RU21 thermal overload relays up to 100 A have been designed to provide current-dependent protection for loads with normal starting against impermissibly high temperature rises due to overload or phase failure.

An overload or phase failure results in an increase of the motor current beyond the set rated motor current. Via heating elements, this current rise heats up the bimetal strips inside the device which then bend and as a result trigger the auxiliary contacts by means of a tripping mechanism. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve, see [Characteristics](#).

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after a recovery time has elapsed.

The 3RU2 thermal overload relays are suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

Use in hazardous areas

The 3RU2 overload relays are certified in accordance with both the European explosion protection directive (ATEX) and the international explosion protection standard (IECEx), see [Certificates](#).

SIRIUS 3RU2136-4.B0 thermal overload relay

Article No. scheme

Product versions	Article number
Thermal overload relays	3RU2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Device type	e.g. 1 = CLASS 10, 1 NO + 1 NC <input type="checkbox"/>
Size, rated operational current and power	e.g. 16 = 16 A (7.5 kW) for size S00 <input type="checkbox"/> <input type="checkbox"/>
Setting range for overload release	e.g. 0A = 0.11 ... 0.16 A <input type="checkbox"/> <input type="checkbox"/>
Connection methods	e.g. B = screw terminals <input type="checkbox"/>
Installation type	e.g. 0 = mounting on contactor <input type="checkbox"/>
Example	3RU2 1 1 6 - 0 A B 0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

3RU2 for standard applications

Benefits

The most important features and benefits of the 3RU21 thermal overload relays are listed in the overview table (see "General data", page 7/79 onwards).

Application

Industries

The 3RU21 thermal overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal starting conditions (CLASS 10, 10A).

Application

The 3RU21 thermal overload relays have been designed for the protection of three-phase and single-phase AC and DC motors.

If single-phase AC or DC loads are to be protected by the 3RU21 thermal overload relays, all three bimetal strips must be heated. For this purpose, all main current paths of the relay must be connected in series.

Ambient conditions

3RU21 thermal overload relays compensate temperature in the temperature range from -40 °C to +60 °C according to IEC 60947-4-1. At temperatures from +60 °C to +70 °C, the upper set value of the setting range has to be reduced by a specific factor in accordance with the table below.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RU21 thermal overload relays in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see [Application Manual](#).

For more information, see [page 1/7](#).

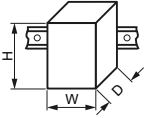

Technical specifications

More information

System Manual "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>
Configuration Manual "Load Feeders – SIRIUS Modular System", see <https://support.industry.siemens.com/cs/ww/en/view/39714188>

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60298164>
Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16270/td>

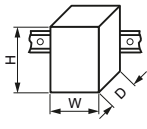
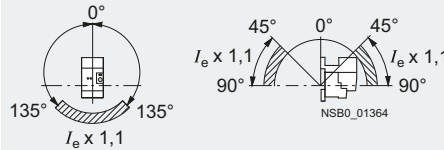
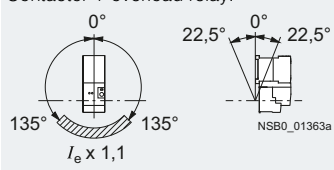
The following technical information is intended to provide an initial overview of the various types of device and functions.

Type		3RU2116	3RU2126	3RU2136	3RU2146
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 95	55 x 105 x 117	70 x 106 x 124
• Spring-type terminals	mm	45 x 102 x 79	45 x 114 x 95	55 x 105 x 117	70 x 106 x 124
General data					
Tripping in the event of		Overload and phase failure			
Trip class acc. to IEC 60947-4-1	Class	10		10, 10A	
Phase failure sensitivity		Yes			
Overload warning		No			
Reset and recovery					
• Reset options after tripping		Manual, automatic and remote RESET (remote RESET in conjunction with the appropriate accessories)			
• Recovery time					
- For automatic RESET	min.	Depends on the strength of the tripping current and characteristic			
- For manual RESET	min.	Depends on the strength of the tripping current and characteristic			
- For remote RESET	min.	Depends on the strength of the tripping current and characteristic			
Features					
• Display of operating state on device		Yes, by means of TEST function/switch position indicator slide			
• TEST function		Yes			
• RESET button		Yes			
• STOP button		Yes			
Protection of motors in hazardous environments					
• according to European Directive 2014/34/EU (ATEX)		DMT 98 ATEX G 001  II (2) GD			
• according to international standard IECEx		IECEx BVS 15.0046 see https://support.industry.siemens.com/cs/ww/en/ps/16270/cert			

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

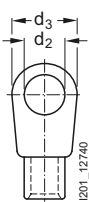
3RU2 for standard applications

Type		3RU2116	3RU2126	3RU2136	3RU2146
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals • Spring-type terminals		mm mm	45 x 89 x 80 45 x 102 x 79	45 x 97 x 95 45 x 114 x 95	55 x 105 x 117 55 x 105 x 117
General data (continued)					
Ambient temperature					
• Storage/transport	°C	-55 ... +80			
• Operation	°C	-40 ... +70			
• Temperature compensation	°C	Up to +60			
• Permissible rated current at					
- Temperature inside control cabinet 60 °C	%	100 (current reduction is required above +60 °C)			
- Temperature inside control cabinet 70 °C	%	87			
Repeat terminals					
• Coil repeat terminals		Yes	Not required		
• Auxiliary contact repeat terminal		Yes	Not required		
Degree of protection acc. to IEC 60529		IP20		<ul style="list-style-type: none"> - IP20 (front side) - Terminal IP00 (use additional terminal covers for higher degree of protection) 	
Touch protection acc. to IEC 60529		Finger-safe		Finger-safe, for vertical contact from the front	
Shock resistance with sine acc. to IEC 60068-2-27		g/ms	15/11 (auxiliary contacts 95/96 and 97/98: 8 g/11 ms)		
Electromagnetic compatibility (EMC)					
• Interference immunity		Not relevant			
• Emitted interference		Not relevant			
Resistance to extreme climates – Air humidity		%	90		
Installation altitude above sea level		m	Up to 2 000		
Mounting position		<p>The diagrams show the permissible mounting positions for mounting onto contactors and stand-alone installation. For mounting position in the hatched area, a setting correction of 10% must be implemented.</p> <p>Stand-alone installation:</p> 			
		<p>Contactor + overload relay:</p> 			
Type of mounting		For mounting onto contactor or stand-alone installation with terminal support, screw and snap-on mounting onto standard mounting rail.			

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

3RU2 for standard applications

Type		3RU2116	3RU2126	3RU2136	3RU2146
Size		S00	S0	S2	S3
Main circuit					
Rated insulation voltage U_i (pollution degree 3)	V	690			1000
Rated impulse withstand voltage U_{imp}	kV	6			8
Rated operational voltage U_e	V	690			
Type of current					
• Direct current		Yes			
• Alternating current		Yes, frequency range up to 400 Hz			
Current setting					
	A	0.11 ... 0.16	1.8 ... 2.5	11 ... 16	28 ... 40
	A	to 11 ... 16	to 34 ... 40	to 70 ... 80	to 80 ... 100
Power loss per unit (max.)					
	W	4.1 ... 6.3	6.2 ... 7.5	8 ... 14	12 ... 16.5
Short-circuit protection					
• With fuse without contactor		See "Selection and ordering data", pages 7/92 ... 7/95			
• With fuse and contactor		"Short-Circuit Protection with Fuses/Motor Starter Protectors for Motor Feeders", see Configuration Manual.			
Protective separation between main and auxiliary current paths acc. to IEC 60947-1					
• Screw terminals or ring terminal lug connections	V	440	690: Setting range ≤ 25 A	690	
• Spring-type terminals	V	440	440: Setting range > 25 A	690	
Conductor cross-sections of main circuit					
Connection type		⊕ Screw terminals			⊕ Screw terminals with box terminal
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2	4 mm Allen screw
Operating devices		mm	∅ 5 ... 6	∅ 5 ... 6	4 mm Allen screw
Prescribed tightening torque		Nm	0.8 ... 1.2	2 ... 2.5	3 ... 4.5
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾ , max. 2 x 4	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 10) ¹⁾	2 x (2.5 ... 35) ¹⁾ , 1 x (2.5 ... 50) ¹⁾	2 x (2.5 ... 16) ¹⁾ , 2 x (10 ... 50) ¹⁾ , 1 x (10 ... 70) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , max. 1 x 10	2 x (1 ... 25) ¹⁾ , 1 x (1 ... 35) ¹⁾	2 x (2.5 ... 35) ¹⁾ , 1 x (2.5 ... 50) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ , 2 x (18 ... 14) ¹⁾ , 2 x 12	2 x (16 ... 12) ¹⁾ , 2 x (14 ... 8) ¹⁾	2 x (18 ... 2) ¹⁾ , 1 x (18 ... 1) ¹⁾	2 x (10 ... 1/0) ¹⁾ , 1 x (10 ... 2/0) ¹⁾
Removable box terminals²⁾					
• With copper bars ³⁾	mm	--	--	--	2 x 12 x 4
• With cable lugs ⁴⁾					
- Terminal screw	Nm	--	--	--	M6
- Prescribed tightening torque	Nm	--	--	--	4.5 ... 6
- Usable ring terminal lugs	mm	--	--	--	d ₂ = min. 6.3 d ₃ = max. 19
					
Connection type		⊕ Spring-type terminals			
Operating devices		mm	3.0 x 0.5 and 3.5 x 0.5		
Conductor cross-sections (min./max.), 1 conductor can be connected					
• Solid or stranded	mm ²	1 x (0.5 ... 4)	1 x (1 ... 10)	--	--
• Finely stranded without end sleeve	mm ²	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	--
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--	--
• AWG cables, solid or stranded	AWG	1 x (20 ... 12)	1 x (18 ... 8)	--	--

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

²⁾ Cable lug and busbar connection possible after removing the box terminals.



³⁾ If bars larger than 12 mm x 10 mm are connected, a 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/97.

⁴⁾ When conductors larger than 25 mm² are connected, the 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/97.

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

3RU2 for standard applications

Type		3RU2116	3RU2126	3RU2136	3RU2146
Size		S00	S0	S2	S3
Auxiliary circuit					
Number of NO contacts		1			
Number of NC contacts		1			
Auxiliary contacts – Assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Contact rating of the auxiliary contacts					
• NC, NO contacts with alternating current AC-15, rated operational current I_e at U_e					
- 24 V	A	3			
- 120 V	A	3			
- 125 V	A	3			
- 230 V	A	2			
- 400 V	A	1			
- 600 V	A	0.75			
- 690 V	A	0.75			
• NC, NO contacts with direct current DC-13, rated operational current I_e at U_e					
- 24 V	A	1			
- 110 V	A	0.22			
- 125 V	A	0.22			
- 220 V	A	0.11			
• Contact reliability (suitability for PLC control; 17 V, 5 mA)					
		Yes			
Short-circuit protection					
• With fuse					
- Operational class gG	A	6			
- Quick	A	10			
• With miniature circuit breaker (C characteristic)					
	A	6 (up to $I_k \leq 0.5$ kA; $U \leq 260$ V)			
Reliable operational voltage for protective separation between auxiliary current paths Acc. to IEC 60947-1	V	440			
CSA, UL, UR rated data					
Auxiliary circuit – Switching capacity		B600, R300			
Conductor cross-sections for auxiliary circuit					
Connection type					
 Screw terminals					
Terminal screw		M3, Pozidriv size 2			
Operating devices	mm	Ø 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾			
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾			
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ , 2 x (18 ... 14) ¹⁾			
Connection type					
 Spring-type terminals					
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm ²	2 x (0.5 ... 2.5)			
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)			

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

3RU2 for standard applications **IE3/IE4 ready**

Selection and ordering data

3RU21 thermal overload relays for mounting onto contactor¹⁾, sizes S00 and S0, CLASS 10

Features and technical specifications:

- Connection methods
Main and auxiliary circuit: Either screw or spring-type terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET

- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F



3RU2116-4AB0





3RU2116-4AC0



3RU2126-4FB0



3RU2126-4AC0

Size con- tactor	Trip class	Rated power for three-phase motors, rated value ²⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ³⁾	SD	Screw terminals 		Spring-type terminals 	
						Article No.	Price per PU d	Article No.	Price per PU
Class	kW	A	A	d					
Size S00									
S00	10	0.04	0.11 ... 0.16	0.5	2	3RU2116-0AB0	5	3RU2116-0AC0	
	10	0.06	0.14 ... 0.2	1	2	3RU2116-0BB0	5	3RU2116-0BC0	
	10	0.06	0.18 ... 0.25	1	▶	3RU2116-0CB0	5	3RU2116-0CC0	
	10	0.09	0.22 ... 0.32	1.6	▶	3RU2116-0DB0	5	3RU2116-0DC0	
	10	0.09	0.28 ... 0.4	2	▶	3RU2116-0EB0	5	3RU2116-0EC0	
	10	0.12	0.35 ... 0.5	2	▶	3RU2116-0FB0	5	3RU2116-0FC0	
	10	0.18	0.45 ... 0.63	2	▶	3RU2116-0GB0	5	3RU2116-0GC0	
	10	0.18	0.55 ... 0.8	4	▶	3RU2116-0HB0	5	3RU2116-0HC0	
	10	0.25	0.7 ... 1	4	▶	3RU2116-0JB0	▶	3RU2116-0JC0	
	10	0.37	0.9 ... 1.25	4	▶	3RU2116-0KB0	5	3RU2116-0KC0	
	10	0.55	1.1 ... 1.6	6	▶	3RU2116-1AB0	▶	3RU2116-1AC0	
	10	0.75	1.4 ... 2	6	▶	3RU2116-1BB0	▶	3RU2116-1BC0	
	10	0.75	1.8 ... 2.5	10	▶	3RU2116-1CB0	▶	3RU2116-1CC0	
	10	1.1	2.2 ... 3.2	10	▶	3RU2116-1DB0	▶	3RU2116-1DC0	
	10	1.5	2.8 ... 4	16	▶	3RU2116-1EB0	5	3RU2116-1EC0	
	10	1.5	3.5 ... 5	20	▶	3RU2116-1FB0	5	3RU2116-1FC0	
	10	2.2	4.5 ... 6.3	20	▶	3RU2116-1GB0	5	3RU2116-1GC0	
	10	3	5.5 ... 8	25	▶	3RU2116-1HB0	5	3RU2116-1HC0	
	10	4	7 ... 10	35	▶	3RU2116-1JB0	▶	3RU2116-1JC0	
	10	5.5	9 ... 12.5	35	▶	3RU2116-1KB0	5	3RU2116-1KC0	
10	7.5	11 ... 16	40	▶	3RU2116-4AB0	5	3RU2116-4AC0		
Size S0									
S0	10	0.75	1.8 ... 2.5	10	▶	3RU2126-1CB0	5	3RU2126-1CC0	
	10	1.1	2.2 ... 3.2	10	▶	3RU2126-1DB0	5	3RU2126-1DC0	
	10	1.5	2.8 ... 4	16	▶	3RU2126-1EB0	5	3RU2126-1EC0	
	10	1.5	3.5 ... 5	20	▶	3RU2126-1FB0	5	3RU2126-1FC0	
	10	2.2	4.5 ... 6.3	20	▶	3RU2126-1GB0	5	3RU2126-1GC0	
	10	3	5.5 ... 8	25	▶	3RU2126-1HB0	5	3RU2126-1HC0	
	10	4	7 ... 10	35	▶	3RU2126-1JB0	▶	3RU2126-1JC0	
	10	5.5	9 ... 12.5	35	▶	3RU2126-1KB0	5	3RU2126-1KC0	
	10	7.5	11 ... 16	40	▶	3RU2126-4AB0	▶	3RU2126-4AC0	
	10	7.5	14 ... 20	50	▶	3RU2126-4BB0	▶	3RU2126-4BC0	
	10	11	17 ... 22	63	▶	3RU2126-4CB0	2	3RU2126-4CC0	
	10	11	20 ... 25	63	▶	3RU2126-4DB0	▶	3RU2126-4DC0	
	10	15	23 ... 28	63	▶	3RU2126-4NB0	2	3RU2126-4NC0	
	10	15	27 ... 32	80	▶	3RU2126-4EB0	▶	3RU2126-4EC0	
	10	18.5	30 ... 36	80	▶	3RU2126-4PB0	2	3RU2126-4PC0	
	10	18.5	34 ... 40	80	▶	3RU2126-4FB0	▶	3RU2126-4FC0	

¹⁾ With the appropriate terminal supports (see "Accessories", page 7/96), the 3RU2 overload relays for mounting on contactors can also be installed as stand-alone units.

²⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

³⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

IE3/IE4 ready 3RU2 for standard applications

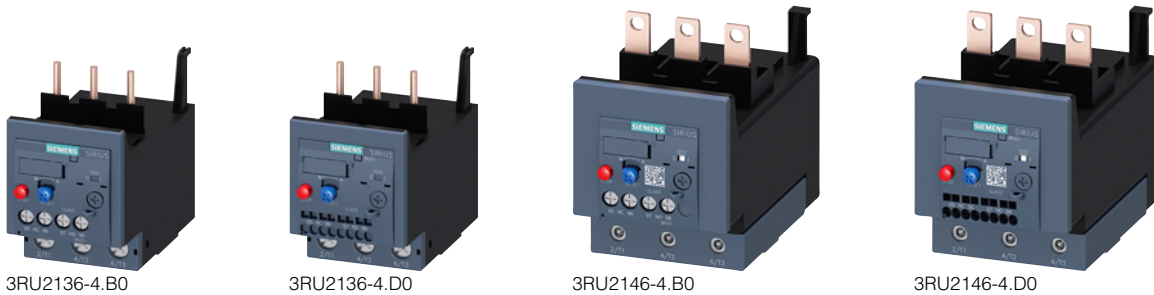
3RU21 thermal overload relays for mounting onto contactor¹⁾, sizes S2 and S3, CLASS 10 or 10A

Features and technical specifications:

- Connection methods
 - Main circuit: Screw terminals with box terminal
 - Auxiliary circuit: Either screw or spring-type terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator

- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41F



Size con- tactor	Trip class	Rated power for three-phase motors, rated value ²⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ³⁾	SD	Screw terminals		Spring-type terminals (on auxiliary current side)	
						Article No.	Price per PU	Article No.	Price per PU
Class	kW	A	A	d					
Size S2									
S2	10	3	5.5 ... 8	25	5	3RU2136-1HB0	5	3RU2136-1HD0	
	10	4	7 ... 10	35	5	3RU2136-1JB0	5	3RU2136-1JD0	
	10	5.5	9 ... 12.5	35	5	3RU2136-1KB0	5	3RU2136-1KD0	
	10	7.5	11 ... 16	40	5	3RU2136-4AB0	5	3RU2136-4AD0	
	10	7.5	14 ... 20	50	5	3RU2136-4BB0	5	3RU2136-4BD0	
	10	11	18 ... 25	63	▶	3RU2136-4DB0	5	3RU2136-4DD0	
	10	15	22 ... 32	80	▶	3RU2136-4EB0	5	3RU2136-4ED0	
	10	18.5	28 ... 40	80	▶	3RU2136-4FB0	5	3RU2136-4FD0	
	10	22	36 ... 45	100	▶	3RU2136-4GB0	2	3RU2136-4GD0	
	10	22	40 ... 50	100	▶	3RU2136-4HB0	2	3RU2136-4HD0	
	10	30	47 ... 57	100	▶	3RU2136-4QB0	2	3RU2136-4QD0	
	10	30	54 ... 65	125	▶	3RU2136-4JB0	2	3RU2136-4JD0	
	10A	37	62 ... 73	160	▶	3RU2136-4KB0	2	3RU2136-4KD0	
	10A	37	70 ... 80	160	▶	3RU2136-4RB0	2	3RU2136-4RD0	
Size S3									
S3	10	18.5	28 ... 40	80	2	3RU2146-4FB0	5	3RU2146-4FD0	
	10	22	36 ... 50	125	2	3RU2146-4HB0	5	3RU2146-4HD0	
	10	30	45 ... 63	125	2	3RU2146-4JB0	2	3RU2146-4JD0	
	10	37	57 ... 75	160	2	3RU2146-4KB0	2	3RU2146-4KD0	
	10	45	70 ... 90	160	2	3RU2146-4LB0	2	3RU2146-4LD0	
	10	45	80 ... 100 ⁴⁾	200	2	3RU2146-4MB0	2	3RU2146-4MD0	

1) With the appropriate terminal supports (see "Accessories", page 7/96), the 3RU2 overload relays for mounting on contactors can also be installed as stand-alone units.

2) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

3) Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

4) For overload relays > 100 A, see 3RB2 electronic overload relays, page 7/110 onwards.

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

3RU2 for standard applications **IE3/IE4 ready**

3RU21 thermal overload relays for stand-alone installation, sizes S00 and S0, CLASS 10

Features and technical specifications:

- Connection methods
Main and auxiliary circuit: Either screw or spring-type terminals
- Overload and phase failure protection
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET

- Switch position indicator
- TEST function
- STOP button
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41F



3RU2116-..B1





3RU2116-..C1



3RU2126-..B1



3RU2126-..C1

Size con- tactor	Trip class	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	SD	Screw terminals 		Spring-type terminals 	
						Article No.	Price per PU d	Article No.	Price per PU
Size S00									
S00	10	0.04	0.11 ... 0.16	0.5	5	3RU2116-0AB1	5	3RU2116-0AC1	
	10	0.06	0.14 ... 0.2	1	5	3RU2116-0BB1	5	3RU2116-0BC1	
	10	0.06	0.18 ... 0.25	1	5	3RU2116-0CB1	5	3RU2116-0CC1	
	10	0.09	0.22 ... 0.32	1.6	5	3RU2116-0DB1	5	3RU2116-0DC1	
	10	0.09	0.28 ... 0.4	2	5	3RU2116-0EB1	5	3RU2116-0EC1	
	10	0.12	0.35 ... 0.5	2	5	3RU2116-0FB1	5	3RU2116-0FC1	
	10	0.18	0.45 ... 0.63	2	5	3RU2116-0GB1	5	3RU2116-0GC1	
	10	0.18	0.55 ... 0.8	4	▶	3RU2116-0HB1	5	3RU2116-0HC1	
	10	0.25	0.7 ... 1	4	▶	3RU2116-0JB1	▶	3RU2116-0JC1	
	10	0.37	0.9 ... 1.25	4	▶▶	3RU2116-0KB1	5	3RU2116-0KC1	
	10	0.55	1.1 ... 1.6	6	▶▶	3RU2116-1AB1	5	3RU2116-1AC1	
	10	0.75	1.4 ... 2	6	▶▶	3RU2116-1BB1	5	3RU2116-1BC1	
	10	0.75	1.8 ... 2.5	10	▶▶	3RU2116-1CB1	5	3RU2116-1CC1	
	10	1.1	2.2 ... 3.2	10	▶▶	3RU2116-1DB1	▶	3RU2116-1DC1	
	10	1.5	2.8 ... 4	16	▶▶	3RU2116-1EB1	5	3RU2116-1EC1	
	10	1.5	3.5 ... 5	20	▶▶	3RU2116-1FB1	5	3RU2116-1FC1	
	10	2.2	4.5 ... 6.3	20	▶▶	3RU2116-1GB1	▶▶	3RU2116-1GC1	
	10	3	5.5 ... 8	25	▶▶	3RU2116-1HB1	▶▶	3RU2116-1HC1	
	10	4	7 ... 10	35	▶▶	3RU2116-1JB1	▶▶	3RU2116-1JC1	
	10	5.5	9 ... 12.5	35	▶▶	3RU2116-1KB1	5	3RU2116-1KC1	
10	7.5	11 ... 16	40	▶▶	3RU2116-4AB1	▶▶	3RU2116-4AC1		
Size S0									
S0	10	7.5	14 ... 20	50	▶▶	3RU2126-4BB1	5	3RU2126-4BC1	
	10	11	17 ... 22	63	5	3RU2126-4CB1	5	3RU2126-4CC1	
	10	11	20 ... 25	63	▶▶	3RU2126-4DB1	5	3RU2126-4DC1	
	10	15	23 ... 28	63	5	3RU2126-4NB1	5	3RU2126-4NC1	
	10	15	27 ... 32	80	5	3RU2126-4EB1	5	3RU2126-4EC1	
	10	18.5	30 ... 36	80	5	3RU2126-4PB1	5	3RU2126-4PC1	
	10	18.5	34 ... 40	80	5	3RU2126-4FB1	5	3RU2126-4FC1	

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see [Configuration Manual](#).

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

IE3/IE4 ready 3RU2 for standard applications

3RU21 thermal overload relays for stand-alone installation, sizes S2 and S3, CLASS 10 or 10A

Features and technical specifications:

- Connection methods
 - Main circuit: Screw terminals with box terminal
 - Auxiliary circuit: Either screw or spring-type terminals
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator

- TEST function
- STOP button
- Sealable covers (optional accessory)

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41F


3RU2136..B1





3RU2136..D1



3RU2146..B1



3RU2146..D1

Size con- tactor	Trip class	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	SD	Screw terminals 		Spring-type terminals 	
						Article No.	Price per PU d	Article No.	Price per PU
CLASS						kw		A	
Size S2									
S2	10	15	22 ... 32	80	5	3RU2136-4EB1	5	3RU2136-4ED1	
		18.5	28 ... 40	80	5	3RU2136-4FB1	5	3RU2136-4FD1	
		22	36 ... 45	100	2	3RU2136-4GB1	5	3RU2136-4GD1	
	10A	22	40 ... 50	100	2	3RU2136-4HB1	5	3RU2136-4HD1	
		30	47 ... 57	100	2	3RU2136-4QB1	5	3RU2136-4QD1	
		30	54 ... 65	125	2	3RU2136-4JB1	5	3RU2136-4JD1	
10A	37	62 ... 73	160	2	3RU2136-4KB1	5	3RU2136-4KD1		
	37	70 ... 80	160	2	3RU2136-4RB1	5	3RU2136-4RD1		
Size S3									
S3	10	30	45 ... 63	125	2	3RU2146-4JB1	5	3RU2146-4JD1	
		37	57 ... 75	160	2	3RU2146-4KB1	5	3RU2146-4KD1	
	10	45	70 ... 90	160	2	3RU2146-4LB1	5	3RU2146-4LD1	
		45	80 ... 100 ³⁾	200	2	3RU2146-4MB1	5	3RU2146-4MD1	

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see [Configuration Manual](#).

³⁾ For overload relays > 100 A, see [3RB2 electronic overload relays, page 7/110 onwards](#).

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays










Accessories

Overview

The following optional accessories are available for the 3RU21 thermal overload relays:

- Size-specific terminal support for stand-alone installation, in sizes S00 and S0 also with spring-type terminals
- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)
- Electrical remote RESET module in three voltage variants (for all sizes)
- Sealable cover (for all sizes)
- Terminal covers for devices with screw terminals (box terminals) and ring terminal lug connections

Selection and ordering data

Version	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Terminal supports for stand-alone installation								
 3RU2916-3AA01	Terminal supports for overload relays with screw terminals		Screw terminals 					
	For separate mounting of the overload relays; screw and snap-on mounting onto standard mounting rail	S00	▶	3RU2916-3AA01	1	1 unit	41F	
		S0	▶	3RU2926-3AA01	1	1 unit	41F	
		S2	▶	3RU2936-3AA01	1	1 unit	41F	
		S3	2	3RU2946-3AA01	1	1 unit	41F	
 3RU2926-3AA01	Terminal supports for overload relays with spring-type terminals		Spring-type terminals 					
	For separate mounting of the overload relays; screw and snap-on mounting onto standard mounting rail	S00	▶	3RU2916-3AC01	1	1 unit	41F	
		S0	▶	3RU2926-3AC01	1	1 unit	41F	
 3RU2936-3AA01								
 3RU2946-3AA01								
 3RU2916-3AC01								
 3RU2926-3AC01								
Mechanical RESET								
 3RU2900-1A with pushbutton and extension plunger	Resetting plungers, holders and formers		S00 ... S3	2	3RU2900-1A	1	1 unit	41F
	Pushbuttons with extended stroke (12 mm), IP65, Ø 22 mm		S00 ... S3	▶	3SU1200-0FB10-0AA0	1	1 unit	41J
	Extension plungers For compensation of the distance between the pushbutton and the unlatching button of the relay		S00 ... S3	▶	3SU1900-0KG10-0AA0	1	1 unit	41J

Overload Relays

SIRIUS 3RU2 Thermal Overload Relays

Accessories

Version	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
---------	------	----	-------------	--------------	-------------------	-----	----

Cable releases with holder for RESET



3RU2900-1.

For \varnothing 6.5 mm holes in the control panel;
max. control panel thickness 8 mm

- Length 400 mm
- Length 600 mm

S00 ... S3 2
S00 ... S3 2

3RU2900-1B
3RU2900-1C

1 1 unit 41F
1 1 unit 41F

Modules for remote RESET, electrical



3RU1900-2A.71

Operating range 0.85 ... 1.1 x U_{S1}
Power consumption 80 VA AC, 70 W DC,
ON time 0.2 ... 4 s,
Switching frequency 60/h

- 24 ... 30 V AC/DC
- 110 ... 127 V AC/DC
- 220 ... 250 V AC/DC

S00 ... S3 ▶
S00 ... S3 2
S00 ... S3 ▶

3RU1900-2AB71
3RU1900-2AF71
3RU1900-2AM71

1 1 unit 41F
1 1 unit 41F
1 1 unit 41F

Sealable covers



3RV2908-0P

For covering the setting knobs

S00 ... S3 ▶

3RV2908-0P

100 10 units 41E

Terminal covers



3RT2936-4EA2

Covers for devices with screw terminals (box terminals)
Additional touch protection for fastening to the box terminals

- Main current level

S2 ▶
S3 ▶

Screw terminals



3RT2936-4EA2
3RT2946-4EA2

1 1 unit 41B
1 1 unit 41B

General accessories

Version	Size	Color	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
---------	------	-------	---------------------	----	-------------	--------------	-------------------	-----	----

Tools for opening spring-type terminals



3RA2908-1A

Screwdrivers

For all SIRIUS devices with spring-type terminals

Length approx. 200 mm,
3.0 mm x 0.5 mm

Titanium gray/black, partially insulated

Main and auxiliary circuit connection: 3RU2

2

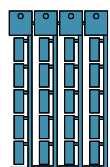
Spring-type terminals



3RA2908-1A

1 1 unit 41B

Blank labels



3RT1900-1SB20

Unit labeling plates¹⁾
For SIRIUS devices

20 mm x 7 mm
Pastel turquoise

3RU2

3RT1900-1SB20

100 340 units 41B

20 mm x 7 mm
Titanium gray

3RU2

3RT2900-1SB20

100 340 units 41B

Adhesive inscription labels¹⁾
For SIRIUS devices

19 mm x 6 mm
Pastel turquoise

3RU2

3RT1900-1SB60

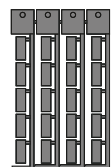
100 3 060 units 41B

19 mm x 6 mm
Zinc yellow

3RU2

3RT1900-1SD60

100 3 060 units 41B



3RT2900-1SB20

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/16).

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

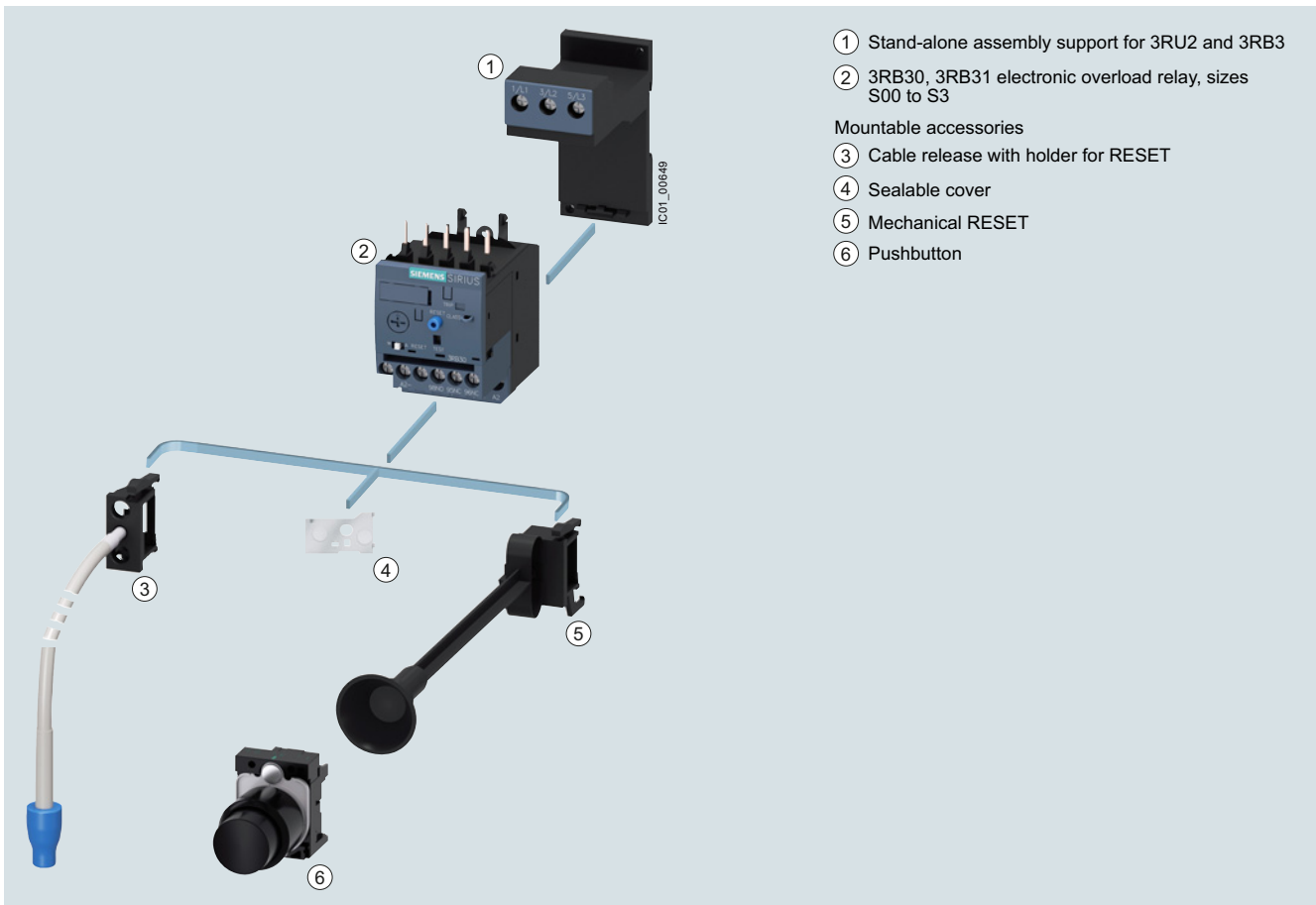
3RB30, 3RB31 for standard applications

Overview

More information

Homepage, see www.siemens.com/sirius-overloadrelays
 Industry Mall, see www.siemens.com/product?3RB3
 TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/TSTWeb?kmat=ElectronicOverloadRelay>
 Conversion tool, e.g. from 3RB20/3RB211 to 3RB30/3RB31, see www.siemens.com/sirius/conversion-tool

Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>
 Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60298164>
 Characteristics and certificates, see <https://support.industry.siemens.com/cs/ww/en/ps/16276>

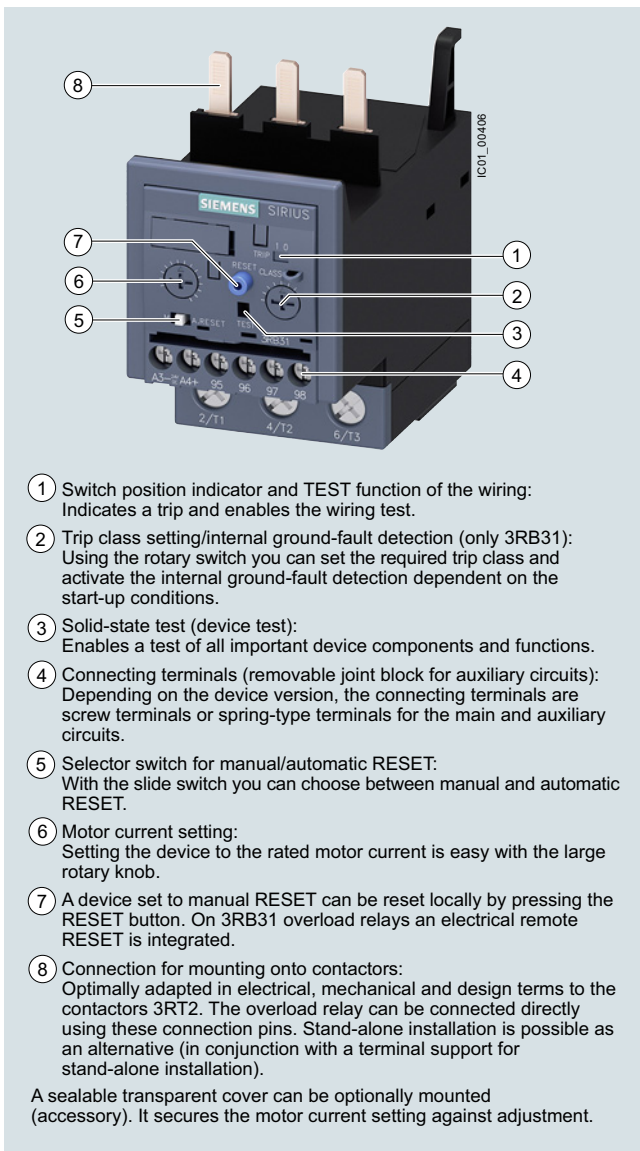


Mountable accessories for 3RB30 and 3RB31 electronic overload relays

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

3RB30, 3RB31 for standard applications



- ① Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.
- ② Trip class setting/internal ground-fault detection (only 3RB31):
Using the rotary switch you can set the required trip class and activate the internal ground-fault detection dependent on the start-up conditions.
- ③ Solid-state test (device test):
Enables a test of all important device components and functions.
- ④ Connecting terminals (removable joint block for auxiliary circuits):
Depending on the device version, the connecting terminals are screw terminals or spring-type terminals for the main and auxiliary circuits.
- ⑤ Selector switch for manual/automatic RESET:
With the slide switch you can choose between manual and automatic RESET.
- ⑥ Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.
- ⑦ A device set to manual RESET can be reset locally by pressing the RESET button. On 3RB31 overload relays an electrical remote RESET is integrated.
- ⑧ Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the contactors 3RT2. The overload relay can be connected directly using these connection pins. Stand-alone installation is possible as an alternative (in conjunction with a terminal support for stand-alone installation).

A sealable transparent cover can be optionally mounted (accessory). It secures the motor current setting against adjustment.

SIRIUS 3RB3133-4.B0 electronic overload relay

The 3RB30/3RB31 electronic overload relays up to 115 A with internal power supply have been designed for current-dependent protection of loads with normal and heavy starting, and to protect against excessive temperature rises due to overload, phase unbalance or phase failure. An overload, phase unbalance or phase failure result in an increase of the motor current beyond the set rated motor current. This current rise is detected by the current transformers integrated into the devices and evaluated by corresponding electronic circuits which then output a pulse to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_e and is stored in the form of a long-term stable tripping characteristic curve (see [Characteristics](#)).

In addition to inverse-time delayed protection of loads against excessive temperature rises due to overload, phase unbalance and phase failure, the 3RB31 electronic overload relays also allow internal ground-fault detection (not possible in conjunction with contactor assemblies for wye-delta starting). This provides protection of loads against high-resistance short circuits due to damage to the insulation material, moisture, condensed water, etc.

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after the recovery time has elapsed.

The 3RB3 electronic overload relays are suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

For 3RB20 and 3RB21 overload relays in sizes S6 to S10/S12, see [page 7/117 onwards](#).

Use in hazardous areas

The 3RB30/3RB31 electronic overload relays are suitable for the overload protection of motors with the following types of protection:

- II (2) G [Ex e] [Ex d] [Ex px]
- II (2) D [Ex t] [Ex p]

EC type test certificate for Group II, Category (2) G/D exists. It has the number PTB 09 ATEX 3001.

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

3RB30, 3RB31 for standard applications

Article No. scheme

Product versions		Article number								
Electronic overload relays		3RB3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Device type	e.g. 0 = standard device, with internal supply, for three-phase loads	<input type="checkbox"/>								
Size, rated operational current and power	e.g. 1 = 16 A (7.5 kW) for size S00	<input type="checkbox"/>								
Version of the automatic RESET, electrical remote RESET	e.g. 6 = switchable between manual/auto RE-SET		<input type="checkbox"/>							
Trip class (CLASS)	e.g. 1 = CLASS 10E				<input type="checkbox"/>					
Setting range of the overload release	e.g. R = 0.1 ... 0.4 A					<input type="checkbox"/>				
Connection methods	e.g. B = screw terminals for main and auxiliary circuits						<input type="checkbox"/>			
Installation type	e.g. 0 = mounting on contactor							<input type="checkbox"/>		
Example		3RB3	0	1	6	-	1	R	B	0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RB30/3RB31 electronic overload relays are listed in the overview table (see "General data" page 7/79 onwards).

Application

Industries

The 3RB30/3RB31 electronic overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5E to 30E), minimize project completion times, inventories and energy consumption, and optimize plant availability and maintenance management.

Application

The 3RB30/3RB31 electronic overload relays have been designed for the protection of three-phase motors in sinusoidal 50/60 Hz voltage networks. The relays are not suitable for the protection of single-phase AC or DC loads.

The 3RU21 thermal overload relay or the 3RB22/3RB23/3RB24 electronic overload relay can be used for single-phase AC loads. For DC loads we recommend the 3RU21 thermal overload relay.

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, ageing and temperature fluctuations.

For the temperature range from -25 °C to +60 °C, the 3RB30/3RB31 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RB30/3RB31 electronic overload relays in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see [Application Manual](#).

For more information, see page 1/7.

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

3RB30, 3RB31 for standard applications

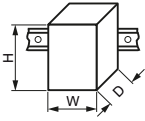
Technical specifications

More information

System Manual "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>
 Configuration Manual "Load Feeders – SIRIUS Modular System", see <https://support.industry.siemens.com/cs/ww/en/view/39714188>

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60298164>
 Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16276/td>

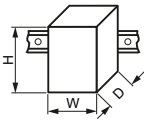
The following technical information is intended to provide an initial overview of the various types of device and functions.

Type		3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 94	55 x 105 x 117	70 x 106 x 124
• Spring-type terminals	mm	45 x 102 x 80	45 x 116 x 95	55 x 105 x 117	70 x 106 x 124
General data					
Tripping in the event of		Overload, phase failure, and phase unbalance + ground fault (for 3RB31 only)			
Trip class acc. to IEC 60947-4-1	CLASS	3RB30: 10E, 20E; 3RB31: 5E, 10E, 20E or 30E adjustable			
Phase failure sensitivity		Yes			
Reset and recovery		Manual and automatic RESET, 3RB31 has an integrated connection for electrical remote RESET (24 V DC)			
• Reset options after tripping					
• Recovery time		Approx. 3 min			
- For automatic RESET		Immediately			
- For manual RESET		Immediately			
- For remote RESET		Immediately			
Features		Yes, by means of switch position indicator slide			
• Display of operating state on device		Yes, test of electronics by pressing the TEST button/ test of auxiliary contacts and wiring of control circuit by actuating the switch position indicator slide/ self-monitoring			
• TEST function		Yes			
• RESET button		No			
• STOP button		No			
Protection and operation of explosion-proof motors		PTB 09 ATEX 3001 ⚠ II (2) G [Ex e] [Ex d] [Ex px] ⚠ II (2) G [Ex t] [Ex p] see https://support.industry.siemens.com/cs/ww/en/view/40591327			
Ambient temperatures		EC type-examination certificate number according to directive 2014/34/EU (ATEX)			
• Storage/transport	°C	-40 ... +80			
• Operation	°C	-25 ... +60			
• Temperature compensation	°C	+60			
• Permissible rated current at					
- Temperature inside control cabinet 60 °C	%	100			
- Temperature inside control cabinet 70 °C	%	On request			
Repeat terminals		Yes			
• Coil repeat terminals		Not required			
• Auxiliary contact repeat terminal		Not required			
Degree of protection acc. to IEC 60529		IP20			
• Screw terminals/spring-type terminals		- IP20 (front side) - Terminal IP00 (use additional terminal covers for higher degree of protection)			
• Straight-through transformers		IP20			
Touch protection acc. to IEC 60529		Finger-safe			
		Finger-safe, for vertical contact from the front			
Shock resistance with sine acc. to IEC 60068-2-27	g/ms	15/11 (signaling contact 97/98 in position "tripped": 9 g/11 ms)			
		15/11 (signaling contact 97/98 in position "tripped": 8 g/11 ms)			

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

3RB30, 3RB31 for standard applications



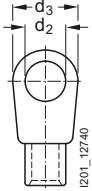


Type		3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143
Size		S00	S0	S2	S3
Dimensions (W x H x D) (overload relay with stand-alone installation support)					
• Screw terminals	mm	45 x 89 x 80	45 x 97 x 94	55 x 105 x 117	70 x 106 x 124
• Spring-type terminals	mm	45 x 102 x 80	45 x 116 x 95	55 x 105 x 117	70 x 106 x 124
General data (continued)					
Electromagnetic compatibility (EMC) – Interference immunity					
• Conductor-related interference					
- Burst acc. to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	2 (power ports), 1 (signal port)			
- Surge acc. to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	2 (line to earth), 1 (line to line)			
• Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	8 (air discharge), 6 (contact discharge)			
• Field-related interference acc. to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	10			
Electromagnetic compatibility (EMC) – Emitted interference					
Degree of severity B acc. to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)					
Resistance to extreme climates – Air humidity	%	95			
Installation altitude above sea level	m	Up to 2 000			
Mounting position		Any			
Type of mounting		Direct mounting/stand-alone installation with terminal support			

Type		3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143
Size		S00	S0	S2	S3
Main circuit					
Rated insulation voltage U_i (pollution degree 3)	V	690		690 1 000 with straight-through transformer	1000
Rated impulse withstand voltage U_{imp}	kV	6		6 8 with straight-through transformer	8
Rated operational voltage U_e	V	690		690 1 000 with straight-through transformer	1000
Type of current					
• Direct current		No			
• Alternating current		Yes, 50/60 Hz \pm 5%			
Current setting	A	0.1 ... 0.4	0.1 ... 0.4	12.5 ... 50	12.5 ... 50
	A	to 4 ... 16	to 10 ... 40	and 20 ... 80	and 32 ... 115
Heavy starting		see Manual			
Power loss per unit (max.)	W	0.1 ... 1.1	0.1 ... 4.5	0.5 ... 4.6	0.9 ... 4.6
Short-circuit protection					
• With fuse without contactor		See "Selection and ordering data", pages 7/105 ... 7/107			
• With fuse and contactor		"Short-Circuit Protection with Fuses/Motor Starter Protectors for Motor Feeders", see Configuration Manual.			
Protective separation between main and auxiliary current paths					
Acc. to IEC 60947-1 (pollution degree 2)					
• For systems with grounded neutral point	V	690			
• For systems with ungrounded neutral point	V	600			

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

3RB30, 3RB31 for standard applications



Type	3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143
Size	S00	S0	S2	S3
Conductor cross-sections of main circuit				
Connection type	 Screw terminals			 Screw terminals with box terminal
Terminal screw	M3, Pozidriv size 2	M4, Pozidriv size 2		4 mm Allen screw
Operating devices	mm	∅ 5 ... 6		4 mm Allen screw
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	4.5 ... 6
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected				
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾ , 2 x (0.5 ... 4) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 10) ¹⁾	1 x (1 ... 50) ¹⁾ , 2 x (1 ... 35) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , max. 1 x 10	2 x (1 ... 25) ¹⁾ , 1 x (1 ... 35) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ , 2 x (18 ... 14) ¹⁾ , 2 x 12	2 x (16 ... 12) ¹⁾ , 2 x (14 ... 8) ¹⁾	2 x (18 ... 2) ¹⁾ , 1 x (18 ... 1) ¹⁾
Removable box terminals²⁾				
• With copper bars ³⁾	mm	--	--	2 x 12 x 4
• With cable lugs ⁴⁾				
- Terminal screw	Nm	--	--	M6
- Prescribed tightening torque	Nm	--	--	4.5 ... 6
- Usable ring terminal lugs	mm	--	--	d ₂ = min. 6.3 d ₃ = max. 19
				
Connection type				
	 Spring-type terminals			
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5		
Conductor cross-sections (min./max.), 1 conductor can be connected				
• Solid or stranded	mm ²	1 x (0.5 ... 4)	1 x (1 ... 10)	--
• Finely stranded without end sleeve	mm ²	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	1 x (0.5 ... 2.5)	1 x (1 ... 6)	--
• AWG cables, solid or stranded	AWG	1 x (20 ... 12)	1 x (18 ... 8)	--
Connection type				
	 Straight-through transformers			
Diameter of opening	mm	--	15	18
<p>¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.</p> <p>²⁾ Cable lug and busbar connection possible after removing the box terminals.</p> <p>³⁾ If bars larger than 12 mm x 10 mm are connected, a 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/109.</p> <p>⁴⁾ When conductors larger than 25 mm² are connected, the 3RT2946-4EA2 cover is needed to maintain the required phase clearance, see page 7/109.</p>				

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

3RB30, 3RB31 for standard applications

Type		3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143
Size		S00	S0	S2	S3
Auxiliary circuit					
Number of NO contacts		1			
Number of NC contacts		1			
Auxiliary contacts – Assignment		1 NO for the signal "tripped"; 1 NC for disconnecting the contactor			
Rated insulation voltage U_i (pollution degree 3)	V	300			
Rated impulse withstand voltage U_{imp}	kV	4			
Auxiliary contacts – Contact rating					
• NC, NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e					
- 24 V	A	4			
- 120 V	A	4			
- 125 V	A	4			
- 250 V	A	3			
• NC, NO contacts with direct current DC-13, rated operational current I_e at U_e					
- 24 V	A	2			
- 60 V	A	0.55			
- 110 V	A	0.3			
- 125 V	A	0.3			
- 250 V	A	0.11			
• Conventional thermal current I_{th}	A	5			
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes			
Short-circuit protection					
• With fuse, operational class gG	A	6			
Ground-fault protection (only 3RB31)					
• Tripping value I_{Δ}		The information refers to sinusoidal residual currents at 50/60 Hz. > $0.75 \times I_{motor}$			
• Operating range I		Lower current setting < I_{motor} < $3.5 \times$ upper current setting			
• Response time t_{trip} (in steady-state condition)	s	< 1			
Integrated electrical remote RESET (only 3RB31)					
Connecting terminals A3, A4		24 V DC, max. 200 mA for approx. 20 ms, then < 10 mA			
Protective separation between auxiliary current paths acc. to IEC 60947-1	V	300			

Type		3RB3016, 3RB3113	3RB3026, 3RB3123	3RB3036, 3RB3133	3RB3046, 3RB3143
Size		S00	S0	S2	S3
CSA, UL, UR rated data					
Auxiliary circuit – Switching capacity		B600, R300			
Conductor cross-sections for auxiliary circuit					
Connection type					
 Screw terminals					
Terminal screw		M3, Pozidriv size 2			
Operating devices	mm	ø 5 ... 6			
Prescribed tightening torque	Nm	0.8 ... 1.2			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm ²	$1 \times (0.5 \dots 4)^1, 2 \times (0.5 \dots 2.5)^1$			
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	$1 \times (0.5 \dots 2.5)^1, 2 \times (0.5 \dots 1.5)^1$			
• AWG cables, solid or stranded	AWG	2 × (20 ... 14)			
Connection type					
 Spring-type terminals					
Operating devices	mm	3.0 × 0.5			
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected					
• Solid or stranded	mm ²	2 × (0.25 ... 1.5)			
• Finely stranded without end sleeve	mm ²	2 × (0.25 ... 1.5)			
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 × (0.25 ... 1.5)			
• AWG cables, solid or stranded	AWG	2 × (24 ... 16)			

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

IE3/IE4 ready 3RB30, 3RB31 for standard applications

Selection and ordering data

3RB30 electronic overload relays, CLASS 10E

Features and technical specifications:

- Connection methods
 - Sizes S00 and S0:
Main and auxiliary circuit: Either screw or spring-type terminals
 - Sizes S2 and S3:
Main circuit: Screw terminals with box terminal or as straight-through transformer
Auxiliary circuit: Either screw or spring-type terminals
- Overload protection, phase failure protection and unbalance protection

- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41G


Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	SD	Screw terminals	SD	Spring-type terminals	
	kW	A	A	d	Article No.	Price per PU	Article No.	Price per PU

Size S00

S00 *Devices for mounting onto contactor³⁾*

0.04 ... 0.09	0.1 ... 0.4	4	▶	3RB3016-1RB0	2	3RB3016-1RE0
0.12 ... 0.37	0.32 ... 1.25	6	▶	3RB3016-1NB0	2	3RB3016-1NE0
0.37 ... 1.5	1 ... 4	20	▶	3RB3016-1PB0	2	3RB3016-1PE0
1.5 ... 5.5	3 ... 12	25	▶	3RB3016-1SB0	2	3RB3016-1SE0
2.2 ... 7.5	4 ... 16	25	▶	3RB3016-1TB0	2	3RB3016-1TE0

Size S0

S0 *Devices for mounting onto contactor³⁾*

0.04 ... 0.09	0.1 ... 0.4	4	▶	3RB3026-1RB0	2	3RB3026-1RE0
0.12 ... 0.37	0.32 ... 1.25	6	▶	3RB3026-1NB0	2	3RB3026-1NE0
0.37 ... 1.5	1 ... 4	20	▶	3RB3026-1PB0	2	3RB3026-1PE0
1.5 ... 5.5	3 ... 12	25	▶	3RB3026-1SB0	2	3RB3026-1SE0
3 ... 11	6 ... 25	50	▶	3RB3026-1QB0	2	3RB3026-1QE0
5.5 ... 18.5	10 ... 40	50	▶	3RB3026-1VB0	2	3RB3026-1VE0

Size S2

S2 *Devices with screw terminals (main current side) and for mounting onto contactor³⁾*

7.5 ... 22	12.5 ... 50	250	▶	3RB3036-1UB0	▶	3RB3036-1UD0
11 ... 37	20 ... 80	250	▶	3RB3036-1WB0	▶	3RB3036-1WD0

Devices with straight-through transformer for stand-alone installation

7.5 ... 22	12.5 ... 50	250	▶	3RB3036-1UW1	▶	3RB3036-1UX1
11 ... 37	20 ... 80	250	▶	3RB3036-1WW1	▶	3RB3036-1WX1

Size S3

S3 *Devices with screw terminals (main current side) and for mounting onto contactor³⁾*

7.5 ... 22	12.5 ... 50	200	1	3RB3046-1UB0	2	3RB3046-1UD0
18.5 ... 55	32 ... 115	315	1	3RB3046-1XB0	2	3RB3046-1XD0

Devices with straight-through transformer for stand-alone installation

7.5 ... 22	12.5 ... 50	200	1	3RB3046-1UW1	2	3RB3046-1UX1
18.5 ... 55	32 ... 115	315	1	3RB3046-1XW1	2	3RB3046-1XX1

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

³⁾ With the appropriate terminal supports (see "Accessories", page 7/108), these overload relays can also be installed as stand-alone units.

Note:

For reliable operational current, note derating information, see Manual.

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

3RB30, 3RB31 for standard applications **IE3/IE4 ready**

3RB30 electronic overload relays, CLASS 20E

Features and technical specifications:

- Connection methods
 - Sizes S00 and S0:
Main and auxiliary circuit: Either screw or spring-type terminals
 - Sizes S2 and S3:
Main circuit: Screw terminals with box terminal or as straight-through transformer
Auxiliary circuit: Either screw or spring-type terminals
- Overload protection, phase failure protection and unbalance protection

- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G



3RB3016-2.B0



3RB3026-2.B0



3RB3036-2.B0





3RB3036-2.W1



3RB3046-2.B0



3RB3046-2.W1

Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	SD	Screw terminals 		Spring-type terminals 	
					Article No.	Price per PU	Article No.	Price per PU

Size S00

S00 *Devices for mounting onto contactor³⁾*

0.04 ... 0.09	0.1 ... 0.4	4	▶	3RB3016-2RB0	2	3RB3016-2RE0
0.12 ... 0.37	0.32 ... 1.25	6	▶	3RB3016-2NB0	2	3RB3016-2NE0
0.37 ... 1.5	1 ... 4	20	▶	3RB3016-2PB0	2	3RB3016-2PE0
1.5 ... 5.5	3 ... 12	25	▶	3RB3016-2SB0	2	3RB3016-2SE0
2.2 ... 7.5	4 ... 16	25	▶	3RB3016-2TB0	2	3RB3016-2TE0

Size S0

S0 *Devices for mounting onto contactor³⁾*

0.04 ... 0.09	0.1 ... 0.4	4	▶	3RB3026-2RB0	2	3RB3026-2RE0
0.12 ... 0.37	0.32 ... 1.25	6	▶	3RB3026-2NB0	2	3RB3026-2NE0
0.37 ... 1.5	1 ... 4	20	▶	3RB3026-2PB0	2	3RB3026-2PE0
1.5 ... 5.5	3 ... 12	25	▶	3RB3026-2SB0	2	3RB3026-2SE0
3 ... 11	6 ... 25	50	▶	3RB3026-2QB0	2	3RB3026-2QE0
5.5 ... 18.5	10 ... 40	50	▶	3RB3026-2VB0	2	3RB3026-2VE0

Size S2

S2 *Devices with screw terminals (main current side) and for mounting onto contactor³⁾*

7.5 ... 22	12.5 ... 50	250	▶	3RB3036-2UB0	▶	3RB3036-2UD0
11 ... 37	20 ... 80	250	▶	3RB3036-2WB0	▶	3RB3036-2WD0

Devices with straight-through transformer for stand-alone installation

7.5 ... 22	12.5 ... 50	250	▶	3RB3036-2UW1	▶	3RB3036-2UX1
11 ... 37	20 ... 80	250	▶	3RB3036-2WW1	▶	3RB3036-2WX1

Size S3

S3 *Devices with screw terminals (main current side) and for mounting onto contactor³⁾*

7.5 ... 22	12.5 ... 50	200	1	3RB3046-2UB0	2	3RB3046-2UD0
18.5 ... 55	32 ... 115	315	1	3RB3046-2XB0	2	3RB3046-2XD0

Devices with straight-through transformer for stand-alone installation

7.5 ... 22	12.5 ... 50	200	1	3RB3046-2UW1	2	3RB3046-2UX1
18.5 ... 55	32 ... 115	315	1	3RB3046-2XW1	2	3RB3046-2XX1

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2".
For fuse values in connection with contactors, see Configuration Manual.

³⁾ With the appropriate terminal supports (see "Accessories", page 7/108), these overload relays can also be installed as stand-alone units.

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays

IE3/IE4 ready 3RB30, 3RB31 for standard applications

3RB31 electronic overload relays, CLASS 5E, 10E, 20E or 30E (adjustable)

Features and technical specifications:

- Connection methods
 - Sizes S00 and S0:
Main and auxiliary circuit: Either screw or spring-type terminals
 - Sizes S2 and S3:
Main circuit: Screw terminals with box terminal or as straight-through transformer
Auxiliary circuit: Either screw or spring-type terminals
- Overload protection, phase failure protection and unbalance protection
- Internal ground-fault detection (activatable)

- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Electrical remote RESET integrated
- Switch position indicator
- TEST function and self-monitoring
- Sealable covers (optional accessory)

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41G


Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	SD	Screw terminals	SD	Spring-type terminals	
	kW	A	A	d	Article No.	Price per PU	Article No.	Price per PU
Size S00								
S00	Devices for mounting onto contactor³⁾							
	0.04 ... 0.09	0.1 ... 0.4	4	▶	3RB3113-4RB0	2	3RB3113-4RE0	
	0.12 ... 0.37	0.32 ... 1.25	6	▶	3RB3113-4NB0	2	3RB3113-4NE0	
	0.37 ... 1.5	1 ... 4	20	▶	3RB3113-4PB0	2	3RB3113-4PE0	
	1.5 ... 5.5	3 ... 12	25	▶	3RB3113-4SB0	2	3RB3113-4SE0	
	2.2 ... 7.5	4 ... 16	25	▶	3RB3113-4TB0	2	3RB3113-4TE0	
Size S0								
S0	Devices for mounting onto contactor³⁾							
	0.04 ... 0.09	0.1 ... 0.4	4	▶	3RB3123-4RB0	2	3RB3123-4RE0	
	0.12 ... 0.37	0.32 ... 1.25	6	▶	3RB3123-4NB0	2	3RB3123-4NE0	
	0.37 ... 1.5	1 ... 4	20	▶	3RB3123-4PB0	2	3RB3123-4PE0	
	1.5 ... 5.5	3 ... 12	25	▶	3RB3123-4SB0	2	3RB3123-4SE0	
	3 ... 11	6 ... 25	50	▶	3RB3123-4QB0	2	3RB3123-4QE0	
	5.5 ... 18.5	10 ... 40	50	▶	3RB3123-4VB0	2	3RB3123-4VE0	
Size S2								
S2	Devices with screw terminals (main current side) and for mounting onto contactor³⁾							
	7.5 ... 22	12.5 ... 50	250	▶	3RB3133-4UB0	▶	3RB3133-4UD0	
	11 ... 37	20 ... 80	250	▶	3RB3133-4WB0	▶	3RB3133-4WD0	
	Devices with straight-through transformer for stand-alone installation							
	7.5 ... 22	12.5 ... 50	250	▶	3RB3133-4UW1	▶	3RB3133-4UX1	
	11 ... 37	20 ... 80	250	▶	3RB3133-4WW1	▶	3RB3133-4WX1	
Size S3								
S3	Devices with screw terminals (main current side) and for mounting onto contactor³⁾							
	7.5 ... 22	12.5 ... 50	200	1	3RB3143-4UB0	1	3RB3143-4UD0	
	18.5 ... 55	32 ... 115	315	1	3RB3143-4XB0	1	3RB3143-4XD0	
	Devices with straight-through transformer for stand-alone installation							
	7.5 ... 22	12.5 ... 50	200	1	3RB3143-4UW1	1	3RB3143-4UX1	
	18.5 ... 55	32 ... 115	315	1	3RB3143-4XW1	1	3RB3143-4XX1	

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see Configuration Manual.

³⁾ With the appropriate terminal supports (see "Accessories", page 7/108), these overload relays can also be installed as stand-alone units.

Overload Relays

SIRIUS 3RB3 Electronic Overload Relays










Accessories

Overview

The following optional accessories are available for the 3RB30/3RB31 electronic overload relays:

- Size-specific terminal support for stand-alone installation, in sizes S00 and S0 also with spring-type terminals
- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)
- Sealable cover (for all sizes)

Selection and ordering data

Version	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal supports for stand-alone installation							
Terminal supports for overload relays with screw terminals			Screw terminals 				
 3RU2916-3AA01	For separate mounting of the overload relays; screw and snap-on mounting onto standard mounting rail	S00	▶	3RU2916-3AA01	1	1 unit	41F
		S0	▶	3RU2926-3AA01	1	1 unit	41F
		S2	▶	3RU2936-3AA01	1	1 unit	41F
		S3	▶	3RU2946-3AA01	1	1 unit	41F
Terminal supports for overload relays with spring-type terminals			Spring-type terminals 				
 3RU2926-3AC01	For separate mounting of the overload relays; screw and snap-on mounting onto standard mounting rail	S00	▶	3RU2916-3AC01	1	1 unit	41F
		S0	▶	3RU2926-3AC01	1	1 unit	41F
 3RU2936-3AA01							
 3RU2946-3AA01							
 3RU2916-3AC01							
 3RU2926-3AC01							
Mechanical RESET							
 3RB3980-0A with pushbutton and extension plunger	Resetting plungers, holders and formers	S00 ... S3	▶	3RB3980-0A	1	1 unit	41F
	Pushbuttons with extended stroke (12 mm), IP65, Ø 22 mm	S00 ... S3	▶	3SU1200-0FB10-0AA0	1	1 unit	41J
	Extension plungers For compensation of the distance between a pushbutton and the unlatching button of the relay	S00 ... S3	▶	3SU1900-0KG10-0AA0	1	1 unit	41J

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

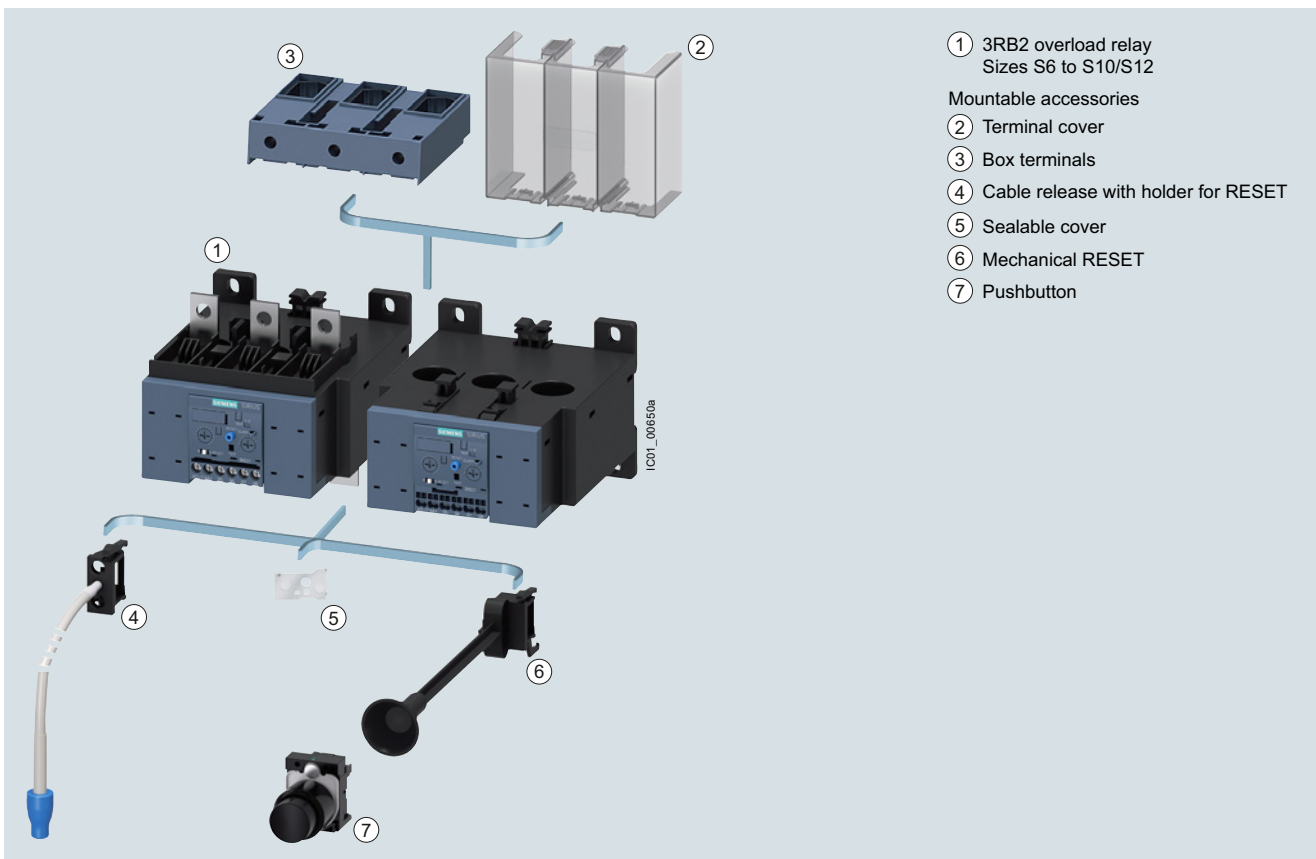
3RB20, 3RB21 for standard applications

Overview

More information

Homepage, see www.siemens.com/sirius-overloadrelays
 Industry Mall, see www.siemens.com/product?3RB2

Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>
 Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60298164>
 Characteristics and certificates, see <https://support.industry.siemens.com/cs/ww/en/ps/16278>



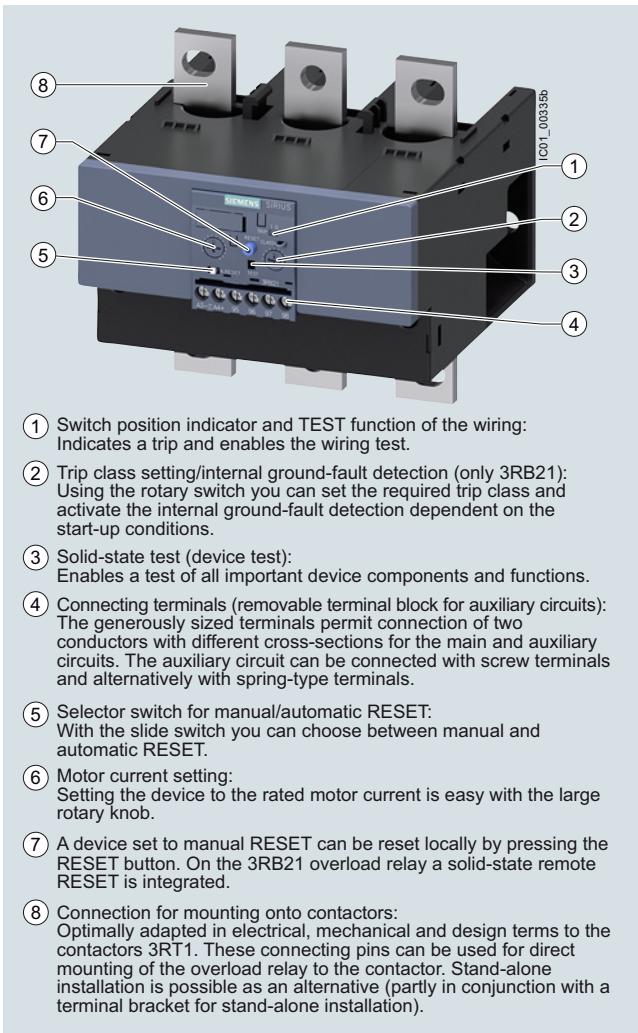
- ① 3RB2 overload relay
 Sizes S6 to S10/S12
- Mountable accessories
- ② Terminal cover
- ③ Box terminals
- ④ Cable release with holder for RESET
- ⑤ Sealable cover
- ⑥ Mechanical RESET
- ⑦ Pushbutton

Mountable accessories for 3RB2 electronic overload relays (sizes S6 to S10/S12)

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB20, 3RB21 for standard applications



- ① Switch position indicator and TEST function of the wiring:
Indicates a trip and enables the wiring test.
- ② Trip class setting/internal ground-fault detection (only 3RB21):
Using the rotary switch you can set the required trip class and activate the internal ground-fault detection dependent on the start-up conditions.
- ③ Solid-state test (device test):
Enables a test of all important device components and functions.
- ④ Connecting terminals (removable terminal block for auxiliary circuits):
The generously sized terminals permit connection of two conductors with different cross-sections for the main and auxiliary circuits. The auxiliary circuit can be connected with screw terminals and alternatively with spring-type terminals.
- ⑤ Selector switch for manual/automatic RESET:
With the slide switch you can choose between manual and automatic RESET.
- ⑥ Motor current setting:
Setting the device to the rated motor current is easy with the large rotary knob.
- ⑦ A device set to manual RESET can be reset locally by pressing the RESET button. On the 3RB21 overload relay a solid-state remote RESET is integrated.
- ⑧ Connection for mounting onto contactors:
Optimally adapted in electrical, mechanical and design terms to the contactors 3RT1. These connecting pins can be used for direct mounting of the overload relay to the contactor. Stand-alone installation is possible as an alternative (partly in conjunction with a terminal bracket for stand-alone installation).

SIRIUS 3RB2153-4FW2 electronic overload relay

The 3RB20 and 3RB21 electronic overload relays up to 630 A with internal power supply have been designed for current-dependent protection of loads with normal and heavy starting (see [Manual](#)) against excessive temperature rises due to overload, phase unbalance or phase failure.

An overload, phase unbalance or phase failure result in an increase of the motor current beyond the set rated motor current. This current rise is detected by the current transformers integrated into the devices and evaluated by corresponding electronic circuits which then output a pulse to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor. The break time depends on the ratio between the tripping current and the current setting I_n and is stored in the form of a long-term stable tripping characteristic curve, see [Characteristics](#).

In addition to inverse-time delayed protection of loads against excessive temperature rises due to overload, phase unbalance and phase failure, the 3RB21 electronic overload relays also allow internal ground-fault detection (not possible in conjunction with contactor assemblies for star-delta (wye-delta) starting). This provides protection of loads against high-resistance short circuits due to damage to the insulation material, moisture, condensed water, etc.

The "tripped" status is signaled by means of a switch position indicator. The relay is reset manually or automatically after the recovery time has elapsed.

The 3RB2 electronic overload relays are suitable for operation with frequency converters, see [Manual](#).

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

For 3RB30 and 3RB31 overload relay sizes S00 to S3, see [page 7/105 onwards](#).

Use in hazardous areas

The 3RB20/3RB21 electronic overload relays are suitable for the overload protection of motors with the following types of protection:

- Ex II (2) G [Ex e] [Ex d] [Ex px]
- Ex II (2) D [Ex t] [Ex p]

EC type test certificate for Group II, Category (2) G/D exists. It has the number PTB 06 ATEX 3001.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB20, 3RB21 for standard applications

Article No. scheme

Product versions	Article number
Electronic overload relays	3RB2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Device type	e.g. 0 = standard device, with internal supply, for three-phase loads <input type="checkbox"/>
Size, rated operational current and power	e.g. 5 = 200 A (90 kW) for size S6 <input type="checkbox"/>
Version of the automatic RESET, electrical remote RESET	e.g. 6 = switchable between manual/auto RE-SET <input type="checkbox"/>
Trip class (CLASS)	e.g. 1 = CLASS 10E <input type="checkbox"/>
Setting range of the overload release	e.g. F = 5 ... 200 A <input type="checkbox"/>
Connection methods	e.g. C = busbar connections main circuit; screw terminals auxiliary circuit <input type="checkbox"/>
Installation type	e.g. 2 = mounting on contactor and stand-alone installation <input type="checkbox"/>
Example	3RB2 0 5 6 - 1 F C 2

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RB20/3RB21 electronic overload relays are listed in the overview table (see "General data", page 7/79 onwards).

Application

Industries

The 3RB20 and 3RB21 electronic overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5E to 30E), minimize project completion times, inventories and energy consumption, and optimize plant availability and maintenance management.

Application

The 3RB20 and 3RB21 electronic overload relays have been designed for the protection of three-phase motors in sinusoidal 50/60 Hz voltage networks. The relays are not suitable for the protection of single-phase AC or DC loads.

The 3RU21 thermal overload relays or the 3RB22 to 3RB24 electronic overload relays can be used for single-phase AC loads. For DC loads we recommend the 3RU21 thermal overload relay.

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, ageing and temperature fluctuations.

For the temperature range from -25 °C to +60 °C, the 3RB20 and 3RB21 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

For the 3RB20 and 3RB21 electronic overload relays with the sizes S6, S10 and S12, the upper set value of the setting range must be reduced for ambient temperatures > 50 °C by a certain factor.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RB20 and 3RB21 electronic overload relays in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see [Application Manual](#).

For more information, see page 1/7.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB20, 3RB21 for standard applications

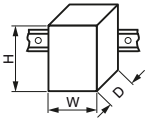
Technical specifications

More information

Configuration Manual "Load Feeders – SIRIUS Modular System", see <https://support.industry.siemens.com/cs/ww/en/view/39714188>
Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60298164>

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16278>

The following technical information is intended to provide an initial overview of the various types of device and functions.

Type		3RB2056, 3RB2153	3RB2066, 3RB2163
Size		S6	S10/S12
Dimensions (W x H x D) (overload relay with stand-alone installation support)		mm 120 x 119 x 155	145 x 147 x 156
General data			
Tripping in the event of		Overload, phase failure, and phase unbalance + ground fault (for 3RB21 only)	
Trip class acc. to IEC 60947-4-1	CLASS	3RB20: 10E or 20E; 3RB21: 5E, 10E, 20E and 30E adjustable	
Phase failure sensitivity		Yes	
Overload warning		No	
Reset and recovery		3RB20: Manual and automatic RESET; 3RB21: Manual, automatic and remote RESET	
• Reset options after tripping		Approx. 3 min Immediately Immediately	
• Recovery time			
- For automatic RESET			
- For manual RESET			
- For remote RESET			
Features		Yes, by means of switch position indicator slide	
• Display of operating state on device		Yes, test of electronics by pressing the TEST button/ test of auxiliary contacts and wiring of control circuit by actuating the switch position indicator slide/ self-monitoring	
• TEST function		Yes	
• RESET button		No	
• STOP button			
Protection and operation of explosion-proof motors		PTB 06 ATEX 3001 ⚠ II (2) G [Ex e] [Ex d] [Ex px] ⚠ II (2) G [Ex t] [Ex p] see https://support.industry.siemens.com/cs/ww/en/view/23814648	
EC type-examination certificate number according to directive 2014/34/EU (ATEX)			
Ambient temperatures			
• Storage/transport	°C	-40 ... +80	
• Operation	°C	-25 ... +60	
• Temperature compensation	°C	+60	
• Permissible rated current at			
- Temperature inside control cabinet 60 °C, stand-alone installation	%	100	100 or 90 ¹⁾
- Temperature inside control cabinet 60 °C, mounted on contactor	%	70	70
- Temperature inside control cabinet 70 °C	%	On request	
Degree of protection acc. to IEC 60529		- IP20 (front side) - Terminal IP00 (use additional terminal covers for higher degree of protection)	
• Screw terminals/busbar connections		IP20	--
• Straight-through transformers			

¹⁾ 90% for relay with current setting range 160 A to 630 A.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays




3RB20, 3RB21 for standard applications

Type		3RB2056, 3RB2153	3RB2066, 3RB2163
Size		S6	S10/S12
Dimensions (W x H x D) (overload relay with stand-alone installation support)		120 x 119 x 155	145 x 147 x 156
General data (continued)			
Touch protection acc. to IEC 60529		Finger-safe with terminal covers for vertical contact from the front	
• Screw terminals/busbar connections		Finger-safe	--
• Straight-through transformers			
Shock resistance with sine acc. to IEC 60068-2-27	g/ms	15/11 (signaling contact 97/98 in position "tripped": 4 g/ 11 ms)	
Electromagnetic compatibility (EMC) – Interference immunity			
• Conductor-related interference			
- Burst acc. to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	2 (power ports), 1 (signal port)	
- Surge acc. to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	2 (line to earth), 1 (line to line)	
• Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	8 (air discharge), 6 (contact discharge)	
• Field-related interference acc. to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	10	
Electromagnetic compatibility (EMC) – Emitted interference		Degree of severity B acc. to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)	
Resistance to extreme climates – Air humidity	%	100	
Installation altitude above sea level	m	Up to 2 000	
Mounting position		Any	
Type of mounting		Direct mounting/stand-alone installation	

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB20, 3RB21 for standard applications

Type		3RB2056, 3RB2153	3RB2066, 3RB2163
Size		S6	S10/S12
Main circuit			
Rated insulation voltage U_i (pollution degree 3)	V	1 000	
Rated impulse withstand voltage U_{imp}	kV	8	
Rated operational voltage U_e	V	1 000	
Type of current			
• Direct current		No	
• Alternating current		Yes, 50/60 Hz \pm 5%	
Current setting	A	50 ... 200	55 ... 250, 160 ... 630
Power loss per unit (max.)	W	0.05	
Short-circuit protection		See "Selection and ordering data", pages 7/117 ... 7/119 "Short-Circuit Protection with Fuses/Motor Starter Protectors for Motor Feeders", see Configuration Manual.	
• With fuse without contactor			
• With fuse and contactor			
Protective separation between main and auxiliary current paths Acc. to IEC 60947-1 (pollution degree 2)			
• For systems with grounded neutral point	V	690	
• For systems with ungrounded neutral point	V	600	
Conductor cross-sections of the main circuit			
Connection type		 Screw terminals with box terminal	
Terminal screw	mm	4 mm Allen screw	5 mm Allen screw
Operating devices	mm	4 mm Allen screw	5 mm Allen screw
Prescribed tightening torque	Nm	10 ... 12	20 ... 22
Conductor cross-sections (min./max.) , 1 or 2 conductors can be connected			
• Solid	mm ²	--	--
• Finely stranded without end sleeve	mm ²	With 3RT1955-4G box terminal: 2 x (1 x max. 50, 1 x max. 70), 1 x (10 ... 70); With 3RT1956-4G box terminal: 2 x (1 x max. 95, 1 x max. 120), 1 x (10 ... 120)	2 x (50 ... 185), Front clamping point only: 1 x (70 ... 240); Rear clamping point only: 1 x (120 ... 185)
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	With 3RT1955-4G box terminal: 2 x (1 x max. 50, 1 x max. 70), 1 x (10 ... 70); With 3RT1956-4G box terminal: 2 x (1 x max. 95, 1 x max. 120), 1 x (10 ... 120)	2 x (50 ... 185), Front clamping point only: 1 x (70 ... 240); Rear clamping point only: 1 x (120 ... 185)
• Stranded	mm ²	With 3RT1955-4G box terminal: 2 x (max. 70), 1 x (16 ... 70); With 3RT1956-4G box terminal: 2 x (max. 120), 1 x (16 ... 120)	2 x (70 ... 240), Front clamping point only: 1 x (95 ... 300); Rear clamping point only: 1 x (120 ... 240)
• AWG cables, solid or stranded	AWG	With 3RT1955-4G box terminal: 2 x (max. 1/0), 1 x (6 ... 2/0); With 3RT1956-4G box terminal: 2 x (max. 3/0), 1 x (6 ... 250 kcmil)	2 x (2/0 ... 500 kcmil), Front clamping point only: 1 x (3/0 ... 600 kcmil); Rear clamping point only: 1 x (250 kcmil ... 500 kcmil)
• Ribbon cables (Number x Width x Thickness)	mm	With 3RT1955-4G box terminal: 2 x (6 x 15.5 x 0.8), 1 x (3 x 9 x 0.8 ... 6 x 15.5 x 0.8); With 3RT1956-4G box terminal: 2 x (10 x 15.5 x 0.8), 1 x (3 x 9 x 0.8 ... 10 x 15.5 x 0.8)	2 x (20 x 24 x 0.5), 1 x (6 x 9 x 0.8 ... 20 x 24 x 0.5)
Connection type			
		 Busbar connections	
Terminal screw		M8 x 25	M10 x 30
Prescribed tightening torque	Nm	10 ... 14	14 ... 24
Conductor cross-sections (min./max.)			
• Finely stranded with cable lug	mm ²	16 ... 95 ¹⁾	50 ... 240 ²⁾
• Stranded with cable lug	mm ²	25 ... 120 ¹⁾	70 ... 240 ²⁾
• AWG cables, solid or stranded, with cable lug	AWG	4 ... 250 kcmil	2/0 ... 500 kcmil
• With connecting bars (max. width)	mm	15	25
Connection type			
		 Straight-through transformers	
Diameter of opening	mm	24.5	--



¹⁾ When connecting cable lugs according to DIN 46235 with conductor cross-sections of 95 mm² and more, the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/120.

²⁾ When connecting cable lugs according to DIN 46234 for conductor cross-sections from 240 mm², as well as DIN 46235 for cable cross-sections from 185 mm², the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/120.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB20, 3RB21 for standard applications

Type	3RB2056, 3RB2153	3RB2066, 3RB2163
Size	S6	S10/S12
Auxiliary circuit		
Number of NO contacts	1	
Number of NC contacts	1	
Auxiliary contacts – Assignment	1 NO for the signal "tripped"; 1 NC for disconnecting the contactor	
Rated insulation voltage U_i (pollution degree 3)	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Auxiliary contacts – Contact rating		
<ul style="list-style-type: none"> NC contact with alternating current AC-14/AC-15, rated operational current I_e at U_e: <ul style="list-style-type: none"> - 24 V - 120 V - 125 V - 250 V NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e: <ul style="list-style-type: none"> - 24 V - 120 V - 125 V - 250 V NC, NO contacts with direct current DC-13, rated operational current I_e at U_e: <ul style="list-style-type: none"> - 24 V - 60 V - 110 V - 125 V - 250 V Conventional thermal current I_{th} Contact reliability (suitability for PLC control; 17 V, 5 mA) 	A	4 4 4 3 4 4 4 3 2 0.55 0.3 0.3 0.11 5 Yes
Short-circuit protection		
<ul style="list-style-type: none"> With fuse, operational class gG 	A	6
Ground-fault protection (only 3RB21)		
<ul style="list-style-type: none"> Tripping value I_{Δ} Operating range I Response time t_{trip} (in steady-state condition) 		The information refers to sinusoidal residual currents at 50/60 Hz. > $0.75 \times I_{motor}$ Lower current setting < $I_{motor} < 3.5 \times$ upper current setting s < 1
Integrated electrical remote RESET (only 3RB21)		
Connecting terminals A3, A4		24 V DC, 100 mA, 2.4 W short-term
Protective separation between auxiliary current paths acc. to IEC 60947-1	V	300
CSA, UL, UR rated data		
Auxiliary circuit – Switching capacity		
		B300, R300
Conductor cross-sections of the auxiliary circuit		
Connection type		
		Screw terminals
Terminal screw		
		M3, Pozidriv size 2
Operating devices		
	mm	Ø 5 ... 6
Prescribed tightening torque		
	Nm	0.8 ... 1.2
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
<ul style="list-style-type: none"> Solid and stranded Finely stranded without end sleeve Finely stranded with end sleeve (DIN 46228-1) AWG cables, solid or stranded 	mm ² mm ² mm ² AWG	1 × (0.5 ... 4) ¹⁾ , 2 × (0.5 ... 2.5) ¹⁾ -- 1 × (0.5 ... 2.5) ¹⁾ , 2 × (0.5 ... 1.5) ¹⁾ 2 × (20 ... 14)
Connection type		
		Spring-type terminals
Operating devices		
	mm	3.0 x 0.5
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
<ul style="list-style-type: none"> Solid and stranded Finely stranded without end sleeve Finely stranded with end sleeve (DIN 46228-1) AWG cables, solid or stranded 	mm ² mm ² mm ² AWG	2 × (0.25 ... 1.5) -- 2 × (0.25 ... 1.5) 2 × (24 ... 16)

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Selection and ordering data

3RB20 electronic overload relays for mounting onto contactors and stand-alone installation, CLASS 10E

Features and technical specifications:

- Connection methods
 - Size S6
Main circuit: With busbar connection or as straight-through transformer (an appropriate connection kit with screws, spring washers and nuts is enclosed with the devices with busbar connection)
Auxiliary circuit: Either screw or spring-type terminals
 - Sizes S10/S12:
Main circuit: With busbar connection (an appropriate connection kit with screws, spring washers and nuts is enclosed)
Auxiliary circuit: Either screw or spring-type terminals
- Overload protection, phase failure protection and unbalance protection
- Internal power supply
- Auxiliary contacts 1 NO + 1 NC
- Manual and automatic RESET
- Switch position indicator
- TEST function and self-monitoring

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41G



3RB2056-1FW2



3RB2066-1MF2

Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	SD	Screw terminals (on auxiliary current side)	SD	Spring-type terminals (on auxiliary current side)	
	kW	A	A	d	Article No.	Price per PU	Article No.	Price per PU

Size S6

Devices with busbar connection, for mounting onto contactor and stand-alone installation

S6	30 ... 90	50 ... 200	315	▶	3RB2056-1FC2	2	3RB2056-1FF2
----	-----------	------------	-----	---	---------------------	---	---------------------

Devices with straight-through transformer, for mounting onto contactor and stand-alone installation

For mounting onto S6 contactors with box terminals	30 ... 90	50 ... 200	315	▶	3RB2056-1FW2	▶	3RB2056-1FX2
--	-----------	------------	-----	---	---------------------	---	---------------------

Size S10/S12

Devices with busbar connection, for mounting onto contactor and stand-alone installation

S10/S12	30 ... 132	55 ... 250	400	▶	3RB2066-1GC2	▶	3RB2066-1GF2
and size 14 (3TF68/3TF69) ³⁾	90 ... 355	160 ... 630	800	▶	3RB2066-1MC2	▶	3RB2066-1MF2

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see [Configuration Manual](#).

³⁾ For 3TF68/3TF69 contactors, direct mounting is not possible.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB20, 3RB21 for standard applications **IE3/IE4 ready**

3RB20 electronic overload relays for mounting onto contactors and stand-alone installation, CLASS 20E

Features and technical specifications:

- Connection methods
 - Size S6
Main circuit: With busbar connection or as straight-through transformer (an appropriate connection kit with screws, spring washers and nuts is enclosed with the devices with busbar connection)
Auxiliary circuit: Either screw or spring-type terminals
 - Sizes S10/S12:
Main circuit: With busbar connection (an appropriate connection kit with screws, spring washers and nuts is enclosed)
Auxiliary circuit: Either screw or spring-type terminals
 - Overload protection, phase failure protection and unbalance protection
 - Internal power supply
 - Auxiliary contacts 1 NO + 1 NC
 - Manual and automatic RESET
 - Switch position indicator
 - TEST function and self-monitoring
- PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41G



3RB2056-2FW2



3RB2066-2MF2

Size contactor	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	SD	Screw terminals (on auxiliary current side)	SD	Spring-type terminals (on auxiliary current side)		
	kW	A	A	d	Article No.	Price per PU	d	Article No.	Price per PU

Size S6

Devices with busbar connection, for mounting onto contactor and stand-alone installation

S6	30 ... 90	50 ... 200	315	▶	3RB2056-2FC2	2	3RB2056-2FF2
----	-----------	------------	-----	---	---------------------	---	---------------------

Devices with straight-through transformer, for mounting onto contactor and stand-alone installation

For mounting onto S6 contactors with box terminals	30 ... 90	50 ... 200	315	▶	3RB2056-2FW2	▶	3RB2056-2FX2
--	-----------	------------	-----	---	---------------------	---	---------------------

Size S10/S12²⁾

Devices with busbar connection, for mounting onto contactor and stand-alone installation

S10/S12 and size 14 (3TF68/3TF69) ³⁾	30 ... 132	55 ... 250	400	▶	3RB2066-2GC2	▶	3RB2066-2GF2
	90 ... 355	160 ... 630	800	▶	3RB2066-2MC2	▶	3RB2066-2MF2

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see [Configuration Manual](#).

³⁾ For 3TF68/3TF69 contactors, direct mounting is not possible.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

IE3/IE4 ready 3RB20, 3RB21 for standard applications

3RB21 electronic overload relays for mounting onto contactors and stand-alone installation, CLASS 5E, 10E, 20E and 30E adjustable

Features and technical specifications:

- Connection methods
 - Size S6
Main circuit: With busbar connection or as straight-through transformer (an appropriate connection kit with screws, spring washers and nuts is enclosed with the devices with busbar connection)
Auxiliary circuit: Either screw or spring-type terminals
 - Sizes S10/S12:
Main circuit: With busbar connection (an appropriate connection kit with screws, spring washers and nuts is enclosed)
Auxiliary circuit: Either screw or spring-type terminals
 - Overload protection, phase failure protection and unbalance protection
 - Internal ground-fault detection (activatable)
 - Internal power supply
 - Auxiliary contacts 1 NO + 1 NC
 - Manual and automatic RESET
 - Electrical remote RESET integrated
 - Switch position indicator
 - TEST function and self-monitoring
- PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41G



3RB2153-4FW2



3RB2163-4MF2

Size	Rated power for three-phase motors, rated value ¹⁾	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ²⁾	SD	Screw terminals (on auxiliary current side)	SD	Spring-type terminals (on auxiliary current side)	
	kW	A	A	d	Article No.	Price per PU	Article No.	Price per PU

Size S6

Devices with busbar connection, for mounting onto contactor and stand-alone installation

 S6 30 ... 90 50 ... 200 315 ▶ **3RB2153-4FC2** ▶ **3RB2153-4FF2**

Devices with straight-through transformer, for mounting onto contactor and stand-alone installation

 For mounting onto S6 contactors with box terminals 30 ... 90 ▶ **3RB2153-4FW2** ▶ **3RB2153-4FX2**

Size S10/S12²⁾

Devices with busbar connection, for mounting onto contactor and stand-alone installation

 S10/S12 and size 14 (3TF68/3TF69)³⁾ 30 ... 132 55 ... 250 400 ▶ **3RB2163-4GC2** ▶ **3RB2163-4GF2**
 90 ... 355 160 ... 630 800 ▶ **3RB2163-4MC2** ▶ **3RB2163-4MF2**

¹⁾ Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see [Configuration Manual](#).

³⁾ For 3TF68/3TF69 contactors, direct mounting is not possible.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

Accessories for 3RB20, 3RB21




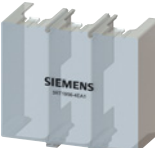

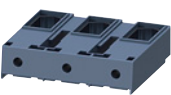
Overview

Overload relays for standard applications

The following optional accessories are available for the 3RB20 and 3RB21 electronic overload relays:

- Mechanical RESET (for all sizes)
- Cable release for resetting devices which are difficult to access (for all sizes)
- Sealable cover (for all sizes)
- Terminal covers for sizes S6 to S10/S12
- Box terminal blocks for sizes S6 and S10/S12

Selection and ordering data

Version	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mechanical RESET							
 <p>3RU3980-0A with pushbutton and extension plunger</p>	Resetting plungers, holders and formers	S6 ... S12	2	3RB3980-0A	1	1 unit	41F
	Pushbuttons with extended stroke (12 mm), IP65, Ø 22 mm	S6 ... S12	▶	3SU1200-0FB10-0AA0	1	1 unit	41J
	Extension plungers For compensation of the distance between a pushbutton and the unlatching button of the relay	S6 ... S12	▶	3SU1900-0KG10-0AA0	1	1 unit	41J
Cable releases with holder for RESET							
 <p>3RU3980-1.</p>	For Ø 6.5 mm holes in the control panel; max. control panel thickness 8 mm						
	<ul style="list-style-type: none"> • Length 400 mm • Length 600 mm 	S6 ... S12	2	3RB3980-0B	1	1 unit	41F
		S6 ... S12	2	3RB3980-0C	1	1 unit	41F
Sealable covers							
 <p>3RB3984-0</p>	For covering the setting knobs	S6 ... S12	2	3RB3984-0	1	1 unit	41F
Terminal covers							
 <p>3RT1956-4EA1</p>  <p>3RT1956-4EA2</p>	Covers for cable lugs and busbar connections						
	• Length 100 mm	S6	▶	3RT1956-4EA1	1	1 unit	41B
	• Length 120 mm	S10/S12	2	3RT1966-4EA1	1	1 unit	41B
	Covers for box terminals						
	• Length 25 mm	S6	▶	3RT1956-4EA2	1	1 unit	41B
	• Length 30 mm	S10/S12	2	3RT1966-4EA2	1	1 unit	41B
Covers for screw terminals							
Between contactor and overload relay, without box terminals (1 unit required per combination)	S6	▶	3RT1956-4EA3	1	1 unit	41B	
	S10/S12	2	3RT1966-4EA3	1	1 unit	41B	
Box terminal blocks							
 <p>3RT195.-4G</p>	For round and ribbon cables						
	• Up to 70 mm ²	S6 ¹⁾	▶	3RT1955-4G	1	1 unit	41B
	• Up to 120 mm ²	S6	▶	3RT1956-4G	1	1 unit	41B
	• Up to 240 mm ²	S10/S12	▶	3RT1966-4G	1	1 unit	41B



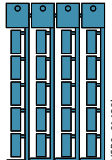
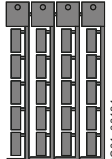
¹⁾ In the scope of supply for 3RT1054-1 contactors (55 kW).

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

Accessories for 3RB20, 3RB21

General accessories

Version	Size	Color	For over-load relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Tools for opening spring-type terminals										
 3RA2908-1A	Screwdrivers For all SIRIUS devices with spring-type terminals	Length approx. 200 mm, 3.0 mm x 0.5 mm	Titanium gray/black, partially insulated	Main and auxiliary circuit connection: 3RB2	2	Spring-type terminals 	1	1 unit	41B	
						3RA2908-1A				
Blank labels										
 NSB0_01429b 3RT1900-1SB20	Unit labeling plates¹⁾ For SIRIUS devices	20 mm x 7 mm	Pastel turquoise	3RB2	20	3RT1900-1SB20	100	340 units	41B	
		20 mm x 7 mm	Titanium gray	3RB2	20	3RT2900-1SB20	100	340 units	41B	
	 IC01_00181 3RT2900-1SB20	Adhesive inscription labels¹⁾ For SIRIUS devices	19 mm x 6 mm	Pastel turquoise	3RU2	15	3RT1900-1SB60	100	3 060 units	41B
			19 mm x 6 mm	Zinc yellow	3RU2	15	3RT1900-1SD60	100	3 060 units	41B

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/16).

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

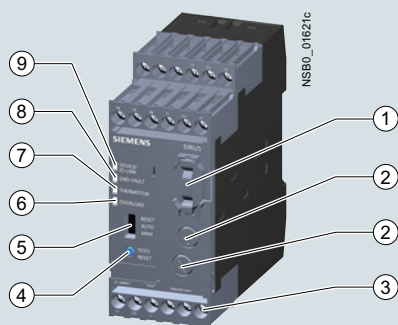
3RB22, 3RB23 for high-feature applications

Overview

More information

Homepage, see www.siemens.com/sirius-overloadrelays
Industry Mall, see www.siemens.com/product?3RB2

Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>
Operating Instructions "3RB22, 3RB23 Electronic Overload Relays", see <https://support.industry.siemens.com/cs/ww/en/view/21833251>
Characteristics and certificates, see <https://support.industry.siemens.com/cs/ww/en/ps/16280>



- ① 3RB2985 function expansion module:
Enables more functions to be added, e.g. internal ground-fault detection and/or an analog output with corresponding signals.
- ② Motor current and trip class setting:
Setting the device to the motor current and to the required trip class dependent on the start-up conditions is easy with the two rotary switches.
- ③ Connecting terminals (removable joint block):
The generously sized terminals permit connection of two conductors with different cross-sections for the auxiliary, control and sensor circuits. Connection is possible with screw connection and alternatively with spring-type connection.
- ④ Test/RESET button:
Enables testing of all important device components and functions, plus resetting of the device after a trip when manual RESET is selected.
- ⑤ Selector switch for manual/automatic RESET:
With this switch you can choose between manual and automatic RESET.
- ⑥ Red LED "OVERLOAD":
A continuous red light signals an active overload trip; a flickering red light signals an imminent trip (overload warning).
- ⑦ Red LED "THERMISTOR":
A continuous red light signals an active thermistor trip.
- ⑧ Red LED "GND FAULT":
A continuous red light signals a ground-fault tripping.
- ⑨ Green LED "READY":
A continuous green light signals that the device is working correctly.

SIRIUS 3RB22 and 3RB23 evaluation modules

The 3RB22 and 3RB23 electronic overload relays up to 630 A (up to 820 A possible in combination with a series transformer) are from a modular system and comprise an evaluation unit, a current measuring module and a connecting cable. The 3RB22 overload relays (with monostable auxiliary contacts) and the 3RB23 overload relays (with bistable auxiliary contacts) are supplied from an external voltage.

They have been designed for inverse-time delayed protection of loads with normal and heavy starting against excessive temperature rises due to overload, phase unbalance or phase failure. An overload, phase unbalance or phase failure result in an increase of the motor current beyond the set rated motor current.

This current rise is detected by means of a current measuring module (see page 7/140) and electronically evaluated by the evaluation module which is connected to it. The evaluation electronics sends a signal to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor.

The break time depends on the ratio between the tripping current and current setting I_e and is stored in the form of a long-term stable tripping characteristic curve (see Characteristics). The "tripped" status is signaled by means of a continuous red "OVERLOAD" LED.

The LED indicates imminent tripping of the relay due to overload, phase unbalance or phase failure by flickering when the limit current has been violated. In the case of the 3RB22 and 3RB23 overload relays this warning can also be issued through auxiliary contacts.

In addition to the described inverse-time delayed protection of loads against excessive temperature rises, the 3RB22 and 3RB23 electronic overload relays also allow direct temperature monitoring of the motor windings (full motor protection!) by connection with broken-wire interlock of a PTC sensor circuit. With this temperature-dependent protection, the loads can be protected against overheating caused, for example, indirectly by reduced coolant flow and which cannot be detected by means of the current alone. In the event of overheating, the devices switch off the contactor, and thus the load, by means of the auxiliary contacts. The "tripped" status is signaled by means of a continuously illuminated "THERMISTOR" LED.

To protect the loads against high-resistance short circuits due to damage to the insulation, humidity, condensed water, etc., the 3RB22 and 3RB23 electronic overload relays offer the possibility of internal ground fault monitoring in conjunction with a function expansion module (for details, see Operating Instructions, not possible in conjunction with contactor assemblies for star-delta (wye-delta) starting). In the event of a ground fault the 3RB22 and 3RB23 relays trip instantaneously.

The "tripped" status is signaled by means of a continuous red "Ground Fault" LED. Signaling through auxiliary contacts is also possible.

After tripping due to overload, phase unbalance, phase failure, thermistor or ground-fault tripping, the relay is reset manually or automatically after the recovery time has elapsed.

In conjunction with a function expansion module, the motor current measured by the microprocessor can be output in the form of a DC 4 mA to 20 mA analog signal for operating rotary coil instruments or for feeding into analog inputs of programmable logic controllers.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB22, 3RB23 for high-feature applications

With an additional AS-Interface analog module the current values can also be transferred over the AS-i bus system.

The 3RB2 electronic overload relays are suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

Article No. scheme

Product versions		Article number							
Electronic overload relays		3RB2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Device type	e.g. 2 = monostable device for high-feature applications, supplied from external source, for three-phase loads	<input type="checkbox"/>							
Size, rated operational current and power	e.g. 8 = irrespective of size and current		<input type="checkbox"/>						
Version of the automatic RESET, electrical remote RESET	e.g. 3 = switchable between manual/auto RESET, with integral electrical remote RESET			<input type="checkbox"/>					
Trip class (CLASS)	e.g. 4 = CLASS 5E, 10E, 20E, 30E (adjustable)				<input type="checkbox"/>				
Setting range of the overload release	e.g. A = none specified					<input type="checkbox"/>			
Connection methods	e.g. A = screw terminals for auxiliary, control and main circuits						<input type="checkbox"/>		
Installation type	e.g. 1 = stand-alone installation							<input type="checkbox"/>	
Example		3RB2	2	8	3	-	4	A	A 1

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Benefits

The most important features and benefits of the 3RB22 and 3RB23 electronic overload relays are listed in the overview table, see "General data", page 7/79 onwards.

Application

Industries

The 3RB22 and 3RB23 electronic overload relays are suitable for customers from all industries who want to guarantee optimum inverse-time delayed and temperature-dependent protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5 to CLASS 30), minimize project completion times, inventories and power consumption, and optimize plant availability and maintenance management.

Application

The 3RB22 and 3RB23 devices have been designed for the protection of three-phase asynchronous and single-phase AC motors.

If single-phase AC motors are to be protected by the 3RB22 and 3RB23 electronic overload relays, the main current paths of the current measuring modules must be series-connected. For circuit diagrams, see [Operating Instructions](#).

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, ageing and temperature fluctuations.

For the temperature range from -25 °C to +60 °C, the 3RB22 and 3RB23 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

Configuration notes for use of the devices below -25 °C or above +60 °C on request.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RB22 and 3RB23 electronic overload relays in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see [Application Manual](#).

For more information, see [page 1/7](#).

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB22, 3RB23 for high-feature applications

Technical specifications

More information

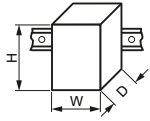

Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>

Configuration Manual "Load Feeders – SIRIUS Modular System", see <https://support.industry.siemens.com/cs/ww/en/view/39714188>

Operating Instructions "3RB22, 3RB23 Electronic Overload Relays", see <https://support.industry.siemens.com/cs/ww/en/view/21833251>

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16280/td>

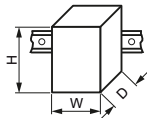
The following technical information is intended to provide an initial overview of the various types of devices and functions.

Type – Overload relay: Evaluation modules		3RB2283-4A.1	3RB2383-4A.1
Size contactor		S00 ... S10/S12	
Dimensions of evaluation modules (W x H x D)		45 x 111 x 95	
General data			
Tripping in the event of		Overload, phase failure and phase unbalance (> 40% according to NEMA), + ground fault (with corresponding function expansion module) and activation of the thermistor motor protection (with closed PTC sensor circuit)	
Trip class acc. to IEC 60947-4-1	CLASS	5E, 10E, 20E and 30E adjustable	
Phase failure sensitivity		Yes	
Overload warning		Yes, from $1.125 \times I_g$ for symmetrical loads and from $0.85 \times I_g$ for unsymmetrical loads	
Reset and recovery		Manual, automatic and remote RESET	
• Reset options after tripping			
• Recovery time			
- For automatic RESET	min.	- For tripping due to overcurrent: 3 (stored permanently) - For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature - For tripping due to a ground fault: no automatic RESET	
- For manual RESET	min.	- For tripping due to overcurrent: 3 (stored permanently) - For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature - For tripping due to a ground fault: Immediately	
- For remote RESET	min.	- For tripping due to overcurrent: 3 (stored permanently) - For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature - For tripping due to a ground fault: Immediately	
Features			
• Display of operating state on device		Yes, with four LEDs: - Green LED "Ready" - Red LED "Ground Fault" - Red LED "Thermistor" - Red LED "Overload"	
• TEST function		Yes, test of LEDs, electronics, auxiliary contacts and wiring of control circuit by pressing the button TEST/RESET/self-monitoring	
• RESET button		Yes, with the TEST/RESET button	
• STOP button		No	
Protection and operation of explosion-proof motors			
EC type-examination certificate number according to directive 2014/34/EU (ATEX)		PTB 05 ATEX 3022  II (2) GD see https://support.automation.siemens.com/WWW/view/en/23115758	--
Ambient temperatures			
• Storage/transport	°C	-40 ... +80	
• Operation	°C	-25 ... +60	
• Temperature compensation	°C	+60	
• Permissible rated current			
- Temperature inside control cabinet 60 °C	%	100	
- Temperature inside control cabinet 70 °C	%	On request	
Degree of protection acc. to IEC 60529		IP20	
Touch protection acc. to IEC 60529		Finger-safe	
Shock resistance with sine acc. to IEC 60068-2-27	g/ms	15/11	

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB22, 3RB23 for high-feature applications



Type – Overload relay: Evaluation modules		3RB2283-4A.1	3RB2383-4A.1
Size contactor		S00 ... S10/S12	
Dimensions of evaluation modules (W x H x D)		45 x 111 x 95	
General data (continued)			
Electromagnetic compatibility (EMC) – Interference immunity			
• Conductor-related interference			
- Burst acc. to IEC 61000-4-4 (corresponds to degree of severity 3)	kV	2 (power ports), 1 (signal port)	
- Surge acc. to IEC 61000-4-5 (corresponds to degree of severity 3)	kV	2 (line to earth), 1 (line to line)	
• Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3)	kV	8 (air discharge), 6 (contact discharge)	
• Field-related interference acc. to IEC 61000-4-3 (corresponds to degree of severity 3)	V/m	10	
Electromagnetic compatibility (EMC) – Emitted interference		Degree of severity A according to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)	
Resistance to extreme climates – Air humidity	%	100	
Installation altitude above sea level	m	Up to 2 000	
Mounting position		Any	
Type of mounting			
• Evaluation modules		Stand-alone installation	
• Current measuring module	Size	S00 to S3: Stand-alone installation, S6 and S10/S12: Stand-alone installation or mounting onto contactors	
Type – Overload relay: Evaluation modules			
Size contactor		3RB2283-4A.1, 3RB2383-4A.1	
		S00 ... S10/S12	
Auxiliary circuit			
Number of NO contacts		2	
Number of NC contacts		2	
Number of CO contacts		--	
Auxiliary contacts – Assignment			
		<ul style="list-style-type: none"> • Alternative 1 <ul style="list-style-type: none"> - 1 NO for the signal "tripped by overload and/or thermistor", - 1 NC for disconnecting the contactor, - 1 NO for the signal "tripped by ground fault", - 1 NC for disconnecting the contactor or¹⁾ • Alternative 2 <ul style="list-style-type: none"> - 1 NO for the signal "tripped by overload and/or thermistor and/or ground fault", - 1 NC for disconnecting the contactor, - 1 NO for overload warning - 1 NC for disconnecting the contactor 	
Rated insulation voltage U_i (pollution degree 3)	V	300	
Rated impulse withstand voltage U_{imp}	kV	4	
Auxiliary contacts – Contact rating			
• NC, NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e			
- 24 V	A	6	
- 120 V	A	6	
- 125 V	A	6	
- 250 V	A	3	
• NC, NO contacts with direct current DC-13, rated operational current I_e at U_e			
- 24 V	A	2	
- 60 V	A	0.55	
- 110 V	A	0.3	
- 125 V	A	0.3	
- 250 V	A	0.2	
• Conventional thermal current I_{th}	A	5	
• Contact reliability (suitability for PLC control; 17 V, 5 mA)		Yes	
Short-circuit protection			
• With fuse, operational class gG	A	6	
• With miniature circuit breaker, C characteristic	A	1.6	
Protective separation between auxiliary current paths acc. to IEC 60947-1	V	300	
CSA, UL, UR rated data			
Auxiliary circuit – Switching capacity		B300, R300	

¹⁾ The assignment of auxiliary contacts may be influenced by function expansion modules.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB22, 3RB23 for high-feature applications

Type – Overload relay: Evaluation modules		3RB2283-4A.1, 3RB2383-4A.1	
Size contactor		S00 ... S10/S12	
Control circuit			
Rated insulation voltage U_i (pollution degree 3)	V	300	
Rated impulse withstand voltage U_{imp}	kV	4	
Rated control supply voltage U_s			
• 50/60 Hz AC	V	24 ... 240	
• DC	V	24 ... 240	
Operating range			
• 50/60 Hz AC		$0.85 \times U_{s \min} \leq U_s \leq 1.1 \times U_{s \max}$	
• DC		$0.85 \times U_{s \min} \leq U_s \leq 1.1 \times U_{s \max}$	
Rated power			
• 50/60 Hz AC	W	0.5	
• DC	W	0.5	
Mains buffering time	ms	200	
Sensor circuit			
Thermistor motor protection (PTC thermistor sensor)			
• Summation cold resistance	k Ω	≤ 1.5	
• Response value	k Ω	3.4 ... 3.8	
• Return value	k Ω	1.5 ... 1.65	
Ground-fault detection			
The information refers to sinusoidal residual currents at 50/60 Hz.			
• Tripping value $I_{\Delta}^{1)}$			
- For $0.3 \times I_e < I_{motor} < 2.0 \times I_e$		$> 0.3 \times I_e$	
- For $2.0 \times I_e < I_{motor} < 8.0 \times I_e$		$> 0.15 \times I_{motor}$	
• Response time t_{trip}	ms	500 ... 1 000	
Analog output¹⁾²⁾			
Rated values			
• Output signal	mA	4 ... 20	
• Measuring range		0 ... $1.25 \times I_e$ 4 mA corresponds to $0 \times I_e$ 16.8 mA corresponds to $1.0 \times I_e$ 20 mA corresponds to $1.25 \times I_e$	
• Load, max.	Ω	100	
Conductor cross-sections for the auxiliary, control and sensor circuits as well as the analog output			
Connection type		 Screw terminals	
Terminal screw		M3, Pozidriv size 2	
Operating devices		mm	3.0 x 0.5
Prescribed tightening torque		Nm	0.8 ... 1.2
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected			
• Solid or stranded	mm ²	$1 \times (0.5 \dots 4)^3, 2 \times (0.5 \dots 2.5)^3$	
• Finely stranded without end sleeve	mm ²	--	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	$1 \times (0.5 \dots 2.5)^3, 2 \times (0.5 \dots 1.5)^3$	
• AWG cables, solid or stranded	AWG	$2 \times (20 \dots 14)$	
Connection type		 Spring-type terminals	
Operating devices		mm	3.0 x 0.5
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected			
• Solid or stranded	mm ²	$2 \times (0.25 \dots 1.5)$	
• Finely stranded without end sleeve	mm ²	--	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	$2 \times (0.25 \dots 1.5)$	
• AWG cables, solid or stranded	AWG	$2 \times (24 \dots 16)$	

¹⁾ For the 3RB22 and 3RB23 overload relays in combination with a corresponding function expansion module.

²⁾ Analog input modules, e.g. SM 331, must be configured for 4-wire measuring transducers. In this case the analog input module must not supply current to the analog output of the 3RB22 and 3RB23 relay.

³⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB22, 3RB23 for high-feature applications

Functions of the 3RB22 and 3RB23 evaluation modules in combination with the 3RB2985 function expansion modules

Evaluation modules	With function expansion module	Basic functions	Inputs		
			A1/A2	T1/T2	Y1/Y2
3RB2283-4AA1 3RB2283-4AC1 3RB2383-4AA1 3RB2383-4AC1	--	Inverse-time delayed protection, temperature-dependent protection, electrical remote RESET, overload warning	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical remote RESET
	3RB2985-2CA1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical remote RESET, overload warning	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical remote RESET
	3RB2985-2CB1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical remote RESET, ground-fault signal	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical remote RESET
	3RB2985-2AA0	Inverse-time delayed protection, temperature-dependent protection, electrical remote RESET, overload warning, analog output	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical remote RESET
	3RB2985-2AA1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical remote RESET, overload warning, analog output	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical remote RESET
	3RB2985-2AB1	Inverse-time delayed protection, temperature-dependent protection, internal ground-fault detection, electrical remote RESET, ground-fault signal, analog output	Power supply 24 ... 240 V AC/DC	Connection for PTC sensor	Electrical remote RESET

Evaluation modules	With function expansion module	Outputs				
		I (-) / I (+)	95/96 NC	97/98 NO	05/06 NC	07/08 NO
3RB2283-4AA1 3RB2283-4AC1 3RB2383-4AA1 3RB2383-4AC1	--	No	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2CA1	No	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection + ground fault)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2CB1	No	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection)	Signal "tripped"	Disconnection of the contactor (ground fault)	Signal "ground-fault tripping"
	3RB2985-2AA0	Analog signal	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2AA1	Analog signal	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection + ground fault)	Signal "tripped"	Overload warning	Overload warning
	3RB2985-2AB1	Analog signal	Disconnection of the contactor (inverse-time delayed/temperature-dependent protection)	Signal "tripped"	Disconnection of the contactor (ground fault)	Signal "ground-fault tripping"

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB22, 3RB23 for high-feature applications **IE3/IE4 ready**

3RB22 and 3RB23 electronic overload relays (evaluation modules) for full motor protection for stand-alone installation, CLASS 5E, 10E, 20E and 30E (adjustable)

Type	3RB2283-4A.1, 3RB2383-4A.1
Features and technical specifications	
Overload protection, phase failure protection and unbalance protection	✓
Supplied from an external source	✓ 24 ... 240 V AC/DC
Auxiliary contacts	✓ 2 NO + 2 NC
Electrical remote RESET integrated	✓
Four LEDs for operating and status displays	✓
TEST function and self-monitoring	✓
Internal ground-fault detection	✓ (with function expansion module)
Screw or spring-type terminals for auxiliary, control and sensor circuits	✓
Input for PTC sensor circuit	✓
Analog output	✓ (with function expansion module)

✓ Available

Selection and ordering data

PU (UNIT, SET, M) = 1
 PS* = 1 UNIT
 PG = 41G



3RB2283-4AA1,
3RB2383-4AA1



3RB2283-4AC1,
3RB2383-4AC1

Size contactor	Version	SD	Screw terminals		SD	Spring-type terminals	
			Article No.	Price per PU		Article No.	Price per PU
Evaluation modules							
S00 ... S12	Monostable	▶	3RB2283-4AA1	▶		3RB2283-4AC1	
	Bistable	▶	3RB2383-4AA1	▶		3RB2383-4AC1	

Note:

Overview of overload relays – matching contactors, see [page 7/84](#).


Current measuring modules and related connecting cables, see [page 7/140](#), general accessories, see [page 7/141 onwards](#).

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

IE3/IE4 ready 3RB22, 3RB23 for high-feature applications

Function expansion modules for 3RB22 and 3RB23 overload relays (evaluation modules)

Size contactor	Version	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Sizes S00 to S12								
			d					
				For plugging into evaluation module (1 unit)				
 3RB2985-2..1	S00 ... S12							
		Analog Basic 1 modules¹⁾ Analog output DC 4 ... 20 mA, with overload warning	3RB22, 3RB23	▶	3RB2985-2AA0	1	1 unit	41F
		Analog Basic 1 GF modules¹⁾²⁾ Analog output DC 4 ... 20 mA, with internal ground-fault detection and overload warning	3RB22, 3RB23	▶	3RB2985-2AA1	1	1 unit	41F
		Analog Basic 2 GF modules¹⁾²⁾ Analog output DC 4 ... 20 mA, with internal ground-fault detection and ground-fault signaling	3RB22, 3RB23	▶	3RB2985-2AB1	1	1 unit	41F
		Basic 1 GF modules²⁾ with internal ground-fault detection and overload warning	3RB22, 3RB23	▶	3RB2985-2CA1	1	1 unit	41F
	Basic 2 GF modules²⁾ with internal ground-fault detection and ground-fault signaling	3RB22, 3RB23	▶	3RB2985-2CB1	1	1 unit	41F	

¹⁾ The analog signal 4 mA up to 20 mA DC can be used for operating rotary coil instruments or for feeding into analog inputs of programmable logic controllers.

²⁾ The following information on ground-fault protection refers to sinusoidal residual currents at 50/60 Hz:

- With a motor current of between 0.3 and 2 times the current setting I_e , the unit will trip at a ground-fault current equal to 30% of the current setting.
- With a motor current of between 2 and 8 times the current setting I_e , the unit will trip at a ground-fault current equal to 15% of the motor current.
- The response delay amounts to between 0.5 s and 1 s.

Note:

Analog input modules, e.g. SM 331, must be configured for 4-wire measuring transducers. In this case the analog input module must not supply current to the analog output of the 3RB22/3RB23 relay.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB24 for IO-Link for high-feature applications

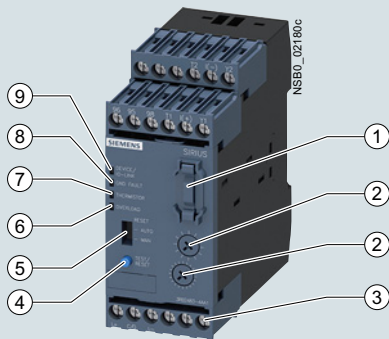
Overview

More information

Homepage, see www.siemens.com/sirius-overloadrelays
 Industry Mall, see www.siemens.com/product?3RB2

Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>
 Manual "SIRIUS 3RB24 Electronic Overload Relay for IO-Link", see <https://support.industry.siemens.com/cs/ww/en/view/46165627>

Certificates, see <https://support.industry.siemens.com/cs/ww/en/ps/16281/cert>



- ① Plug-in point for operator panel:
enables connection of the 3RA6935-0A operator panel.
- ② Motor current and trip class setting:
Setting the device to the motor current and to the required trip class dependent on the start-up conditions is easy with the two rotary switches.
- ③ Connecting terminals (removable terminal block):
The generously sized terminals permit connection of two conductors with different cross-sections for the auxiliary, control and sensor circuits. Connection is possible with screw connection and alternatively with spring-type connection.
- ④ Test/RESET button:
Enables testing of all important device components and functions, plus resetting of the device after a trip when manual RESET is selected.
- ⑤ Selector switch for manual/automatic RESET:
With this switch you can choose between manual and automatic RESET.
- ⑥ Red LED "OVERLOAD":
A continuous red light signals an active overload trip; a flickering led light signals an imminent trip (overload warning).
- ⑦ Red LED "THERMISTOR":
A continuous red light signals an active thermistor trip.
- ⑧ Red LED "GND FAULT":
A continuous red light signals an active ground-fault trip.
- ⑨ Green LED "DEVICE/IO-Link":
A continuous green light signals that the device is working correctly, a green flickering light signals the communication through IO-Link.

SIRIUS 3RB24 evaluation module

The modular, IO-Link powered 3RB24 electronic overload relays (with monostable auxiliary contacts) up to 630 A (up to 820 A possible with a series transformer) have been designed for current-dependent protection of loads with normal and heavy starting against excessive temperature rises due to overload, phase unbalance or phase failure. It comprises an evaluation unit, a current measuring module and a connecting cable.

The evaluation module 3RB24 also offers an engine starter function: The contactors, which are connected via the auxiliary contacts, can also be actuated for operation via IO-Link. In this way, direct-on-line, reversing and wye-delta starters up to 630 A (or 830 A) can be connected to the controller wirelessly via the IO-Link controller.

An overload, phase unbalance or phase failure result in an increase of the motor current beyond the set rated motor current.

This current rise is detected by means of the current measuring module (see page 7/140) and electronically evaluated by the evaluation module which is connected to it. The evaluation electronics sends a signal to the auxiliary contacts. The auxiliary contacts then switch off the load by means of a contactor.

The break time depends on the ratio between the tripping current and current setting I_e and is stored in the form of a long-term stable tripping characteristic curve (see Manual). The "tripped" status is signaled by means of a continuously illuminated red "OVERLOAD" LED and also reported as a group fault via IO-Link.

The LED indicates imminent tripping of the relay due to overload, phase unbalance or phase failure by flickering when the limit current has been violated. This warning can also be reported to the higher-level PLC via IO-Link at the 3RB24 overload relays.

In addition to the described inverse-time delayed protection of loads against excessive temperature rises, the 3RB24 electronic overload relays also allow direct temperature monitoring of the motor windings (full motor protection!) by connection with broken-wire interlock of a PTC sensor circuit. With this temperature-dependent protection, the loads can be protected against overheating caused, for example, indirectly by reduced coolant flow and which cannot be detected by means of the current alone. In the event of overheating, the devices switch off the contactor, and thus the load, by means of the auxiliary contacts. The "tripped" status is signaled by means of a continuously illuminated "THERMISTOR" LED and also reported as a group fault via IO-Link.

To protect the loads against incomplete ground faults due to damage to the insulation, humidity, condensation, etc., the 3RB24 electronic overload relays offer the possibility of internal ground-fault detection (for details, see Manual, not possible in conjunction with contactor assemblies for star-delta (wye-delta) starting). In the event of a ground fault, the 3RB24 relays trip instantaneously.

The "tripped" status is signaled by means of a flashing red LED "Ground Fault" and reported at the overload relay 3RB24 as a group fault via IO-Link.

The reset after overload, phase unbalance, phase failure, thermistor or ground-fault tripping is performed manually by key on site, via IO-Link or by electrical remote RESET or automatically after the cooling time (motor model) or for thermistor protection after sufficient cooling. Trips in devices initiated by function monitoring systems (broken wire or short-circuit on the thermistor) can only be reset locally.

A motor current measured by the microprocessor can be output in the form of an analog signal DC 4 mA to 20 mA for operating rotary coil instruments or for feeding into analog inputs of programmable logic controllers.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB24 for IO-Link for high-feature applications

The current values can be transmitted to the higher-level controller via IO-Link.

The 3RB24 electronic overload relay for IO-Link is suitable for operation with frequency converters.

The devices are manufactured in accordance with environmental guidelines and contain environmentally friendly and reusable materials. They comply with all important worldwide standards and approvals.

Use in hazardous areas

The 3RB24 electronic overload relays for IO-Link with the 3RB29 current measuring module are suitable for the overload protection of motors with the following types of protection:

- Ex II (2) G [Ex e] [Ex d] [Ex px]
- Ex II (2) D [Ex t] [Ex p]

EC type test certificate for Group II, Category (2) G/D exists. It has the number PTB 11 ATEX 3014.

Article No. scheme

Product versions	Article number
Electronic overload relays	3RB2 □ □ □ - □ □ □ □
Device type	e.g. 4 = monostable device for high-feature applications, supplied from external source (24 V DC), for three-phase loads □
Size, rated operational current and power	e.g. 8 = irrespective of size and current □
Version of the automatic RESET, electrical remote RESET	e.g. 3 = switchable between manual/auto RESET, with integral electrical remote RESET □
Trip class (CLASS)	e.g. 4 = CLASS 5E, 10E, 20E, 30E (adjustable) □
Setting range of the overload release	e.g. A = none specified □
Connection methods	e.g. A = screw terminals for auxiliary, control and main circuits □
Installation type	e.g. 1 = stand-alone installation □
Example	3RB2 4 8 3 - 4 A A 1

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders please use the article numbers quoted in the selection and ordering data.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB24 for IO-Link for high-feature applications

Application

Industries

The 3RB24 electronic overload relays are suitable for customers from all industries who want to guarantee optimum current and temperature-dependent protection of their electrical loads (e.g. motors) under normal and heavy starting conditions (CLASS 5E to 30E), minimize project completion times, inventories and energy consumption, and optimize plant availability and maintenance management.

Application

The 3RB24 electronic overload relays have been designed for the protection of three-phase asynchronous and single-phase AC motors.

In addition to protection function, these devices can be used together with contactors as direct or reversing starters (star-delta (wye-delta) start also possible), which are controlled via IO-Link. This makes it possible to directly control drives via IO-Link from a higher-level controller or on site via the optional hand-held device and also, for example, to return current values directly via IO-Link.

If single-phase AC motors are to be protected by the 3RB24 electronic overload relays, the main current paths of the current measuring modules must be series-connected (circuit diagrams see Manual).

Ambient conditions

The devices are insensitive to external influences such as shocks, corrosive ambient conditions, ageing and temperature fluctuations.

In the temperature range from -25 °C to +60 °C, the 3RB24 electronic overload relays compensate the temperature in accordance with IEC 60947-4-1.

Configuration notes for use of the devices below -25 °C or above +60 °C on request.

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of 3RB24 electronic overload relays in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see [Application Manual](#).

For more information, see [page 1/7](#).

Technical specifications

More information

Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>

Configuration Manual "Load Feeders – SIRIUS Modular System", see <https://support.industry.siemens.com/cs/ww/en/view/39714188>

Manual "SIRIUS 3RB24 Electronic Overload Relay for IO-Link", see <https://support.industry.siemens.com/cs/ww/en/view/46165627>

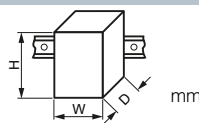
Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16281/td>

The following technical information is intended to provide an initial overview of the various types of device and functions.

Type – Overload relay: Evaluation modules

Size contactor

Dimensions of evaluation modules (W x H x D)



3RB2483-4A.1

S00 ... S10/S12

45 x 111 x 95

General data

Tripping in the event of

Overload, phase failure and phase unbalance (> 40% according to NEMA), + ground fault (connectable and disconnectable) and activation of the thermistor motor protection (with closed PTC sensor circuit)

Trip class acc. to IEC 60947-4-1

CLASS 5E, 10E, 20E and 30E adjustable

Phase failure sensitivity

Yes

Overload warning

Yes, from $1.125 \times I_e$ for symmetrical loads and from $0.85 \times I_e$ for unsymmetrical loads

Reset and recovery

- Reset options after tripping

Manual and automatic RESET, electrical remote RESET or through IO-Link

- Recovery time

- For automatic RESET

min.

- For tripping due to overcurrent: 3 (stored permanently)
- For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature
- For tripping due to a ground fault: no automatic RESET

- For manual RESET

min.

- For tripping due to overcurrent: 3 (stored permanently)
- For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature
- For tripping due to a ground fault: Immediately

- For remote RESET

min.

- For tripping due to overcurrent: 3 (stored permanently)
- For tripping by thermistor: Time until the motor temperature has fallen 5 K below the response temperature
- For tripping due to a ground fault: Immediately

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays



3RB24 for IO-Link for high-feature applications

Type – Overload relay: Evaluation modules Size contactor Dimensions of evaluation modules (W x H x D)		3RB2483-4A.1 S00 ... S10/S12 45 x 111 x 95 mm
General data (continued)		
Features		
<ul style="list-style-type: none"> • Display of operating state on device 		Yes, with four LEDs: - Green "DEVICE/IO-Link" LED - Red LED "Ground Fault" - Red LED "Thermistor" - Red LED "Overload"
<ul style="list-style-type: none"> • TEST function 		Yes, test of LEDs, electronics, auxiliary contacts and wiring of control circuit by pressing the button TEST/RESET/self-monitoring
<ul style="list-style-type: none"> • RESET button 		Yes, with the TEST/RESET button
<ul style="list-style-type: none"> • STOP button 		No
Protection and operation of explosion-proof motors		
EC type-examination certificate number according to directive 2014/34/EU (ATEX)		PTB 11 ATEX 3014 ⚠ II (2) G [Ex e] [Ex d] [Ex px] ⚠ II (2) G [Ex t] [Ex p] see https://support.industry.siemens.com/cs/ww/en/view/60524083
Ambient temperatures		
<ul style="list-style-type: none"> • Storage/transport 	°C	-40 ... +80
<ul style="list-style-type: none"> • Operation 	°C	-25 ... +60
<ul style="list-style-type: none"> • Temperature compensation 	°C	+60
<ul style="list-style-type: none"> • Permissible rated current 		
<ul style="list-style-type: none"> - Temperature inside control cabinet 60 °C 	%	100
<ul style="list-style-type: none"> - Temperature inside control cabinet 70 °C 	%	On request
Degree of protection acc. to IEC 60529		
		IP20
Touch protection acc. to IEC 60529		
		Finger-safe
Shock resistance with sine acc. to IEC 60068-2-27		
	g/ms	15/11
Electromagnetic compatibility (EMC) – Interference immunity		
<ul style="list-style-type: none"> • Conductor-related interference 		
<ul style="list-style-type: none"> - Burst acc. to IEC 61000-4-4 (corresponds to degree of severity 3) 	kV	2 (power ports), 1 (signal port)
<ul style="list-style-type: none"> - Surge acc. to IEC 61000-4-5 (corresponds to degree of severity 3) 	kV	2 (line to earth), 1 (line to line)
<ul style="list-style-type: none"> • Electrostatic discharge acc. to IEC 61000-4-2 (corresponds to degree of severity 3) 	kV	8 (air discharge), 6 (contact discharge)
<ul style="list-style-type: none"> • Field-related interference acc. to IEC 61000-4-3 (corresponds to degree of severity 3) 	V/m	10
Electromagnetic compatibility (EMC) – Emitted interference		
		Degree of severity A according to EN 55011 (CISPR 11) and EN 55022 (CISPR 22)
Resistance to extreme climates – Air humidity		
	%	100
Installation altitude above sea level		
	m	Up to 2 000
Mounting position		
		Any
Type of mounting		
<ul style="list-style-type: none"> • Evaluation modules 		Stand-alone installation
<ul style="list-style-type: none"> • Current measuring module 	Size	S00 to S3: Stand-alone installation, S6 and S10/S12: Stand-alone installation or mounting onto contactors

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB24 for IO-Link for high-feature applications



Type – Overload relay: Evaluation modules	3RB2483-4A.1	
Size contactor	S00 ... S10/S12	
Auxiliary circuit		
Number of auxiliary switches	1 CO contact, 1 NO contact connected in series internally	
Auxiliary contacts – Assignment	<ul style="list-style-type: none"> • 1 CO contact for selecting the contactor (for reversing starter function), actuated by the control system • 1 NO contact for normal switching duty, actuated by the control system (opens automatically when tripping occurs) 	
Rated insulation voltage U_i (pollution degree 3)	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Auxiliary contacts – Contact rating		
<ul style="list-style-type: none"> • NC, NO contact with alternating current AC-14/AC-15, rated operational current I_e at U_e <ul style="list-style-type: none"> - 24 V - 120 V - 125 V - 250 V • NC, NO contacts with direct current DC-13, rated operational current I_e at U_e <ul style="list-style-type: none"> - 24 V - 60 V - 110 V - 125 V - 250 V • Conventional thermal current I_{th} • Contact reliability (suitability for PLC control; 17 V, 5 mA) 	A	6 6 6 3 2 0.55 0.3 0.3 0.2 5 Yes
Short-circuit protection		
<ul style="list-style-type: none"> • With fuse, operational class gG • With miniature circuit breaker, C characteristic 	A	6 1.6
Protective separation between auxiliary current paths acc. to IEC 60947-1	V	300
CSA, UL, UR rated data		
Auxiliary circuit – Switching capacity	B300, R300	
Conductor cross-sections of the auxiliary circuit		
Connection type	 Screw terminals	
Terminal screw	M3, Pozidriv size 2	
Operating devices	mm	3.0 x 0.5
Prescribed tightening torque	Nm	0.8 ... 1.2
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
• Solid or stranded	mm ²	1 × (0.5 ... 4) ¹⁾ , 2 × (0.5 ... 2.5) ¹⁾
• Finely stranded without end sleeve	mm ²	--
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	1 × (0.5 ... 2.5) ¹⁾ , 2 × (0.5 ... 1.5) ¹⁾
• AWG cables, solid or stranded	AWG	2 × (20 ... 14)
Connection type	 Spring-type terminals	
Operating devices	mm	3.0 x 0.5
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
• Solid or stranded	mm ²	2 × (0.25 ... 1.5)
• Finely stranded without end sleeve	mm ²	--
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 × (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	2 × (24 ... 16)

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB24 for IO-Link for high-feature applications

Type – Overload relay: Evaluation modules	3RB2483-4A.1	
Size contactor	S00 ... S10/S12	
Control circuit		
Rated insulation voltage U_i (pollution degree 3)	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Rated control supply voltage U_s¹⁾	24 through IO-Link	
• DC	V	24 through IO-Link
Operating range	0.85 × $U_{s\ min}$ ≤ U_s ≤ 1.1 × $U_{s\ max}$	
• DC	0.85 × $U_{s\ min}$ ≤ U_s ≤ 1.1 × $U_{s\ max}$	
Rated power	0.5	
• DC	W	0.5
Mains buffering time	ms	200
Sensor circuit		
Thermistor motor protection (PTC thermistor sensor)		
• Summation cold resistance	kΩ	≤ 1.5
• Response value	kΩ	3.4 ... 3.8
• Return value	kΩ	1.5 ... 1.65
Ground-fault detection		
• Tripping value I_{Δ}	The information refers to sinusoidal residual currents at 50/60 Hz.	
- For $0.3 \times I_e < I_{motor} < 2.0 \times I_e$	> $0.3 \times I_e$	
- For $2.0 \times I_e < I_{motor} < 8.0 \times I_e$	> $0.15 \times I_{motor}$	
• Response time t_{trip}	ms	500 ... 1 000
Analog output¹⁾		
Rated values		
• Output signal	mA	4 ... 20
• Measuring range	0 ... $1.25 \times I_e$ 4 mA corresponds to $0 \times I_e$ 16.8 mA corresponds to $1.0 \times I_e$ 20 mA corresponds to $1.25 \times I_e$	
• Load, max.	Ω	100
Conductor cross-sections for the control and sensor circuit as well as the analog output		
Connection type		
		 Screw terminals
Terminal screw	M3, Pozidriv size 2	
Operating devices	mm	3.0 × 0.5
Prescribed tightening torque	Nm	0.8 ... 1.2
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
• Solid	mm ²	1 × (0.5 ... 4) ²⁾ , 2 × (0.5 ... 2.5) ²⁾
• Finely stranded without end sleeve	mm ²	--
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	1 × (0.5 ... 2.5) ²⁾ , 2 × (0.5 ... 1.5) ²⁾
• Stranded	mm ²	--
• AWG cables, solid or stranded	AWG	2 × (20 ... 14)
Connection type		
		 Spring-type terminals
Operating devices	mm	3.0 × 0.5
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected		
• Solid	mm ²	2 × (0.25 ... 1.5)
• Finely stranded without end sleeve	mm ²	--
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 × (0.25 ... 1.5)
• Stranded	mm ²	2 × (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	2 × (24 ... 16)

¹⁾ Analog input modules, e.g. SM 331, must be configured for 4-wire measuring transducers. The analog input module may not supply current to the analog output of the 3RB24 overload relay.

²⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

3RB24 for IO-Link for high-feature applications **IE3/IE4 ready**

3RB24 electronic overload relays (evaluation modules) for full motor protection for stand-alone installation, CLASS 5E, 10E, 20E and 30E (adjustable)

Type	3RB2483-4A.1
Features and technical specifications	
Overload protection, phase failure protection and unbalance protection	✓
Supplied from an external source	✓ 24 V DC through IO-Link
Direct-on-line or reversing starters (wye-delta starting also possible) controllable through IO-Link	✓
Auxiliary contacts	✓ 1 CO and 1 NO in series
Manual and automatic RESET	✓
Remote RESET	✓ (electrically or via IO-Link)
Four LEDs for operating and status displays	✓
TEST function and self-monitoring	✓
Internal ground-fault detection	✓
Screw or spring-type terminals for auxiliary, control and sensor circuits	✓
Input for thermistor (PTC) sensor circuit	✓
Analog output	✓
IO-Link-specific functions	
• Connection of direct-on-line, reversing and star-delta starters to the controller via IO-Link	✓
• On-site controlling of the starter using the hand-held device	✓
• Accessing process data (e.g. current values in all three phases) via IO-Link	✓
• Accessing parameterization and diagnostics data (e.g. tripped signals) via IO-Link	✓
✓ Available	

Selection and ordering data



PU (UNIT, SET, M) = 1
 PS* = 1 UNIT
 PG = 41G



3RB2483-4AA1



3RB2483-4AC1

Size contactor	Version	SD	Screw terminals 	SD	Spring-type terminals 	
		d	Article No.	Price per PU d	Article No.	Price per PU

Evaluation modules

S00 ... S12	Monostable	▶	3RB2483-4AA1	2	3RB2483-4AC1
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Notes:

- Overview of overload relays – matching contactors, see [page 7/84](#).
- Analog input modules, e.g. SM 331, must be configured for 4-wire measuring transducers. The analog input module may not supply current to the analog output of the 3RB24 relay.

Current measuring modules and related connecting cables, see [page 7/140](#), "Accessories", see [page 7/141 onwards](#).

Overview

More information

Homepage, see www.siemens.com/sirius-overloadrelays
 Industry Mall, see www.siemens.com/product?3RB2

Application Manual "SIRIUS Controls with IE3/IE4 motors", see <https://support.industry.siemens.com/cs/ww/en/view/94770820>

Other Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16282/man>



SIRIUS 3RB2906 current measuring module

The current measuring modules are designed as system components for connecting to evaluation units 3RB22 to 3RB24. Using these evaluation units the motor current is measured and the measured value sent to the evaluation unit for evaluation.

The current measuring modules in sizes up to S3 are equipped with straight-through transformers and can be snap-fitted under the evaluation units. The larger evaluation units are installed directly on the contactor or as stand-alone units.

Application

Use of SIRIUS protection devices in conjunction with IE3/IE4 motors

Note:

For the use of current measuring modules for 3RB22, 3RB23, 3RB24 in conjunction with highly energy-efficient IE3/IE4 motors, please read the information on dimensioning and configuration, see [Application Manual](#).

For more information, see [page 1/7](#).

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

Current measuring modules for 3RB22, 3RB23, 3RB24

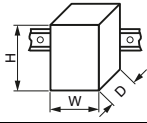
Technical specifications

More information

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16282/man>

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16282/td>

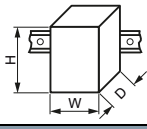



The following technical information is intended to provide an initial overview of the various types of devices and functions.

Type – Overload relays: Current measuring modules		3RB2906	3RB2956	3RB2966
Size contactor		S00/S0	S2/S3	S6
Dimensions of current measuring modules (W x H x D)	 mm	45 x 84 x 45	55 x 94 x 72	120 x 119 x 145
Main circuit				
Rated insulation voltage U_i (pollution degree 3)	V	1 000		
Rated impulse withstand voltage U_{imp}	kV	6	8	
Rated operational voltage U_e	V	1 000		
Type of current		No		
• Direct current		Yes, 50/60 Hz ± 5%		
• Alternating current				
Current setting	A	0.3 ... 3; 2.4 ... 25	10 ... 100	20 ... 200 63 ... 630
Power loss per unit (max.)	W	0.5		
Short-circuit protection		See "Selection and ordering data", page 7/140 see Configuration Manual		
Degree of protection acc. to IEC 60529				
• Screw terminals/busbar connections		IP20	- IP20 (front side) - Terminal IP00 (use additional terminal covers for higher degree of protection)	
• Straight-through transformers		IP20	IP20	--
Touch protection acc. to IEC 60529				
• Screw terminals/busbar connections		Finger-safe	Finger-safe with terminal covers for vertical contact from the front	
• Straight-through transformers		Finger-safe	Finger-safe	--
Protective separation between main and auxiliary current paths Acc. to IEC 60947-1 (pollution degree 2)				
• For systems with grounded neutral point	V	690		
• For systems with ungrounded neutral point	V	600		

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

Current measuring modules for 3RB22, 3RB23, 3RB24

Type – Overload relays: Current measuring modules				3RB2906		3RB2956		3RB2966	
Size contactor		S00/S0	S2/S3	S6				S10/S12	
Dimensions of current measuring modules (W x H x D)	mm	45 x 84 x 45	55 x 94 x 72	120 x 119 x 145				145 x 147 x 148	
Conductor cross-sections of main circuit									
Connection type		 Screw terminals with box terminal							
Terminal screw	mm	--		4 mm Allen screw				5 mm Allen screw	
Operating devices	mm	--		4 mm Allen screw				5 mm Allen screw	
Prescribed tightening torque	Nm	--		10 ... 12				20 ... 22	
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected									
• Solid or stranded	mm ²	--		With 3RT1955-4G box terminal: 2 x (max. 70), 1 x (16 ... 70)				2 x (70 ... 240), Front clamping point only: 1 x (95 ... 300)	
				With 3RT1956-4G box terminal: 2 x (max. 120), 1 x (16 ... 120)				Rear clamping point only: 1 x (120 ... 240)	
• Finely stranded without end sleeve	mm ²	--		With 3RT1955-4G box terminal: 2 x (1 x max. 50, 1 x max. 70), 1 x (10 ... 70)				2 x (50 ... 185), Front clamping point only: 1 x (70 ... 240)	
				With 3RT1956-4G box terminal: 2 x (1 x max. 95, 1 x max. 120), 1 x (10 ... 120)				Rear clamping point only: 1 x (120 ... 185)	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	--		With 3RT1955-4G box terminal: 2 x (1 x max. 50, 1 x max. 70), 1 x (10 ... 70)				2 x (50 ... 185), Front clamping point only: 1 x (70 ... 240)	
				With 3RT1956-4G box terminal: 2 x (1 x max. 95, 1 x max. 120), 1 x (10 ... 120)				Rear clamping point only: 1 x (120 ... 185)	
• AWG cables	AWG	--		With 3RT1955-4G box terminal: 2 x (max. 1/0), 1 x (6 ... 2/0)				2 x (2/0 ... 500 kcmil), Front clamping point only: 1 x (3/0 ... 600 kcmil)	
				With 3RT1956-4G box terminal: 2 x (max. 3/0), 1 x (6 ... 250 kcmil)				Rear clamping point only: 1 x (250 kcmil ... 500 kcmil)	
• Ribbon cables (Number x Width x Thickness)	mm	--		With 3RT1955-4G box terminal: 2 x (6 x 15.5 x 0.8), 1 x (3 x 9 x 0.8 ... 6 x 15.5 x 0.8)				2 x (20 x 24 x 0.5), 1 x (6 x 9 x 0.8 ... 20 x 24 x 0.5)	
				With 3RT1956-4G box terminal: 2 x (10 x 15.5 x 0.8), 1 x (3 x 9 x 0.8 ... 10 x 15.5 x 0.8)					
Connection type		 Busbar connections							
Terminal screw		--		M8 x 25				M10 x 30	
Prescribed tightening torque	Nm	--		10 ... 14				14 ... 24	
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected									
• Solid with cable lug	mm ²	--		16 ... 95 ¹⁾				50 ... 240 ²⁾	
• Stranded with cable lug	mm ²	--		25 ... 120 ¹⁾				70 ... 240 ²⁾	
• AWG cables, solid or stranded, with cable lug	AWG	--		4 ... 250 kcmil				2/0 ... 500 kcmil	
• With connecting bars (max. width)	mm	--		17				25	
Connection type		 Straight-through transformers							
Diameter of opening	mm	7.5	14	25				--	

¹⁾ When connecting cable lugs according to DIN 46235 with conductor cross-sections of 95 mm² and more, the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/141.

²⁾ When connecting cable lugs according to DIN 46234 for conductor cross-sections from 240 mm², as well as DIN 46235 for cable cross-sections from 185 mm², the 3RT1956-4EA1 terminal cover must be used to ensure phase clearance, see page 7/141.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

Current measuring modules for 3RB22, 3RB23, 3RB24 **IE3/IE4 ready**

Selection and ordering data

Current measuring modules (essential accessories)



3RB2906-2BG1,
3RB2906-2DG1

3RB2906-2JG1

3RB2956-2TG2

3RB2966-2WH2

Size contactor	Current setting value of the inverse-time delayed overload release	Short-circuit protection with fuse, type of coordination "2", operational class gG ¹⁾	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A		d					
Sizes S00/S0									
Devices with straight-through transformer for stand-alone installation									
S00/S0	0.3 ... 3	20	3RB22 to 3RB24	▶	3RB2906-2BG1		1	1 unit	41G
	2.4 ... 25	63		▶	3RB2906-2DG1		1	1 unit	41G
Sizes S2/S3									
Devices with straight-through transformer for stand-alone installation									
S2/S3	10 ... 100	315	3RB22 to 3RB24	▶	3RB2906-2JG1		1	1 unit	41G
Size S6									
Devices with busbar connection, for mounting onto contactor and stand-alone installation (an appropriate connection kit with screws, spring washers and nuts is enclosed)									
S6	20 ... 200	315	3RB22 to 3RB24	▶	3RB2956-2TH2		1	1 unit	41G
Devices with straight-through transformer, for mounting onto contactor and stand-alone installation									
For mounting onto S6 contactors with box terminals	20 ... 200	315	3RB22 to 3RB24	▶	3RB2956-2TG2		1	1 unit	41G
Sizes S10/S12²⁾									
Devices with busbar connection, for mounting onto contactor and stand-alone installation (an appropriate connection kit with screws, spring washers and nuts is enclosed)									
S10/S12 and size 14 (3TF68/3TF69) ²⁾	63 ... 630	800	3RB22 to 3RB24	▶	3RB2966-2WH2		1	1 unit	41G


¹⁾ Maximum protection by fuse only for overload relays, type of coordination "2". For fuse values in connection with contactors, see [Configuration Manual](#).

²⁾ For 3TF68/3TF69 contactors, direct mounting is not possible.

Note:

The connecting cable between the current measuring module and the evaluation module is not included in the scope of supply; please order separately (see "Accessories").

Accessories

Size contactor	Version	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
			d						
Connecting cables (essential accessories)									
	S00 ... S3	For connection between evaluation module and current measuring module • Length 0.1 m (only for mounting of the evaluation module directly onto the current measuring module)	3RB22 to 3RB24	▶	3RB2987-2B		1	1 unit	41F
3RB2987-2.	S00 ... S12	• Length 0.5 m	3RB22 to 3RB24	▶	3RB2987-2D		1	1 unit	41F

Additional general accessories, see page 7/141.

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

Accessories for 3RB22, 3RB23, 3RB24

Overview

More information

Homepage, see www.siemens.com/sirius-overloadrelays
 Industry Mall, see www.siemens.com/product?3RB2


Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16283/man>

The following optional accessories are available for the 3RB22 to 3RB24 electronic overload relays:




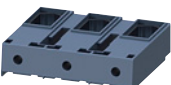
- Operator panel for the evaluation modules 3RB24
- Sealable cover for the evaluation modules 3RB22 to 3RB24
- Terminal covers for the 3RB29 current measuring modules size S6 and S10/S12
- Box terminal blocks for the 3RB29 current measuring modules size S6 and S10/S12
- Push-in lugs for screw fixing for 3RB22 to 3RB24 evaluation modules and 3RB2906 current measuring modules

Selection and ordering data

Accessories for 3RB24 overload relays

Version	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d							
Operator panels for evaluation modules							
	Operator panels (set)	3RB24	10	3RA6935-0A	1	1 unit	42F
3RA6935-0A	One set comprises: <ul style="list-style-type: none"> • 1 x operator panel • 1 x 3RA6936-0A enabling module • 1 x 3RA6936-0B interface cover • 1 x fixing terminal Note: The connecting cable between the evaluation module and the operator panel is not included in the scope of supply; please order separately.						
	Connecting cable Length 2.5 m (round), for connecting the evaluation module to the operator panel	3RB24	▶	3UF7933-0BA00-0	1	1 unit	42J
	Enabling modules (replacement)	3RB24	10	3RA6936-0A	1	1 unit	42F
	Interface covers	3RB24	10	3RA6936-0B	1	5 units	42F

General accessories





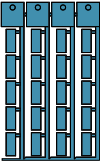
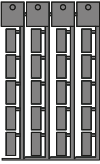
Version	Size	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d								
Sealable covers for evaluation modules								
	For covering the setting knobs	--	3RB22 to 3RB24	2	3RB2984-2	1	10 units	41F
3RB2984-2								
Terminal covers for current measuring modules								
	Covers for cable lugs and busbar connections							
	• Length 100 mm	S6	3RB2956	▶	3RT1956-4EA1	1	1 unit	41B
	• Length 120 mm	S10/S12	3RB2966	2	3RT1966-4EA1	1	1 unit	41B
	Covers for box terminals							
	• Length 25 mm	S6	3RB2956	▶	3RT1956-4EA2	1	1 unit	41B
	• Length 30 mm	S10/S12	3RB2966	2	3RT1966-4EA2	1	1 unit	41B
	Covers for screw terminals Between contactor and overload relay, without box terminals (1 unit required per combination)	S6	3RB2956	▶	3RT1956-4EA3	1	1 unit	41B
		S10/S12	3RB2966	2	3RT1966-4EA3	1	1 unit	41B
3RT1956-4EA1								
								
3RT1956-4EA2								
Box terminal blocks for current measuring modules								
	For round and ribbon cables							
	• Up to 70 mm ²	S6 ¹⁾	3RB2956	▶	3RT1955-4G	1	1 unit	41B
	• Up to 120 mm ²	S6	3RB2956	▶	3RT1956-4G	1	1 unit	41B
	• Up to 240 mm ²	S10/S12	3RB2966	▶	3RT1966-4G	1	1 unit	41B
3RT195-4G								

¹⁾ In the scope of supply for 3RT1054-1 contactors (55 kW).

Overload Relays

SIRIUS 3RB2 Electronic Overload Relays

Accessories for 3RB22, 3RB23, 3RB24

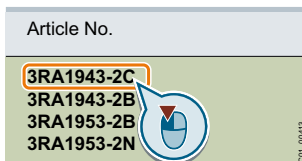
Version	Size	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG		
Push-in lugs for evaluation modules and current measuring modules										
	For screw fixing the evaluation modules	--	3RB22 to 3RB24	5	3RP1903		1	10 units	41H	
3RP1903										
	For screw fixing the current measuring modules (2 units per module)	S00 .. S3	3RB2906	2	3RB1900-0B		100	10 units	41F	
3RB1900-0B										
Version	Size	Color	For overload relays	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Tools for opening spring-type terminals										
	Screwdrivers For all SIRIUS devices with spring-type terminals	Length approx. 200 mm, 3.0 mm x 0.5 mm	Titanium gray/black, partially insulated	Main and auxiliary circuit connection: 3RB2	2	3RA2908-1A		1	1 unit	41B
3RA2908-1A										
Blank labels										
	Unit labeling plates¹⁾ For SIRIUS devices	20 mm x 7 mm	Pastel turquoise	3RB2	20	3RT1900-1SB20		100	340 units	41B
3RT1900-1SB20										
	Adhesive inscription labels¹⁾ For SIRIUS devices	19 mm x 6 mm	Pastel turquoise	3RU2	15	3RT1900-1SB60		100	3 060 units	41B
3RT2900-1SB20										
		19 mm x 6 mm	Zinc yellow	3RU2	15	3RT1900-1SD60		100	3 060 units	41B

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/16).

Load Feeders and Motor Starters for Use in the Control Cabinet

**clickable**

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.



Or directly on the Internet, e.g.
www.siemens.com/product?3RA1943-2C

Price groups

PG 14O, 41B, 41D, 41E, 41H, 41L, 42C, 42D, 42F, 42G, 255

8/2 **Introduction****SIRIUS 3RA2 load feeders**

- 8/4 General data
- 3RA21 direct-on-line starters
- 8/21 - For standard mounting rails or for screw fixing
- 8/29 - For 60 mm busbars
- 3RA22 reversing starters
- 8/33 - For standard mounting rails or for screw fixing
- 8/39 - For 60 mm busbars
- 8/44 Accessories
- 8/55 3RV29 infeed system for load feeders

SIRIUS 3RA6 compact starters

- 8/56 General data
- 3RA61, 3RA62 compact starters
- 8/66 - 3RA61 direct-on-line starters
- 8/67 - 3RA62 reversing starters
- 3RA64, 3RA65 compact starters for IO-Link
- 8/68 - 3RA64 direct-on-line starters
- 8/69 - 3RA65 reversing starters
- 8/70 Accessories
- 8/76 Add-on modules for AS-Interface
- 8/78 Infeed system for 3RA6

SIRIUS 3RM1 motor starters

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- 8/86 Benefits
- 8/87 Technical specifications
- 8/88 Accessories
- 8/91 [Selection and ordering data **NEW**](#)

ET 200SP motor starters

- 8/95 Overview
- 8/97 Benefits
- 8/97 Application
- 8/98 Technical specifications
- 8/102 [Selection and ordering data **NEW**](#)

Note:

Conversion tool, see
www.siemens.com/sirius/conversion-tool

Load Feeders and Motor Starters for Use in the Control Cabinet

Introduction

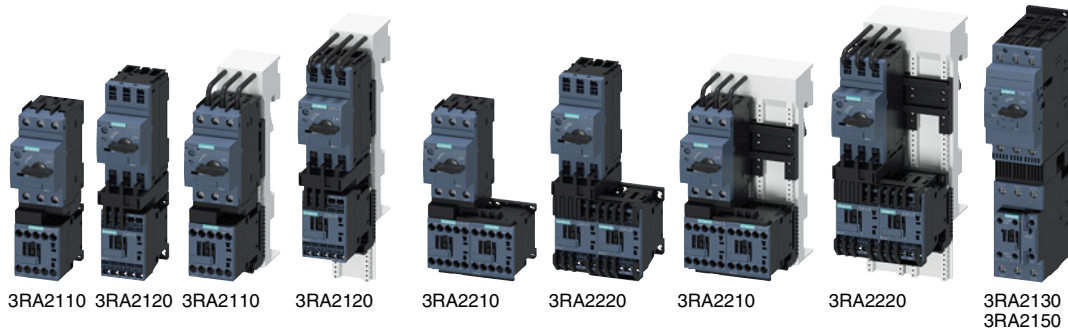
Overview

Central and compact starter solutions

Our range offers you many different possibilities for simple and practical starter solutions in the control cabinet. Features common to all our load feeders, compact starters and motor starters: Like all SIRIUS devices they are optimally coordinated with each

other, have a very compact design and are particularly easy and quick to install and wire up.

In addition there is a seamless range of SIRIUS 3RW soft starters available for soft starting in the control cabinet ([see page 6/2](#)).



Type	Page
------	------

SIRIUS 3RA2 load feeders

- The 3RA2 fuseless load feeders consist of the 3RV2 motor starter protector and the 3RT2 contactor. The motor starter protector and contactor are prewired and mechanically and electrically connected in preassembled assembly kits (link modules, wiring kits and standard mounting rail or busbar adapters).
- 4 sizes (S00, S0, S2, S3)
- Can be supplied for direct-on-line start or reversing duty as
 - a complete unit or
 - single devices for self-assembly
- Can be supplied with screw or spring-type terminals

3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing

- Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC

3RA21
[8/21](#)

3RA21 direct-on-line starters for 60 mm busbars

- Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC

3RA21
[8/29](#)

3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing

- Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC

3RA22
[8/33](#)

3RA22 reversing starters for 60 mm busbars

- Rated control supply voltage 50/60 Hz 230 V AC and 24 V DC

3RA22
[8/39](#)

Accessories for 3RA2 direct-on-line and reversing starters

[8/44](#)

Infeed system

- The infeed system is a convenient means of energy supply and distribution for a group of several motor starter protectors or complete load feeders with a screw or spring-type terminal up to size S0.

3RV29
[8/55, 7/62](#)



		Type	Page
SIRIUS 3RA6 compact starters			
	<ul style="list-style-type: none"> Integrated functionality of a motor starter protector, contactor and electronic overload relay and various functions of optional mountable accessories Can be used for direct starting of standard three-phase motors up to 32 A 		
3RA61 direct-on-line starters	<ul style="list-style-type: none"> Up to 15 kW/400 V, weld-free, wide setting range, removable terminals 	3RA61	8/66
3RA62 reversing starters	<ul style="list-style-type: none"> Up to 15 kW/400 V, weld-free, wide setting range, removable terminals 	3RA62	8/67
3RA64 direct-on-line starters for IO-Link	<ul style="list-style-type: none"> Up to 15 kW/400 V, weld-free, wide setting range, removable terminals 	3RA64	8/68
3RA65 reversing starters for IO-Link	<ul style="list-style-type: none"> Up to 15 kW/400 V, weld-free, wide setting range, removable terminals 	3RA65	8/69
Accessories for 3RA6 direct-on-line and reversing starters		3RA69	8/70
Add-on modules for AS-Interface		3RA69	8/76
Infeed system for 3RA6	<ul style="list-style-type: none"> Modular expandability, up to 100 A, terminals up to 70 mm² 	3RA68	8/78
	<ul style="list-style-type: none"> Three-phase infeeds and expansion modules 		8/81
	<ul style="list-style-type: none"> Expansion modules 		8/82
	<ul style="list-style-type: none"> Accessories for infeed systems for 3RA6 		8/83
SIRIUS 3RM1 motor starters			
	<ul style="list-style-type: none"> For switching three-phase motors up to 3 kW (at 400 V) and resistive loads up to 10 A at AC voltages up to 500 V under normal operating conditions Space-saving design (width 22.5 mm) 		
3RM10 direct-on-line starters	<ul style="list-style-type: none"> Direct-on-line starting with electronic overload protection 	3RM10	8/91
3RM12 reversing starters	<ul style="list-style-type: none"> Reversing functionality with electronic overload protection 	3RM12	8/91
3RM11 Failsafe direct-on-line starters	<ul style="list-style-type: none"> As 3RM10 plus safety-related shutdown 	3RM11	8/91
3RM13 Failsafe reversing starters	<ul style="list-style-type: none"> As 3RM12 plus safety-related shutdown 	3RM13	8/91
Accessories for 3RM1 motor starters	<ul style="list-style-type: none"> 3RM19 three-phase infeed system for the main circuit 	3RM19	8/92
	<ul style="list-style-type: none"> Fuse modules for the use of 3RM1 motor starters on 8US busbar systems and mounting rails 	3RM19	8/89
	<ul style="list-style-type: none"> Adapters 	8US1	8/92
	<ul style="list-style-type: none"> Cover profiles 	8US1922	8/93
	<ul style="list-style-type: none"> Device connectors for the control circuit 	3ZY1212	8/93
	<ul style="list-style-type: none"> Spare terminals for main and control circuits 	3ZY11	8/94
	<ul style="list-style-type: none"> Push-in lugs for wall mounting, integrated sealable cover, coding pins 	3ZY1	8/94
ET 200SP motor starters			
	<ul style="list-style-type: none"> In hybrid technology in the SIMATIC ET 200SP I/O system For the switching and protection of three-phase asynchronous motors, single-phase AC motors and single-phase asynchronous motors up to 5.5 kW (at 400 V) 		
3RK1308 direct-on-line starters	<ul style="list-style-type: none"> Direct-on-line starting with electronic overload protection 	3RK1308-0A.0	8/102
3RK1308 reversing starters	<ul style="list-style-type: none"> Reversing functionality with electronic overload protection 	3RK1308-0B.0	8/102
3RK1308 fail-safe direct-on-line starters	<ul style="list-style-type: none"> Direct-on-line starting with electronic overload protection 	3RK1308-0C.0	8/102
3RK1308 fail-safe reversing starters	<ul style="list-style-type: none"> Reversing functionality with electronic overload protection 	3RK1308-0D.0	8/102
BaseUnits	<ul style="list-style-type: none"> Designed for the infeed and integration into the ET 200SP I/O system 	3RK1908-0AP00	8/103
3DI/LC control module	<ul style="list-style-type: none"> Module with three digital inputs for the use of additional functions such as "Quick stop", and for manual-local operation 	3RK1908-1AA0	8/103
Accessories	<ul style="list-style-type: none"> Cover for BaseUnit and infeed bus, additional mechanical bracket, fan 	3RK19, 3RW49	8/104

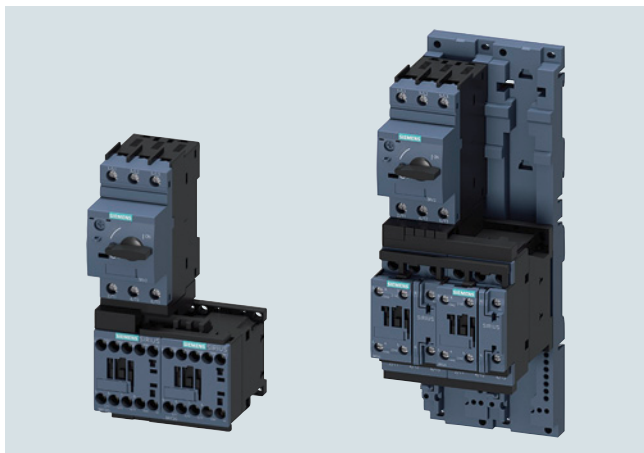
Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Overview

3RA2 load feeders



3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing with screw terminals

The 3RA2 fuseless load feeders consist of the 3RV2 motor starter protector and the 3RT2 electromechanical contactor. The devices are electrically and mechanically connected using preassembled assembly kits (link modules, wiring kits and standard mounting rail or busbar adapters).

Around 500 preassembled 3RA2 combinations can be ordered for direct-on-line and reversing starting of standard three-phase motors up to 65 A (approx. 37 kW/400 V). Preassembled assembly kits are available as accessories for the power range up to 45 kW. The desired fuseless load feeder can thus be assembled quickly and economically by the customer. A time saving is also achieved in connection with switchgear acceptances, as – unlike with conventional wiring systems – there is no need to rectify possible wiring errors.

In the 3RA2 load feeder, the 3RV2 motor starter protector is responsible for overload and short-circuit protection. Back-up protective devices, such as melting fuses or limiters, are superfluous here, as the motor starter protector is short-circuit proof up to 150 kA at 400 V.

The 3RT2 contactor is particularly suitable for extremely complex switching tasks requiring the greatest endurance.

The 3RA2 load feeders are available with setting ranges from 0.14 to 65 A in sizes S00, S0 and S2. Load feeders in size S3 up to 100 A are available for self-assembly.

Size	Width Direct-on-line starters/ reversing starters	Max. rated current $I_{n \max}$	For three- phase motors up to
	mm	A	kW
S00	45/90	16	7.5
S0	45/90	32	15
S2	55/120	65	37
S3	70/150	100	45

The size of the 3RA2 load feeders is based on the size of the contactor:

Size 3RA2	S00	S0	S2	S3
Size of 3RV2 motor starter protector	S00	S00 ¹⁾ , S0	S2	S3
Size of 3RT2 contactor	S00	S0	S2	S3

¹⁾ The combination of an S00 motor starter protector with an S0 contactor is possible only for screw terminal versions.

More information

Homepage, see www.siemens.com/sirius-starting
 Industry Mall, see www.siemens.com/product?3RA2
 Online configurator, see www.siemens.com/sirius/configurators
 TIA Selection Tool Cloud (TST Cloud), see <https://mall.industry.siemens.com/spice/TSTWeb/?kmat=LoadFeeder>

Operating conditions

3RA2 load feeders are climate-proof. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. Suitable covers must be provided for installation in dusty and damp locations.

Behavior in the event of short circuit

EN 60947-4-1 (VDE 0660 Part 102) and IEC 60947-4-1 make a distinction between two different types of coordination, which are referred to as type of coordination "1" and type of coordination "2". Any short circuits that occur are cleared safely by both types of coordination. The only differences concern the extent of the damage caused to the device by a short circuit.

ToC
1

Type of coordination "1"

The load feeder may be non-operational after a short circuit has been cleared. Damage to the contactor or to the overload release is permissible.

ToC
2

Type of coordination "2"

There must be no damage to the overload release or to any other component after a short circuit has been cleared. The load feeder can resume operation without needing to be renewed. At most, welding of the contactor contacts is permissible if they can be disconnected easily without any significant deformation.

The types of coordination are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Tripping times

All 3RA2 load feeders described here are designed for normal starting, in other words for overload tripping times of less than 10 s (CLASS 10). At rated-load operating temperature the tripping times are shorter, depending on the particular equipment and the setting range. The exact values can be derived from the tripping characteristics of the motor starter protectors.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Connection methods

For all 3RA2 feeders up to 32 A, spring-type terminals are available as well as screw terminals. To connect two devices with spring-type terminals, there are plug-in connection modules for sizes S00 and S0 which enable very quick mounting of the feeders and a vibration-resistant assembly.

To connect a motor starter protector with screw terminals to a contactor with spring-type terminals there are special hybrid connection modules for the sizes S00 and S0.



Screw terminals



Spring-type terminals

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Use of load feeders in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS 3RA2 load feeders in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see [Application Manual](#).

For more information, see [page 1/7](#).

3RA2 complete units

The 3RA2 fuseless load feeders can be ordered as preassembled complete units for direct-on-line starting (3RA21) or for reversing duty (3RA22) with screw or spring-type terminals. From size S2, complete units for direct-on-line starting (3RA21) are only available with screw-type terminals.

There are control supply voltages available of 50 Hz 230 V AC and 24 V DC.

A distinction is also drawn between whether the feeder is mounted onto a 35 mm standard mounting rail, on a flat surface using screws, or on a 60 mm busbar system.

3RA21 load feeders in the size S0 must be configured on standard mounting rail adapters if high vibration and shock loads (railways, power generation,...) are involved.

A vibration and shock kit is available for mounting on busbar adapters.

Accessories

As the 3RA2 fuseless load feeders are constructed from 3RV2 motor starter protectors and 3RT2 contactors, the same accessories – such as auxiliary switches, undervoltage releases or door-coupling rotary operating mechanisms – can be used for the 3RA2 fuseless load feeders as for these motor starter protectors and contactors.

In particular, certain accessories have been optimized for the fuseless load feeders. These include the top-connected, transverse auxiliary switch on the motor starter protector, which is available in a range of different versions. Special auxiliary switch blocks that can be snapped on from below are available for the contactor. These two accessories enable the fuseless load feeders to be wired simply without having to route cables through the device.

Incoming power supply

In total, four different energy supply options are available (see ["3RV29 infeed system for load feeders" on page 8/55](#)).

Customer assembly of fuseless load feeders

Whereas preassembled 3RA2s can be ordered up to 65 A, combinations in size S3 up to 100 A (approx. 45 kW/400 V) can be self-assembled.

The standard devices can be combined optimally – in terms of both technical specifications and dimensions, thanks to the modular system of the SIRIUS series.

The fuseless load feeders can thus be assembled easily by the customer. It is simply necessary to assemble the standard 3RV2 motor starter protector, the 3RT2 contactor and the appropriate assembly kit.

For single devices and assembly kits, see the ["Selection and ordering data" for 3RA21 direct-on-line starters and 3RA22 reversing starters, page 8/21 or 8/33 onwards](#).

For assembly kits for direct-on-line starting or reversing duty for mounting onto standard mounting rails or busbars, see [page 8/49](#).

For size S3 direct-on-line starters and sizes S0, S2 and S3 reversing starters, it is imperative that a standard mounting rail adapter is used to ensure the necessary mechanical strength. If a busbar adapter is used (not possible for size S3) then a standard mounting rail adapter is not necessary.

SENTRON 3VA circuit breakers and SIRIUS 3RT contactors are available for rated currents >100 A.

Special equipment for customer assembly can be ordered if other rated control supply voltages are required. Assembly kits can be used to facilitate assembly.

Customers can also assemble tested combinations of motor starter protectors with solid-state controls (soft starters, solid-state contactors) and load feeders with additional monitoring and control devices (3RR monitoring relays, SIMOCODE 3UF).

For the electrical and mechanical connection of protection equipment and controls there are preassembled assembly kits (link modules, wiring kits and standard mounting rail or busbar adapters).

The following types of configuration are possible:

- Direct-on-line/reversing starting
- Star-delta (wye-delta) starting
- Solid-state/soft starting

For more information and assignment tables for combinations of the 3RA2 generation for self-assembly, see

- [Configuration Manual for load feeders – SIRIUS Modular System, https://support.industry.siemens.com/cs/ww/en/view/39714188](https://support.industry.siemens.com/cs/ww/en/view/39714188)
- [Manual, https://support.industry.siemens.com/cs/ww/en/view/60284351](https://support.industry.siemens.com/cs/ww/en/view/60284351)

Customer assembly of fused load feeders

The flexible, modular system of SIRIUS also enables the configuration of fused load feeders up to 100 A (approx. 45 kW/400 V). Up to 32 A is also available for 45 mm installation widths.

Compact 3NW7...-1 cylindrical fuse holders for IEC fuses size 10 x 38 mm, or 3NW7...-1HG holders for Class CC UL fuses, can be used for this purpose.

For more information about fuse systems, see [Catalog LV 10](#).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Communications integration using IO-Link

Load feeders can also be assembled with IO-Link for connection to the higher-level control system. For each feeder, this requires a contactor with a voltage tap onto which a 3RA2711 function module is plugged (various versions for direct-on-line, reversing and wye-delta starters). The design of the SIRIUS load feeders permits a group of up to four SIRIUS controls to be conveniently connected through the standardized open system IO-Link to a control system, thus reducing wiring considerably compared to the conventional parallel wiring method. The electrical connection is made using only three standard cables.

The function modules perform not only the communication (contactor operation and feedback, ready signal) but also the electrical interlocking (for reversing and wye-delta starters) and the timing relay function (wye-delta reversing time).

Communication information and control supply voltages are passed on through ribbon cables so that the complete control current wiring on the feeder is no longer needed.

The monitoring and maintenance of a plant is made considerably easier by transmitting diverse diagnostics data from the function modules (e.g. missing main and auxiliary voltage, local disconnection...) through IO-Link to the higher-level control system. Also, feeders equipped for IO-Link can be conveniently controlled from the control cabinet door using the optional operator panel.

More information:

- For IO-Link, [see page 2/97 onwards](#)
- For 3RA27 function modules, [see pages 3/80, 3/87 and 3/107](#)

Communications integration via AS-Interface

Connection of the load feeders to the higher-level control system is possible not only through IO-Link but also through AS-Interface. The AS-Interface connection is recommended wherever load feeders are used in distributed applications. In this case, too, a contactor with a voltage tap is required with a corresponding 3RA2712 function module (various versions for direct-on-line, reversing and wye-delta starters). The devices are implemented in A/B technology, making it easy to connect up to 62 feeders to an AS-i master (regardless of whether they are direct-on-line, reversing or wye-delta starters). This results in a significant reduction of wiring compared to the conventional parallel wiring method. The electrical connection is made using standard cables.

The function modules perform not only the communication (contactor operation and feedback, ready signal) but also the electrical interlocking (for reversing and wye-delta starters) and the timing relay function (wye-delta reversing time).

Communication information and control supply voltages are passed on through ribbon cables so that the complete control current wiring on the starter is no longer needed.

More information:

- For AS-Interface, [see page 2/18 onwards](#)
- For 3RA27 function modules, [see pages 3/80, 3/87 and 3/107](#)

Contactors with voltage tap

For configuring load feeders with communication interfaces (AS-i/IO-Link), contactors with voltage taps are required. These contactors are not included as standard in the preassembled 3RA2 load feeders. A load feeder with communication interface must be assembled therefore from single devices.

Complete integration in the automation landscape

As the result of the communication connection through IO-Link or AS-i, the SIRIUS load feeders are fully integrated in the automation landscape and can draw on all the advantages of TIA (e.g. integration in the TIA Maintenance Station).

Mounting

3RA2 fuseless load feeders can be supplied:

- For assembly on TH 35 standard mounting rails according to EN 60715 (depth 15 mm)
- For assembly on busbar adapters (busbar center-to-center clearance 60 mm, busbar thickness 5 to 10 mm with beveled edges)

The fuseless load feeders are also suitable for screw fixing using two 3RV2928-0B push-in lugs.

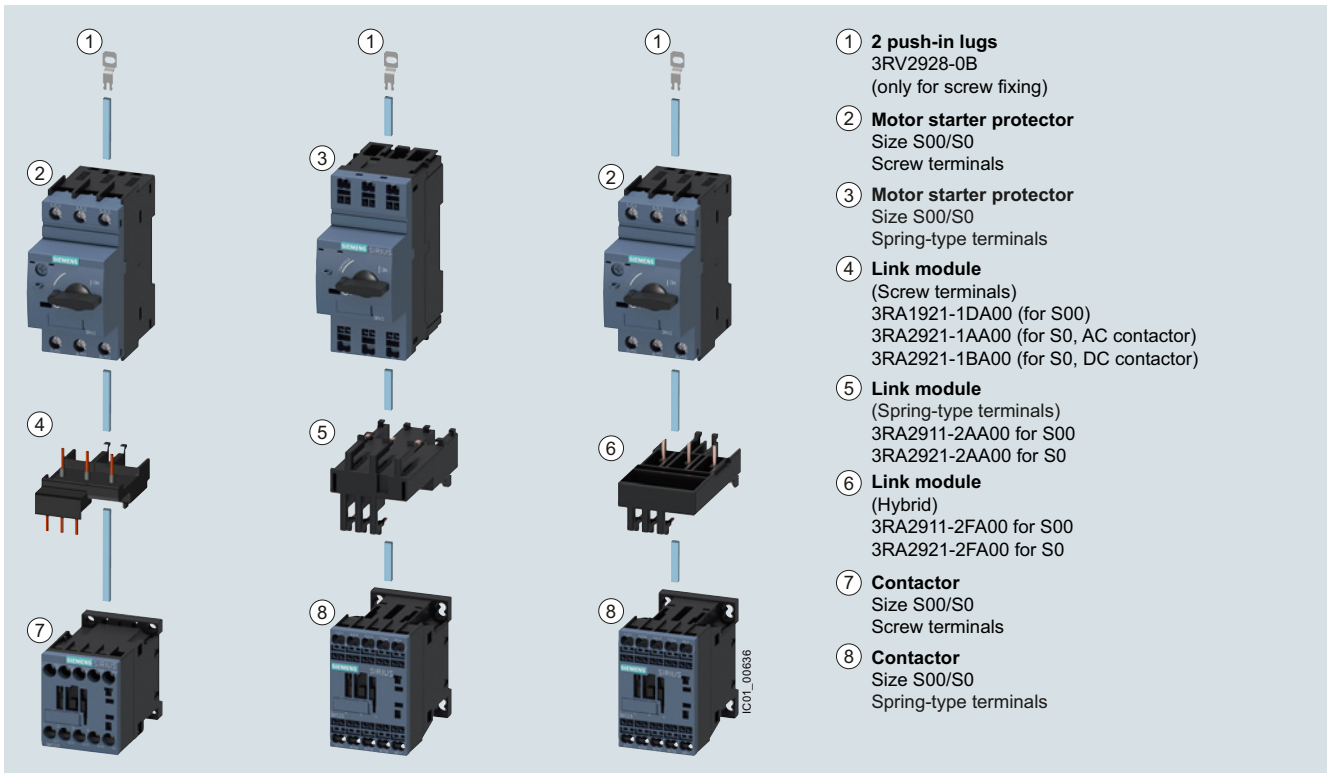
3RA2 fuseless load feeders can also be installed using the 3RV29 infeed system (S0 and S00 only, [see page 7/62](#)).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

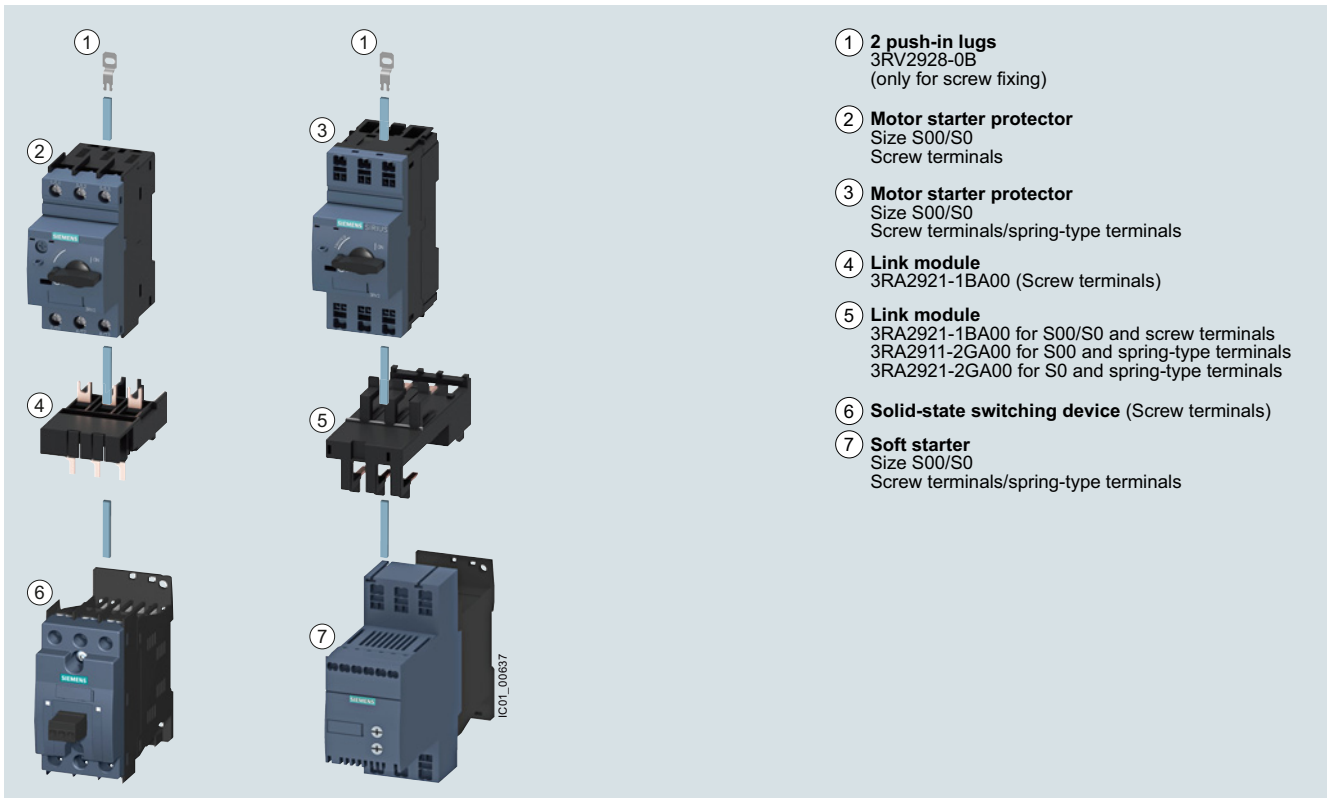
Direct-on-line starting • For standard rail mounting or screw fixing • Sizes S00 and S0



Left: 3RA21 load feeder with screw terminals

Center: 3RA21 load feeder with spring-type terminals

Right: Motor starter protector combination with screw terminals, with contactor with spring-type terminals



Left: Motor starter protector combination with solid-state switching device with screw terminals

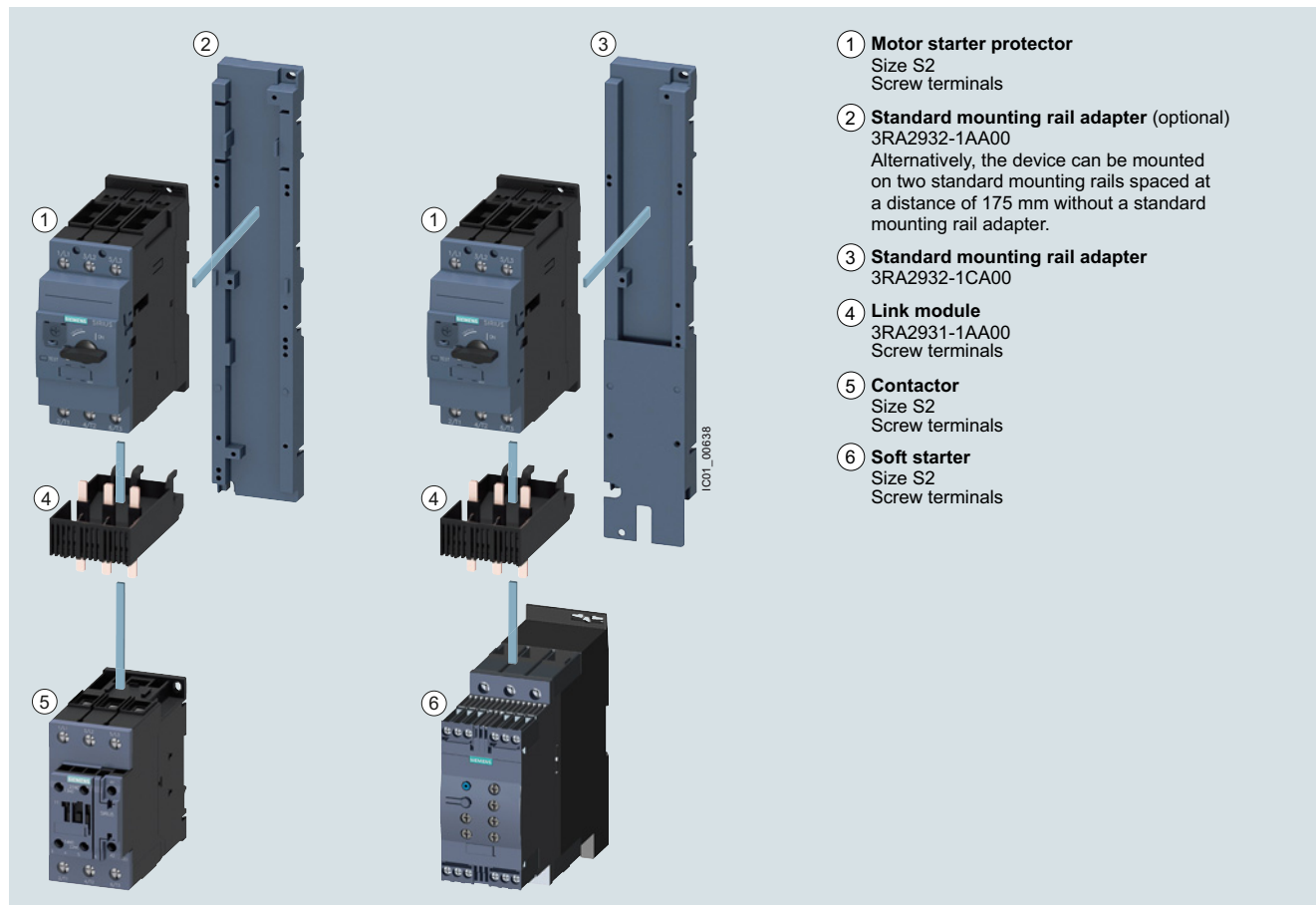
Right: Motor starter protector combination with soft starter with spring-type terminals

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Direct-on-line starting • For standard rail mounting • Size S2



Left: 3RA21 load feeder with screw terminals

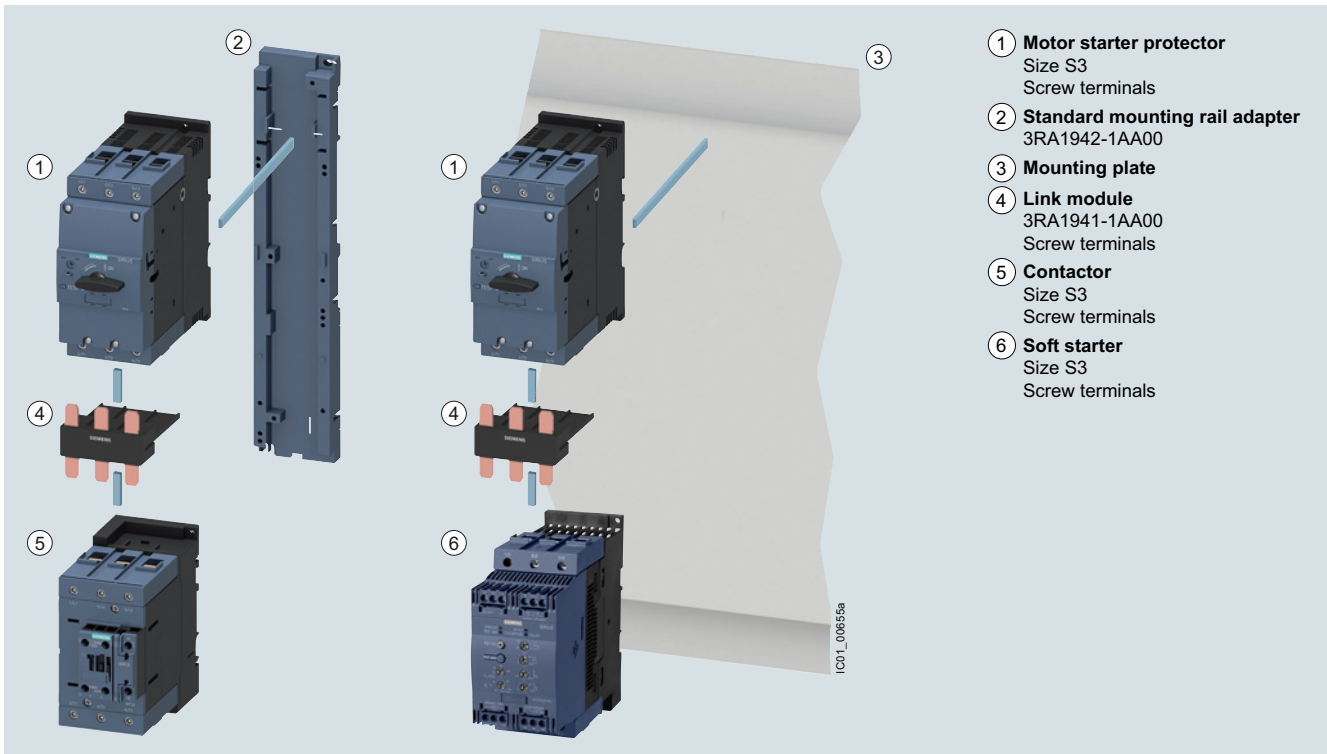
Right: Motor starter protector combination with soft starter with screw terminals

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

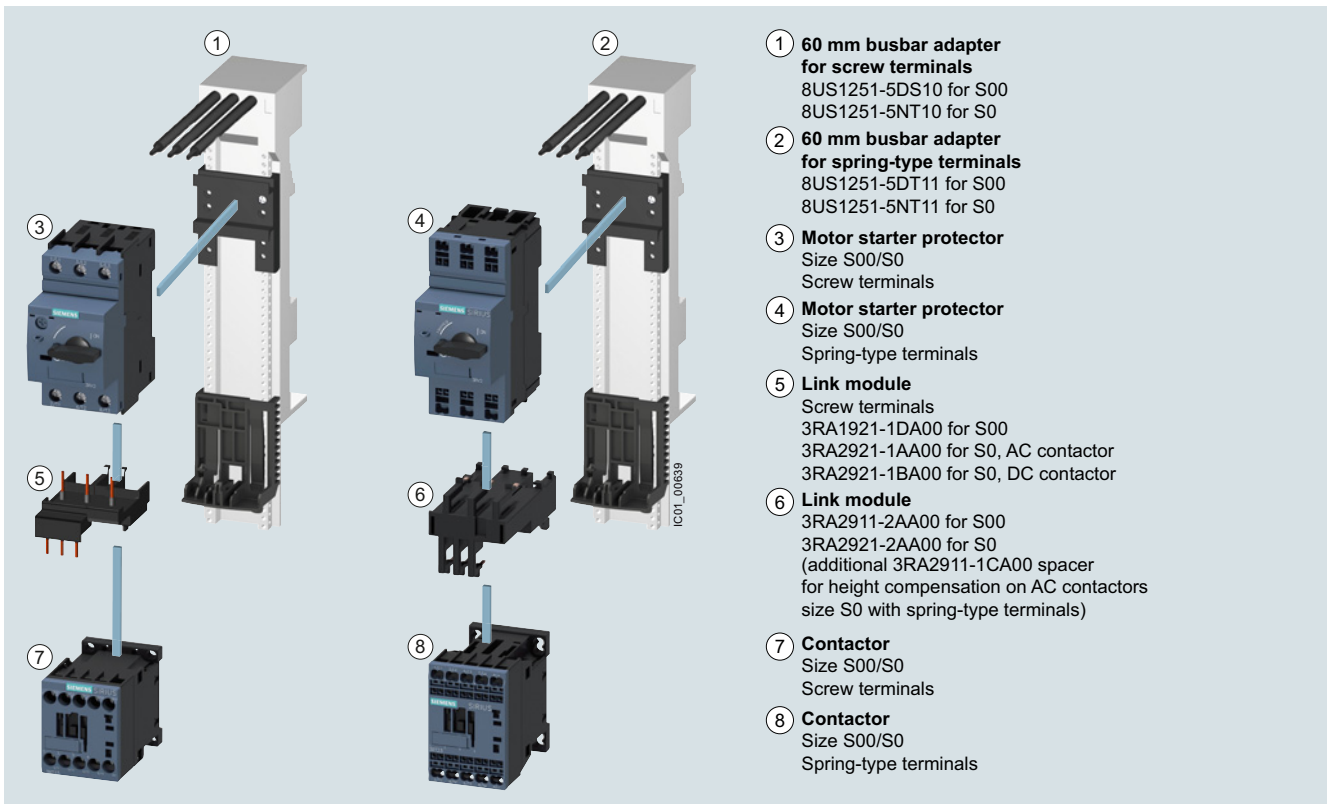
General data

Direct-on-line starting • For standard rail mounting • Size S3



3RA21 load feeder for direct-on-line starting and standard rail mounting in size S3 (the version with screw terminals is shown in the picture)

Direct-on-line starting • For 60 mm busbar systems • Sizes S00 and S0



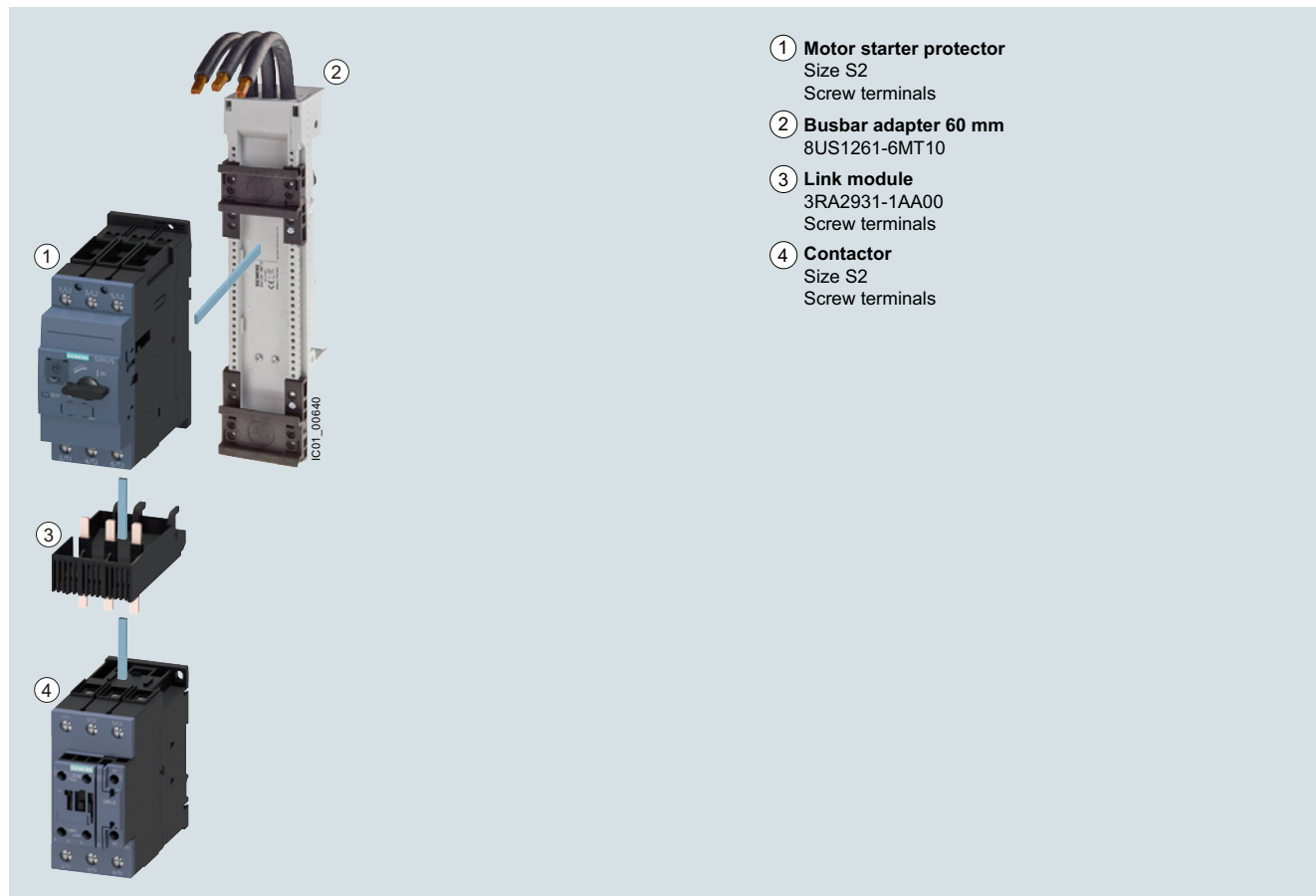
Left: 3RA21 load feeder for direct-on-line starting with busbar adapter with screw terminals
Right: 3RA21 load feeder for direct-on-line starting with busbar adapter with spring-type terminals

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Direct-on-line starting • For 60 mm busbar systems • Size S2



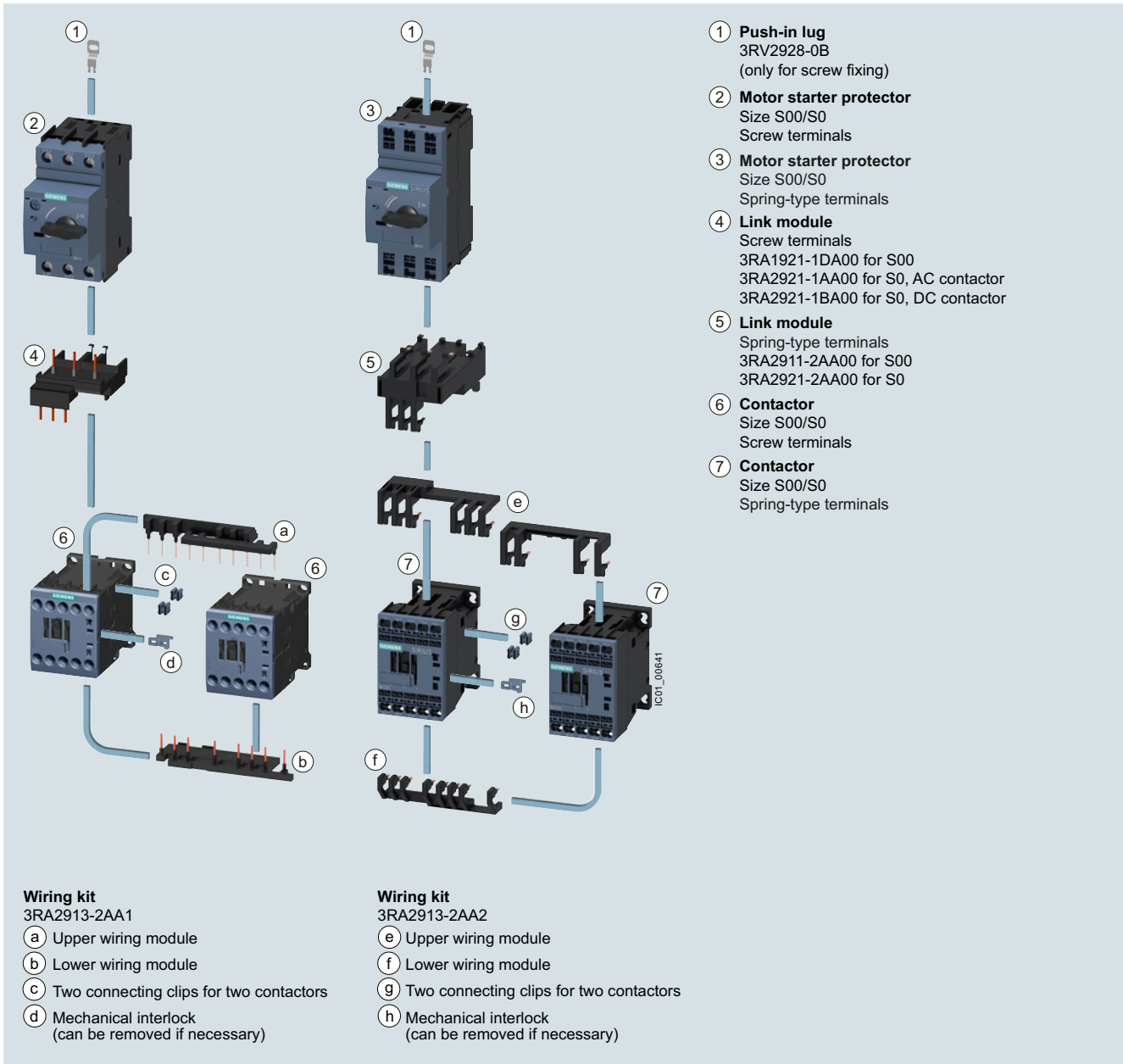
3RA21 load feeder for direct-on-line starting with busbar adapter with screw terminals

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Reversing duty • For standard rail mounting or screw fixing • Size S00



Left: 3RA22 load feeder with screw terminals with push-in lugs with two contactors for reversing duty and 3RA2913-2AA1 wiring kit for connection of the contactors (incl. mechanical interlocking and connecting clips)

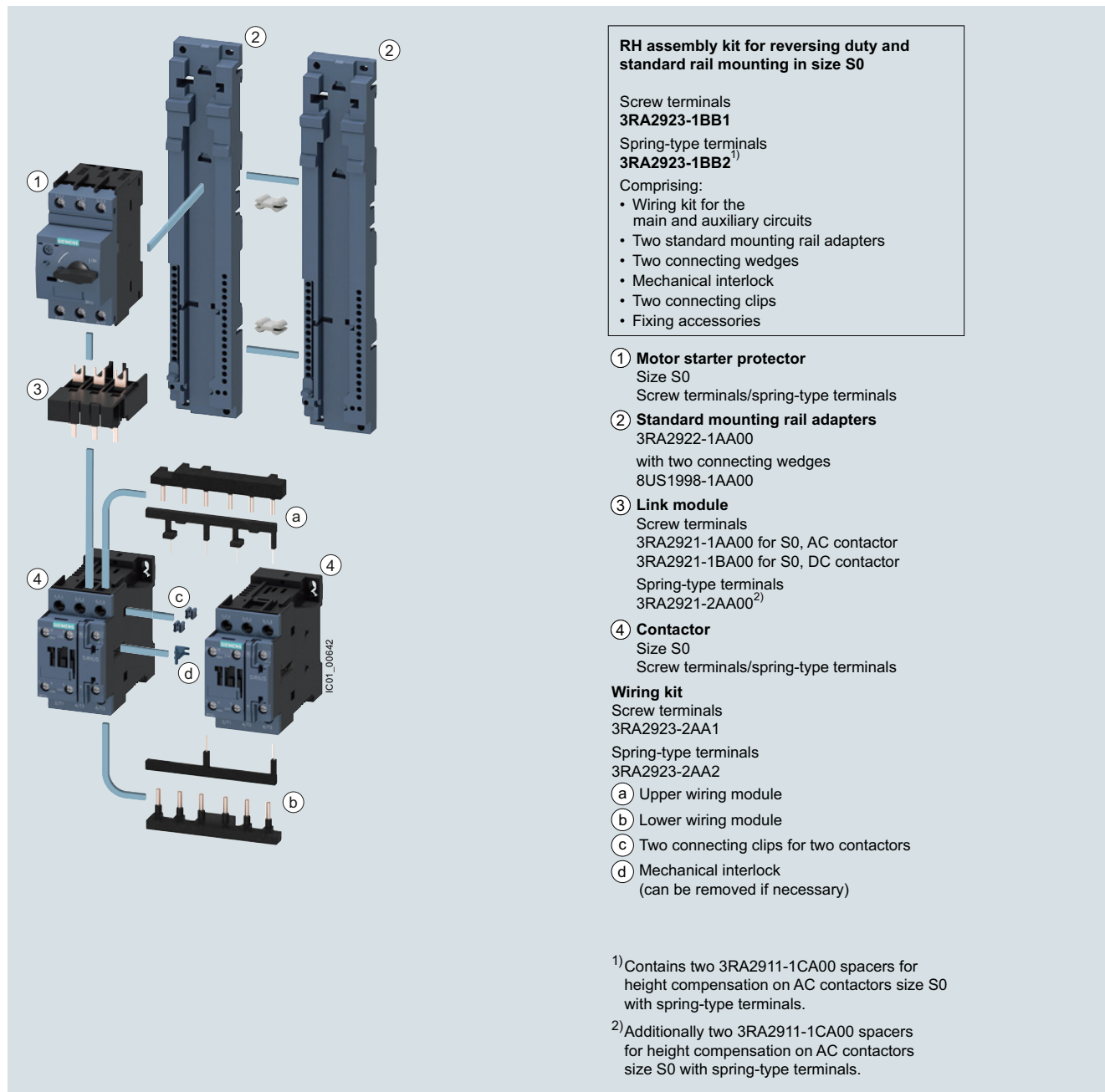
Right: 3RA22 load feeder with spring-type terminals with push-in lugs with two contactors for reversing duty and 3RA2913-2AA2 wiring kit (incl. mechanical interlocking and connecting clips)

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Reversing duty • For standard rail mounting • Size S0



3RA22 load feeder for reversing duty and standard rail mounting in size S0 (the version with screw terminals is shown in the picture)

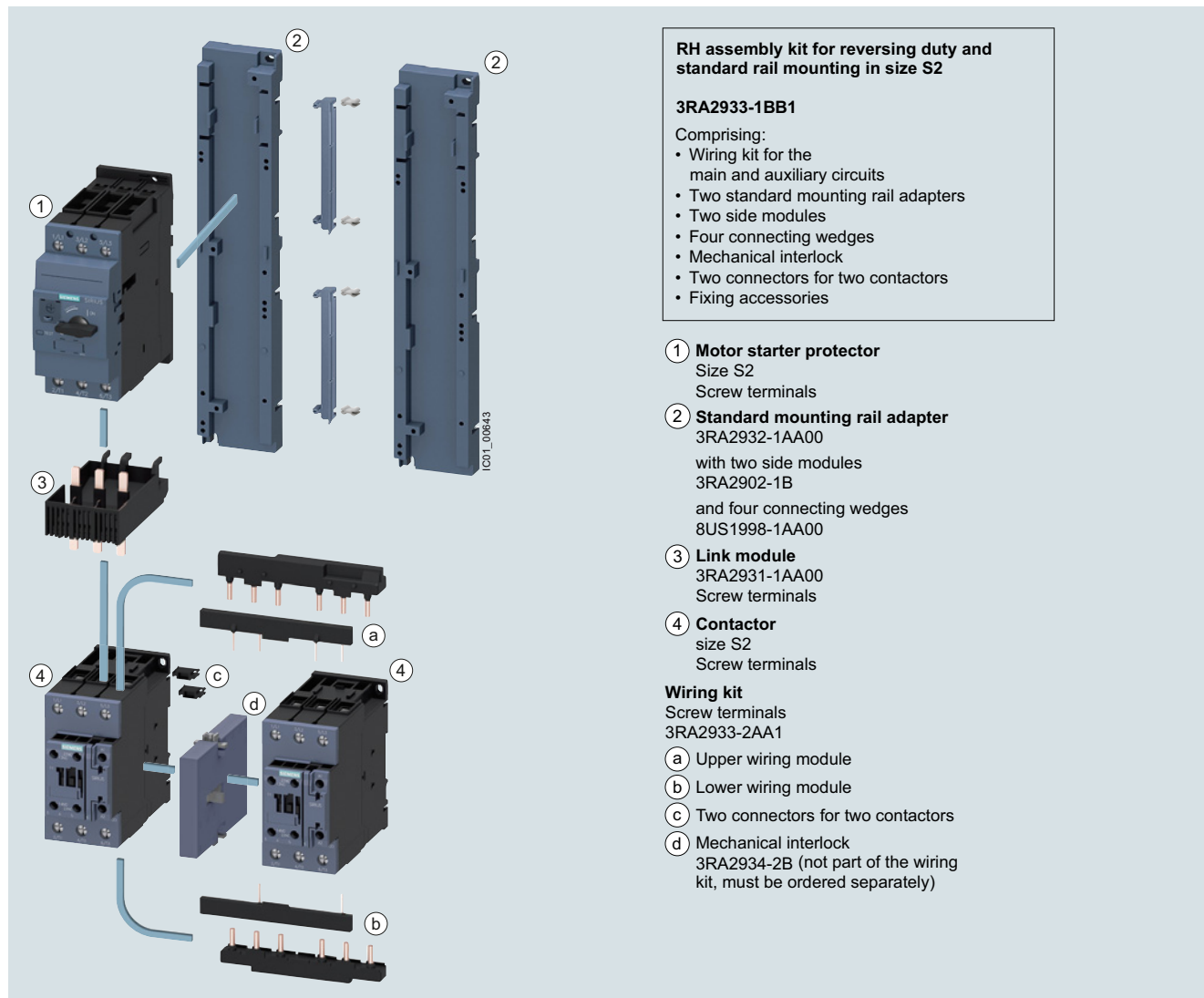
RH assembly kits for reversing duty and standard rail mounting in size S0, [see page 8/51](#).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Reversing duty • For standard rail mounting • Size S2



3RA22 load feeder for reversing duty and standard rail mounting in size S2
(the version with screw terminals is shown in the picture)

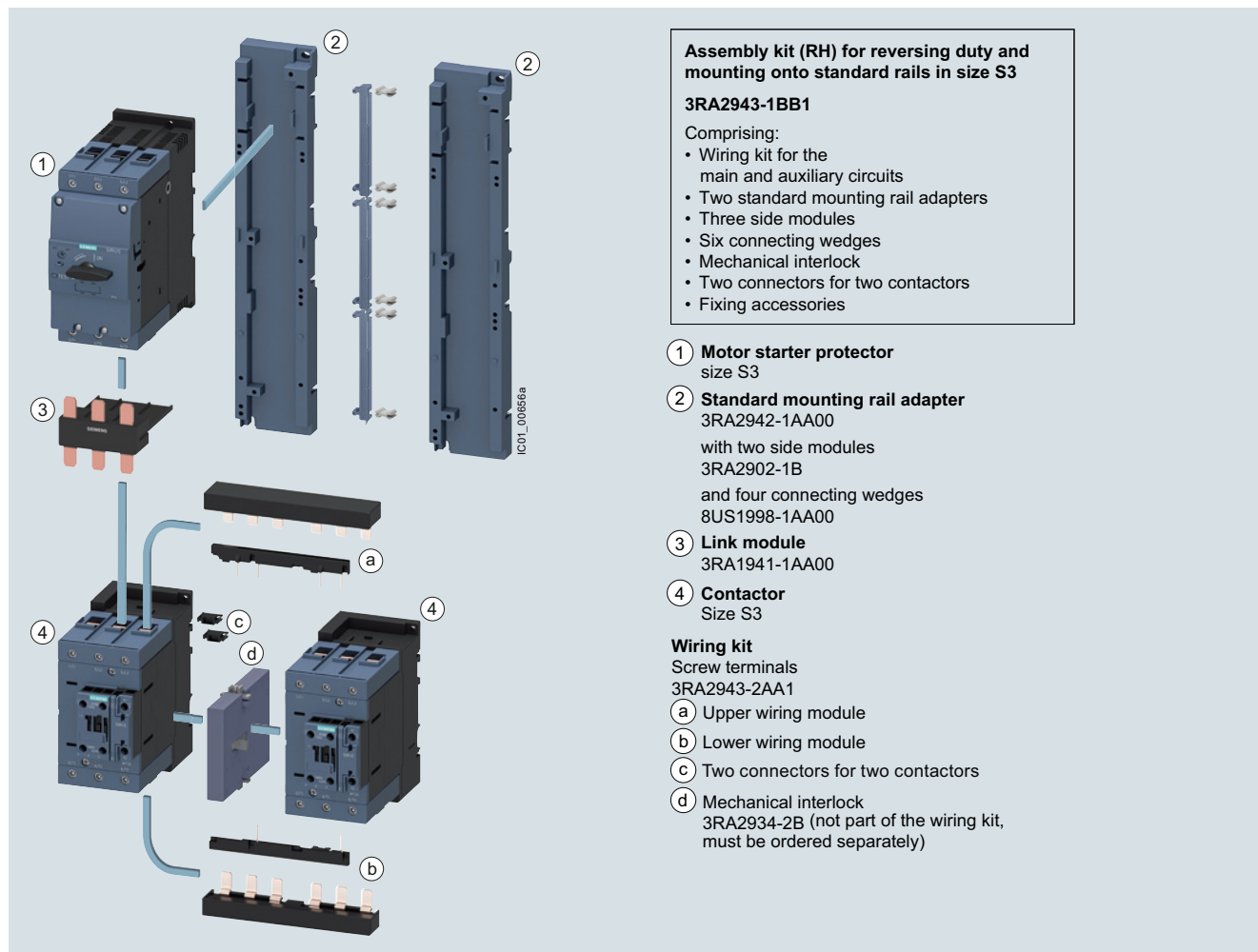
RH assembly kits for reversing duty and standard rail mounting
in size S2, [see page 8/51](#).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Reversing duty • For standard rail mounting • size S3



3RA22 load feeder for reversing duty and standard rail mounting in size S3
(the version with screw terminals is shown in the picture)

RH assembly kits for reversing duty and standard rail mounting
in size S3, [see page 8/51](#).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Reversing duty • For 60 mm busbar systems • Sizes S00 and S0

RS assembly kit for reversing duty and busbar mounting in size S00/S0

Screw terminals
3RA2913-1DB1 for S00
3RA2923-1DB1 for S0

Spring-type terminals
3RA2913-1DB2 for S00
3RA2923-1DB2 for S0¹⁾

Comprising:

- Wiring kit for the main and auxiliary circuits
- Busbar adapter
- Device holder
- Two connecting wedges
- Mechanical interlock
- Two connecting clips for two contactors
- Fixing accessories

1 Motor starter protector
 Size S00/S0
 Screw terminals/spring-type terminals

2 Link module
 Screw terminals
 3RA1921-1DA00 for S00
 3RA2921-1AA00 for S0, AC contactor
 3RA2921-1BA00 for S0, DC contactor

Spring-type terminals
 3RA2911-2AA00 for S00
 3RA2921-2AA00 for S0²⁾

3 60 mm busbar adapter
 Screw terminals
 8US1251-5DS10 for S00/S0
 8US1251-5NT10 for S0

Spring-type terminals
 8US1251-5DT11 for S00/S0
 8US1251-5NT11 for S0

2 connecting wedges
 8US1998-1AA00

60 mm device holder
 8US1250-5AS10 or
 8US1250-5AT10
 (according to left adapter)

4 Contactor
 Size S00/S0
 Screw terminals/spring-type terminals

Wiring kit
 Screw terminals
 3RA2913-2AA1 for S00
 3RA2923-2AA1 for S0

Spring-type terminals
 3RA2913-2AA2 for S00
 3RA2923-2AA2 for S0

(a) Upper wiring module
(b) Lower wiring module
(c) Two connecting clips for two contactors
(d) Mechanical interlock
 (can be removed if necessary)

3RA22 load feeder for reversing duty and 60 mm busbar
 (the version with screw terminals is shown in the picture)

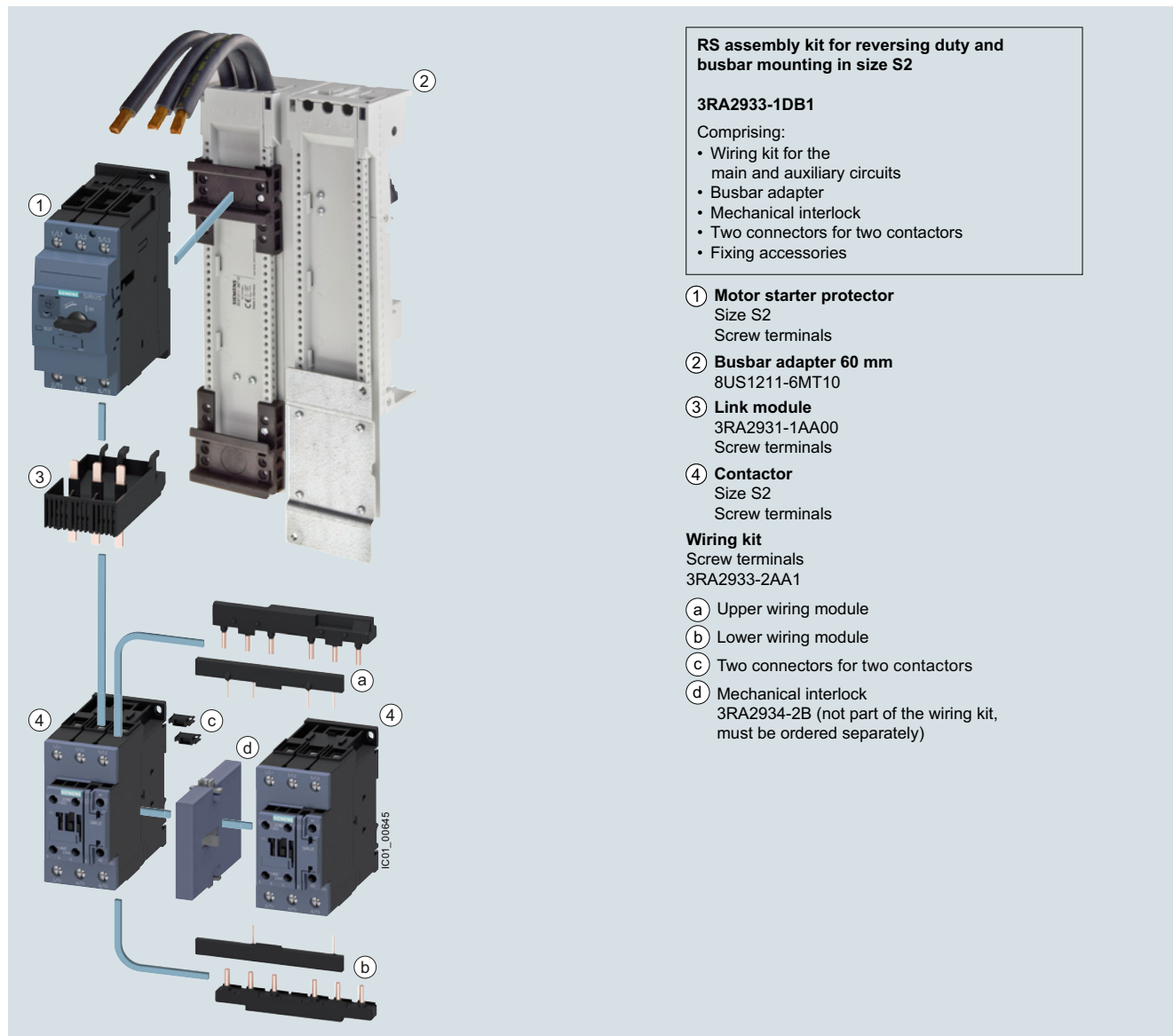
RS assembly kits for reversing duty and busbar mounting in
 size S00/S0, [see page 8/53](#).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Reversing duty • For 60 mm busbar systems • size S2



RS assembly kit for reversing duty and busbar mounting in size S2

3RA2933-1DB1

Comprising:

- Wiring kit for the main and auxiliary circuits
- Busbar adapter
- Mechanical interlock
- Two connectors for two contactors
- Fixing accessories

① Motor starter protector

Size S2
Screw terminals

② Busbar adapter 60 mm

8US1211-6MT10

③ Link module

3RA2931-1AA00
Screw terminals

④ Contactor

Size S2
Screw terminals

Wiring kit

Screw terminals
3RA2933-2AA1

a Upper wiring module

b Lower wiring module

c Two connectors for two contactors

d Mechanical interlock 3RA2934-2B (not part of the wiring kit, must be ordered separately)

3RA22 load feeder for reversing duty and 60 mm busbar in size S2 (the version with screw terminals is shown in the picture)

RS assembly kits for reversing duty and busbar mounting in size S2, see page 8/53.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Article No. scheme

Product versions		Article number											
SIRIUS load feeders		3RA2	<input type="checkbox"/>	<input type="checkbox"/>	0	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Product function	Direct-on-line starter Reversing starter	1 2											For motor standard output 0.06 ... 45 kW For motor standard output 0.06 ... 45 kW
Size	S00 S0 e.g. 3 = S2 e.g. 5 = S2	1 2 <input type="checkbox"/> <input type="checkbox"/>											at $I_q = 100$ kA at 400 V at $I_q = 150$ kA at 400 V
Setting range of the overload release	e.g. 0B = 0.14 ... 0.2 A				<input type="checkbox"/>	<input type="checkbox"/>							
Assembly, assembly type, connection method	e.g. A = S00, S0, S2					<input type="checkbox"/>							Direct mounting, screw terminals
Contacteur size, rated power at 400 V AC	e.g. 15 = S00/3 kW						<input type="checkbox"/>	<input type="checkbox"/>					
Version	e.g. 0 = S0, S2								<input type="checkbox"/>				1 NO + 1 NC integrated in contactor
Auxiliary switches on the contactor	e.g. 1 = S00 e.g. 2 = S00								<input type="checkbox"/> <input type="checkbox"/>				1 NO integrated in contactor 1 NC integrated in contactor
Operating range of solenoid coil (contactor)	e.g. A = S00, S0, S2									<input type="checkbox"/>			AC $0.8 \times U_{s \min} \dots 1.1 \times U_{s \max}$, standard coil without RC circuit
Rated control supply voltage (contactor)	230 V AC 24 V DC										P 0 B 4		50/60 Hz AC for S00, 50 Hz AC for S0 ... S3
Example		3RA2	1	1	0	-	0	B	A	1	5	-	1 A P 0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

The 3RA2 fuseless load feeders offer a number of benefits:

- Minimum planning and assembly work and far less wiring with the preassembled complete units (only one article number 3RA2)
- Plug-in connectors from the motor starter protector to all types of SIRIUS controls, for quicker and error-free assembly of feeders with screw and spring-type terminals
- High planning reliability through consistent combination tests for fuseless and fused configuration in accordance with IEC and UL/CSA
- Comprehensive approvals for use world-wide on request; [see page 16/6 onwards](#).
- High operational reliability through short-circuit breaking capacity of 150 kA with type of coordination "1" and "2"
- Uniform accessories for sizes S00, S0, S2 and S3
- Spring-type terminals possible throughout: Enhanced operational reliability (vibration-resistant wiring) and less wiring work thanks to plug-in connections (S00 and S0 only)
- Power loss 5 to 10% smaller than for comparable devices, hence lower energy consumption
- Connection of feeders to the control system through standardized system connection (IO-Link and AS-i), for fast integration in TIA and less wiring work

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Technical specifications

More information

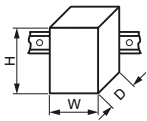
Industry Mall, see www.siemens.com/product?3RA2

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16289/faq>

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60284351>

Configuration Manual, see <https://support.industry.siemens.com/cs/ww/en/view/39714188>.

Direct-on-line starters/ reversing starters	Size	Connection method	Mounting	Control voltage	Width W	Height H	Depth D	
					mm	mm	mm	
Mounting dimensions								
Direct-on-line starters 3RA21. (Size S3 or larger is only available for self-assembly)	S00 3RA211.	Screw terminals	Standard mounting rails	AC/DC	45	167	97	
			Busbar adapters	AC/DC	45	200	155	
		Spring-type terminals	Standard mounting rails	AC/DC	45	198	97	
			Busbar adapters	AC/DC	45	260	155	
	S0 3RA212.	Screw terminals	Standard mounting rails	AC	45	193	97	
				DC	45	193	107	
				Busbar adapters	AC	45	260	155
		Spring-type terminals	Standard mounting rails	AC/DC	45	243	107	
				Busbar adapters	AC/DC	45	260	165
				Busbar adapters	AC/DC	55	274	150
	S2 3RA213./3RA215.	Screw terminals	Standard mounting rails	AC/DC	55	274	150	
				Busbar adapters	AC/DC	55	350	208
S3 (self-assembly only)	Screw terminals	Standard mounting rail adapters	AC/DC	70	333	198		
Reversing starters 3RA22. (Size S3 or larger is only available for self-assembly)	S00 3RA221.	Screw terminals	Standard mounting rails	AC/DC	90	170	97	
			Busbar adapters	AC/DC	90	200	155	
		Spring-type terminals	Standard mounting rails	AC/DC	90	204	97	
			Busbar adapters	AC/DC	90	260	155	
	S0 3RA222.	Screw terminals	Standard mounting rail adapters	AC	90	265	120.3	
				DC	90	265	130	
				AC	90	260	155	
				DC	90	260	165	
	Spring-type terminals	Standard mounting rail adapters	AC/DC	90	270	131		
			Busbar adapters	AC/DC	90	260	165	
			Busbar adapters	AC/DC	90	260	165	
	S2 (self-assembly only)	Screw terminals	Standard mounting rail	AC/DC	120	295	175	
				Busbar adapters	AC/DC	120	361	208
	S3 (self-assembly only)	Screw terminals	Standard mounting rail adapters	AC/DC	150	333	198	



Type		3RA2.1	3RA2.2	3RA213, 3RA215	For self-assembly
Size		S00	S0	S2	S3
Number of poles		3	3	3	3
Mechanics and environment					
Permissible ambient temperature					
• During operation	°C	-20 ... +60			
• During storage and transport	°C	-55 ... +80			
Weight	kg	0.6 ... 1.5	0.8 ... 2.3	2.2 ... 2.5	4.0 ... 4.2
Permissible mounting position					
Important: Acc. to DIN 43602 start command "I" at the right or top					
Shock resistance	Acc. to IEC 60068-2-27 g/ms	6/11 (sine pulse)			On request
Degree of protection	Acc. to IEC 60529	IP20			<ul style="list-style-type: none"> • IP20 on front side • Connecting terminal IP00
Touch protection	Acc. to IEC 60529	Finger-safe			Finger-safe, for vertical contact from the front

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data




Type		3RA2.1	3RA2.2	3RA213, 3RA215	For self-assembly
Size		S00	S0	S2	S3
Number of poles		3	3	3	3
Electrical specifications					
Standards		<ul style="list-style-type: none"> • IEC 60947-1, EN 60947-1 (VDE 0660 Part 100) • IEC 60947-2, EN 60947-2 (VDE 0660 Part 101) • IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102) 			
Max. rated current I_n max (= max. rated operational current I_θ)	A	16	32	65	100
Rated operational voltage U_e	V	690			
Rated frequency	Hz	50/60			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Trip class (CLASS)	Acc. to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)	10			
Rated short-circuit current I_q at AC 50/60 Hz 400 V	Acc. to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)	150		3RA213: 100 3RA215: 150	With 3RV2041: 100 With 3RV2042: 150
Types of coordination	Acc. to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)	See "Selection and ordering data", page 8/21 onwards			
Power loss P_v of all main current paths Dependent on rated current I_n (upper setting range)		See technical specifications of the individual devices: <ul style="list-style-type: none"> • "Switching Devices – Contactors and Contactor Assemblies", page 3/23 onwards • "Protection Equipment" → "Motor starter protectors/circuit breakers", page 7/19 onwards 			
Power consumption of the solenoid coils with contactors		See technical specifications of the contactor, from page 3/23 onwards			
Magnetic coil operating range with contactors					
Endurance of the motor starter protector					
• Mechanical endurance	Operating cycles	100 000		Up to 52 A: 50 000	25 000
• Electrical endurance	Operating cycles	100 000		From 59 A: 20 000	25 000
• Max. switching frequency per hour (motor starts)	1/h	15			
Endurance of contactor					
• Mechanical endurance	Operating cycles	30 million	10 million		
• Electrical endurance	Operating cycles	See endurance characteristic curves of the contactors, page 3/23 onwards			
Phase failure sensitivity of the motor starter protector	Acc. to IEC 60947-1, EN 60947-1 (VDE 0660 Part 102)	✓			
Isolating features of the motor starter protector	Acc. to IEC 60947-2, EN 60947-2 (VDE 0660 Part 101)	✓			
Main and EMERGENCY STOP switch characteristics of the motor starter protector and accessories	Acc. to IEC 60204-1, EN 60204-1 (VDE 0113 Part 1)	✓ (with overvoltage releases of category "1" under conditions of proper use)			
Protective separation between main and auxiliary circuits	Acc. to EN 60947-1, Appendix N	V	Up to 400		
Mirror contacts for contactors Integrated auxiliary switches		✓ acc. to IEC 60947-4-1, Appendix F			

✓ Function available



Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

General data

Conductor cross-sections of main circuit						
Type		3RA2.10	3RA2.20	3RA2130-4E..., 3RA2130-4P..., 3RA2130-4U..., 3RA2130-4V...	3RA2130-4W..., 3RA2130-4X..., 3RA2130-4J..., 3RA2130-4K..., 3RA2150	For self-assembly
Size		S00	S0	S2		S3
Connection type		 Screw terminals				 Screw terminals with box terminal
Terminal screw		M3, Pozidriv size 2	M4, Pozidriv size 2	M6, Pozidriv size 2		4 mm Allen screw
Operating devices	mm	∅ 5 ... 6	∅ 5 ... 6	∅ 5 ... 6		Allen screw
Prescribed tightening torque	Nm	0.8 ... 1.2	2 ... 2.5	3.0 ... 4.5		4.5 ... 6
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected						
• Solid or stranded	mm ²	2 x (0.75 ... 2.5) ¹⁾ , 2 x (0.5 ... 1.5) ¹⁾ , only for contactor 2 x 4	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 10) ¹⁾	2 x (1 ... 25) ¹⁾ , 1 x (1 ... 35) ¹⁾	2 x (1 ... 35) ¹⁾ , 1 x (1 ... 50) ¹⁾	2 x (2.5 ... 16) ¹⁾ , 2 x (10 ... 50) ¹⁾ , 1 x (10 ... 70) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾	2 x (1 ... 2.5) ¹⁾ , 2 x (2.5 ... 6) ¹⁾ , 1 x 10	2 x (1 ... 16) ¹⁾ , 1 x (1 ... 25) ¹⁾	2 x (1 ... 25) ¹⁾ , 1 x (1 ... 35) ¹⁾	2 x (2.5 ... 35) ¹⁾ , 1 x (2.5 ... 50) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ , only for contactor 2 x (18 ... 14) ¹⁾ , 2 x 12	2 x (16 ... 12) ¹⁾ , 2 x (14 ... 8) ¹⁾	2 x (18 ... 3) ¹⁾ , 1 x (18 ... 2) ¹⁾	2 x (18 ... 2) ¹⁾ , 1 x (18 ... 1) ¹⁾	2 x (10 ... 1/0) ¹⁾ , 1 x (10 ... 2/0) ¹⁾
• Ribbon cable conductors (Number x Width x Thickness) mm	--	--	--	--	--	2 x (6 x 9 x 0.8)
Connection type		 Spring-type terminals				
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5				
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected						
• Solid or stranded	mm ²	2 x (0.5 ... 4)	2 x (1 ... 10)	--	--	--
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--	--	--
• Finely stranded with end sleeve (DIN 46228-11)	mm ²	2 x (0.5 ... 2.5)	2 x (1 ... 6)	--	--	--
• AWG cables, solid or stranded	AWG	2 x (20 ... 12)	2 x (18 ... 8)	--	--	--
Max. external diameter of the conductor insulation	mm	3.6	3.6	--	--	--

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Conductor cross-sections for auxiliary and control circuits						
Type		3RA2110 3RA2210	3RA2120 3RA2220	3RA2130 3RA2150	For self-assembly	
Size		S00	S0	S2	S3	
Connection type		 Screw terminals				
Terminal screw		M3, Pozidriv size 2				
Operating devices	mm	∅ 5 ... 6				
Prescribed tightening torque	Nm	0.8 ... 1.2				
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected						
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾				
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ , 2 x (0.75 ... 2.5) ¹⁾				
• AWG cables, solid or stranded	AWG	2 x (18 ... 14) ¹⁾ , 2 x (20 ... 16) ¹⁾ , 2 x 12 for contactor S00 only				
Connection type		 Spring-type terminals				
Operating devices	mm	3.0 x 0.5 and 3.5 x 0.5				
Conductor cross-sections (min./max.), 1 or 2 conductors can be connected						
• Solid or stranded	mm ²	2 x (0.5 ... 2.5)				
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)				
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5)				
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)				
Max. external diameter of the conductor insulation	mm	3.6				

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must be in the range specified.

Load Feeders and Motor Starters for Use in the Control Cabinet

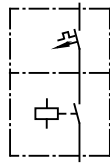
SIRIUS 3RA2 Load Feeders

IE3/IE4 ready 3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing

Selection and ordering data



Direct-on-line start



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0, S2 and S3

With screw terminals

- Screw fixing with two push-in lugs per load feeder possible¹⁾
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO,
Contactor sizes S0, S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC ³⁾		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Stand-ard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Mounting rail adapter					
	kW	A	A								
<p>Type of coordination "2" at $I_{ca} = 150$ kA at 400 V (also compatible with type of coordination "1")</p>											
				3RV20	3RT20	3RA					
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP01	1921-1DA00	2	3RA2110-0BA15-1AP0	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10			2	3RA2110-0CA15-1AP0	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			2	3RA2110-0DA15-1AP0	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	3RA2110-0EA15-1AP0	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	3RA2110-0FA15-1AP0	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	3RA2110-0GA15-1AP0	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	3RA2110-0HA15-1AP0	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			2	3RA2110-0JA15-1AP0	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	3RA2110-0KA15-1AP0	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	3RA2110-1AA15-1AP0	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			2	3RA2110-1BA15-1AP0	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	3RA2110-1CA15-1AP0	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	3RA2110-1DA15-1AP0	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			2	3RA2110-1EA15-1AP0	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	2921-1AA00	2	3RA2120-1FA24-0AP0	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10			2	3RA2120-1GA24-0AP0	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	3RA2120-1HA24-0AP0	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			2	3RA2120-1JA24-0AP0	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10			2	3RA2120-1KA24-0AP0	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1AP00		2	3RA2120-4AA26-0AP0	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1AP00		5	3RA2120-4BA27-0AP0	1	1 unit	41D
	11	22	16 ... 22	21-4CA10			2	3RA2120-4CA27-0AP0	1	1 unit	41D
	11	22	18 ... 25	21-4DA10			2	3RA2120-4DA27-0AP0	1	1 unit	41D
	15	28	23 ... 28	21-4NA10			2	3RA2120-4NA27-0AP0	1	1 unit	41D
	15	29 ⁴⁾	27 ... 32	21-4EA10			2	3RA2120-4EA27-0AP0	1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1AP00	2931-1AA00	2	3RA2150-4EA35-0AP0	1	1 unit	41D
	18.5	35	28 ... 36	32-4PA10			2	3RA2150-4PA35-0AP0	1	1 unit	41D
	18.5	35	32 ... 40	32-4UA10			2	3RA2150-4UA35-0AP0	1	1 unit	41D
	22	41	35 ... 45	32-4VA10	36-1AP00		2	3RA2150-4VA36-0AP0	1	1 unit	41D
	22	41	42 ... 50	32-4WA10			2	3RA2150-4WA36-0AP0	1	1 unit	41D
	30	55	49 ... 59	32-4XA10	37-1AP00		2	3RA2150-4XA37-0AP0	1	1 unit	41D
	30	55	54 ... 65	32-4JA10			2	3RA2150-4JA37-0AP0	1	1 unit	41D
	37 ⁵⁾	66	62 ... 75	32-4KA10	38-1AP00		2	3RA2150-4KA38-0AP0	1	1 unit	41D
S3	Size S3 available on request						Size S3 is only available for self-assembly				

¹⁾ For push-in lugs, see "Accessories" on page 8/51.

²⁾ For auxiliary switches, see "Accessories" on page 8/44.

³⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

⁴⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

⁵⁾ Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

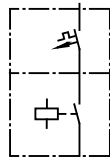
3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing **IE3/IE4 ready**



3RA2110

3RA2120

Direct-on-line start



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With spring-type terminals

- Screw fixing with two push-in lugs per load feeder possible¹⁾
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO,
Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC ³⁾		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Stand-ard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module					
	kW	A	A								
								Article No.	Basic price per PU		

Type of coordination "2" at I_q = 150 kA at 400 V
(also compatible with type of coordination "1")

				3RV20	3RT20	3RA29					
								ToC 2			
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP01	11-2AA00	2	3RA2110-0BE15-1AP0	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20			2	3RA2110-0CE15-1AP0	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	3RA2110-0DE15-1AP0	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	3RA2110-0EE15-1AP0	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	3RA2110-0FE15-1AP0	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	3RA2110-0GE15-1AP0	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	3RA2110-0HE15-1AP0	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	3RA2110-0JE15-1AP0	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	3RA2110-0KE15-1AP0	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	3RA2110-1AE15-1AP0	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	3RA2110-1BE15-1AP0	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	3RA2110-1CE15-1AP0	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	3RA2110-1DE15-1AP0	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	3RA2110-1EE15-1AP0	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	5	3RA2120-1FE24-0AP0	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20			5	3RA2120-1GE24-0AP0	1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			5	3RA2120-1HE24-0AP0	1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	3RA2120-1JE24-0AP0	1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	3RA2120-1KE24-0AP0	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2AP00		2	3RA2120-4AE26-0AP0	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2AP00		5	3RA2120-4BE27-0AP0	1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	3RA2120-4CE27-0AP0	1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	3RA2120-4DE27-0AP0	1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	3RA2120-4NE27-0AP0	1	1 unit	41D
	15	29 ⁴⁾	27 ... 32	21-4EA20			2	3RA2120-4EE27-0AP0	1	1 unit	41D

Type of coordination "1" at I_q = 150 kA at 400 V
(motor starter protector is compatible with type of coordination "2")

S00	For load feeders for lower outputs, see this table at type of coordination "2".										
											ToC 1
	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP01	11-2AA00	2	3RA2110-1FE15-1AP0	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20			2	3RA2110-1GE15-1AP0	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	3RA2110-1HE15-1AP0	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2AP01		2	3RA2110-1JE16-1AP0	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2AP01		2	3RA2110-1KE17-1AP0	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2AP01		2	3RA2110-4AE18-1AP0	1	1 unit	41D

¹⁾ For push-in lugs, see "Accessories" on page 8/51.
²⁾ For auxiliary switches, see "Accessories" on page 8/44.
³⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.
⁴⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

Load Feeders and Motor Starters for Use in the Control Cabinet

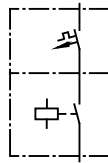
SIRIUS 3RA2 Load Feeders

3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing **IE3/IE4 ready**



3RA2110

Direct-on-line start



Rated control supply voltage 24 V DC With screw terminals

- Screw fixing with two push-in lugs per load feeder possible¹⁾
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO

Size	Standard three-phase motor 4-pole at 400 V AC ³⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG	
	Stand-ard output P	Motor current I (guide value)	Motor starter protector	+ Contactor	+ Link module + Mounting rail adapter		Screw terminals				
	kW	A	A			d	Article No.	Basic price per PU			
Type of coordination "1" at $I_q = 150$ kA at 400 V (motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".										
	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB41	1921-1DA00	2	3RA2110-1FA15-1BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10			2	3RA2110-1GA15-1BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	3RA2110-1HA15-1BB4	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1BB41		2	3RA2110-1JA16-1BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1BB41		2	3RA2110-1KA17-1BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB41		2	3RA2110-4AA18-1BB4	1	1 unit	41D

¹⁾ For push-in lugs, see "Accessories" on page 8/51.

²⁾ For auxiliary switches, see "Accessories" on page 8/44.

³⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

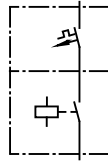
Load Feeders and Motor Starters for Use in the Control Cabinet SIRIUS 3RA2 Load Feeders

IE3/IE4 ready 3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing



3RA2130

Direct-on-line start



**Rated control supply voltage 24 V DC
With screw terminals**

- Screw fixing with two push-in lugs per load feeder possible¹⁾
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
Contactor sizes S2 and S3: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC ³⁾		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module					
								Screw terminals			
								Article No.			Basic price per PU
	kW	A	A				d				

Type of coordination "2" at I_q = 100 kA at 400 V
(motor starter protector is compatible with type of coordination "2")

	Type of coordination "2"			SD	Article No.	Basic price per PU	PU	PS*	PG	
	3RV20	3RT20	3RA							
S2	15	29	22 ... 32	2	3RA2130-4EA35-0NB3		1	1 unit	41D	
	18.5	35	28 ... 36	2	3RA2130-4PA35-0NB3		1	1 unit	41D	
	18.5	35	32 ... 40	2	3RA2130-4UA35-0NB3		1	1 unit	41D	
	22	41	35 ... 45	2	3RA2130-4VA36-0NB3		1	1 unit	41D	
	22	41	42 ... 50	2	3RA2130-4WA36-0NB3		1	1 unit	41D	
	30	55	49 ... 59	2	3RA2130-4XA37-0NB3		1	1 unit	41D	
	30	55	54 ... 65	2	3RA2130-4JA37-0NB3		1	1 unit	41D	
	37 ⁴⁾	66	62 ... 73	2	3RA2130-4KA38-0NB3		1	1 unit	41D	

S3 Size S3 available on request Size S3 is only available for self-assembly

1) For push-in lugs, see "Accessories" on page 8/51.
 2) For auxiliary switches, see "Accessories" on page 8/44.
 3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
 4) Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

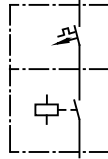
Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

3RA21 direct-on-line starters for snapping onto standard mounting rails or for screw fixing **IE3/IE4 ready**



Direct-on-line start



Rated control supply voltage 24 V DC With spring-type terminals

- Screw fixing with two push-in lugs per load feeder possible¹⁾
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO,
Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC ³⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Stand-ard output P	Motor current I (guide value)	Motor starter protector	+ Contactor	+ Link module		Spring-type terminals			
	kW	A	A			d	Article No.	Basic price per PU		

Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")

				3RV20	3RT20	3RA29					
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB41	11-2AA00	2	3RA2110-0BE15-1BB4	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20			2	3RA2110-0CE15-1BB4	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	3RA2110-0DE15-1BB4	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	3RA2110-0EE15-1BB4	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	3RA2110-0FE15-1BB4	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	3RA2110-0GE15-1BB4	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	3RA2110-0HE15-1BB4	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	3RA2110-0JE15-1BB4	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	3RA2110-0KE15-1BB4	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	3RA2110-1AE15-1BB4	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	3RA2110-1BE15-1BB4	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	3RA2110-1CE15-1BB4	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	3RA2110-1DE15-1BB4	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	3RA2110-1EE15-1BB4	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	5	3RA2120-1FE24-0BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20			5	3RA2120-1GE24-0BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			5	3RA2120-1HE24-0BB4	1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	3RA2120-1JE24-0BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	3RA2120-1KE24-0BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		2	3RA2120-4AE26-0BB4	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		5	3RA2120-4BE27-0BB4	1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	3RA2120-4CE27-0BB4	1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	3RA2120-4DE27-0BB4	1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	3RA2120-4NE27-0BB4	1	1 unit	41D
	15	29 ⁴⁾	27 ... 32	21-4EA20			2	3RA2120-4EE27-0BB4	1	1 unit	41D

Type of coordination "1" at I_q = 150 kA at 400 V (motor starter protector is compatible with type of coordination "2")

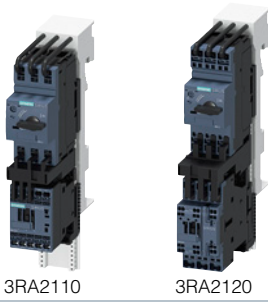
S00	For load feeders for lower outputs, see this table at type of coordination "2".										
	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB41	11-2AA00	2	3RA2110-1FE15-1BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20			2	3RA2110-1GE15-1BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	3RA2110-1HE15-1BB4	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2BB41		2	3RA2110-1JE16-1BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2BB41		2	3RA2110-1KE17-1BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB40		2	3RA2110-4AE18-1BB4	1	1 unit	41D

1) For push-in lugs, see "Accessories" on page 8/51.
 2) For auxiliary switches, see "Accessories" on page 8/44.
 3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
 4) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

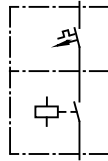
Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

3RA21 direct-on-line starters for 60 mm busbars **IE3/IE4 ready**



Direct-on-line start



Rated control supply voltage
 50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
 With spring-type terminals

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
 Contactor size S00: 1 NO,
 Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC ²⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Spring-type terminals			
	kW	A	A			d	Article No.	Basic price per PU		

Type of coordination "2" at I_q = 150 kA at 400 V
 (also compatible with type of coordination "1")

				3RV20	3RT20	3RA29						
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP01	11-2AA00	2	3RA2110-0BH15-1AP0	1	1 unit	41D	
	0.06	0.2	0.18 ... 0.25	11-0CA20		11-0CA20	2	3RA2110-0CH15-1AP0	1	1 unit	41D	
	0.09	0.3	0.22 ... 0.32	11-0DA20		+ 8US1251-5DT11	2	3RA2110-0DH15-1AP0	1	1 unit	41D	
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	3RA2110-0EH15-1AP0	1	1 unit	41D	
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	3RA2110-0FH15-1AP0	1	1 unit	41D	
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	3RA2110-0GH15-1AP0	1	1 unit	41D	
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	3RA2110-0HH15-1AP0	1	1 unit	41D	
	0.25	0.85	0.7 ... 1	11-0JA20			2	3RA2110-0JH15-1AP0	1	1 unit	41D	
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	3RA2110-0KH15-1AP0	1	1 unit	41D	
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	3RA2110-1AH15-1AP0	1	1 unit	41D	
	0.75	1.9	1.4 ... 2	11-1BA20			2	3RA2110-1BH15-1AP0	1	1 unit	41D	
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	3RA2110-1CH15-1AP0	1	1 unit	41D	
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	3RA2110-1DH15-1AP0	1	1 unit	41D	
	1.5	3.6	2.8 ... 4	11-1EA20			2	3RA2110-1EH15-1AP0	1	1 unit	41D	
	S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	5	3RA2120-1FH24-0AP0	1	1 unit	41D
		2.2	4.9	4.5 ... 6.3	21-1GA20		+ 8US1251-5NT11 ³⁾	5	3RA2120-1GH24-0AP0	1	1 unit	41D
3		6.5	5.5 ... 8	21-1HA20			5	3RA2120-1HH24-0AP0	1	1 unit	41D	
4		8.5	7 ... 10	21-1JA20			5	3RA2120-1JH24-0AP0	1	1 unit	41D	
5.5		11.5	9 ... 12	21-1KA20			5	3RA2120-1KH24-0AP0	1	1 unit	41D	
7.5		15.5	10 ... 16	21-4AA20	26-2AP00		2	3RA2120-4AH26-0AP0	1	1 unit	41D	
7.5		15.5	13 ... 20	21-4BA20	27-2AP00		5	3RA2120-4BH27-0AP0	1	1 unit	41D	
11		22	16 ... 22	21-4CA20			2	3RA2120-4CH27-0AP0	1	1 unit	41D	
11		22	18 ... 25	21-4DA20			2	3RA2120-4DH27-0AP0	1	1 unit	41D	
15		28	23 ... 28	21-4NA20			2	3RA2120-4NH27-0AP0	1	1 unit	41D	
15		29 ⁴⁾	27 ... 32	21-4EA20			2	3RA2120-4EH27-0AP0	1	1 unit	41D	

Type of coordination "1" at I_q = 150 kA at 400 V
 (motor starter protector is compatible with type of coordination "2")

S00	For load feeders for lower outputs, see this table at type of coordination "2".									
1.5	3.6	3.5 ... 5	11-1FA20	15-2AP01	11-2AA00	2	3RA2110-1FH15-1AP0	1	1 unit	41D
2.2	4.9	4.5 ... 6.3	11-1GA20		+ 8US1251-5DT11	2	3RA2110-1GH15-1AP0	1	1 unit	41D
3	6.5	5.5 ... 8	11-1HA20			2	3RA2110-1HH15-1AP0	1	1 unit	41D
4	8.5	7 ... 10	11-1JA20	16-2AP01		2	3RA2110-1JH16-1AP0	1	1 unit	41D
5.5	11.5	9 ... 12	11-1KA20	17-2AP01		2	3RA2110-1KH17-1AP0	1	1 unit	41D
7.5	15.5	10 ... 16	11-4AA20	18-2AP01		2	3RA2110-4AH18-1AP0	1	1 unit	41D

¹⁾ For auxiliary switches, see "Accessories" on page 8/44.
²⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.
³⁾ A 3RA2911-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals is included in the scope of supply.
⁴⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

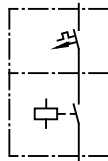
Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

IE3/IE4 ready **3RA21 direct-on-line starters for 60 mm busbars**



Direct-on-line start



Rated control supply voltage 24 V DC
With screw terminals

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO,
Contactor sizes S0 and S2: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC ²⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ Contactor	+ Link module + Busbar adapter		Screw terminals			
	kW	A	A			d	Article No.	Basic price per PU		

Type of coordination "2" at I_q = 150 kA at 400 V
(also compatible with type of coordination "1")

				3RV20	3RT20	3RA						
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB41	1921-1DA00	2	3RA2110-0BD15-1BB4	1	1 unit	41D	
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 8US1251-5DS10	2	3RA2110-0CD15-1BB4	1	1 unit	41D	
	0.09	0.3	0.22 ... 0.32	11-0DA10			2	3RA2110-0DD15-1BB4	1	1 unit	41D	
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	3RA2110-0ED15-1BB4	1	1 unit	41D	
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	3RA2110-0FD15-1BB4	1	1 unit	41D	
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	3RA2110-0GD15-1BB4	1	1 unit	41D	
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	3RA2110-0HD15-1BB4	1	1 unit	41D	
	0.25	0.85	0.7 ... 1	11-0JA10			2	3RA2110-0JD15-1BB4	1	1 unit	41D	
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	3RA2110-0KD15-1BB4	1	1 unit	41D	
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	3RA2110-1AD15-1BB4	1	1 unit	41D	
	0.75	1.9	1.4 ... 2	11-1BA10			2	3RA2110-1BD15-1BB4	1	1 unit	41D	
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	3RA2110-1CD15-1BB4	1	1 unit	41D	
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	3RA2110-1DD15-1BB4	1	1 unit	41D	
	1.5	3.6	2.8 ... 4	11-1EA10			2	3RA2110-1ED15-1BB4	1	1 unit	41D	
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	2921-1BA00	2	3RA2120-1FD24-0BB4	1	1 unit	41D	
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US1251-5DT10	2	3RA2120-1GD24-0BB4	1	1 unit	41D	
	3	6.5	5.5 ... 8	11-1HA10			2	3RA2120-1HD24-0BB4	1	1 unit	41D	
	4	8.5	7 ... 10	11-1JA10			2	3RA2120-1JD24-0BB4	1	1 unit	41D	
	5.5	11.5	9 ... 12	11-1KA10			2	3RA2120-1KD24-0BB4	1	1 unit	41D	
	7.5	15.5	10 ... 16	21-4AA10	26-1BB40	2921-1BA00	2	3RA2120-4AD26-0BB4	1	1 unit	41D	
	7.5	15.5	13 ... 20	21-4BA10	27-1BB40	+ 8US1251-5NT10	5	3RA2120-4BD27-0BB4	1	1 unit	41D	
	11	22	16 ... 22	21-4CA10			2	3RA2120-4CD27-0BB4	1	1 unit	41D	
	11	22	18 ... 25	21-4DA10			2	3RA2120-4DD27-0BB4	1	1 unit	41D	
	15	28	23 ... 28	21-4NA10			2	3RA2120-4ND27-0BB4	1	1 unit	41D	
	15	29 ³⁾	27 ... 32	21-4EA10			2	3RA2120-4ED27-0BB4	1	1 unit	41D	
S2	15	29	22 ... 32	32-4EA10	35-1NB30	2931-1AA00		Size S2 is only available for self-assembly.				
	18.5	35	28 ... 36	32-4PA10		+ 8US1261-6MT10						
	18.5	35	32 ... 40	32-4UA10								
	22	41	35 ... 45	32-4VA10	36-1NB30							
	22	41	42 ... 50	32-4WA10								
	30	55	49 ... 59	32-4XA10	37-1NB30							
	30	55	54 ... 65	32-4JA10								
	37 ⁴⁾	66	62 ... 73	32-4KA10	38-1NB30							

Type of coordination "1" at I_q = 150 kA at 400 V
(motor starter protector is compatible with type of coordination "2")

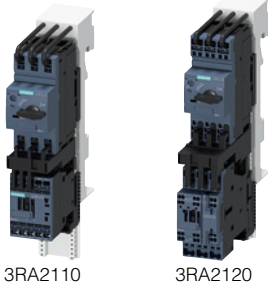
S00	For load feeders for lower outputs, see this table at type of coordination "2".										
	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB41	1921-1DA00	2	3RA2110-1FD15-1BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 8US1251-5DS10	2	3RA2110-1GD15-1BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	3RA2110-1HD15-1BB4	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1BB41		2	3RA2110-1JD16-1BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1BB41		2	3RA2110-1KD17-1BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB41		2	3RA2110-4AD18-1BB4	1	1 unit	41D

¹⁾ For auxiliary switches, see "Accessories" on page 8/44.
²⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.
³⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
⁴⁾ Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

Load Feeders and Motor Starters for Use in the Control Cabinet

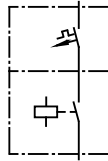
SIRIUS 3RA2 Load Feeders

3RA21 direct-on-line starters for 60 mm busbars **IE3/IE4 ready**



3RA2110 3RA2120

Direct-on-line start



Rated control supply voltage 24 V DC
With spring-type terminals

- With busbar adapter
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- Integrated auxiliary switches:
Contactor size S00: 1 NO,
Contactor size S0: 1 NO + 1 NC

Size	Standard three-phase motor 4-pole at 400 V AC ²⁾		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protector	+ Contactor	+ Link module + Busbar adapter					
								Spring-type terminals			
								Article No.	Basic price per PU		
	kW	A	A				d				

Type of coordination "2" at I_q = 150 kA at 400 V
(also compatible with type of coordination "1")

				3RV20	3RT20	3RA29					
								ToC 2			
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB41	11-2AA00	2	3RA2110-0BH15-1BB4	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 8US1251-5DT11	2	3RA2110-0CH15-1BB4	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	3RA2110-0DH15-1BB4	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	3RA2110-0EH15-1BB4	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	3RA2110-0FH15-1BB4	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	3RA2110-0GH15-1BB4	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	3RA2110-0HH15-1BB4	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	3RA2110-0JH15-1BB4	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	3RA2110-0KH15-1BB4	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	3RA2110-1AH15-1BB4	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	3RA2110-1BH15-1BB4	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	3RA2110-1CH15-1BB4	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	3RA2110-1DH15-1BB4	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	3RA2110-1EH15-1BB4	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	5	3RA2120-1FH24-0BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 8US1251-5NT11	5	3RA2120-1GH24-0BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			5	3RA2120-1HH24-0BB4	1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	3RA2120-1JH24-0BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	3RA2120-1KH24-0BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		2	3RA2120-4AH26-0BB4	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		5	3RA2120-4BH27-0BB4	1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	3RA2120-4CH27-0BB4	1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	3RA2120-4DH27-0BB4	1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	3RA2120-4NH27-0BB4	1	1 unit	41D
	15	29 ³⁾	27 ... 32	21-4EA20			2	3RA2120-4EH27-0BB4	1	1 unit	41D

Type of coordination "1" at I_q = 150 kA at 400 V
(motor starter protector is compatible with type of coordination "2")

S00	For load feeders for lower outputs, see this table at type of coordination "2".										
											ToC 1
	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB41	11-2AA00	2	3RA2110-1FH15-1BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 8US1251-5DT11	2	3RA2110-1GH15-1BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	3RA2110-1HH15-1BB4	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2BB41		2	3RA2110-1JH16-1BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2BB41		2	3RA2110-1KH17-1BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB40		2	3RA2110-4AH18-1BB4	1	1 unit	41D

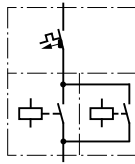
¹⁾ For auxiliary switches, see "Accessories" on page 8/44.
²⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.
³⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

Load Feeders and Motor Starters for Use in the Control Cabinet SIRIUS 3RA2 Load Feeders

IE3/IE4 ready 3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing

Selection and ordering data

Reversing duty



Rated control supply voltage

50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0, S2 and S3

With screw terminals

- Screw fixing with two push-in lugs per load feeder possible¹⁾
- Without standard mounting rail adapter for size S00
- With 2 standard mounting rail adapters for size S0 for mechanical reinforcement (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0, S2 and S3, an integrated NO contact is still available for free use.



Size	Standard three-phase motor 4-pole at 400 V AC ³⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protectors	+ 2 contactors	+ Link module + Assembly kit RH ⁴⁾ / Wiring kit		Screw terminals			
	kW	A	A			Article No.	Basic price per PU			

Type of coordination "2" at $I_q = 150 \text{ kA}$ at 400 V (also compatible with type of coordination "1")

				3RV20	3RT20	3RA						
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1AP02	1921-1DA00	2	3RA2210-0BA15-2AP0	1	1 unit	41D	
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 2913-2AA1	2	3RA2210-0CA15-2AP0	1	1 unit	41D	
	0.09	0.3	0.22 ... 0.32	11-0DA10			2	3RA2210-0DA15-2AP0	1	1 unit	41D	
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	3RA2210-0EA15-2AP0	1	1 unit	41D	
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	3RA2210-0FA15-2AP0	1	1 unit	41D	
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	3RA2210-0GA15-2AP0	1	1 unit	41D	
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	3RA2210-0HA15-2AP0	1	1 unit	41D	
	0.25	0.85	0.7 ... 1	11-0JA10			2	3RA2210-0JA15-2AP0	1	1 unit	41D	
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	3RA2210-0KA15-2AP0	1	1 unit	41D	
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	3RA2210-1AA15-2AP0	1	1 unit	41D	
	0.75	1.9	1.4 ... 2	11-1BA10			2	3RA2210-1BA15-2AP0	1	1 unit	41D	
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	3RA2210-1CA15-2AP0	1	1 unit	41D	
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	3RA2210-1DA15-2AP0	1	1 unit	41D	
	1.5	3.6	2.8 ... 4	11-1EA10			2	3RA2210-1EA15-2AP0	1	1 unit	41D	
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1AP00	2921-1AA00	2	3RA2220-1FB24-0AP0	1	1 unit	41D	
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2923-1BB1	2	3RA2220-1GB24-0AP0	1	1 unit	41D	
	3	6.5	5.5 ... 8	11-1HA10			2	3RA2220-1HB24-0AP0	1	1 unit	41D	
	4	8.5	7 ... 10	11-1JA10			2	3RA2220-1JB24-0AP0	1	1 unit	41D	
	5.5	11.5	9 ... 12	11-1KA10			2	3RA2220-1KB24-0AP0	1	1 unit	41D	
	7.5	15.5	10 ... 16	21-4AA10	26-1AP00		2	3RA2220-4AB26-0AP0	1	1 unit	41D	
	7.5	15.5	13 ... 20	21-4BA10	27-1AP00		5	3RA2220-4BB27-0AP0	1	1 unit	41D	
	11	22	16 ... 22	21-4CA10			2	3RA2220-4CB27-0AP0	1	1 unit	41D	
	11	22	18 ... 25	21-4DA10			2	3RA2220-4DB27-0AP0	1	1 unit	41D	
	15	28	23 ... 28	21-4NA10			2	3RA2220-4NB27-0AP0	1	1 unit	41D	
	15	29 ⁵⁾	27 ... 32	21-4EA10			2	3RA2220-4EB27-0AP0	1	1 unit	41D	
S2	15	29	22 ... 32	32-4EA10	35-1AP00	2931-1AA00		Size S2 is only available for self-assembly.				
	18.5	35	28 ... 36	32-4PA10		+ 2933-1BB1						
	18.5	35	32 ... 40	32-4UA10								
	22	41	35 ... 45	32-4VA10	36-1AP00							
	22	41	42 ... 50	32-4WA10								
	30	55	49 ... 59	32-4XA10	37-1AP00							
	30	55	54 ... 65	32-4JA10								
	37 ⁶⁾	66	62 ... 73	32-4KA10	38-1AP00							
S3	Size S3 available on request						Size S3 is only available for self-assembly					

¹⁾ For push-in lugs, see "Accessories" on page 8/51.
²⁾ For auxiliary switches, see "Accessories" on page 8/44.
³⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

⁴⁾ RH = assembly kit for reversing duty and standard rail mounting in sizes S0 and S2.
⁵⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.
⁶⁾ Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

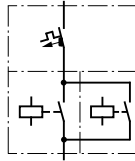
Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing **IE3/IE4 ready**



Reversing duty



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With screw terminals

- Screw fixing with two push-in lugs per load feeder possible¹⁾
- Without standard mounting rail adapter for size S00
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.

3RA2210

Size	Standard three-phase motor 4-pole at 400 V AC ³⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Stand-ard output P	Motor current I (guide value)	Motor starter protectors	+ 2 contactors	+ Link module + Assembly kit RH ⁴⁾ / Wiring kit		Screw terminals			
							Article No.	Basic price per PU		
	kW	A	A			d				

Type of coordination "1" at $I_q = 150$ kA at 400 V
(motor starter protector is compatible with type of coordination "2")

3RV20 3RT20 3RA

S00 For load feeders for lower outputs, see this table at type of coordination "2".

S00							2	3RA2210-1FA15-2AP0 3RA2210-1GA15-2AP0 3RA2210-1HA15-2AP0	1	1 unit	41D
	1.5	3.6	3.5 ... 5	11-1FA10	15-1AP02	1921-1DA00					
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2913-2AA1	2		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1AP02		2		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1AP02		2		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1AP02		2		1	1 unit	41D

¹⁾ For push-in lugs, see "Accessories" on page 8/51.

²⁾ For auxiliary switches, see "Accessories" on page 8/44.

³⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

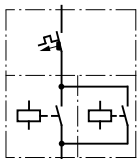
⁴⁾ RH = assembly kit for reversing duty and standard rail mounting in sizes S0 and S2.

Load Feeders and Motor Starters for Use in the Control Cabinet SIRIUS 3RA2 Load Feeders

IE3/IE4 ready 3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing



Reversing duty



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With spring-type terminals

- Screw fixing with two push-in lugs per load feeder possible¹⁾
- Without standard mounting rail adapter for size S00
- With two standard mounting rail adapters for size S0 for mechanical reinforcement (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC ³⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RH ⁴⁾ /Wiring kit		Spring-type terminals			
	kW	A	A			d	Article No.	Basic price per PU		

Type of coordination "2" at $I_q = 150$ kA at 400 V
(also compatible with type of coordination "1")

		3RV20			3RT20		3RA29				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP02	11-2AA00	2	3RA2210-0BE15-2AP0	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 2913-2AA2	2	3RA2210-0CE15-2AP0	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	3RA2210-0DE15-2AP0	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	3RA2210-0EE15-2AP0	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	3RA2210-0FE15-2AP0	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	3RA2210-0GE15-2AP0	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	3RA2210-0HE15-2AP0	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	3RA2210-0JE15-2AP0	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	3RA2210-0KE15-2AP0	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	3RA2210-1AE15-2AP0	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	3RA2210-1BE15-2AP0	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	3RA2210-1CE15-2AP0	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	3RA2210-1DE15-2AP0	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	3RA2210-1EE15-2AP0	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	5	3RA2220-1FF24-0AP0	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 2923-1BB2 ⁵⁾	5	3RA2220-1GF24-0AP0	1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			5	3RA2220-1HF24-0AP0	1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	3RA2220-1JF24-0AP0	1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	3RA2220-1KF24-0AP0	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2AP00		2	3RA2220-4AF26-0AP0	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2AP00		5	3RA2220-4BF27-0AP0	1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	3RA2220-4CF27-0AP0	1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	3RA2220-4DF27-0AP0	1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	3RA2220-4NF27-0AP0	1	1 unit	41D
	15	29 ⁶⁾	27 ... 32	21-4EA20			2	3RA2220-4EF27-0AP0	1	1 unit	41D

Type of coordination "1" at $I_q = 150$ kA at 400 V
(motor starter protector is compatible with type of coordination "2")

S00		For load feeders for lower outputs, see this table at type of coordination "2".									
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP02	11-2AA00	2	3RA2210-1FE15-2AP0	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 2913-2AA2	2	3RA2210-1GE15-2AP0	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	3RA2210-1HE15-2AP0	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2AP02		2	3RA2210-1JE16-2AP0	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2AP02		2	3RA2210-1KE17-2AP0	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2AP02		2	3RA2210-4AE18-2AP0	1	1 unit	41D

¹⁾ For push-in lugs, see "Accessories" on page 8/51.
²⁾ For auxiliary switches, see "Accessories" on page 8/44.
³⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.
⁴⁾ RH = assembly kit for reversing duty and standard rail mounting in size S0.
⁵⁾ The RH assembly kit also includes the 3RA2911-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals.
⁶⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

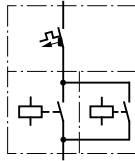
Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing **IE3/IE4 ready**



Reversing duty



Rated control supply voltage 24 V DC With screw terminals

- Screw fixing with two push-in lugs per load feeder possible¹⁾
- Without standard mounting rail adapter for size S00
- With two standard mounting rail adapters for size S0 for mechanical reinforcement (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0, S2 and S3, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC ³⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Stand-ard output P	Motor current I (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RH ⁴⁾ /Wiring kit		Screw terminals			
	kW	A	A			d	Article No.	Basic price per PU		

Type of coordination "2" at $I_q = 150 \text{ kA}$ at 400 V (compatible with type of coordination "1")

	3RV20			3RT20		3RA					
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	1921-1DA00	2	3RA2210-0BA15-2BB4	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 2913-2AA1	2	3RA2210-0CA15-2BB4	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA10			2	3RA2210-0DA15-2BB4	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA10			2	3RA2210-0EA15-2BB4	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA10			2	3RA2210-0FA15-2BB4	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA10			2	3RA2210-0GA15-2BB4	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA10			2	3RA2210-0HA15-2BB4	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA10			2	3RA2210-0JA15-2BB4	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA10			2	3RA2210-0KA15-2BB4	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA10			2	3RA2210-1AA15-2BB4	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA10			2	3RA2210-1BA15-2BB4	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA10			2	3RA2210-1CA15-2BB4	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA10			2	3RA2210-1DA15-2BB4	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA10			2	3RA2210-1EA15-2BB4	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	2921-1BA00	2	3RA2220-1FB24-0BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2923-1BB1	2	3RA2220-1GB24-0BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	3RA2220-1HB24-0BB4	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10			2	3RA2220-1JB24-0BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10			2	3RA2220-1KB24-0BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA10	26-1BB40		2	3RA2220-4AB26-0BB4	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA10	27-1BB40		5	3RA2220-4BB27-0BB4	1	1 unit	41D
	11	22	16 ... 22	21-4CA10			2	3RA2220-4CB27-0BB4	1	1 unit	41D
	11	22	18 ... 25	21-4DA10			2	3RA2220-4DB27-0BB4	1	1 unit	41D
	15	28	23 ... 28	21-4NA10			2	3RA2220-4NB27-0BB4	1	1 unit	41D
	15	29 ⁵⁾	27 ... 32	21-4EA10			2	3RA2220-4EB27-0BB4	1	1 unit	41D
S2	15	29	22 ... 32	32-4EA10	35-1NB30	2931-1AA00		Size S2 is only available for self-assembly.			
	18.5	35	28 ... 36	32-4PA10		+ 2933-1BB1					
	18.5	35	32 ... 40	32-4UA10							
	22	41	35 ... 45	32-4VA10	36-1NB30						
	22	41	42 ... 50	32-4WA10							
	30	55	49 ... 59	32-4XA10	37-1NB30						
	30	55	54 ... 65	32-4JA10							
	37 ⁶⁾	66	62 ... 73	32-4KA10	38-1NB30						
S3	Size S3 available on request						Size S3 is only available for self-assembly.				

¹⁾ For push-in lugs, see "Accessories" on page 8/51.

²⁾ For auxiliary switches, see "Accessories" on page 8/44.

³⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

⁴⁾ RH = assembly kit for reversing duty and standard rail mounting in sizes S0 and S2.

⁵⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

⁶⁾ Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

Load Feeders and Motor Starters for Use in the Control Cabinet

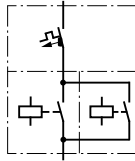
SIRIUS 3RA2 Load Feeders

IE3/IE4 ready 3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing



3RA2210

Reversing duty



Rated control supply voltage 24 V DC With screw terminals

- Screw fixing with two push-in lugs per load feeder possible¹⁾
- Without standard mounting rail adapter for size S00
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.

Size	Standard three-phase motor 4-pole at 400 V AC ³⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG	
	Stand-ard output P	Motor current I (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Wiring kit		Screw terminals				
	kW	A	A			d	Article No.	Basic price per PU			
Type of coordination "1" at $I_g = 150$ kA at 400 V (motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1			
S00	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB42	1921-1DA00	2	3RA2210-1FA15-2BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2913-2AA1	2	3RA2210-1GA15-2BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	3RA2210-1HA15-2BB4	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1BB42		2	3RA2210-1JA16-2BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1BB42		2	3RA2210-1KA17-2BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB42		2	3RA2210-4AA18-2BB4	1	1 unit	41D

¹⁾ For push-in lugs, see "Accessories" on page 8/51.

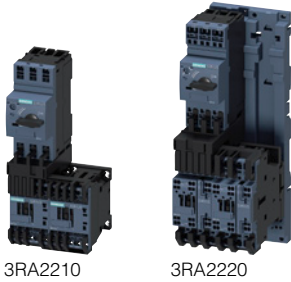
²⁾ For auxiliary switches, see "Accessories" on page 8/44.

³⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

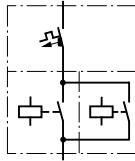
Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

3RA22 reversing starters for snapping onto standard mounting rails or for screw fixing **IE3/IE4 ready**



Reversing duty



Rated control supply voltage 24 V DC
With spring-type terminals

- Screw fixing with two push-in lugs per load feeder possible¹⁾
- Without standard mounting rail adapter for size S00
- With two standard mounting rail adapters for size S0 for mechanical reinforcement (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches²⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC ³⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS ⁴⁾ /Wiring kit		Spring-type terminals			
						Article No.	Basic price per PU			
	kW	A	A			d				

Type of coordination "2" at I_q = 150 kA at 400 V
 (also compatible with type of coordination "1")

	3RV20		3RT20		3RA29						
							ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB42	11-2AA00	2	3RA2210-0BE15-2BB4	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 2913-2AA2	2	3RA2210-0CE15-2BB4	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	3RA2210-0DE15-2BB4	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	3RA2210-0EE15-2BB4	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	3RA2210-0FE15-2BB4	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	3RA2210-0GE15-2BB4	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	3RA2210-0HE15-2BB4	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	3RA2210-0JE15-2BB4	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	3RA2210-0KE15-2BB4	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	3RA2210-1AE15-2BB4	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	3RA2210-1BE15-2BB4	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	3RA2210-1CE15-2BB4	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	3RA2210-1DE15-2BB4	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	3RA2210-1EE15-2BB4	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	5	3RA2220-1FF24-0BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 2923-1BB2	5	3RA2220-1GF24-0BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			5	3RA2220-1HF24-0BB4	1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	3RA2220-1JF24-0BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	3RA2220-1KF24-0BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		2	3RA2220-4AF26-0BB4	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		5	3RA2220-4BF27-0BB4	1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	3RA2220-4CF27-0BB4	1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	3RA2220-4DF27-0BB4	1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	3RA2220-4NF27-0BB4	1	1 unit	41D
	15	29 ⁵⁾	27 ... 32	21-4EA20			2	3RA2220-4EF27-0BB4	1	1 unit	41D

Type of coordination "1" at I_q = 150 kA at 400 V
 (motor starter protector is compatible with type of coordination "2")

S00	For load feeders for lower outputs, see this table at type of coordination "2".										
								ToC 1			
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB42	11-2AA00	2	3RA2210-1FE15-2BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 2913-2AA2	2	3RA2210-1GE15-2BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	3RA2210-1HE15-2BB4	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2BB42		2	3RA2210-1JE16-2BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2BB42		2	3RA2210-1KE17-2BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB42		2	3RA2210-4AE18-2BB4	1	1 unit	41D

1) For push-in lugs, see "Accessories" on page 8/51.
 2) For auxiliary switches, see "Accessories" on page 8/44.
 3) The actual starting and rated data of the motor to be protected must be considered when selecting the units.
 4) RH = assembly kit for reversing duty and standard rail mounting in size S0.
 5) Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

Load Feeders and Motor Starters for Use in the Control Cabinet

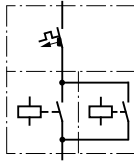
SIRIUS 3RA2 Load Feeders

3RA22 reversing starters for 60 mm busbars **IE3/IE4 ready**



3RA2210

Reversing duty



Rated control supply voltage
50/60 Hz 230 V AC for S00
With screw terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.

Size	Standard three-phase motor 4-pole at 400 V AC ²⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG	
	Standard output P	Motor current I (guide value)	Motor starter protector	+ 2 contactors	+ Link module + Assembly kit RS ³⁾ / Wiring kit		Screw terminals				
	kW	A	A			d	Article No.	Basic price per PU			
Type of coordination "1" at I_q = 150 kA at 400 V (motor starter protector is compatible with type of coordination "2")											
S00	For load feeders for lower outputs, see this table at type of coordination "2".										
S00	1.5	3.6	3.5 ... 5	11-1FA10	15-1AP02	1921-1DA00	2	3RA2210-1FD15-2AP0	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2913-1DB1	2	3RA2210-1GD15-2AP0	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2	3RA2210-1HD15-2AP0	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1AP02		2	3RA2210-1JD16-2AP0	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1AP02		2	3RA2210-1KD17-2AP0	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1AP02		2	3RA2210-4AD18-2AP0	1	1 unit	41D

¹⁾ For auxiliary switches, see "Accessories" on page 8/44.
²⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.
³⁾ RS = assembly kit for reversing duty and busbar mounting.

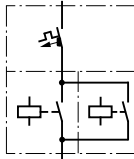
Load Feeders and Motor Starters for Use in the Control Cabinet SIRIUS 3RA2 Load Feeders

IE3/IE4 ready 3RA22 reversing starters for 60 mm busbars



3RA2210 3RA2220

Reversing duty



Rated control supply voltage
50/60 Hz 230 V AC for S00, 50 Hz 230 V AC for S0
With spring-type terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC ²⁾	Adjustable current response time of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protectors	+ 2 contactors	+ Link module + Assembly kit RS ³⁾ /Wiring kit		Spring-type terminals			
							Article No.	Basic price per PU		
	kW	A	A			d				

Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")

				3RV20	3RT20	3RA29						
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2AP02	11-2AA00	2	3RA2210-0BH15-2AP0	1	1 unit	41D	ToC 2
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 2913-1DB2	2	3RA2210-0CH15-2AP0	1	1 unit	41D	
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	3RA2210-0DH15-2AP0	1	1 unit	41D	
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	3RA2210-0EH15-2AP0	1	1 unit	41D	
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	3RA2210-0FH15-2AP0	1	1 unit	41D	
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	3RA2210-0GH15-2AP0	1	1 unit	41D	
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	3RA2210-0HH15-2AP0	1	1 unit	41D	
	0.25	0.85	0.7 ... 1	11-0JA20			2	3RA2210-0JH15-2AP0	1	1 unit	41D	
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	3RA2210-0KH15-2AP0	1	1 unit	41D	
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	3RA2210-1AH15-2AP0	1	1 unit	41D	
	0.75	1.9	1.4 ... 2	11-1BA20			2	3RA2210-1BH15-2AP0	1	1 unit	41D	
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	3RA2210-1CH15-2AP0	1	1 unit	41D	
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	3RA2210-1DH15-2AP0	1	1 unit	41D	
	1.5	3.6	2.8 ... 4	11-1EA20			2	3RA2210-1EH15-2AP0	1	1 unit	41D	
	S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2AP00	21-2AA00	5	3RA2220-1FH24-0AP0	1	1 unit	
2.2		4.9	4.5 ... 6.3	21-1GA20		+ 2923-1DB2 ⁴⁾	5	3RA2220-1GH24-0AP0	1	1 unit	41D	
3		6.5	5.5 ... 8	21-1HA20			5	3RA2220-1HH24-0AP0	1	1 unit	41D	
4		8.5	7 ... 10	21-1JA20			5	3RA2220-1JH24-0AP0	1	1 unit	41D	
5.5		11.5	9 ... 12	21-1KA20			5	3RA2220-1KH24-0AP0	1	1 unit	41D	
7.5		15.5	10 ... 16	21-4AA20	26-2AP00		2	3RA2220-4AH26-0AP0	1	1 unit	41D	
7.5		15.5	13 ... 20	21-4BA20	27-2AP00		5	3RA2220-4BH27-0AP0	1	1 unit	41D	
11		22	16 ... 22	21-4CA20			2	3RA2220-4CH27-0AP0	1	1 unit	41D	
11		22	18 ... 25	21-4DA20			2	3RA2220-4DH27-0AP0	1	1 unit	41D	
15		28	23 ... 28	21-4NA20			2	3RA2220-4NH27-0AP0	1	1 unit	41D	
15	29 ⁵⁾	27 ... 32	21-4EA20			2	3RA2220-4EH27-0AP0	1	1 unit	41D		

Type of coordination "1" at I_q = 150 kA at 400 V (motor starter protector is compatible with type of coordination "2")

S00	For load feeders for lower outputs, see this table at type of coordination "2".											
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2AP02	11-2AA00	2	3RA2210-1FH15-2AP0	1	1 unit	41D	ToC 1
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 2913-1DB2	2	3RA2210-1GH15-2AP0	1	1 unit	41D	
	3	6.5	5.5 ... 8	11-1HA20			2	3RA2210-1HH15-2AP0	1	1 unit	41D	
	4	8.5	7 ... 10	11-1JA20	16-2AP02		2	3RA2210-1JH16-2AP0	1	1 unit	41D	
	5.5	11.5	9 ... 12	11-1KA20	17-2AP02		2	3RA2210-1KH17-2AP0	1	1 unit	41D	
	7.5	15.5	10 ... 16	11-4AA20	18-2AP02		2	3RA2210-4AH18-2AP0	1	1 unit	41D	

¹⁾ For auxiliary switches, see "Accessories" on page 8/44.
²⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.
³⁾ RS = assembly kit for reversing duty and busbar mounting.

⁴⁾ The RS assembly kit also includes the 3RA2911-1CA00 spacer for height compensation on AC contactors size S0 with spring-type terminals.
⁵⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

Load Feeders and Motor Starters for Use in the Control Cabinet

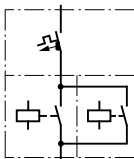
SIRIUS 3RA2 Load Feeders

3RA22 reversing starters for 60 mm busbars **IE3/IE4 ready**



3RA2210 3RA2220

Reversing duty



Rated control supply voltage 24 V DC With screw terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With contactor sizes S0 and S2, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC ²⁾	Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)	Motor starter protectors	+ 2 contactors	+ Link module + Assembly kit RS ³⁾ / Wiring kit		Screw terminals			
	kW	A	A			d	Article No.	Basic price per PU		

Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")

				3RV20	3RT20	3RA		ToC 2				
S00	0.06	0.2	0.14 ... 0.2	11-0BA10	15-1BB42	1921-1DA00	2	3RA2210-0BD15-2BB4 3RA2210-0CD15-2BB4 3RA2210-0DD15-2BB4 3RA2210-0ED15-2BB4 3RA2210-0FD15-2BB4 3RA2210-0GD15-2BB4 3RA2210-0HD15-2BB4 3RA2210-0JD15-2BB4 3RA2210-0KD15-2BB4 3RA2210-1AD15-2BB4 3RA2210-1BD15-2BB4 3RA2210-1CD15-2BB4 3RA2210-1DD15-2BB4 3RA2210-1ED15-2BB4	1	1 unit	41D	
	0.06	0.2	0.18 ... 0.25	11-0CA10		+ 2913-1DB1	2		1	1 unit	41D	
	0.09	0.3	0.22 ... 0.32	11-0DA10			2		1	1 unit	41D	
	0.09	0.3	0.28 ... 0.4	11-0EA10			2		1	1 unit	41D	
	0.12	0.4	0.35 ... 0.5	11-0FA10			2		1	1 unit	41D	
	0.18	0.6	0.45 ... 0.63	11-0GA10			2		1	1 unit	41D	
	0.18	0.6	0.55 ... 0.8	11-0HA10			2		1	1 unit	41D	
	0.25	0.85	0.7 ... 1	11-0JA10			2		1	1 unit	41D	
	0.37	1.1	0.9 ... 1.25	11-0KA10			2		1	1 unit	41D	
	0.55	1.5	1.1 ... 1.6	11-1AA10			2		1	1 unit	41D	
	0.75	1.9	1.4 ... 2	11-1BA10			2		1	1 unit	41D	
	0.75	1.9	1.8 ... 2.5	11-1CA10			2		1	1 unit	41D	
	1.1	2.7	2.2 ... 3.2	11-1DA10			2		1	1 unit	41D	
	1.5	3.6	2.8 ... 4	11-1EA10			2		1	1 unit	41D	
	S0	1.5	3.6	3.5 ... 5	11-1FA10	24-1BB40	2921-1BA00		2	3RA2220-1FD24-0BB4 3RA2220-1GD24-0BB4 3RA2220-1HD24-0BB4 3RA2220-1JD24-0BB4 3RA2220-1KD24-0BB4 3RA2220-4AD26-0BB4 3RA2220-4BD27-0BB4 3RA2220-4CD27-0BB4 3RA2220-4DD27-0BB4 3RA2220-4ND27-0BB4 3RA2220-4ED27-0BB4	1	1 unit
2.2		4.9	4.5 ... 6.3	11-1GA10		+ 2923-1DB1	2	1	1 unit		41D	
3		6.5	5.5 ... 8	11-1HA10			2	1	1 unit		41D	
4		8.5	7 ... 10	11-1JA10			2	1	1 unit		41D	
5.5		11.5	9 ... 12	11-1KA10			2	1	1 unit		41D	
7.5		15.5	10 ... 16	21-4AA10	26-1BB40		2	1	1 unit		41D	
7.5		15.5	13 ... 20	21-4BA10	27-1BB40		5	1	1 unit		41D	
11		22	16 ... 22	21-4CA10			2	1	1 unit		41D	
11		22	18 ... 25	21-4DA10			2	1	1 unit		41D	
15		28	23 ... 28	21-4NA10			2	1	1 unit		41D	
15		29 ⁴⁾	27 ... 32	21-4EA10			2	1	1 unit		41D	
S2		15	29	22 ... 32	32-4EA10	35-1NB30	2931-1AA00		Size S2 is only available for self-assembly.			
		18.5	35	28 ... 36	32-4PA10		+ 2933-1DB1					
		18.5	35	32 ... 40	32-4UA10							
		22	41	35 ... 45	32-4VA10	36-1NB30						
	22	41	42 ... 50	32-4WA10								
	30	55	49 ... 59	32-4XA10	37-1NB30							
	30	55	54 ... 65	32-4JA10								
	37 ⁵⁾	66	62 ... 73	32-4KA10	38-1NB30							

Type of coordination "1" at I_q = 150 kA at 400 V (motor starter protector is compatible with type of coordination "2")

S00	For load feeders for lower outputs, see this table at type of coordination "2".										ToC 1
S00	1.5	3.6	3.5 ... 5	11-1FA10	15-1BB42	1921-1DA00	2	3RA2210-1FD15-2BB4 3RA2210-1GD15-2BB4 3RA2210-1HD15-2BB4 3RA2210-1JD16-2BB4 3RA2210-1KD17-2BB4 3RA2210-4AD18-2BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA10		+ 2913-1DB1	2		1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA10			2		1	1 unit	41D
	4	8.5	7 ... 10	11-1JA10	16-1BB42		2		1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA10	17-1BB42		2		1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA10	18-1BB42		2		1	1 unit	41D

¹⁾ For auxiliary switches, see "Accessories" on page 8/44.

²⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

³⁾ RS = assembly kit for reversing duty and busbar mounting.

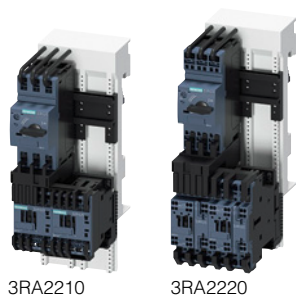
⁴⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

⁵⁾ Maximum permissible current setting at motor starter protector 65 A, as the maximum permissible current of the 3RA2931-1AA00 link module is 65 A.

Load Feeders and Motor Starters for Use in the Control Cabinet

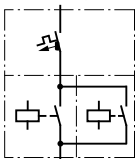
SIRIUS 3RA2 Load Feeders

IE3/IE4 ready 3RA22 reversing starters for 60 mm busbars



3RA2210 3RA2220

Reversing duty



Rated control supply voltage 24 V DC With spring-type terminals

- With busbar adapter and device holder (included in the scope of supply)
- The motor starter protector and contactor are mechanically and electrically connected by means of the link module.
- Auxiliary switches¹⁾ on the motor starter protector and the contactor can be easily fitted thanks to the modular system.
- With the contactor S0, an integrated NO contact is still available for free use.

Size	Standard three-phase motor 4-pole at 400 V AC ²⁾		Adjustable current response value of the inverse-time delayed overload release	Comprising the following single devices			SD	Fuseless load feeder	PU (UNIT, SET, M)	PS*	PG
	Standard output P	Motor current I (guide value)		Motor starter protectors	+ 2 contactors	+ Link module + Assembly kit RS ³⁾ /Wiring kit					
	kW	A	A				d	Article No.	Basic price per PU		

Type of coordination "2" at I_q = 150 kA at 400 V (also compatible with type of coordination "1")

	3RV20			3RT20		3RA29			ToC 2		
S00	0.06	0.2	0.14 ... 0.2	11-0BA20	15-2BB42	11-2AA00	2	3RA2210-0BH15-2BB4	1	1 unit	41D
	0.06	0.2	0.18 ... 0.25	11-0CA20		+ 2913-1DB2	2	3RA2210-0CH15-2BB4	1	1 unit	41D
	0.09	0.3	0.22 ... 0.32	11-0DA20			2	3RA2210-0DH15-2BB4	1	1 unit	41D
	0.09	0.3	0.28 ... 0.4	11-0EA20			2	3RA2210-0EH15-2BB4	1	1 unit	41D
	0.12	0.4	0.35 ... 0.5	11-0FA20			2	3RA2210-0FH15-2BB4	1	1 unit	41D
	0.18	0.6	0.45 ... 0.63	11-0GA20			2	3RA2210-0GH15-2BB4	1	1 unit	41D
	0.18	0.6	0.55 ... 0.8	11-0HA20			2	3RA2210-0HH15-2BB4	1	1 unit	41D
	0.25	0.85	0.7 ... 1	11-0JA20			2	3RA2210-0JH15-2BB4	1	1 unit	41D
	0.37	1.1	0.9 ... 1.25	11-0KA20			2	3RA2210-0KH15-2BB4	1	1 unit	41D
	0.55	1.5	1.1 ... 1.6	11-1AA20			2	3RA2210-1AH15-2BB4	1	1 unit	41D
	0.75	1.9	1.4 ... 2	11-1BA20			2	3RA2210-1BH15-2BB4	1	1 unit	41D
	0.75	1.9	1.8 ... 2.5	11-1CA20			2	3RA2210-1CH15-2BB4	1	1 unit	41D
	1.1	2.7	2.2 ... 3.2	11-1DA20			2	3RA2210-1DH15-2BB4	1	1 unit	41D
	1.5	3.6	2.8 ... 4	11-1EA20			2	3RA2210-1EH15-2BB4	1	1 unit	41D
S0	1.5	3.6	3.5 ... 5	21-1FA20	24-2BB40	21-2AA00	5	3RA2220-1FH24-0BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	21-1GA20		+ 2923-1DB2	5	3RA2220-1GH24-0BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	21-1HA20			5	3RA2220-1HH24-0BB4	1	1 unit	41D
	4	8.5	7 ... 10	21-1JA20			5	3RA2220-1JH24-0BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	21-1KA20			5	3RA2220-1KH24-0BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	21-4AA20	26-2BB40		2	3RA2220-4AH26-0BB4	1	1 unit	41D
	7.5	15.5	13 ... 20	21-4BA20	27-2BB40		5	3RA2220-4BH27-0BB4	1	1 unit	41D
	11	22	16 ... 22	21-4CA20			2	3RA2220-4CH27-0BB4	1	1 unit	41D
	11	22	18 ... 25	21-4DA20			2	3RA2220-4DH27-0BB4	1	1 unit	41D
	15	28	23 ... 28	21-4NA20			2	3RA2220-4NH27-0BB4	1	1 unit	41D
	15	29 ⁴⁾	27 ... 32	21-4EA20			2	3RA2220-4EH27-0BB4	1	1 unit	41D

Type of coordination "1" at I_q = 150 kA at 400 V (motor starter protector is compatible with type of coordination "2")

	For load feeders for lower outputs, see this table at type of coordination "2".							ToC 1			
S00	1.5	3.6	3.5 ... 5	11-1FA20	15-2BB42	11-2AA00	2	3RA2210-1FH15-2BB4	1	1 unit	41D
	2.2	4.9	4.5 ... 6.3	11-1GA20		+ 2913-1DB2	2	3RA2210-1GH15-2BB4	1	1 unit	41D
	3	6.5	5.5 ... 8	11-1HA20			2	3RA2210-1HH15-2BB4	1	1 unit	41D
	4	8.5	7 ... 10	11-1JA20	16-2BB42		2	3RA2210-1JH16-2BB4	1	1 unit	41D
	5.5	11.5	9 ... 12	11-1KA20	17-2BB42		2	3RA2210-1KH17-2BB4	1	1 unit	41D
	7.5	15.5	10 ... 16	11-4AA20	18-2BB42		2	3RA2210-4AH18-2BB4	1	1 unit	41D

¹⁾ For auxiliary switches, see "Accessories" on page 8/44.

²⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

³⁾ RS = assembly kit for reversing duty and busbar mounting.

⁴⁾ Suitable for use with IE3/IE4 motors up to a starting current of 256 A. For higher starting currents we recommend using size S2.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

Overview

The accessories listed here are parts and add-ons for the 3RA2 direct-on-line and reversing starters as well as components for the customer assembly of fuseless load feeders.

Selection and ordering data

Accessories for motor starter protectors



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E

Version	For motor starter protectors	SD	Screw terminals	SD	Spring-type terminals	
	Size	d	Article No.	Price per PU	Article No.	Price per PU

Auxiliary switches¹⁾

Transverse auxiliary switches

For mounting on the front

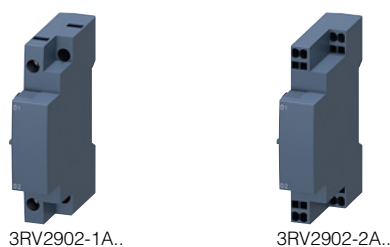
1 CO	S00 ... S3	▶	3RV2901-1D 3RV2901-1E 3RV2901-1F	▶	-- 3RV2901-2E 3RV2901-2F
1 NO + 1 NC		▶			
2 NO		▶			

Lateral auxiliary switches

For mounting on the left

1 NO + 1 NC	S00 ... S3	▶	3RV2901-1A	▶	3RV2901-2A
-------------	------------	---	------------	---	------------

¹⁾ Each motor starter protector can be fitted with one transverse and one lateral auxiliary switch. The lateral auxiliary switches 2 NO + 2 NC are used without transverse auxiliary switches.



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41E

Rated control supply voltage U_s				For motor starter protectors	SD	Screw terminals	SD	Spring-type terminals	
AC 50 Hz	AC 60 Hz	AC 50/60 Hz	AC/DC 50/60 Hz, DC 5 s ON period ²⁾	Size	d	Article No.	Price per PU	Article No.	Price per PU

Auxiliary releases for motor starter protectors³⁾

Undervoltage release

230	240	--	--	S00 ... S3	▶	3RV2902-1AP0	▶	3RV2902-2AP0
-----	-----	----	----	------------	---	--------------	---	--------------

Shunt release

--	--	210 ... 240	190 ... 330	S00 ... S3	▶	3RV2902-1DP0	▶	3RV2902-2DP0
----	----	-------------	-------------	------------	---	--------------	---	--------------

- ¹⁾ The voltage range is valid for 100% (infinite) ON period. The response voltage is 0.9 of the lower limit of the voltage range.
- ²⁾ The voltage range is valid for 5 s ON period at 50/60 Hz AC and DC. The response voltage lies at 0.85 of the lower limit of the voltage range.
- ³⁾ One auxiliary release can be mounted on the right per motor starter protector (does not apply to 3RV21 motor starter protectors with overload relay function).








For the complete range of accessories for the motor starter protectors see [page 7/43 onwards](#).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

Accessories for contactors

For contactors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size		d					
Auxiliary switch blocks for snapping onto the front of contactors							
	Cable entry from below S00 ... S3	1-pole - 1 NO - 1 NC	▶ 3RH2911-1BA10 ▶ 3RH2911-1BA01		1 1	1 unit 1 unit	41B 41B
	S00 ... S3	2-pole - 1 NO + 1 NC - 2 NO	▶ 3RH2911-1MA11 ▶ 3RH2911-1MA20		1 1	1 unit 1 unit	41B 41B
Auxiliary switch blocks for contactors, for lateral mounting							
	S00 S00 S00 S0/S3 S0/S3 S0/S3	2 NC 1 NO + 1 NC 2 NO 2 NC 1 NO + 1 NC 2 NO	▶ 3RH2911-1DA02 ▶ 3RH2911-1DA11 ▶ 3RH2911-1DA20 ▶ 3RH2921-1DA02 ▶ 3RH2921-1DA11 ▶ 3RH2921-1DA20		1 1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit 1 unit	41B 41B 41B 41B 41B 41B
	S00 S00 S00 S0/S3 S0/S3 S0/S3	2 NC 1 NO + 1 NC 2 NO 2 NC 1 NO + 1 NC 2 NO	▶ 3RH2911-2DA02 ▶ 3RH2911-2DA11 ▶ 3RH2911-2DA20 ▶ 3RH2921-2DA02 ▶ 3RH2921-2DA11 ▶ 3RH2921-2DA20		1 1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit 1 unit	41B 41B 41B 41B 41B 41B
Motor feeder connectors for contactors with screw terminals (can only be used for direct-on-line starters)							
	Adapters for contactor Ambient temperature $T_{U \max.} = 60 \text{ °C}$ S00	Rated operational current I_e at AC-3/400 V: 20 A	▶ 3RT1916-4RD01		1	1 unit	41B
	S0	Rated operational current I_e at AC-3/400 V: 25 A	▶ 3RT1926-4RD01		1	1 unit	41B
	Motor feeder connectors for contactors S00, S0	--	▶ 3RT1900-4RE01		1	1 unit	41B

For the complete range of accessories for the 3RT contactors, see [page 3/76 onwards](#).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

For con- tactors	Version	Rated control supply voltage		SD	Article No. ²⁾	Price per PU	PU (UNIT, SET, M)	PS*	PG
		AC operation	DC operation						
Type		V AC	V DC	d					

Surge suppressors without LED for contactors (also for spring-type terminals)

Size S00

For plugging onto the front side of the contactors (with or without auxiliary switch blocks)



3RT2916-1B.00

3RT2.1	Varistors	24 ... 48	24 ... 70	▶	3RT2916-1BB00		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT2916-1BD00		1	1 unit	41B
3RT2.1	RC element	24 ... 48	24 ... 70	▶	3RT2916-1CB00		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT2916-1CD00		1	1 unit	41B
3RT2.1	Noise suppression diode	--	12 ... 250	▶	3RT2916-1DG00		1	1 unit	41B
3RT2.1	Diode assemblies (diode and Zener diode) for DC operation	--	12 ... 250	▶	3RT2916-1EH00		1	1 unit	41B

Size S0

For plugging onto the front side of the contactors (before installing the auxiliary switch block)



3RT2926-1E.00

3RT2.2	Varistors²⁾	24 ... 48	24 ... 70	▶	3RT2926-1BB00		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT2926-1BD00		1	1 unit	41B
3RT2.2	RC element	24 ... 48	24 ... 70	▶	3RT2926-1CB00		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT2926-1CD00		1	1 unit	41B
3RT2.2	Diode assemblies for DC operation	--	24	▶	3RT2926-1ER00		1	1 unit	41B
		--	30 ... 250	▶	3RT2926-1ES00		1	1 unit	41B

Sizes S2 and S3

For plugging onto the front side of the contactors (before installing the auxiliary switch block)



3RT2936-1B.00

3RT2.3, 3RT2.4	Varistors²⁾³⁾	24 ... 48	--	▶	3RT2936-1BB00		1	1 unit	41B
		127 ... 240	--	▶	3RT2936-1BD00		1	1 unit	41B
3RT2.3	RC element	24 ... 48	24 ... 70	▶	3RT2936-1CB00		1	1 unit	41B
		127 ... 240	150 ... 250	▶	3RT2936-1CD00		1	1 unit	41B
3RT2.4	RC element	24 ... 48	24 ... 70	5	3RT2946-1CB00		1	1 unit	41B
		127 ... 240	150 ... 250	5	3RT2946-1CD00		1	1 unit	41B
3RT2.3, 3RT2.4	Diode assemblies³⁾ for DC operation	--	24	▶	3RT2936-1ER00		1	1 unit	41B
		--	30 ... 250	5	3RT2936-1ES00		1	1 unit	41B

¹⁾ Can be used for AC operation for 50/60 Hz.
Other voltages on request.

²⁾ The varistor is already integrated on the AC/DC contactors.

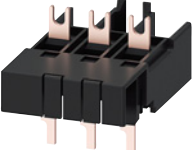




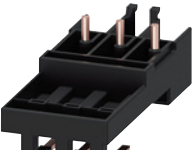
³⁾ Surge suppressors 3RT2936-1B/-1E can be used for 3RT2.4 contactors as from product version E03.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

Accessories for the customer assembly of fuseless load feeders

	For motor starter protectors	For contactors	Actuating voltage of contactor	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
	Size	Size		d						
Link modules from motor starter protector to contactor¹⁾										
 3RA2921-1AA00	Electrical and mechanical link between motor starter protector and contactor				Screw terminals 					
	Single-unit packaging									
	S00/S0	S00	AC and DC	▶	3RA1921-1DA00		1	1 unit	41B	
	S00/S0	S0	AC	▶	3RA2921-1AA00		1	1 unit	41B	
	S00/S0	S0	DC	▶	3RA2921-1BA00		1	1 unit	41B	
	S2	S2	AC and DC	▶	3RA2931-1AA00		1	1 unit	41B	
	S3	S3	AC and DC	▶	3RA1941-1AA00		1	1 unit	41B	
	Multi-unit packaging									
	S00/S0	S00	AC and DC	▶	3RA1921-1D		1	10 units	41B	
	S00/S0	S0	AC	▶	3RA2921-1A		1	10 units	41B	
S00/S0	S0	DC	▶	3RA2921-1B		1	10 units	41B		
S2	S2	AC and DC	▶	3RA2931-1A		1	5 units	41B		
S3	S3	AC and DC	▶	3RA1941-1A		1	5 units	41B		
 3RA2931-1AA00	Electrical and mechanical link between motor starter protector and contactor				Spring-type terminals 					
	Single-unit packaging									
	S00	S00	AC and DC	▶	3RA2911-2AA00		1	1 unit	41B	
	S0	S0	AC ²⁾ and DC	▶	3RA2921-2AA00		1	1 unit	41B	
	Multi-unit packaging									
	S00	S00	AC and DC	▶	3RA2911-2A		1	10 units	41B	
	S0	S0	AC ²⁾ and DC	▶	3RA2921-2A		1	10 units	41B	
	Hybrid link modules from motor starter protector to contactor³⁾									
	 3RA2911-2FA00	Electrical and mechanical link between motor starter protector with screw terminals and contactor with spring-type terminals								
		Single-unit packaging								
S00		S00	AC and DC	▶	3RA2911-2FA00		1	1 unit	41B	
S0		S0	AC ²⁾ and DC	▶	3RA2921-2FA00		1	1 unit	41B	
Multi-unit packaging										
S00		S00	AC and DC	▶	3RA2911-2F		1	10 units	41B	
S0	S0	AC ²⁾ and DC	▶	3RA2921-2F		1	10 units	41B		
 3RA2921-2FA00										

1) The link modules from motor starter protector to contactor cannot be used for the 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/circuit breakers.

2) A spacer for height compensation on AC contactors, size S0, is optionally available, see page 8/53.

3) The hybrid link modules from motor starter protector to contactor cannot be used for the 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV27 and 3RV28 motor starter protectors/circuit breakers. They are only suitable for constructing direct-on-line starters.

Note:

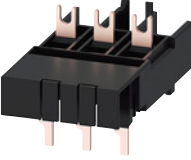

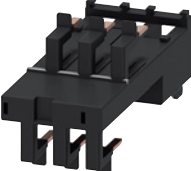

Link modules can be used in

- Sizes S00 and S0 up to max. 32 A
- Size S2 up to max. 65 A

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

	For motor starter protectors	For soft starters	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
	Size	Size	d						
Link modules from motor starter protector to soft starter¹⁾									
 <p>3RA2921-1BA00</p>	Electrical and mechanical link between motor starter protector and soft starter			Screw terminals 					
	Single-unit packaging								
	S00/S0	S00/S0	2	3RA2921-1BA00		1	1 unit	41B	
	S2 ²⁾	S2	▶	3RA2931-1AA00		1	1 unit	41B	
	S3 ³⁾	S3	▶	3RA1941-1AA00		1	1 unit	41B	
	Multi-unit packaging								
	S00/S0	S00/S0	2	3RA2921-1B		1	10 units	41B	
S2 ²⁾	S2	▶	3RA2931-1A		1	5 units	41B		
S3 ³⁾	S3	▶	3RA1941-1A		1	5 units	41B		
 <p>3RA2921-2GA00</p>	Electrical and mechanical link between motor starter protector and soft starter			Spring-type terminals 					
	Single-unit packaging								
	S00	S00	2	3RA2911-2GA00		1	1 unit	41B	
S0	S0	2	3RA2921-2GA00		1	1 unit	41B		

¹⁾ The link modules from motor starter protector to soft starter and motor starter protector to solid-state contactor cannot be used for the 3RV2.21-4PA1., 3RV2.21-4FA1., 3RV2.31-4K.1., 3RV2.31-4R.1., 3RV2.32-4K.1., 3RV2.32-4R.1., 3RV27 and 3RV28 motor starter protectors/circuit breakers.

²⁾ To assemble the feeder between a motor starter protector and a soft starter in size S2, the 3RA2932-1CA00 standard mounting rail adapter must be used.

³⁾ It is only permitted to assemble the feeder between the motor starter protector and the soft starter in size S3 on a mounting plate.

Note:

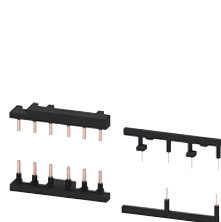
Link modules can be used in

- Sizes S00 and S0 up to max. 32 A
- Size S2 up to max. 65 A

Load Feeders and Motor Starters for Use in the Control Cabinet SIRIUS 3RA2 Load Feeders

Accessories

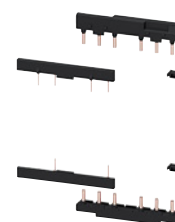
PU (UNIT, SET, M) = 1
 PS* = 1 unit (unless otherwise specified)
 PG = 41B



3RA2923-2AA1



3RA2923-2AA2



3RA2933-2AA1

For con- tactors	Size	Version	SD	Screw terminals		Spring-type terminals	
				Article No.	Price per PU	Article No.	Price per PU
Type			d				
Assembly kits for reversing contactor assemblies for making 3-pole contactor assemblies							
3RT201	S00-S00	The assembly kit contains: Mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom • For main, auxiliary and control circuits		3RA2913-2AA1		3RA2913-2AA2	
3RT202	S0-S0	The assembly kit contains: Mechanical interlock, two connecting clips for two contactors, wiring modules on the top and bottom • For main, auxiliary and control circuits ¹⁾ • Only for main circuit ²⁾		3RA2923-2AA1 --		-- 3RA2923-2AA2	
3RT203	S2-S2	The assembly kit contains: Two connectors for two contactors, wiring modules on the top and bottom (3RA2934-2B mechanical interlock must be ordered separately, see page 3/114) • For main and auxiliary circuits • Only for main circuit ³⁾		3RA2933-2AA1 --	5	-- 3RA2933-2AA2	
3RT204	S3-S3	The assembly kit contains: Two connectors for two contactors, wiring modules on the top and bottom (3RA2934-2B mechanical interlock must be ordered separately, see page 3/114) • For main and auxiliary circuits • Only for main circuit ³⁾	2	3RA2943-2AA1 --	2	-- 3RA2943-2AA2	

¹⁾ Use of the 3RA2923-2AA1 assembly kit in conjunction with the 3RT202-.....-3MA0 contactors is limited because the auxiliary switches in the basic unit are not allowed to be used on account of the permanently mounted auxiliary switch block.

²⁾ Version in size S0 with spring-type terminals:
Only the wiring modules for the main circuit are included.
No connecting clips are included for the auxiliary and control circuit.

³⁾ Version in sizes S2 and S3 with spring-type terminals in the auxiliary and control circuits: Only the wiring modules for the main circuit are included.
A cable set is included for the auxiliary circuit.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

For contactors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size		d					

Safety main circuit connectors for two contactors



3RA2916-1A

switches two contactors in series

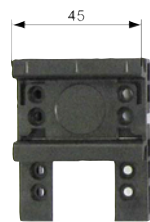
Screw terminals



S00		2	3RA2916-1A		1	1 unit	41B
S0		2	3RA2926-1A		1	1 unit	41B
S2		2	3RA2936-1A		1	1 unit	41B

For motor starter protectors	For contactors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					

Mounting rails for mounting contactors for the customer assembly of 3RA21 load feeders with busbar adapters for 60 mm systems



8US1998-7CB45

For the discrete configuration of direct-on-line starters a further mounting rail is needed for the contactor in addition to the mounting rail existing on the busbar adapter.

For pushing onto the device adapter, including fixing screws

--	S0	2	8US1998-7CB45		1	10 units	140
----	----	---	----------------------	--	---	----------	-----

Standard mounting rail adapters



3RA2922-1AA00

For mechanical fixing of motor starter protector and contactor; for snapping onto standard mounting rail or for screw fixing

S00, S0	S00, S0	Single-unit packaging	2	3RA2922-1AA00		1	1 unit	41B
S00, S0	S00, S0	Multi-unit packaging	2	3RA2922-1A		1	5 units	41B
S2	S2	Single-unit packaging	2	3RA2932-1AA00		1	1 unit	41B
S2	S2	Multi-unit packaging	2	3RA2932-1A		1	5 units	41B
S3	S3	Single-unit packaging	2	3RA2942-1AA00		1	1 unit	41B
S3	S3	Multi-unit packaging	2	3RA2942-1A		1	5 units	41B



3RA2932-1CA00

For mechanical fixing of motor starter protector and soft starter; for snapping onto standard mounting rail or for screw fixing

S2	S2	Single-unit packaging	2	3RA2932-1CA00		1	1 unit	41B
----	----	------------------------------	---	----------------------	--	---	--------	-----

Side modules for standard mounting rail adapters



3RA2902-1B

S00 ... S3	S00 ... S3	For standard mounting rail adapters 10 mm wide, 96 mm long. For widening standard mounting rail adapters when using lateral auxiliary switches, 2 units required	2	3RA2902-1B		1	10 units	41B
------------	------------	--	---	-------------------	--	---	----------	-----

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

Busbar adapters



8US1251-5DS10





8US1251-5DT11



8US1250-5AS10



8US1250-5AT10

For load feeders	Rated current	Connect- ing cable	Adapter length	Adapter width	Rated voltage	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	A	AWG	mm	mm	V	d					
Busbar adapters for 60 mm systems											
For flat copper profiles according to DIN 46433 Width: 12 mm and 30 mm Thickness: 5 mm and 10 mm and for T and double-T special profiles											
• For load feeders with screw terminals											
							Screw terminals 				
S00/S0	25	12	200	45	690	2	8US1251-5DS10		1	1 unit	14O
S00 (motor starter protector)/S0 (contactor)	25	12	260	45	690	2	8US1251-5DT10		1	1 unit	14O
S0	32	10	200	45	690	3	8US1251-5NS10		1	1 unit	14O
S0	32	10	260	45	690	2	8US1251-5NT10		1	1 unit	14O
S2	80	4	260	55	690	5	8US1261-6MT10		1	1 unit	14O
S2 ¹⁾	80	4	260	118	690	5	8US1211-6MT10		1	1 unit	14O
• For load feeders with spring-type terminals											
							Spring-type terminals 				
S00	25	12	200	45	690	2	8US1251-5DS11		1	1 unit	14O
S00/S0	25	12	260	45	690	2	8US1251-5DT11		1	1 unit	14O
S0	32	10	200	45	690	5	8US1251-5NS11		1	1 unit	14O
S0	32	10	260	45	690	2	8US1251-5NT11		1	1 unit	14O

Accessories²⁾

Device holders	--	--	200	45	--	2	8US1250-5AS10		1	1 unit	14O
For lateral attachment to busbar adapters	--	--	260	45	--	2	8US1250-5AT10		1	1 unit	14O
Side modules	--	--	200	9	--	2	8US1998-2BJ10		1	10 units	14O
For widening busbar adapters											
Vibration and shock kits											
For high vibration and shock loads											
S00/S0	--	--	--	--	--	2	8US1998-1CA10		1	2 units	14O
S2	--	--	--	--	--	5	8US1998-1DA10		1	1 unit	14O



¹⁾ For the assembly of feeders for reversing starters comprising a motor starter protector and two contactors.

²⁾ For additional mounting rails for busbar adapters, see page 8/50.




Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

For motor starter protectors	For contactors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Size		d					
RS assembly kits for reversing duty and 60-mm busbar systems								
RS assembly kits for screw terminals				Screw terminals 				
S00, S0	S00	Comprising:	2	3RA2913-1DB1		1	1 unit	41B
S0	S0	• Wiring kit for main and auxiliary circuit	2	3RA2923-1DB1		1	1 unit	41B
S00	S0	• Busbar adapters • Device holders • Two connecting wedges • Mechanical interlocks • Two connecting clips for two contactors • Fixing accessories	2	3RA2923-1EB1		1	1 unit	41B
Link modules must be ordered separately.								
S2	S2	Comprising:	2	3RA2933-1DB1		1	1 unit	41B
• Wiring kit for main and auxiliary circuit • Busbar adapters • Mechanical interlocks • Two connectors for two contactors • Fixing accessories Link modules must be ordered separately.								
RS assembly kits for spring-type terminals				Spring-type terminals 				
S00	S00	Comprising:	2	3RA2913-1DB2		1	1 unit	41B
S0	S0	• Wiring kit for main and auxiliary circuit	2	3RA2923-1DB2		1	1 unit	41B
• Busbar adapters • Device holders • Two connecting wedges • Mechanical interlocks • Two connectors for two contactors • Two spacers (for size S0 only) • Fixing accessories Link modules must be ordered separately.								



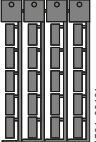
For graphic overviews for RS assembly kits, [see page 8/15 onwards](#).

For motor starter protectors	For contactors	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Size		d					
Connecting wedges								
		For mechanical linking of busbar adapters and device holders or of standard mounting rail adapters (2 units per combination required)	2	8US1998-1AA00		100	100 units	140
8US1998-1AA00								
Spacers								
		For height compensation on AC contactors size S0 with spring-type terminals		Spring-type terminals 				
S0	S0	Single-unit packaging	2	3RA2911-1CA00		1	1 unit	41B
S0	S0	Multi-unit packaging	2	3RA2911-1C		1	5 units	41B
3RA2911-1CA00								

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Tools for opening spring-type terminals						
 3RA2908-1A	Screwdrivers For all SIRIUS devices with spring-type terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	Spring-type terminals 				
		3RA2908-1A		1	1 unit	41B
Blank labels						
 3RT2900-1SB20	Unit labeling plates¹⁾ For SIRIUS devices 20 mm x 7 mm, titanium gray	3RT2900-1SB20		100	340 units	41B
		Configuration Manual "Load Feeders – Configuring the SIRIUS Modular System" Configuration manual for new combinations of load feeders Information and assignment tables for combinations for self-assembly; For the Configuration Manual, see https://support.industry.siemens.com/cs/ww/en/view/39714188 .				

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/16).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA2 Load Feeders

3RV29 infeed system for load feeders

Overview

Types of infeed for 3RA2 fuseless load feeders

On the whole four different power infeed possibilities are available:

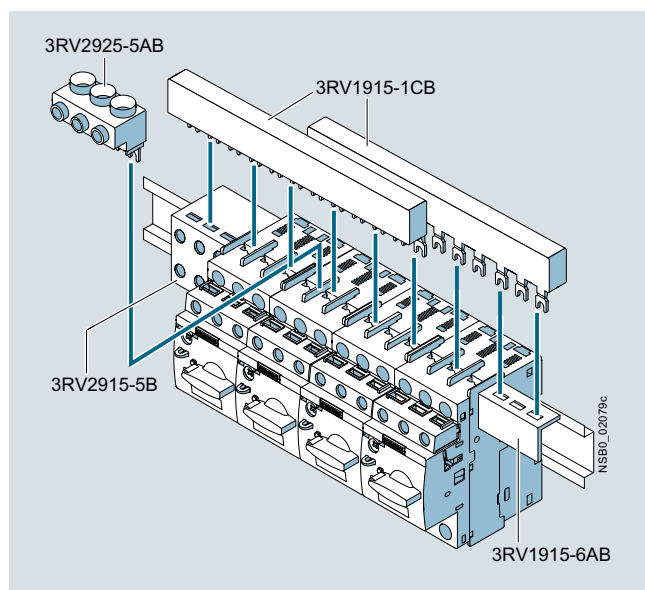
- Parallel wiring
- Use of three-phase busbars (combination with SIRIUS motor starter protectors and contactors possible)
- 8US busbar adapters
- SIRIUS 3RV29 infeed systems

Insulated three-phase busbar system

Three-phase busbar systems provide an easy, time-saving and clearly arranged means of feeding 3RA2 load feeders with screw terminals. Different versions are available for sizes S00 and S0 and can also be used for the various different types of motor starter protectors.

The busbars are suitable for between two and five feeders. However, any kind of extension is possible by clamping the tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last motor starter protector.

A combination of feeders of different sizes is possible with sizes S00 and S0. Connecting pieces are available for this purpose. The motor starter protectors are supplied by appropriate infeed terminals.



SIRIUS three-phase busbar system size S00/S0

The three-phase busbar systems are finger-safe. They are designed for any short-circuit stress which can occur at the output side of connected motor starter protectors.

The three-phase busbar systems can also be used to construct "Type E Starters" of size S0 or S2 according to UL/CSA. However, special infeed terminals must be used for this purpose; see page 7/48.

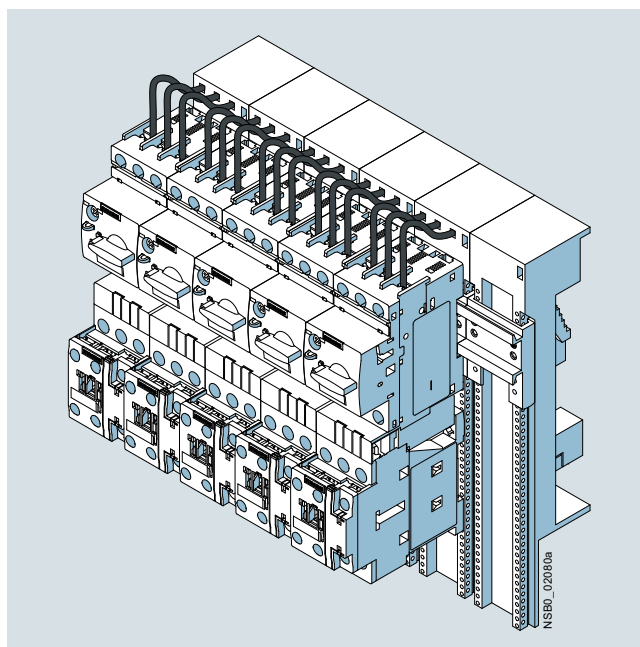
8US busbar adapters for 60 mm systems

The load feeders are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs.

The busbar adapters for busbar systems with 60 mm center-to-center clearance are suitable for copper busbars with a width of 12 to 30 mm. The busbars can be 4 to 5 mm or 10 mm thick.

The feeders are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

For "Selection and ordering data", see page 8/52.



SIRIUS load feeders with busbar adapters snapped onto busbars

SIRIUS 3RV29 infeed system

The 3RV29 infeed system is a convenient means of energy supply and distribution for a group of several motor starter protectors or complete load feeders with a screw or spring-type terminal up to size S0.

The system is based on a basic module complete with a lateral incoming unit (three-phase busbar with infeed) which has two slots.

Expansion modules are available for extending the system (three-phase busbars for system expansion).

For the 3RV29 infeed system, see page 7/62.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Overview

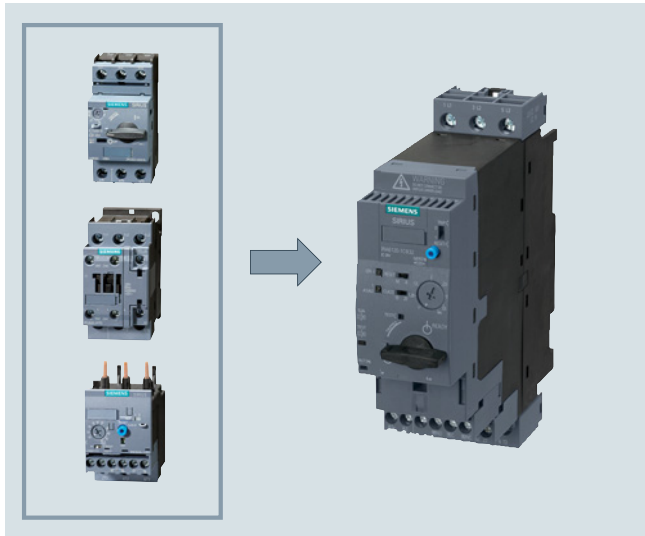
3RA6 fuseless compact starters and infeed system for 3RA6



3RA62 reversing starter

Integrated functionality

The SIRIUS 3RA6 compact starters are a generation of special load feeders with the integrated functionality of a motor starter protector, contactor and electronic overload relay. In addition, various functions of optional mountable accessories (e.g. auxiliary switches, surge suppressors) are already integrated in the SIRIUS compact starter.



3RA6 compact starters with the integrated functionality of a motor starter protector, contactor and electronic overload relay.

Applications

SIRIUS compact starters can be used wherever standard three-phase motors or resistive loads up to 32 A (approx. 15 kW/400 V) are directly started or switched.

The compact starters are not suitable for the protection of DC loads.

Approvals according to IEC, UL, CSA and CCC standards have been issued for the compact starters.

More information

Homepage, see www.siemens.com/compactstarter

Industry Mall, see www.siemens.com/product?3RA68

Online configurator, see www.siemens.com/sirius/configurators

Very high operational reliability

The high short-circuit breaking capacity and defined shut-down when the end of service life is reached mean that the SIRIUS compact starter achieves a very high level of operational reliability that would otherwise have only been possible with considerable additional outlay. This sets it apart from devices with similar functionality.

Safe disconnection

The auxiliary switches (NC contacts) of the 3RA6 compact starters are designed as mirror contacts. This enables their use for safe disconnection – e.g. EMERGENCY STOP up to SIL 1 (IEC 62061) or PL c (ISO 13849-1) or, if used in conjunction with an additional infeed contactor, up to SIL 3 (IEC 62061) or PL e (ISO 13849-1).

Communications integration through AS-Interface

To enable communications integration through AS-Interface there is an AS-i add-on module available in several versions for mounting instead of the control circuit terminals on the SIRIUS compact starter.

The design of the AS-i add-on module permits a group of up to 62 feeders with a total of four cables to be connected to the control system. This reduces wiring work considerably compared to the parallel wiring method.

Communications integration using IO-Link

Up to four compact starters in IO-Link version (reversing and direct-on-line starters) can be connected together and conveniently linked to the IO-Link master through a standardized IO-Link connection.

The IO-Link connection enables a high density of information in the local range.

For details of the communication connection using IO-Link, see [page 2/97 onwards](#).

The diagnostics data of the process collected by the 3RA6 compact starter, e.g. short circuit, end of service life, limit position, etc., are not only indicated on the compact starter itself but also transmitted to the higher-level control system through IO-Link.

Thanks to the optionally available operator panel, which can be installed in the control cabinet door, it is easy to control the 3RA6 compact starters with IO-Link from the control cabinet door.

Permanent wiring/easy replacement

Using the SIRIUS infeed system for 3RA6 (see [page 8/78](#)), it is possible to carry out the wiring in advance without a compact starter having to be connected.

A compact starter is very easily replaced simply by pulling it out of the device without disconnecting the wiring.

Even with screw connections or mounting on a standard mounting rail there is no need to disconnect any wiring (on account of the removable main and control circuit terminals) in order to replace a compact starter.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Consistent solution from the infeed to the motor feeder

The SIRIUS infeed system for 3RA6 with integrated PE bar is offered as a user-friendly possibility of feeding in summation currents up to 100 A with a maximum conductor cross-section of 70 mm² and connecting the motor cable directly without additional intermediate terminals.

Screw and spring-type terminals

The SIRIUS compact starters and the infeed system for 3RA6 are available with screw and spring-type terminals.



Screw terminals



Spring-type terminals

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

System configurator for engineering

A free system configurator is available to reduce further the amount of engineering work for selecting the required compact starters and matching infeed.

Use of load feeders in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS 3RA6 compact starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, [see Application Manual](#).

For more information, [see page 1/7](#).

Types of infeed for the 3RA6 fuseless compact starters

On the whole four different infeed possibilities are available:

- Parallel wiring
- Use of three-phase busbars (combination with SIRIUS motor starter protectors and SIRIUS contactors possible)
- 8US busbar adapters
- SIRIUS infeed system for 3RA6 ([see page 8/78](#))

To comply with the clearance and creepage distances demanded according to UL 508 there are the following infeed possibilities:

Type of infeed	Infeed terminal (according to UL 508, type E)	Type
Parallel wiring	Terminal block for "Self-Protected Combination Motor Controller (Type E)"	3RV2928-1H
Three-phase busbars	Three-phase infeed terminal for constructing "Type E Starters", UL 508	3RV2925-5EB
Infeed system for 3RA6	Infeed on left, 50/70 mm ² screw terminal with 3 sockets, outgoing terminal with screw/spring-type terminals, including PE bar	3RA6813-8AB (screw terminals), 3RA6813-8AC (spring-type terminals)

SIRIUS 3RA6 compact starters

SIRIUS 3RA6 compact starters are universal motor feeders according to IEC 60947-6-2. As control and protective switching devices (CPS) they can connect, convey and disconnect the thermal, dynamic and electrical loads from short-circuit currents up to $I_{cs} = 53$ kA, i.e. they are practically weld-free. They combine the functions of a motor starter protector, a contactor and an electronic overload relay in one enclosure. 45-mm-wide direct-on-line starters and 90-mm-wide reversing starters are available as variants.

The reversing starter version comes with not only an internal electrical interlock but also with a mechanical interlock to prevent simultaneous actuation of both directions of rotation.

The compact starters have isolating features in accordance with IEC 60947.2 and can be used as disconnecter units (main control switch according to EN 60204 or VDE 0113). Isolation is effected by moving the handle into the "OFF" position; disconnection by means of the control contacts is not enough.

3RA6 fuseless compact starters are available in five current setting ranges. The 3RA61 and 3RA62 have two control voltage ranges (AC/DC), and the 3RA64 and 3RA65 have one control voltage range (DC):

Current setting range	At 400 V AC for three-phase motors Standard output P	Rated control supply voltage for	
		3RA61, 3RA62 compact starters	3RA64, 3RA65 compact starters for IO-Link
A	kW	V AC/DC	V DC
0.1 ... 0.4	0.09	24	24
0.32 ... 1.25	0.37	110 ... 240	
1 ... 4	1.5		
3 ... 12	5.5		
8 ... 32	15		

Notes:

The 3RA2 load feeders can be used for fuseless load feeders > 32 A up to 65 A. Load feeders in size S3 up to 100 A are available for self-assembly ([see also page 8/4](#)).

The SENTRON 3VL circuit breakers and the SIRIUS 3RT contactors can be used for fuseless load feeders > 100 A.

Operating conditions

The SIRIUS 3RA6 compact starters are suitable for use in any climate. They are intended for use in enclosed rooms in which no severe operating conditions (such as dust, caustic vapors, hazardous gases) prevail. Suitable covers must be provided for installation in dusty and damp locations.

The SIRIUS compact starters are generally designed to degree of protection IP20. The permissible ambient temperature during operation is -20 to +60 °C. The rated short-circuit current I_{CS} according to IEC 60947-6-2 is 53 kA at 400 V.

Note:

The maximum permissible short-circuit currents of the device versions for the various forms of power supply and voltages are available on request from Technical Support:
<https://support.industry.siemens.com/My/ww/en/requests>

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Overload tripping times

The tripping time in the event of overload can be set on the device to normal starting conditions (CLASS 10) and to heavy starting conditions (CLASS 20). As the breaker mechanism still remains closed after an overload, resetting is possible by either local manual reset or auto reset after three minutes cooling time.

With auto reset, there is no need to open the control cabinet.

Diagnostics options

The compact starter provides the following diagnostics options:

- With LEDs
 - Connection to the control voltage
 - Position of the main contacts
- With mechanical display
 - Tripping due to overload
 - Tripping due to short circuit
 - Tripping due to malfunction (end of service life reached because of worn switching contacts or a worn switching mechanism or faults in the control electronics)

These states can also be evaluated in the higher-level control system:

- With parallel wiring using the integrated auxiliary and signaling switches of the compact starter
- With AS-Interface or IO-Link in even greater detail using the respective communication interface

Four complement versions for 3RA61 and 3RA62 compact starters

- For standard mounting rail or screw fixing: basic version including one pair of main circuit terminals and one pair of control circuit terminals
- For standard mounting rail or screw fixing when using the AS-i add-on module: without control circuit terminals because the AS-i add-on module is plugged on instead
- For use with the infeed system for 3RA6: without main circuit terminals because they are supplied with the infeed system and the expansion modules
- For use with the infeed system for 3RA6 and the AS-i add-on module: without terminal complement (also for reordering when replacing the compact starter)

The control circuit terminals are always required by the compact starters for IO-Link; the main circuit terminals depend on the use of the infeed system.

More components of the 3RA6

Apart from the control supply voltage, "Overload" (1 CO) and "Short circuit/Function fault" (1 NO) signaling contacts are already integrated into the 3RA61/3RA62 – and lockable via two 6-pole removable control circuit terminals. The 3RA61 has two auxiliary contacts (1 NO + 1 NC) for displaying the position of the main contacts. Unlike the 3RA61 direct-on-line starter, the 3RA62 reversing starter has one auxiliary contact (1 NO) per direction of rotation per main contact.

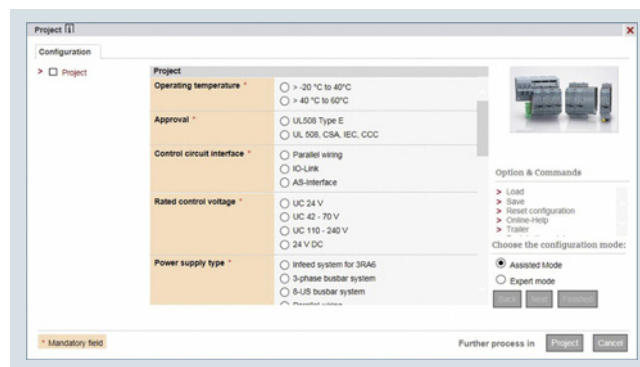
Available for the 3RA61 and 3RA64 direct-on-line starters is a slot for an optional auxiliary switch block (optionally 2 NO, 2 NC or 1 NO + 1 NC) and for the 3RA62 and 3RA65 reversing starters there are two slots (for auxiliary switch blocks, see "Accessories" on page 8/71).

Positively-driven operation of the auxiliary contacts

Positively-driven operation between individual auxiliary circuits exists for the compact starter in the version as a direct-on-line starter for parallel wiring (3RA61) between the auxiliary circuits of the NC contacts (NC 21-22) and the NO contacts (NO 13-14) in the basic unit.

In addition, the optional auxiliary switch block offers positively driven contacts in the 3RA6913-1A version, each with one normally closed contact and one normally open contact.

Configurator



Configurator

Advantages:

- Simple usage – from individual compact starters or also with corresponding infeed system and AS-i connection
- In the final configuration, you will be presented with additional technical information such as CAD data and product data sheets as well as characteristic curves, operating instructions, manuals etc.

See www.siemens.com/sirius/configurators

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Article No. scheme

Product versions		Article number									
Compact starters		3RA6	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Product function	Direct-on-line starter	1	2	0						For motor standard output 0.09 ... 15 kW ¹⁾	
	Reversing starter	2	5	0						For motor standard output 0.09 ... 15 kW ¹⁾	
	Direct-on-line starter for IO-Link	4	0	0						For motor standard output 0.09 ... 15 kW ¹⁾	
	Reversing starter for IO-Link	5	0	0						For motor standard output 0.09 ... 15 kW ¹⁾	
	Infeed system	8									
	Accessories	9									
		• Auxiliary switches	1	<input type="checkbox"/>							
	• Terminals	2	<input type="checkbox"/>								
	• IO-Link accessories	3	<input type="checkbox"/>								
	• Fixing elements	4	<input type="checkbox"/>								
	• Control kit	5	<input type="checkbox"/>								
Connection methods	No terminals				0						
	Screw terminals				1						
	Spring-type terminals				2						
Setting range	0.1 ... 0.4 A					A					
	0.32 ... 1.25 A					B					
	1 ... 4 A					C					
	3 ... 12 A					D					
	8 ... 32 A					E					
Rated control supply voltage	24 V DC					B	4			For direct-on-line/reversing starters for IO-Link	
	24 V AC/DC					B	3			For direct-on-line/reversing starters	
	110 ... 240 V AC/DC					P	3			For direct-on-line/reversing starters	
Terminal complement variant	None					0				Without main and control circuit terminals	
	1/1					2				With 1 pair of main circuit and 1 pair of control circuit terminals	
	0/1					3				Without main circuit terminals, with 1 pair of control circuit terminals	
	1/0					4				With 1 pair of main circuit terminals, without control circuit terminals	
Special versions											
Example		3RA6	1	2	0	-	0	A	B	3	0

¹⁾ Standard three-phase motor, basis 4-pole at 400 V AC; the actual startup characteristics of the motor as well as its rated data are important factors here.

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Benefits

Product advantages

The SIRIUS 3RA6 compact starters offer a number of benefits:

- Compact design saves space in the control cabinet
- Little planning and assembly work and far less wiring thanks to a single complete unit with one article number
- Low variance and therefore low stock levels, with two wide voltage ranges and five wide setting ranges for the rated current
- High plant availability through integrated functionalities such as prevention of main contact welding and disconnection at end of service life
- Enhanced productivity through automatic device reset in case of overload and differentiated detection of overload and short circuit
- Easy checking of the wiring and testing of the motor direction prior to start-up thanks to optional control kits

- Speedy replacement of devices thanks to removable terminals with spring-type and screw terminals in the main and control circuit
- Efficient power distribution through the related SIRIUS infeed system for 3RA6
- Direct connection of the motor feeder cable to the SIRIUS infeed system for 3RA6 thanks to integrated PE bar
- Connecting and looping through of incoming feeders up to a cross-section of 70 mm²
- When using the infeed system for 3RA6, possibility of directly connecting the motor cable without intermediate terminals
- Integration in Totally Integrated Automation thanks to the optional connection to AS-Interface or IO-Link

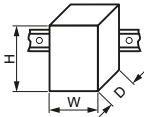
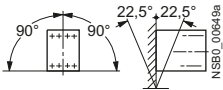
The SIRIUS 3RA6 compact starters create the basis for high-availability and future-proof machine concepts.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Technical specifications

More information		Note on security:				
Industry Mall, see www.siemens.com/product?3RA6		In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept. For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity .				
System Manual, see http://support.industry.siemens.com/cs/ww/en/view/27865747 .						
FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16301/faq						
Type		3RA61	3RA62	3RA64	3RA65	
Mechanics and environment						
Mounting dimensions (W x H x D)						
<ul style="list-style-type: none"> • Screw terminals • Spring-type terminals 			mm	45 x 170 x 165	90 x 170 x 165	45 x 170 x 165
		mm	45 x 191 x 165	90 x 191 x 165	45 x 191 x 165	90 x 191 x 165
Depth from standard mounting rail		mm	160			
Permissible ambient temperature		°C	-20 ... +70, restriction as from 60 depending on design			
<ul style="list-style-type: none"> • For operation (permissible operational current, see the following section "Electrical specifications") • During storage • During transport 		°C	-55 ... +80			
		°C	-55 ... +80			
Permissible mounting position						
Shock resistance (sine-wave pulse)		a = 60 m/s ² = 6 g with 10 ms; for every 3 shocks in all axes				
Vibratory load		f = 4 ... 5.8 Hz; d = 15 mm; f = 5.8 ... 500 Hz; a = 20 m/s ² ; 10 cycles				
Degree of protection		Acc. to IEC 60947-1	IP20			
Installation altitude		m	Up to 2 000 above sea level without restriction			
Relative air humidity		%	10 ... 90			
Pollution degree			3			
Electrical specifications						
Device standard		IEC 60947-6-2				
Maximum rated operational voltage U_e		V	690			
		V	400 at 3RA6250-E... and 3RA6500-E... (Reversing starter 32 A designs)			
Rated frequency		Hz	50/60			
Rated insulation voltage U_i (pollution degree 3)		V	690			
Rated impulse withstand voltage U_{imp}		kV	6			
Rated operational current I_e¹⁾		A	0.4			
and setting range for overload release		A	1.25			
		A	4			
		A	12			
		A	32			
Permissible operational current of the compact starter²⁾		When several compact starters are mounted side-by-side in the 3RA6 infeed system (for more details on the various design variants, see System Manual)				
<ul style="list-style-type: none"> • For a control cabinet inside temperature of +40 °C • For a control cabinet inside temperature of +60 °C • For a control cabinet inside temperature of +70 °C 		%	100			
		%	80			
		%	60			
Trip class (CLASS)		Acc. to IEC 60947-4-1, EN 60947-4-1 (VDE 0660 Part 102)	10/20			
Overload function		Ratio of lower to upper current mark	1:4			
Rated service short-circuit breaking capacity I_{CS} at 50/60 Hz, 400 V AC		kA	53			
Rated service short-circuit breaking capacity I_{CSIT} at 50/60 Hz 400/690 V AC in IT systems		kA	1.5			

¹⁾ For the use of 3RA6 compact starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see Application Manual.

²⁾ Details about installation conditions and the use of the compact starters, and particularly about the derating of the rated current, can be found in the System Manual.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Type			3RA61	3RA62	3RA64	3RA65
Electrical specifications (continued)						
Power loss $P_{V \max}$ of all main current paths Dependent on rated current I_e (upper setting range)	0.4 A	mW	10			
	1.25 A	mW	100			
	4 A	W	1			
	12 A	W	1.8			
	32 A	W	5.4			
Max. switching frequency	AC-41	1/h	750			
	AC-43	1/h	250			
	AC-44	1/h	15			
No-load switching frequency		1/h	3 600		3 600, depending on the IO-Link communication time	
Touch protection	Acc. to DIN VDE 0106, Part 100		Finger-safe			
Isolating features of the compact starter	Acc. to IEC 60947-3		✓ Isolation is assured only by moving the actuator into the "OFF" position.			
Main and EMERGENCY STOP switch characteristics of the compact starter and accessories	Acc. to IEC 60204		✓			
Protective separation	Acc. to IEC 60947-2					
Control circuit to auxiliary circuit		V	Up to 400			
• Horizontal standard mounting rail		V	Up to 250			
• Other mounting position						
Auxiliary circuit to auxiliary circuit		V	Up to 400			
• Horizontal standard mounting rail		V	Up to 250			
• Other mounting position						
Main circuit to auxiliary circuit		V	Up to 400			
• Any mounting position						
EMC interference immunity	Acc. to IEC 60947-1		Corresponds to degree of severity 3			
Conducted interference	BURST acc. to IEC 61000-4-4					
• In the main circuit		kV	4		4	
• In the auxiliary circuit		kV	3		2	
Conducted interference	SURGE acc. to IEC 61000-4-5					
• In the main circuit						
- Conductor - Ground		kV	4		2	
- Conductor - Conductor		kV	2		1	
• In the auxiliary circuit						
- Conductor - Ground		kV	2		0.5 ¹⁾	
- Conductor - Conductor		kV	1		0.5 ¹⁾	
Auxiliary switches						
• Integrated						
- Position of the main contacts			1 NO + 1 NC	2 NO	1 NO + 1 NC	2 NO
- Overload/short circuit and malfunction signal			1 CO/1 NO			
• Expandable						
- Position of the main contacts			2 NO, 2 NC, 1 NO + 1 NC			
Surge suppressors			Integrated (varistor)			
Electromagnetic operating mechanisms						
Control voltage		V	24 AC/DC		24 DC	
		V	110 ... 240 AC/DC		--	
Frequency	At AC	Hz	50/60 (± 5%)			
Operating range			0.7 ... 1.25 U_s		0.85 ... 1.2 U_s	
No-load switching frequency		1/h	3 600			
Line protection	At 10 kA	mm ²	2.5			
	At 50 kA	mm ²	4			
Shock resistance						
• Breaker mechanism OFF		g	25			
• Breaker mechanism ON		g	15			
Normal switching duty						
Making capacity			12 x I_n			
Breaking capacity			10 x I_n			
Switching capacity dependent on rated current	Up to 12 A	kW	5.5			
	Up to 32 A	kW	15			
Endurance in operating cycles						
• Electrical endurance	At $I_e = 0.9 \times I_n$ and 400 V		3 ... 10 000 000	2 x 3 ... 10 000 000	3 000 000	2 x 1 500 000

✓ Function available

¹⁾ To maintain maximum interference immunity in a harsh electromagnetic environment, additional overvoltage protection should be provided in the control circuit. The 5SD7432-4 plug-in surge arrester with remote signaling, for instance, is suitable, see [Catalog LV 10](#).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Type		3RA6120-□B3., 3RA6250-□B3. □ = A, B, C or D Rated operational current ≤ 12 A				3RA6120-EB3., 3RA6250-EB3. Rated operational current 32 A			
Rated control supply voltage	V	24 AC		24 DC		24 AC		24 DC	
Inrush peak current	A	0.59		0.47		0.59		0.47	
Hold current	A	0.13		0.12		0.17		0.14	
Closed	W	2.8		2.9		3.5		3.1	
Operating times, typical									
• On	ms	< 160		< 140		< 160		< 140	
• Off	ms	< 35		< 35		< 30		< 30	
Type		3RA6 20-□P3., 3RA6250-□P3. □ = A, B, C or D Rated operational current ≤ 12 A				3RA6120-EP3., 3RA6250-EP3. Rated operational current 32 A			
Rated control supply voltage	V	110 AC	240 AC	110 DC	240 DC	110 AC	240 AC	110 DC	240 DC
Inrush peak current	A	0.24	0.40	0.17	0.29	0.24	0.40	0.17	0.29
Hold current	A	0.06	0.08	0.03	0.02	0.06	0.07	0.04	0.03
Closed	W	3.8	6	3.1	5.1	3.7	5.2	3.4	5.8
Operating times, typical									
• On	ms	< 160	< 140	< 150	< 140	< 160	< 140	< 150	< 140
• Off	ms	< 50	< 80	< 50	< 70	< 40	< 60	< 40	< 60
Type		3RA6400-□B4., 3RA6500-□B4. □ = A, B, C or D Rated operational current ≤ 12 A				3RA6400-EB4., 3RA6500-EB4. Rated operational current 32 A			
Rated control supply voltage	V	24 DC				24 DC			
Inrush peak current	A	0.39				0.53			
Hold current	A	0.13				0.15			
Closed	W	2.9				3.4			
Operating times, typical ¹⁾									
• On	ms	< 140				< 140			
• Off	ms	< 35				< 30			

¹⁾ Plus IO-Link communication

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Type		3RA61	3RA62	3RA64	3RA65
Control circuit					
Rated operational voltage					
• External auxiliary switch block	V	400/690			
• Internal auxiliary switch	V	400/690			
• Short-circuit signaling switch	V	400			
• Overload signaling switch	V	400			
Switching capacity					
• External auxiliary switch block					
	AC-15				
	• Up to $U_e = 230$ V	A	6		
	• Up to $U_e = 400$ V	A	3		
	• Up to $U_e = 289/500$ V	A	2		
	• Up to $U_e = 400/690$ V	A	1		
	DC-13				
	• Up to $U_e = 24$ V	A	6		
	• Up to $U_e = 60$ V	A	0.9		
	• Up to $U_e = 125$ V	A	0.55		
	• Up to $U_e = 250$ V	A	0.27		
• Internal auxiliary switch					
	AC-15				
	• Up to $U_e = 230$ V	A	6		
	• Up to $U_e = 400$ V	A	3		
	• Up to $U_e = 289/500$ V	A	2		
	• Up to $U_e = 400/690$ V	A	1		
	DC-13				
	• Up to $U_e = 24$ V	A	10		
	• Up to $U_e = 60$ V	A	2		
	• Up to $U_e = 125$ V	A	1		
	• Up to $U_e = 250$ V	A	0.27		
	• Up to $U_e = 480$ V	A	0.1		
• Signaling switch					
	AC-15				
	• Up to $U_e = 230$ V	A	3		
	• Up to $U_e = 400$ V	A	1		
	DC-13				
	• Up to $U_e = 24$ V	A	2		
	• Up to $U_e = 250$ V	A	0.11		
External auxiliary switch blocks, internal auxiliary switches					
Endurance in operating cycles					
• Mechanical endurance			10 000 000		3 000 000
• Electrical endurance	AC-15, 230 V				
	• Up to 6 A		200 000		
	• Up to 3 A		500 000		
	• Up to 1 A		2 000 000		
	• Up to 0.3 A		10 000 000		
	DC-13, 24 V				
	• Up to 6 A		30 000		
	• Up to 3 A		100 000		
	• Up to 0.5 A		2 000 000		
	• Up to 0.2 A		10 000 000		
	DC-13, 110 V				
	• Up to 1 A		40 000		
	• Up to 0.55 A		100 000		
	• Up to 0.3 A		300 000		
	• Up to 0.1 A		2 000 000		
	• Up to 0.04 A		10 000 000		
	DC-13, 220 V				
	• Up to 0.3 A		110 000		
	• Up to 0.1 A		650 000		
	• Up to 0.05 A		2 000 000		
	• Up to 0.018 A		10 000 000		
Contact reliability	At 17 V and 5 mA	Oper- ating cycles	1 faulty switching operation per 100 000 000		
Short-circuit protection					
• Short-circuit current $I_K \leq 1.1$ kA	Fuse links, operational class gG - NEOZED Type 5SE - DIAZED Type 5SB - LV HRC Type 3NA	A	10		
• Short-circuit current $I_K < 400$ A	Miniature circuit breaker up to 230 V with C characteristic	A	10		

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

General data

Type			3RA61	3RA62	3RA64	3RA65
Signaling switches						
Endurance in operating cycles						
• Mechanical endurance			20 000			
• Electrical endurance AC-15	At 230 V and 3 A		6 050			
Contact reliability	At 17 V and 5 mA	Operating cycles	1 faulty switching operation per 100 000 000			
Short-circuit protection						
• Short-circuit current $I_K \leq 1.1$ kA	Fuse links, operational class gG - NEOZED Type 5SE - DIAZED Type 5SB - LV HRC Type 3NA	A	6			
• Short-circuit current $I_K < 400$ A	Miniature circuit breaker up to 230 V with C characteristic	A	6			
Overload (short-circuit current $I_K \leq 1.1$ kA)	Fuse links, operational class gG - NEOZED Type 5SE - DIAZED Type 5SB - LV HRC Type 3NA	A	4			



Load Feeders and Motor Starters for Use in the Control Cabinet

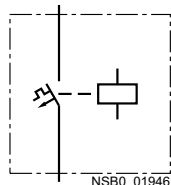
SIRIUS 3RA6 Compact Starters 3RA61, 3RA62 Compact Starters

3RA61 direct-on-line starters **IE3/IE4 ready**

Selection and ordering data



Direct-on-line start



Width 45 mm

Rated short-circuit current $I_{CS} = 53 \text{ kA}$ at 400 V

A set of 3RA6940-0A adapters is required for screw fixing.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42F

3RA6120-1CB32

3RA6120-2EB32

Standard three-phase motor 4-pole at 400 V AC ¹⁾ Standard output P	Setting range for electronic overload release	Instantaneous electronic release	SD ²⁾	Article No.	Price per PU	SD ²⁾	Article No.	Price per PU
			d			d		
kW	A	A	d			d		

For use with the infeed system for 3RA6 and with the AS-i add-on module or as a replacement device, without main and control circuit terminals

0.09	0.1 ... 0.4	56	10	3RA6120-0A□30	2	---	---
0.37	0.32 ... 1.25	56	10	3RA6120-0B□30	2	---	---
1.5	1 ... 4	56	2	3RA6120-0C□30	2	---	---
5.5	3 ... 12	168	2	3RA6120-0D□30	2	---	---
15	8 ... 32	448	2	3RA6120-0E□30	2	---	---

Screw terminals

Spring-type terminals

For standard mounting rail or screw fixing, including 1 pair of main circuit terminals and 1 pair of control circuit terminals

0.09	0.1 ... 0.4	56	2	3RA6120-1A□32	2	3RA6120-2A□32
0.37	0.32 ... 1.25	56	2	3RA6120-1B□32	2	3RA6120-2B□32
1.5	1 ... 4	56	2	3RA6120-1C□32	2	3RA6120-2C□32
5.5	3 ... 12	168	2	3RA6120-1D□32	2	3RA6120-2D□32
15	8 ... 32	448	2	3RA6120-1E□32	2	3RA6120-2E□32

For use in the infeed system for 3RA6, without main circuit terminals, with 1 pair of control circuit terminals

0.09	0.1 ... 0.4	56	10	3RA6120-1A□33	10	3RA6120-2A□33
0.37	0.32 ... 1.25	56	2	3RA6120-1B□33	10	3RA6120-2B□33
1.5	1 ... 4	56	2	3RA6120-1C□33	2	3RA6120-2C□33
5.5	3 ... 12	168	2	3RA6120-1D□33	2	3RA6120-2D□33
15	8 ... 32	448	2	3RA6120-1E□33	2	3RA6120-2E□33

Article No. supplements for rated control supply voltage

- 24 V AC/DC
- 110 ... 240 V AC/DC

For standard mounting rail or screw fixing for use with AS-i add-on module, with 1 pair of main circuit terminals, without control circuit terminals
Rated control supply voltage 24 V AC/DC

0.09	0.1 ... 0.4	56	10	3RA6120-1AB34	10	3RA6120-2AB34
0.37	0.32 ... 1.25	56	10	3RA6120-1BB34	10	3RA6120-2BB34
1.5	1 ... 4	56	10	3RA6120-1CB34	10	3RA6120-2CB34
5.5	3 ... 12	168	2	3RA6120-1DB34	10	3RA6120-2DB34
15	8 ... 32	448	10	3RA6120-1EB34	10	3RA6120-2EB34

¹⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Standard delivery times apply for a rated control supply voltage of 24 V AC/DC. For the other rated control supply voltages, longer delivery times are possible.

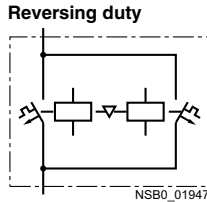
Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

3RA61, 3RA62 Compact Starters

IE3/IE4 ready 3RA62 reversing starters

Selection and ordering data



Width 90 mm

Rated short-circuit current $I_{CS} = 53 \text{ kA}$ at 400 V

Two sets of 3RA6940-0A adapters are required for screw fixing.

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 42F

3RA6250-1CP32

3RA6250-2DP32

Standard three-phase motor 4-pole at 400 V AC ¹⁾	Setting range for electronic overload release	Instantaneous electronic release	SD ²⁾	Article No.	Price per PU	SD ²⁾	Article No.	Price per PU
Standard output P			d			d		
kW	A	A	d			d		

For use with the infeed system for 3RA6 and with the AS-i add-on module or as a replacement device, without main and control circuit terminals

0.09	0.1 ... 0.4	56	10	3RA6250-0A□30	10	--		
0.37	0.32 ... 1.25	56	10	3RA6250-0B□30	10	--		
1.5	1 ... 4	56	10	3RA6250-0C□30	10	--		
5.5	3 ... 12	168	10	3RA6250-0D□30	10	--		
15	8 ... 32	448	10	3RA6250-0E□30	10	--		

Screw terminals

Spring-type terminals

For standard mounting rail or screw fixing, including 1 pair of main circuit terminals and 1 pair of control circuit terminals

0.09	0.1 ... 0.4	56	10	3RA6250-1A□32	10	3RA6250-2A□32		
0.37	0.32 ... 1.25	56	2	3RA6250-1B□32	2	3RA6250-2B□32		
1.5	1 ... 4	56	2	3RA6250-1C□32	2	3RA6250-2C□32		
5.5	3 ... 12	168	2	3RA6250-1D□32	2	3RA6250-2D□32		
15	8 ... 32	448	2	3RA6250-1E□32	10	3RA6250-2E□32		

For use in the infeed system for 3RA6, without main circuit terminals, with 1 pair of control circuit terminals

0.09	0.1 ... 0.4	56	10	3RA6250-1A□33	10	3RA6250-2A□33		
0.37	0.32 ... 1.25	56	10	3RA6250-1B□33	10	3RA6250-2B□33		
1.5	1 ... 4	56	10	3RA6250-1C□33	10	3RA6250-2C□33		
5.5	3 ... 12	168	10	3RA6250-1D□33	10	3RA6250-2D□33		
15	8 ... 32	448	10	3RA6250-1E□33	10	3RA6250-2E□33		

Article No. supplements for rated control supply voltage

- 24 V AC/DC
- 110 ... 240 V AC/DC

For standard mounting rail or screw fixing for use with AS-i add-on module, with 1 pair of main circuit terminals, without control circuit terminals
 Rated control supply voltage 24 V AC/DC

0.09	0.1 ... 0.4	56	10	3RA6250-1AB34	10	3RA6250-2AB34		
0.37	0.32 ... 1.25	56	10	3RA6250-1BB34	10	3RA6250-2BB34		
1.5	1 ... 4	56	10	3RA6250-1CB34	10	3RA6250-2CB34		
5.5	3 ... 12	168	10	3RA6250-1DB34	10	3RA6250-2DB34		
15	8 ... 32	448	10	3RA6250-1EB34	10	3RA6250-2EB34		

¹⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

²⁾ Standard delivery times apply for a rated control supply voltage of 24 V AC/DC. For the other rated control supply voltages, longer delivery times are possible.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

3RA64, 3RA65 Compact Starters for IO-Link

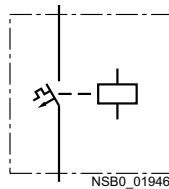
3RA64 direct-on-line starters **IE3/IE4 ready**

Selection and ordering data



3RA64 with 3RA6911-1A
auxiliary switch block

Direct-on-line start



NSB0_01946

Rated control supply voltage 24 V DC

Width 45 mm

Rated short-circuit current $I_{CS} = 53 \text{ kA}$ at 400 V

A set of 3RA6940-0A adapters is required for screw fixing.

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 42F

Standard three-phase motor 4-pole at 400 V AC ¹⁾ Standard output P	Setting range for electronic overload release	Instantaneous electronic release	SD	Article No.	Price per PU	SD	Article No.	Price per PU
kW	A	A	d					
For standard mounting rail or screw fixing, including 1 pair of main circuit terminals and 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	10	3RA6400-1AB42	10		3RA6400-2AB42	
0.37	0.32 ... 1.25	56	10	3RA6400-1BB42	10		3RA6400-2BB42	
1.5	1 ... 4	56	2	3RA6400-1CB42	2		3RA6400-2CB42	
5.5	3 ... 12	168	2	3RA6400-1DB42	2		3RA6400-2DB42	
15	8 ... 32	448	10	3RA6400-1EB42	10		3RA6400-2EB42	
For use in the infeed system for 3RA6, without main circuit terminals, with 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	10	3RA6400-1AB43	10		3RA6400-2AB43	
0.37	0.32 ... 1.25	56	2	3RA6400-1BB43	2		3RA6400-2BB43	
1.5	1 ... 4	56	2	3RA6400-1CB43	2		3RA6400-2CB43	
5.5	3 ... 12	168	2	3RA6400-1DB43	2		3RA6400-2DB43	
15	8 ... 32	448	10	3RA6400-1EB43	10		3RA6400-2EB43	

¹⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

Load Feeders and Motor Starters for Use in the Control Cabinet

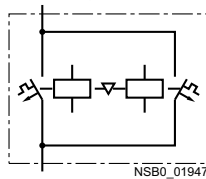
SIRIUS 3RA6 Compact Starters

3RA64, 3RA65 Compact Starters for IO-Link

IE3/IE4 ready 3RA65 reversing starters

Selection and ordering data


3RA65 with 3RA6911-1A auxiliary switch blocks

Reversing duty

Rated control supply voltage 24 V DC

Width 90 mm

Rated short-circuit current $I_{CS} = 53 \text{ kA}$ at 400 V

Two sets of 3RA6940-0A adapters are required for screw fixing.

 PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 42F

Standard three-phase motor 4-pole at 400 V AC ¹⁾	Setting range for electronic overload release	Instantaneous electronic release	SD	Article No.	Price per PU	SD	Article No.	Price per PU
Standard output P								
kW	A	A	d	Screw terminals		d	Spring-type terminals	
For standard mounting rail or screw fixing, including 1 pair of main circuit terminals and 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	10	3RA6500-1AB42	10	3RA6500-2AB42		
0.37	0.32 ... 1.25	56	2	3RA6500-1BB42	10	3RA6500-2BB42		
1.5	1 ... 4	56	2	3RA6500-1CB42	10	3RA6500-2CB42		
5.5	3 ... 12	168	10	3RA6500-1DB42	10	3RA6500-2DB42		
15	8 ... 32	448	10	3RA6500-1EB42	10	3RA6500-2EB42		
For use in the infeed system for 3RA6, without main circuit terminals, with 1 pair of control circuit terminals								
0.09	0.1 ... 0.4	56	10	3RA6500-1AB43	10	3RA6500-2AB43		
0.37	0.32 ... 1.25	56	10	3RA6500-1BB43	10	3RA6500-2BB43		
1.5	1 ... 4	56	10	3RA6500-1CB43	10	3RA6500-2CB43		
5.5	3 ... 12	168	10	3RA6500-1DB43	10	3RA6500-2DB43		
15	8 ... 32	448	10	3RA6500-1EB43	10	3RA6500-2EB43		

¹⁾ The actual starting and rated data of the motor to be protected must be considered when selecting the units.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Accessories

Overview

Accessories for SIRIUS 3RA6 compact starters

The following accessories are available specially for the 3RA6 compact starters:

- Infeed system for 3RA6, [see page 8/78 onwards](#)
- For AS-i add-on modules, [see page 8/76 onwards: "Add-on modules for AS-Interface"](#)
- External auxiliary switch blocks: Snap-on auxiliary switch as versions 2 NO, 2 NC and 1 NO + 1 NC with screw or spring-type terminals; the contacts of the auxiliary switch block open and close jointly with the main contacts of the compact starter. The NC contacts are designed as mirror contacts.
- Control kit: Aid for manually closing the main contacts to check the wiring and motor direction under conditions of short-circuit protection
- Adapter for screw fixing the compact starter, including push-in lugs
- Main circuit terminal: Available with screw and spring-type terminals
- Main circuit terminals mixed connection method: With the main circuit terminals mixed connection method it is also possible in the main circuit to switch from screw terminals on the line side to spring-type terminals on the outgoing side. This enables, for example, the side-by-side mounting of several compact starters and their cost-efficient connection using three-phase busbars on the infeed side. The motors are then connected directly by the quick and reliably contacting spring-type terminals.

Accessories for UL applications

The terminal block for "Self-Protected Combination Motor Controller", type E is available for complying with the clearance and creepage distances demanded according to UL 508.

Accessories for infeed using three-phase busbar systems

The three-phase busbars can be used as an easy, time-saving and clearly arranged means of feeding SIRIUS 3RA6 compact starters with screw terminals. Motor starter protector sizes S00 and S0 can also be integrated.

The busbars are suitable for between two and five devices. However, any kind of extension up to a maximum summation current of 63 A is possible by clamping the tags of an additional busbar (rotated by 180°) underneath the terminals of the respective last motor starter protector.

Motor starter protectors S00 and S0 of the 3RV2 series can be combined in any way (without a special connecting piece). The motor starter protectors are supplied by appropriate infeed terminals. Special infeed terminals are required for constructing "Type E Starters" according to UL/CSA.

The three-phase busbar systems are finger-safe but empty connection tags must be fitted with covers. They are designed for any short-circuit stress which can occur at the output side of connected SIRIUS 3RA6 compact starters or motor starter protectors.

Busbar adapters for 60 mm systems

The compact starters are mounted directly with the aid of busbar adapters on busbar systems with 60 mm center-to-center clearance in order to save space and to reduce infeed times and costs. These feeders are suitable for copper busbars with a width from 12 to 30 mm. The busbars can be 4 to 5 mm or 10 mm thick.

The 8US busbar system can be loaded with a maximum summation current of 630 A.

The "reversing starter" version requires a device holder alongside the busbar adapter for lateral mounting.

The compact starters are snapped onto the adapter and connected on the line side. This prepared unit is then plugged directly onto the busbar system, and is thus connected both mechanically and electrically at the same time.

For more accessories such as incoming and outgoing terminals, flat copper profiles etc., [see Catalog LV 10](#).

Accessories for operation with closed control cabinet doors

Door-coupling rotary operating mechanisms for standard and EMERGENCY STOP applications are available for operating the compact starter with closed control cabinet doors.

Accessories for SIRIUS 3RA6 compact starters in IO-Link version

The following accessories are available specially for the 3RA64, 3RA65 compact starters:


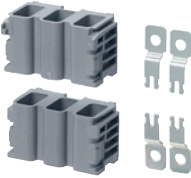






- Additional connection cables for side-by-side mounting of up to four compact starters
- Operator panel for on-site control and diagnostics of up to four compact starters coupled to each other

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Accessories

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories specially for 3RA6 compact starters						
		Control kit For mechanical actuation of the compact starter				
3RA6950-0A	2	3RA6950-0A		1	1 unit	42F
		Adapters for screw fixing the compact starter (set including push-in lugs) Direct-on-line starters require one set, reversing starters two sets.				
3RA6940-0A	2	3RA6940-0A		1	1 unit	42F
		Auxiliary switch blocks for compact starters				
3RA6911-1A	2	• 2 NO		1	1 unit	42F
	2	• 2 NC		1	1 unit	42F
	2	• 1 NO + 1 NC (these auxiliary contacts are positively driven)		1	1 unit	42F
		Main circuit terminals (incoming and outgoing side)				
3RA6920-1A	2	3RA6920-1A		1	1 unit	42F
		Control circuit terminals (1 set comprising 2 terminals)				
3RA6920-1B	2	• for 3RA61		1	1 unit	42F
	2	• for 3RA62		1	1 unit	42F
		Auxiliary switch blocks for compact starters				
3RA6911-2A	2	• 2 NO		1	1 unit	42F
	2	• 2 NC		1	1 unit	42F
	2	• 1 NO + 1 NC (these auxiliary contacts are positively driven)		1	1 unit	42F
		Main circuit terminals (incoming and outgoing side)				
3RA6920-2A	2	3RA6920-2A		1	1 unit	42F
		Control circuit terminals (1 set comprising 2 terminals)				
3RA6920-2B	2	• for 3RA61		1	1 unit	42F
	2	• for 3RA62		1	1 unit	42F

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Accessories specially for 3RA6 compact starters (continued)



3RA6920-3A

	20	3RA6920-3A		1	1 unit	42F
--	----	-------------------	--	---	--------	-----

Main circuit terminals, mixed connection method
1 set comprises:

- 1 joint block on the line side with screw terminals
- 1 joint block on the outgoing side with spring-type terminals

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Accessories specially for 3RA64, 3RA65 compact starters for IO-Link



3RA6931-0A

	2	3RA6932-0A		1	5 units	42F
	5	3RA6933-0B		1	5 units	42F
	5	3RA6931-0A		1	5 units	42F
	5	3RA6933-0C		1	5 units	42F

Additional connection cables (flat) for side-by-side mounting of up to 4 compact starters

- 10-pole
- 8 mm¹⁾
- 200 mm¹⁾
- 14-pole
- 8 mm²⁾
- 200 mm



3RA6935-0A

	10	3RA6935-0A		1	1 unit	42F
--	----	-------------------	--	---	--------	-----

Operator panels (set)

- 1 operator panel
- 1 enabling module
- 1 interface cover
- 1 fixing terminal

	10	3RA6936-0A		1	1 unit	42F
--	----	-------------------	--	---	--------	-----

	10	3RA6936-0B		1	5 units	42F
--	----	-------------------	--	---	---------	-----

	5	3RA6933-0A		1	1 unit	42F
--	---	-------------------	--	---	--------	-----

Enabling modules (replacement)

Interface covers (replacement)

Connection cables (round) for connecting the operator panel 10-pole, 2 000 mm

1) 10-pole connection cables are required for EMERGENCY STOP group concepts.

2) Is included in the scope of supply of the SIRIUS 3RA6 compact starter in IO-Link version.

For matching IO-Link masters, [see page 2/104 onwards](#).

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Terminals for "Self-Protected Combination Motor Controllers (Type E)" acc. to UL 508 for infeed through parallel wiring with compact starters



3RV2928-1H

	▶	3RV2928-1H		1	1 unit	41E
--	---	-------------------	--	---	--------	-----

Terminal blocks type E for extended clearance and creepage distances (1 and 2 inch)

Note:
UL 508 demands 1-inch clearance and 2-inch creepage distance at line side for "Combination motor controller type E". Terminal blocks are not required for use according to CSA. These terminal blocks cannot be used in combination with 3RV19.5 three-phase busbars.





Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Accessories

Number of compact starters and motor starter protectors that can be connected Without lateral accessories	Modular spacing	Rated current I_n at 690 V	For motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm	A	Size	d					


Three-phase busbars for infeed with 3RA6

	For feeding several compact starters and/or motor starter protectors with screw terminals, mounted side-by-side on standard mounting rails, insulated, with touch protection.								
3RV1915-1AB	2	45	63	S00, S0 ¹⁾	▶ 3RV1915-1AB		1	1 unit	41E
	3	45	63	S00, S0 ¹⁾	▶ 3RV1915-1BB		1	1 unit	41E
3RV1915-1BB	4	45	63	S00, S0 ¹⁾	▶ 3RV1915-1CB		1	1 unit	41E
	5	45	63	S00, S0 ¹⁾	▶ 3RV1915-1DB		1	1 unit	41E
3RV1915-1CB									
									
3RV1915-1DB									

¹⁾ Not suitable for 3RV21 motor starter protectors for motor protection with overload relay function and for 3RV27 and 3RV28 circuit breakers according to UL 489/CSA C22.2 No. 5.


Version	Modular spacing	For motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm	Size	d					

Covers for connection tags of the three-phase busbars


	Touch protection for empty positions	--	S00, S0	▶ 3RV1915-6AB		1	10 units	41E
3RV1915-6AB								

Conductor cross-section			Tightening torque	For compact starters and motor starter protectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solid or stranded	Finely stranded with end sleeve	AWG cables, solid or stranded								
mm ²	mm ²	AWG	Nm	Size	d					

Three-phase infeed terminals for three-phase busbars and for constructing "Type E Starters" according to UL 508

	Connection from top										
3RV2925-5EB	2.5 ... 25	2.5 ... 16	10 ... 4	3 ... 4	S00, S0	2	3RV2925-5EB		1	1 unit	41E

Three-phase infeed terminals for 3-phase busbars

	Connection from below¹⁾										
3RV2915-5B	2.5 ... 25	2.5 ... 16	10 ... 4	Input: 4; Output: 2 ... 2.5	S00, S0	▶	3RV2915-5B		1	1 unit	41E

¹⁾ This terminal is connected in place of a compact starter, please take the space requirement (45 mm) into account.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Busbar adapters for 60 mm systems



8US1211-1NS10

For flat copper profiles according to DIN 46433
Width: 12 ... 30 mm
Thickness: 4 ... 5 mm or 10 mm

2

8US1211-1NS10

1

1 unit

140

Device holders for lateral mounting alongside the busbar adapter for 60 mm systems



8US1250-1AA10

Required in addition to the busbar adapter for mounting a reversing starter

2

8US1250-1AA10

1

1 unit

140

Version	Color of actuator	Version of extension shaft mm	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					

Door-coupling rotary operating mechanisms for operating the compact starter with closed control cabinet doors



3RV2926-0B

The door-coupling rotary operating mechanisms consist of a knob, a coupling driver and a 130 mm long extension shaft (6 mm x 6 mm). The door-coupling rotary operating mechanisms are designed to degree of protection IP64. The door interlocking prevents accidental opening of the control cabinet door in the ON position of the motor starter protector. The OFF position can be locked with up to 3 padlocks.

Door-coupling rotary operating mechanisms

Black

130

▶

3RV2926-0B

1

1 unit

41E

EMERGENCY STOP door-coupling rotary operating mechanisms

Red/yellow

130

▶

3RV2926-0C



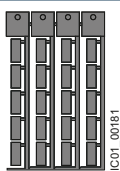
1

1 unit

41E

Load Feeders and Motor Starters for Use in the Control Cabinet SIRIUS 3RA6 Compact Starters

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Tools for opening spring-type terminals						
 Screwdrivers For all SIRIUS devices with spring-type terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated 3RA2908-1A	2	Spring-type terminals  3RA2908-1A		1	1 unit	41B
Blank labels						
 Unit labeling plates¹⁾ For SIRIUS devices 20 mm x 7 mm, titanium gray 3RT2900-1SB20	20	3RT2900-1SB20		100	340 units	41B
System Manual						
"SIRIUS 3RA6 Compact Starter, SIRIUS Infeed System for 3RA6"						
System Manual, see http://support.industry.siemens.com/cs/ww/en/view/27865747 .						

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see page 16/16).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Add-on modules for AS-Interface

Overview

Various AS-i add-on modules are available for communication of the 3RA6 compact starter with the control system using AS-Interface:

- Standard version
- With two local inputs
- With two free external inputs
- With one free external input and one free external output
- With two free external outputs
- For local control

The AS-i add-on modules can be combined only in connection with compact starters with a rated control supply voltage of 24 V AC/DC.

AS-i add-on module for local control

With this new module it is also possible for the connected compact starter to be operated directly using simple switches, i.e. without recourse to AS-i communication, if required.

"Automatic" mode

NC contacts can be connected to the inputs Y2 and Y4 through the local terminals on the AS-i add-on module. If the "+" terminals are connected simultaneously to both local inputs, the AS-i add-on module will be in "Automatic" mode, i.e. it will communicate with the control system through AS-Interface.

Local control

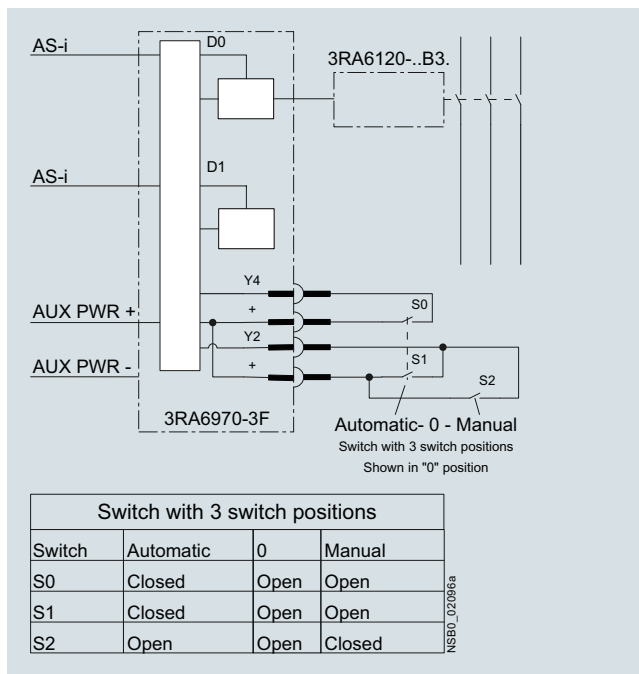
Opening the two inputs Y2 and Y4 will result in the direct disconnection of the compact starter. Operation through AS-i communication is finished and the compact starter can now be switched on and off directly using NO contacts (one NO contact per direction of rotation on the reversing starter).

"LED AUX Power" must light up green, the 24 V DC supply must be ensured and the AS-i control supply voltage must no longer be applied.

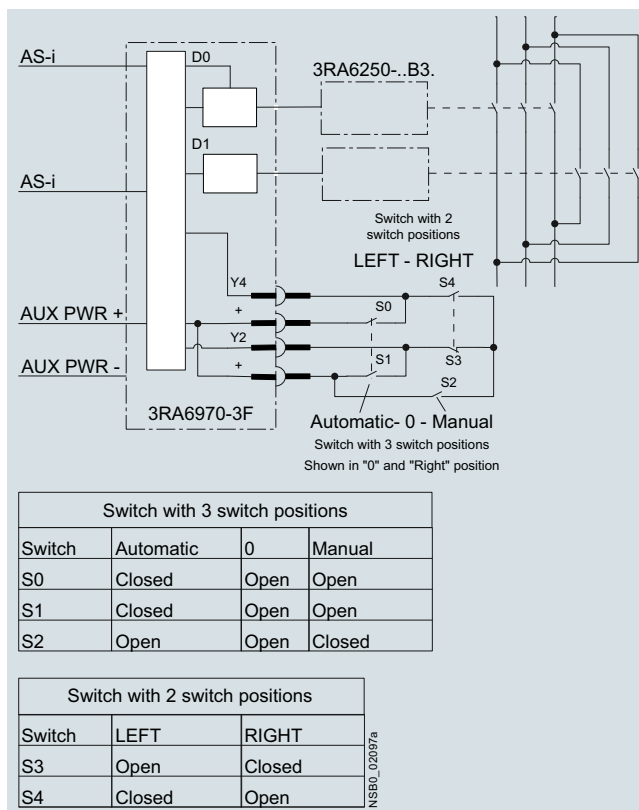
Resetting to "Automatic" mode

If a "1" signal is simultaneously applied at the local inputs, the availability bit DI 0 is switched to a "1" signal.

If AS-i communication is reset, the motor is first switched off and then on again when requested by the control system.



Circuit diagram example for controlling a 3RA6120 direct-on-line starter using an AS-i add-on module for local control







Circuit diagram example for controlling a 3RA6250 reversing starter using an AS-i add-on module for local control

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Add-on modules for AS-Interface

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-i add-on modules						
 3RA6970-3A	2	3RA6970-3A		1	1 unit	42F
	Standard version For communication of the compact starter with the control system using AS-Interface					
 3RA6970-3B to -3F	2	3RA6970-3B		1	1 unit	42F
	With two local inputs For safe disconnection through local safety relays, e.g. cable-operated switches					
	2	3RA6970-3C		1	1 unit	42F
	With two free external inputs Replaces the digital standard inputs "Motor On" and "Group warning"					
	2	3RA6970-3D		1	1 unit	42F
	With one free external input and one free external out-put Replaces the digital standard input "Group warning"					
	2	3RA6970-3E		1	1 unit	42F
	With two free external outputs Only for direct-on-line starters, replaces the digital standard output "Motor CCW"					
	2	3RA6970-3F		1	1 unit	42F
	For local control Control of the compact starter optionally using AS-Interface or local switches					
Spare parts for AS-i add-on modules						
 3RK1901-0NA00, 3RK1901-0PA00	10	3RK1901-0NA00		1	5 units	42C
	Connectors for data and auxiliary supply cable With 2 insulation displacement terminations for standard stranded wires 2 x 0.5 ... 0.75 mm ²					
	10	3RK1901-0PA00		1	5 units	42C
<ul style="list-style-type: none"> • Flat, yellow, extender • Flat, black, extender 						
Accessories for AS-i add-on modules						
 3RK1904-2AB02	2	3RK1904-2AB02		1	1 unit	42C
	AS-Interface addressing unit V3.0 <ul style="list-style-type: none"> • For AS-Interface modules and sensors and actuators with integrated AS-Interface according to AS-i Specification V3.0 • For setting the AS-i address of standard slaves, and slaves with extended addressing mode (A/B slaves) • With input/output test function and many other commissioning functions • Battery operation with four type AA batteries (IEC LR6, NEDA 15) • Scope of supply: <ul style="list-style-type: none"> - Addressing unit with four batteries - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5 m 					
For matching AS-Interface masters, network transitions and power supply units, see pages 2/36, 2/44 and 2/78 onwards .						

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed system for 3RA6

Overview

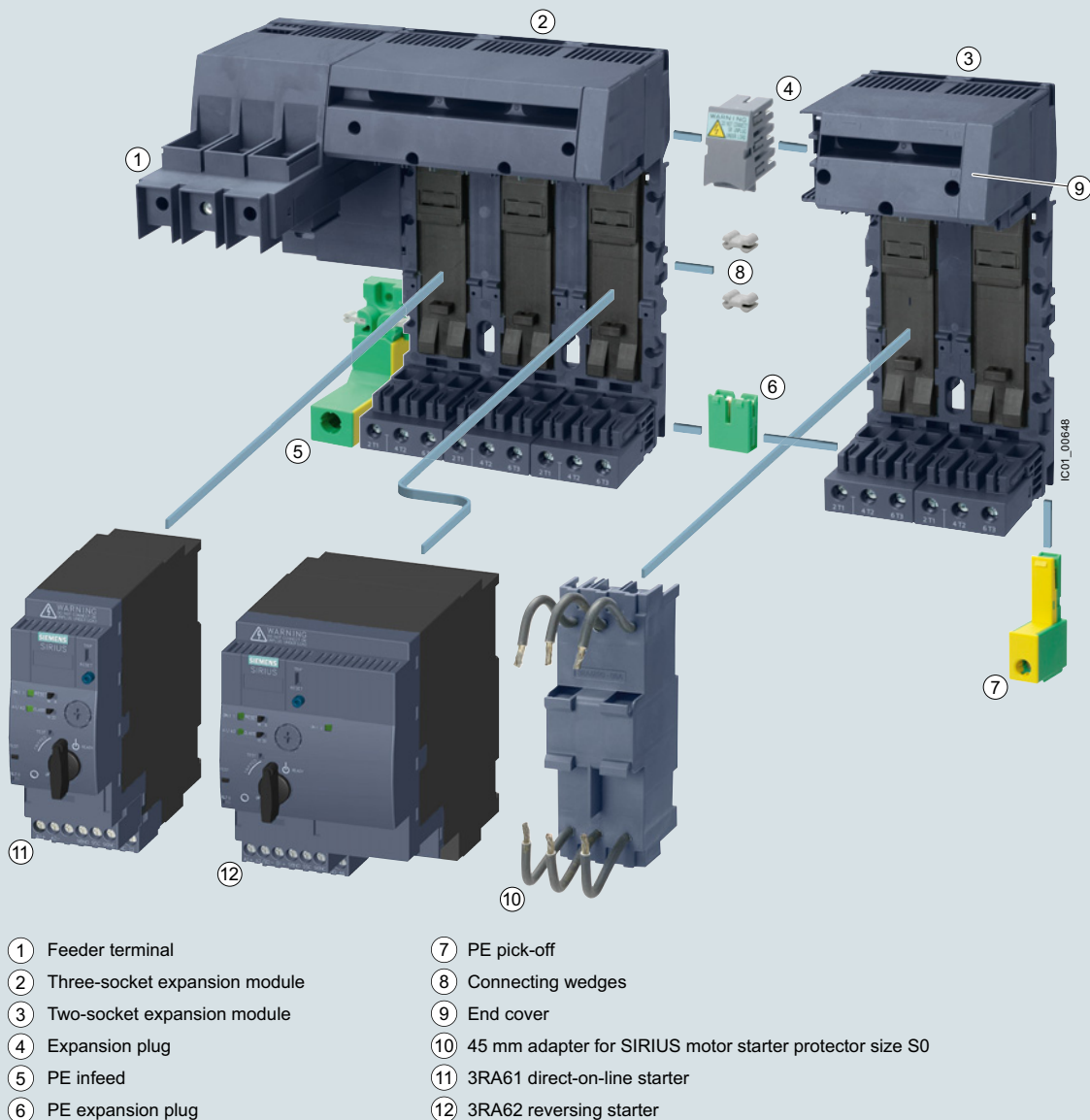
More information

Homepage, see www.siemens.com/compactstarter
 Industry Mall, see www.siemens.com/product?3RA68

Online configurator, see www.siemens.com/sirius/configurators

The infeed system for 3RA6 compact starters enables far less wiring in the main circuit and, thanks to the easy exchangeability of the compact starters, reduces the usual downtimes for maintenance work during the plant's operating phase. The infeed system provides the possibility of completely prewiring the main

circuit without a compact starter needing to be connected at the same time. As the result of the removable terminals in the main circuit, compact starters can be integrated in an infeed system in easy manner (without the use of tools).



Infeed system for 3RA6 compact starters

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed system for 3RA6

In addition, the integrated PE bar means it is optionally possible to connect the motor cable directly to the infeed system without additional intermediate terminals. The infeed system for 3RA6 compact starters is designed for summation currents up to 100 A with a maximum conductor cross-section of up to 70 mm² on the infeed terminal block.

The infeed system can be mounted on a standard mounting rail or flat surfaces.

① Infeed

The three-phase infeed is available as a infeed with screw terminal (25/35 mm² up to 63 A or 50/70 mm² up to 100 A) and as a infeed with spring-type terminal (25/35 mm² up to 63 A).

The infeed with spring-type terminal can be fitted on the left as well as on the right of an expansion module.

The infeed with screw terminal is supplied only with a 3-socket expansion module and permanently fitted on the left side.

The infeed with screw terminals enable connection of the main conductors (L1, L2, L3) either from above or from below.

The infeed with screw terminal is supplied complete with one end cover, the infeed with spring-type terminal complete with two end covers.

② 3-socket expansion module

The expansion module with three sockets for compact starters is available with screw terminals and with spring-type terminals.

Expansion modules enable the infeed system to be expanded and can be fitted to each other in any number.

Two expansion modules are held together with the help of two connecting wedges and one expansion plug. These assembly parts are included in the scope of supply of the respective expansion module.

When the infeed system for 3RA6 is used, the compact starters (plug-in modules) are easily assembled and disassembled even when live.

Optional possibilities:

- PE connection on motor outgoing side
- Outfeed for external auxiliary devices
- Connection to 3RV29 infeed system
- Integration of SIRIUS 3RV1 and 3RV2 motor starter protectors size S0 up to 25 A (using 3RA6890-0BA adapter)

③ 2-socket expansion module

If only two instead of three additional sockets are required, then the 2-socket expansion module is the right choice. It has the same functionality as the 3-socket expansion module.

④ Expansion plug

Two expansion modules can be connected together using the expansion plug. Flexible expansion of the infeed system is thus possible.

⑤ PE infeed

This module enables a PE cable to be connected.

The PE infeed can be ordered with screw terminals and spring-type terminals (35 mm²) and can be fitted on the left or right of the expansion block.

⑥ PE expansion plug

The PE expansion plug is inserted from below and enables two PE bars to be connected.

⑦ PE pick-off

The PE pick-off is available with screw terminals and spring-type terminals (6/10 mm²). It is snapped into the infeed system from below.

⑧ Connecting wedges

Two connecting wedges are used to hold together two expansion modules.

⑨ End covers

On the last expansion module of a row, the socket provided for the expansion plug can be covered by inserting the end cover.

⑩ 45 mm adapters for SIRIUS 3RV1/3RV2 motor starter protectors

SIRIUS 3RV1 and 3RV2 motor starter protectors size S0 with screw terminals can be fitted to the adapter, enabling them to be plugged into the infeed system.

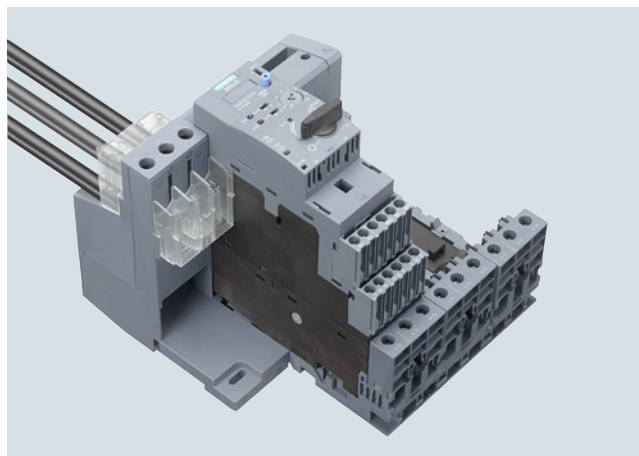
IP20 terminal covers for increasing finger-safety

Universally configured terminal covers are available for the 25/35 mm² and 50/70 mm² three-phase infeeds with screw terminal:

- 3RA6880-2AB terminal covers for infeeds with screw terminal 25/35 mm² (3RA6812-8AB/AC)
- 3RA6880-3AB terminal covers for infeeds with screw terminal 50/70 mm² (3RA6813-8AB/AC)

The terminal covers can be used in two ways on the infeed terminals of the infeeds with screw terminal 25/35 mm² and 50/70 mm² (see illustration):

- If the terminals are connected, the cables are also covered:
 - by approx. 14 mm with the 3RA6880-2AB
 - by approx. 18 mm with the 3RA6880-3AB
- On clamping points without connected cables, the covers can be turned once and then pushed over the clamping points for finger-safe covering of the metal parts.



Use of the 3RA6880-2AB terminal cover on the infeed with screw terminal 25/35 mm² (3RA6812-8AB/AC). The upper cover increases the finger-safety for the connected conductors. The identical lower cover is turned for use and prevents touching of the voltage-carrying metal parts of the infeed terminal. For better recognition, the covers are shown as transparent in this illustration and not in their original color.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed system for 3RA6

Terminal blocks

Using the terminal block the three phases can be fed out of the system; this means that single-phase, two-phase and three-phase components can also be integrated in the system.

After the end cover is pulled out, the terminal block can be plugged onto an expansion module.

Expansion plug for SIRIUS 3RV29 infeed systems

After the end cover is pulled out, the expansion plug for the SIRIUS 3RV29 infeed system can be plugged onto an expansion module. It connects the infeed system for 3RA6 compact starters with the SIRIUS 3RV29 infeed system.

Maximum rated operational current

The following maximum rated operational currents apply for the components of the infeed system for 3RA6:

Component	Maximum rated operational current A
Infeed with screw terminal 50/70 mm ²	100
Infeed with screw terminal 25/35 mm ²	63
Infeed with spring-type terminal 25/35 mm ²	63
Expansion plug	63

With side-by-side mounting of several expansion modules, the maximum rated operational current from the second expansion module to the end of the row is 63 A.

Proposal for upstream short-circuit protection devices

The following short-circuit data apply for the components of the infeed system for 3RA6 compact starters:

Conductor cross-section mm ²	Maximum let-through current $I_{d, \max}$ and current integral I^2t	Proposal for upstream short-circuit protection device	Maximum prospective $I_{\text{short-circuit}}$ kA
Short-circuit protection for 3RA681..8A, infeed with screw terminal (25/35 mm² and 50/70 mm²)			
2.5 ... 35, 2.5 ... 70	$I_{d, \max} < 21 \text{ kA}, I^2t = 530 \text{ kA}^2\text{s}$	3RV2041-4MA10 (LV HRC gG 3NA3; 315 A)	50
Short-circuit protection for spring-loaded infeed 25/35 mm², 3RA6830-5AC			
4	$I_{d, \max} < 9.5 \text{ kA}, I^2t = 85 \text{ kA}^2\text{s}$	3RV2021-4DA10	40
6	$I_{d, \max} < 12.5 \text{ kA}, I^2t = 140 \text{ kA}^2\text{s}$	3RV2031-4EA10	30
10	$I_{d, \max} < 15 \text{ kA}, I^2t = 180 \text{ kA}^2\text{s}$	3RV2031-4WA10	25
16/25	$I_{d, \max} < 19 \text{ kA}, I^2t = 440 \text{ kA}^2\text{s}$	3RV2031-4JA10	65
		3RV2041-4JA10	65
35	$I_{d, \max} < 21 \text{ kA}, I^2t = 530 \text{ kA}^2\text{s}$	3RV2041-4MA10 (LV HRC gG 3NA3; 315 A)	50
Short-circuit protection for terminal block, 3RV2917-5D			
1.5	$I_{d, \max} < 7.5 \text{ kA}$	5SY...	
2.5	$I_{d, \max} < 9.5 \text{ kA}$	1)	
4	$I_{d, \max} < 9.5 \text{ kA}$		
6	$I_{d, \max} < 12.5 \text{ kA}$		

1) To prevent the possibility of short circuits, the cables on the terminal block must be installed so that they are short-circuit proof.

Load Feeders and Motor Starters for Use in the Control Cabinet

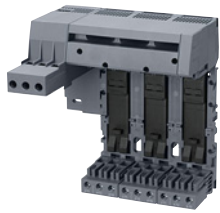
SIRIUS 3RA6 Compact Starters

Infeed system for 3RA6

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Three-phase infeeds and expansion modules



3RA6812-8AB

Infeeds with screw terminal 25/35 mm² left

Infeed with screw terminal at line side with a permanently fitted 3-socket expansion module with screw or spring-type terminals on the outgoing side and integrated PE bar

Expansion module with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter

- Screw terminals on the outgoing side

2

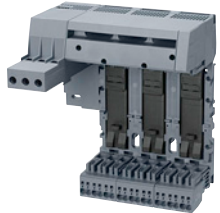
Screw terminals



3RA6812-8AB

1 1 unit

42F



3RA6812-8AC

- Spring-type terminals on the outgoing side

2

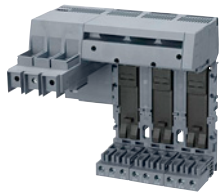
Spring-type terminals



3RA6812-8AC

1 1 unit

42F



3RA6813-8AB

Infeeds with screw terminal 50/70 mm² left

Infeed with screw terminal at line side with a permanently fitted 3-socket expansion module with screw or spring-type terminals on the outgoing side and integrated PE bar

Expansion module with 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter, suitable for UL operation according to UL 508 Type E

- Screw terminals on the outgoing side

2

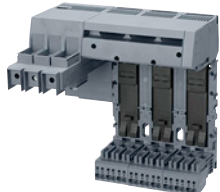
Screw terminals



3RA6813-8AB

1 1 unit

42F



3RA6813-8AC

- Spring-type terminals on the outgoing side

2

Spring-type terminals



3RA6813-8AC

1 1 unit

42F



3RA6830-5AC

Infeed with spring-type terminal 25/35 mm² left or right

Up to 63 A

2

Spring-type terminals



3RA6830-5AC

1 1 unit

42F

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed system for 3RA6

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Expansion modules



3RA6822-0AB

Two-socket expansion modules

With screw or spring-type terminals and integrated PE bar

With 2 sockets for 2 direct-on-line starters or 1 reversing starter

Expansion plug and 2 connecting wedges are included in the scope of supply.

- Version with screw terminals

2

Screw terminals



3RA6822-0AB

1

1 unit

42F



3RA6822-0AC

- Version with spring-type terminals

2

Spring-type terminals

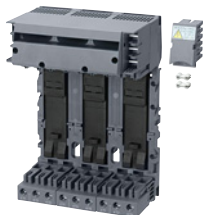


3RA6822-0AC

1

1 unit

42F



3RA6823-0AB

Three-socket expansion modules

With screw or spring-type terminals and integrated PE bar

With 3 sockets for 3 direct-on-line starters or 1 direct-on-line starter and 1 reversing starter

Expansion plug and 2 connecting wedges are included in the scope of supply.

- Version with screw terminals

2

Screw terminals

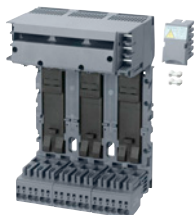


3RA6823-0AB

1

1 unit

42F



3RA6823-0AC

- Version with spring-type terminals

2

Spring-type terminals



3RA6823-0AC

1

1 unit

42F

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed system for 3RA6

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Accessories for infeed systems for 3RA6

PE infeeds, 25/35 mm²



3RA6860-6AB

- Version with screw terminals

2

Screw terminals



3RA6860-6AB

1

1 unit

42F



3RA6860-5AC

- Version with spring-type terminals

2

Spring-type terminals



3RA6860-5AC

1

1 unit

42F

PE pick-offs 6/10 mm²



3RA6870-4AB

- Version with screw terminals

2

Screw terminals



3RA6870-4AB

1

1 unit

42F



3RA6870-3AC

- Version with spring-type terminals

2

Spring-type terminals



3RA6870-3AC

1

1 unit

42F

Expansion plugs

PE expansion plugs



3RA6890-0EA

2

3RA6890-0EA

1

1 unit

42F

Expansion plugs

Between 2 expansion modules

Included in the scope of supply of the expansion modules



3RA6890-1AB

2

3RA6890-1AB

1

1 unit

42F

Expansion plugs for SIRIUS 3RV29 infeed system

Connects infeed system for 3RA6 to 3RV29 infeed system



3RA6890-1AA

2

3RA6890-1AA

1








1 unit

42F

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RA6 Compact Starters

Infeed system for 3RA6

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for infeed systems for 3RA6 (continued)						
 3RA6890-0BA	2	45 mm adapters For SIRIUS 3RV1.2 and 3RV2.2 circuit breakers/motor starter protectors size S0 up to 25 A <ul style="list-style-type: none"> Screw terminals (conductor cross-section AWG 10) 	Screw terminals  3RA6890-0BA	1	1 unit	42F
		Terminal covers for infeeds with screw terminal IP20 terminal covers for infeeds with screw terminal 25/35 mm² (3RA6812-8AB/AC) (2 units per pack)				
 3RA6880-2AB	2	IP20 terminal covers for infeeds with screw terminal 50/70 mm² (3RA6813-8AB/AC) (2 units per pack)	3RA6880-3AB	1	1 unit	42F
		 3RA6880-3AB				
 3RV2917-5D	2	Tools for opening spring-type terminals Screwdrivers For all SIRIUS devices with spring-type terminals <p>Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated</p>	Spring-type terminals  3RA2908-1A	1	1 unit	41B
		 3RA2908-1A				
System Manual						
		System Manual "SIRIUS 3RA6 Compact Starter, SIRIUS Infeed System for 3RA6", see https://support.industry.siemens.com/cs/ww/en/view/27865747				

Overview



3RM13 motor starter with reversing functionality, electronic overload protection and safety-related shutdown

More information

3RM1 motor starters:

Homepage, see www.siemens.com/motorstarter/3RM1
 Industry Mall, see www.siemens.com/product?3RM1

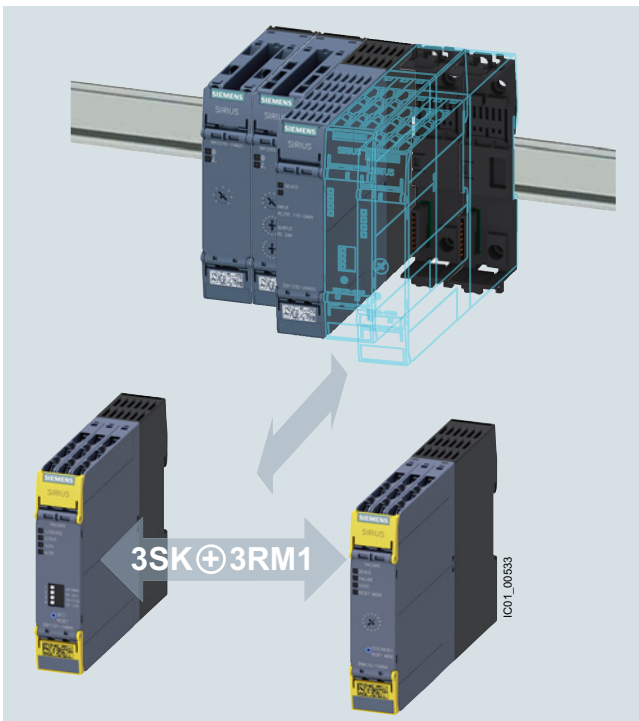
3SK safety relays for protecting the 3RM1 motor starters:

Homepage, see www.siemens.com/safety-relays
 Industry Mall, see www.siemens.com/product?3SK

SIRIUS 3RM1 motor starters are compact devices, 22.5 mm wide, combining a large number of functions in a single enclosure. They consist of combinations of relay contacts, power semiconductors (hybrid technology), and an electronic overload relay for operational switching of three-phase motors up to 3 kW (at 400 V) and resistive loads up to 10 A at AC voltages up to 500 V.

The 3RM1 motor starters with overload protection with wide setting range are available as direct-on-line starters and reversing starters and as versions with safety-related shutdown up to SIL 3/PL e.

Seamlessly integrated safety right through to the main circuit



Problem-free integration of functional safety into the main circuit through the simple combination of 3RM1 and 3SK devices

Functional safety in the main circuit needs to be both simple and flexible.

The unique compatibility of hybrid 3RM1 fail-safe motor starters and 3SK safety relays means that integrated functional safety right through to the main circuit is no longer a problem.

Their compact design allows the motor starters to be installed to the right of the safety relay in a simple manner, just like an output expansion. The wiring of the safety-related signals to the relay can be performed simply, quickly and in an error-free manner using the device connector.

The ergonomically designed enclosure with removable terminals and terminal labeling in the hinged cover allows for the cables to be conveniently diagonally mounted from the front. Either screw or spring-type terminals with push-in technology are available.

Highlights

- Fail-safe disconnection of motors up to 3 kW
- Problem-free combination of fail-safe motor starters and safety relays
- End-to-end system, simple setup using device connectors
- Ergonomic enclosure

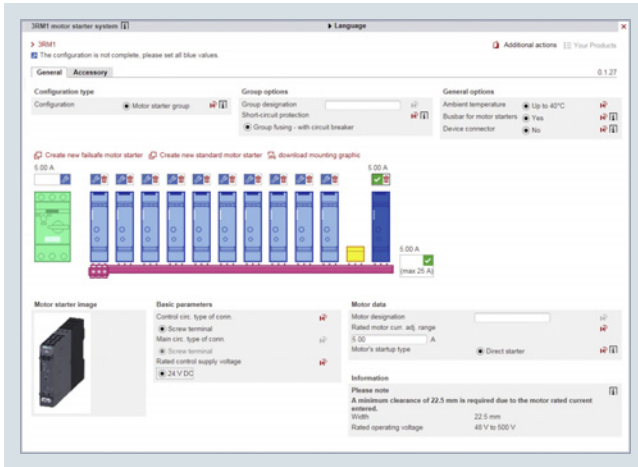
Note:

For SIRIUS 3SK safety relays, see page 11/12.

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RM1 motor starters

Online Configurator



Online Configurator

Article No. scheme

Product versions		Article number		
Product function	Direct-on-line starters	3RM10	0	<input type="checkbox"/> - <input type="checkbox"/> AA <input type="checkbox"/> 4
	Failsafe direct-on-line starters	3RM11	0	<input type="checkbox"/> - <input type="checkbox"/> AA <input type="checkbox"/> 4 with ATEX certification and safety-related shutdown
	Reversing starters	3RM12	0	<input type="checkbox"/> - <input type="checkbox"/> AA <input type="checkbox"/> 4
	Failsafe reversing starters	3RM13	0	<input type="checkbox"/> - <input type="checkbox"/> AA <input type="checkbox"/> 4 with ATEX certification and safety-related shutdown
Wide setting range for electronic overload release	0.1 ... 0.5 A	1		for motor standard output 0 ... 0.12 kW ²⁾
	0.4 ... 2.0 A	2		for motor standard output 0.09 ... 0.75 kW ²⁾
	1.6 ... 7.0 A (10 A) ¹⁾	7		for motor standard output 0.55 ... 3 kW ²⁾
Connection method	Screw terminals		1	
	Spring-type terminals (push-in)		2	
	Mixed connection method		3	Spring-type terminals (push-in)
Rated control supply voltage U_s	24 V DC			0
	110 ... 230 V AC; 110 V DC			1
Example		3RM13	0	1 - 2 AA 0 4

¹⁾ Operation of resistive loads with maximum 10 A.

²⁾ Standard three-phase motor, basis 4-pole at 400 V AC; the actual startup characteristics of the motor as well as its rated data are important factors here.

Advantages of the online configurator:

- Create individual motor starters or a complex motor starter group
- Individual selection options, such as direct or reversing starting, spring-type or screw terminals, as well as motor current and control voltage
- Graphic representation of the design during configuration
- Automatic calculation of the matching motor starter protector/circuit breaker (for group configuration)

See

www.siemens.com/sirius/configurators

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers. For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

Product advantages

- Less space required in the control cabinet (20 to 80%) thanks to high functional density, which also means reduced wiring and testing
- Greater endurance and reduced heat losses thanks to hybrid technology, [see www.siemens.com/sirius/energysaving](http://www.siemens.com/sirius/energysaving)
- Lower costs for stock keeping and configuration as a result of the wide setting range of the electronic overload release (up to 1:5)
- Fast wiring without tools for rigid conductors or conductors equipped with end sleeves thanks to spring-type terminals (push-in)
- Safety-related shutdown in accordance with SIL 3/PL e by shutting down the control supply voltage without additional devices in the main circuit
- The motor starters can be ideally combined with 3SK safety relays for safety-related shutdown ([see page 11/12](http://www.siemens.com/sirius/energysaving))
- Motor status feedback to the higher-level control system in the case of 3RM10 and 3RM12 motor starters in the 24 V DC version
- Virtually error-free wiring on the mains connection side and reduction in short-circuit protective devices by means of 3RM19 infeed system
- ATEX certification of the overload protection of the 3RM1 Failsafe motor starters: "Increased safety" type of protection EEx e according to ATEX directive 2014/34/EU
- The 3RM1 motor starters can be used with highly energy-efficient IE3/IE4 motors. In this regard, please observe the information on dimensioning and configuring, [see Application Manual](#).
For more information about IE3/IE4, [see page 1/7](#).

Standards and approvals

- IEC/EN 60947-4-2
- UL 60947-4-2
- CSA
- ATEX
- IEC 61508-1: SIL 3
- ISO 13849: PL e
- CCC approval for China

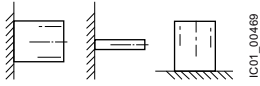
Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RM1 motor starters

Technical specifications

More information

Industry Mall, see www.siemens.com/product?3RM1FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16311/faq>Manual, see <https://support.industry.siemens.com/cs/ww/en/view/66295730>

Article number		3RM10, 3RM12	3RM11, 3RM13
General technical specifications:			
Dimensions (W x H x D)	mm	22.5 x 100 x 141.6	
Ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-40 ... +70	
• During transport	°C	-40 ... +70	
Installation altitude at height above sea level, maximum	m	4 000	2 000
Shock resistance		6 g / 11 ms	
Vibration resistance		1 ... 6 Hz, 15 mm; 20 m/s ² , 500 Hz	
Degree of protection		IP20	
Mounting position		Vertical, horizontal, standing (consider derating)	
			

Article number		3RM1.01	3RM1.02	3RM1.07
Main circuit:				
Operational voltage rated value maximum	V	500		
Operating frequency	Hz	50/60		
Operational current at AC-53a at 400 V at an ambient temperature of 40 °C	A	0.5	2	7
Minimum load [% of IM]	%	20		
Adjustable current response value of the inverse-time delayed overload release	A	0.1 ... 0.5	0.4 ... 2	1.6 ... 7

Article number		3RM1.0.-AA04	3RM1.0.-AA14
Control circuit:			
Type of voltage of the control supply voltage		DC	AC/DC
Control supply voltage			
• At DC	V	24	110
• At AC at 50 Hz	V	--	110 ... 230
Frequency of the control supply voltage	Hz	--	50/60

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RM1 motor starters

Type		3RM1.0.-1AA.4	3RM1.0.-3AA.4	3RM1.0.-2AA.4
Connections/terminals:				
Type of electrical connection for main circuit (1 or 2 conductors can be connected)		⊕ Screw terminals		⊖ Spring-type terminals
Connectable conductor cross-section for main contacts				
• Solid	mm ²	1x (0.5 ... 4), 2x (0.5 ... 2.5)		1x (0.5 ... 4)
• Finely stranded	mm ²	1x (0.5 ... 4), 2x (0.5 ... 1.5)		1x (0.5 ... 2.5)
- With end sleeve	mm ²	--		1x (0.5 ... 4)
- Without end sleeve	mm ²	--		1x (0.5 ... 4)
Type of electrical connection for auxiliary and control circuit (1 or 2 conductors can be connected)		⊕ Screw terminals		⊖ Spring-type terminals
Type of connectable conductor cross-sections for auxiliary contacts				
• Solid	mm ²	1x (0.5 ... 2.5), 2x (1.0 ... 1.5)		1x (0.5 ... 1.5), 2x (0.5 ... 1.5)
• Finely stranded	mm ²	1x (0.5 ... 2.5), 2x (0.5 ... 1)		1x (0.5 ... 1.0), 2x (0.5 ... 1.0)
- With end sleeve	mm ²	--		1x (0.5 ... 1.5), 2x (0.5 ... 1.5)
- Without end sleeve	mm ²	--		1x (0.5 ... 1.5), 2x (0.5 ... 1.5)
Type of connectable conductor cross-sections for AWGH cables				
• For main contacts		1x (20 ... 12), 2x (20 ... 14)		1x (20 ... 12)
• For auxiliary contacts		1x (20 ... 14), 2x (18 ... 16)		1x (20 ... 16), 2x (20 ... 16)

Accessories

More information

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/66295730>

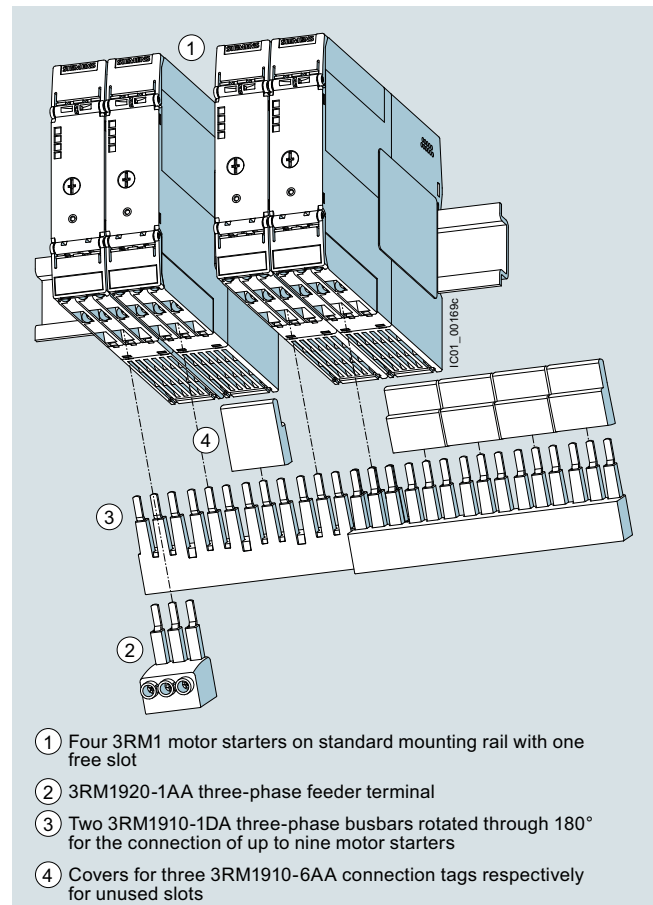
Three-phase infeed system (3RM19 three-phase busbar system)

The system permits an easy, time-saving and safe means of feeding two or more 3RM1 motor starters. It can be used only with motor starters with screw terminals and in combination with 8US1716-0RK00 adapters for mounting rails in the main circuit.

The maximum summation current must not exceed 25 A. The primary infeed is connected via a three-phase infeed terminal.

The busbars are available in three lengths, for two, three or five motor starters. More than five devices can be connected by clamping the connection tags of a second busbar rotated by 180°.

The three-phase busbars are finger-safe but empty connection tags must be fitted with covers.



3RM19 infeed system with three-phase infeed terminal: In the above example, two three-phase busbars (5-pole busbars) rotated through 180° allow up to nine 3RM1 motor starters to be connected. Contact with the unused connection tags in unoccupied positions is prevented safely by the covers.

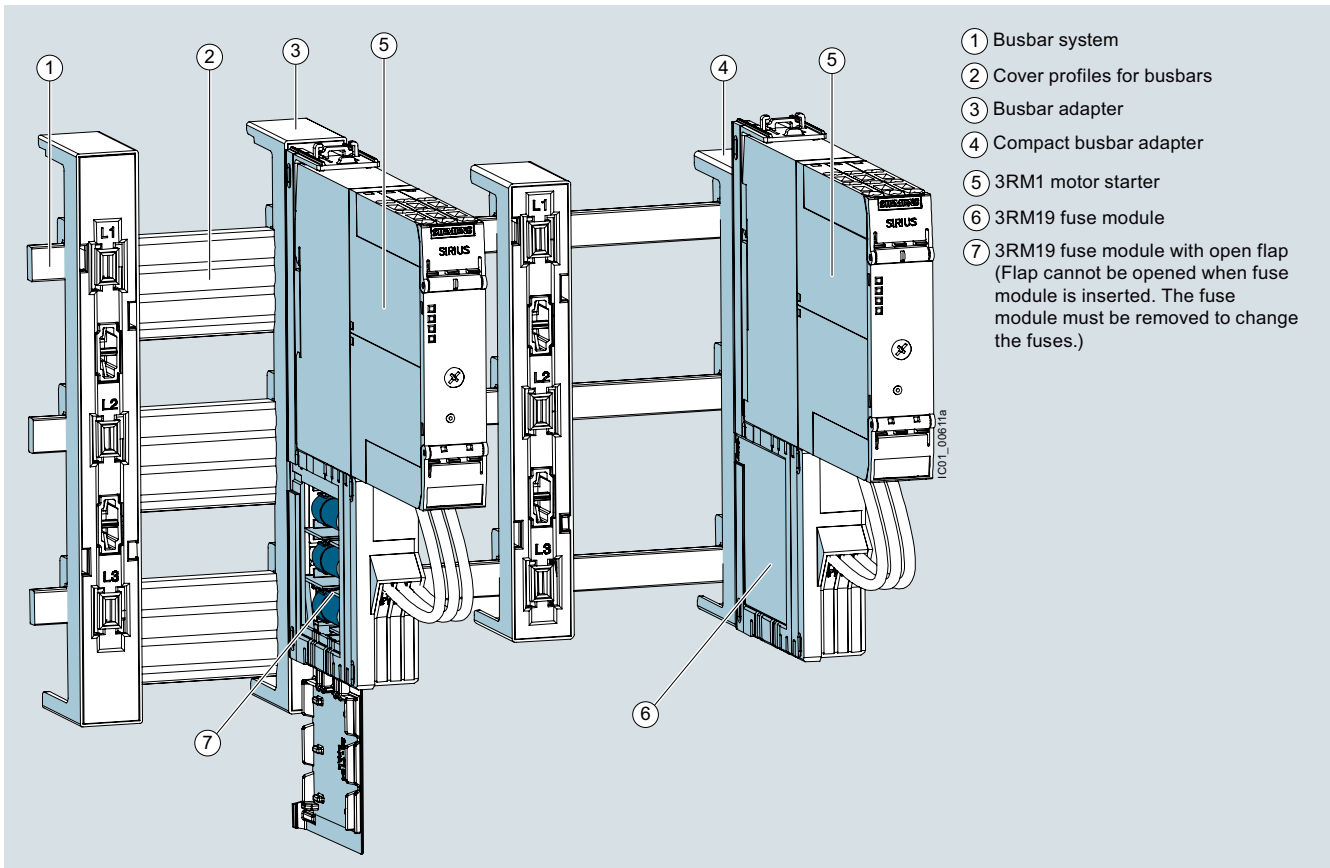
Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RM1 motor starters

Fuse module for the use of 3RM1 motor starters on 8US busbar systems and mounting rails

The fuse module permits the very compact construction of a load feeder with a maximum width of 22.5 mm. The 3RM1 motor starter in combination with the integrated fuses for short-circuit protection can therefore be used on 8US busbar systems. Thanks to the range of different adapters, the fuse module can be used in all 60 mm busbar systems and also in compact busbar systems and on mounting rails. The interface to the adapter also permits a simple and secure replacement of the load feeder.

The fuse module can be combined with all 3RM1 motor starters. The easily replaceable fuses protect the connected motor and the cables.



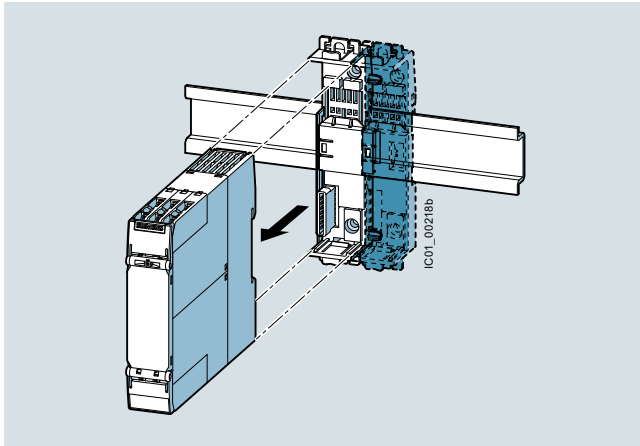
By means of the fuse module, 3RM1 motor starters can be used in busbar systems and 8US compact busbar systems, as well as on mounting rails

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RM1 motor starters

Device connectors for the control circuit

The device connectors for 3RM1 motor starters (24 V DC control supply voltage only) reduce the outlay for cabling by looping through the control supply voltage. The device connectors can be snapped onto a standard mounting rail or fixed to a level mounting panel using screws.



Device connectors with 3RM1 motor starter

Using the device connectors exclusively for feeding in the control supply voltage

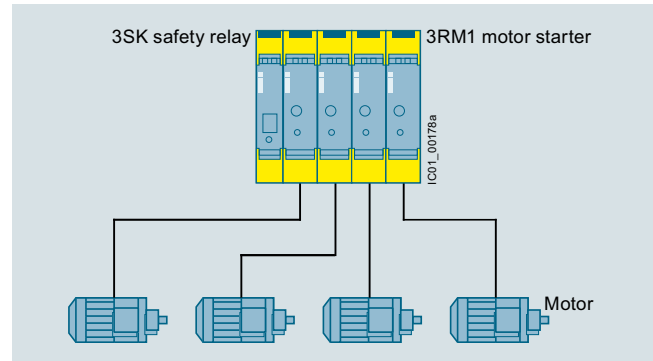
By using device connectors, a maximum of five motor starters can be supplied with 24 V DC control supply voltage. This requires the control supply voltage to be applied to the A1 and A2 terminals of only one motor starter.

Device daisy chain connectors can be used for gaps between two motor starters. Device termination connectors terminate a group.

Using the device connectors for safe group shutdown

In combination with the 3RM11 and 3RM13 fail-safe motor starters, the device connector can also be used for safety-related shutdown. For this application, groups of no more than five fail-safe motor starters can be connected using a device connector, and the group must be terminated with a terminating connector. Removing the control voltage supply from the first motor starter will safely shut down the whole group.

Safe group shutdown can be implemented particularly easily in conjunction with 3SK safety relays. In this case, up to five motor starters can be directly connected to 3SK safety relays via the device connector and then safely shut down (see page 11/12).



Ideal connection: Combination of four SIRIUS 3RM1 Failsafe motor starters with SIRIUS 3SK safety relays

Electromechanical switching devices in series with hybrid motor starters

Switching an inductive load - in particular of motors < 1 kW with high inductance - with an electromechanical switching device (e.g. contactor) can cause high and steep voltage edges.

The resulting faults/damage can be prevented by first disconnecting with the hybrid motor starter or by using EMC suppression modules:

- For 3RT2916-1P. EMC suppression modules for direct mounting on the contactor, see page 3/119
- For motor suppression modules that are fitted in the main circuit, see page 8/94

Note:

For more information, see <https://support.industry.siemens.com/cs/ww/en/view/109758696>.





Load Feeders and Motor Starters for Use in the Control Cabinet

IE3/IE4 ready SIRIUS 3RM1 motor starters

Selection and ordering data

More information

Industry Mall, see www.siemens.com/product?3RM1

	Rating for three-phase motor at 400 V ¹⁾ kW	Adjustable current response value of the inverse-time delayed overload release A	Control supply voltage		SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			At DC V	At AC at 50 Hz V						
Direct-on-line starters										
	0 ... 0.12	0.1 ... 0.5	24	--	2	3RM1001-□AA04		1	1 unit	41D
	0.09 ... 0.75	0.4 ... 2	24	--	2	3RM1002-□AA04		1	1 unit	41D
	0.55 ... 3	1.6 ... 7	24	--	2	3RM1007-□AA04		1	1 unit	41D
	0 ... 0.12	0.1 ... 0.5	110	110 ... 230	2	3RM1001-□AA14		1	1 unit	41D
	0.09 ... 0.75	0.4 ... 2	110	110 ... 230	2	3RM1002-□AA14		1	1 unit	41D
	0.55 ... 3	1.6 ... 7	110	110 ... 230	2	3RM1007-□AA14		1	1 unit	41D
Reversing starters										
	0 ... 0.12	0.1 ... 0.5	24	--	2	3RM1201-□AA04		1	1 unit	41D
	0.09 ... 0.75	0.4 ... 2	24	--	2	3RM1202-□AA04		1	1 unit	41D
	0.55 ... 3	1.6 ... 7	24	--	2	3RM1207-□AA04		1	1 unit	41D
	0 ... 0.12	0.1 ... 0.5	110	110 ... 230	2	3RM1201-□AA14		1	1 unit	41D
	0.09 ... 0.75	0.4 ... 2	110	110 ... 230	2	3RM1202-□AA14		1	1 unit	41D
	0.55 ... 3	1.6 ... 7	110	110 ... 230	2	3RM1207-□AA14		1	1 unit	41D
Failsafe direct-on-line starters										
	0 ... 0.12	0.1 ... 0.5	24	--	2	3RM1101-□AA04		1	1 unit	41D
	0.09 ... 0.75	0.4 ... 2	24	--	2	3RM1102-□AA04		1	1 unit	41D
	0.55 ... 3	1.6 ... 7	24	--	2	3RM1107-□AA04		1	1 unit	41D
	0 ... 0.12	0.1 ... 0.5	110	110 ... 230	2	3RM1101-□AA14		1	1 unit	41D
	0.09 ... 0.75	0.4 ... 2	110	110 ... 230	2	3RM1102-□AA14		1	1 unit	41D
	0.55 ... 3	1.6 ... 7	110	110 ... 230	2	3RM1107-□AA14		1	1 unit	41D
Failsafe reversing starters										
	0 ... 0.12	0.1 ... 0.5	24	--	2	3RM1301-□AA04		1	1 unit	41D
	0.09 ... 0.75	0.4 ... 2	24	--	2	3RM1302-□AA04		1	1 unit	41D
	0.55 ... 3	1.6 ... 7	24	--	2	3RM1307-□AA04		1	1 unit	41D
	0 ... 0.12	0.1 ... 0.5	110	110 ... 230	2	3RM1301-□AA14		1	1 unit	41D
	0.09 ... 0.75	0.4 ... 2	110	110 ... 230	2	3RM1302-□AA14		1	1 unit	41D
	0.55 ... 3	1.6 ... 7	110	110 ... 230	2	3RM1307-□AA14		1	1 unit	41D

3RM1301-1AA04

Type of electrical connection


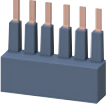
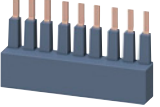
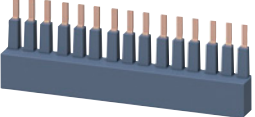




- Screw terminals for main circuit, screw terminals for control circuit
- Spring-type terminals (push-in) for main circuit, spring-type terminals (push-in) for control circuit
- Screw terminals for main circuit, spring-type terminals (push-in) for control circuit

1
2
3

¹⁾ The actual startup characteristics of the motor as well as its rated data are important factors here.

Load Feeders and Motor Starters for Use in the Control Cabinet








SIRIUS 3RM1 motor starters

Product designation	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Three-phase infeed system for 3RM1 with screw terminals						
 3RM1920-1AA		▶ Three-phase infeed terminals • for three-phase busbars		1	1 unit	41D
 3RM1910-1AA		▶ Three-phase busbars • For 2 motor starters		1	1 unit	41D
 3RM1910-1BA		▶ • For 3 motor starters		1	1 unit	41D
 3RM1910-1DA		▶ • For 5 motor starters		1	1 unit	41D
 3RM1910-6AA		▶ Covers For 3 connection tags of the three-phase busbars		1	10 units	41D
Fuse modules for 3RM1 for use on busbars or mounting rails						
 3RM1932-1AB		▶ Fuse module with 3NW6007-1 fuse	2	3RM1932-1AB	1	1 unit 41D
		▶ Fuse module without fuse¹⁾	10	3RM1930-1AA	1	1 unit 41D
Adapters						
 8US1216-0AS00		▶ Adapters for busbar systems 22.5 mm x 200 mm x 41.5 mm	5	8US1216-0AS00	1	1 unit 140
 8US1616-0AK02		▶ Adapters for compact busbar systems 22.5 mm x 160 mm x 41.5 mm	5	8US1616-0AK02	1	1 unit 140

¹⁾ For details of alternative fuses, [see manual](#).

Load Feeders and Motor Starters for Use in the Control Cabinet

SIRIUS 3RM1 motor starters

Product designation	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Adapters						
 8US1716-0RK00	d	Adapter for 35 mm DIN mounting rails 22.5 mm x 185 mm x 23.5 mm	5	8US1716-0RK00	1	1 unit 140
Cover profiles¹⁾²⁾						
Cover profiles for busbars						
 8US1922-2CA00		12 mm x 5 mm x 1 000 mm 40 mm or 60 mm center-to-center busbar clearance depending on busbar system	2	8US1922-2CA00	1	10 units 140
 8US1922-2AA00		15 mm x 5 mm x 1 000 mm 20 mm x 5 mm x 1 000 mm 25 mm x 5 mm x 1 000 mm 30 mm x 5 mm x 1 000 mm 40 mm or 60 mm center-to-center busbar clearance depending on busbar system	2	8US1922-2AA00	1	10 units 140
 8US1922-2BA00		12 mm x 10 mm x 1 000 mm 15 mm x 10 mm x 1 000 mm 20 mm x 10 mm x 1 000 mm 25 mm x 10 mm x 1 000 mm 30 mm x 10 mm x 1 000 mm 60 mm center-to-center busbar clearance	2	8US1922-2BA00	1	10 units 140
Device connectors						
 3ZY1212-2EA00		Device connectors For 3RM1 motor starters, 24 V DC, 22.5 mm	2	3ZY1212-2EA00	1	1 unit 41L
 3ZY1212-2AB00		Device daisy chain connectors For 3RM1 motor starters 24 V DC, 22.5 mm For gaps without motor starters in assemblies	2	3ZY1212-2AB00	1	1 unit 41L
 3ZY1212-2FA00		Device termination connectors For 3RM1 motor starters, 24 V DC, 22.5 mm	2	3ZY1212-2FA00	1	1 unit 41L

1) The cover profiles for busbars can be used for maintaining minimum spacing between the load feeders.

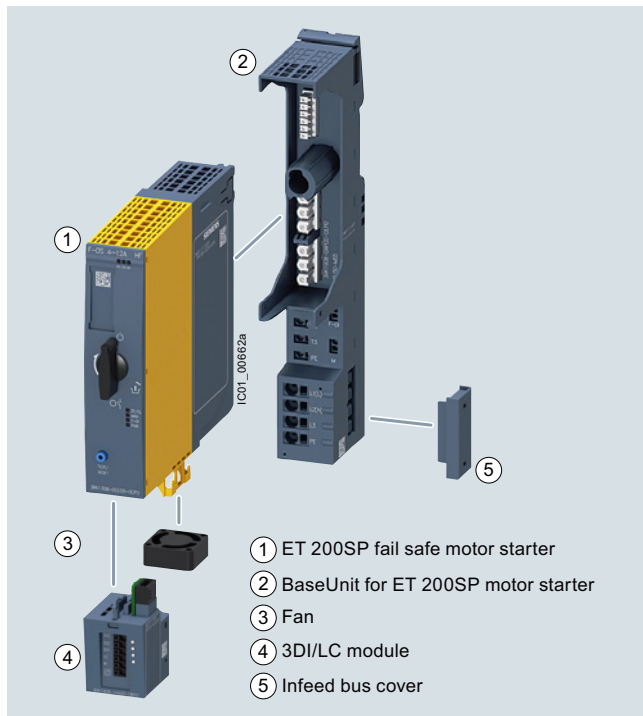
2) For further accessories for the configuration of a busbar system, see [Catalog LV 10](#).

Load Feeders and Motor Starters for Use in the Control Cabinet

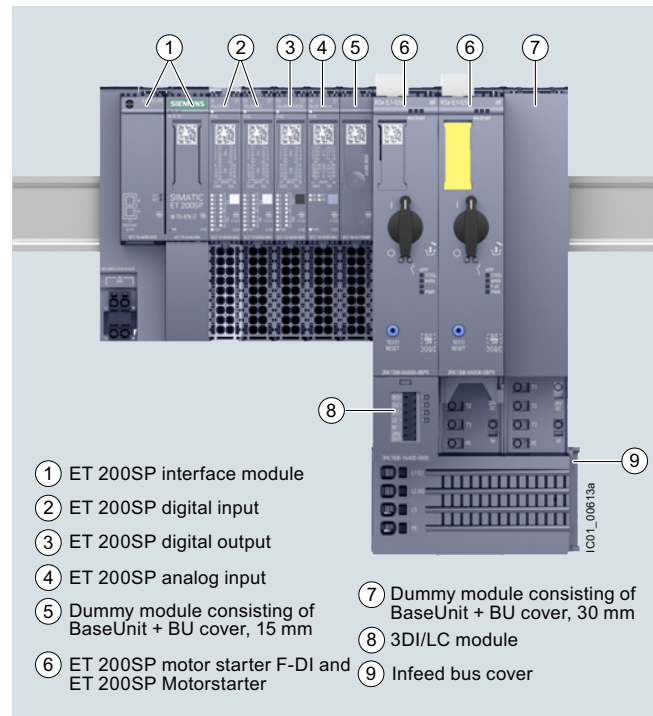
SIRIUS 3RM1 motor starters

Product designation	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Removable terminals							
 3ZY1122-1BA00	Terminal for main circuit, 2-pole						
	• Screw terminals, 1 x 4 mm ²	2	Screw terminals 				
			3ZY1122-1BA00	1	6 units	41L	
	• Spring-type terminals (push-in), 1 x 4 mm ²	2	Spring-type terminals 				
		3ZY1122-2BA00	1	6 units	41L		
 3ZY1131-1BA00	Terminal for control circuit, 3-pole						
	• Screw terminals, 1 x 2.5 mm ²	2	Screw terminals 				
			3ZY1131-1BA00	1	6 units	41L	
	• Spring-type terminals (push-in), 1 x 2.5 mm ²	2	Spring-type terminals 				
		3ZY1131-2BA00	1	6 units	41L		
Further accessories							
 3ZY1311-0AA00	Push-in lugs for wall mounting 2 lugs per device are required		2	3ZY1311-0AA00	1	10 units	41L
 3ZY1321-2AA00	Sealable covers, 22.5 mm For simple protection against unauthorized access		2	3ZY1321-2AA00	1	5 units	41L
 3ZY1440-1AA00	Coding pins for removable terminals For mechanical coding of the terminals		2	3ZY1440-1AA00	1	12 units	41L
 3ZY1450-1AB00	Hinged cover NEW Replacement cover, without terminal labeling, 22.5 mm wide		2	3ZY1450-1AB00	1	5 units	41H
	• Titanium gray	2	3ZY1450-1BB00	1	5 units	41H	
	• Yellow	2		1	5 units	41H	
 3RK1911-6EA00	Motor suppression module NEW		15	3RK1911-6EA00	1	1 unit	42D
	• Square	15	3RK1911-6EB00	1	1 unit	42D	
	• Round	15		1	1 unit	42D	
 3RA2908-1A	Screwdrivers For all SIRIUS devices with spring-type terminals Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated		2	Spring-type terminals 			
				3RA2908-1A	1	1 unit	41B

Overview



Motor starter, BaseUnit, fan and 3DI/LC control module



3RK1308 motor starter in the ET 200SP I/O system

More information

Homepage, see www.siemens.com/ET200SP-motorstarter
Industry Mall, see www.siemens.com/product?3RK1308
TIA Selection Tool, see www.siemens.com/TST

Further components in the ET 200SP distributed I/O system:

- [Catalog ST 70](#)
- Industry Mall, see www.siemens.com/product?ET200SP

ET 200SP motor starters

ET 200SP is a scalable and extremely flexible modular I/O system with IP20 degree of protection.

As I/O modules, the ET 200SP motor starters are an integral part of this I/O system. They are switching and protection devices for single- and three-phase loads and are available as direct-on-line or reversing starters.

Basic functionality

All versions of the ET 200SP motor starter feature the following functionality:

- Fully pre-wired motor starters for switching and protecting any AC loads up to 5.5 kW from 48 V AC to 500 V AC
- Disconnection possible via fail-safe motor starters up to SIL 3 and PL e Cat. 4
- With self-assembling 32 A power bus, i.e. the load voltage is only fed in once for a group of motor starters
- All control supply voltages connected only once, i.e. when modules are added they are automatically connected to the next module
- Hot swapping is permissible
- Digital inputs can optionally be used via a 3DI/LC module
- Control of the motor starter from the control system and extensive diagnostics status via the cyclic process image
- Diagnostics capability for active monitoring of the switching and protection functions

- The signal states in the process image of the motor starter provide information about protective devices (short circuit or overload), the switching states of the motor starter, and system faults.

Use of fan

For motor starters with a 12 A rated current, the 3RW4928-8VB00 fan is included in the scope of supply.

This fan can also be ordered as an option for motor starters with lower rated currents, if the boundary conditions demand this. For information on the ambient conditions for the use of motor starters, see chapter "Product overview" in the Manual.

Designing interference-free motor starters

For interference-free operation of the ET 200SP station in accordance with IEC 60947-4-2 standard, use a dummy module before the first motor starter. The dummy module consists of the 6ES7193-6BP00-0BA0 or 6ES7193-6BP00-0DA0 BaseUnit and the 6ES7133-6CV15-1AM0 BU cover 15 mm.

The 15 mm BU cover protects the plug contacts of the BaseUnit against dirt.

Load Feeders and Motor Starters for Use in the Control Cabinet

ET 200SP motor starters

Electromechanical switching devices in series with hybrid motor starters

Switching an inductive load - in particular of motors <1 kW with high inductance - with an electromechanical switching device (e.g. contactor) can cause high and steep voltage edges.

The resulting faults/damage can be prevented by first disconnecting with the hybrid motor starter or by using EMC suppression modules:

- For 3RT2916-1P.. EMC suppression modules for direct mounting on the contactor, [see page 3/119](#)
- For motor suppression modules that are fitted in the main circuit, [see page 8/104](#)

Note:

For more information, [see https://support.industry.siemens.com/cs/ww/en/view/109758696](https://support.industry.siemens.com/cs/ww/en/view/109758696).

BaseUnits for motor starters

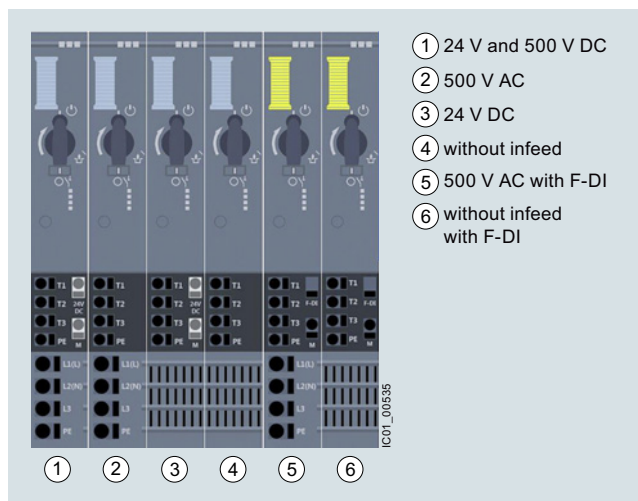
BaseUnits are components for accommodating the ET 200SP I/O modules.

The self-assembling voltage buses integrated into the terminal modules reduce wiring outlay to the single infeed (both of auxiliary and load voltage).

All modules following on the right are automatically supplied upon plugging the BaseUnits together, if BaseUnits are inserted with routing.

The rugged design and keyed connection technology enables use in harsh industrial conditions.

The BaseUnits are available with various infeeds for the motor starters.



View of the BaseUnit infeeds for the motor starters

3DI/LC control module

This is a digital input module with three inputs for local motor starter functions such as "manual local control", "implementation of fast inputs" or "end position disconnection". For a list of all the functions permitted by the 3DI/LC module, [see chapter "Overview of functions" in the manual](#).

The module is plugged into the front of the motor starter from which it is supplied with a 24 V DC operating voltage.

Article No. scheme

Product versions		Article number	
Motor starters		3RK1308 - 0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0 0 - 0 C P 0	
Product function	Direct-on-line starter	A	for motor standard output 0.12 ... 5.5 kW ¹⁾
	Reversing starters	B	for motor standard output 0.12 ... 5.5 kW ¹⁾
	Fail-safe direct-on-line starters	C	for motor standard output 0.12 ... 5.5 kW ¹⁾
	Fail-safe reversing starters	D	for motor standard output 0.12 ... 5.5 kW ¹⁾
Current range	0.3 ... 1 A	B	maximum current-carrying capacity when starting 10 A
	0.9 ... 3 A	C	maximum current-carrying capacity when starting 30 A
	2.8 ... 9 A	D	maximum current-carrying capacity when starting 90 A
	4 ... 12 A	E	including fan (3RW4928-8VB00), maximum current-carrying capacity when starting 100 A
Example		3RK1308 - 0 A D 0 0 - 0 C P 0	

¹⁾ For standard motors: Single- or three-phase asynchronous motors, single-phase AC motors, single-phase asynchronous motors, at 400 V AC and 500 V AC; the actual startup characteristics of the motor as well as its rated data are important factors here.

Product versions		Article number	
BaseUnit		3RK1908 - 0 A P 0 0 - 0 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> P 0	
BU infeed	24 V and 500 V AC	A	
	24 V DC	B	
	500 V AC	C	
	without infeed	D	
	500 V AC	E	with F-DI for fail-safe motor starters
	without infeed	F	with F-DI for fail-safe motor starters
Example		3RK1908 - 0 A P 0 0 - 0 A P 0	

Note:

The article number schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits**Product advantages**

The ET 200SP motor starters offer a number of advantages:

- Fully integrated into the ET 200SP I/O system (including TIA Selection Tool and TIA Portal)
- High degree of flexibility when it comes to safety applications via SIMATIC F-CPU or SIRIUS 3SK safety relays up to SIL 3 and PL e Cat. 4.
- Simple, integrated current value transmission
- Extensive parameterization by means of TIA Portal
- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Greater endurance and reduced heat losses thanks to hybrid technology
- Less space required in the control cabinet (20 to 80%) as a result of greater functional density (direct-on-line and reversing starters in same width)
- Extensive diagnostics and information for preventive maintenance
- Parameterizable inputs via 3DI/LC control module
- Less wiring and testing required as a result of integrating several functions into a single device
- Lower overheads for stock keeping and configuration as a result of the wide setting range of the electronic overload release (up to 1:3)
- Technology has lower inherent power losses than speed-controlled drive systems, so that less cooling (and smaller footprint) are possible (and enabling a more compact design)
- The ET 200SP motor starters can be used with highly energy-efficient IE3/IE4 motors, [see Application Manual](#). Take the current characteristics of the connected motor and motor starter into account when dimensioning. In addition to the rated current, the maximum permissible current range of the motor starter and the ratio of the rated current to the starting current of the motor are relevant. For more information on IE3/IE4, [see page 1/7](#).

Standards and approvals

- IEC/EN 60947-4-2
- UL 60947-4-2
- CSA
- ATEX
- IEC 61508-1: SIL 3
- ISO 13849: PL e
- CCC approval for China

Application

The ET 200SP motor starters are suitable for the following applications:

- Switching and monitoring of
 - three-phase motors with overload and short-circuit protection (e.g. 400 V asynchronous motors for secondary drives in conveyor systems)
 - single-phase motors with overload and short-circuit protection (e.g. 230 V motors for pump applications)
 - resistive loads by means of current value and diagnosis via the maintenance function (e.g. for heaters)
- Plant monitoring and energy management in conveyor systems:
 - By means of the phase asymmetry and zero current detection during current measurement, for example, drive belt monitoring and blocking monitoring are possible.
- Track switching and lifting table control in conveyor systems:
 - Track switches can be implemented using the quick stop function and lifting table controls by means of the "immediate end position disconnection" function without any laborious programming.
- Safe isolation of the drive from main power supply:
 - The isolating functions according to IEC 60947-1 offer protection against inadvertent activation during plant maintenance.

Load Feeders and Motor Starters for Use in the Control Cabinet

ET 200SP motor starters

Technical specifications

More information

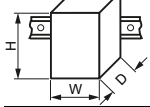
Industry Mall, see www.siemens.com/product?3RK1308

Manual, see

<https://support.industry.siemens.com/cs/ww/en/view/109479973>

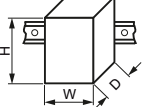
FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/21800/faq>

ET 200SP motor starters

Article number		3RK1308-0AB00-0CP0	3RK1308-0AC00-0CP0	3RK1308-0AD00-0CP0	3RK1308-0AE00-0CP0
		3RK1308-0BB00-0CP0	3RK1308-0BC00-0CP0	3RK1308-0BD00-0CP0	3RK1308-0BE00-0CP0
Product designation		Motor starters			
General technical specifications:					
Width x height x depth	mm	30 × 142 × 150			
					
Design of the switch contact		Hybrid			
Design of the motor protection		Electronic			
Installation altitude at height above sea level, maximum	m	4 000			
Mounting position		Vertical, horizontal, flat (observe derating)			
Type of mounting		Can be plugged into BaseUnit			
Ambient temperature	°C	-25 ... +60			
• During operation	°C	-40 ... +70			
• During transport	°C	-40 ... +70			
• During storage					
Relative humidity during operation	%	10 ... 95			
Vibration resistance		15 mm up to 6 Hz; 2 g up to 500 Hz			
Shock resistance		6 g / 11 ms			
Degree of protection		IP20			
Type of coordination		1			
Electrical data:					
Supply voltage at DC rated value	V	24			
Operational power for AC-53a at 400 V rated value	kW	0.25	1.1	4	5.5
Operating frequency, rated value	Hz	50 ... 60			
Ultimate short-circuit current breaking capacity (I_{cu})	kA	55			
• at 400 V rated value	kA	55			
• at 500 V rated value					
Adjustable current response value of the inverse-time delayed overload release	A	0.3 ... 1	0.9 ... 3	2.8 ... 9	4 ... 12
Max. current carrying capacity at startup	A	10	30	90	100
Max. permissible voltage for protective separation between main and auxiliary circuit	V	500			
Insulation voltage, rated value	V	500			
Trip class		CLASS 5 and 10 adjustable			

Load Feeders and Motor Starters for Use in the Control Cabinet

ET 200SP motor starters

Article number		3RK1308-0CB00-0CP0	3RK1308-0CC00-0CP0	3RK1308-0CD00-0CP0	3RK1308-0CE00-0CP0
		3RK1308-0DB00-0CP0	3RK1308-0DC00-0CP0	3RK1308-0DD00-0CP0	3RK1308-0DE00-0CP0
Product designation		Fail-safe motor starter			
General technical specifications:					
Width x height x depth	mm	30 × 142 × 150			
					
Design of the switch contact		Hybrid			
Design of the motor protection		Electronic			
Installation altitude at height above sea level, maximum	m	2 000			
Mounting position		Vertical, horizontal, flat (observe derating)			
Type of mounting		Can be plugged into BaseUnit			
Ambient temperature					
• During operation	°C	-25 ... +60			
• During transport	°C	-40 ... +70			
• During storage	°C	-40 ... +70			
Relative humidity during operation	%	10 ... 95			
Vibration resistance		15 mm up to 6 Hz; 2 g up to 500 Hz			
Shock resistance		6 g / 11 ms			
Degree of protection		IP20			
Type of coordination		1			
Electrical data:					
Supply voltage at DC rated value	V	24			
Operational power for AC-53a at 400 V rated value	kW	0.25	1.1	4	5.5
Operating frequency, rated value	Hz	50 ... 60			
Ultimate short-circuit current breaking capacity (I_{cu})					
• at 400 V rated value	kA	55			
• at 500 V rated value	kA	55			
Adjustable current response value of the inverse-time delayed overload release	A	0.3 ... 1	0.9 ... 3	2.8 ... 9	4 ... 12
Max. current carrying capacity at startup	A	10	30	90	100
Max. permissible voltage for protective separation between main and auxiliary circuit	V	500			
Insulation voltage, rated value	V	500			
Trip class		CLASS 5 and 10 adjustable			

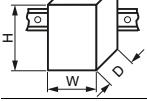
Load Feeders and Motor Starters for Use in the Control Cabinet

ET 200SP motor starters

BaseUnits for motor starters

Article number	3RK1908-0AP00-0AP0	3RK1908-0AP00-0BP0	3RK1908-0AP00-0CP0	3RK1908-0AP00-0DP0	3RK1908-0AP00-0EP0	3RK1908-0AP00-0FP0
Product designation	BaseUnit					
General technical specifications:						
Width x height x depth	mm	30 × 215 × 75				
Ambient temperature						
• During operation	°C	-25 ... +60				
• During transport	°C	-40 ... +70				
• During storage	°C	-40 ... +70				
Degree of protection		IP20				
Touch protection against electric shock		Finger-safe				
Connections/terminals:						
Type of connectable conductor cross-sections						
• at the inputs for supply voltage						
- Solid		1x0.5 ... 2.5 mm ²	--			
- Finely stranded with end sleeve		1x0.5 ... 2.5 mm ²	--			
- Finely stranded without end sleeve		1x0.5 ... 2.5 mm ²	--			
- Solid for AWG cables		1x20 ... 12	--			
• For infeed						
- Solid		1x1 ... 6 mm ²	--	1x1 ... 6 mm ²	--	1x1 ... 6 mm ² --
- Finely stranded with end sleeve		1x1 ... 6 mm ²	--	1x1 ... 6 mm ²	--	1x1 ... 6 mm ² --
- Finely stranded without end sleeve		1x1 ... 6 mm ²	--	1x1 ... 6 mm ²	--	1x1 ... 6 mm ² --
- Solid for AWG cables		1x18 ... 10	--	1x18 ... 10	--	1x18 ... 10 --
• For load-side outgoing feeder						
- Solid		1x0.5 ... 2.5 mm ²				
- Finely stranded with end sleeve		1x0.5 ... 2.5 mm ²				
- Finely stranded without end sleeve		1x0.5 ... 2.5 mm ²				
- Solid for AWG cables		1x20 ... 12				
Type of electrical connection for auxiliary and control circuits		Spring-type terminals (push-in)				
Miscellaneous:						
Type of screwdriver tip		Slotted				
Size of screwdriver tip		Standard screwdriver 0.6 mm x 3.5 mm				





3DI/LC control module

Article number	3RK1908-1AA00-0BP0	
Product designation	3DI/LC control module	
General technical specifications:		
Width x height x depth	mm	30 × 54.5 × 42.3
		
Type of product	Accessories	
Number of digital inputs	4	
Installation altitude at height above sea level, maximum	m	2 000
Mounting position	Vertical, horizontal, flat	
Type of mounting	Can be plugged onto motor starter	
Ambient temperature		
• During operation	°C	-25 ... +60
• During transport	°C	-40 ... +70
• During storage	°C	-40 ... +70
Connections/terminals:		
Connectable conductor cross-section for auxiliary contacts		
• Solid or stranded	mm ²	0.2 ... 1.5
• Finely stranded with end sleeve	mm ²	0.25 ... 1.5
• Finely stranded without end sleeve	mm ²	0.2 ... 1.5
AWG number as coded connectable conductor cross-section	24 ... 16	
Type of electrical connection for auxiliary and control circuits	Spring-type terminals (push-in)	
Electrical data:		
Type of voltage of the control supply voltage	DC	
Control supply voltage at DC rated value	V	20.4 ... 28.8
Miscellaneous:		
Type of screwdriver tip	Slotted	
Size of screwdriver tip	Standard screwdriver 0.6 mm x 3.5 mm	

Load Feeders and Motor Starters for Use in the Control Cabinet

ET 200SP motor starters **IE3/IE4 ready**

Selection and ordering data

	Adjustable current response value of the inverse-time delayed overload release	Max. current carrying capacity at startup	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	A	d					
Motor starters								
<i>Direct-on-line starters</i>								
	0.3 ... 1	10	2	3RK1308-0AB00-0CP0		1	1 unit	42D
	0.9 ... 3	30	2	3RK1308-0AC00-0CP0		1	1 unit	42D
	2.8 ... 9	90	2	3RK1308-0AD00-0CP0		1	1 unit	42D
	4 ... 12	100	2	3RK1308-0AE00-0CP0		1	1 unit	42D
<i>Reversing starters</i>								
	0.3 ... 1	10	2	3RK1308-0BB00-0CP0		1	1 unit	42D
	0.9 ... 3	30	2	3RK1308-0BC00-0CP0		1	1 unit	42D
	2.8 ... 9	90	2	3RK1308-0BD00-0CP0		1	1 unit	42D
	4 ... 12	100	2	3RK1308-0BE00-0CP0		1	1 unit	42D
Fail-safe motor starters								
<i>Fail-safe direct-on-line starters</i>								
	0.3 ... 1	10	2	3RK1308-0CB00-0CP0		1	1 unit	42D
	0.9 ... 3	30	2	3RK1308-0CC00-0CP0		1	1 unit	42D
	2.8 ... 9	90	2	3RK1308-0CD00-0CP0		1	1 unit	42D
	4 ... 12	100	2	3RK1308-0CE00-0CP0		1	1 unit	42D
<i>Fail-safe reversing starters</i>								
	0.3 ... 1	10	2	3RK1308-0DB00-0CP0		1	1 unit	42D
	0.9 ... 3	30	2	3RK1308-0DC00-0CP0		1	1 unit	42D
	2.8 ... 9	90	2	3RK1308-0DD00-0CP0		1	1 unit	42D
	4 ... 12	100	2	3RK1308-0DE00-0CP0		1	1 unit	42D

Load Feeders and Motor Starters for Use in the Control Cabinet

ET 200SP motor starters

Type of product	Operational voltage of the AC infeed	Supply voltage of the DC infeed	SD	Push-in terminals	PU (UNIT, SET, M)	PS*	PG
	V	V	d	Article No.	Price per PU		

BaseUnits¹⁾

3RK1908-0AP00-0AP0

For motor starters

with AC/DC infeed	500	24	2	3RK1908-0AP00-0AP0	1	1 unit	42D
with DC infeed	--	24	2	3RK1908-0AP00-0BP0	1	1 unit	42D
with AC infeed	500	--	2	3RK1908-0AP00-0CP0	1	1 unit	42D
without infeed	--	--	2	3RK1908-0AP00-0DP0	1	1 unit	42D
with AC infeed, with F-DI for fail-safe motor starters	500	--	2	3RK1908-0AP00-0EP0	1	1 unit	42D
without AC infeed, with F-DI for fail-safe motor starters	--	--	2	3RK1908-0AP00-0FP0	1	1 unit	42D

¹⁾ The voltage is looped-through from BaseUnits with infeed to subsequent BaseUnits.

Type of product	Supply voltage at DC rated value	Loop through the potential group from the left	SD	Push-in terminals	PU (UNIT, SET, M)	PS*	PG
	V		d	Article No.	Price per PU		

BaseUnits



6ES7193-6BP00-0BA0

For dummy modules

dark, looping through the potential group	24	Yes	X	6ES7193-6BP00-0BA0	1	1 unit	255
light, opening a new potential group	24	No	X	6ES7193-6BP00-0DA0	1	1 unit	255

Control supply voltage at DC rated value	Product function	SD	Push-in terminals	PU (UNIT, SET, M)	PS*	PG
V	Local control Digital inputs parameterizable	d	Article No.	Price per PU		

3DI/LC control module



3RK1908-1AA00-0BP0

20.4 ... 28.8	Yes	Yes	2	3RK1908-1AA00-0BP0	1	1 unit	42D
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Load Feeders and Motor Starters for Use in the Control Cabinet

ET 200SP motor starters

	Product designation	Type of product	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories								
	BU cover 15 mm	for BaseUnits Type A0 or A1	1	6ES7133-6CV15-1AM0		1	5 units	255
6ES7133-6CV15-1AM0								
	BU cover 30 mm	For protection of empty slots, 30 mm	2	3RK1908-1CA00-0BP0		1	1 unit	42D
3RK1908-1CA00-0BP0								
	Infeed bus cover (1 bag containing 10 covers)	For ET 200SP	2	3RK1908-1DA00-2BP0		1	1 unit	42D
3RK1908-1DA00-2BP0								
	Mechanical bracket (1 bag containing 5 mechanical brackets)	Mechanical, for ET 200SP	2	3RK1908-1EA00-1BP0		1	1 unit	42D
3RK1908-1EA00-1BP0								
	Fan	Can be used for 3RK1308	▶	3RW4928-8VB00		1	1 unit	42G
3RW4928-8VB00								
	Motor suppression module <i>NEW</i>							
	• Square		15	3RK1911-6EA00		1	1 unit	42D
3RK1911-6EA00								
	• Round		15	3RK1911-6EB00		1	1 unit	42D
3RK1911-6EB00								

Motor Starters for Use in the Field, High Degree of Protection



	Price groups
	PG 212, 215, 216, 218, 219, 230, 241, 250, 2AP, 337, 343, 346, 41B, 41J, 42C, 42D, 572, 589, 5K1, 5K2, 5N2, 753, 2AP
9/2	Introduction
	ET 200pro motor starters
9/3	General data
9/8	Standard motor starters
9/9	High Feature motor starters
9/10	ET 200pro isolator modules
	<u>ET 200pro safety motor starters</u>
	<u>Solutions local/PROFIsafe</u>
	Safety modules local
9/11	- Safety local isolator modules
9/11	- 400 V disconnecting modules
	Safety modules PROFIsafe
9/14	- F-Switch PROFIsafe
9/15	<u>Accessories for ET 200pro motor starters</u> NEW
9/20	<u>ET 200pro – interface modules</u> NEW
	<u>ET 200pro CPUs</u>
9/24	Standard CPUs
9/28	Fail-safe CPUs
	<u>ET 200pro – I/O modules</u>
9/33	Digital expansion modules
9/34	Analog expansion modules
9/34	IO-Link master modules
9/34	Fail-safe digital expansion modules
9/35	PM-E power modules
9/36	PM-O power module outputs
9/36	ET 200pro pneumatic interfaces
9/36	RF170C
9/37	<u>Power supplies</u>
9/38	<u>SIMATIC ET 200pro FC-2</u>
	<u>frequency converters</u>
9/39	<u>ET 200pro add-on products</u>
	<u>ET 200pro software</u>
9/40	Motor Starter ES

SIRIUS M200D motor starters

9/41	General data
	<u>M200D motor starters for AS-Interface</u>
9/43	General data
9/47	M200D Basic motor starters
9/48	M200D Standard motor starters
	<u>M200D motor starters for PROFIBUS/PROFINET</u>
9/49	General data
9/55	Communication modules, motor starter modules
	<u>Software</u>
9/56	Motor Starter ES
	<u>Accessories</u>
9/57	For all M200D motor starters
9/62	For M200D motor starters for AS-Interface
9/64	For M200D motor starters for PROFIBUS
9/65	For M200D motor starters for PROFINET
9/66	Hybrid fieldbus connections

Note:

Conversion tool, see www.siemens.com/sirius/conversion-tool

clickable

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.

Article No.
3RA1943-2C 3RA1943-2B 3RA1953-2B 3RA1953-2N

Or directly on the Internet, e.g. www.siemens.com/product?3RA1943-2C

Motor Starters for Use in the Field, High Degree of Protection

Introduction

Overview



3RK1304



3RK1315

	Article No.	Page
ET 200pro motor starters		
Motor starters in the SIMATIC ET 200pro I/O system up to 5.5 kW		
Standard motor starters	3RK1304	9/8
High Feature motor starters	3RK1304	9/9
ET 200pro isolator modules	• With switch disconnector function for safe disconnection 3RK1304	9/10
Safety modules local	• Isolator module, 400 V disconnecting module 3RK1304	9/11
Safety modules PROFIsafe	• F-Switch PROFIsafe 6ES7148	9/14
Accessories for ET 200pro motor starters	• Incoming power supply, power loop-through connection on the field device, motor cable, power bus with power terminal connectors 3RK19	9/15
ET 200pro – interface modules	• For communication with PROFIBUS, PROFINET and IWLAN 6ES71	9/20
ET 200pro CPUs	• Standard CPUs, fail-safe CPUs 6ES71	9/24
ET 200pro – I/O modules	• Digital/analog expansion modules, fail-safe expansion modules, power modules, ET 200pro pneumatic interfaces 6ES71	9/33
ET 200pro PS	• Stabilized power supplies 6ES7148	9/37
ET 200pro FC-2 frequency converters	6SL35	9/38
ET 200pro add-on products	• Modules for EtherNet/IP ZNX:EIP	9/39
SIRIUS M200D motor starters		
Distributed motor starters up to 5.5 kW		
M200D AS-i Basic motor starters	3RK1315	9/47
M200D AS-i Standard motor starters	3RK1325	9/48
M200D communication modules for PROFIBUS	3RK1305	9/55
M200D communication modules for PROFINET	3RK1335	9/55
M200D motor starter modules	3RK1395	9/55
Accessories	• Incoming power supply, motor cable, power bus with power terminal connectors 3RK1911	9/59
	• Motor control with I/O communication 3RK1902	9/61
	• Motor control with AS-i communication 3RK1902	9/62
	• Motor control with PROFIBUS 3RK1902	9/64
	• Motor control with PROFINET 3RK1902	9/65
Hybrid fieldbus connections		
	• Passive and active 3RK1911	9/67

Flexible and cost-efficient distributed starter solutions

Be it their high degree of protection, compact design or integrated multifunctionality – our motor starters and soft starters for use in the field are ideal for realizing distributed drive solutions. The modular concepts, distributed power supply and integrated safety technology of our portfolio for a high degree of protection consistently supports current trends in drive technology.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

General data

Overview

ET 200pro motor starters in I/O system ET 200pro

SIMATIC ET 200pro is the modular I/O system with high degree of protection IP65/66/67 for local, cabinet-free use. The ET 200pro motor starters with the high degree of protection IP65 are an integral part of ET 200pro.



ET 200pro motor starter: Isolator module, Standard starter and High Feature starter mounted on a wide module rack

ET 200pro motor starters (see pages 9/8 and 9/9)

- Only two variants up to 5.5 kW
- All settings can be parameterized by bus
- Comprehensive diagnostic signals
- Support for PROFlenergy
- Overload can be acknowledged by remote reset
- Current unbalance monitoring
- Stall protection
- EMERGENCY START function on overload
- Current value transmission by bus
- Current limit monitoring
- Full support of acyclic services
- Direct-on-line or reversing starters
- Power bus connection can be plugged in using Han Q4/2 plug-in connectors
- Motor feeder with Han Q8/0 connector
- Conductor cross-section up to 6 x 4 mm²
- 25 A per segment (power looped through using jumper plug)
- In the Standard and High Feature versions (with 4 DI on-board)
- Electromechanical switching and electronic switching
- Electronic starter for direct activation or with integrated soft starter function
- Supplied with 400 V AC brake contact as an option
- Temperature sensor can be connected (Thermoclick or PTC type A)
- Provision of the motor current in PROFlenergy format to higher-level systems, motor current shutdown in dead times using PROFlenergy

More information

Homepage, see www.siemens.com/ET200pro

Industry Mall, see www.siemens.com/product?3RK1304

Further components in the ET 200pro distributed I/O system:

- [Catalog ST 70](#)
- Industry Mall, see www.siemens.com/product?ET200pro

ET 200pro isolator modules (see page 9/10)

The isolator module with switch disconnecter function is used for safe disconnection of the 400 V operational voltage during repair work in the plant and provides an integrated group fusing function (i.e. additional group short-circuit protection for all subsequently supplied motor starters).

Depending on the power distribution concept, all stations can be equipped with an isolator module as an option.

Safety applications

Safety Solution local (see page 9/11)

With the Safety local modules

- Safety local isolator module and
 - 400 V disconnecting module
- with an appropriate connection, safety level PL e (according to ISO 13849-1) can be reached.

Safety Solution PROFIsafe (see page 9/14)

With the Safety PROFIsafe modules

- F-Switch and
 - 400 V disconnecting module
- with an appropriate connection, safety levels SIL 3 (according to IEC 62061) and PL e (according to ISO 13849-1) can also be reached.

Functionality

With the ET 200pro motor starters, any three-phase loads can be protected and switched.

The ET 200pro motor starters are available with mechanical and also electronic contacts.

The ET 200pro electromechanical starters are offered as direct-on-line starters (DSe) and reversing starters (RSe) as **Standard** and **High Feature** versions. There are device versions with or without control for externally fed brakes with 400 V AC.

Compared with the Standard motor starters, the **High Feature, mechanical** motor starter also has:

- Four digital inputs
- Advanced parameterization options

The ET 200pro electronic starters are offered as direct-on-line starters (sDSte/sDSte) and reversing starters (sRSSte/sRSte) in the High Feature version.

Compared with the High Feature mechanical motor starters, the **High Feature, electronic** motor starter also has:

- Soft starting and smooth ramp-down function
- Deactivated soft start function as an electronic starter for applications with a high switching frequency
- Advanced parameterization options

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

General data

As a result of the protection concept with solid-state overload evaluation and the use of SIRIUS switching devices, size S00, additional advantages are realized on the Standard and High Feature motor starters – advantages that soon make themselves positively felt particularly in manufacturing processes with high plant stoppage costs:

- Configuration is made easier by the fine modular structure with ET 200pro. When using ET 200pro motor starters, the parts list per load feeder is reduced to two main items: the bus module and the motor starter. This makes the ET 200pro ideal for modular machine concepts or solutions for conveying systems and in machine-tool building.
- Expansions are easily possible through the subsequent adding of modules. The innovative plug-in technology also does away with the wiring needed up to now. Through the hot swapping function (disconnection and connection during operation) a motor starter can be replaced within seconds if necessary, without having to shut down the ET 200pro station and with it the process in the plant. The motor starters are therefore recommendable in particular for applications with special demands on availability. Storage costs are also optimized by the low level of variance (two units up to 5.5 kW).
- With four locally acting inputs available on the High Feature motor starter it is possible to realize autonomous special functions that work independently of the bus and the higher level control system, e.g. as a quick stop on gate valve controls or limit position disconnectors. In parallel with this, the states of these inputs are signaled to the control system.

Article No. scheme

Product versions		Article number				
Motor starters		3RK1304 – 5 <input type="checkbox"/> S <input type="checkbox"/> 0 – <input type="checkbox"/> A A <input type="checkbox"/>				
Setting range	0.15 ... 2.0 A 1.5 ... 12 A	K				
		L				
Product function	Direct-on-line starters DSe		4	4		Standard
	Reversing starters RSe		4	5		Standard
	Direct-on-line starters DSe		4	2		High Feature
	Reversing starters RSe		4	3		High Feature
	Direct-on-line starters sDSSSte/sDSte		7	2		High Feature
	Reversing starters sDSSSte/sDSte		7	3		High Feature
Inputs/outputs	Without brake output					0
	With brake output					3 400 V AC, with High Feature + 4 inputs
Example		3RK1304 – 5 K S 4 0 – 4 A A 0				

Product versions		Article number				
Modules		3RK1304 – 0 H S 0 0 – <input type="checkbox"/> A A 0				
Product function	Isolator modules				6	
	Isolator modules				7	Safety modules local
	400 V disconnecting module				8	Safety modules local/PROFIsafe
Example		3RK1304 – 0 H S 0 0 – 6 A A 0				

Note:

The article number schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

General data

Type	Standard motor starters		High Feature motor starters	
	DSe, RSe		DSe, RSe	sDSSSte, sDSte, sRSSSte, sRSte
Technology designation¹⁾				
Device functions (firmware features)				
Parameterizable rated operational current		✓		
Integrated short-circuit protection		✓		
Parameterizable current limit values		--	✓ 2 limit values	
Parameterizable response in case of current limit violation		--	✓	
Zero current monitoring		✓		
Parameterizable response in case of zero current violation		✓		
Parameterizable current unbalance limit	%	-- Fixed limit value (30 x I _e)	✓ 30 ... 60 x I _e	
Parameterizable response in case of unbalance limit violation		✓		
Motor blocking monitoring		--	✓	
Parameterizable blocking current limit	%	--	✓ 150 ... 1 000 x I _e	
Parameterizable blocking time limit	s	--	✓ 1 ... 5	
Current value transmission		✓		
Group warning diagnostics		--	✓ Parameterizable	
Group diagnostics		✓ Parameterizable		
EMERGENCY START				
Digital inputs				
• Parameterizable input signal		--	✓ 4 inputs	
• Parameterizable input level		--	✓ Latching/non-latching	
• Parameterizable input signal delay	ms	--	✓ NC/NO contacts	
• Parameterizable input signal extension	ms	--	✓ 10 ... 80	
• Parameterizable input control actions		--	✓ 0 ... 200	
			✓ 12 different actions	
Brake output (400 V AC)				
		✓ Order option		
Parameterizable brake enabling delay	s	✓ -2.5 ... +2.5		
Parameterizable holding time of the brake during stopping	s	✓ 0 ... 25		
Parameterizable start up type		--		✓
Parameterizable ramp-down time		--		✓
Parameterizable starting voltage		--		✓
Parameterizable stopping voltage		--		✓
Local device interface		✓		
Firmware update		✓ By specialists		
Thermal motor model				
		✓		
Parameterizable trip class		-- CLASS 10 fixed	✓ CLASS 5, 10, 15, 20	
Parameterizable response in case of overload of thermal motor model		--	✓ 3 possible states	
Advance warning limit for motor heating	%	--	✓ Parameterizable 0 ... 95	
Advance warning limit time-related trip reserve	s	--	✓ Parameterizable 0 ... 500	
Parameterizable recovery time	min	--	✓ 1 ... 30	
Parameterizable protection against voltage failure		-- Permanently integrated	✓	
Reversing start function				
		✓ Order option		
Parameterizable interlock time for reversing starters		-- 150 ms fixed	✓ 0 ... 60 s	
Integrated logbook functions				
		✓ 3 device logbooks		
Integrated statistics data memory				
		✓		
Parameterizable response in case of CPU/master stop				
		✓		
PROFenergy profile support				
• Disconnection of the motor current during idle times		✓		
• Measured motor current values		✓		
Device indications				
• Group fault		SF LED (red)		
• Switching state		STATE LED (red, yellow, green)		
• Device status		DEVICE LED (red, yellow, green)		
• Digital inputs		--	IN 1 ... IN 4, LED	

✓ Function available

-- Function not available

- 1) DS Direct-on-line starters
 RS Reversing starters
 DSS .. Direct-on-line soft starters
 RSS .. Reversing soft starters
 e Electronic motor protection
 te Full motor protection (thermal + electronic)
 s Electronic switching with semiconductor.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

General data

Benefits

ET 200pro motor starters provide the following advantages:

- High flexibility thanks to a modular and compact design
- Little variance among all motor starter versions (two units up to 5.5 kW)
- Extensive parameterization using STEP 7 HW Config
- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Extensive diagnostics and information for preventive maintenance
- Parameterizable inputs for on-site control functions (High Feature)
- Cabinet-free design thanks to high degree of protection IP65

Application

The SIMATIC ET 200pro motor starters are ideal for the use of several spatially concentrated distributed drive solutions in which several motors, or digital or analog sensors and actuators are addressed from a distributed station. They are perfectly suited for protecting and switching any AC loads.

Application areas

The SIMATIC ET 200pro motor starters are suitable for numerous sectors of industry, e.g. machinery and plant engineering or conveying applications.

Use of ET 200pro motor starters in conjunction with IE3/IE4 motors

Note:

For the use of ET 200pro motor starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, [see Application Manual](#).

For more information, [see page 1/7](#).

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

General data

Technical specifications

More information			
Manual, see https://support.industry.siemens.com/cs/ww/en/view/22332388		Notes on security: System networking requires suitable protective measures (including network segmentation for IT security) in order to ensure safe plant operation. For more information on the subject of Industrial Security, see www.siemens.com/industrialsecurity .	
Type		Standard motor starters Mechanically switching without inputs	High Feature motor starters Mechanically switching with inputs
Technology designation ¹⁾		DSe, RSe	DSe, RSe Mechanically switching with inputs and soft starter function sDSSSte, sDSte, sRSSSte, sRSte
Mechanics and environment			
Motor starters or modules that can be connected to ET 200pro With width of 110 mm		max. 8	
Mounting dimensions (W x H x D) • Direct-on-line starters and reversing starters	mm	110 x 230 x 150	110 x 230 x 160
Permissible ambient temperature • During operation • During storage	°C °C	-25 ... +55, from +40 with derating -40 ... +70	
Permissible mounting position		Vertical, horizontal	
Vibration resistance acc. to IEC 60068, Part 2-6	g	2	
Shock resistance acc. to IEC 60068, Part 2-27	g/ms	Half-sine 15/11	
Degree of protection		IP65	
Pollution degree		3, IEC 60664 (IEC 61131)	
Electrical specifications			
Power consumption at 24 V DC • From auxiliary circuit L+/M (U1) • From auxiliary circuit A1/A2 (U2)	mA mA	Approx. 40 Approx. 200	
Rated operational current I_g for power bus	A	25	
Rated operational voltage U_g • Approval according to EN 60947-1, Appendix N • Approval according to CSA and UL	V AC V AC V AC	400 (50/60 Hz) Up to 400 (50/60 Hz) Up to 600 (50/60 Hz)	
Approval • DIN VDE 0106, Part 101 • CSA and UL approval	V V	Up to 400 Up to 600	
Conductor cross-sections • Incoming power supply	mm ²	Max. 6 x 4	
Touch protection		Finger-safe	
Rated impulse withstand voltage U_{imp}	kV	6	
Rated insulation voltage U_i	V	400	
Rated operational current I_g for starters • AC-1 / 2 / 3 at 40 °C - At 400 V - At 500 V • AC-4 at 40 °C - At 400 V	A A A	0.15 ... 2.0/1.5 ... 12.0 0.15 ... 2.0/1.5 ... 9.0 0.15 ... 2.0/1.5 ... 4.0	
Rated short-circuit breaking capacity	kA	100 at 400 V	
Type of coordination acc. to IEC 60947-4-1		1	
Power of three-phase motors at 400 V	kW	Max. 5.5	
Utilization categories		AC-1, AC-2, AC-3, AC-4	
Protective separation between main and auxiliary circuits	V	400, acc. to EN 60947-1, Appendix N	
Endurance of contactor • Mechanical • Electrical	Operating cycles Operating cycles	30 million Up to 10 million; depending on the current loading (see manual)	
Permissible switching frequency		Depending on the current loading, motor starting time, and relative ON period (see manual)	
Operating times at 0.85 ... 1.1 x U_g • Closing delay • Opening delay	ms ms	11 ... 50 5 ... 45	

¹⁾ DS ... Direct-on-line starters
RS ... Reversing starters
DSS ... Direct-on-line soft starters
RSS ... Reversing soft starters
e ... Electronic motor protection
te ... Full motor protection (thermal + electronic)
s ... Electronic switching with semiconductor.

²⁾ If the soft starter control function is deactivated, the permissible rated operational current is reduced to 9 A up to CLASS 10.
³⁾ With parameterization as electronic starter max. 4 kW.
⁴⁾ 8-hour operation.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

Standard motor starters **IE3/IE4 ready**

Overview

The functionality, device functions, and technical specifications of the Standard motor starter are described in "ET 200pro Motor Starters, General data" (see page 9/3 onwards).

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Standard motor starters, mechanical Motor protection: thermal model



DSe Standard

DSe direct-on-line starters¹⁾

- Without brake output
- With brake output 400 V AC

2

2

3RK1304-5□S40-4AA0

3RK1304-5□S40-4AA3

1

1 unit

42D

1

1 unit

42D

RSe reversing starters¹⁾

- Without brake output
- With brake output 400 V AC

2

2

3RK1304-5□S40-5AA0

3RK1304-5□S40-5AA3

1

1 unit

42D

1

1 unit

42D

Setting range
Rated operational current

- 0.15 ... 2.0 A
- 1.5 ... 12.0 A

Additional price

None

✓

K
L

¹⁾ Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters", page 9/19).

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

IE3/IE4 ready High Feature motor starters

Overview

The functionality, device functions, and technical specifications of the High Feature motor starter are described in "ET 200pro Motor Starters, General data" (see page 9/3 onwards).

The High Feature motor starter differs from the Standard motor starter in having more parameters and four integrated, freely-parameterizable digital inputs.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

High Feature motor starters, mechanical Motor protection: thermal model



RSe High Feature

DSe direct-on-line starters¹⁾

- Without brake output and with 4 inputs
- With brake output 400 V AC and 4 inputs

2	3RK1304-5□S40-2AA0	1	1 unit	42D
5	3RK1304-5□S40-2AA3	1	1 unit	42D

RSe reversing starters¹⁾

- Without brake output and with 4 inputs
- With brake output 400 V AC and 4 inputs

2	3RK1304-5□S40-3AA0	1	1 unit	42D
2	3RK1304-5□S40-3AA3	1	1 unit	42D

Setting range
Rated operational current

- 0.15 ... 2.0 A
- 1.5 ... 12.0 A

Additional price

None
✓

K
L

High Feature motor starters²⁾, electronic Full motor protection, comprising thermal motor protection and thermistor motor protection



sRSSt High Feature

Direct-on-line starters sDSSSt/sDSt¹⁾²⁾

- Without brake output and with 4 inputs
- With brake output 400 V AC and 4 inputs

2	3RK1304-5□S70-2AA0	1	1 unit	42D
5	3RK1304-5□S70-2AA3	1	1 unit	42D

Reversing starters sRSSSt/sRSt¹⁾²⁾

- Without brake output and with 4 inputs
- With brake output 400 V AC and 4 inputs

2	3RK1304-5□S70-3AA0	1	1 unit	42D
2	3RK1304-5□S70-3AA3	1	1 unit	42D

Setting range
Rated operational current

- 0.15 ... 2.0 A
- 1.5 ... 12.0 A

Additional price

None
✓

K
L

¹⁾ Only functions when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters", page 9/19).

²⁾ The solid-state motor starters can be used not only as solid-state motor starters with a high level of switching frequency but also as fully fledged soft starters for soft starting and stopping. The changeover from motor starter to soft starter takes place through reparameterization in HW Config. Depending on the setting, this results in the following current ranges:

- Parameterization as solid-state motor starter: 0.15 to 2 A and 1.5 to 9 A (4 kW)
- Parameterization as soft starter: 0.15 to 2 A and 1.5 to 12 A (5.5 kW).

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro isolator modules **IE3/IE4 ready**

Overview

The isolator module with integrated group fusing function (i.e. additional group short-circuit protection for all subsequently supplied motor starters) and switch disconnecter function is used for safe disconnection of the 400 V operational voltage in the plant.

Depending on the power distribution concept, all stations can be equipped with an isolator module as an option.

The following properties apply to the isolator module:

- Increase of plant availability through fast replacement of units (easy mounting and plug-in technology)
- Cabinet-free design thanks to high degree of protection IP65

The isolator module is available in addition in a safety version (see "Safety local isolator module" on page 9/11).

Technical specifications

Type	Isolator modules	
General data		
Mounting dimensions (W x H x D)		
• Direct-on-line starters and reversing starters	mm	110 x 230 x 170
Permissible ambient temperature		
• During operation	°C	-25 ... +55
• During storage	°C	-40 ... +70
Permissible mounting position		
		Any
Vibration resistance acc. to IEC 60068 Part 2-6		
	g	2
Shock resistance acc. to IEC 60068 Part 2-27		
	g/ms	Half-sine 15/11
Power consumption		
• From auxiliary circuit L+/M (U1)	mA	Approx. 20
• From auxiliary circuit A1/A2 (U2)		--
Rated operational current I_e for power bus		
	A	25
Rated operational voltage U_e		
	V	400
Approvals according to		
• DIN VDE 0106, Part 101	V	Up to 500
• CSA and UL	V	Up to 600
Conductor cross-sections		
• Incoming power supply	mm ²	Max. 6 x 4

Type	Isolator modules	
Degree of protection		
		IP65
Touch protection		
		Finger-safe
Pollution degree		
		3, IEC 60664 (IEC 61131)
Rated impulse withstand voltage U_{imp}		
	kV	6
Rated insulation voltage U_i		
	V	400
Rated operational current I_e for starters		
• AC-1 / 2 / 3 at 40 °C		
- At 400 V	A	25
- At 500 V	A	25
Rated short-circuit breaking capacity		
	kA	50 at 400 V
Type of coordination acc. to IEC 60947-4-1		
		2
Protective separation between main and auxiliary circuits		
	V	400, according to DIN VDE 0106, Part 101
Device functions		
• Group diagnostics		Yes, parameterizable
Device indications		
• Group fault		SF LED (red)

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

ET 200pro isolator modules, mechanical

Isolator modules ¹⁾	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rated operational current 25 A	2	3RK1304-OHS00-6AA0		1	1 unit	42D



3RK1304-OHS00-6AA0

¹⁾ Only functions when used together with the related 110 mm backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see page 9/19).

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro Safety Motor Starters Solutions Local/PROFIsafe

Safety modules local

Overview

Safety Solution local

With the Safety local modules

- Safety local isolator module and
 - 400 V disconnecting module
- with an appropriate connection, safety level PL e (according to ISO 13849-1) can be reached.



ET 200pro motor starter (Safety Solution local): Safety local isolator module, disconnecting module, Standard starter and High Feature starter mounted on a wide module rack

Safety local isolator module

The Safety local isolator module is a repair switch with integrated safety evaluation functions that can be parameterized using DIP switches.

It is used for

- Connection of a 1- or 2-channel EMERGENCY STOP circuit up to PL e (protective door or EMERGENCY STOP pushbuttons) and parameterizable start behavior
- For controlling the 400 V disconnecting module by means of a safety rail signal

400 V disconnecting module

The 400 V disconnecting module enables the safe disconnection of an operational voltage of 400 V up to PL e. For operation in a Safety Solution local application, it functions only in combination with the Safety local isolator module.

For operation in a Safety PROFIsafe application it functions only in combination with the F-Switch.

Functionality

Safety local isolator module

The Safety local isolator module features the same functions as a standard isolator module with an additional local safety function.

The Safety local isolator module contains a 3TK2841 module and is equipped with M12 terminals for the connection of external safety components.

Terminals 1 and 2 can be used to connect either 1-channel or 2-channel EMERGENCY STOP circuits or protective door circuits (IN 1, IN 2).

For monitored starts, an external START switch can be connected to terminal 3.

The required safety functions can be set using two slide switches located under the left M12 opening.

In the event of an EMERGENCY STOP, the Safety local isolator module trips the downstream 400 V disconnecting module. This safely separates the 400 V circuit up to PL e.

In combination with the 400 V disconnecting module, the Safety local isolator module can be used for safety applications up to PL e.

400 V disconnecting module

The 400 V disconnecting module can be used together with the Safety local isolator module for local safety applications and together with the F-Switch for PROFIsafe safety applications.

It contains two contactors connected in series for safety-related disconnection of the main circuit.

The auxiliary circuit supply of the device is over a safety power rail in the backplane bus module.

The 400 V disconnecting module can be used in conjunction with the Safety local isolator module or with the F-Switch for safety applications up to PL e.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro Safety Motor Starters Solutions Local/PROFIsafe

Safety modules local

Technical specifications

Type		Safety local isolator module	400 V disconnecting module
General data			
Mounting dimensions (W x H x D)			
• Direct-on-line starters and reversing starters	mm	110 x 230 x 170	110 x 230 x 150
Permissible ambient temperature			
• During operation	°C	-25 ... +55	
• During storage	°C	-40 ... +70	
Permissible mounting position		Any	
Vibration resistance acc. to IEC 60068, Part 2-6		2 g	
Shock resistance acc. to IEC 60068, Part 2-27		Half-sine 15 g/11 ms	
Power consumption			
• From auxiliary circuit L+/M (U1)	mA	Approx. 20	
• From auxiliary circuit A1/A2 (U2)		--	
Rated operational current I_e for power bus	A	25	
Rated operational voltage U_e	V	400 (50/60 Hz)	
Approval DIN VDE 0106, Part 101	V	Up to 500	
CSA and UL approval	V	Up to 600	
Conductor cross-sections			
Incoming power supply	mm ²	Max. 6 x 4	
Degree of protection		IP65	
Touch protection		Finger-safe	
Pollution degree		3, IEC 60664 (IEC 61131)	
Rated impulse withstand voltage U_{imp}	kV	6	
Rated insulation voltage U_i	V	400	
Rated operational current I_e for starters			
• AC-1 / 2 / 3 at 40 °C			
- At 400 V	A	16	25
- At 500 V	A	16	25
Rated short-circuit breaking capacity	kA	50 at 400 V	
Type of coordination acc. to IEC 60947-4-1		2	
Protective separation between main and auxiliary circuits	V	400, according to DIN VDE 0106, Part 101	
Operating times at 0.85 ... 1.1 x U_s			
• Closing delay	ms	--	25 ... 100
• Opening delay	ms	--	7 ... 10
Device functions			
• Group diagnostics		Yes, parameterizable	
Device indications			
• Group fault		SF LED (red)	

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro Safety Motor Starters Solutions Local/PROFIsafe

IE3/IE4 ready**Safety modules local****Selection and ordering data**

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Safety modules local

3RK1304-OHS00-7AA0

Safety local isolator module¹⁾²⁾

Rated operational current 16 A

5

3RK1304-OHS00-7AA0

1

1 unit

42D



3RK1304-OHS00-8AA0

400 V disconnecting module³⁾⁴⁾

Rated operational current 25 A

2

3RK1304-OHS00-8AA0

1

1 unit

42D

- 1) The Safety local isolator module only functions when used together with the 400 V disconnecting module.
- 2) Only in combination with the special backplane bus module for the Safety Local isolator module (see "Accessories for ET 200pro motor starters", page 9/19).
- 3) The 400 V disconnecting module functions only when used together with the Safety local isolator module or with the F-Switch.
- 4) The 400 V disconnecting module functions only when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters", page 9/19).

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro Safety Motor Starters Solutions Local/PROFIsafe

Safety modules PROFIsafe **IE3/IE4 ready**

Overview

Safety Solution PROFIsafe

With the Safety PROFIsafe modules

- F-Switch and
- 400 V disconnecting module

With an appropriate connection, safety levels SIL 3 (according to IEC 62061) and PL e (according to ISO 13849-1) can be reached.

F-Switch PROFIsafe

Fail-safe digital inputs/outputs in degrees of protection IP65 to IP67 for near-machine, cabinet-free use.

Fail-safe digital inputs

- For the fail-safe reading in of sensor information (1-/2-channel)
- Including integrated discrepancy evaluation for 2V2 signals
- Internal sensor supplies (incl. testing) available

Fail-safe digital outputs

- Three fail-safe PP-switching outputs for safe switching of the backplane busbars

The F-Switch is certified up to SIL 3/PL e and has detailed diagnostics.

It supports PROFIsafe in PROFIBUS configurations as well as in PROFINET configurations.

Note:

Safety characteristics, see page 16/6.



Functionality

The PROFIsafe F-Switch is a fail-safe solid-state module for PROFIsafe safety applications. It has two fail-safe inputs and outputs for safe switching of the 24 V supply over backplane busbars. In combination with the 400 V disconnecting module, fail-safe disconnection of ET 200pro motor starters is possible in PROFIsafe applications up to SIL 3/PL e.

400 V disconnecting module

See "Safety modules local", Overview, page 9/11 and Technical specifications, page 9/12.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Safety modules PROFIsafe						
 3RK1304-0HS00-8AA0	400 V disconnecting modules¹⁾²⁾ Rated operational current 25 A	2	3RK1304-0HS00-8AA0	1	1 unit	42D
 6ES7148-1FS00-0AB0	F-Switch PROFIsafe 24 V DC, including bus module <u>Note:</u> Connection module must be ordered separately	1	6ES7148-4FS00-0AB0	1	1 unit	241
	Connection modules for F-Switch 24 V DC	1	6ES7194-4DA00-0AA0	1	1 unit	241

¹⁾ The 400 V disconnecting module functions only when used together with the Safety local isolator module or with the F-Switch.

²⁾ The 400 V disconnecting module functions only when used together with the backplane bus module and the wide module rack. The backplane bus module and the wide module rack must be ordered separately (see "Accessories for ET 200pro motor starters", page 9/19).

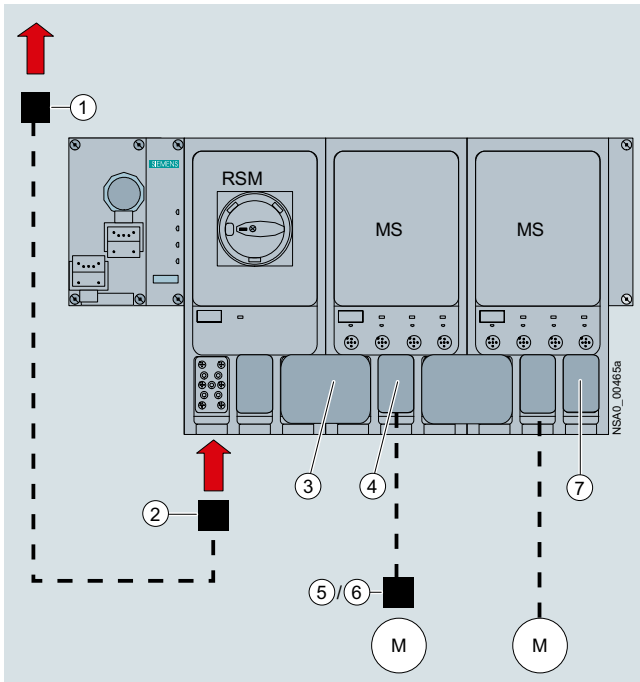
Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

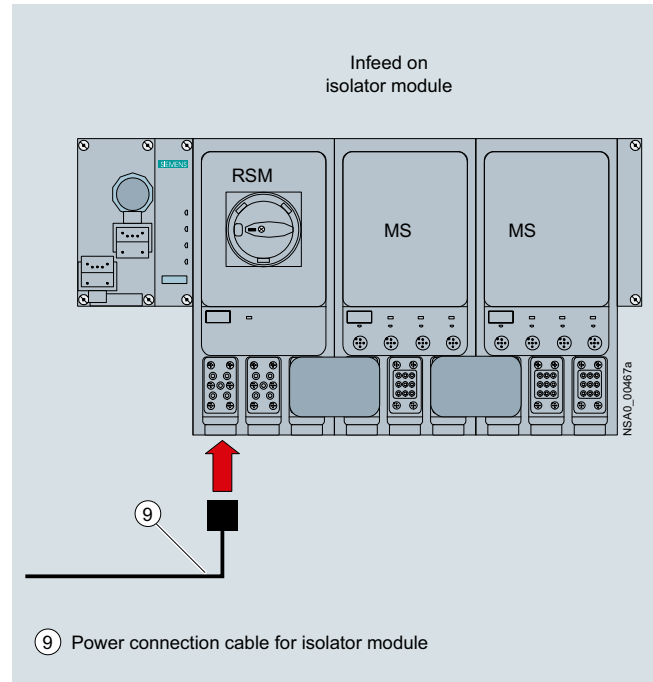
ET 200pro Safety Motor Starters Solutions Local/PROFIsafe

Accessories for ET 200pro motor starters

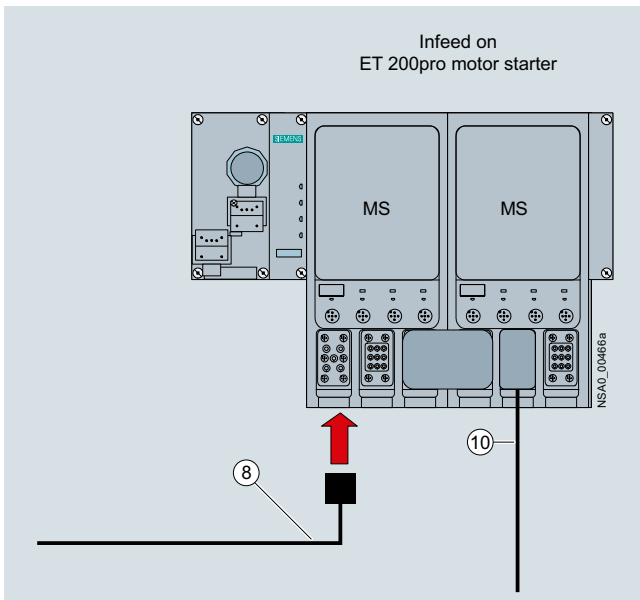
Overview



Basic design of an ET 200pro version with (from the left) connection module for IM, interface module for communication (IM), RSM isolator module, two ET 200pro motor starters (MS), and connections for energy



Infeed on the RSM isolator module



Infeed on the ET 200pro motor starter

Legend:

- ① Power feeder plug (see page 9/17)
- ② Power connection plug (see page 9/17)
- ③ Power jumper plug (see page 9/17)
- ④ Motor connection plug (see page 9/17)
- ⑤ Motor plug (see page 9/17)
- ⑥ Motor plug with EMC suppressor circuit (see page 9/17)
- ⑦ Power loop-through plug (see page 9/17)
- ⑧ Power connection cable (see page 9/17)
- ⑨ Power connection cable for isolator module (see page 9/17)
- ⑩ Motor cable (see page 9/18)



Motor Starters for Use in the Field, High Degree of Protection

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Accessories for ET 200pro motor starters

Power bus

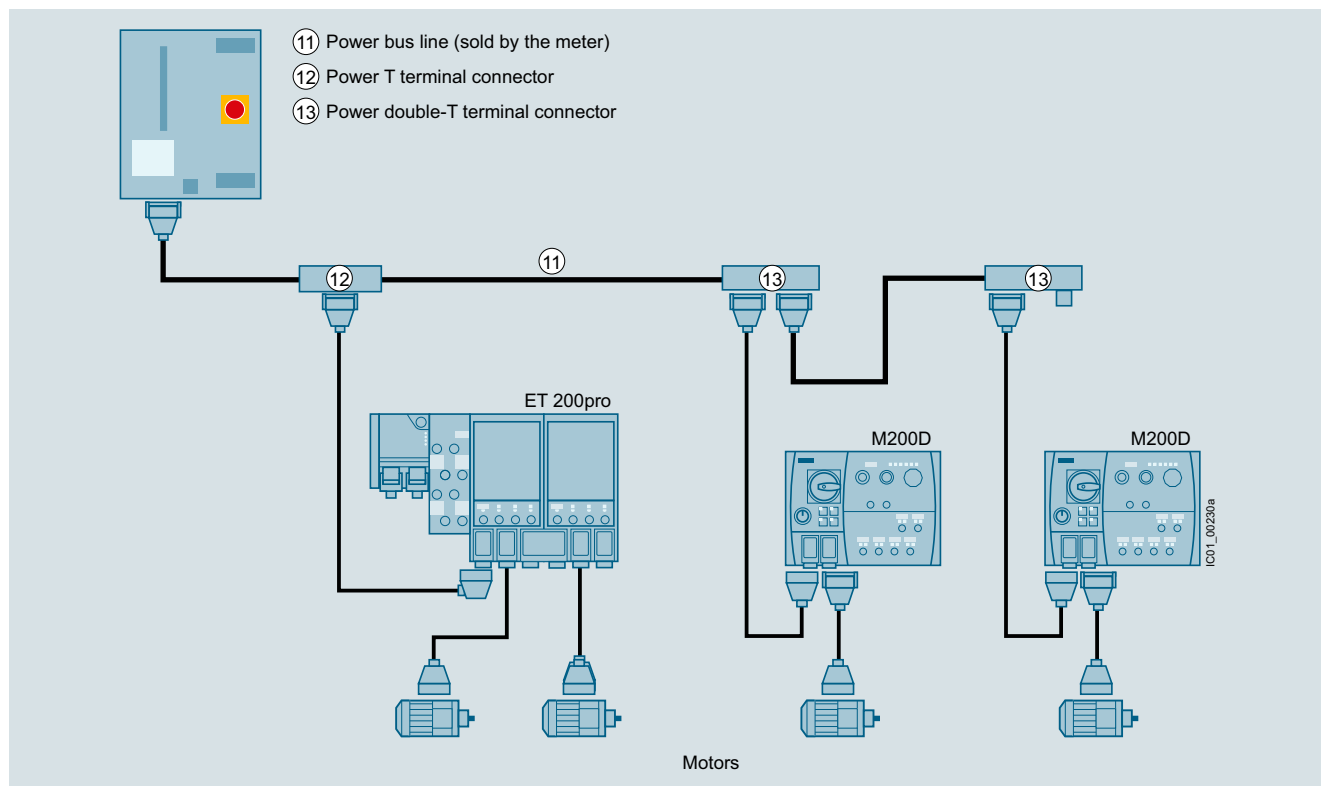
The power supply to the field devices (ET 200pro motor starters, M200D motor starters) is provided via the power bus, in which the power T terminal connectors or power double-T terminal connectors are connected by power bus cables.

Feeders

From the terminal connectors, spur lines with Han Q4/2 plugs lead to the field devices, from which the motors are supplied with power via motor connection cables.

Interruption-free thanks to power terminal connectors

In finger-safe connection technology the power T terminal connectors and power double-T terminal connectors connect the components of a feeder to the power bus. They ensure interruption-free operation, i.e. the power bus is not interrupted when the components are plugged in.



Power supply to the motors via the power bus with power T and double-T terminal connectors linked by power bus cables, spur lines to the field devices (motor starters), and power loop-through connections to the motors via motor connection cables

Motor control via PROFIBUS

The interface modules (IM) for PROFIBUS can be combined with three different connection modules for connecting PROFIBUS DP and the power supply:

- Direct connection with cable bushings
- ECOFAST connection with hybrid fieldbus cables (with two copper cores for data transmission with PROFIBUS DP, and four copper cores for the power supply), and ECOFAST connectors (HanBrid)¹⁾
- M12, 7/8" connection
 - with M12 connecting cable and M12 plugs for data transmission with PROFIBUS DP
 - with 7/8" connecting cable and 7/8" plugs for the power supply²⁾

For the connection modules with the associated accessories, see "Accessories ET 200pro interface modules", page 9/20).

Motor control via PROFINET

For the connection modules with the associated accessories, see Accessories for ET 200pro interface modules, page 9/22 onwards.

¹⁾ Hybrid fieldbus connections with HanBrid sockets designed as cabinet bushings transmit data and energy from the control cabinet (IP20) to the field (IP65). They are the interface for jointly routing PROFIBUS DP and the auxiliary voltages into the hybrid fieldbus cable (see page 9/66).

²⁾ On the control cabinet bushings with two M12 sockets for the PROFIBUS M12 connecting cables (see page 9/66), the 24 V supply of the motor starters is implemented via separate 7/8" connecting cables.

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ET 200pro Motor Starters

ET 200pro Safety Motor Starters Solutions Local/PROFIsafe

Accessories for ET 200pro motor starters

Selection and ordering data



Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Incoming power supply						
① Power feeder plugs						
Connector set for incoming power supply, e.g. for connecting to T terminal connectors, comprising a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. bushing						
• 5 male contacts, 2.5 mm ²	5	3RK1911-2BS60		1	1 unit	42D
• 5 male contacts, 4 mm ²	5	3RK1911-2BS20		1	1 unit	42D
• 5 male contacts, 6 mm ²	5	3RK1911-2BS40		1	1 unit	42D
② Power connection plugs						
Connector set for incoming power supply for connection to ET 200pro motor starters/ET 200pro isolator modules, comprising a cable-end connector hood, angular outgoing feeder, female insert for HAN Q4/2, including bushing						
• 5 female contacts, 2.5 mm ²	5	3RK1911-2BE50		1	1 unit	42D
• 5 female contacts, 4 mm ²	5	3RK1911-2BE10		1	1 unit	42D
• 5 female contacts, 6 mm ²	5	3RK1911-2BE30		1	1 unit	42D
⑧ Power connection cables, assembled at one end						
Power connection cable for ET 200pro motor starters, open at one end, for HAN Q4/2, angular, 4 x 4 mm ²						
• Length 1.5 m	5	3RK1911-0DB13		1	1 unit	42D
• Length 5.0 m	5	3RK1911-0DB33		1	1 unit	42D
⑨ Power connection cables for isolator module, assembled at one end						
Power connection cable for ET 200pro isolator modules, open at one end, for HAN Q4/2, angular, insert turned at isolator module end, 4 x 4 mm ²						
• Length 1.5 m	30	3RK1911-0DF13		1	1 unit	42D
• Length 5.0 m	30	3RK1911-0DF33		1	1 unit	42D
Power loop-through on the field device						
③ Power jumper plugs						
	2	3RK1922-2BQ00		1	1 unit	42D
⑦ Power loop-through plugs						
Connector set for power loop-through for connection to ET 200pro motor starters/ET 200pro isolator modules, comprising a cable-end connector hood, angular outgoing feeder, pin insert for HAN Q4/2, including bushing						
• 4 male contacts, 2.5 mm ²	5	3RK1911-2BF50		1	1 unit	42D
• 4 male contacts, 4 mm ²	5	3RK1911-2BF10		1	1 unit	42D
Motor cables						
④ Motor connection plugs						
Connector set for motor cable for connection to ET 200pro motor starters, comprising a cable-end connector hood, angular outgoing feeder, pin insert for HAN Q8/0, incl. bushing						
• 8 male contacts, 1.5 mm ²	5	3RK1902-OCE00		1	1 unit	42D
• 6 male contacts, 2.5 mm ²	5	3RK1902-OCC00		1	1 unit	42D
⑤ Motor plugs						
Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e, incl. star jumper, including bushing						
• 7 female contacts, 1.5 mm ²	30	3RK1911-2BM21		1	1 set	42D
• 7 female contacts, 2.5 mm ²	30	3RK1911-2BM22		1	1 set	42D
⑥ Motor plugs with EMC suppressor circuit						
Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e with EMC suppressor circuit, including star jumper, including bushing						
• 7 female contacts, 1.5 mm ²	30	3RK1911-2BL21		1	1 set	42D
• 7 female contacts, 2.5 mm ²	30	3RK1911-2BL22		1	1 set	42D

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Accessories for ET 200pro motor starters

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor cables (continued)						
⑩ Motor cables, assembled at one end						
Open at one end, HAN Q8, angular, length 5 m						
• For motor without brake, for ET 200pro, 4 x 1.5 mm ²	15	3RK1911-0EB31		1	1 unit	42D
• For motor with brake for ET 200pro, 6 x 1.5 mm ²	30	3RK1911-0ED31		1	1 unit	42D
• For motor without brake, with thermistor, for ET 200pro, 6 x 1.5 mm ²	30	3RK1911-0EF31		1	1 unit	42D
• For motor with brake and thermistor for ET 200pro, 8 x 1.5 mm ²	30	3RK1911-0EG31		1	1 unit	42D
Power bus						
⑫ Power T terminal connectors						
For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments						
• 2.5 mm ² / 4 mm ²	5	3RK1911-2BF01		1	1 unit	42D
• 4 mm ² / 6 mm ²	5	3RK1911-2BF02		1	1 unit	42D
⑬ Power double-T terminal connectors						
For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments, connection of two motor starters possible						
• 4 mm ² / 6 mm ²	5	3RK1911-2BG02		1	1 unit	42D
Sealing set (comprising 2 seals)						
For power T/power double-T terminal connectors						
• For power cables with Ø 10 ... 13 mm	5	3RK1911-5BA00		1	1 unit	42D
• For power cables with Ø 13 ... 16 mm	5	3RK1911-5BA10		1	1 unit	42D
• For power cables with Ø 16 ... 19 mm	5	3RK1911-5BA20		1	1 unit	42D
• For power cables with Ø 19 ... 22 mm	X	3RK1911-5BA30		1	1 unit	42D
• Blanking plugs	5	3RK1911-5BA50		1	1 unit	42D
Further accessories for power connections						
Crimping tool						
	15	3RK1902-0CW00		1	1 unit	42D
for pins/sockets, 4 mm ² and 6 mm ²						
Dismantling tools						
• For male and female contacts for 9-pole HAN Q4/2 inserts	15	3RK1902-0AB00		1	1 unit	42D
• For male and female contacts for 9-pole HAN Q8 inserts	5	3RK1902-0AJ00		1	1 unit	42D
Sealing caps						
For 9-pole power socket connectors						
• 1 unit per pack	5	3RK1902-0CK00		1	1 unit	42D
• 10 units per pack	5	3RK1902-0CJ00		1	10 units	42D
						
3RK1902-0CK00						

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro Safety Motor Starters Solutions Local/PROFIsafe

Accessories for ET 200pro motor starters

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Further accessories						
Module racks, wide¹⁾						
• Length 500 mm	1	6ES7194-4GB00-0AA0		1	1 unit	250
• Length 1 000 mm	1	6ES7194-4GB60-0AA0		1	1 unit	250
• Length 2 000 mm	1	6ES7194-4GB20-0AA0		1	1 unit	250
Module racks, wide, compact¹⁾						
• Length 500 mm	1	6ES7194-4GD00-0AA0		1	1 unit	250
• Length 1 000 mm	1	6ES7194-4GD10-0AA0		1	1 unit	250
• Length 2 000 mm	1	6ES7194-4GD20-0AA0		1	1 unit	250
Backplane bus modules 110 mm²⁾						
Backplane bus module for Safety local isolator modules						
	2	3RK1922-2BA00		1	1 unit	42D
Handheld devices						
For ET 200pro motor starters (or for ET 200S High Feature and M200D motor starters) for local operation						
Notes:						
• The motor-starter-specific serial interface cables must be ordered separately.						
• The RS 232 interface cable 3RK1922-2BP00 is used for the MS ET 200pro.						
RS 232 interface cable						
Serial data connection between ET 200pro (or M200D) motor starters and the RS 232 interface of a PC/PG/laptop (with the Motor Starter ES software) or the handheld device 3RK1922-3BA00.						
	5	3RK1922-2BP00		1	1 unit	42D
USB interface cable, 2.5 m						
Serial data connection between ET 200pro (or M200D) motor starters and the USB interface of a PC/PG/laptop (with the Motor Starter ES software).						
	3	6SL3555-0PA00-2AA0		1	1 unit	346
M12 sealing caps						
For sealing unused M12 input or output sockets (one set contains ten sealing caps)						
	▶	3RK1901-1KA00		100	10 units	42C
Motor suppression module NEW						
RC element for installation in motor terminal box						
• Type of construction square						
	15	3RK1911-6EA00		1	1 unit	42D
• Type of construction round						
	15	3RK1911-6EB00		1	1 unit	42D



3RK1922-3BA00



3RK1901-1KA00



3RK1911-6EA00



3RK1911-6EB00

¹⁾ The wide module rack can accommodate all ET 200pro motor starters and any optional modules (isolator module, Safety local isolator module and 400 V disconnecting module).

²⁾ The backplane bus module is a prerequisite for operation of the ET 200pro motor starter and the optional module.

Notes:

- For motor control with PROFIBUS, see page 9/20
- For motor control with PROFINET, see page 9/22
- For Manual "SIMATIC ET 200pro Motor Starters", see <https://support.industry.siemens.com/cs/ww/en/view/22332388>

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – interface modules

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
IM 154-1 and IM 154-2 interface modules						
IM 154-1 interface module For ET 200pro; for communication between ET 200pro and higher-level masters over PROFIBUS DP	1	6ES7154-1AA01-0AB0		1	1 unit	250
IM 154-2 DP High Feature interface module For ET 200pro; for communication between ET 200pro and higher-level masters over PROFIBUS DP; support of PROFIsafe	1	6ES7154-2AA01-0AB0		1	1 unit	250
Accessories						
CM IM DP ECOFAST connection modules For connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, 2 ECOFAST Cu connections	1	6ES7194-4AA00-0AA0		1	1 unit	250
CM IM DP direct connection modules For direct connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, up to 6 M20 screwed cable bushings	1	6ES7194-4AC00-0AA0		1	1 unit	250
CM IM DP M12 7/8" connection modules For connection of PROFIBUS DP and 24 V power supply to PROFIBUS interface modules, 2 x M12 and 2 x 7/8"	1	6ES7194-4AD00-0AA0		1	1 unit	250
Accessories for CM IM DP ECOFAST						
PROFIBUS ECOFAST hybrid cables, assembled With 2 ECOFAST connectors, trailing cable with 2 x Cu 0.64 mm ² and 4 x Cu 1.5 mm ² , in various lengths:						
• 1.5 m	1	6XV1830-7BH15		1	1 unit	5K2
• 3.0 m	1	6XV1830-7BH30		1	1 unit	5K2
• 5.0 m	1	6XV1830-7BH50		1	1 unit	5K2
• 10 m	1	6XV1830-7BN10		1	1 unit	5K2
• 15 m	1	6XV1830-7BN15		1	1 unit	5K2
• 20 m	1	6XV1830-7BN20		1	1 unit	5K2
PROFIBUS ECOFAST hybrid cables GP, assembled With 2 ECOFAST connectors, trailing cable with 2 x Cu 0.64 mm ² and 4 x Cu 1.5 mm ² , in various lengths:						
• 1.5 m	1	6XV1860-3PH15		1	1 unit	5K2
• 3.0 m	1	6XV1860-3PH30		1	1 unit	5K2
• 5.0 m	1	6XV1860-3PH50		1	1 unit	5K2
• 10 m	1	6XV1860-3PN10		1	1 unit	5K2
• 15 m	1	6XV1860-3PN15		1	1 unit	5K2
• 20 m	1	6XV1860-3PN20		1	1 unit	5K2
PROFIBUS ECOFAST hybrid cables, non-assembled Trailing cable with 2 x Cu 0.64 mm ² and 4 x Cu 1.5 mm ² , in various lengths:						
• 50 m	1	6XV1830-7AN50		1	1 unit	5K2
• 100 m	1	6XV1830-7AT10		1	1 unit	5K2
PROFIBUS ECOFAST hybrid connectors 180 ECOFAST Cu, 2 x Cu, 4 x 1.5 mm ² , HANBRID connectors						
• With pin insert, pack of 5	1	6GK1905-0CA00		1	5 units	5K2
• With female insert, pack of 5	1	6GK1905-0CB00		1	5 units	5K2
PROFIBUS ECOFAST hybrid connectors, angular ECOFAST Cu, 2 x Cu, 4 x 1.5 mm ² , HANBRID connectors						
• With pin insert, pack of 5	1	6GK1905-0CC00		1	5 units	5K2
• With female insert, pack of 5	1	6GK1905-0CD00		1	5 units	5K2
Accessories for CM IM DP Direct						
PROFIBUS trailing cables Max. acceleration 4 m/s ² , at least 3 000 000 bending cycles, bending radius at least 60 mm, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m.	1	6XV1830-3EH10		1	1 M	5K2
PROFIBUS FC Food bus cables With PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m.	1	6XV1830-0GH10		1	1 M	5K2
PROFIBUS FC Robust bus cables With PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m.	1	6XV1830-0JH10		1	1 M	5K2
Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m.	1	6XV1830-8AH10		1	1 M	5K2

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ET 200pro – interface modules

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
IM 154-1 and IM 154-2 interface modules (continued)						
Accessories for CM IM DP M12 7/8"						
PROFIBUS M12 connecting cables						
Preassembled with two M12 plugs, 5-pole, in various lengths:						
• 1.5 m	1	6XV1830-3DH15		1	1 unit	5K1
• 2.0 m	1	6XV1830-3DH20		1	1 unit	5K1
• 3.0 m	1	6XV1830-3DH30		1	1 unit	5K1
• 5.0 m	1	6XV1830-3DH50		1	1 unit	5K1
• 10 m	1	6XV1830-3DN10		1	1 unit	5K1
• 15 m	1	6XV1830-3DN15		1	1 unit	5K1
7/8" connecting cables for power supply						
5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs, 5-pole, in various lengths:						
• 1.5 m	1	6XV1822-5BH15		1	1 unit	5K1
• 2.0 m	1	6XV1822-5BH20		1	1 unit	5K1
• 3.0 m	1	6XV1822-5BH30		1	1 unit	5K1
• 5.0 m	1	6XV1822-5BH50		1	1 unit	5K1
• 10 m	1	6XV1822-5BN10		1	1 unit	5K1
• 15 m	1	6XV1822-5BN15		1	1 unit	5K1
M12 connectors						
For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	6GK1905-0EA00		1	5 units	5K2
• With pin insert, pack of 5	1	6GK1905-0EB00		1	5 units	5K2
PROFIBUS M12 bus termination plugs						
With pin insert						
	1	6GK1905-0EC00		1	5 units	5K2
7/8" connectors						
For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	6GK1905-0FA00		1	5 units	5K2
• With female insert, pack of 5	1	6GK1905-0FB00		1	5 units	5K2
M12 sealing caps						
For protection of unused M12 terminals on ET 200pro						
	▶	3RX9802-0AA00		100	10 units	42C
7/8" sealing caps						
For protection of unused 7/8" terminals on ET 200pro, pack of 10 units per packing unit						
	1	6ES7194-3JA00-0AA0		1	10 units	250
General accessories						
ET 200pro module racks						
• Narrow, for interface, solid-state and power modules						
- 500 mm	1	6ES7194-4GA00-0AA0		1	1 unit	250
- 1 000 mm	1	6ES7194-4GA60-0AA0		1	1 unit	250
- 2 000 mm, can be cut to length	1	6ES7194-4GA20-0AA0		1	1 unit	250
• Compact, for interface, solid-state and power modules						
- 500 mm	1	6ES7194-4GC70-0AA0		1	1 unit	250
- 1 000 mm	1	6ES7194-4GC60-0AA0		1	1 unit	250
- 2 000 mm, can be cut to length	1	6ES7194-4GC20-0AA0		1	1 unit	250
• Wide, for interface, solid-state, power modules and motor starters						
- 500 mm	1	6ES7194-4GB00-0AA0		1	1 unit	250
- 1 000 mm	1	6ES7194-4GB60-0AA0		1	1 unit	250
- 2 000 mm, can be cut to length	1	6ES7194-4GB20-0AA0		1	1 unit	250
• Wide, for I/O modules and motor starters						
- 500 mm	1	6ES7194-4GD00-0AA0		1	1 unit	250
- 1 000 mm	1	6ES7194-4GD10-0AA0		1	1 unit	250
- 2 000 mm	1	6ES7194-4GD20-0AA0		1	1 unit	250
Spare fuses						
12.5 A quick-response, for interface and power modules, pack of 10						
	1	6ES7194-4HB00-0AA0		1	10 units	250
PROFIBUS FastConnect bus cables						
Standard type with special design for fast installation, 2-core, shielded, sold by the meter; delivery unit max. 1 000 m; minimum order quantity 20 m						
	1	6XV1830-0EH10		1	1 M	5K1
PROFIBUS hybrid standard cables GP						
Standard PROFIBUS hybrid cable with 2 power cores (1.5 mm ²) for supplying data and power to the ET 200pro						
	1	6XV1860-2R		1	1 M	5K2
SIMATIC Manual Collection						
Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)						
	X	6ES7998-8XC01-8YE0		1	1 unit	219
SIMATIC Manual Collection – Update service for 1 year						
Scope of supply: the current DVD S7 Manual Collection as well as the three subsequent updates						
	5	6ES7998-8XC01-8YE2		1	1 unit	219

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ET 200pro – interface modules

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
IM 154-3 PN and IM 154-4 PN interface modules						
IM 154-3 PN High Feature interface modules NEW For communication between ET 200pro and a higher-level controller via PROFINET IO; support of PROFIsafe. Order connection module 6ES7194-4AK00-0AA0 separately.	1	6ES7154-3AB00-0AB0		1	1 unit	250
IM 154-4 PN High Feature interface modules For communication between ET 200pro and a higher-level controller via PROFINET IO; support of PROFIsafe. Order connection module 6ES7194-4AK00-0AA0 separately.	1	6ES7154-4AB10-0AB0		1	1 unit	250
Accessories						
Connection modules for IM 154-3 PN High Feature						
• Connection module CM IM PN M12, 7/8" S NEW For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x M12 and 2 x 7/8"	1	6ES7194-4AK00-0AA0		1	1 unit	250
Connection modules for IM 154-4 PN High Feature						
• CM IM PN M12 connection modules, 7/8" For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x M12 and 2 x 7/8"	1	6ES7194-4AJ00-0AA0		1	1 unit	250
• CM IM PN 2xRJ45 connection modules For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x RJ45 and 2 x push-pull power connectors	1	6ES7194-4AF00-0AA0		1	1 unit	250
• CM IM PN 2xSCRJ FO connection modules For connection of PROFINET PN and 24 V power supply to PROFINET interface modules, 2 x SCRJ FO and 2 x push-pull power connectors	1	6ES7194-4AG00-0AA0		1	1 unit	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	▶	3RX9802-0AA00		100	10 units	42C
IE M12 connecting cables Preassembled with two M12 plugs, max. 85 m, in various lengths:						
• 0.3 m	1	6XV1870-8AE30		1	1 unit	5K1
• 0.5 m	1	6XV1870-8AE50		1	1 unit	5K1
• 1.0 m	1	6XV1870-8AH10		1	1 unit	5K1
• 1.5 m	1	6XV1870-8AH15		1	1 unit	5K1
• 2.0 m	1	6XV1870-8AH20		1	1 unit	5K1
• 3.0 m	1	6XV1870-8AH30		1	1 unit	5K1
• 5.0 m	1	6XV1870-8AH50		1	1 unit	5K1
• 10 m	1	6XV1870-8AN10		1	1 unit	5K1
• 15 m	1	6XV1870-8AN15		1	1 unit	5K1
For more special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WWW/view/en/26999294						
7/8" sealing caps 1 pack = 10 units	1	6ES7194-3JA00-0AA0		1	10 units	250
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs, 5-pole, max. 50 m, in various lengths:						
• 1.5 m	1	6XV1822-5BH15		1	1 unit	5K1
• 2.0 m	1	6XV1822-5BH20		1	1 unit	5K1
• 3.0 m	1	6XV1822-5BH30		1	1 unit	5K1
• 5.0 m	1	6XV1822-5BH50		1	1 unit	5K1
• 10 m	1	6XV1822-5BN10		1	1 unit	5K1
• 15 m	1	6XV1822-5BN15		1	1 unit	5K1
For more special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WWW/view/en/26999294						
Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m.	1	6XV1830-8AH10		1	1 M	5K2
7/8" connectors For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	6GK1905-0FA00		1	5 units	5K2
• With female insert, pack of 5	1	6GK1905-0FB00		1	5 units	5K2
Industrial Ethernet FastConnect installation cables						
• IE FC TP standard cables GP 2 x 2: Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1840-2AH10		1	1 M	5K1
• IE FC TP trailing cables 2 x 2: Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1840-3AH10		1	1 M	5K1
• IE FC TP trailing cables GP 2 x 2: Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1870-2D		1	1 M	5K2
• IE TP torsion cables GP 2 x 2: Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1870-2F		1	1 M	5K2
• IE FC TP marine cables 2 x 2: Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1840-4AH10		1	1 M	5K1

Motor Starters for Use in the Field, High Degree of Protection ET 200pro Motor Starters

ET 200pro – interface modules

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-3 PN and IM 154-4 PN interface modules (continued)						
IE RJ45 Plug PRO RJ45 plug-in connector for field assembly in degree of protection IP65/67, plastic enclosure, insulation displacement method, for SCALANCE X-200IRT PRO and ET 200pro; 1 pack = 1 unit	1	6GK1901-1BB10-6AA0		1	1 unit	5K2
IE SC RJ POF Plug PRO SC RJ plug-in connector for field assembly for POF fibers in degree of protection IP65/67, plastic enclosure, for SCALANCE X-200IRT PRO and ET 200pro, 1 pack = 1 unit	1	6GK1900-0MB00-6AA0		1	1 unit	5K2
IE SC RJ PCF Plug PRO SC RJ plug-in connector for field assembly for PCF fibers in degree of protection IP65/67, plastic enclosure, for SCALANCE X-200IRT PRO, 1 pack = 1 unit	1	6GK1900-0NB00-6AA0		1	1 unit	5K2
Power Plug PRO 5-pole power plug-in connector for field assembly for 2 x 24 V power supply in degree of protection IP65/67, plastic enclosure, for SCALANCE X-200IRT and ET 200pro, 1 pack = 1 unit	1	6GK1907-0AB10-6AA0		1	1 unit	5K2
IE Panel Feedthrough Control cabinet bushing for transition from M12 connection method (D-coded, IP65) to RJ45 connection method (IP20) • 1 pack = 5 units	1	6GK1901-0DM20-2AA5		1	5 units	5K2
Push-pull connectors For 1L+/2L+, non-assembled	1	6GK1907-0AB10-6AA0		1	1 unit	5K2
Covers for RJ45 push-pull sockets 5 units per pack	1	6ES7194-4JD50-0AA0		1	5 units	250
Covers for push-pull power sockets (1L+, 2L+) 5 units per pack	1	6ES7194-4JA50-0AA0		1	5 units	250
General accessories						
ET 200pro module racks						
• Narrow, for interface, solid-state and power modules						
- 500 mm	1	6ES7194-4GA00-0AA0		1	1 unit	250
- 1 000 mm	1	6ES7194-4GA60-0AA0		1	1 unit	250
- 2 000 mm, can be cut to length	1	6ES7194-4GA20-0AA0		1	1 unit	250
• Compact, for interface, solid-state and power modules						
- 500 mm	1	6ES7194-4GC70-0AA0		1	1 unit	250
- 1 000 mm	1	6ES7194-4GC60-0AA0		1	1 unit	250
- 2 000 mm, can be cut to length	1	6ES7194-4GC20-0AA0		1	1 unit	250
• Wide, for interface, solid-state, power modules and motor starters						
- 500 mm	1	6ES7194-4GB00-0AA0		1	1 unit	250
- 1 000 mm	1	6ES7194-4GB60-0AA0		1	1 unit	250
- 2 000 mm, can be cut to length	1	6ES7194-4GB20-0AA0		1	1 unit	250
• Wide, for I/O modules and motor starters						
- 500 mm	1	6ES7194-4GD00-0AA0		1	1 unit	250
- 1 000 mm	1	6ES7194-4GD10-0AA0		1	1 unit	250
- 2 000 mm	1	6ES7194-4GD20-0AA0		1	1 unit	250
Spare fuses 12.5 A quick-response, for interface and power modules, pack of 10	1	6ES7194-4HB00-0AA0		1	10 units	250
SIMATIC Manual Collection Electronic manuals on DVD, several languages: S7-200, TD 200, S7-300, M7-300, C7, S7-400, M7-400, STEP 7, Engineering Tools, Runtime Software, SIMATIC DP (Distributed I/O), SIMATIC HMI (Human Machine Interface), SIMATIC NET (Industrial Communication)	X	6ES7998-8XC01-8YE0		1	1 unit	219
SIMATIC Manual Collection – Update service for 1 year Scope of supply: the current DVD S7 Manual Collection as well as the three subsequent updates	5	6ES7998-8XC01-8YE2		1	1 unit	219

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – CPUs

Standard CPUs

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 PN/DP CPU interface modules						
IM 154-8 PN/DP CPU interface modules, V3.2 PROFINET IO Controller for operating distributed I/Os on PROFINET, with integrated PLC functionality	1	6ES7154-8AB01-0AB0		1	1 unit	250
Accessories						
MMC 64 KB¹⁾ For program backups	1	6ES7953-8LF31-0AA0		1	1 unit	230
MMC 128 KB¹⁾ For program backups	1	6ES7953-8LG31-0AA0		1	1 unit	230
MMC 512 KB¹⁾ For program backups	1	6ES7953-8LJ31-0AA0		1	1 unit	230
MMC 2 MB¹⁾ For program backups and/or firmware updates	1	6ES7953-8LL31-0AA0		1	1 unit	230
MMC 4 MB¹⁾ For program backups	1	6ES7953-8LM31-0AA0		1	1 unit	230
MMC 8 MB¹⁾ For program backups	1	6ES7953-8LP31-0AA0		1	1 unit	230
Connection modules For CPU IM 154-8 PN/DP, with 4 x M12 and 2 x 7/8", for connection of PROFINET and PROFIBUS DP	1	6ES7194-4AN00-0AA0		1	1 unit	250
SCALANCE X-200 Industrial Ethernet switches With integrated SNMP access, web diagnostics, copper cable diagnostics and PROFINET diagnostics, SCALANCE X208PRO for configuring line, star and ring structures, in degree of protection IP65, with eight 10/100 Mbps M12 ports, including eleven M12 dust covers	1	6GK5208-0HA10-2AA6		1	1 unit	5N2
Industrial Ethernet FC RJ45 Plug 180 RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated insulation displacement contacts for connection of Industrial Ethernet FC installation cables; with 180° cable feeder						
• 1 unit	1	6GK1901-1BB10-2AA0		1	1 unit	5K1
• 10 units	1	6GK1901-1BB10-2AB0		1	10 units	5K1
• 50 units	1	6GK1901-1BB10-2AE0		1	50 units	5K1
Industrial Ethernet FastConnect installation cables						
• FastConnect standard cable	1	6XV1840-2AH10		1	1 M	5K1
• FastConnect trailing cable	1	6XV1840-3AH10		1	1 M	5K1
• FastConnect marine cable	1	6XV1840-4AH10		1	1 M	5K1
Industrial Ethernet FastConnect installation cables						
• IE FC TP trailing cables GP 2 x 2; Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1870-2D		1	1 M	5K2
• IE TP torsion cables GP 2 x 2; Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1870-2F		1	1 M	5K2
Industrial Ethernet FastConnect Stripping tools	1	6GK1901-1GA00		1	1 unit	5K2
IE connecting cables M12-180/M12-180						
• Preassembled IE FC TP trailing cables GP 2 x 2 (PROFINET type C) with two 4-pole M12 plugs (4-pole, D-coded), degree of protection IP65/IP67, in various lengths:						
- 0.3 m	1	6XV1870-8AE30		1	1 unit	5K1
- 0.5 m	1	6XV1870-8AE50		1	1 unit	5K1
- 1.0 m	1	6XV1870-8AH10		1	1 unit	5K1
- 1.5 m	1	6XV1870-8AH15		1	1 unit	5K1
- 2.0 m	1	6XV1870-8AH20		1	1 unit	5K1
- 3.0 m	1	6XV1870-8AH30		1	1 unit	5K1
- 5.0 m	1	6XV1870-8AH50		1	1 unit	5K1
- 10 m	1	6XV1870-8AN10		1	1 unit	5K1
- 15 m	1	6XV1870-8AN15		1	1 unit	5K1
• PROFINET M12 connecting cables, trailing, preassembled at both ends with M12 plugs, angular (pin), in various lengths:						
- 3.0 m	15	3RK1902-2NB30		1	1 unit	42D
- 5.0 m	15	3RK1902-2NB50		1	1 unit	42D
- 10 m	15	3RK1902-2NC10		1	1 unit	42D
• PROFINET M12 connecting cables, trailing, preassembled at one end with M12 plugs, angular (one end with pin, one end open), in various lengths:						
- 3.0 m	15	3RK1902-2HB30		1	1 unit	42D
- 5.0 m	15	3RK1902-2HB50		1	1 unit	42D
- 10 m	15	3RK1902-2HC10		1	1 unit	42D

¹⁾ For operation of the CPU, an MMC is essential.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – CPUs

Standard CPUs

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 PN/DP CPU interface modules (continued)						
IE FC M12 Plug PRO						
PROFINET M12 connectors, D-coded with quick-connect technology, axial outgoing feeder						
• 1 unit	1	6GK1901-0DB20-6AA0		1	1 unit	5K1
• 8 units	1	6GK1901-0DB20-6AA8		1	8 units	5K1
• PROFINET M12 connectors, D-coded, angular	5	3RK1902-2DA00		1	1 unit	42D
IE Panel Feedthrough						
Control cabinet bushing for transition from M12 connection method (D-coded, IP65/IP67) to RJ45 connection method (IP20), 1 pack = 5 units						
	1	6GK1901-0DM20-2AA5		1	5 units	5K2
7/8" connecting cables for power supply						
• 5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs (axial outgoing feeder), 5-pole, max. 50 m, in various lengths:						
- 1.5 m	1	6XV1822-5BH15		1	1 unit	5K1
- 2.0 m	1	6XV1822-5BH20		1	1 unit	5K1
- 3.0 m	1	6XV1822-5BH30		1	1 unit	5K1
- 5.0 m	1	6XV1822-5BH50		1	1 unit	5K1
- 10 m	1	6XV1822-5BN10		1	1 unit	5K1
- 15 m	1	6XV1822-5BN15		1	1 unit	5K1
- For more special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WWW/view/en/26999294						
• Trailing power cables, 5 x 1.5 mm ² , preassembled at both ends with 7/8" connectors, angular (one end with socket, one end with pin), in various lengths:						
- 3.0 m	15	3RK1902-3NB30		1	1 unit	42D
- 5.0 m	15	3RK1902-3NB50		1	1 unit	42D
- 10 m	15	3RK1902-3NC10		1	1 unit	42D
• Trailing power cables, 5 x 1.5 mm ² , preassembled at one end with 7/8" connector with female insert, angular (one end with socket, one end open), in various lengths:						
- 3.0 m	15	3RK1902-3GB30		1	1 unit	42D
- 5.0 m	15	3RK1902-3GB50		1	1 unit	42D
- 10 m	15	3RK1902-3GC10		1	1 unit	42D
Power cables						
5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m						
	1	6XV1830-8AH10		1	1 M	5K2
7/8" connectors						
For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	6GK1905-0FA00		1	5 units	5K2
• With female insert, pack of 5	1	6GK1905-0FB00		1	5 units	5K2
• Angular, with female insert, 1 unit	5	3RK1902-3DA00		1	1 unit	42D
• Angular with pin insert, 1 unit	5	3RK1902-3BA00		1	1 unit	42D
7/8" covers, pack of 10						
	1	6ES7194-3JA00-0AA0		1	10 units	250
Twisted pair connecting cables 4 x 2 with RJ45 connectors						
• 0.5 m	1	6XV1870-3QE50		1	1 unit	5K1
• 1 m	1	6XV1870-3QH10		1	1 unit	5K1
• 2 m	1	6XV1870-3QH20		1	1 unit	5K1
• 6 m	1	6XV1870-3QH60		1	1 unit	5K1
• 10 m	1	6XV1870-3QN10		1	1 unit	5K1
Crossed twisted pair connecting cables 4 x 2 with RJ45 connectors						
• 0.5 m	1	6XV1870-3RE50		1	1 unit	5K1
• 1 m	1	6XV1870-3RH10		1	1 unit	5K1
• 2 m	1	6XV1870-3RH20		1	1 unit	5K1
• 6 m	1	6XV1870-3RH60		1	1 unit	5K1
• 10 m	1	6XV1870-3RN10		1	1 unit	5K1
M12 sealing caps						
For protection of unused M12 terminals on ET 200pro						
	▶	3RX9802-0AA00		100	10 units	42C
M12 sealing caps with female thread						
5 units						
	1	6ES7194-4JD60-0AA0		1	5 units	250
PROFIBUS M12 connecting cables						
Preassembled with two 5-pole M12 plugs/sockets, max. 100 m in various lengths:						
• 1.5 m	1	6XV1830-3DH15		1	1 unit	5K1
• 2.0 m	1	6XV1830-3DH20		1	1 unit	5K1
• 3.0 m	1	6XV1830-3DH30		1	1 unit	5K1
• 5.0 m	1	6XV1830-3DH50		1	1 unit	5K1
• 10 m	1	6XV1830-3DN10		1	1 unit	5K1
• 15 m	1	6XV1830-3DN15		1	1 unit	5K1
For more special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WWW/view/en/26999294						

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – CPUs

Standard CPUs

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
IM 154-8 PN/DP CPU interface modules (continued)						
PROFIBUS M12 bus termination plugs, female insert	1	6GK1905-0ED00		1 5 units	5K2	
PROFIBUS M12 bus termination plugs, pin insert	1	6GK1905-0EC00		1 5 units	5K2	
M12 plug-in connectors, axial outgoing feeder, with pin insert	1	6GK1905-0EA00		1 5 units	5K2	
PROFIBUS FC standard cable GP Standard type with special design for fast installation, 2-core, shielded, Sold by the meter: max. delivery unit 1 000 m, minimum order quantity 20 m	1	6XV1830-0EH10		1 1 M	5K1	
PROFIBUS FC trailing cable 2-core, shielded	1	6XV1830-3EH10		1 1 M	5K2	
PROFIBUS FC food cable 2-core, shielded Sold by the meter: max. delivery unit 1 000 m, minimum order quantity 20 m	1	6XV1830-0GH10		1 1 M	5K2	
PROFIBUS FC robust cables 2-core, shielded Sold by the meter: max. delivery unit 1 000 m, minimum order quantity 20 m	1	6XV1830-0JH10		1 1 M	5K2	
PROFIBUS M12 connectors 5-pole, B-coded, metal enclosure, 1 pack = 5 units						
• Female insert	1	6GK1905-0EB00		1 5 units	5K2	
CPU 1516pro-2 PN						
CPU 1516pro-2 PN Work memory 1 MB for program, 5 MB for data, PROFINET IO IRT interface, PROFINET IO RT interface; SIMATIC Memory Card required	1	6ES7516-2PN00-0AB0		1 1 unit	215	
Accessories						
SIMATIC Memory Card						
• 4 MB ¹⁾	NEW	1 6ES7954-8LC03-0AA0		1 1 unit	212	
• 12 MB ¹⁾	NEW	1 6ES7954-8LE03-0AA0		1 1 unit	212	
• 24 MB ¹⁾	NEW	1 6ES7954-8LF03-0AA0		1 1 unit	212	
• 256 MB ¹⁾	NEW	1 6ES7954-8LL03-0AA0		1 1 unit	212	
• 2 GB ¹⁾		1 6ES7954-8LP02-0AA0		1 1 unit	212	
• 32 GB ¹⁾		1 6ES7954-8LT03-0AA0		1 1 unit	212	
Connection modules CM CPU 2PN M12 / 7/8", with 3 x M12 and 2 x 7/8", for connection of 2 x PROFINET	1	6ES7194-4AP00-0AA0		1 1 unit	215	
Industrial Ethernet FC RJ45 Plug 180 RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated insulation displacement contacts for connection of Industrial Ethernet FC installation cables; with 180° cable feeder						
• 1 unit	1	6GK1901-1BB10-2AA0		1 1 unit	5K1	
• 10 units	1	6GK1901-1BB10-2AB0		1 10 units	5K1	
• 50 units	1	6GK1901-1BB10-2AE0		1 50 units	5K1	
Industrial Ethernet FastConnect installation cables						
• FastConnect standard cable	1	6XV1840-2AH10		1 1 M	5K1	
• FastConnect trailing cable	1	6XV1840-3AH10		1 1 M	5K1	
• FastConnect marine cable	1	6XV1840-4AH10		1 1 M	5K1	
Industrial Ethernet FastConnect installation cables						
• IE FC TP trailing cables GP 2 x 2; Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1870-2D		1 1 M	5K2	
• IE TP torsion cables GP 2 x 2; Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1870-2F		1 1 M	5K2	
Industrial Ethernet FastConnect Stripping tools	1	6GK1901-1GA00		1 1 unit	5K2	
IE connecting cables M12-180/M12-180						
• Preassembled IE FC TP trailing cables GP 2 x 2 (PROFINET type C) with two 4-pole M12 plugs (4-pole, D-coded), degree of protection IP65/IP67, in various lengths:						
- 0.3 m	1	6XV1870-8AE30		1 1 unit	5K1	
- 0.5 m	1	6XV1870-8AE50		1 1 unit	5K1	
- 1.0 m	1	6XV1870-8AH10		1 1 unit	5K1	
- 1.5 m	1	6XV1870-8AH15		1 1 unit	5K1	
- 2.0 m	1	6XV1870-8AH20		1 1 unit	5K1	
- 3.0 m	1	6XV1870-8AH30		1 1 unit	5K1	
- 5.0 m	1	6XV1870-8AH50		1 1 unit	5K1	
- 10 m	1	6XV1870-8AN10		1 1 unit	5K1	
- 15 m	1	6XV1870-8AN15		1 1 unit	5K1	
• PROFINET M12 connecting cables, trailing, preassembled at both ends with M12 plugs, angular (pin), in various lengths:						
- 3.0 m	15	3RK1902-2NB30		1 1 unit	42D	
- 5.0 m	15	3RK1902-2NB50		1 1 unit	42D	
- 10 m	15	3RK1902-2NC10		1 1 unit	42D	

¹⁾ For operation of the CPU, an MMC is essential

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – CPUs

Standard CPUs

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
CPU 1516pro-2 PN (continued)						
IE Connecting Cable M12-180/M12-180 (continued)						
• PROFINET M12 connecting cables, trailing, preassembled at one end with M12 plugs, angular (one end with pin, one end open), in various lengths:						
- 3.0 m	15	3RK1902-2HB30		1	1 unit	42D
- 5.0 m	15	3RK1902-2HB50		1	1 unit	42D
- 10 m	15	3RK1902-2HC10		1	1 unit	42D
IE FC M12 Plug PRO						
PROFINET M12 connectors, D-coded with quick-connect technology, axial outgoing feeder.						
• 1 unit	1	6GK1901-0DB20-6AA0		1	1 unit	5K1
• 8 units	1	6GK1901-0DB20-6AA8		1	8 units	5K1
• PROFINET M12 connectors, D-coded, angular	5	3RK1902-2DA00		1	1 unit	42D
IE Panel Feedthrough						
Control cabinet bushing for transition from M12 connection method (D-coded, IP65/IP67) to RJ45 connection method (IP20), 1 pack = 5 units						
	1	6GK1901-0DM20-2AA5		1	5 units	5K2
7/8" connecting cables for power supply						
5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs (axial outgoing feeder), 5-pole, max. 50 m, in various lengths:						
• 1.5 m	1	6XV1822-5BH15		1	1 unit	5K1
• 2.0 m	1	6XV1822-5BH20		1	1 unit	5K1
• 3.0 m	1	6XV1822-5BH30		1	1 unit	5K1
• 5.0 m	1	6XV1822-5BH50		1	1 unit	5K1
• 10 m	1	6XV1822-5BN10		1	1 unit	5K1
• 15 m	1	6XV1822-5BN15		1	1 unit	5K1
• For more special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WW/view/en/26999294						
• Trailing power cables, 5 x 1.5 mm ² , preassembled at both ends with 7/8" connectors, angular (one end with socket, one end with pin), in various lengths:						
- 3.0 m	15	3RK1902-3NB30		1	1 unit	42D
- 5.0 m	15	3RK1902-3NB50		1	1 unit	42D
- 10 m	15	3RK1902-3NC10		1	1 unit	42D
• Trailing power cables, 5 x 1.5 mm ² , preassembled at one end with 7/8" connector with female insert, angular (one end with socket, one end open), in various lengths:						
- 3.0 m	15	3RK1902-3GB30		1	1 unit	42D
- 5.0 m	15	3RK1902-3GB50		1	1 unit	42D
- 10 m	15	3RK1902-3GC10		1	1 unit	42D
Power cables						
5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m						
	1	6XV1830-8AH10		1	1 M	5K2
7/8" connectors						
For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	6GK1905-0FA00		1	5 units	5K2
• With female insert, pack of 5	1	6GK1905-0FB00		1	5 units	5K2
• Angular, with female insert, 1 unit	5	3RK1902-3DA00		1	1 unit	42D
• Angular with pin insert, 1 unit	5	3RK1902-3BA00		1	1 unit	42D
7/8" covers, pack of 10						
	1	6ES7194-3JA00-0AA0		1	10 units	250
Twisted pair connecting cables 4x2 with RJ45 connectors						
• 0.5 m	1	6XV1870-3QE50		1	1 unit	5K1
• 1 m	1	6XV1870-3QH10		1	1 unit	5K1
• 2 m	1	6XV1870-3QH20		1	1 unit	5K1
• 6 m	1	6XV1870-3QH60		1	1 unit	5K1
• 10 m	1	6XV1870-3QN10		1	1 unit	5K1
Crossed twisted pair connecting cables 4x2 with RJ45 connectors						
• 0.5 m	1	6XV1870-3RE50		1	1 unit	5K1
• 1 m	1	6XV1870-3RH10		1	1 unit	5K1
• 2 m	1	6XV1870-3RH20		1	1 unit	5K1
• 6 m	1	6XV1870-3RH60		1	1 unit	5K1
• 10 m	1	6XV1870-3RN10		1	1 unit	5K1
M12 sealing caps						
For protection of unused M12 terminals on ET 200pro						
	▶	3RX9802-0AA00		100	10 units	42C
M12 sealing caps with female thread						
5 units	1	6ES7194-4JD60-0AA0		1	5 units	250

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – CPUs

Fail-safe CPUs

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
IM 154-8 F PN/DP CPU interface modules						
IM 154-8 F PN/DP CPU interface modules, V3.2						
Fail-safe PROFINET IO Controller for operating distributed I/Os on PROFINET, with integrated PLC functionality						
• 512 KB work memory	1	6ES7154-8FB01-0AB0		1	1 unit	241
• 1.5 MB work memory	1	6ES7154-8FX00-0AB0		1	1 unit	241
S7 Distributed Safety V5.4 SP5 Update 2 programming tool						
Task: Configuration software for configuring fail-safe user programs for SIMATIC S7-300F, S7-400F, WinAC RTX F, ET 200S, ET 200M, ET 200iSP, ET 200pro, ET 200eco, ET 200SP						
Requirement: Windows 7 SP1 (64 bit), Windows 10 Professional/Enterprise (64-bit), Windows Server 2008 R2 SP1 (64-bit), Windows Server 2012 R2 (64-bit), Windows Server 2016 (64-bit); STEP 7 from V5.5 SP1; Please note also the operating system approved for the STEP 7 version used.						
• Floating license for 1 user, software and documentation on DVD; license key on USB flash drive	1	6ES7833-1FC02-0YA5		1	1 unit	241
• Floating license for 1 user, software, documentation and license key download ¹⁾ ; email address required for delivery	1	6ES7833-1FC02-0YH5		1	1 unit	241
S7 Distributed Safety upgrade						
• From V5.x to V5.4; floating license for 1 user, software and documentation on DVD; license key on USB flash drive	5	6ES7833-1FC02-0YE5		1	1 unit	241
STEP 7 Safety Advanced V15						
Task: Engineering tool for configuring and programming fail-safe user programs for SIMATIC S7-1200 FC, S7-1500F, S7-1500F Software Controller, S7-300F, S7-400F, WinAC RTX F, ET 200SP F Controller and the fail-safe I/O, ET 200SP, ET 200S, ET 200M, ET 200iSP, ET 200pro and ET 200eco						
Requirement: STEP 7 Professional V15						
• Floating license for 1 user, software and documentation on DVD; license key on USB flash drive	X	6ES7833-1FA15-0YA5		1	1 unit	218
• Floating license for 1 user, software, documentation and license key download ¹⁾ ; email address required for delivery	1	6ES7833-1FA15-0YH5		1	1 unit	218
Accessories						
SIMATIC Micro Memory Cards						
• MMC 64 KB ²⁾ for program backup	1	6ES7953-8LF31-0AA0		1	1 unit	230
• MMC 128 KB ²⁾ for program backup	1	6ES7953-8LG31-0AA0		1	1 unit	230
• MMC 512 KB ²⁾ for program backup	1	6ES7953-8LJ31-0AA0		1	1 unit	230
• MMC 2 MB ²⁾ for program backups and/or firmware updates	1	6ES7953-8LL31-0AA0		1	1 unit	230
• MMC 4 MB ²⁾ for program backup	1	6ES7953-8LM31-0AA0		1	1 unit	230
• MMC 8 MB ²⁾ for program backup	1	6ES7953-8LP31-0AA0		1	1 unit	230
Connection modules						
For CPU IM 154-8 PN/DP, with 4 x M12 and 2 x 7/8", for connection of PROFINET and PROFIBUS DP	1	6ES7194-4AN00-0AA0		1	1 unit	250
SCALANCE X-200 Industrial Ethernet switches						
With integrated SNMP access, web diagnostics, copper cable diagnostics and PROFINET diagnostics, SCALANCE X208PRO for configuring line, star and ring structures, in degree of protection IP65, with eight 10/100 Mbps M12 ports, including eleven M12 dust covers	1	6GK5208-0HA10-2AA6		1	1 unit	5N2
Industrial Ethernet FC RJ45 Plug 90						
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated insulation displacement contacts for connection of Industrial Ethernet FC installation cables; with 90° cable feeder						
• 1 unit	1	6GK1901-1BB20-2AA0		1	1 unit	5K1
• 10 units	1	6GK1901-1BB20-2AB0		1	10 units	5K1
Industrial Ethernet FC RJ45 Plug 180						
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated insulation displacement contacts for connection of Industrial Ethernet FC installation cables; with 180° cable feeder						
• 1 unit	1	6GK1901-1BB10-2AA0		1	1 unit	5K1
• 10 units	1	6GK1901-1BB10-2AB0		1	10 units	5K1
• 50 units	1	6GK1901-1BB10-2AE0		1	50 units	5K1

¹⁾ For up-to-date information and download availability, see <http://www.siemens.com/tia-online-software-delivery>.

²⁾ For operation of the CPU, an MMC is essential.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – CPUs

Fail-safe CPUs

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 F PN/DP CPU interface modules (continued)						
Industrial Ethernet FastConnect installation cables						
• FastConnect standard cable	1	6XV1840-2AH10		1	1 M	5K1
• FastConnect trailing cable	1	6XV1840-3AH10		1	1 M	5K1
• FastConnect marine cable	1	6XV1840-4AH10		1	1 M	5K1
Industrial Ethernet FastConnect installation cables						
• IE FC TP trailing cables GP 2 x 2: Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1870-2D		1	1 M	5K2
• IE TP torsion cables GP 2 x 2: Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1870-2F		1	1 M	5K2
Industrial Ethernet FastConnect Stripping tools	1	6GK1901-1GA00		1	1 unit	5K2
IE connecting cables M12-180/M12-180						
• Preassembled IE FC TP trailing cables GP 2 x 2 (PROFINET type C) with two 4-pole M12 plugs (4-pole, D-coded), degree of protection IP65/IP67, in various lengths:						
- 0.3 m	1	6XV1870-8AE30		1	1 unit	5K1
- 0.5 m	1	6XV1870-8AE50		1	1 unit	5K1
- 1.0 m	1	6XV1870-8AH10		1	1 unit	5K1
- 1.5 m	1	6XV1870-8AH15		1	1 unit	5K1
- 2.0 m	1	6XV1870-8AH20		1	1 unit	5K1
- 3.0 m	1	6XV1870-8AH30		1	1 unit	5K1
- 5.0 m	1	6XV1870-8AH50		1	1 unit	5K1
- 10 m	1	6XV1870-8AN10		1	1 unit	5K1
- 15 m	1	6XV1870-8AN15		1	1 unit	5K1
• PROFINET M12 connecting cables, trailing, preassembled at both ends with M12 plugs, angular (pin), in various lengths:						
- 3.0 m	15	3RK1902-2NB30		1	1 unit	42D
- 5.0 m	15	3RK1902-2NB50		1	1 unit	42D
- 10 m	15	3RK1902-2NC10		1	1 unit	42D
• PROFINET M12 connecting cables, trailing, preassembled at one end with M12 plugs, angular (one end with pin, one end open), in various lengths:						
- 3.0 m	15	3RK1902-2HB30		1	1 unit	42D
- 5.0 m	15	3RK1902-2HB50		1	1 unit	42D
- 10 m	15	3RK1902-2HC10		1	1 unit	42D
IE FC M12 Plug PRO						
PROFINET M12 connectors, D-coded with quick-connect technology, axial outgoing feeder.						
• 1 unit	1	6GK1901-0DB20-6AA0		1	1 unit	5K1
• 8 units	1	6GK1901-0DB20-6AA8		1	8 units	5K1
• PROFINET M12 connectors, D-coded, angular	5	3RK1902-2DA00		1	1 unit	42D
IE Panel Feedthrough						
Control cabinet bushing for transition from M12 connection method (D-coded, IP65/IP67) to RJ45 connection method (IP20), 1 pack = 5 units						
1		6GK1901-0DM20-2AA5		1	5 units	5K2
7/8" connecting cables for power supply						
• 5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs (axial outgoing feeder), 5-pole, max. 50 m, in various lengths:						
- 1.5 m	1	6XV1822-5BH15		1	1 unit	5K1
- 2.0 m	1	6XV1822-5BH20		1	1 unit	5K1
- 3.0 m	1	6XV1822-5BH30		1	1 unit	5K1
- 5.0 m	1	6XV1822-5BH50		1	1 unit	5K1
- 10 m	1	6XV1822-5BN10		1	1 unit	5K1
- 15 m	1	6XV1822-5BN15		1	1 unit	5K1
- For more special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WW/view/en/26999294						
• Trailing power cables, 5 x 1.5 mm ² , preassembled at both ends with 7/8" connectors, angular (one end with socket, one end with pin), in various lengths:						
- 3.0 m	15	3RK1902-3NB30		1	1 unit	42D
- 5.0 m	15	3RK1902-3NB50		1	1 unit	42D
- 10 m	15	3RK1902-3NC10		1	1 unit	42D
• Trailing power cables, 5 x 1.5 mm ² , preassembled at one end with 7/8" connector with female insert, angular (one end with socket, one end open), in various lengths:						
- 3.0 m	15	3RK1902-3GB30		1	1 unit	42D
- 5.0 m	15	3RK1902-3GB50		1	1 unit	42D
- 10 m	15	3RK1902-3GC10		1	1 unit	42D
Power cables						
5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m						
1		6XV1830-8AH10		1	1 M	5K2

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – CPUs

Fail-safe CPUs

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IM 154-8 F PN/DP CPU interface modules (continued)						
7/8" connectors						
For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	6GK1905-0FA00		1 5 units		5K2
• With female insert, pack of 5	1	6GK1905-0FB00		1 5 units		5K2
• Angular, with female insert, 1 unit	5	3RK1902-3DA00		1 1 unit		42D
• Angular with pin insert, 1 unit	5	3RK1902-3BA00		1 1 unit		42D
7/8" covers, pack of 10	1	6ES7194-3JA00-0AA0		1 10 units		250
Twisted pair connecting cables 4 x 2 with RJ45 connectors						
• 0.5 m	1	6XV1870-3QE50		1 1 unit		5K1
• 1 m	1	6XV1870-3QH10		1 1 unit		5K1
• 2 m	1	6XV1870-3QH20		1 1 unit		5K1
• 6 m	1	6XV1870-3QH60		1 1 unit		5K1
• 10 m	1	6XV1870-3QN10		1 1 unit		5K1
Crossed twisted pair connecting cables 4 x 2 with RJ45 connectors						
• 0.5 m	1	6XV1870-3RE50		1 1 unit		5K1
• 1 m	1	6XV1870-3RH10		1 1 unit		5K1
• 2 m	1	6XV1870-3RH20		1 1 unit		5K1
• 6 m	1	6XV1870-3RH60		1 1 unit		5K1
• 10 m	1	6XV1870-3RN10		1 1 unit		5K1
M12 sealing caps	▶	3RX9802-0AA00		100 10 units		42C
For protection of unused M12 terminals on ET 200pro						
M12 sealing caps with female thread	1	6ES7194-4JD60-0AA0		1 5 units		250
5 units						
PROFIBUS M12 connecting cables						
Preassembled with two 5-pole M12 plugs/sockets, max. 100 m, in various lengths:						
• 1.5 m	1	6XV1830-3DH15		1 1 unit		5K1
• 2.0 m	1	6XV1830-3DH20		1 1 unit		5K1
• 3.0 m	1	6XV1830-3DH30		1 1 unit		5K1
• 5.0 m	1	6XV1830-3DH50		1 1 unit		5K1
• 10 m	1	6XV1830-3DN10		1 1 unit		5K1
• 15 m	1	6XV1830-3DN15		1 1 unit		5K1
For more special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WWW/view/en/26999294						
PROFIBUS M12 bus termination plugs, female inserts	1	6GK1905-0ED00		1 5 units		5K2
PROFIBUS M12 bus termination plugs, pin inserts	1	6GK1905-0EC00		1 5 units		5K2
M12 plug-in connectors, axial outgoing feeder, with pin insert	1	6GK1905-0EA00		1 5 units		5K2
PROFIBUS FC standard cable GP	1	6XV1830-0EH10		1 1 M		5K1
Standard type with special design for fast installation, 2-core, shielded, Sold by the meter: Max. delivery unit 1 000 m, minimum order quantity 20 m						
PROFIBUS FC trailing cable	1	6XV1830-3EH10		1 1 M		5K2
2-core, shielded						
PROFIBUS FC food cable	1	6XV1830-0GH10		1 1 M		5K2
2-core, shielded Sold by the meter: Max. delivery unit 1 000 m, minimum order quantity 20 m						
PROFIBUS FC robust cables	1	6XV1830-0JH10		1 1 M		5K2
2-core, shielded Sold by the meter: Max. delivery unit 1 000 m, minimum order quantity 20 m						
PROFIBUS M12 connectors						
5-pole, B-coded, metal enclosure, 1 pack = 5 units						
• Female insert	1	6GK1905-0EB00		1 5 units		5K2

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – CPUs

Fail-safe CPUs

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
CPU 1516pro F-2 PN						
CPU 1516pro F-2 PN Work memory 1.5 MB for program, 5 MB for data, PROFINET IO IRT interface, PROFINET IO RT interface; SIMATIC Memory Card required	1	6ES7516-2GN00-0AB0		1	1 unit	216
Accessories						
SIMATIC Memory Card						
• 4 MB ¹⁾	NEW 1	6ES7954-8LC03-0AA0		1	1 unit	212
• 12 MB ¹⁾	NEW 1	6ES7954-8LE03-0AA0		1	1 unit	212
• 24 MB ¹⁾	NEW 1	6ES7954-8LF03-0AA0		1	1 unit	212
• 256 MB ¹⁾	NEW 1	6ES7954-8LL03-0AA0		1	1 unit	212
• 2 GB ¹⁾	1	6ES7954-8LP02-0AA0		1	1 unit	212
• 32 GB ¹⁾	1	6ES7954-8LT03-0AA0		1	1 unit	212
Connection modules						
CM CPU 2PN M12 / 7/8"; with 3 x M12 and 2 x 7/8", for connection of 2 x PROFINET	1	6ES7194-4AP00-0AA0		1	1 unit	215
Industrial Ethernet FC RJ45 Plug 180						
RJ45 plug-in connector for Industrial Ethernet, with robust metal enclosure and integrated insulation displacement contacts for connection of Industrial Ethernet FC installation cables; with 180° cable feeder						
• 1 unit	1	6GK1901-1BB10-2AA0		1	1 unit	5K1
• 10 units	1	6GK1901-1BB10-2AB0		1	10 units	5K1
• 50 units	1	6GK1901-1BB10-2AE0		1	50 units	5K1
Industrial Ethernet FastConnect installation cables						
• FastConnect standard cable	1	6XV1840-2AH10		1	1 M	5K1
• FastConnect trailing cable	1	6XV1840-3AH10		1	1 M	5K1
• FastConnect marine cable	1	6XV1840-4AH10		1	1 M	5K1
Industrial Ethernet FastConnect installation cables						
• IE FC TP trailing cables GP 2 x 2: Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1870-2D		1	1 M	5K2
• IE TP torsion cables GP 2 x 2: Sold by the meter, delivery unit max. 1 000 m; minimum order quantity 20 m	1	6XV1870-2F		1	1 M	5K2
Industrial Ethernet FastConnect						
Stripping tools	1	6GK1901-1GA00		1	1 unit	5K2
IE connecting cables M12-180/M12-180						
• Preassembled IE FC TP trailing cables GP 2 x 2 (PROFINET type C) with two 4-pole M12 plugs (4-pole, D-coded), degree of protection IP65/IP67, in various lengths:						
- 0.3 m	1	6XV1870-8AE30		1	1 unit	5K1
- 0.5 m	1	6XV1870-8AE50		1	1 unit	5K1
- 1.0 m	1	6XV1870-8AH10		1	1 unit	5K1
- 1.5 m	1	6XV1870-8AH15		1	1 unit	5K1
- 2.0 m	1	6XV1870-8AH20		1	1 unit	5K1
- 3.0 m	1	6XV1870-8AH30		1	1 unit	5K1
- 5.0 m	1	6XV1870-8AH50		1	1 unit	5K1
- 10 m	1	6XV1870-8AN10		1	1 unit	5K1
- 15 m	1	6XV1870-8AN15		1	1 unit	5K1
• PROFINET M12 connecting cables, trailing, preassembled at both ends with M12 plugs, angular (pin), in various lengths:						
- 3.0 m	15	3RK1902-2NB30		1	1 unit	42D
- 5.0 m	15	3RK1902-2NB50		1	1 unit	42D
- 10 m	15	3RK1902-2NC10		1	1 unit	42D
• PROFINET M12 connecting cables, trailing, preassembled at one end with M12 plugs, angular (one end with pin, one end open), in various lengths:						
- 3.0 m	15	3RK1902-2HB30		1	1 unit	42D
- 5.0 m	15	3RK1902-2HB50		1	1 unit	42D
- 10 m	15	3RK1902-2HC10		1	1 unit	42D
IE FC M12 Plug PRO						
PROFINET M12 connectors, D-coded with quick-connect technology, axial outgoing feeder						
• 1 unit	1	6GK1901-0DB20-6AA0		1	1 unit	5K1
• 8 units	1	6GK1901-0DB20-6AA8		1	8 units	5K1
• PROFINET M12 connectors, D-coded, angular	5	3RK1902-2DA00		1	1 unit	42D
IE Panel Feedthrough						
Control cabinet bushing for transition from M12 connection method (D-coded, IP65/IP67) to RJ45 connection method (IP20), 1 pack = 5 units	1	6GK1901-0DM20-2AA5		1	5 units	5K2

¹⁾ For operation of the CPU, an MMC is essential

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – CPUs

Fail-safe CPUs

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
CPU 1516pro F-2 PN (continued)						
7/8" connecting cables for power supply						
• 5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs (axial outgoing feeder), 5-pole, max. 50 m, in various lengths:						
- 1.5 m	1	6XV1822-5BH15		1	1 unit	5K1
- 2.0 m	1	6XV1822-5BH20		1	1 unit	5K1
- 3.0 m	1	6XV1822-5BH30		1	1 unit	5K1
- 5.0 m	1	6XV1822-5BH50		1	1 unit	5K1
- 10 m	1	6XV1822-5BN10		1	1 unit	5K1
- 15 m	1	6XV1822-5BN15		1	1 unit	5K1
- For more special lengths with 90° or 180° cable feeder, see http://support.automation.siemens.com/WW/view/en/26999294						
• Trailing power cables, 5 x 1.5 mm ² , preassembled at both ends with 7/8" connectors, angular (one end with socket, one end with pin), in various lengths:						
- 3.0 m	15	3RK1902-3NB30		1	1 unit	42D
- 5.0 m	15	3RK1902-3NB50		1	1 unit	42D
- 10 m	15	3RK1902-3NC10		1	1 unit	42D
• Trailing power cables, 5 x 1.5 mm ² , preassembled at one end with 7/8" connector with female insert, angular (one end with socket, one end open), in various lengths:						
- 3.0 m	15	3RK1902-3GB30		1	1 unit	42D
- 5.0 m	15	3RK1902-3GB50		1	1 unit	42D
- 10 m	15	3RK1902-3GC10		1	1 unit	42D
Power cables	1	6XV1830-8AH10		1	1 M	5K2
5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m						
7/8" connectors						
For ET 200eco, with axial cable feeder						
• With pin insert, pack of 5	1	6GK1905-0FA00		1	5 units	5K2
• With female insert, pack of 5	1	6GK1905-0FB00		1	5 units	5K2
• Angular, with female insert, 1 unit	5	3RK1902-3DA00		1	1 unit	42D
• Angular with pin insert, 1 unit	5	3RK1902-3BA00		1	1 unit	42D
7/8" covers, pack of 10	1	6ES7194-3JA00-0AA0		1	10 units	250
Twisted pair connecting cables 4 x 2 with RJ45 connectors						
• 0.5 m	1	6XV1870-3QE50		1	1 unit	5K1
• 1 m	1	6XV1870-3QH10		1	1 unit	5K1
• 2 m	1	6XV1870-3QH20		1	1 unit	5K1
• 6 m	1	6XV1870-3QH60		1	1 unit	5K1
• 10 m	1	6XV1870-3QN10		1	1 unit	5K1
Crossed twisted pair connecting cables 4 x 2 with RJ45 connectors						
• 0.5 m	1	6XV1870-3RE50		1	1 unit	5K1
• 1 m	1	6XV1870-3RH10		1	1 unit	5K1
• 2 m	1	6XV1870-3RH20		1	1 unit	5K1
• 6 m	1	6XV1870-3RH60		1	1 unit	5K1
• 10 m	1	6XV1870-3RN10		1	1 unit	5K1
M12 sealing caps	▶	3RX9802-0AA00		100	10 units	42C
For protection of unused M12 terminals on ET 200pro						
M12 sealing caps with female thread	1	6ES7194-4JD60-0AA0		1	5 units	250
5 units						

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – I/O modules

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Digital expansion modules						
8 DI digital input modules 24 V DC, with module diagnostics, including bus module connection module to be ordered separately	1	6ES7141-4BF00-0AA0		1	1 unit	250
8 DI High Feature digital input modules 24 V DC, with channel diagnostics, including bus module connection module to be ordered separately	5	6ES7141-4BF00-0AB0		1	1 unit	250
16 DI digital input modules 24 V DC, with module diagnostics, including bus module connection module 6ES7 194-4CB50-0AA0 to be ordered separately	1	6ES7141-4BH00-0AA0		1	1 unit	250
4 DO digital output modules 24 V DC, 2 A, with module diagnostics, including bus module connection module to be ordered separately	1	6ES7142-4BD00-0AA0		1	1 unit	250
4 DO High Feature digital output modules 24 V DC, 2 A, with channel diagnostics, including bus module connection module to be ordered separately	1	6ES7142-4BD00-0AB0		1	1 unit	250
8 DO digital output modules 24 V DC, 0.5 A, with module diagnostics, including bus module connection module to be ordered separately	1	6ES7142-4BF00-0AA0		1	1 unit	250
4 DI/4 DO digital input and output modules 24 V DC, 0.5 A, with module diagnostics, including bus module connection module to be ordered separately	1	6ES7143-4BF50-0AA0		1	1 unit	250
4 DI/4 DO digital input and output modules 24 V DC, 0.5 A, with module diagnostics, including bus module connection module to be ordered separately	1	6ES7143-4BF00-0AA0		1	1 unit	250
Accessories						
CM IO 4 x M12 connection modules 4 M12 sockets for connection of digital or analog sensors or actuators to ET 200pro	1	6ES7194-4CA00-0AA0		1	1 unit	250
CM IO 4 x M12 Invers connection modules 4 M12 sockets for connection of digital actuators to ET 200pro (4 DO and 4 DO HF); 2 x M12 with single assignment, 2 x M12 with double assignment	1	6ES7194-4CA50-0AA0		1	1 unit	250
CM IO 4 x M12 P connection modules 4 M12 sockets for connection of digital sensors or actuators to ET 200pro; plastic version	1	6ES7194-4CA10-0AA0		1	1 unit	250
CM IO 8 x M12 connection modules 8 M12 sockets for connection of digital sensors or actuators to ET 200pro	1	6ES7194-4CB00-0AA0		1	1 unit	250
CM IO 8 x M12 P connection modules 8 M12 sockets for connection of digital sensors or actuators to ET 200pro; plastic version	1	6ES7194-4CB10-0AA0		1	1 unit	250
CM IO 8 x M12D connection modules 8 M12 sockets for connection of digital sensors or actuators to ET 200pro	1	6ES7194-4CB50-0AA0		1	1 unit	250
CM IO 8 x M8 connection modules 8 M8 sockets for connection of digital sensors or actuators to ET 200pro	1	6ES7194-4EB00-0AA0		1	1 unit	250
CM IO 2 x M12 connection modules 2 M12 8-pole sockets; to be used with: EM 8DI 24 V DC and 8 DO 24 V DC/0.5 A	1	6ES7194-4FB00-0AA0		1	1 unit	250
CM IO 1 x M23 connection modules 1 M23 socket, to be used with: EM 8 DI 24 V DC and 8 DO 24 V DC/0.5 A	1	6ES7194-4FA00-0AA0		1	1 unit	250
Module labeling plates For color coding of CM IOs in the colors white, red, blue and green; pack of 100	1	6ES7194-4HA00-0AA0		1	500 units	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	▶	3RX9802-0AA00		100	10 units	42C
Labels 20 x 7, pastel turquoise, pack of 340	20	3RT1900-1SB20		100	340 units	41B
M12 Y-shaped coupler plugs For double connection of sensors with a single cable, 5-pole; cannot be used for F-DI4/8	1	6ES7194-1KA01-0XA0		1	1 unit	250
M12 Y-cables For double connection of I/Os with a single cable to ET 200, 5-pole	1	6ES7194-6KA00-0XA0		1	1 unit	250
M8 sealing caps For IP67 modules	2	3RK1901-1PN00		100	10 units	42C

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – I/O modules

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Analog expansion modules						
4AI U analog input modules High Feature, ±10 V; ±5 V; 0 ... 10 V; 1 ... 5 V, channel diagnostics, including bus module. Connection module to be ordered separately	1	6ES7144-4FF01-0AB0		1	1 unit	250
4AI I analog input modules High Feature, ±20 mA; 0 ... 20 mA; 4 ... 20 mA, channel diagnostics, including bus module. Connection module to be ordered separately	1	6ES7144-4GF01-0AB0		1	1 unit	250
4AI RTD analog input modules High Feature; resistors: 150, 300, 600 and 3 000 Ohm; thermistor: Pt100, 200, 500, 1 000, Ni100, 120, 200, 500 and 1 000; channel diagnostics, including bus module. Connection module must be ordered separately	1	6ES7144-4JF00-0AB0		1	1 unit	250
4AI TC analog input modules High Feature; thermocouples: Types B, E, J, K, L, N, R, S, T; voltage measurement: ±80 mV; channel diagnostics, including bus module. Connection module must be ordered separately	1	6ES7144-4PF00-0AB0		1	1 unit	250
4AO U analog output modules High Feature, ±10 V; 0 ... 10 V; 1 ... 5 V, channel diagnostics, including bus module. Connection module to be ordered separately	1	6ES7145-4FF00-0AB0		1	1 unit	250
4AO I analog output modules High Feature, ±20 mA; 0 ... 20 mA; 4 ... 20 mA, channel diagnostics, including bus module. Connection module to be ordered separately	1	6ES7145-4GF00-0AB0		1	1 unit	250
Accessories						
CM IO 4 x M12 connection modules 4 M12 sockets for connection of digital or analog sensors or actuators to ET 200pro	1	6ES7194-4CA00-0AA0		1	1 unit	250
M12 compensation plugs With integrated Pt100 for reference point compensation when connecting thermocouples	1	6ES7194-4AB00-0AA0		1	1 unit	250
Module labeling plates For color coding of CM IOs in the colors white, red, blue and green; pack of 100	1	6ES7194-4HA00-0AA0		1	500 units	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	▶	3RX9802-0AA00		100	10 units	42C
IO-Link master modules						
4 IO-LINK HF solid-state modules 4 IO-Link ports acc. to IO Link specification V1.1, Port Class B; High Feature, channel diagnostics, including bus module connection module to be ordered separately	1	6ES7147-4JD00-0AB0		1	1 unit	250
Accessories						
CM IO-Link 4 x M12 P connection modules 4 M12 sockets for connection of IO-Link devices to ET 200pro 4 IO-LINK HF solid-state module	1	6ES7194-4CA20-0AA0		1	1 unit	250
Module labeling plates For color coding of CM IOs in the colors white, red, blue and green; pack of 100	1	6ES7194-4HA00-0AA0		1	500 units	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	▶	3RX9802-0AA00		100	10 units	42C
Fail-safe digital expansion modules						
8/16 F-DI PROFIsafe fail-safe digital input modules 24 V DC, including bus module. Connection module must be ordered separately	1	6ES7148-4FA00-0AB0		1	1 unit	241
4/8 F-DI, 4 F-DO 2 A fail-safe digital input/output modules 24 V DC, including bus module. Connection module must be ordered separately	1	6ES7148-4FC00-0AB0		1	1 unit	241
F-Switch PROFIsafe fail-safe solid-state modules Three fail-safe PP-switching outputs for safe switching of the backplane busbars (2L+, F0, F1); two fail-safe digital inputs, 45 mm; usable up to SIL 3 (IEC 61508)	1	6ES7148-4FS00-0AB0		1	1 unit	241
Accessories						
Connection modules For F-Switch PROFIsafe fail-safe solid-state modules	1	6ES7194-4DA00-0AA0		1	1 unit	241
Connection modules For the 4/8 F-DI/4 F-DO, 24 V DC/2 A fail-safe solid-state modules	1	6ES7194-4DC00-0AA0		1	1 unit	241
Connection modules For the 8/16 F-DI, 24 V DC fail-safe solid-state modules	1	6ES7194-4DD00-0AA0		1	1 unit	241
PROFIBUS DP IM 154-2 interface modules Including terminal module	1	6ES7154-2AA01-0AB0		1	1 unit	250
PROFINET IM154-4 PN interface modules Including terminal module	1	6ES7154-4AB10-0AB0		1	1 unit	250
M12 sealing caps For protection of unused M12 terminals on ET 200pro	▶	3RX9802-0AA00		100	10 units	42C

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – I/O modules

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
d						
PM-E power modules						
PM-E power modules 24 V DC For resupply and group formation of the 24 V DC load voltage for solid-state modules within an ET 200pro station	1	6ES7148-4CA00-0AA0		1	1 unit	250
Accessories						
CM PM-E ECOFAST connection modules For resupply of 24 V load voltage, 1 ECOFAST Cu connection	1	6ES7194-4BA00-0AA0		1	1 unit	250
CM PM-E Direct connection modules For resupply of 24 V load voltage, up to 2 M20 screwed cable bushings	1	6ES7194-4BC00-0AA0		1	1 unit	250
CM PM-E 7/8" connection modules For resupply of 24 V load voltage, 1 x 7/8"	1	6ES7194-4BD00-0AA0		1	1 unit	250
CM PM-E PP connection modules For resupply of 24 V load voltage, 2 x push-pull, with spare fuse	1	6ES7194-4BE00-0AA0		1	1 unit	250
Spare fuses 12.5 A quick-response, for interface and power modules, pack of 10	1	6ES7194-4HB00-0AA0		1	10 units	250
PROFIBUS ECOFAST hybrid cables – copper Trailing cables (PUR sheath) with two copper conductors, shielded, for PROFIBUS DP and four copper cores with 1.5 mm ²						
• <u>Non-assembled</u>						
- 50 m	1	6XV1830-7AN50		1	1 unit	5K2
- 100 m	1	6XV1830-7AT10		1	1 unit	5K2
• <u>Preassembled with ECOFAST plug and socket, fixed length</u>						
- 1.5 m	1	6XV1830-7BH15		1	1 unit	5K2
- 3 m	1	6XV1830-7BH30		1	1 unit	5K2
- 5 m	1	6XV1830-7BH50		1	1 unit	5K2
- 10 m	1	6XV1830-7BN10		1	1 unit	5K2
- 15 m	1	6XV1830-7BN15		1	1 unit	5K2
- 20 m	1	6XV1830-7BN20		1	1 unit	5K2
PROFIBUS ECOFAST hybrid cables GP Trailing cables with 4 x Cu and 2 x Cu, shielded with UL approval						
• <u>Preassembled with ECOFAST plug and socket</u>						
- 1.5 m	1	6XV1860-3PH15		1	1 unit	5K2
- 3 m	1	6XV1860-3PH30		1	1 unit	5K2
- 5 m	1	6XV1860-3PH50		1	1 unit	5K2
- 10 m	1	6XV1860-3PN10		1	1 unit	5K2
- 15 m	1	6XV1860-3PN15		1	1 unit	5K2
- 20 m	1	6XV1860-3PN20		1	1 unit	5K2
ECOFAST plug connectors, can be preassembled Sockets; Order unit 5 units	1	6GK1905-0CB00		1	5 units	5K2
PROFIBUS ECOFAST hybrid plugs, angular With 2 x Cu shielded and 4 x Cu 1.5 mm ² ; 5 units; with installation instructions; female insert	1	6GK1905-0CD00		1	5 units	5K2
Push-pull connectors For 1L+/ 2L+, non-assembled	1	6GK1907-0AB10-6AA0		1	1 unit	5K2
Covers for push-pull sockets 5 units	1	6ES7194-4JA50-0AA0		1	5 units	250
Accessories for CM PM-E Direct						
Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	6XV1830-8AH10		1	1 M	5K2
Accessories for CM PM-E 7/8"						
7/8" connecting cables for power supply 5-core, 5 x 1.5 mm ² , trailing, preassembled with two 7/8" plugs, 5-pole						
• Length 1.5 m	1	6XV1822-5BH15		1	1 unit	5K1
• Length 2.0 m	1	6XV1822-5BH20		1	1 unit	5K1
• Length 3.0 m	1	6XV1822-5BH30		1	1 unit	5K1
• Length 5.0 m	1	6XV1822-5BH50		1	1 unit	5K1
• Length 10 m	1	6XV1822-5BN10		1	1 unit	5K1
• Length 15 m	1	6XV1822-5BN15		1	1 unit	5K1
7/8" connectors With axial cable feeder						
• With female insert, pack of 5	1	6GK1905-0FB00		1	5 units	5K2

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro – I/O modules

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
PM-O power module outputs						
PM-O power modules 2 x 24 V DC For tapping the 24 V load voltage 2L+ and the solid-state/sensor supply voltage 1L+ within an ET 200pro station	1	6ES7148-4CA60-0AA0		1	1 unit	250
Accessories						
CM PM-O PP connection modules For tapping 24 V load voltage and solid-state/sensor supply voltage, 2 x push-pull plug-in connectors	1	6ES7194-4BH00-0AA0		1	1 unit	250
Push-pull connectors For 1L+/2L+, non-assembled	1	6GK1907-0AB10-6AA0		1	1 unit	5K2
Covers for push-pull sockets 5 units	1	6ES7194-4JA50-0AA0		1	5 units	250
ET 200pro pneumatic interfaces						
EM 148-P pneumatic interfaces						
• DO 16 x P/CPV 10 for direct connection of the FESTO valve terminals CPV 10 16 DO x P	1	6ES7148-4EA00-0AA0		1	1 unit	250
• DO 16 x P/CPV 14 for direct connection of the FESTO valve terminals CPV 14 16 DO x P	1	6ES7148-4EB00-0AA0		1	1 unit	250
• FESTO CPV 10 valve terminals		to be purchased through FESTO				
• FESTO CPV 14 valve terminals		see page 16/16				
RF170C						
SIMATIC RF170C communication modules For connection to the distributed ET 200pro I/O system	1	6GT2002-0HD01		1	1 unit	572
Accessories						
Connection blocks for SIMATIC RF170C For connecting 2 readers or other RS422/RS232 devices through M12 plug-in connectors	1	6GT2002-1HD01		1	1 unit	572
Reader cables for SIMATIC RF200/RF300/RF600/MV440 Or MOBY D extension cable and SIMATIC RF200/RF300/RF600/MV400, material PUR, CMG approval, trailing						
• 2 m, straight connector	1	6GT2891-4FH20		1	1 unit	572
• 5 m, straight connector	1	6GT2891-4FH50		1	1 unit	572
• 10 m, straight connector	1	6GT2891-4FN10		1	1 unit	572
• 20 m, straight connector	1	6GT2891-4FN20		1	1 unit	572
• 50 m, straight connector	1	6GT2891-4FN50		1	1 unit	572
• 2 m, connector angular at the reader	1	6GT2891-4JH20		1	1 unit	572
• 5 m, connector angular at the reader	1	6GT2891-4JH50		1	1 unit	572
• 10 m, connector angular at the reader	1	6GT2891-4JN10		1	1 unit	572
Reader cables for MOBY D Material PUR, CMG approval, trailing, 2 m	1	6GT2691-4FH20		1	1 unit	572
Reader cables for MV300 handheld readers						
• Coiled cable with useful length of 1.6 m ... 4 m for MV320, material PUR	1	6GT2191-0BH50		1	1 unit	572
• Coiled cable with useful length of 1.6 m ... 4 m for MV340, material PUR	1	6GT2191-0AH50		1	1 unit	572
Plug for connecting other RS422/RS232 devices M12 8-pole male connector, screw contacts for cores up to 0.5 mm ² order quantity: 1 pack of 5 units	1	6GT2090-0BE00		1	5 units	572
M12 sealing caps for unused reader connections Minimum order quantity 10 units, price per 100 units	▶	3RX9802-0AA00		100	10 units	42C
DVD "RFID Systems Software & Documentation"	5	6GT2080-2AA20		1	1 unit	572

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

Power supplies

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Three-phase, 24 V DC (ET 200pro PS, IP67)						
SIMATIC ET 200pro PS Stabilized power supply in the construction and design of the distributed I/O system, with the option of looping the power to other modules; with degree of protection IP67; Input: 400 ... 480 V 3 AC Output: 24 V DC/8 A	1	6ES7148-4PC00-0HA0		1	1 unit	589
Accessories						
Power connection plugs For connection to the distributed I/O system						
• for X1 (6 mm ²)	5	3RK1911-2BE30		1	1 unit	42D
• for X2 (4 mm ²)	5	3RK1911-2BF10		1	1 unit	42D
National Fire Protection Association (NFPA) compatibility These devices are only certified for installation in industrial machines in accordance with the "Electrical Standard for Industrial Machinery" (NFPA79).						
• For X1 SIMATIC ET 200pro PS 61 88 201 1003.xx (AWG10)		to be purchased through Harting see page 16/16				
• For X1 SITOP PSU300P 61 88 201 1000.xx / 61 88 201 1002.xx (AWG14)						
• For X2 SIMATIC ET 200pro PS 61 88 202 1010.xx (AWG10)* dummy cap included for X2						
• For X3 Phoenix-Contact SAC-5P-M12-M12FS dummy cap included for X3						
Sealing caps For 9-pole power socket connectors						
• X2 (pack of 1)	5	3RK1902-0CK00		1	1 unit	42D
• X2 (pack of 10)	5	3RK1902-0CJ00		1	10 units	42D

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

SIMATIC ET 200pro FC-2 frequency converters

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIMATIC ET 200pro FC-2 frequency converters						
SIMATIC ET 200pro FC-2 frequency converters With integrated safety function STO (Safe Torque Off), 380 ... 480 V 3 AC, ±10%, 47 ... 63 Hz <u>Overload:</u> 150%, 60 s; 200%, 3 s <u>Power rating:</u> 1.1 kW (0 ... +55 °C), 1.5 kW (0 ... +45 °C)	3	6SL3514-1KE13-5AE0		1	1 unit	337
Accessories for SIMATIC ET 200pro FC-2 frequency converters						
Backplane bus modules for accommodating the frequency converter¹⁾	3	6SL3260-2TA00-0AA0		1	1 unit	337
Connecting cables preassembled at one end Power connection cable, open at one end, for HAN Q4/2, angled, 4 × 4 mm ²						
• Length 1.5 m	5	3RK1911-0DB13		1	1 unit	42D
• Length 5 m	5	3RK1911-0DB33		1	1 unit	42D
Connector set for incoming power supply, HAN Q4/2						
• 2.5 mm ²	5	3RK1911-2BE50		1	1 unit	42D
• 4.0 mm ²	5	3RK1911-2BE10		1	1 unit	42D
• 6.0 mm ²	5	3RK1911-2BE30		1	1 unit	42D
Motor cables preassembled at one end For motors with brake and temperature sensor with HAN Q8 connector, shielded <u>Cross-section 1.5 mm²</u>						
• Length 1.5 m		ZKT: 70020501000150 HTG: 61 88 201 0288				
• Length 3 m		ZKT: 70020501000300 HTG: 61 88 201 0289				
• Length 5 m		ZKT: 70020501000500 HTG: 61 88 201 0290				
• Length 10 m		ZKT: 70020501001000 HTG: 61 88 201 0299				
Frequency converter plugs For motor cable, shielded, HAN Q8 <u>Cross-section 1.5 mm²</u>						
		ZKT:10032001 HTG: 61 83 401 0131 ZKT: Available from KnorrTec, see page 16/16 HTG: Available from Harting, See page 16/16				
Power jumper plugs For 400 V power loop-through connection to the following 400 V modules	2	3RK1922-2BQ00		1	1 unit	42D
IOP-2 Handheld For use with SINAMICS G120, SINAMICS G120C, SINAMICS G120P, SINAMICS G110D, SINAMICS G120D, SINAMICS G110M and SIMATIC ET 200pro FC-2 Included in the scope of supply: • Intelligent Operator Panel IOP-2 • Handheld enclosure • Batteries (4 × AA) • Charger (international) • RS 232 connecting cable (length 3 m, only for use in combination with SINAMICS G120, SINAMICS G120C and SINAMICS G120P ²⁾) • USB cable (length 1 m)	3	6SL3255-0AA00-4HA1		1	1 unit	343
RS 232 interface cable With optical interface for connection of the SIMATIC ET 200pro FC-2 frequency converter to the IOP-2 Handheld (length 2.5 m) ²⁾	5	3RK1922-2BP00		1	1 unit	42D
PC inverter connection kit 2 (mini USB interface cable for communication with a PC) For controlling and commissioning an inverter directly from a PC over a point-to-point link if the appropriate software (STARTER commissioning tool ³⁾ V4.4 plus SSP (SINAMICS Support Package) or higher is installed (length 3 m)	3	6SL3255-0AA00-2CA0		1	1 unit	343
SINAMICS memory card (SD card) For the SIMATIC ET 200pro FC-2 parameter settings If required there is space on the memory card for the complete parameterization of the frequency converter. During servicing, the plant is immediately ready for use again after replacing the frequency converter and inserting the memory card.	5	6SL3054-4AG00-2AA0		1	1 unit	753

¹⁾ Absolutely essential for operation of the converter.

²⁾ For use in combination with SINAMICS G110D, SINAMICS G120D,
SINAMICS G110M or SIMATIC ET 200pro FC-2, the RS 232 connecting
cable with optical interface is required (Article No.: 3RK1922-2BP00).
The cable must be ordered separately.

³⁾ The STARTER commissioning tool is available online at
www.siemens.com/starter.

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Motor Starters

ET 200pro add-on products

Selection and ordering data

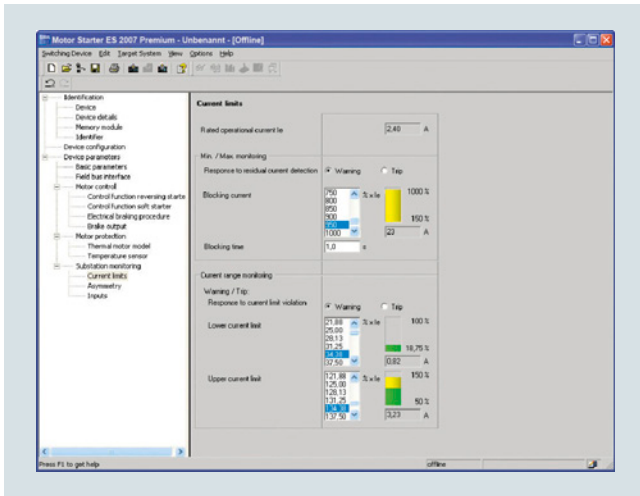
Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
EtherNet/IP interface modules						
SIMATIC ET 200pro interface modules for EtherNet/IP	1	ZNX:EIP200PRO		1	1 unit	250
Including:						
<ul style="list-style-type: none"> • Bus termination module for ET 200pro • Companion disk with the manuals and configuration tool 						
Accessories						
Connection modules for EtherNet/IP	1	ZNX:EIP200PROC1		1	1 unit	250
For connection of the interface module to EtherNet/IP						

Motor Starters for Use in the Field, High Degree of Protection

ET 200pro Software

Motor Starter ES

Overview



Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

More information

Homepage, see www.siemens.com/sirius-engineering

Industry Mall, see www.siemens.com/product?3ZS1

Technical specifications and system requirements, see <https://support.industry.siemens.com/cs/ww/en/ps/16713/td>

Motor Starter ES is used for the start up, parameterization, diagnostics, documentation and preventive maintenance of SIMATIC ET 200S, ET 200pro, ECOFAST and M200D motor starters.

The software program is available in three versions which differ in their user-friendliness, scope of functions and price.

For detailed information on the Motor Starter ES software, see [page 14/10](#).

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

General data

Overview



SIRIUS M200D AS-i Basic motor starter with manual local operation

The intelligent and highly flexible SIRIUS M200D motor starters for distributed installation start, monitor and protect motors and loads up to 5.5 kW.

The M200D motor starters are available in four versions:

M200D AS-i Basic	M200D AS-i Standard	M200D PROFIBUS	M200D PROFINET
Motor control with AS-i communication		PROFIBUS	PROFINET
Mechanical or electronic switching	✓	✓	✓
Electronic switching with soft starter functionality	--	✓	✓

✓ Function available

-- Function not available

More information

Homepage, see www.siemens.com/motorstarter

Industry Mall, see www.siemens.com/product?M200D

TIA Selection Tool Cloud (TST Cloud), see https://mall.industry.siemens.com/spice/TSTWeb/?kmat=MS_M200D

Basic functionality

The versions of the M200D motor starter are equipped with the following properties and functions:

- Available as direct-on-line and reversing starters in a rugged design
- Electromechanical or electronic switching version
- Low variance – only two device versions up to 5.5 kW thanks to wide range setting
- All versions have the same enclosure size.
- Degree of protection IP65
- Quick and fail-safe wiring of system and motor cables using ISO 23570 plug-in connector technology (Q4/2 and Q8/0)
- Robust and widely used M12 connection method for digital inputs and outputs
- Integrated feeder connector monitoring
- Full motor protection through overload protection and a temperature sensor (PTC, TC)
- Short-circuit and overload protection integrated
- Integrated repair switch lockable with three locks (multi-level service)
- Uniform wiring to the SINAMICS G110D, SINAMICS G110M and SINAMICS G120D frequency inverters and to the ET 200pro distributed I/O system
- Extensive diagnostics concept using LEDs
- Optional integrated manual local control with key-operated switch (ordering option)
- Optionally available brake actuation with voltages from 180 V DC (no rectifier needed in motor) or 230/400 V AC (ordering options)

Article No. scheme

Product versions		Article number														
Motor starters		3	R	K	1	3	5	6	K	S	4	1	3	A	A	0
Type	AS-i Basic	1												A		
	AS-i Standard	2												A		
	PROFIBUS/PROFINET	9												D		
Setting range for rated operational current I_A	0.15 ... 2 A								K							
	1.5 ... 9 A								N							
	1.5 ... 12 A								L							
Starter version	Electromechanical starters										4					with integrated contactor
	Electronic starters										7					with thyristors
Product function	Direct-on-line starters													0		
	Reversing starters													1		
	Direct-on-line starters													2		with manual local operation
	Reversing starters													3		with manual local operation
Brake actuation	None															0
	230/400 V AC															3
	180 V DC															5
Example		3	R	K	1	3	5	6	K	S	4	1	3	A	A	0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

General data

Benefits

M200D motor starters provide the following advantages for customers:

- High plant availability through plug-in capability of the main circuit, communication and I/Os – relevant for installing and replacing devices
- Cabinet-free construction and near-motor installation thanks to the high degree of protection IP65
- The motor starters record the actual current flow for the parameterizable electronic motor overload protection. Reliable messages concerning the overshooting or undershooting of setpoint values ensure comprehensive motor protection. All motor protection functions can be defined by simple parameterization
- Low stock levels and low order costs thanks to a wide setting range for the electronic motor protection of 1:10 (only two device versions up to 5.5 kW)
- The integrated wide range for the current enables a single device to cover numerous standard motors of different sizes.
- Comprehensive offering of accessories, including ready-assembled cables
- The M200D motor starters can be installed with a few manual steps. The integrated plug-in technology enables far lower wiring outlay: Preassembled cables can be plugged directly onto the motor starter module.
- Easy and user-friendly installation because all versions have the same enclosure dimensions.
- Fast and user-friendly commissioning using optional manual local operation
- Increase of process speed through integrated functions such as "Quick Stop" and "Disable Quick Stop", e.g. at points and crossings
- Optional manual local control with momentary-contact and latching operation for easier start up and easier servicing

Application

The high degree of protection IP65 makes the M200D motor starters suitable in particular for use on extensive conveying systems such as are found in mail sorting centers, airports, automotive factories and the packing industry.

For simple drive tasks, particularly in conveyor applications, the new SINAMICS G110D frequency inverter series with a performance range from 0.75 kW to 7.5 kW and degree of protection IP65 is the ideal partner for the M200D motor starters.

SINAMICS G110D inverters allow for stepless speed control of three-phase asynchronous motors and comply with the requirements for materials handling applications with frequency control (for further information, [see Catalog D 31.2](#)).

For simple drive tasks in conveyor applications in which a frequency inverter integrated into the motor is required, the SINAMICS G110M frequency inverter with a performance range from 0.37 kW to 4 kW and degree of protection IP65/66 is the ideal partner. The SINAMICS G110M is available individually as a frequency inverter for self-assembly and pre-mounted on SIMOGEAR geared motors, and with its conveyor-specific functions it satisfies the requirements of conveyor technology applications (for further information, [see Catalog D 31.2](#)).

Use of SIRIUS M200D motor starters in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS M200D motor starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, [see Application Manual](#).

For more information, [see page 1/7](#).

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface

General data

Overview

For motor control using AS-Interface there are the following M200D motor starter versions: SIRIUS M200D AS-i Basic and SIRIUS M200D AS-i Standard (basic functionality, [see page 9/41 "SIRIUS M200D Motor Starters" → "General data" → "Overview"](#)).

SIRIUS M200D AS-i Basic

Functionality

- Easy and fast on-site start up through parameterization of local setting knobs (DIP switches) and rotary coding switches for adjusting the rated operational current. The rotary coding switch has an OFF position for deactivating the overload protection with the help of the thermal motor model when using a temperature sensor.

Communications

- AS-i communication with A/B addressing according to Spec V2.1
- The AS-i bus is connected cost-effectively using an M12 connection on the device. Of the four digital inputs, two are contained in the process image and can therefore be used in the PLC program. The other two inputs are locally effective and permanently assigned with functions.
- The LEDs can provide comprehensive diagnostics of the device on the spot. In addition to diagnostics using the PAE process image, the device can create up to 15 different diagnostic signals per slave. The message with the highest priority can be read out through the AS-i communication. This is yet another new development which distinguishes the M200D AS-i Basic motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the system.

SIRIUS M200D AS-i Standard

The intelligent and highly flexible M200D AS-i standard motor starter in A/B technology starts and protects motors and loads up to 5.5 kW. They are available in direct-on-line or reversing starter versions, in a mechanical version and also an electronic version (the latter with soft start function).

The M200D AS-i Standard motor starter is the most functional member of the SIRIUS motor starter family in the high degree of protection IP65 for AS-i communication. Consistency with other products of the SIRIUS M200D motor starter range and with the frequency converter and ET 200pro I/O system is assured.

Functionality

- AS-i communication with A/B addressing according to Spec 3.0
- Electronic version also with soft start function
- AS-i slave profile 7AE/7A5 with process image 6E/4A
- Full TIA integration: All digital inputs and outputs exist in the cyclic process image and are visible through AS-i, providing maximum flexibility and best adaptability to the application.
- Additionally expanded diagnostics using data record through AS-i bus
- Complete plant monitoring using statistics data record and current value monitoring by means of data records
- Parameterization through AS-i bus with the help of data records or an expanded process image from the user program
- Control of the motor starter using a command data record from the user program
- Flexible assignment of the digital inputs and outputs with all available assignable input actions
- Parameterization using Motor Starter ES at the local interface (ordering option for start up software)
- Diagnostics with the help of Motor Starter ES (ordering option for start up software)

Mounting and installation

The M200D motor starters can be installed with a few manual steps. The integrated plug-in technology enables far lower wiring outlay. Connecting cables can be plugged directly onto the motor starter module. Swapping of the connecting wires and malfunctions within the plant are prevented by preassembled cables. The AS-i bus is connected cost-effectively using an M12 connection on the device. All versions have identical enclosure dimensions for easier system design and conversion.

Parameterization and configuration

The particularly robust M200D AS-i Standard motor starter is characterized by numerous functions which can be flexibly parameterized. It enables highly flexible parameterization through the AS-i bus using data records from the user program as well as user-friendly local parameterization using the Motor Starter ES start up software through the local point-to-point interface.

Functions can be flexibly assigned to the digital inputs and outputs, adapting them to all possible conveyor applications. All motor protection functions, limit values and reactions can be defined by parameterization. The AS-i Standard is unique. In its 6E/4A process image the motor starter sends all four digital inputs and the digital output via the process image to the PLC in cyclic mode. System configuration and system documentation are facilitated not least by a number of CAX data.

Operation

The new generation of motor starters is characterized by its advanced functionality, maximum flexibility and extremely high degree of automation.

All digital inputs and outputs exist in the cyclic process image. All limit values for monitoring functions and their reactions are parameterizable and therefore adaptable to the application. The motor starters record the actual current flow. Evaluating the current of the parameterizable solid-state overload protection increases the availability of the drives, as do reliable messages concerning the overshooting or undershooting of setpoint values.

Diagnostics and maintenance

The M200D sets new standards for diagnostics. In addition to diagnostics using the PAE process image and diagnostics by "parameter echo" (up to 15 different diagnostic signals per slave can be read out via AS-i communication), the possibility of reading out diagnostic data records is unique on the market.

The AS-i Standard is recommended in particular for expansive and highly automated system components because the possibility of monitoring devices and systems with data records (statistical data, measured values and device diagnostics) provides an in-depth view of the plant from the control room, guaranteeing the monitoring process and increasing plant availability.

Preventive maintenance can be carried out with the integrated maintenance timer and plant downtimes prevented as a result in advance.

Local control of a drive is possible using the ordering option with integrated manual operation. This is yet another new development which distinguishes the M200D AS-i Standard motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the plant.

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface

General data



SIRIUS M200D
AS-i Basic

SIRIUS M200D
AS-i Standard

Device functions (firmware features)

Slave on the bus

Fieldbus	✓ AS-i	
Slave type	✓ A/B acc. to Spec 2.1	✓ A/B acc. to Spec 3.0
Profile	✓ 7.A.E	✓ 7.A.E & 7.A.5
Number of assigned AS-i addresses on the bus	✓ 1	✓ 2
Number of stations per AS-i master	✓ Max. 62 devices	✓ Max. 31 devices
AS-i master profile	✓ M3 and higher	✓ M4 and higher

Parameter assignment

DIP switches	✓	--
Potentiometer for rated operational current	✓	--
Motor Starter ES	--	✓
Data records through AS-i	--	✓

Diagnostics

Diagnostics through parameter channel	✓	
Acyclic through data records	--	✓
Expanded process image PAE 4 bytes	--	✓

Process image

Process image	✓ 4E/3A	✓ 6E/4A
---------------	---------	---------

Data channels

Local optical interface (manual local)	✓	
AS-i bus	✓	
Motor Starter ES through local interface	--	✓
Motor Starter ES through bus	--	

Data records¹⁾ (acyclic)

Parameter assignment	--	✓
Diagnostics	--	✓
Measured values	--	✓
Statistics	--	✓
Commands	--	✓

Inputs

Number	✓ 4	
• Of these in the process image	✓ 2 through AS-i	✓ 4 through AS-i
Input action	✓ For permanently assigned functions, see manual	✓ Parameterizable: flexible
Quick stop	✓ Permanent function: latching, edge-triggered	✓ Parameterizable function: latching (edge-triggered), non-latching (level-triggered)

Outputs

Number	✓ 1	
Output action	✓ Permanent function: assigned with group fault	✓ Parameterizable: For function, see manual

Brake output

180 V DC /230/400 V AC / none	✓	
-------------------------------	---	--

Motor protection

Overload protection	✓ Electronic, wide range 1:10	
Short-circuit protection	✓	
Full motor protection	✓	
Temperature sensor	✓ Parameterizable using DIP switches: PTC or Thermoclick or deactivated	✓ Parameterizable using Motor Starter ES, data record: PTC or Thermoclick or deactivated

✓ Function available

-- Function not available

¹⁾ The data records are a reduced selection compared with PROFIBUS/PROFINET.

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface

General data



SIRIUS M200D
AS-i Basic

SIRIUS M200D
AS-i Standard

Device functions (firmware features) (continued)

Device function

Repair switch	✓	
Current limit monitoring bottom	--	✓ Parameterizable
Current limit monitoring top	--	✓ Parameterizable
Zero current detection	✓ Permanent function: disconnection, less than 18.75% of the rated operational current I_e	✓ Parameterizable
Blocking current	✓ Permanent function: starting up of the motor: Tripping limit up to 800% of the rated operational current I_e for 10 s Active operation: Threshold for tripping "blocking current" up to 400% of the rated operational current I_e	✓ Parameterizable
Unbalance	✓ Permanent function: up to 30% of the rated operational current I_e (only mechanical MS)	✓ Parameterizable
Load type	✓ Permanent function: Three-phase	✓ Parameterizable: single-phase and three-phase
Shutdown class	✓ Parameterizable using DIP switches: CLASS 10/deactivated	Parameterizable using Motor Starter ES, data record: CLASS 5, 10, 15, 20
Protection against voltage failure	✓	✓ Parameterizable: activated/deactivated
Soft starter control function		
Soft start function	--	✓ Only solid-state version
Bypass function	--	✓ Only solid-state version

✓ Function available

-- Function not available

Application

The M200D AS-i standard is particularly suitable for highly automated applications in conveyor systems requiring devices and systems to be monitored to prevent or limit plant downtime. The option of planning the functions of the motor starter or its interfaces also creates the prerequisite for fine-adjustment to the function of the motor starter in the application and hence provides for extreme flexibility.

Use of M200D motor starters in conjunction with IE3/IE4 motors

Note:

For the use of SIRIUS M200D motor starters in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see [Application Manual](#).

For more information, see [page 1/7](#).

Technical specifications

More information

Manuals for SIRIUS M200D:

- AS-i Basic, see <https://support.industry.siemens.com/cs/ww/en/view/35016496>
 - AS-i Standard, see <https://support.industry.siemens.com/cs/ww/en/view/38722160>
- FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16324/faq>

Note on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions only represent one component of such a concept.

For more information on the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface

General data

Type	M200D motor starters				
		AS-i Basic electromechanical switching DStE/RSStE	AS-i Basic electronic switching sDStE/sRSStE	AS-i Standard electromechanical switching DStE/RSStE	AS-i Standard electronic switching sDStE/sRSStE
Technology designation¹⁾					
Mechanics and environment					
Mounting dimensions (W x H x D)	mm	294 x 215 x 159			
Permissible ambient temperature					
• During operation	°C	-25 ... +55			
• During storage	°C	-40 ... +70			
Weight	g	2 880/3 130	3 220/3 420	2 880/3 130	3 220/3 420
Permissible mounting position		Vertical, horizontal, lying			
Vibration resistance acc. to IEC 60068 Part 2-6	g	2			
Shock resistance					
• Acc. to IEC 60068 Part 2-27	g/ms	12/11 half-sine			
• Without influencing the contact position	g/ms	9.8/5 or 5.9/10			
Degree of protection acc. to IEC 529		IP65			
Installation altitude					
• Up to 1 000 m		No derating			
• Up to 2 000 m		1% per 100 m			
Cooling		Convection			
Protection class IEC 536 (VDE 0106-1)		1			
Electrical specifications					
Control circuit					
Operating voltage U_{AS-i}	V DC	26.5 ... 31.6			
Supply voltage U_{aux}	V DC	20.4 ... 28.8			
Power consumption from AS-i (incl. 200 mA sensor supply)	mA	< 300			
Current consumption from U_{aux} (without digital output)					
• Max.	mA	155	15 (direct-on-line)/ 175 (reversing)	155	15 (direct-on-line)/ 175 (reversing)
• Typ.	mA	75	10 (direct-on-line)/ 75 (reversing)	75	10 (direct-on-line)/ 75 (reversing)
Main circuit					
Maximum power of three-phase motors at 400 V AC	kW	5.5	4	5.5	5.5
Rated operational voltage U_e					
• Approval acc. to EN 60947-1	V AC	400 (50/60 Hz)			
• Approval acc. to UL and CSA	V AC	600 (50/60 Hz)			
• Rated operational current range	A	0.15 ... 2/1.5 ... 12	--	0.15 ... 2/1.5 ... 12	--
• Rated operational current range for soft starting	A	--	--	--	0.15 ... 2/1.5 ... 12
• Rated operational current range for direct-on-line starting	A	--	0.15 ... 2/1.5 ... 9	--	0.15 ... 2/1.5 ... 9
Rated operational current for starters I_e at 400 V AC					
• 400 V at AC-1 / 2 / 3	A	12	--	12	--
• 500 V at AC-1 / 2 / 3	A	9	--	9	--
• 400 V at AC-4	A	4	--	4	--
• 400 V at AC-53a	A	--	9	--	12 for soft starting 9 for direct-on-line starting
Mechanical endurance of contactor	Operating cycles	30 million	--	30 million	--
Trip class		CLASS 10		CLASS 5, 10, 15, 20	
Type of coordination acc. to IEC 60947-4-1		1 (2 for device version 2A)	1	1 (2 for device version 2A)	1
Permissible switching frequency		See manual		See manual	
Rated ultimate short-circuit breaking capacity I_q					
• At 400 V AC	kA	50			
• At 500 V AC	kA	50 ²⁾	20 ²⁾	50	20 ²⁾
Short-circuit protection					
• At $I_{emax} = 2$ A		integrated, 2 x13 $I_e = 26$ A			
• At $I_{emax} = 9/12$ A		integrated, 2 x13 $I_e = 208$ A			
Brake actuation (option)					
Operational voltage	V	230/400 AC or 180 DC			
Uninterrupted current	A	< 0.5 at 230/400 V AC < 0.8 at 180 V DC			
Short-circuit protection		Yes, 1 A melting fuse			

¹⁾ DS Direct-on-line starters
 RS Reversing starters
 DSS .. Direct-on-line soft starters
 RSS .. Reversing soft starters
 te Full motor protection (thermal + electronic)
 s Electronic switching with semiconductor.

²⁾ Only systems with grounded neutral point permitted.

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface

IE3/IE4 ready M200D Basic motor starters

Selection and ordering data


M200D AS-i Basic without manual local operation



M200D AS-i Basic with manual local operation

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Electromechanical starters (with integrated contactor)

	15	3RK1315-6□S41-□AA□		1	1 unit	42D
Rated operational current setting range/A					Additional price	
• 0.15 ... 2		K			None	
• 1.5 ... 12		L			✓	
Direct-on-line starters/reversing starters						
• Direct-on-line starters		0			None	
• Reversing starters		1			✓	
• Direct-on-line starters with manual local operation		2			✓	
• Reversing starters with manual local operation		3			✓	
Brake actuation						
• Without brake actuation			0		None	
• Brake actuation (230/400 V AC)			3		✓	
• Brake actuation (180 V DC)			5		✓	

Electronic starters (with thyristors)

	15	3RK1315-6□S71-□AA□		1	1 unit	42D
Rated operational current setting range/A					Additional price	
• 0.15 ... 2		K			None	
• 1.5 ... 9		N			✓	
Direct-on-line starters/reversing starters						
• Direct-on-line starters		0			None	
• Reversing starters		1			✓	
• Direct-on-line starters with manual local operation		2			✓	
• Reversing starters with manual local operation		3			✓	
Brake actuation						
• Without brake actuation			0		None	
• Brake actuation (230/400 V AC)			3		✓	
• Brake actuation (180 V DC)			5		✓	

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for AS-Interface

M200D Standard motor starters **IE3/IE4 ready**

Selection and ordering data



M200D AS-i Standard without manual local operation



M200D AS-i Standard with manual local operation

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Electromechanical starters (with integrated contactor)

15 **3RK1325-6□S41-□AA□** 1 1 unit 42D

Rated operational current setting range/A

- 0.15 ... 2
- 1.5 ... 12

Direct-on-line starters/reversing starters

- Direct-on-line starters
- Reversing starters
- Direct-on-line starters with manual local operation
- Reversing starters with manual local operation

Brake actuation

- Without brake actuation
- Brake actuation (230/400 V AC)
- Brake actuation (180 V DC)

Additional price
None
✓
None
✓
✓
✓
None
✓
✓

Electronic starters (with thyristors)

15 **3RK1325-6□S71-□AA□** 1 1 unit 42D

Rated operational current setting range/A

- 0.15 ... 2
- 1.5 ... 12

Direct-on-line starters/reversing starters

- Direct-on-line starters
- Reversing starters
- Direct-on-line starters with manual local operation
- Reversing starters with manual local operation

Brake actuation

- Without brake actuation
- Brake actuation (230/400 V AC)
- Brake actuation (180 V DC)

Additional price
None
✓
None
✓
✓
✓
None
✓
✓

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for PROFIBUS/PROFINET

General data

Overview

The intelligent, highly flexible M200D PROFIBUS/PROFINET motor starters are the most functional motor starters of the SIRIUS motor starter family in the high degree of protection IP65 for PROFIBUS/PROFINET communication.

They start and protect motors and loads up to 5.5 kW. Direct-on-line and reversing starter versions are available, in a mechanical version and also an electronic version (the latter with soft start function).

The particularly robust M200D PROFIBUS/PROFINET motor starters are characterized by numerous functions which can be flexibly parameterized. Their modular design comprises a motor starter module and a communication module.

The M200D PROFINET motor starters enable TIA-integrated parameterization through PROFINET from STEP 7 – in familiar, user-friendly manner with the look and feel of PROFIBUS.

Functionality

- For basic functionality, see page 9/41 "M200D Motor Starters" → "General data" → "Overview"
- Electronic version also with soft start function
- Robust and widely used M12 connection method for the digital inputs and outputs and the PROFIBUS/PROFINET bus connection
- All four digital inputs and two digital outputs exist in the cyclic process image. This provides complete transparency of the process on the control level
- Full TIA integration: All digital inputs and outputs exist in the cyclic process image and are visible through the bus, providing maximum flexibility and excellent adaptability to the application
- Flexible assignment of the digital inputs and outputs with all available assignable input actions
- Extensive diagnostics concept using LEDs and through the bus with the TIA-compatible mechanisms
- Expanded diagnostics using data records
- Complete plant monitoring using statistics data record and current value monitoring by means of data records
- Parameterization through PROFIBUS/PROFINET bus with the help of data records from the user program
- Control of the motor starter using a command data record from the user program
- Removable modular control unit – quicker device replacement and therefore lower costs when device outages occur – since existing wiring is on the control unit and only one device needs to be replaced
- Parameterization in STEP 7 HW Config using Motor Starter ES (ordering option for start up software)
- Start up and diagnostics with the help of Motor Starter ES (ordering option for start up software)
- Trace function through Motor Starter ES for optimized start up and tracking of process and device values

Only with PROFINET:

- Just one bus system from the MES level to the devices – no routers
- More stations on the bus and possible configuration of flexible bus structures
- Automatic re-parameterization in case of device replacement thanks to proximity detection
- Wireless integration of plant segments in difficult environments using WLAN
- Easier expansion of the system thanks to a higher number of stations on the bus and elimination of terminating resistors



M200D motor starter module for PROFIBUS/PROFINET (without communication module)



M200D communication module for PROFIBUS



M200D communication module for PROFINET

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for PROFIBUS/PROFINET

General data

Mounting and installation

The M200D PROFIBUS/PROFINET motor starter is comprised of the communication module and the motor starter module. Only the motor starter module has to be replaced therefore when replacing devices. This saves time and money. The communication module remains as an active station on the bus and all other system components continue running. This prevents downtimes.

The integrated plug-in technology enables far lower wiring outlay: Connecting cables can be plugged directly onto the motor starter module. The PROFINET bus is connected cost-effectively using an M12 connection on the device. All versions have identical enclosure dimensions for easier system design and conversion.

Parameterization and configuration

All motor protection functions, limit values and reactions can be defined by parameterization.

The user has several user-friendly options for the parameterization. In addition to parameterization directly from STEP 7, which also permits automatic re-parameterization in case of device replacement, it is possible to use the user-friendly Motor Starter ES start up software. By connecting a programming device directly to PROFIBUS/PROFINET and the Motor Starter ES start up software, the devices can also be conveniently programmed from a central point through the bus. Also, parameters can be changed during operation from the user program using the data record mechanism so that the function of the motor starter is adapted to the process when required. With the help of a PC and the Motor Starter ES software it is also possible to perform the parameterization through the local point-to-point interface on-site.

Functions can be flexibly assigned to the digital inputs and outputs, adapting them to all possible conveyor applications. All digital inputs and outputs exist in the cyclic process image. All limit values for monitoring functions and their reactions are parameterizable and therefore adaptable to the application. Consistency with other products of the SIRIUS M200D motor starter range and with the frequency converter and ET 200pro I/O system is assured.

Only with M200D PROFINET motor starters

Thanks to the integrated proximity detection, the device name does not need to be issued manually when a device is replaced. The name is issued automatically by the neighboring devices which note the "names" of the devices in their proximity. No additional start up measures are required therefore when replacing a device.

The new motor starter generation is characterized by high functionality, maximum flexibility and the highest level of automation. PROFINET is especially recommended for large-scale and highly automated system components, since the possibility of monitoring the devices or plants with data records (statistical data, measured values and device diagnostics) ensures a broader insight into the plant by the control room, and hence increases the availability of the plant sustainably.

Operation

The motor starters record the actual current flow. Evaluating the current of the parameterizable solid-state overload protection increases the availability of the drives, as do reliable signals concerning the overshooting or undershooting of setpoint values.

Diagnostics and maintenance

Diagnostics is provided through numerous mechanisms – and can be used as the customer prefers.

The motor starter is TIA-diagnostics compatible, which means that when a fault is identified, a diagnostics alarm is distributed, which invokes the diagnostics OB in the case of a SIMATIC control. The fault can be evaluated as usual in the user program.

The M200D motor starter offers a large variety of diagnostics data through data records. Its functionality is without equal on the market. There are extensive options for reading out data from the motor starter for monitoring devices, systems or processes.

The motor starter is equipped internally with three logbooks for device faults, motor starter trips and events that are issued with a time stamp. These logbooks can be read out of the motor starter at any time in the form of data records and provide the plant operator with plenty of information about the state of his plant and process which he can use to carry out improvements.

With the slave pointer and statistical data functions it is possible to read out, for example, the maximum internal current values or the number of motor starter connection operations for plant monitoring purposes. This allows deviations in the process to be monitored, but also optimum initial commissioning to take place. The user can draw conclusions about the actual load conditions of the devices in his process and on this basis can optimize his plant maintenance intervals.

The device diagnostics data record contains details of all the states of the motor starter, the device configuration and the communication status as a basis for central device and plant monitoring.

With installation and maintenance functions (I&M), information on modules employed and data specified by the user during configuration, such as location designations, are stored in the motor starter. I&M functions are used for troubleshooting faults and localizing changes in hardware in a plant or checking the system configuration. Reordering a device is particularly easy as the result.

The integrated maintenance timer can be used to implement preventative maintenance and avoid plant downtimes through look-ahead servicing.

Another new addition is the TRACE integrated into the ES motor starter software. It can be used to record measured values as a function of time following a trigger event. This enables process flows to be recorded and their timing optimized.

Local control of a drive is possible using the ordering option with integrated manual operation. This is yet another new development which distinguishes the M200D PROFIBUS/PROFINET motor starter from the rest of the market and adds innovative technology, maximum availability and transparency to the system.

M200D PROFINET motor starters with PROFlenergy

Increasing energy prices, far-reaching ecological problems worldwide and the threat of climate change make it necessary for you to be more conscious about your use of energy.

Active and effective energy management is possible with PROFlenergy.

PROFlenergy is a manufacturer-independent profile on PROFINET, which can be used by all manufacturers, has been standardized by PNO¹⁾ and supports switching off electrical devices during dead times and measuring the energy flow.

¹⁾ In the PNO (PROFIBUS Nutzerorganisation e. V. – PROFIBUS User Organization), manufacturers and users have come together to agree on the PROFIBUS and PROFINET standardized communication technologies.

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for PROFIBUS/PROFINET

General data

Switching off during dead times

PROFenergy supports the targeted switching-off of loads during dead time.

These can be planned short breaks of a few minutes (such as lunch breaks), longer dead times (such as nights) or unplanned dead times. Energy is always saved when no power is required.

Measuring and visualizing the energy flow as a basis of energy management

The objective of energy management is to optimize the use of energy in a company – from the purchasing of energy through to the consumption of energy – economically and ecologically.

Analyses of energy consumption over time can be used to control energy flows, avoid energy peaks, improve ratings and thus save costs.

PROFenergy enables consumption data to be read off from the devices in a unified form. This is recorded during operation and can be displayed on a control panel, for example, or sent to overlying energy management software packages. This ensures that the measured variables are in a uniform manufacturer-independent form and structure that is available to the user for further processing. These PROFenergy functions thus provide the basis for active load and energy management during operation.

PROFenergy in the M200D PROFINET motor starter

The M200D PROFINET motor starter supports the "switching during dead times" and "current measurement values" functions of the motor current using PROFenergy. These are called commands, because they trigger a reaction in the M200D motor starter.



**SIRIUS M200D
PROFIBUS**



**SIRIUS M200D
PROFINET**

Device functions (firmware features)	SIRIUS M200D PROFIBUS	SIRIUS M200D PROFINET
Slave on the bus		
Fieldbus	✓ PROFIBUS to M12	✓ PROFINET to M12
Adjustable number of stations	✓ 1 ... 125	✓ 1 ... 128 with CPU 315, CPU 317 1 ... 1256 with CPU 319
Parameter assignment		
DIP switches	✓ For address setting and terminating resistor	--
Motor Starter ES	✓ Through bus, optical interface	
PROFIBUS/PROFINET data records	✓	
From STEP 7/HW Config	✓	
Diagnostics		
Acyclic through data records	✓	
Diagnostic interrupt support	✓	
Process image		
Process image	✓ 2 bytes PAE/ 2 bytes PAA	
Data channels		
Local optical interface (manual local)	✓	
Motor Starter ES through local interface	✓	
Using Motor Starter ES through bus	✓	
Data records (acyclic)		
Parameter assignment	✓ Using DS 131 (DS = data record)	
Diagnostics	✓ Device-specific DS 92	
Measured values	✓ Measured values DS 94	
Statistics	✓ Statistical data DS 95	
Commands	✓ Using DS 93	
Slave pointer	✓ Slave pointer DS 96	
Logbook	✓ Using Motor Starter ES and data records: device faults DS 72, tripping operation DS 73, events DS 75	
Device identification	✓ Using DS 100	
I&M data	✓ Using DS 231 ... 234	✓ Using data records 0xAFF0 ... 0xAFF3
Inputs		
Number	✓ 4	
• Of these in the process image	✓ 4	
Input action	✓ Parameterizable: Flexibly assignable action, see manual	
Quick stop	✓ Parameterizable: latching, non-latching	

✓ Function available

-- Function not available

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for PROFIBUS/PROFINET

General data



SIRIUS M200D
PROFIBUS



SIRIUS M200D
PROFINET

Device functions (firmware features) (continued)

Outputs

Number	✓ 2
• Of these in the process image	✓ 2
Output action	✓ Parameterizable: Flexibly assignable action, see manual

Brake output

180 V DC /230/400 V AC / none	✓
-------------------------------	---

Motor protection

Overload protection	✓ Electronic, wide range 1:10
Short-circuit protection	✓
Full motor protection	✓
Temperature sensor	✓ Parameterizable using Motor Starter ES, data record: PTC or Thermoclick or deactivated

Device function

Repair switch	✓
Current limit monitoring bottom	✓ Parameterizable
Current limit monitoring top	✓ Parameterizable
Zero current detection	✓ Parameterizable: tripping, warning
Blocking current	✓ Parameterizable
Unbalance	✓ Parameterizable
Load type	✓ Parameterizable: single-phase and three-phase
Shutdown class	✓ Parameterizable using Motor Starter ES, data record: CLASS 5, 10, 15, 20
Protection against voltage failure	✓ Parameterizable: activated/deactivated

Support for PROFlenergy profile

Switching during dead times	--	3
Measured motor current values	--	3

Soft starter control function

Soft start function	✓
Bypass function	✓ Only solid-state version

✓ Function available

-- Function not available

Benefits

M200D PROFINET motor starters with PROFlenergy

Both standards and laws are making environmental protection and energy management increasingly important, as is the desire to cut energy costs in production facilities and thus ensure a sustainable competitive advantage.

It is thus an objective within the industry to save energy and actively reduce CO₂ emissions. By the careful use of valuable resources, the manufacturer-independent PROFlenergy profile on PROFINET can make an active contribution to environmental protection.

Application

M200D PROFIBUS/PROFINET motor starters are particularly suitable for fully TIA-integrated, highly automated conveyor applications that meet all needs with regard to the monitoring of devices and systems and preventive maintenance.

Adaptability of the motor starter functions and maximum flexibility of the device enable a broad range of application without any limits. The PROFINET-specific expansions are the best assurance of a future-proof investment.

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for PROFIBUS/PROFINET

General data

Technical specifications

More information

Manual for M200D PROFIBUS/PROFINET, see <https://support.industry.siemens.com/cs/ww/en/view/38823402>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16325/faq>

Note on security:

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions only represent one component of such a concept.

For more information on the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Type	M200D PROFIBUS/PROFINET motor starter modules		
		Electromechanical switching DSte/RSte	Electronic switching sDSSte/sRSSte
Technology designation¹⁾			
Mechanics and environment			
Mounting dimensions (W x H x D)			
• Without communication module	mm	294 x 215 x 159	
• With communication module	mm	295 x 215 x 163	
Permissible ambient temperature			
• During operation	°C	-25 ... +55	
• During storage	°C	-40 ... +70	
Weight	g	2 820/3 080	3 160/3 360
Permissible mounting position		Vertical, horizontal, lying	
Vibration resistance acc. to IEC 60068 Part 2-6	g	2	
Shock resistance			
• Acc. to IEC 60068 Part 2-27	g/ms	12/11 half-sine	
• Without influencing the contact position	g/ms	9.8/5 or 5.9/10	
Degree of protection acc. to IEC 529		IP65	
Installation altitude			
• Up to 1 000 m		No derating	
• Up to 2 000 m		1% per 100 m	
Cooling		Convection	
Protection class IEC 536 (VDE 0106-1)		1	
Electrical specifications			
Main circuit			
Maximum power of three-phase motors at 400 V AC	kW	5.5	
Rated operational voltage U_e			
• Approval acc. to EN 60947-1	V AC	400 (50/60 Hz)	
• Approval acc. to UL and CSA	V AC	600 (50/60 Hz)	
• Rated operational current range	A	0.15 ... 2/1.5 ... 12	480 (50/60 Hz)
• Rated operational current range for soft starting	A	--	0.15 ... 2/1.5 ... 12
• Rated operational current range for direct-on-line starting	A	--	0.15 ... 2/1.5 ... 9
Rated operational current for starters I_e at 400 V AC			
• 400 V at AC-1 / 2 / 3	A	12	--
• 500 V at AC-1 / 2 / 3	A	9	--
• 400 V at AC-4	A	4	--
• 400 V at AC-53a	A	--	12 for soft starting, 9 for direct-on-line starting
Mechanical endurance of contactor	Operating cycles	30 million	--
Trip class		CLASS 5, 10, 15, 20	
Permissible switching frequency		See manual	
Rated ultimate short-circuit breaking capacity I_q			
• At 400 V AC	kA	50	
• At 500 V AC	kA	50	20 ²⁾
Short-circuit protection			
• At $I_{e\max} = 2$ A		integrated, 2 x13 $I_e = 26$ A	
• At $I_{e\max} = 9/12$ A		integrated, 2 x13 $I_e = 208$ A	

- ¹⁾ DS Direct-on-line starters
 RS Reversing starters
 DSS .. Direct-on-line soft starters
 RSS .. Reversing soft starters
 te Full motor protection (thermal + electronic)
 s Electronic switching with semiconductor.

- ²⁾ Only systems with grounded neutral point permitted.

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for PROFIBUS/PROFINET

General data

		Line voltage				
		380 V AC	400 V AC	440 V AC	480 V AC	500 V AC
Brake voltage with brake actuation 180 V DC¹⁾						
Operational voltage	V	230/400 AC or 180 DC				
Uninterrupted current	A	< 0.5 at 230/400 V AC, < 0.8 at 180 V DC				
Short-circuit protection		Yes, 1 A melting fuse				
Rectified brake voltage	V DC	171	180	198	216	225
Recommended brake coil voltage for Siemens motors	V DC	170 ... 200	170 ... 200	184 ... 218	184 ... 218	--

¹⁾ Integrated brake actuation supplies DC power supply for the brake.

Type	M200D communication modules	
	For PROFIBUS	For PROFINET
Mechanics and environment		
Mounting dimensions (W x H x D)	mm	174 x 139 x 40
Permissible ambient temperature		
• During operation	°C	-25 ... +55
• During storage	°C	-40 ... +70
Weight	g	300
Permissible mounting position		Vertical, horizontal, lying
Vibration resistance acc. to IEC 60068 Part 2-6	g	2
Shock resistance		
• Acc. to IEC 60068 Part 2-27	g/ms	12/11 half-sine
• Without influencing the contact position	g/ms	9.8/5 or 5.9/10
Degree of protection acc. to IEC 529		IP65
Installation altitude		
• Up to 1 000 m		No derating
• Up to 2 000 m		1% per 100 m
Cooling		Convection
Protection class IEC 536 (VDE 0106-1)		1
Electrical specifications		
Control circuit		
Operational voltage		
• $U_{DC24V-NS}$	V DC	20.4 ... 28.8
• $U_{DC24V-S}$	V DC	20.4 ... 28.8
Power consumption from		
• $U_{DC24V-NS}$	mA	< 300
• $U_{DC24V-S}$	mA	< 100

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

M200D Motor Starters for PROFIBUS/PROFINET

Communication modules, motor starter modules

Selection and ordering data



M200D motor starter module
PROFIBUS/PROFINET
(without communication module)



M200D motor starter
PROFIBUS



M200D motor starter
PROFINET

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
M200D communication modules for PROFIBUS						
Communication module for PROFIBUS						
M12 connection for communication, 7/8" for 24 V power supply	15	3RK1305-0AS01-0AA0		1	1 unit	42D
M200D communication modules for PROFINET						
Communication module for PROFINET						
M12 connection for communication, 7/8" for 24 V power supply	15	3RK1335-0AS01-0AA0		1	1 unit	42D

M200D motor starter modules for PROFIBUS/PROFINET

Electromechanical starters (with integrated contactor)

15	3RK1395-6□S41-□AD□	1	1 unit	42D
	↑			Additional price
	K			None
	L			✓
	↑			None
	0			None
	1			✓
	2			✓
	3			✓
	↑			None
	0			None
	3			✓
	5			✓

Rated operational current setting range/A

- 0.15 ... 2
- 1.5 ... 12

Direct-on-line starters/reversing starters

- Direct-on-line starters
- Reversing starters
- Direct-on-line starters with manual local operation
- Reversing starters with manual local operation

Brake actuation

- Without brake actuation
- Brake actuation (230/400 V AC)
- Brake actuation (180 V DC)

Electronic starters (with thyristors)

15	3RK1395-6□S71-□AD□	1	1 unit	42D
	↑			Additional price
	K			None
	L			✓
	↑			None
	0			None
	1			✓
	2			✓
	3			✓
	↑			None
	0			None
	3			✓
	5			✓

Rated operational current setting range/A

- 0.15 ... 2
- 1.5 ... 12

Direct-on-line starters/reversing starters

- Direct-on-line starters
- Reversing starters
- Direct-on-line starters with manual local operation
- Reversing starters with manual local operation

Brake actuation

- Without brake actuation
- Brake actuation (230/400 V AC)
- Brake actuation (180 V DC)

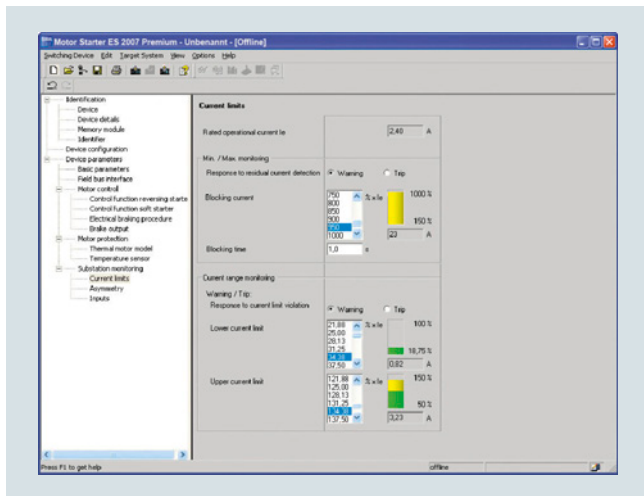
Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Software

Motor Starter ES

Overview



Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

More information

Homepage, see www.siemens.com/sirius-engineering
 Industry Mall, see www.siemens.com/product?3ZS1
 Technical specifications and system requirements, see <https://support.industry.siemens.com/cs/ww/en/ps/16713/td>

Motor Starter ES is used for the start up, parameterization, diagnostics, documentation and preventive maintenance of SIMATIC ET 200S, ET 200pro, ECOFAST and M200D motor starters.

The software program is available in three versions which differ in their user-friendliness, scope of functions and price.

For detailed information on the Motor Starter ES software, see [page 14/10](#).

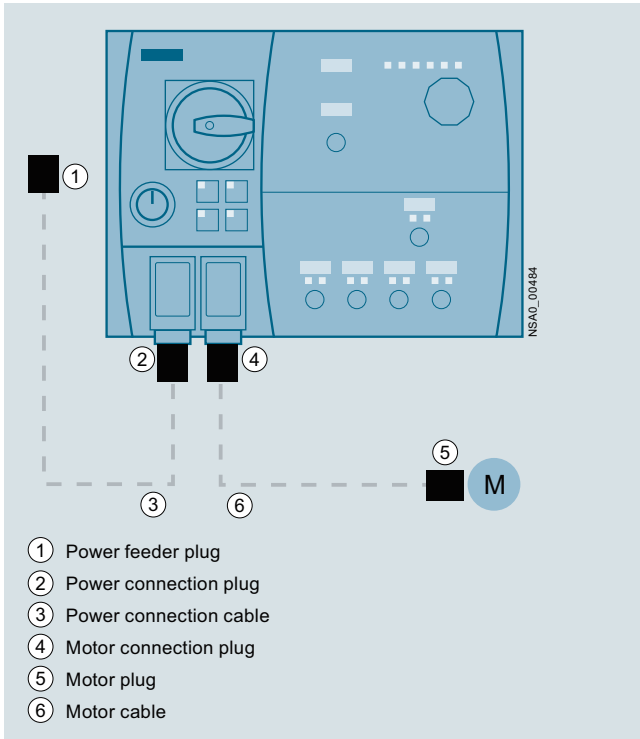
Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

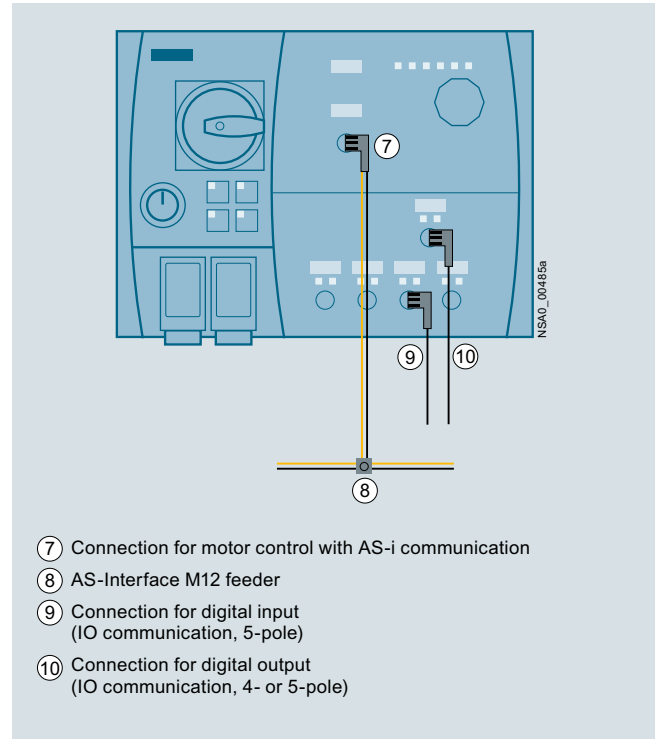
Accessories

For all M200D motor starters

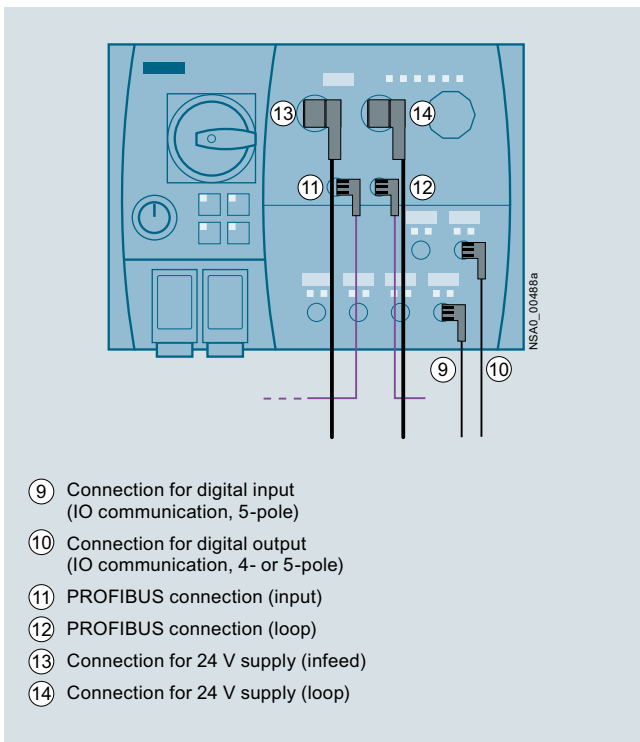
Overview



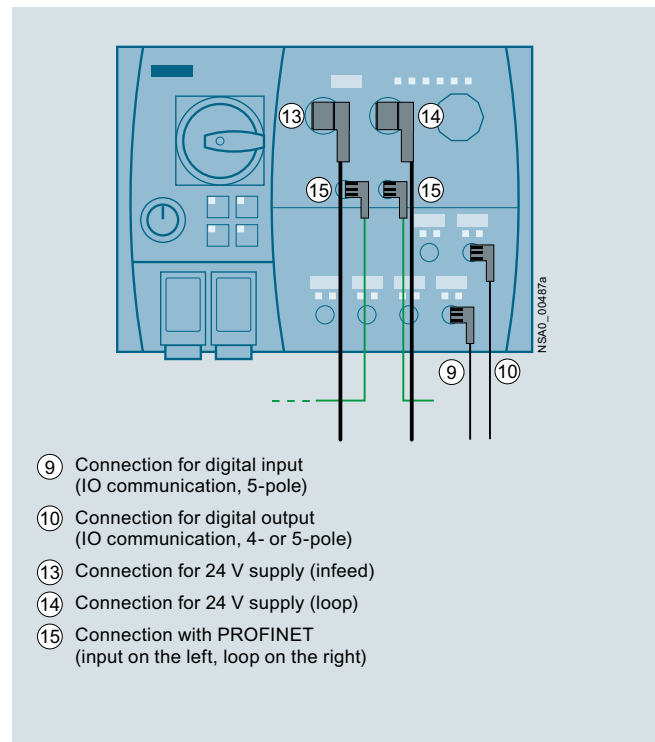
Power and motor connection on the M200D motor starter (in this example: M200D for AS-i)



Communication connection using AS-Interface and digital inputs and outputs



Communication connection using PROFIBUS and digital inputs and outputs



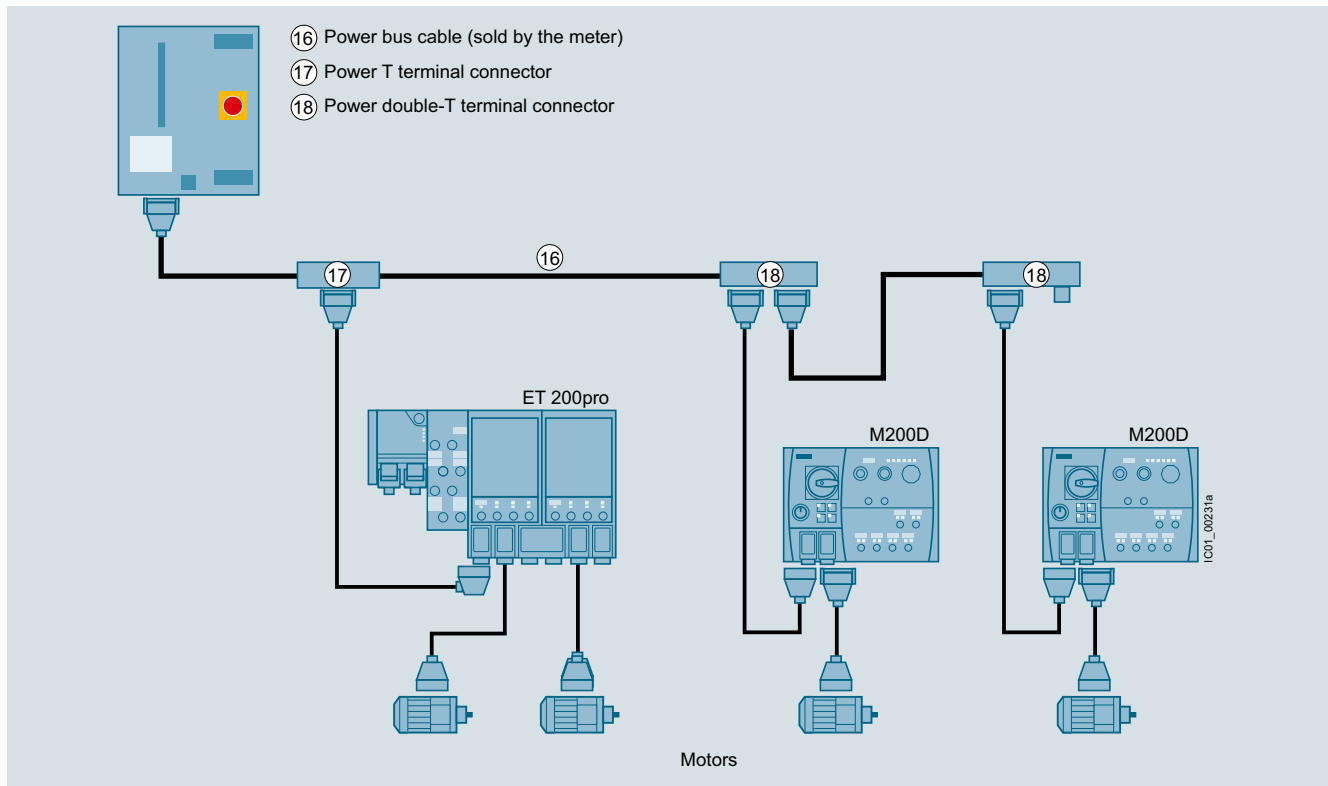
Communication connection using PROFINET and digital inputs and outputs

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

For all M200D motor starters



Power supply to the motors via the power bus with power T and double-T terminal connectors linked by power bus cables, spur lines to the field devices (motor starters), and power loop-through connections to the motors via motor connection cables

Power bus

The power supply to the field devices (ET 200pro motor starters, M200D motor starters) is provided via the power bus, in which the power T terminal connectors or power double-T terminal connectors are connected by power bus cables.

Feeders

From the terminal connectors, spur lines with Han Q4/2 plugs lead to the field devices, from which the motors are supplied with power via motor connection cables.

Interruption-free thanks to power terminal connectors

In finger-safe connection technology the power T terminal connectors and power double-T terminal connectors connect the components of a feeder to the power bus. They ensure interruption-free operation, i.e. the power bus is not interrupted when the components are unplugged.

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

For all M200D motor starters

Selection and ordering data

The accessories listed below represent a basic selection sorted by:

- Accessories for all M200D motor starters
- Accessories for M200D motor starters for AS-interface
- Accessories for M200D motor starters for PROFIBUS
- Accessories for M200D motor starters for PROFINET


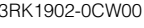

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mountable accessories						
M200D protective brackets						
	5	3RK1911-3BA00		1	1 unit	42D
Incoming power supply						
① Power feeder plugs						
Connector set for incoming power supply, e.g. for connecting to T terminal connectors, comprising a coupling enclosure, straight outgoing feeder (with bracket), pin insert for HAN Q4/2, incl. bushing						
• 5 male contacts, 2.5 mm ²	5	3RK1911-2BS60		1	1 unit	42D
• 5 male contacts, 4 mm ²	5	3RK1911-2BS20		1	1 unit	42D
• 5 male contacts, 6 mm ²	5	3RK1911-2BS40		1	1 unit	42D
② Power connection plugs						
Connector set for incoming power supply for connection to M200D motor starters, comprising a cable-end connector hood, angular outgoing feeder, female insert for HAN Q4/2, incl. bushing						
• 5 female contacts, 2.5 mm ² , 2 female contacts, 0.5 mm ²	5	3RK1911-2BE50		1	1 unit	42D
• 5 female contacts, 4 mm ² , 2 female contacts, 0.5 mm ²	5	3RK1911-2BE10		1	1 unit	42D
• 5 female contacts, 6 mm ² , 2 female contacts, 0.5 mm ²	5	3RK1911-2BE30		1	1 unit	42D
② + ③ Power connection cable						
Assembled at one end with "N" and jumper pin 11 and 12 for plug monitoring, with HAN Q4/2, angular; open at one end; 5 x 4 mm ²						
• Length 1.5 m	10	3RK1911-0DC13		1	1 unit	42D
• Length 5.0 m	10	3RK1911-0DC33		1	1 unit	42D
Motor cables						
④ Motor connection plugs						
Connector set for motor cable for connection to M200D motor starters, comprising a cable-end connector hood, angular outgoing feeder, pin insert for HAN Q8/0, incl. bushing						
• 8 male contacts, 1.5 mm ²	5	3RK1902-0CE00		1	1 unit	42D
• 6 male contacts, 2.5 mm ²	5	3RK1902-0CC00		1	1 unit	42D
⑤ Motor plugs						
Connector set for motor cable for connection to motors, comprising a cable-end connector hood, straight outgoing feeder, female insert for HAN 10e, incl. star jumper, including bushing						
• 7 female contacts, 1.5 mm ²	30	3RK1911-2BM21		1	1 set	42D
• 7 female contacts, 2.5 mm ²	30	3RK1911-2BM22		1	1 set	42D
④ + ⑥ Motor cables, assembled at one end						
For connection to M200D motor starters, HAN Q8/0, angular, length 5 m						
• Motor cables for motor without brake, 4 x 1.5 mm ²	15	3RK1911-0EB31		1	1 unit	42D
• Motor cables for motor without brake with thermistor, 6 x 1.5 mm ²	30	3RK1911-0EF31		1	1 unit	42D
• Motor cables for motor with brake actuation, braking voltage 400 V AC or 180 V DC, 6 x 1.5 mm ²	30	3RK1911-0ED31		1	1 unit	42D
• Motor cables for motor with brake actuation, braking voltage 400 V AC or 180 V DC and thermistor, 8 x 1.5 mm ²	30	3RK1911-0EG31		1	1 unit	42D
• Motor cables for motor with brake actuation, braking voltage 230 V AC, 6 x 1.5 mm ²	30	3RK1911-0EH31		1	1 unit	42D
• Motor cables for motor with brake actuation, braking voltage 230 V AC and thermistor, 8 x 1.5 mm ²	30	3RK1911-0EE31		1	1 unit	42D

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

For all M200D motor starters

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Power bus						
Ⓣ Power T terminal connectors For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments						
• 2.5 mm ² / 4 mm ²	5	3RK1911-2BF01		1	1 unit	42D
• 4 mm ² / 6 mm ²	5	3RK1911-2BF02		1	1 unit	42D
Ⓡ Power double-T terminal connector For 400 V AC, for connection of feeders (e.g. motor starters) by means of standard round cable at any point of the power bus, by insulation displacement connection, used with preassembled bus segments, connection of two motor starters possible						
• 4 mm ² / 6 mm ²	5	3RK1911-2BG02		1	1 unit	42D
Sealing set (comprising 2 seals) For power T/power double-T terminal connectors						
• For power cables with						
- Ø 10 ... 13 mm	5	3RK1911-5BA00		1	1 unit	42D
- Ø 13 ... 16 mm	5	3RK1911-5BA10		1	1 unit	42D
- Ø 16 ... 19 mm	5	3RK1911-5BA20		1	1 unit	42D
- Ø 19 ... 22 mm	X	3RK1911-5BA30		1	1 unit	42D
• Blanking plugs	5	3RK1911-5BA50		1	1 unit	42D
Further accessories for power connections						
						
Crimping tools for pins/sockets 4 mm² and 6 mm²	15	3RK1902-0CW00		1	1 unit	42D
						
Dismantling tools						
• For male and female contacts for 9-pole HAN Q4/2 inserts	15	3RK1902-0AB00		1	1 unit	42D
• For male and female contacts for 9-pole HAN Q8 inserts	5	3RK1902-0AJ00		1	1 unit	42D
						
Sealing caps						
For 9-pole power socket connectors						
• 1 unit per pack	5	3RK1902-0CK00		1	1 unit	42D
• 10 units per pack	5	3RK1902-0CJ00		1	10 units	42D

3RK1902-0CW00

3RK1902-0CK00

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

For all M200D motor starters

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Motor control with I/O communication							
		M12 plugs, straight Screw fixing, 5-pole screw terminals, max. 0.75 mm ² , A-coded, max. 4 A	5	3RK1902-4BA00-5AA0	1	1 unit	42D
3RK1902-4BA00-5AA0							
		M12 plugs, angular Screw fixing, 5-pole screw terminals, max. 0.75 mm ² , A-coded, max. 4 A	5	3RK1902-4DA00-5AA0	1	1 unit	42D
3RK1902-4DA00-5AA0							
		M12 plugs, angular, screw fixing, 5-pole, 5 x 0.34 mm², A-coded, black PUR sheath, max. 4 A <ul style="list-style-type: none"> • Cable length 1.5 m • Cable length 5 m • Cable length 10 m 	5 5 5	3RK1902-4HB15-5AA0 3RK1902-4HB50-5AA0 3RK1902-4HC01-5AA0	1 1 1	1 unit 1 unit 1 unit	42D 42D 42D
3RK1902-4H...-5AA0							
		Control cable, assembled at both ends Straight M12 plug, straight M12 socket, screw fixing, 3-pole, 3 x 0.34 mm ² , A-coded, black PUR sheath, max. 4 A <ul style="list-style-type: none"> • Cable length 1.5 m 	5	3RK1902-4PB15-3AA0	1	1 unit	42D
3RK1902-4PB15-3AA0							
Further accessories							
		Handheld devices For M200D motor starters (or for ET 200pro and ET 200S High Feature motor starters) for local operation. The motor starter-specific serial interface cables must be ordered separately. The RS 232 interface cable 3RK1922-2BP00 is used for the MS M200D.	5	3RK1922-3BA00	1	1 unit	42D
3RK1922-3BA00							
		RS 232 interface cable Serial data connection between M200D (or ET 200pro) motor starters and the RS 232 interface of a PC/PG/laptop (with the Motor Starter ES software) or the handheld device 3RK1922-3BA00	5	3RK1922-2BP00	1	1 unit	42D
		USB interface cable, 2.5 m Serial data connection between M200D (or ET 200pro) motor starters and the USB interface of a PC/PG/laptop (with the Motor Starter ES software).	3	6SL3555-0PA00-2AA0	1	1 unit	346
		M12 sealing caps For sealing unused M12 input or output sockets and M12 female contacts for PROFIBUS and PROFINET communication modules (one set contains ten sealing caps)	▶	3RK1901-1KA00	100	10 units	42C
3RK1901-1KA00							
		RONIS SB30 keys Replacement key for M200D for "manual local control" ordering option	▶	3SU1950-0FB80-0AA0	1	1 unit	41J
3SU1950-0FB80-0AA0							

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

For M200D motor starters for AS-Interface

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Motor control with AS-i communication



3RK1902-4GB50-4AA0

⑦ Control cables, assembled at one end

M12 plug, angular, screw fixing, 4-pole, 4 x 0.34 mm², A-coded, black PUR sheath, max. 4 A

- Cable length 5 m

5

3RK1902-4GB50-4AA0

1

1 unit

42D



3RK1902-4CA00-4AA0

⑦ M12 socket, angled

For screw fixing, 4-pole screw terminals, max. 0.75 mm², A-coded, max. 4 A

5

3RK1902-4CA00-4AA0

1

1 unit

42D



3RK1901-2NR21

⑧ AS-Interface M12 feeder **NEW**

For flat cable	For	Cable length	Cable end in feeder					
AS-i / U _{aux}	M12 socket	--	not available	2	3RK1901-2NR20	1	1 unit	42C
	M12 cable box	1 m	not available	2	3RK1901-2NR21	1	1 unit	42C
		2 m	not available	2	3RK1901-2NR22	1	1 unit	42C



3RK1901-1MN00

Cable terminating piece

For sealing of open cable ends (shaped AS-Interface cable) in IP67

▶

3RK1901-1MN00

1

10 units

42C



3RX90...-0AA00

AS-Interface profile cable [see also page 2/85](#)

Material	Color	Quantity					
Rubber	Yellow (AS-Interface)	100 m roll	2	3RX9010-0AA00	1	1 unit	42C
		1 km drum	5	3RX9012-0AA00	1	1 unit	42C
	Black (24 V DC)	100 m roll	2	3RX9020-0AA00	1	1 unit	42C
		1 km drum	5	3RX9022-0AA00	1	1 unit	42C
TPE	Yellow (AS-Interface)	100 m roll	2	3RX9013-0AA00	1	1 unit	42C
		1 km drum	5	3RX9014-0AA00	1	1 unit	42C
	Black (24 V DC)	100 m roll	2	3RX9023-0AA00	1	1 unit	42C
		1 km drum	5	3RX9024-0AA00	1	1 unit	42C
TPE special version according to UL Class 2	Yellow (AS-Interface)	100 m roll	5	3RX9017-0AA00	1	1 unit	42C
	Black (24 V DC)	100 m roll	5	3RX9027-0AA00	1	1 unit	42C
PUR	Yellow (AS-Interface)	100 m roll	2	3RX9015-0AA00	1	1 unit	42C
		1 km drum	5	3RX9016-0AA00	1	1 unit	42C
	Black (24 V DC)	100 m roll	2	3RX9025-0AA00	1	1 unit	42C
		1 km drum	5	3RX9026-0AA00	1	1 unit	42C

Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

For M200D motor starters for AS-Interface

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Further accessories

3RK1904-2AB02

AS-Interface addressing unit V3.0

- For AS-Interface modules and sensors and actuators with integrated AS-Interface according to AS-i Specification V3.0
- For setting the AS-i address of standard slaves, and slaves with extended addressing mode (A/B slaves)
- With input/output test function and many other commissioning functions
- Battery operation with four type AA batteries (IEC LR6, NEDA 15)
- Scope of supply:
 - Addressing unit with four batteries
 - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5 m

2

3RK1904-2AB02

1

1 unit

42C



3RK1902-4PB15-3AA0

M12 addressing cables to M12

- Standard M12 cable for addressing slaves with M12 connection, e.g. K60R modules
- When using the current version of the 3RK1904-2AB01 addressing unit
- 1.5 m

5

3RK1902-4PB15-3AA0

1

1 unit

42D

"SIRIUS M200D Motor Starter" manuals

Manual - SIRIUS M200D AS-Interface Basic Motor Starter, [see https://support.industry.siemens.com/cs/ww/en/view/35016496](https://support.industry.siemens.com/cs/ww/en/view/35016496)

Manual - SIRIUS M200D AS-Interface Standard Motor Starter, [see https://support.industry.siemens.com/cs/ww/en/view/38722160](https://support.industry.siemens.com/cs/ww/en/view/38722160)





Motor Starters for Use in the Field, High Degree of Protection

SIRIUS M200D Motor Starters

Accessories

For M200D motor starters for PROFIBUS

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Motor control with PROFIBUS						
		M12 plugs, angular For screw fixing, 5-pole screw terminal, max. 0.75 mm ² , B-coded, no terminating resistor				
3RK1902-1DA00	5	• ① 5 female contacts 3RK1902-1DA00		1	1 unit	42D
		• ② 5 male contacts 3RK1902-1BA00		1	1 unit	42D
3RK1902-1BA00	5					
		Control cables, assembled at one end M12, screw fixing, angular, B-coded, no terminating resistor				
3RK1902-1G.	15	• ① 5 female contacts, 3 m 3RK1902-1GB30		1	1 unit	42D
	15	• ① 5 female contacts, 5 m 3RK1902-1GB50		1	1 unit	42D
	15	• ① 5 female contacts, 10 m 3RK1902-1GC10		1	1 unit	42D
		• ① ② Control cables, assembled at both ends M12, screw fixing, angular, pin/socket 5-pole, B-coded, no terminating resistor				
3RK1902-1N.	15	• 3.0 m 3RK1902-1NB30		1	1 unit	42D
	15	• 5.0 m 3RK1902-1NB50		1	1 unit	42D
	15	• 10.0 m 3RK1902-1NC10		1	1 unit	42D
Further accessories						
	1	PROFIBUS trailing cables Max. acceleration 4 m/s ² , at least 3 000 000 bending cycles, bending radius at least 60 mm, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	6XV1830-3EH10	1	1 M	5K2
	1	PROFIBUS FC Food bus cables With PE outer sheath for operation in the food and beverage industry, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	6XV1830-0GH10	1	1 M	5K2
	1	PROFIBUS FC Robust bus cables With PUR outer sheath for operation in environments exposed to chemicals and mechanical loads, 2-core, shielded, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	6XV1830-0JH10	1	1 M	5K2
	1	Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	6XV1830-8AH10	1	1 M	5K2
Connection for 24 V power supply of the M200D PROFIBUS/PROFINET						
See page 9/65						
Manual "SIRIUS M200D PROFIBUS/PROFINET Motor Starter"						
See https://support.industry.siemens.com/cs/ww/en/view/38823402						



Motor Starters for Use in the Field, High Degree of Protection




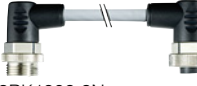

SIRIUS M200D Motor Starters

Accessories

For M200D motor starters for PROFINET

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Motor control with PROFINET						
		⑮ M12 plugs, angular For screw fixing, 4-pole screw terminal, max. 0.75 mm ² , angular, D-coded • 4 male contacts	5	3RK1902-2DA00	1	1 unit 42D
 3RK1902-2H.		⑮ Control cables, assembled at one end M12 for screw fixing, angular, 4-pole, D-coded, • 4 male contacts, 3 m • 4 male contacts, 5 m • 4 male contacts, 10 m	15 15 15	3RK1902-2HB30 3RK1902-2HB50 3RK1902-2HC10	1 1 1	1 unit 42D 1 unit 42D 1 unit 42D
 3RK1902-2N.		⑮ Control cables, assembled at both ends M12 for screw fixing, angular at both ends, 4-pole, D-coded, male contacts at both ends • 3 m • 5 m • 10 m	15 15 15	3RK1902-2NB30 3RK1902-2NB50 3RK1902-2NC10	1 1 1	1 unit 42D 1 unit 42D 1 unit 42D
Further accessories						
		PROFINET IE FC TP standard cable GP 2 x 2 Sold by the meter	1	6XV1840-2AH10	1	1 M 5K1
		PROFINET IE FC TP trailing cable 2 x 2 Sold by the meter	1	6XV1840-3AH10	1	1 M 5K1
		PROFINET IE FC TP trailing cable GP 2 x 2 Sold by the meter	1	6XV1870-2D	1	1 M 5K2
		PROFINET IE FC TP torsion cable 2 x 2 Sold by the meter	1	6XV1870-2F	1	1 M 5K2
		PROFINET IE FC TP marine cable, 4-core Sold by the meter	1	6XV1840-4AH10	1	1 M 5K1
		Power cables 5-core, 5 x 1.5 mm ² , trailing, sold by the meter, minimum order quantity 20 m, maximum order quantity 1 000 m	1	6XV1830-8AH10	1	1 M 5K2

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Connection for 24 V power supply of the M200D PROFIBUS/PROFINET						
 3RK1902-3DA00		Plugs On M200D, 7/8" for screw fixing, angular, screw terminal, 1.5 mm ² • ⑮ 5 female contacts	5	3RK1902-3DA00	1	1 unit 42D
 3RK1902-3BA00		• ⑭ 5 male contacts	5	3RK1902-3BA00	1	1 unit 42D
 3RK1902-3G.		⑮ Supply lines, assembled at one end 7/8" for screw fixing, angular, 1.5 mm ² • 5 female contacts, 3 m • 5 female contacts, 5 m • 5 female contacts, 10 m	15 15 15	3RK1902-3GB30 3RK1902-3GB50 3RK1902-3GC10	1 1 1	1 unit 42D 1 unit 42D 1 unit 42D
 3RK1902-3N.		⑮ ⑭ Supply lines, assembled at both ends 7/8", for screw fixing, angular at both ends, 5-pole pin/socket, 1.5 mm ² • 3 m • 5 m • 10 m	15 15 15	3RK1902-3NB30 3RK1902-3NB50 3RK1902-3NC10	1 1 1	1 unit 42D 1 unit 42D 1 unit 42D
 6ES7194-3JA00-0AA0		7/8" sealing caps 1 pack = 10 units	1	6ES7194-3JA00-0AA0	1	10 units 250
Manual "SIRIUS M200D PROFIBUS/PROFINET Motor Starter"						
		See https://support.industry.siemens.com/cs/ww/en/view/38823402				

Motor Starters for Use in the Field, High Degree of Protection

Hybrid fieldbus connections

Overview



Hybrid fieldbus connection with two HanBrid sockets



Control cabinet bushing with two M12 sockets

Hybrid fieldbus connections with HanBrid sockets designed as cabinet bushings transmit data and energy from the control cabinet (IP20) to the field (IP65). They are the interface for jointly routing PROFIBUS DP and the auxiliary voltages into the hybrid fieldbus cable.

On the cabinet bushings with two M12 sockets for the PROFIBUS M12 connecting cables, the 24 V supply of the motor starters is implemented via separate 7/8" connecting cables.

Passive and active hybrid fieldbus connections

The hybrid fieldbus connections are available in two versions which differ in their functionality.

- Passive version
- Active version with signal refresher function to considerably increase the maximum PROFIBUS cable length

Connection methods

The field side is connected using HanBrid or M12 plug-in connectors.

In the case of HanBrid, the following versions are available:

- Socket/socket for feeding into the field
- Pin/socket for looping through in the field

The M12 version is generally configured with socket/socket.

Following connections are available at the rear (cabinet side) in the case of the passive bushings:

- Direct connection
- FastConnect connection

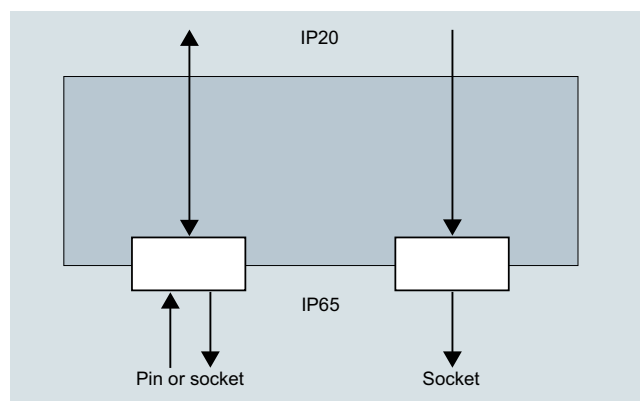
The active bushing with refresher function has 9-pole Sub D sockets for the rear connection.

Auxiliary power infeed

HanBrid plug-in connection technology offers the option of feeding in or looping through two separate auxiliary voltages of 24 V DC (switched/unswitched) into the field in addition to the PROFIBUS signal. The terminal block with spring-type terminals on the rear (cabinet side) of the hybrid fieldbus connection provides a variety of interconnecting options for these auxiliary voltages.

Passive hybrid fieldbus connections

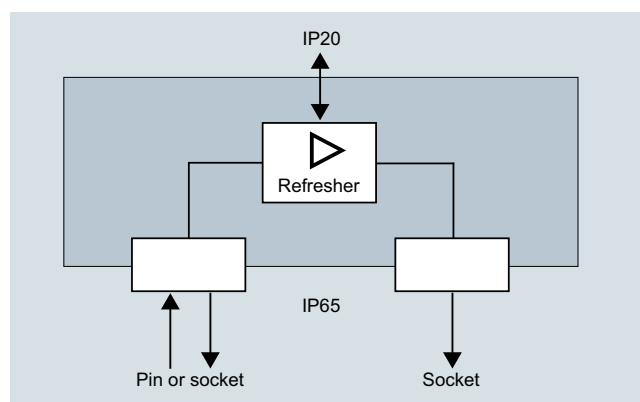
- Bushing from the control cabinet (IP20) into the field (IP65)
- HanBrid plug-in design socket/socket or pin/socket
- Direct connection or FastConnect connection for PROFIBUS at the rear
- Terminal block with spring-type terminals (0.25 to 2.5 mm²) for infeeding or forwarding the auxiliary voltages



Hybrid fieldbus connection as passive cabinet bushing

Active hybrid fieldbus connections with refresher function

- Bushing from the control cabinet (IP20) into the field (IP65)
- Three independent, electrically separated PROFIBUS segments
- Signal refresher function from and to all segments
- Automatic continuous baud rate detection
- Status/diagnostics displays with LEDs
- Cascading depth of a maximum nine hybrid fieldbus connections
- HanBrid plug-in design socket/socket and pin/socket
- M12 plug-in design socket/socket
- 9-pole Sub D socket connection for PROFIBUS at the rear
- Terminal block with spring-type terminals (0.25 to 2.5 mm²) for infeeding or forwarding the auxiliary voltages



Hybrid fieldbus connection as active control cabinet bushing with refresher function

Motor Starters for Use in the Field, High Degree of Protection

Hybrid fieldbus connections

Technical specifications

Type	Passive hybrid fieldbus connections		Active hybrid fieldbus connections
Mechanics and environment			
Dimensions (W x H x D)	mm	93 x 103 x 65	
Cutout (W x H)	mm	80 x 90	
Temperature range	°C	-25 ... +60	
Degree of protection		IP20 internal / IP65 on field side	
Material/enclosure	mm	Plastic (black PC), flame retardant	
Electrical specifications			
Rated operational voltage	V DC	24, ± 25%	
• 24 V DC not switched (NS)	V DC	24, ± 25%	
• 24 V DC switched (S)			
Max. rated current	A	10	
Power supply	--	From 24 V DC not switched (NS)	
Max. power consumption	mA	130	
Mains buffering	ms	> 20	
Baud rate detection	--	Automatic	
Maximum cascading depth	--	9 hybrid fieldbus connections	
Baud rates	kbps	9.6/19.2/45.45/93.75/187.5/500/1 500/3 000/6 000 /1 2 000	
Electrical separation	V DC	500	

Selection and ordering data



Hybrid fieldbus connection on the field side:
With socket/socket (HanBrid)



With pin/socket (HanBrid)



Control cabinet bushing on the field side
With socket/socket (M12)

Link type / function	Connection IP65	Connection IP20 (PROFIBUS)	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					

Hybrid fieldbus connections

Passive

• Cu/Cu, for feeding into the field	Socket/socket (2 x HanBrid)	Direct connection	5	3RK1911-1AA22		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	Direct connection	5	3RK1911-1AA32		1	1 unit	42D
• Cu/Cu, for feeding into the field	Socket/socket (2 x HanBrid)	PROFIBUS FastConnect bus connector	5	3RK1911-1AF22		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	PROFIBUS FastConnect bus connector	5	3RK1911-1AF32		1	1 unit	42D

Active (refresher)

• Cu/Cu, for feeding into the field	Socket/socket (2 x HanBrid)	9-pole Sub D socket	5	3RK1911-1AJ22		1	1 unit	42D
• Cu/Cu, for looping through in the field	Pin/socket (2 x HanBrid)	9-pole Sub D socket	5	3RK1911-1AJ32		1	1 unit	42D
• Cu/Cu, for feeding into the field	Socket/socket (2 x M12)	9-pole Sub D socket	5	3RK1911-1AK22		1	1 unit	42D

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Accessories



6ES7194-1JB10-0XA0

Sealing caps for HanBrid
Protective cover for bus and power supply connection (pack of 10)

1	6ES7194-1JB10-0XA0		1	10 units	250
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PROFIBUS ECOFAST hybrid cables, [see page 9/20](#).

* You can order this quantity or a multiple thereof.
Illustrations are approximate

Motor Starters for Use in the Field, High Degree of Protection

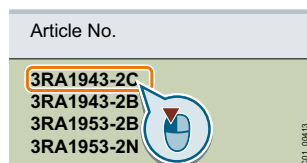
Notes



Monitoring and Control Devices

**clickable**

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.



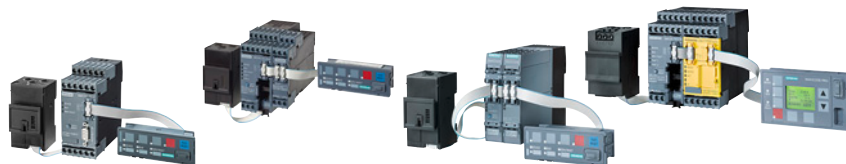
Or directly on the Internet, e.g.
www.siemens.com/product?3RA1943-2C

	Price groups PG 200, 2SP, 41B, 41E, 41F, 41H, 41L, 42F, 42J, 470, 5K1, 5M2, 5P1, 5T1, 5W3	10/84 Voltage monitoring 10/87 Current monitoring 10/89 Power factor and active current monitoring
10/2	Introduction	Residual-current monitoring 10/92 - Residual-current monitoring relays 10/94 - 3UL23 residual-current transformers
	SIMOCODE 3UF motor management and control devices <u>SIMOCODE pro 3UF7 motor management and control devices</u>	Insulation monitoring 10/95 - General data 10/97 - For ungrounded AC networks 10/99 - For ungrounded DC and AC networks
10/5	General data	10/102 Level monitoring
10/16	Basic units NEW	10/105 Speed monitoring
10/19	Expansion modules	10/108 Accessories
10/21	Fail-safe expansion modules	<u>SIRIUS 3UG48 monitoring relays for stand-alone installation for IO-Link</u>
10/22	Accessories NEW	10/109 General data
10/25	<u>3UF18 current transformers for overload protection</u>	10/112 Line monitoring 10/115 Voltage monitoring 10/118 Current monitoring
ST 70 ¹⁾	LOGO! logic modules	10/121 Power factor and active current monitoring Residual-current monitoring 10/125 - Residual-current monitoring relays 10/94 - 3UL23 residual-current transformers
10/26	General data	10/128 Speed monitoring
10/27	LOGO! basic modules with display	10/131 Accessories
10/28	LOGO! basic modules without display	<u>SIRIUS 3RS10, 3RS11, 3RS20, 3RS21 temperature monitoring relays</u>
10/29	LOGO! expansion modules	10/132 General data
	LOGO! communication modules	10/136 Relays, analogically adjustable for 1 sensor 10/138 Relays, digitally adjustable for 1 sensor 10/140 Relays, digitally adjustable for up to 3 sensors
10/30	- LOGO! CMK2000 communication modules	10/142 Accessories
10/31	- LOGO! CSM unmanaged	<u>SIRIUS 3RS14, 3RS15 temperature monitoring relays for IO-Link</u>
10/32	- LOGO! CMR (mobile wireless communication)	10/143 General data 10/148 Relays, digitally adjustable for 1 sensor 10/151 Relays, digitally adjustable for up to 3 sensors
10/34	Accessories	10/153 Accessories
15/4	LOGO!Power	10/154 <u>SIRIUS 3RN2 thermistor motor protection</u> NEW
10/36	LOGO!Contact	<u>Coupling relays and signal converters/interface converters</u>
10/37	LOGO! Software	5/32 Coupling relays 3/152 3TG10 power relays/miniature contactors
	Relays	10/163 SIRIUS 3RS70 signal converters
	<u>Timing relays</u>	1) See Catalog ST 70.
10/38	General data	Note: For the conversion tool, e.g. from 3RP15 to 3RP25, from 3RS17 to 3RS70 or from 3RN1 to 3RN2, see www.siemens.com/sirius/conversion-tool
10/39	SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm NEW	
10/51	SIRIUS 3RP20 timing relays, 45 mm	
10/57	7PV15 timing relays, 17.5 mm	
3/101	SIRIUS 3RA28 solid-state time-delay auxiliary switch blocks for mounting onto 3RT2 contactors and 3RH2 contactor relays	
3/106	SIRIUS 3RA28 function modules for mounting onto 3RT2 contactors and 3RH2 contactor relays	
3/102	SIRIUS 3RT19 timing relays for mounting onto 3RT1 contactors <u>SIRIUS 3RR21, 3RR22 monitoring relays for mounting onto 3RT2 contactors</u>	
10/62	Current and active current monitoring <u>SIRIUS 3RR24 monitoring relays for mounting onto 3RT2 contactors for IO-Link</u>	
10/70	Current and active current monitoring <u>SIRIUS 3UG45, 3UG46 monitoring relays for stand-alone installation</u>	
10/77	General data	
10/79	Line monitoring	

Monitoring and Control Devices

Introduction

Overview



Type	SIMOCODE pro C	SIMOCODE pro V PROFINET General Performance	SIMOCODE pro S General Performance	SIMOCODE pro V High Performance PROFIBUS/PROFINET Modbus RTU/EtherNet/IP	Page
SIMOCODE pro 3UF7 motor management and control devices					
Basic units	✓	✓	✓	✓	10/16
Current measuring modules	✓	✓	✓	✓	10/17
Current/voltage measuring modules	--	--	--	✓	10/17
Operator panels	✓	✓	✓	✓	10/18
Operator panels with display	--	--	--	✓	10/18
Expansion modules	--	✓	✓	✓	10/19
Fail-safe expansion modules	--	--	--	✓	10/21
Current transformers	✓	✓	✓	✓	10/25
SIMOCODE ES (TIA Portal)	✓	✓	✓	✓	14/12
SIMOCODE pro block library for SIMATIC PCS 7	✓	✓	✓	✓	14/16

✓ Available

-- Not available



Type	Basic units	Expansion modules	Software	Page
LOGO! logic modules				
LOGO! basic modules with display	✓	--	--	10/27
LOGO! basic modules without display	✓	--	--	10/28
LOGO! expansion modules	--	✓	--	10/29
LOGO! CMK2000 communication modules	--	✓	--	10/30
LOGO! CSM unmanaged	--	✓	--	10/31
LOGO! CMR (mobile wireless communication)	--	✓	--	10/32
LOGO!Contact	--	✓	--	10/36
LOGO! Software	--	--	✓	10/37

✓ Corresponds to

-- Does not correspond to



Type	3RP25	3RP20	7PV15
Timing relays			
Enclosures:			
• 17.5 mm industry and household equipment installation	✓	--	✓
• 22.5 mm industry	✓	--	--
• 45 mm industry	--	✓	--
Monofunction	✓	✓	✓
Multifunction	✓	✓	✓
Combination voltage	✓	✓	✓
Wide voltage range	✓	✓	✓
Application:			
• Control systems and mechanical engineering	✓	✓	✓
• Infrastructure	--	--	✓
Page	10/39	10/51	10/57

✓ Corresponds to or available

-- Does not correspond to or not available



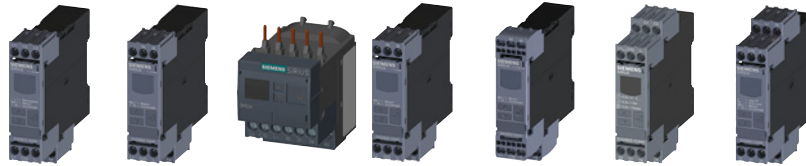
Type	3UG451., 3UG461.	3UG463.	3RR21, 3RR22, 3UG461, 3UG462	3UG4641	3UG4625 with 3UL23	3UG458.	3UG4501	3UG4651	Page
Monitoring relays									
Line monitoring	✓	--	--	--	--	--	--	--	10/79
Voltage monitoring	--	✓	--	--	--	--	--	--	10/84
Current monitoring	--	--	✓	--	--	--	--	--	10/62, 10/87
Active current monitoring	--	--	3RR22 ✓	✓	--	--	--	--	10/62, 10/89
Power factor monitoring	--	--	--	✓	--	--	--	--	10/89
Residual-current monitoring	--	--	--	--	✓	--	--	--	10/92
Insulation monitoring	--	--	--	--	--	✓	--	--	10/97, 10/99
Level monitoring	--	--	--	--	--	--	✓	--	10/102
Speed monitoring	--	--	--	--	--	--	--	✓	10/105

✓ Available

-- Not available

Monitoring and Control Devices

Introduction



Type	3UG481.	3UG4832	3RR24	3UG4822	3UG4841	3UG4825 with 3UL23	3UG4851	Page
Monitoring relays for IO-Link								
Line monitoring	✓	--	--	--	--	--	--	10/112
Voltage monitoring	--	✓	--	--	--	--	--	10/115
Current monitoring	--	--	✓	✓	--	--	--	10/70, 10/118
Power factor and active current monitoring	--	--	✓	--	✓	--	--	10/70, 10/121
Residual-current monitoring	--	--	--	--	--	✓	--	10/125
Speed monitoring	--	--	--	--	--	--	✓	10/128
✓ Available -- Not available								



Type	3RS10, 3RS11, 3RS20, 3RS21	3RS14, 3RS15	3RN2	3RS70	Page
Temperature monitoring relays					
Temperature monitoring	✓	--	--	--	10/136, 10/138, 10/140
Temperature monitoring relays for IO-Link					
Temperature monitoring for IO-Link	--	✓	--	--	10/148, 10/151
Thermistor motor protection					
Thermistor motor protection	--	--	✓	--	10/154
Signal converters					
Single-range converters	--	--	--	✓	10/163
Multi-range converters	--	--	--	✓	10/163
Universal converters	--	--	--	✓	10/163
✓ Available -- Not available					

Connection methods

The monitoring and control devices are available with screw or spring-type terminals.

SIRIUS 3RP25 timing relays, SIRIUS 3RN2 thermistor motor protection and SIRIUS 3RS70 signal converters are available with screw terminals or spring-type terminals (push-in).



Screw terminals



Spring-type terminals, spring-type terminals (push-in)

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

"Increased safety" type of protection EEx e/d according to ATEX directive 2014/34/EU

The communication-capable, modularly designed SIMOCODE pro motor management system (SIRIUS Motor Management and Control Devices) protects motors of types of protection EEx e and EEx d in hazardous areas.

"Increased safety" type of protection EEx e/d according to ATEX directive 2014/34/EU

The SIRIUS 3RN2 thermistor motor protection relay protects motors with types of protection EEx e and EEx d in hazardous areas.

ATEX approval for operation in hazardous areas

The SIRIUS SIMOCODE pro 3UF7 motor management system is certified for the protection of motors in hazardous areas according to

- ATEX Ex I (M2); equipment group I, category M2 (mining)
- ATEX Ex II (2) GD; equipment group II, category 2 in area GD

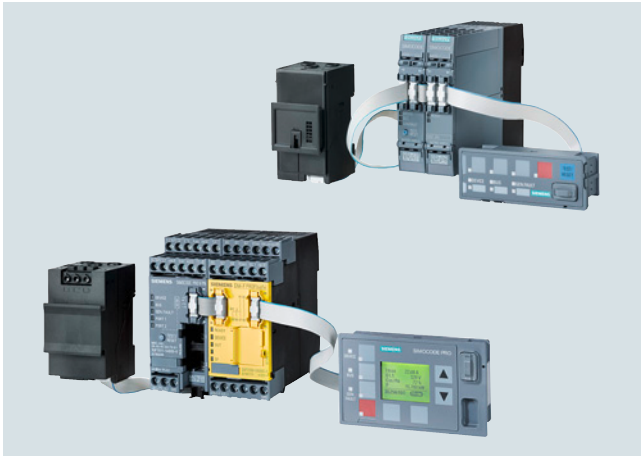
The SIRIUS 3RN2011, 3RN2012-...30, 3RN2013 and 3RN2023 thermistor motor protection relays for PTC sensors are certified according to ATEX Ex II (2) G and D for environments with explosive gas or dust loads.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

General data

Overview



SIMOCODE pro S and SIMOCODE pro V

More information

Homepage, see www.siemens.com/simocode

Industry Mall, see www.siemens.com/product?3UF7

TIA Selection Tool Cloud (TST Cloud)

- For SIMOCODE pro S, see <https://mall.industry.siemens.com/spice/TSTWeb/?kmat=SimocodeProS>
- For SIMOCODE pro V, see <https://mall.industry.siemens.com/spice/TSTWeb/?kmat=SimocodeProV>

SIMOCODE pro is a flexible, modular motor management system for motors with constant speeds in the low-voltage performance range. It optimizes the connection between I&C and motor feeder, increases plant availability and allows significant savings to be made for installation, commissioning, operation and maintenance of a system.

SIMOCODE pro offers, for example:

- Multifunctional, solid-state full motor protection that is independent of the automation system
- Integrated control functions instead of hardware for the motor control
- Detailed operational, service and diagnostics data
- Open communication via PROFIBUS DP, PROFINET/OPC UA, Modbus RTU or EtherNet/IP
- Safety relay function for the fail-safe disconnection of motors up to SIL 3 (IEC 61508, IEC 62061) or PL e with Category 4 (EN ISO 13849-1)
- SIMOCODE ES (TIA Portal) is the software package for SIMOCODE pro parameterization, start up and diagnostics.

Device series

Basic Performance with SIMOCODE pro C

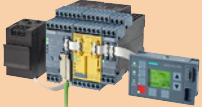
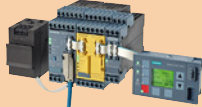




The compact system for direct-on-line starters and reversing starters or for controlling a motor starter protector.

General Performance with SIMOCODE pro S or SIMOCODE pro V PN GP

The smart system for direct-on-line, reversing, and wye-delta starters or for controlling a motor starter protector or soft starter. Its expandability with an expansion module/multifunction module provides comprehensive input/output project data volume, precise ground-fault detection via the 3UL23 residual-current transformers and temperature measurement.

High Performance with SIMOCODE pro V

The variable system with all control functions and with the possibility of expanding the inputs, outputs and functions of the system at will using expansion modules

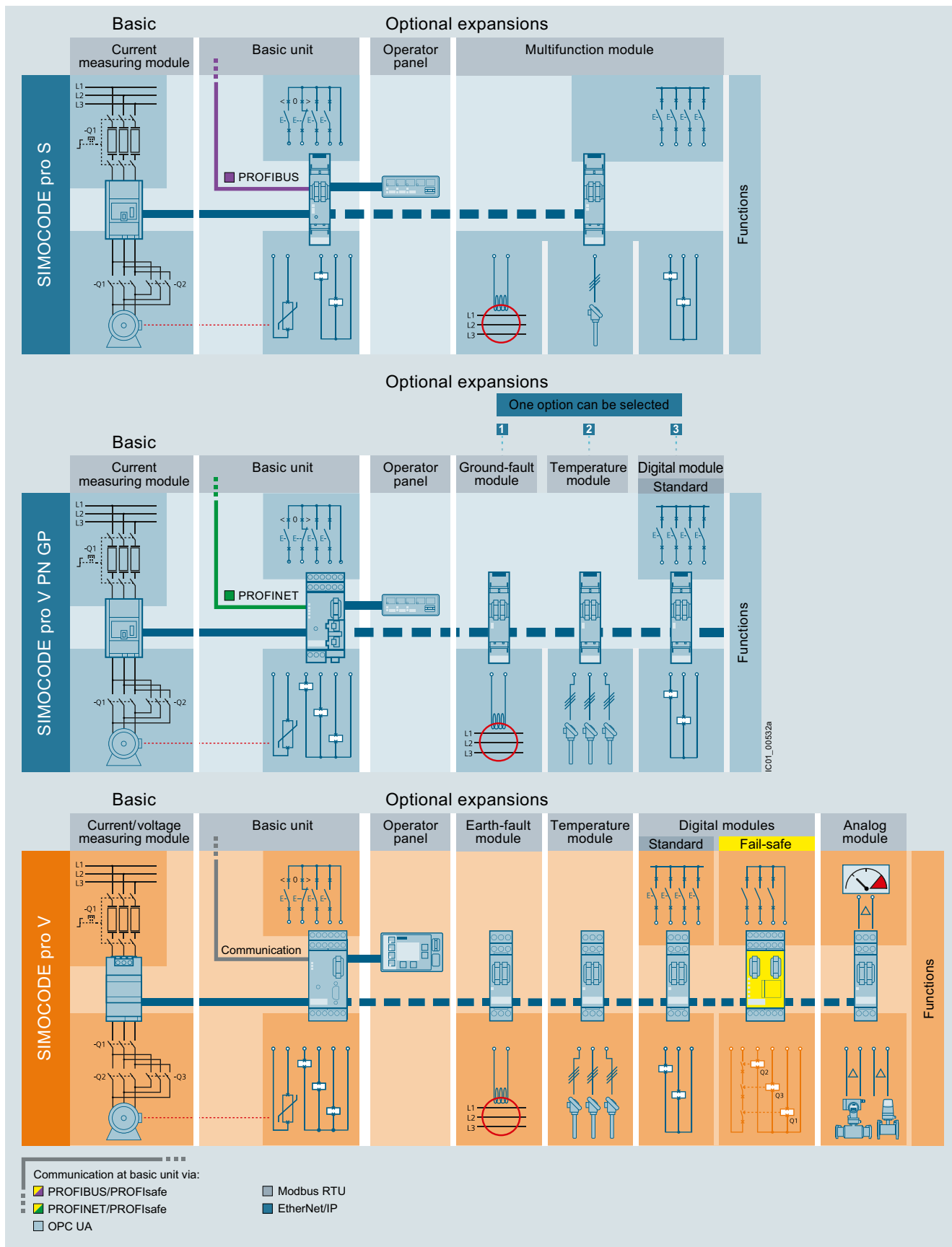
	PROFINET IO / OPC UA	ETHERNET / IP	PROFIBUS	MODBUS RTU	
Current/voltage measuring module	 SIMOCODE pro V PN	 SIMOCODE pro V EIP	 SIMOCODE pro V PB	 SIMOCODE pro V MR	High Performance
Operator panel with display					
Max. 5/7 expansion modules					
Safety					
Extended control functions (e.g. positioner, pole-changing starter)					
Current measuring module	 SIMOCODE pro V PN GP	 SIMOCODE pro S			General Performance
Operator panel					
1 expansion module					
Basic control functions (e.g. direct-on-line/reversing start)					

Device series

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

General data



System structure

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

General data

Expansion possibilities	SIMOCODE pro C	SIMOCODE pro S	SIMOCODE pro V	SIMOCODE pro V	
	Basic Performance PROFIBUS	General Performance PROFIBUS	General Performance PROFINET GP	High Performance PROFIBUS/Modbus RTU	PROFINET/ EtherNet/IP
Operator panels	✓	✓	✓	✓	✓
Operator panels with display	--	--	--	✓	✓
Current measuring modules	✓	✓	✓	✓	✓
Current/voltage measuring modules	--	--	--	✓	✓
Expansion modules:					
• Digital modules	--	--	1 ²⁾	2	2
• Fail-safe digital modules ¹⁾	--	--	--	1	1
• Analog modules	--	--	--	1	2
• Ground-fault modules	--	--	1	1	1
• Temperature modules	--	--	1	1	2
• Multifunction modules	--	1	--	--	--

✓ Available
-- Not available

¹⁾ The fail-safe digital module can be used instead of one of the two digital modules.
²⁾ Only monostable version can be used.

Per feeder each system always comprises one basic unit and one separate current measuring module. The two modules are connected together electrically through the system interface with a connection cable and can be mounted mechanically connected as a unit (one behind the other) or separately (side by side). The motor current to be monitored is decisive only for the choice of the current measuring module.

An operator panel for mounting in the control cabinet door is optionally connectable through a second system interface on the basic unit. Both the current measuring module and the operator panel are electrically supplied by the basic unit through the connection cable. More inputs, outputs and functions can be

added to the SIMOCODE pro V and SIMOCODE pro S by means of optional expansion modules, thus supplementing the inputs and outputs already existing on the basic unit. With the DM-F Local and DM-F PROFIsafe fail-safe digital modules it is also possible to integrate the fail-safe disconnection of motors in the SIMOCODE pro V motor management system.

All modules are connected by connection cables. The connection cables are available in various lengths. The maximum distance between modules (e.g. between the basic unit and the current measuring module) must not exceed 2.5 m. The total length of all the connection cables per system interface of the basic unit may be up to 3 m.

Article No. scheme

Product versions	Article number
SIMOCODE pro motor management system	3UF7 □ □ □ - 1 □ □ 0 □ - 0
Type of unit/module	e.g. 0 = basic unit □
Functional version of the module	e.g. 20 = SIMOCODE pro S □ □
Connection type of the current transformer	e.g. A = through-hole technology □
Voltage version	e.g. B = 24 V DC □
Enclosure color	e.g. 1 = titanium gray □
Example	3UF7 0 2 0 - 1 A B 0 1 - 0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

General data

Benefits

General customer benefits

- Integrating the whole motor feeder into the process control by means of PROFIBUS DP, PROFINET/OPC UA, Modbus RTU or EtherNet/IP significantly reduces the wiring between the motor feeder and the PLC
- Decentralization of the automated processes by means of configurable control and monitoring functions in the feeder saves resources in the automation system and ensures full functionality and protection of the feeder even if the I&C or bus system fails
- The acquisition and monitoring of operating, service and diagnostics data in the feeder and process control system increases plant availability as well as maintenance and service-friendliness
- The high degree of modularity allows users to perfectly implement their plant-specific requirements for each motor feeder
- The SIMOCODE pro system offers functionally graded and space-saving solutions for each customer application
- The replacement of the control circuit hardware with integrated control functions decreases the number of hardware components and wiring required and in this way limits stock keeping costs and potential wiring errors
- The use of electronic full motor protection permits better utilization of the motors and ensures long-term stability of the tripping characteristic and reliable tripping even after years of service
- Thanks to the precision of the current, voltage, power and energy measurements (especially those acquired by the 2nd-generation current/voltage measuring modules), costs can be internally allocated with a high degree of accuracy
- By virtue of its wide frequency range (20 to 400 Hz), SIMOCODE can be used in combination with the 2nd-generation current/voltage measuring modules in a wide range of motor applications.

Multifunctional, electronic full motor protection for rated motor currents up to 820 A

SIMOCODE pro offers comprehensive protection of the motor feeder by means of a combination of different, multi-step and delayable protection and monitoring functions:

- Inverse-time delayed electronic overload protection (CLASS 5E to 40E)
- Thermistor motor protection
- Phase failure/unbalance protection
- Stall protection
- Monitoring of adjustable limit values for the motor current
- Voltage and power monitoring
- Monitoring of the power factor (motor idling/load shedding)
- Ground-fault monitoring
- Temperature monitoring, e.g. via Pt100/Pt1000
- Monitoring of operating hours, downtime and number of starts etc.

Recording of measuring curves

SIMOCODE pro can record measuring curves and therefore is able, for example, to present the progression of motor current during motor start up.

Flexible motor control implemented with integrated control functions (instead of comprehensive hardware interlocks)

Many predefined motor control functions have already been integrated into SIMOCODE pro, including all necessary logic operations and interlocks:

- Overload relays
- Direct-on-line and reversing starters
- Wye/delta starters (also with direction reversal)
- Two speeds, motors with separate windings (pole-changing starter); also with direction reversal
- Two speeds, motors with separate Dahlander windings (also with direction reversal)
- Positioner actuation
- Solenoid valve actuation
- Actuation of a motor starter protector
- Soft starter actuation (also with direction reversal)

These control functions are predefined in SIMOCODE pro and can be freely assigned to the inputs and outputs of the device (including the PROFIBUS/PROFINET process image).

These predefined control functions can also be flexibly adapted to each customized configuration of a motor feeder by means of freely configurable logic modules (truth tables, counters, timers, edge evaluation, etc.) and with the help of standard functions (power failure monitoring, emergency start, external faults, etc.), without additional auxiliary relays being necessary in the control circuit.

SIMOCODE pro makes a lot of additional hardware and wiring in the control circuit unnecessary, which results in a high level of standardization of the motor feeder in terms of its design and circuit diagrams.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

General data

Detailed operational, service and diagnostics data

SIMOCODE pro makes different operational, service and diagnostics data available and helps to detect potential faults in time and to prevent them by means of preventative measures. In the event of a malfunction, a fault can be diagnosed, localized and rectified very quickly – there are no or very short downtimes.

Operating data

- Motor switching state derived from the current flow in the main circuit
- All phase currents
- All phase voltages and phase-to-phase voltages
- Active power, apparent power and power factor
- Phase unbalance and phase sequence
- Ground-fault current
- Frequency
- Time to trip
- Motor temperature
- Remaining cooling time etc.

Service data

- Motor operating hours
- Motor stop times
- Number of motor starts
- Number of overload trips
- Interval for compulsory testing of the enabling circuits
- Energy consumed
- Internal comments stored in the device etc.

Diagnostics data

- Numerous detailed early warning and fault messages
- Internal device fault logging with time stamp
- Time stamping of freely selectable status, alarm or fault messages etc.

Easy operation and diagnostics

Operator panel

The operator panel is used to control the motor feeder and can replace all conventional pushbuttons and indicator lights to save space. It makes SIMOCODE pro or the feeder directly operable in the control cabinet. It features all the status LEDs available on the basic unit and externalizes the system interface for simple parameterization or diagnosis on a PC/PG.

Operator panel with display

As an alternative to the 3UF720 standard operator panel for SIMOCODE pro V, a 3UF721 operator panel with display is also available. This can additionally indicate current measured values, operational and diagnostics data or status information of the motor feeder at the control cabinet. The pushbuttons of the operator panel can be used to control the motor. Furthermore, it is possible to set parameters such as rated motor current, limit values, etc. directly via the operator panel with display (with SIMOCODE pro V PROFIBUS as of E15, SIMOCODE pro V Modbus RTU as of E03 and with all SIMOCODE pro V PROFINET and EtherNet/IP).

Communication

SIMOCODE pro has either an integrated PROFIBUS DP or Modbus RTU interface (SUB-D or terminal connection) or a PROFINET or EtherNet/IP interface (2 x RJ45).

Fail-safe disconnection through PROFIBUS or PROFINET with the PROFIsafe profile is also possible in conjunction with a fail-safe controller (F-CPU) and the DM-F PROFIsafe fail-safe digital module.

SIMOCODE pro PROFIBUS

SIMOCODE pro PROFIBUS supports, for example:

- Cyclic services (DPV0) and acyclic services (DPV1)
- Extensive diagnostics and hardware interrupts
- Time stamp with high timing precision (SIMATIC S7) for SIMOCODE pro V
- DPV1 communication after the Y-Link

SIMOCODE pro PROFINET

SIMOCODE pro PROFINET supports, for example:

- Line and ring bus topology (for 2-port devices with an integrated switch)
- Media redundancy via MRP protocol (for 2-port devices with an integrated switch)
- Operating, service and diagnostics data via standard web browser
- OPC UA server for open communication with visualization and control system
- NTP-synchronized time
- Interval function and measured values for power management via PROFEnergy
- Module exchange without PC/memory module through proximity detection
- Extensive diagnostics and maintenance alarms

System redundancy with SIMOCODE pro PROFINET

All SIMOCODE PROFINET devices support the system redundancy mechanisms of PROFINET IO and therefore can be operated directly on fault-tolerant systems such as SIMATIC S7-400 H. As such, SIMOCODE pro can provide decisive added value also for the field level of plants in which plant availability and control system redundancy are priorities.

SIMOCODE pro Modbus RTU

SIMOCODE pro Modbus RTU supports, for example:

- Communication at 1 200/2 400/4 800/9 600/19 200 or 57 600 baud
- Access to freely parameterizable process image via Modbus RTU
- Access to all operating, service and diagnostics data via Modbus RTU

SIMOCODE pro EtherNet/IP

SIMOCODE pro EtherNet/IP supports, for example:

- Line and ring bus topology thanks to an integrated switch
- Ring structures via Device Level Ring (DLR) protocol
- Operating, service and diagnostics data via standard web browser
- NTP-synchronized time
- Parameter assignment via SIMOCODE ES V14 or higher – via local device interface and Ethernet

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

General data

Notes on security

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information on Industrial Security, see www.siemens.com/industrialsecurity.

Autonomous operation

An essential feature of SIMOCODE pro is the autonomous execution of all protection and control functions, even when communication to the I&C system is interrupted. This means that even in the event of bus system or automation system failure, full functionality of the feeder is ensured or a specific behavior can be parameterized in case of such a fault, e.g. targeted shutdown of the feeder or execution of particular parameterized control mechanisms (such as reversal of the direction of rotation).

Advantages from integrated energy management

siemens.com/
energysuite

Ready for
SIMATIC
Energy Suite

As an integrated option for the TIA Portal, the SIMATIC Energy Suite couples energy management with automation efficiently, making energy consumption at your production facility transparent.

Thanks to the simplified configuration of energy-measuring components, e.g. SIMOCODE pro V, configuration effort is also clearly reduced.

Thanks to end-to-end connection with higher-level energy management systems or cloud-based services, you can seamlessly expand the recorded energy data to create a cross-site energy management system.

The advantages at a glance:

- Automatic generation of energy management data
- Integration into TIA Portal and into automation
- Simple configuration

For more information, see [page 1/3](#) or www.siemens.com/energysuite.

Application

SIMOCODE pro is often used for automated processes where plant downtimes are very expensive (e.g. chemical, oil/gas, water/wastewater, steel or cement industries) and where it is important to prevent plant downtimes through detailed operational, service and diagnostics data or to localize faults very quickly when they occur.

SIMOCODE pro is modular and space-saving and suited especially for operation in motor control centers (MCCs) in the process industry and for power plant technology.

Applications

- Protection and control of motors in hazardous areas for types of protection EEx e/d according to ATEX directive 2014/34/EU
 - With heavy starting (paper, cement, metal and water industries)
 - In high-availability plants (chemical, oil, raw material processing industries, power plants)
- New: Dry-running protection of centrifugal pumps based on active power monitoring for type of protection Ex b

Use of SIMOCODE pro 3UF7 with IE3/IE4 motors

Note:

When using the SIMOCODE pro 3UF7 in conjunction with highly energy-efficient IE3/IE4 motors, please observe the information on dimensioning and configuring, see [Application Manual](#).

For more information, see [page 1/7](#).

Safety technology for SIMOCODE pro

The safe disconnection of motors in the process industry is becoming increasingly important as the result of new and revised standards and requirements in the safety technology field.

With the DM-F Local and DM-F PROFIsafe fail-safe expansion modules it is easy to integrate functions for fail-safe disconnection in the SIMOCODE pro V motor management system while retaining service-proven concepts. The strict separation of safety functions and operational functions proves particularly advantageous for planning, configuring and construction. Seamless integration in the motor management system leads to greater transparency for diagnostics and during operation of the system.

Suitable components for this purpose are the DM-F Local and DM-F PROFIsafe fail-safe expansion modules, depending on the requirements:

- The DM-F Local fail-safe digital module for when direct assignment between a fail-safe hardware shutdown signal and a motor feeder is required, or
- The DM-F PROFIsafe fail-safe digital module for when a fail-safe controller (F-CPU) creates the signal for disconnection and transmits it in a fail-safe manner through PROFIBUS/PROFIsafe or PROFINET/PROFIsafe to the motor management system

New: Dry-running protection of centrifugal pumps with SIMOCODE pro in hazardous areas

With special versions of the current/voltage measuring modules, SIMOCODE pro enables dry-running protection of centrifugal pumps through active power monitoring and motor switch-off. This applies to centrifugal pumps with progressive flow characteristics, which are also suitable for pumping flammable media and are also installed in hazardous areas. If the active power, and thus the flow rate, falls below a minimum value, the motor – and thus the centrifugal pump – is switched off. When determining the limit values to be monitored, the user is supported by a menu-guided teach-in process in the engineering software.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

General data

Technical specifications

More information

<p>Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16337/td</p> <p>Manual Collection "SIMOCODE pro", see https://support.industry.siemens.com/cs/ww/en/view/109743951</p> <p>System Manual "SIMOCODE pro Safety Fail-Safe Digital Modules", see https://support.industry.siemens.com/cs/ww/en/view/50564852</p>	<p>Application Manual "SIRIUS Controls with IE3/IE4 motors", see https://support.industry.siemens.com/cs/ww/en/view/94770820</p> <p>Configuration Manual "Load Feeders – SIRIUS Modular System", see https://support.industry.siemens.com/cs/ww/en/view/39714188</p>
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General data

Type		3UF7
Permissible ambient temperature		
• During operation	°C	-25 ... +60; 3UF721: 0 ... +60
• During storage and transport	°C	-40 ... +80; 3UF721: -20 ... +70
Degree of protection (acc. to IEC 60529)		
• Measurement modules with busbar connection		IP00
• Operator panel (front) and door adapter (front) with cover		IP54
• Other components		IP20
Shock resistance (sine pulse)	g/ms	15/11
Mounting position		Any
Frequency	Hz	50/60 ± 5%
EMC interference immunity (according to IEC 60947-1)		Corresponds to degree of severity 3
• Conducted interference, burst acc. to IEC 61000-4-4	kV	2 (power ports)
	kV	1 (signal port)
	V	10
• Conducted interference, high frequency acc. to IEC 61000-4-6		
• Conducted interference, surge acc. to IEC 61000-4-5	kV	2 (line to ground); 3UF7320-1AB, 3UF7330-1AB: 1 (line to ground)
	kV	1 (line to line); 3UF7320-1AB, 3UF7330-1AB: 0.5 (line to line)
• Electrostatic discharge, ESD acc. to IEC 61000-4-2	kV	8 (air discharge); 3UF7020: Operator input during operation only on the front
	kV	6 (contact discharge); 3UF721: 4 (contact discharge)
• Field-related interference acc. to IEC 61000-4-3	V/m	10
EMC emitted interference (according to IEC 60947-1)		
• Conducted and radiated interference emission		EN 55011/EN 55022 (CISPR 11/CISPR 22) (corresponds to degree of severity A)
Protective separation (acc. to IEC 60947-1)		All circuits in SIMOCODE pro are safely separated from each other according to IEC 60947-1, i.e. they are designed with doubled creepage paths and clearances. In this context, compliance with the instructions in the test report "Safe Isolation" No. 2668 is required.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

General data

Basic units						
Type		3UF7000-1AU00-0, 3UF7010-1AU00-0, 3UF7000-1AB00-0, 3UF7010-1AB00-0, 3UF7011-1AU00-0, 3UF7020-1AU01-0, 3UF7011-1AB00-0, 3UF7020-0AB01-0, 3UF7012-1AU00-0, 3UF7013-1AU00-0, 3UF7012-1AB00-0, 3UF7013-1AB00-0				
Control circuit						
Rated control supply voltage U_s (acc. to IEC 61131-2)		110 ... 240 V AC/DC; 50/60 Hz	24 V DC			
Operating range						
• SIMOCODE pro C (3UF7000) and SIMOCODE pro V PROFIBUS (3UF7010) SIMOCODE pro V Modbus RTU (3UF7012)		0.85 ... 1.1 x U_s	0.80 ... 1.2 x U_s			
• SIMOCODE pro V PROFINET (3UF7011), SIMOCODE pro V EtherNet/IP (3UF7013) and SIMOCODE pro S (3UF7020)		0.85 ... 1.1 x U_s	0.80 ... 1.2 x U_s			
- Operation		0.85 ... 1.1 x U_s	0.85 ... 1.2 x U_s			
- Start up		0.85 ... 1.1 x U_s	0.85 ... 1.2 x U_s			
Power consumption¹⁾						
• SIMOCODE pro C (3UF7000) and SIMOCODE pro S (3UF7020)		7 VA/5 W	5 W			
• SIMOCODE pro V PROFIBUS (3UF7010) and SIMOCODE pro V Modbus RTU (3UF7012)		10 VA/7 W	7 W			
• SIMOCODE pro V PROFIBUS E15/V4.0 (3UF7010-1A.00-0-Z B01) and SIMOCODE pro V Modbus RTU E03/V2.0 (3UF7012-1A.00-0-Z B01)		7 VA/5 W	4 W			
• SIMOCODE pro V PROFINET (3UF7011) and SIMOCODE pro V EtherNet/IP (3UF7013)		11 VA/8 W	8 W			
Rated insulation voltage U_i	V	300 (for pollution degree 3)				
Rated impulse withstand voltage U_{imp}	kV	4				
Relay outputs						
• Number		3 monostable relay outputs				
- SIMOCODE pro C, SIMOCODE pro V (incl. SIMOCODE pro V PN GP)		2 monostable relay outputs				
- SIMOCODE pro S						
• Specified short-circuit protection for auxiliary contacts (relay outputs)		6 A operational class gG; 10 A quick-response (IEC 60947-5-1)				
- Fuse links		1.6 A, C characteristic (IEC 60947-5-1); 6 A, C characteristic ($I_k < 500$ A)				
- Miniature circuit breaker	A	6				
• Rated uninterrupted current						
• Rated switching capacity		6 A/24 V AC; 6 A/120 V AC; 3 A/230 V AC				
- AC-15		2 A/24 V DC; 0.55 A/60 V DC; 0.25 A/125 V DC				
- DC-13						
Inputs (binary)		4 inputs supplied internally by the device electronics (with 24 V DC) and connected to a common potential				
Thermistor motor protection (binary PTC)						
• Summation cold resistance	kΩ	≤ 1.5				
• Response value	kΩ	3.4 ... 3.8				
• Return value	kΩ	1.5 ... 1.65				
2nd-generation current/voltage measuring modules						
Type		3UF7..0-1AA01-0	3UF7..1-1AA01-0	3UF7..2-1AA01-0	3UF7..3-1.A01-0	3UF7..4-1BA01-0
Main circuit						
Current setting I_e	A	0.3 ... 4	3 ... 40	10 ... 115	20 ... 200	63 ... 630
Rated insulation voltage U_i	V	690				
Rated operational voltage U_e	V	690				
Rated impulse withstand voltage U_{imp}	kV	6				
Rated frequency	Hz	50/60				
Type of current		Three-phase current				
Short circuit		Additional short-circuit protection is required in the main circuit				
Typical voltage measuring range						
• Phase-to-phase voltage/line-to-line voltage (e.g. U_{L1L2})	V	110 ... 690				
• Phase voltage (e.g. U_{L1N})	V	65 ... 400				
Accuracy at 25 °C, 50/60 Hz						
Valid for voltage range		<ul style="list-style-type: none"> Phase-to-phase voltage U_L in the range 0.85 x 110 V ... 1.1 x 690 V Phase voltage U_L in the range 0.85 x 65 V ... 1.1 x 400 V 				
Valid for current range	A	0.25 ... 8/ 8 ... 32	2.25 ... 80/ 80 ... 320	7.5 ... 230/ 230 ... 920	15 ... 400/ 400 ... 1 600	47 ... 1 260/ 1 260 ... 5 040
• Voltage measurement	%	± 1.5				
• Current measurement	%	± 1.5/3 (typical)				
• Temperature drift of current measurement						
- 3UF7110-1AA01-0	%	± 0.02 K				
- 3UF7111-1AA01-0, 3UF7112-1AA01-0, 3UF7113-1AA01-0, 3UF7113-1BA01-0, 3UF7114-1BA01-0	%	± 0.01 K				
• Power factor measurement (p.f. ≥ 0.5)	%	± 1.5/5 (typical)				
• Apparent power measurement (p.f. ≥ 0.5)	%	± 3/5 (typical)				
• Active power measurement (p.f. ≥ 0.5)	%	± 5/10				
• Energy measurement (p.f. ≥ 0.5)	%	± 5/10				
• Frequency measurement (p.f. ≥ 0.5)	%	± 1.5				
Notes on voltage measurement						
• Supply lines for voltage measurement		In the supply lines from the main circuit for voltage measurement of SIMOCODE pro it may be necessary to provide additional line protection!				

¹⁾ All values are based on a combination consisting of basic unit, current measuring module and operator panel.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

General data

Current measuring modules						
Type		3UF7100-1AA00-0	3UF7101-1AA00-0	3UF7102-1AA00-0	3UF7103-1.A00-0	3UF7104-1BA00-0
Main circuit						
Current setting I_e	A	0.3 ... 3	2.4 ... 25	10 ... 100	20 ... 200	63 ... 630
Rated insulation voltage U_i	V	690; 3UF7103 and 3UF7104: 1 000 (at pollution degree 3)				
Rated operational voltage U_e	V	690				
Rated impulse withstand voltage U_{imp}	kV	6; 3UF7103 and 3UF7104: 8				
Rated frequency	Hz	50/60				
Type of current		Three-phase current				
Short circuit		Additional short-circuit protection is required in the main circuit				
Accuracy of current measurement (in the range of 1 x minimum current setting I_{i1} to 8 x max. current setting I_{i8})	%	± 3 (typical)				
Digital modules or multifunction modules						
Type		3UF7300, 3UF7310, 3UF7600				
Control circuit						
Rated insulation voltage U_i	V	300 (at pollution degree 3)				
Rated impulse withstand voltage U_{imp}	kV	4				
Relay outputs		2 monostable or bistable relay outputs (depending on the version)				
<ul style="list-style-type: none"> • Number • Specified short-circuit protection for auxiliary contacts (relay outputs) <ul style="list-style-type: none"> - Fuse links - Miniature circuit breakers • Rated uninterrupted current • Rated switching capacity <ul style="list-style-type: none"> - AC-15 - DC-13 	A	6 A operational class gG; 10 A quick-response (IEC 60947-5-1) 1.6 A, C characteristic (IEC 60947-5-1); 6 A, C characteristic ($I_k < 500$ A) 6				
Inputs (binary)		4 inputs, electrically isolated, supplied externally with 24 V DC or 110 ... 240 V AC/DC depending on the version, connected to a common potential				
Ground-fault modules or multifunction modules						
Type		3UF7510, 3UF7600				
Control circuit						
Connectable residual-current transformer		3UL23				
Type of current for monitoring		Type A (AC and pulsating DC residual currents)				
Adjustable response value		30 mA ... 40 A				
Relative measurement error	%	7.5				
Temperature modules or multifunction modules						
Type		3UF7600, 3UF7700				
Sensor circuit						
Number of temperature sensors		<ul style="list-style-type: none"> • 3UF7700 • 3UF7600 3 temperature sensors 1 temperature sensor				
Typical sensor current		<ul style="list-style-type: none"> • Pt100 • Pt1000/KTY83/KTY84/NTC mA 1 0.2				
Open-circuit/short-circuit detection		<ul style="list-style-type: none"> • Sensor type <ul style="list-style-type: none"> - Open circuit - Short circuit - Measuring range 				
	°C	Pt100/Pt1000 ✓ -50 ... +500	KTY83-110 ✓ -50 ... +175	KTY84 ✓ -40 ... +300	NTC -- ✓ 80 ... 160	
Measuring accuracy at 20 °C ambient temperature (T20)	K	< ± 2				
Deviation due to ambient temperature (in % of measuring range)	%	0.05 per K deviation from T20				
Conversion time	ms	500				
Connection type		Two- or three-wire connection				

- ✓ Detection possible
 -- Detection not possible

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

General data

Analog module					
Type	3UF74				
Control circuit					
Inputs					
• Channels		2 (passive)			
• Parameterizable measuring ranges	mA	0/4 ... 20			
• Shielding		Up to 30 m shield recommended, from 30 m shield required			
• Max. input current (destruction limit)	mA	40			
• Accuracy	%	± 1			
• Input resistance	Ω	50			
• Conversion time	ms	150			
• Resolution	Bit	12			
• Open-circuit detection		With measuring range 4 ... 20 mA			
Outputs					
• Channels		1			
• Parameterizable output range	mA	0/4 ... 20			
• Shielding		Up to 30 m shield recommended, from 30 m shield required			
• Max. voltage at output	V DC	30			
• Accuracy	%	± 1			
• Max. output load	Ω	500			
• Conversion time	ms	25			
• Resolution	Bit	12			
• Short-circuit proof		Yes			
Connection type	Two-wire connection				
Electrical separation of inputs/output to the device electronics	No				
Fail-safe digital modules					
Type	3UF7320-1AB00-0	3UF7320-1AU00-0	3UF7330-1AB00-0	3UF7330-1AU00-0	
Control circuit					
Rated control supply voltage U_s	V	24 DC	110 ... 240 AC/DC; 50/60 Hz	24 DC	110 ... 240 AC/DC; 50/60 Hz
Power consumption		3 W	9.5 VA/4.5 W	4 W	11 VA/5.5 W
Rated insulation voltage	V	300			
Rated impulse withstand voltage U_{imp}	kV	4			
Relay outputs					
• Number	2 relay enabling circuits, 2 relay outputs				
Version of the fuse link For short-circuit protection of the relay enabling circuit	A	4, operational class gG			
Rated uninterrupted current	A	5			
Rated switching capacity					
• AC-15	3 A/24 V AC; 3 A/120 V AC; 1.5 A/230 V AC				
• DC-13	4 A/24 V DC; 0.55 A/60 V DC; 0.22 A/125 V DC				
Inputs (binary)	5 (with internal power supply from the device electronics)				
Cable length					
• Between sensor/start signal and evaluation electronics	m	1 500	1 500	--	--
• For further digital signals	m	--	--	300	300
Safety data ¹⁾					
SIL level max. according to IEC 61508	3				
Achievable performance level PL according to EN ISO 13849-1	e				
Achievable category according to EN ISO 13849-1	4				
Stop category according to EN 60204-1	0				
Probability of a dangerous failure for SIL 3 applications					
• Per hour (PFH _d) at a high demand rate according to IEC 62061	1/h	1.0 × 10 ⁻⁸ for 2-channel sensor evaluation		1.0 × 10 ⁻⁸	
• Per hour (PFD _{avg}) at a low demand rate according to IEC 61508		2.0 × 10 ⁻⁶ for 2-channel sensor evaluation		2.0 × 10 ⁻⁶	
T1 value for proof test interval or service duration according to IEC 61508	a	20			

¹⁾ For more safety data, see System Manual "SIMOCODE pro Safety Fail-Safe Digital Modules".

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

General data

More information

Configuration instructions

When using an operator panel with display, please note that the type and number of expansion modules that can be connected are limited for the use of a SIMOCODE pro V PROFIBUS basic unit (with product version lower than E15) or SIMOCODE pro V Modbus RTU (with product version lower than E03), [see](#)

- [TIA Selection Tool](#)
- [SIMOCODE pro Manual Collection](#)

Protective separation

All circuits in SIMOCODE pro are safely isolated from each other in accordance with IEC 60947-1. That is, they are designed with double creepages and clearances. In the event of a fault, therefore, no parasitic voltages can be formed in neighboring circuits. The instructions of test log No. 2668 must be complied with.

Types of protection EEx e and EEx d

The overload protection and the thermistor motor protection of the SIMOCODE pro system comply with the requirements for overload protection of explosion-proof motors to the type of protection:

- EEx d "Flameproof enclosure" e.g. according to IEC 60079-1
- EEx e "Increased safety" e.g. according to IEC 60079-7

When using SIMOCODE pro devices with a 24 V DC control voltage, electrical separation must be ensured using a battery or a safety transformer according to IEC 61558-2-6.

EC type test certificate: BVS 06 ATEX F 001

Test report: BVS PP 05.2029 EC.

Type of protection Ex b

The function for dry-running protection of centrifugal pumps in hazardous areas complies with the requirements of the following type of protection:

- Ex b "Control of ignition source", ignition protection system b1, e.g. according to EN 80079-37






SIMOCODE pro is registered for the dry-running protection of centrifugal pumps by means of active power monitoring according to both ATEX and IEC Ex.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

Basic units **IE3/IE4 ready**

Selection and ordering data




Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
SIMOCODE pro PROFIBUS					
	SIMOCODE pro C				
	PROFIBUS DP interface, 12 Mbps, RS 485 4 I/3 O freely assignable, input for thermistor connection, monostable relay outputs Rated control supply voltage U_s : <ul style="list-style-type: none"> • 24 V DC • 110 ... 240 V AC/DC 				
3UF7000-1AB00-0		▶ 3UF7000-1AB00-0		1	1 unit 42J
		▶ 3UF7000-1AU00-0		1	1 unit 42J
	SIMOCODE pro S				
	PROFIBUS DP interface, 1.5 Mbps, RS 485 4 I/2 O freely assignable, input for thermistor connection, monostable relay outputs, can be expanded by a multifunction module Note: The connection cable to the current measuring module must be at least 15 cm. Rated control supply voltage U_s : <ul style="list-style-type: none"> • 24 V DC • 110 ... 240 V AC/DC 				
3UF7020-1AU01-0		▶ 3UF7020-1AB01-0		1	1 unit 42J
		▶ 3UF7020-1AU01-0		1	1 unit 42J
	SIMOCODE pro V¹⁾				
	PROFIBUS DP interface, 12 Mbps, RS 485 4 I/3 O freely assignable, input for thermistor connection, monostable relay outputs, can be expanded by expansion modules Rated control supply voltage U_s : <ul style="list-style-type: none"> • 24 V DC • 110 ... 240 V AC/DC 				
3UF7010-1AB00-0		▶ 3UF7010-1AB00-0		1	1 unit 42J
		▶ 3UF7010-1AU00-0		1	1 unit 42J
SIMOCODE pro PROFINET					
	SIMOCODE pro V PROFINET GP NEW				
	ETHERNET/PROFINET IO, OPC UA server and web server, 100 Mbps, PROFINET system redundancy, 4 I/3 O freely assignable, input for thermistor connection, monostable relay outputs, can be expanded by expansion module, web server in German/English/Chinese/Russian 2 x connection to bus through RJ45, Media Redundancy Protocol Rated control supply voltage U_s : <ul style="list-style-type: none"> • 24 V DC • 110 ... 240 V AC/DC 				
3UF7011-1AB00-1		▶ 3UF7011-1AB00-1		1	1 unit 42J
		▶ 3UF7011-1AU00-1		1	1 unit 42J
	1 x connection to bus through RJ45, Rated control supply voltage U_s : <ul style="list-style-type: none"> • 24 V DC • 110 ... 240 V AC/DC 				
		▶ 3UF7011-1AB00-2		1	1 unit 42J
		▶ 3UF7011-1AU00-2		1	1 unit 42J
	SIMOCODE pro V PROFINET				
	ETHERNET/PROFINET IO, OPC UA server and web server, 100 Mbps, 2 x connection to bus through RJ45, PROFINET system redundancy, media redundancy protocol, 4 I/3 O freely assignable, input for thermistor connection, monostable relay outputs, can be expanded by expansion modules, web server in German/English/Chinese/Russian Rated control supply voltage U_s : <ul style="list-style-type: none"> • 24 V DC • 110 ... 240 V AC/DC 				
3UF7011-1AB00-0		▶ 3UF7011-1AB00-0		1	1 unit 42J
		▶ 3UF7011-1AU00-0		1	1 unit 42J

¹⁾ For the use of 2nd-generation current/voltage measuring modules, SIMOCODE pro V PROFIBUS with product version E15 (V4.0) must be ordered. This version does not have an NEPSI certificate. It can be ordered at no extra charge. The article number must be supplemented by "-Z" and the order code "B01", e.g. **3UF7010-1AB00-0-Z B01**.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

IE3/IE4 ready Basic units

Version	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG	
	d	Article No.	Price per PU				
SIMOCODE pro Modbus RTU							
	SIMOCODE pro V Modbus RTU¹⁾⁵⁾						
	Modbus RTU interface, 57.6 Kbps, RS 485, 4 I/O freely assignable, input for thermistor connection, monostable relay outputs, can be expanded by expansion modules						
	Rated control supply voltage U_s :						
	• 24 V DC	▶	3UF7012-1AB00-0	1	1 unit	42J	
	• 110 ... 240 V AC/DC	▶	3UF7012-1AU00-0	1	1 unit	42J	
3UF7012-1A.00-0							
SIMOCODE pro EtherNet/IP							
	SIMOCODE pro V EtherNet/IP¹⁾						
	EtherNet/IP interface, web server, 100 Mbps, 2 x connection to bus through RJ45, DLR media redundancy, 4 I/O freely assignable, input for thermistor connection, monostable relay outputs, can be expanded by expansion modules, web server in German/English/Chinese/Russian						
	Rated control supply voltage U_s :						
	• 24 V DC	▶	3UF7013-1AB00-0	1	1 unit	42J	
	• 110 ... 240 V AC/DC	▶	3UF7013-1AU00-0	1	1 unit	42J	
3UF7013-1AB00-0							
SIMOCODE pro current or current/voltage measuring modules							
	Current measuring modules						
	• Straight-through transformers	0.3 ... 3 45	▶	3UF7100-1AA00-0	1	1 unit	42J
		2.4 ... 25 45	▶	3UF7101-1AA00-0	1	1 unit	42J
		10 ... 100 55	▶	3UF7102-1AA00-0	1	1 unit	42J
		20 ... 200 120	▶	3UF7103-1AA00-0	1	1 unit	42J
	• Busbar connection ⁶⁾	20 ... 200 120	▶	3UF7103-1BA00-0	1	1 unit	42J
		63 ... 630 145	▶	3UF7104-1BA00-0	1	1 unit	42J
3UF7103-1AA00-0							
	2nd-generation current/voltage measuring modules for SIMOCODE pro V¹⁾²⁾						
	Voltage measuring up to 690 V, measured values with increased accuracy, power, power factor and frequency monitoring						
	• Straight-through transformers	0.3 ... 4 45	▶	3UF7110-1AA01-0	1	1 unit	42J
		3 ... 40 45	▶	3UF7111-1AA01-0	1	1 unit	42J
		10 ... 115 55	▶	3UF7112-1AA01-0	1	1 unit	42J
		20 ... 200 120	▶	3UF7113-1AA01-0	1	1 unit	42J
	• Busbar connection ⁶⁾	20 ... 200 120	▶	3UF7113-1BA01-0	1	1 unit	42J
	63 ... 630 145	▶	3UF7114-1BA01-0	1	1 unit	42J	
3UF7110-1AA01-0							
	Current/voltage measuring modules for dry-running protection of centrifugal pumps in hazardous areas^{2)3)4) NEW}						
	• Straight-through transformers	0.3 ... 4 45	▶	3UF7120-1AA01-0	1	1 unit	42J
		3 ... 40 45	▶	3UF7121-1AA01-0	1	1 unit	42J
		10 ... 115 55	▶	3UF7122-1AA01-0	1	1 unit	42J
		20 ... 200 120	▶	3UF7123-1AA01-0	1	1 unit	42J
	• Busbar connection ⁶⁾	20 ... 200 120	▶	3UF7123-1BA01-0	1	1 unit	42J
		63 ... 630 145	▶	3UF7124-1BA01-0	1	1 unit	42J
3UF7123-1AA01-0							

1) The SIMOCODE ES (TIA Portal) V14 software or higher is necessary for parameterization, see page 14/12.

2) When installing the basic unit on a current/voltage measuring module, the connection cable must be at least 15 cm long.

3) The current/voltage measuring modules for dry-running protection require SIMOCODE pro V PROFIBUS basic units as of product version E16 (expected to be available from 03/2019), SIMOCODE pro V PROFINET as of product version E13 (expected to be available from 10/2018) or SIMOCODE pro V EtherNet/IP as of product version E04 (expected to be available from 03/2019).

4) When using an operator panel with display with the current/voltage measuring modules for dry-running protection, an operator panel with display as of product version E03 (both versions 3UF7210-1AA01-0 and 3UF7210-1BA01-0 expected to be available from 03/2019) is required.

5) For the use of 2nd-generation current/voltage measuring modules, SIMOCODE pro V Modbus RTU with product version E03 (V2.0) must be ordered. This version does not have a NEPSI certificate. It can be ordered at no extra charge. The article number must be supplemented by "-Z" and the order code "B01", e.g. **3UF7012-1AB00-0-Z B01**.

6) One terminal parts kit 3RT1955-4PA00 or 3RT1966-4PA00 (see page 10/24) is included in the scope of delivery for connection to a contactor.



Note:

SIMOCODE pro V basic unit in a hardened version via SIPLUS extreme upon request.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

Basic units **IE3/IE4 ready**

Version	Current setting	Width	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
	A	mm	d	Article No.	Price per PU			
SIMOCODE pro operator panels								
Operator panels								
 <p>Installation in control cabinet door or front plate, for plugging into all SIMOCODE pro basic units, ten LEDs for status indication and user-assignable buttons for controlling the motor, titanium gray</p>				▶	3UF7200-1AA01-0	1	1 unit	42J
3UF7200-1AA01-0								
Operator panels with display for SIMOCODE pro V								
 <p>Installation in control cabinet door or front plate, for plugging into SIMOCODE pro V, seven LEDs for status indication and user-assignable buttons for controlling the motor, multilingual display, e.g. for indication of measured values, status information or fault messages, titanium gray</p> <ul style="list-style-type: none"> English/German/French/Spanish/Portuguese/Italian/Polish/Finnish English/Chinese/Russian/Korean 				▶	3UF7210-1AA01-0	1	1 unit	42J
3UF7210-1.A01-0								
				▶	3UF7210-1BA01-0	1	1 unit	42J

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

Expansion modules

Selection and ordering data

Version	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
	d	Article No.		Price per PU		

Expansion modules for SIMOCODE pro V

With SIMOCODE pro V, it is possible to expand the type and number of inputs and outputs in steps. Each expansion module has two system interfaces on the front. Through the one system interface the expansion module is connected to the system interface of the SIMOCODE pro V using a connection cable; through the second system interface, further expansion modules or the operator panel can be connected. The power supply for the expansion modules is provided by the connection cable through the basic unit.

Notes:

The SIMOCODE pro V PN GP basic unit can be used with the 3UF7300-1A.00-0 monostable digital module, the 3UF7510-1AA00-0 ground-fault module, or the 3UF7700-1AA0-0 temperature module.

Please order connection cable separately, see page 10/22.

Digital modules

Up to two digital modules can be used to add additional binary inputs and relay outputs to the basic unit. The input circuits of the digital modules are supplied from an external power supply.

Four binary inputs and two relay outputs, up to two digital modules can be connected

Relay outputs	Input voltage				
Monostable	24 V DC	▶	3UF7300-1AB00-0	1	1 unit 42J
	110 ... 240 V AC/DC	▶	3UF7300-1AU00-0	1	1 unit 42J
Bistable	24 V DC	▶	3UF7310-1AB00-0	1	1 unit 42J
	110 ... 240 V AC/DC	▶	3UF7310-1AU00-0	1	1 unit 42J

Analog modules

By means of the analog module, the basic unit can be optionally expanded by analog inputs and outputs (0/4 ... 20 mA).

Two inputs (passive) for input and one output for output of 0/4 ... 20 mA signals, max. one analog module can be connected per pro V PB/MB RTU basic unit and max. two analog modules per pro V PN/EIP basic unit

Ground-fault modules

Ground-fault monitoring using 3UL23 residual-current transformers and ground-fault modules is used in cases where precise detection of the ground-fault current is required or power systems with high impedance are grounded.

With the ground-fault module, it is possible to determine the precise fault current as a measured value, and to define freely selectable warning and trip limits in a wide range from 30 mA ... 40 A.

One input for connecting a 3UL23 residual-current transformer, up to one ground-fault module can be connected

Note:

For corresponding residual-current transformers, see page 10/94.

Temperature modules

Irrespective of the thermistor motor protection of the basic units, up to an additional three analog temperature sensors can be evaluated using a temperature module.

Sensor types: Pt100/Pt1000, KTY83/KTY84 or NTC

Three inputs for connecting up to three analog temperature sensors, up to one temperature module can be connected per pro V PB/MB RTU basic unit and up to two temperature modules per pro V PN/EIP basic unit



3UF7300-1AB00-0



3UF7400-1AA00-0



3UF7510-1AA00-0



3UF7700-1AA00-0

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

Expansion modules

Version	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU			

Expansion modules for SIMOCODE pro S

With SIMOCODE pro S, it is possible to expand the type and number of inputs and outputs. The expansion module has two system interfaces on the front. Through the one system interface the expansion module is connected to the system interface of the SIMOCODE pro S using a connection cable; through the second system interface, the operator panel can be connected. The power supply for the expansion module is provided by the connection cable through the basic unit.

Note:

Please order connection cable separately, [see page 10/22](#).

Multifunction modules

The multifunction module is the expansion module of the SIMOCODE pro S device series with the following functions:

- Digital module function with four digital inputs and two monostable relay outputs
- Ground-fault module function with an input for the connection of a 3UL23 residual-current transformer with freely selectable warning and trip limits in a wide zone of 30 mA ... 40 A
- Temperature module function with an input for connecting an analog temperature sensor Pt100, Pt1000, KTY83, KTY84, or NTC

Max. one multifunction module can be connected per pro S basic unit

Input voltage of the digital inputs:

- 24 V DC
- 110 ... 240 V AC/DC



3UF7600-1AU01-0

▶	3UF7600-1AB01-0	1	1 unit	42J
▶	3UF7600-1AU01-0	1	1 unit	42J

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

Fail-safe expansion modules

Selection and ordering data

Version	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
	d	Article No.		Price per PU		

Fail-safe expansion modules for SIMOCODE pro V

Thanks to the fail-safe expansion modules, SIMOCODE pro V can be expanded with the function of a safety relay for the fail-safe disconnection of motors. A maximum of one fail-safe digital module can be connected; it can be used instead of a digital module.

The fail-safe expansion modules are equipped likewise with two system interfaces at the front for making the connection to other system components. Unlike other expansion modules, power is supplied to the modules through a separate terminal connection.

Note:

Please order connection cable separately, [see page 10/22](#).

DM-F Local fail-safe digital modules

For fail-safe disconnection using a hardware signal

Two relay enabling circuits, joint switching; two relay outputs, common potential disconnected fail-safe; inputs for sensor circuit, start signal, cascading and feedback circuit, safety function adjustable using DIP switches

Rated control supply voltage U_s :

- 24 V DC
- 110 ... 240 V AC/DC

▶	3UF7320-1AB00-0	1	1 unit	42J
▶	3UF7320-1AU00-0	1	1 unit	42J

DM-F PROFIsafe fail-safe digital modules¹⁾

For fail-safe disconnection using PROFIBUS/PROFIsafe or PROFINET/PROFIsafe

Two relay enabling circuits, joint switching; two relay outputs, common potential disconnected fail-safe; one input for feedback circuit; three binary standard inputs

Rated control supply voltage U_s :

- 24 V DC
- 110 ... 240 V AC/DC

▶	3UF7330-1AB00-0	1	1 unit	42J
▶	3UF7330-1AU00-0	1	1 unit	42J



3UF7320-1AB00-0



3UF7330-1AB00-0






¹⁾ Cannot be used in conjunction with SIMOCODE pro V for Modbus RTU or EtherNet/IP communication.

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

Accessories

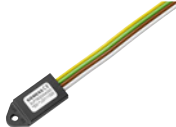


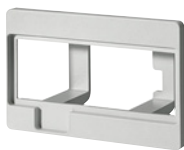


Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Connection cables (essential accessory)						
In different lengths for connecting basic unit, current measuring module, current/voltage measuring module, operator panel or expansion modules						
						
3UF7932-0AA00-0						
Version	Length					
Flat	0.025 m	▶ 3UF7930-0AA00-0		1	1 unit	42J
	0.1 m	▶ 3UF7931-0AA00-0		1	1 unit	42J
	0.15 m	▶ 3UF7934-0AA00-0		1	1 unit	42J
	0.3 m	▶ 3UF7935-0AA00-0		1	1 unit	42J
	0.5 m	▶ 3UF7932-0AA00-0		1	1 unit	42J
Round	0.5 m	▶ 3UF7932-0BA00-0		1	1 unit	42J
	1.0 m	▶ 3UF7937-0BA00-0		1	1 unit	42J
	2.5 m	▶ 3UF7933-0BA00-0		1	1 unit	42J
PC cables and adapters						
						
3UF7941-0AA00-0		▶ 3UF7941-0AA00-0		1	1 unit	42J
USB PC cables						
For connecting to the USB interface of a PC/PG, for communication with SIMOCODE pro through the system interface						
USB/serial adapters						
	5	▶ 3UF7946-0AA00-0		1	1 unit	42J
For connecting an RS 232 PC cable to the USB interface of a PC						
Memory modules						
						
3UF7901-0AA01-0						
Enable transmission to a new system, e.g. when a device is replaced, without the need for additional aids or detailed knowledge of the device.						
Memory modules for SIMOCODE pro C						
		▶ 3UF7900-0AA01-0		1	1 unit	42J
For saving the complete parameterization of a SIMOCODE pro C system, titanium gray						
Memory modules for SIMOCODE pro S and pro V						
		▶ 3UF7901-0AA01-0		1	1 unit	42J
For saving the complete parameterization of a SIMOCODE pro system, titanium gray						
Interface covers						
						
3RA6936-0B	10	▶ 3RA6936-0B		1	5 units	42F
For system interface, titanium gray						
Addressing plugs						
						
3UF7910-0AA00-0		▶ 3UF7910-0AA00-0		1	1 unit	42J
For assigning the PROFIBUS or Modbus RTU address without using a PC/PG to SIMOCODE pro through the system interface						

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices



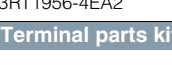




Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Accessories for motor control centers						
		With the draw-out technology often used in motor control centers it is possible to integrate a SIMOCODE pro initialization module in the switchboard on a permanent basis. Feeder-related parameter and address data can then be permanently assigned to this feeder.				
3UF7902-0AA00-0		Initialization modules				
		For automatic parameterization of SIMOCODE pro S and SIMOCODE pro V basic units (pro V PROFIBUS basic units from product version E09)		1	1 unit	42J
		Y connection cables				
		For use in conjunction with the initialization module; connects the basic unit, current measuring module or current/voltage measuring module, and initialization module				
		System interface length	Open cable end			
		0.1 m	1.0 m		1	1 unit 42J
		0.5 m	1.0 m		1	1 unit 42J
		1.0 m	1.0 m		1	1 unit 42J
Bus connection terminals						
		For shield support and strain relief of the PROFIBUS cable on a SIMOCODE pro S				
3UF7960-0AA00-0				1	1 unit	42J
Door adapters						
		For external connection of the system interface, e.g. outside a control cabinet				
3UF7920-0AA00-0				1	1 unit	42J
Adapters for operator panel						
		The adapter enables the smaller 3UF7200 operator panel from SIMOCODE pro to be used in a front panel cutout in which previously, e.g. after a change of system, a larger 3UF52 operator panel from SIMOCODE-DP had been used, degree of protection IP54				
3UF7922-0AA00-0				1	1 unit	42J
Labeling strips						
		• For pushbuttons of the 3UF720 operator panel		100	400 units	42J
		• For pushbuttons of the 3UF721 operator panel with display		100	600 units	42J
		• For LEDs of the 3UF720 operator panel		100	1 200 units	42J
3UF7925-0AA02-0						
Push-in lugs						
		For screw fixing, e.g. on mounting plate, 2 units required per device				
3RV2928-0B		• Can be used for 3UF71.0, 3UF71.1 and 3UF71.2	2	100	10 units	41E
		• Can be used for 3UF700, 3UF701, 3UF73, 3UF74, 3UF75 and 3UF77	5	1	10 units	41H
		• Can be used for 3UF7020, 3UF7600	2	1	10 units	41L

SIMOCODE 3UF Motor Management and Control Devices

SIMOCODE pro 3UF7 Motor Management and Control Devices

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Terminal covers							
 <p>3RT1956-4EA1</p>		Covers for cable lugs and busbar connections					
		<ul style="list-style-type: none"> Length 100 mm, can be used for 3UF71.3-1BA0.-0 Length 120 mm, can be used for 3UF71.4-1BA0.-0 	▶	3RT1956-4EA1	1	1 unit	41B
	2			3RT1966-4EA1	1	1 unit	41B
 <p>3RT1956-4EA2</p>		Covers for box terminals					
		<ul style="list-style-type: none"> Length 25 mm, can be used for 3UF71.3-1BA0.-0 Length 30 mm, can be used for 3UF71.4-1BA0.-0 	▶	3RT1956-4EA2	1	1 unit	41B
	2			3RT1966-4EA2	1	1 unit	41B
 <p>3RT1956-4EA2</p>		Covers for screw terminals					
		Between contactor and current measuring module or current/voltage measuring module for direct mounting					
		<ul style="list-style-type: none"> Can be used for 3UF71.3-1BA0.-0 Can be used for 3UF71.4-1BA0.-0 	▶	3RT1956-4EA3	1	1 unit	41B
	2			3RT1966-4EA3	1	1 unit	41B
Terminal parts kit							
		Can be used for current and/or current/voltage measuring modules with standard mounting rail connection, complete for one contactor					
	5	<ul style="list-style-type: none"> M 8 x 25 		3RT1955-4PA00	1	1 unit	41B
	5	<ul style="list-style-type: none"> M 10 x 30 		3RT1966-4PA00	1	1 unit	41B
Box terminal blocks							
 <p>3RT195.-4G</p>		For round and ribbon cables					
		<ul style="list-style-type: none"> Up to 70 mm², can be used for 3UF71.3-1BA0.-0 Up to 120 mm², can be used for 3UF71.3-1BA0.-0 Up to 240 mm², can be used for 3UF71.4-1BA0.-0 	▶	3RT1955-4G	1	1 unit	41B
			▶	3RT1956-4G	1	1 unit	41B
			▶	3RT1966-4G	1	1 unit	41B
Bus termination modules							
 <p>3UF1900-1KA00</p>		With separate control supply voltage for bus termination following the last unit on the bus line					
		Supply voltage:					
	5	<ul style="list-style-type: none"> 115/230 V AC 		3UF1900-1KA00	1	1 unit	42J
	5	<ul style="list-style-type: none"> 24 V DC 		3UF1900-1KB00	1	1 unit	42J
Software							
 <p>3ZS1322...</p>		SIMOCODE ES (TIA Portal) NEW					
		Software for configuring, commissioning, operating and diagnosing SIMOCODE pro based on the TIA Portal, see page 14/12.					
 <p>3ZS1632-XX0.-0Y.0</p>		SIMOCODE pro block library for SIMATIC PCS 7					
		The PCS 7 block library can be used for simple and easy integration of SIMOCODE pro into the SIMATIC PCS 7 process control system, see page 14/16.					

SIMOCODE 3UF Motor Management and Control Devices

3UF18 current transformers for overload protection

Overview

More information


Homepage, see www.siemens.com/siriusIndustry Mall, see www.siemens.com/product?3UF18

The 3UF18 current transformers are protection transformers and are used for actuating overload relays. Protection transformers are designed to ensure proportional current transfer up to a multiple of the primary rated current. The 3UF18 current transformers convert the maximum current of the corresponding operating range into the standard value of 1 A secondary.

Selection and ordering data

Type of mounting	Operating range	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	A	d	Article No.	Price per PU		

For mounting onto contactors and stand-alone installation

 3UF1868	Screw fixing	205 ... 820	X	3UF1868-3GA00	1	1 unit	42J
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Accessories

For contactor type	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Terminal covers

For transformer/contactor combinations and stand-alone installation for 3UF1868-3GA00 transformer <u>Note:</u> One cover required per connection side.	5	3TX7696-0A		1	1 unit	41B
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LOGO! Logic Modules

General data

Overview



LOGO! logic modules

More information

Homepage, see www.siemens.com/LOGO

Industry Mall, see www.siemens.com/product?logo

LOGO!, see [Catalog ST 70](#)

To download brochures, see www.siemens.com/simatic/printmaterial

- The compact, user-friendly, and low-cost solution for simple control tasks
- Compact, user-friendly, can be used universally without accessories
- All in one: The display and operator panel are integrated
- 36 different functions can be linked at a press of a button or with PC software; up to 130 times in total
- LOGO! 8: 38/43 different functions can be linked at a press of a button or with PC software; up to 200/400 times in total
- Functions can be changed simply with the press of a button. No complicated rewiring

Application

The LOGO! logic module is the user-friendly, low-cost solution for simple control tasks.

LOGO! is universally applicable, e.g.:

- Building installation and wiring (lighting, shutters, awnings, doors, access control, barriers, ventilation systems, etc.)
- Control cabinet installation
- Machine and device construction (pumps, small presses, compressors, hydraulic lifts, conveyors, etc.)
- Special controls for conservatories and greenhouses
- Signal preprocessing for other controllers

LOGO! Modular logic modules can be expanded easily for each application.

Marine approvals

American Bureau of Shipping, Bureau Veritas, Det Norske Veritas, Germanischer Lloyd, Lloyds Register of Shipping, Polski Rejestr Statków, etc.

Overview



LOGO! basic module with display

- The space-saving basic versions
- Interface for connecting expansion modules, max. 24 digital inputs, 20 digital outputs, 8 analog inputs and 8 analog outputs can be addressed
- All basic units with integrated web server
- Enclosure width 72 mm (4 MW)
- All basic units with Ethernet interface for communication with LOGO! 8, LOGO! TDE, SIMATIC Controllers, SIMATIC Panels and PCs
- Use of standard micro SD cards

Selection and ordering data

Version	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU			
LOGO! 8 logic modules						
LOGO! logic modules 24CE Control supply voltage 24 V DC, 8 digital inputs 24 V DC, of which 4 can be used as analog inputs (0 ... 10 V), 4 digital outputs 24 V DC, 0.3 A, with integrated time switch, Ethernet interface, 400 function blocks can be combined, modular expandability	1	6ED1052-1CC08-0BA0		1	1 unit	200
LOGO! logic modules 12/24RCE Control supply voltage 12 ... 24 V DC, 8 digital inputs 12/24 V DC, of which 4 can be used as analog inputs (0 ... 10 V), 4 relay outputs 10 A, integrated time switch, Ethernet interface, 400 function blocks can be combined, modular expandability	1	6ED1052-1MD08-0BA0		1	1 unit	200
LOGO! logic modules 24RCE Control supply voltage 24 V AC/DC, 8 digital inputs 24 V AC/DC, 4 relay outputs 10 A, integrated time switch, Ethernet interface, 400 function blocks can be combined, modular expandability	1	6ED1052-1HB08-0BA0		1	1 unit	200
LOGO! logic modules 230RCE Control supply voltage 115 ... 230 V AC/DC, 8 digital inputs 115 ... 230 V AC/DC, 4 relay outputs 10 A, integrated time switch, Ethernet interface, 400 function blocks can be combined, modular expandability	1	6ED1052-1FB08-0BA0		1	1 unit	200

For accessories, see page 10/34 onwards.

LOGO! Logic Modules

LOGO! basic modules without display

Overview



LOGO! basic module without display

- The cost-optimized basic versions
- Interface for connecting expansion modules, max. 24 digital inputs, 20 digital outputs, 8 analog inputs and 8 analog outputs can be addressed
- With connection option for LOGO! TDE text display
- All basic units with integrated web server
- Enclosure width 72 mm (4 MW)
- All basic units with Ethernet interface for communication with LOGO! 8, LOGO! TDE, SIMATIC Controllers, SIMATIC Panels and PCs
- Use of standard micro SD cards

Selection and ordering data

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
LOGO! 8 logic modules					
LOGO! logic modules 24CEo Control supply voltage 24 V DC, 8 digital inputs 24 V DC, of which 4 can be used as analog inputs (0 ... 10 V), 4 digital outputs 24 V DC, 0.3 A; integrated time switch, Ethernet interface, without display or keyboard, 400 function blocks can be combined, modular expandability	1	6ED1052-2CC08-0BA0		1 unit	200
LOGO! logic modules 12/24RCEo Control supply voltage 12 ... 24 V DC, 8 digital inputs 12 ... 24 V DC, of which 4 can be used as analog inputs (0 ... 10 V), 4 relay outputs 10 A, integrated time switch, Ethernet interface, without display or keyboard, 400 function blocks can be combined, modular expandability	1	6ED1052-2MD08-0BA0		1 unit	200
LOGO! logic modules 24RCEo Control supply voltage 24 V AC/DC, 8 digital inputs 24 V AC/DC, 4 relay outputs 10 A, integrated time switch, Ethernet interface, without display or keyboard, 400 function blocks can be combined, modular expandability	1	6ED1052-2HB08-0BA0		1 unit	200
LOGO! logic modules 230RCEo Control supply voltage 115 ... 230 V AC/DC, 8 digital inputs 115 ... 230 V AC/DC, 4 relay outputs 10 A, integrated time switch, Ethernet interface, without display or keyboard, 400 function blocks can be combined, modular expandability	1	6ED1052-2FB08-0BA0		1 unit	200

For accessories, see page 10/34 onwards.

Overview



LOGO! expansion modules

- Expansion modules for connection to LOGO! basic modules
- With digital inputs and outputs, analog inputs or analog outputs

Selection and ordering data

Version	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU			
LOGO! 8 expansion modules						
LOGO! DM8 24 Control supply voltage 24 V DC, 4 digital inputs 24 V DC, 4 digital outputs 24 V DC, 0.3 A	1	6ED1055-1CB00-0BA2		1	1 unit	200
LOGO! DM16 24 Control supply voltage 24 V DC, 8 digital inputs 24 V DC, 8 digital outputs 24 V DC, 0.3 A	1	6ED1055-1CB10-0BA2		1	1 unit	200
LOGO! DM8 12/24R Control supply voltage 12 ... 24 V DC, 4 digital inputs 12 ... 24 V DC, 4 relay outputs 5 A	1	6ED1055-1MB00-0BA2		1	1 unit	200
LOGO! DM8 24R Control supply voltage 24 V AC/DC, 4 digital inputs 24 V AC/DC, 4 relay outputs 5 A	1	6ED1055-1HB00-0BA2		1	1 unit	200
LOGO! DM16 24R Control supply voltage 24 V DC, 8 digital inputs 24 V DC, 8 relay outputs 5 A	1	6ED1055-1NB10-0BA2		1	1 unit	200
LOGO! DM8 230R Control supply voltage 115 ... 230 V AC/DC, 4 digital inputs 115 ... 230 V AC/DC, 4 relay outputs 5 A	1	6ED1055-1FB00-0BA2		1	1 unit	200
LOGO! DM16 230R Control supply voltage 115 ... 230 V AC/DC, 8 digital inputs 115 ... 230 V AC/DC, 8 relay outputs 5 A	1	6ED1055-1FB10-0BA2		1	1 unit	200
LOGO! AM2 Control supply voltage 12 ... 24 V DC, 2 analog inputs 0 ... 10 V or 0 ... 20 mA, 10-bit resolution	1	6ED1055-1MA00-0BA2		1	1 unit	200
LOGO! AM2 PT 100 Control supply voltage 12 ... 24 V DC, 2 analog inputs Pt100, temperature range -50 °C ... +200 °C	1	6ED1055-1MD00-0BA2		1	1 unit	200
LOGO! AM2 AQ Control supply voltage 24 V DC, 2 analog outputs 0 ... 10 V, 0/4 ... 20 mA	1	6ED1055-1MM00-0BA2		1	1 unit	200

For accessories, see page 10/34 onwards.

LOGO! Logic Modules

LOGO! Communication Modules

LOGO! CMK2000 communication modules

Overview



LOGO! CMK2000 communication modules

- Expansion module for the LOGO! 8 basic versions
- For integration of LOGO! 8 in KNX installations
- 24 digital inputs, 20 digital outputs and 8 analog inputs and outputs each for processing of process signals via KNX

Information regarding compatibility:

LOGO! CMK2000 communication modules can be used with LOGO! ... 0BA8.

Application

With the LOGO! CMK2000 communication modules, the LOGO! 8 logic module series can be integrated in the KNX building system bus.

Designed for small-scale automation solutions, LOGO! 8 can be used in combination with the new communication module for building automation tasks, for example for monitoring, access control, air conditioning, lighting, shading and watering, even extending to pump control.

Selection and ordering data

Version	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU			
LOGO! CMK2000 communication modules						
For integration of LOGO! 8 in the KNX building system bus, max. 50 communication objects can be configured; RJ45 port for Ethernet; supply voltage 24 V DC/40 mA	1	6BK1700-0BA20-0AA0		1	1 unit	470

For accessories, see page 10/34 onwards.

Overview



LOGO! CSM unmanaged

The module is used for the connection of a LOGO! and up to three additional nodes to an Industrial Ethernet network with 10/100 Mbps in an electrical line, tree or star structure.

Key features of the LOGO! CSM are:

- Unmanaged 4-port switch, of which one port on the front side is for simple diagnostics access
- Two versions for the voltage ranges 12/24 V DC or 230 V AC/DC
- It is easy to connect via four RJ45 standard plug-in connections
- Space-saving, optimized for connection to LOGO!
- Economical solution for creating small, local Ethernet networks
- Stand-alone use for networking any number of Ethernet devices

Information regarding compatibility:

LOGO! CSM 12/24 communication modules can be used with LOGO! ...0BA7/...0BA8.

Benefits

- Savings on installation costs and installation space compared to using external network components
- Fast commissioning since configuring is not necessary
- Fast and uncomplicated diagnostics access in the control cabinet
- Flexible expansion of the network thanks to simple connection of the CSM

Application

LOGO! CSM is an Industrial Ethernet switch in a compact, modular design for use in devices of the new LOGO! generation with Industrial Ethernet connection. With the LOGO! CSM, the Ethernet interface of the SIMATIC LOGO! can be multiplied to enable simultaneous communication with control panels, programming devices, other controllers, or the office world.

External access (e.g. for diagnostics purposes) is possible without problems via the four Ethernet ports.

Product versions

LOGO! CSM 12/24 (now in LOGO! 8 design)

For operation with direct current at 12 and 24 volts

Selection and ordering data

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
LOGO! CSM compact switch modules					
Unmanaged switch for connection to a LOGO! and up to three additional nodes in the Industrial Ethernet with 10/100 Mbps; 4 x RJ45 ports; LED diagnostics, LOGO! module					
LOGO! CSM 12/24	1	6GK7177-1MA20-0AA0		1	1 unit 5P1
External 12 V DC or 24 V DC power supply; for LOGO! ...0BA7/...0BA8					

For accessories, [see page 10/34 onwards](#).

More information

Selection Tools:

To assist in selecting the right Industrial Ethernet switches as well as in the configuration of modular variants, the SIMATIC NET Selection Tool and the TIA Selection Tool are available.

SIMATIC NET Selection Tool, [see](#)

www.siemens.com/snst-standalone

TIA Selection Tool, [see](#)

www.siemens.com/tia-selection-tool

LOGO! Logic Modules

LOGO! Communication Modules

LOGO! CMR (mobile wireless communication)

Overview



LOGO! CMR

LOGO! CMR is suitable in combination with the LOGO! logic module as a low-cost remote signaling system for monitoring and controlling distributed plants and systems via text messages or email.

LOGO! CMR can send text messages or emails to predefined mobile network numbers and also receive text messages from predefined mobile network numbers.

Sending a text message/email can be initiated by events in the LOGO! basic module as well as by the two digital alarm inputs of the LOGO! CMR. The values in the LOGO! logic module can be directly influenced by receiving a text message.

The LOGO! CMR offers convenient commissioning and diagnostics via web-based management, via local and/or remote access.

The two digital outputs can also be connected remotely via incoming text messages/emails.

The LOGO! CMR determines the current position of the module using the GPS signal received via the GPS antenna. In addition, the LOGO! 8 logic module can also be synchronized by means of the time-of-day included in the GPS signal.

Further options for synchronizing the LOGO! BM with the current time-of-day are calculation of the time-of-day via an NTP server or from the data of the mobile wireless service provider.

Product versions

- LOGO! CMR2020 for use in GSM/GPRS mobile wireless networks
- LOGO! CMR2040 for use in LTE mobile wireless networks

Information regarding compatibility:

LOGO! CMR2020 and LOGO! CMR2040 can be used with LOGO! ...0BA8.

Caution! Observance of national mobile wireless approvals is mandatory:

- DE: www.siemens.de/mobilfunkzulassungen
- EN: www.siemens.com/mobilenetwork-approvals

Benefits

- Low-cost alarm signaling system – low investment and operating outlay for the monitoring and control of small systems via text message and/or email
- Reduction of travel/maintenance costs thanks to remote access via OpenVPN and HTTP for configuring the LOGO! CMR or LOGO! 8 logic module
- Easy-to-use thanks to intuitive text messaging syntax with alias text messaging function or assignment and use of symbolic names
- Simple configuration process via Web Based Management without the need for special knowledge of radio communications
- Internationally deployable thanks to communication via GSM, UMTS, and LTE networks
- Time synchronization of the LOGO! 8 logic module using the time determined from the GPS signal, an NTP server or the time from the mobile radio provider
- Harmonizes with LOGO! 8 series with regard to functioning, design and structure
- Fast installation thanks to standard rail mounting

Application

In industrial environments


- Simple remote diagnostics and remote control tasks in LOGO! applications in the plant and machine environment, e.g. gate controls, ventilation systems, industrial water pumps, automatic dry feeders in agriculture
- Simple building automation including building equipment, e.g. for HVAC (Heating, Ventilation and Air Conditioning), pump controller
- Remote control and monitoring of, e.g. level, pressure, temperature, flow, and valve control in the water/wastewater industry
- Position monitoring in the logistics industry, e.g. for vehicles, refrigeration transporters, containers
- Simplest possible metering and energy management systems in distributed buildings controlled with LOGO!
- Design of systems for monitoring and controlling simple telecontrol stations
- Remote connection of distributed local controllers via LOGO!

- Remote control and monitoring of low-end machine controls (usually discrete logic)

In non-industrial environments

- Remote control and monitoring of automation tasks in domestic building and installation systems, e.g.
 - Stairway lighting
 - External lighting
 - Awnings, shutters
 - Shop window lighting
- Remote control of HVAC in dwellings, greenhouses, etc.

Selection and ordering data

Version	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
LOGO! CMR Communication Module Radio					
Communication modules for connecting LOGO! ...0BA8 to a GSM/GPRS or LTE network; 1 x RJ45 port for Industrial Ethernet connection; 2 x digital input; 2 x digital output; read/write access to LOGO! variables; sending/receiving text messages; GPS position detection; time-of-day synchronization/forwarding with real-time clock; configuration and diagnostics via WEB interface; observe national approval!					
LOGO! CMR2020 For connecting LOGO! ...0BA8 to GSM/GPRS networks	1	6GK7142-7BX00-0AX0		1	1 unit 5P1
LOGO! CMR2040 For connecting LOGO! ...0BA8 to LTE network	5	6GK7142-7EX00-0AX0		1	1 unit 5P1

For accessories, [see page 10/34 onwards](#).

More information
Selection Tools

To assist in selecting the right Industrial Ethernet switches as well as in the configuration of the LOGO! logic module, the TIA Selection Tool is available.

TIA Selection Tool, [see www.siemens.com/tia-selection-tool](#)

LOGO! Logic Modules

Accessories

Selection and ordering data

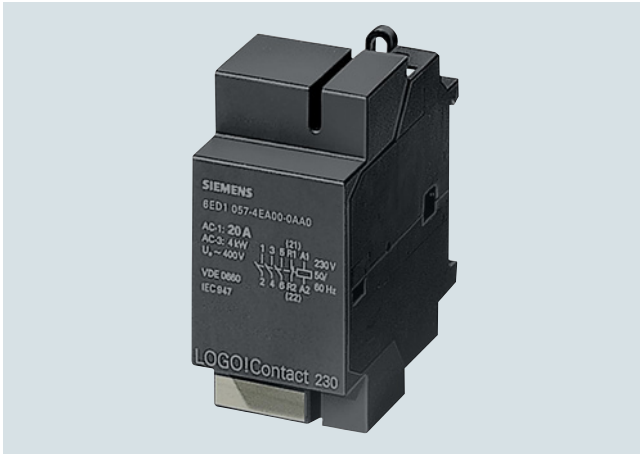
Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for LOGO! 8						
LOGO! TDE text display 6-line text display, can be connected to all LOGO! 8 versions with and without display, with 2 Ethernet interfaces; including installation accessories <u>Note:</u> Requires additional 12 V DC power supply or 24 V AC/DC power supply.	1	6ED1055-4MH08-0BA0		1	1 unit	200
LOGO! Software						
LOGO!Soft Comfort V8 For programming on the PC in LAD/FBD; runs on Windows 8, 7, XP, Linux and Mac OSX; on DVD	1	6ED1058-0BA08-0YA1		1	1 unit	200
LOGO! 8 Starter Kits						
In TANOS box, with LOGO! 8, LOGO!Soft Comfort V8, WinCC Basic, Ethernet cable						
LOGO! Starter Kit 12/24 RCE With LOGO! 12/24 RCE, power supply, screwdriver, in Systainer	30	6ED1057-3BA01-0AA8		1	1 unit	2SP
LOGO! Starter Kit 230 RCE With LOGO! 230 RCE, power supply, screwdriver, in Systainer	30	6ED1057-3BA03-0AA8		1	1 unit	2SP
LOGO! Starter Kit 12/24 RCEO With LOGO! 12/24 RCEO, LOGO! TD, power supply, screwdriver, in Systainer	30	6ED1057-3BA11-0AA8		1	1 unit	2SP
LOGO! 8 KP300 Basic Starter Kit With LOGO! 12/24 RCE, LOGO! Power 24 V 1.3 A, KP300 Basic mono PN	1	6AV2132-0HA00-0AA1		1	1 unit	2SP
LOGO! 8 KP400 Basic Starter Kit With LOGO! 12/24 RCE, LOGO! Power 24 V 1.3 A, KTP400 Basic	1	6AV2132-0KA00-0AA1		1	1 unit	2SP
LOGO! 8 KTP700 Basic Starter Kit With LOGO! 12/24 RCE, LOGO! Power 24 V 1.3 A, KTP700 Basic	1	6AV2132-3GB00-0AA1		1	1 unit	2SP
Front panel assembly kits						
Front panel assembly kits						
• Width: 4 MW, with pushbuttons	22	6AG1057-1AA00-0AA3		1	1 unit	470
• Width: 8 MW, with pushbuttons	22	6AG1057-1AA00-0AA2		1	1 unit	470
Accessories for LOGO! CSM unmanaged						
SIMATIC NET cables						
IE TP Cord RJ45/RJ45						
TP cable 4 x 2 with 2 RJ45 connectors						
• 0,5 m	1	6XV1870-3QE50		1	1 unit	5K1
• 1 m	1	6XV1870-3QH10		1	1 unit	5K1
• 2 m	1	6XV1870-3QH20		1	1 unit	5K1
• 6 m	1	6XV1870-3QH60		1	1 unit	5K1
• 10 m	1	6XV1870-3QN10		1	1 unit	5K1
IE FC Outlet RJ45 For connection of Industrial Ethernet FC cables and TP cords; scaled pricing from 10 and 50 units	1	6GK1901-1FC00-0AA0		1	1 unit	5K1

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Accessories for LOGO! CMR						
Mobile wireless antennas						
ANT794-4MR	1	6NH9860-1AA00		1	1 unit	5T1
Resistant in the indoor and outdoor areas; 5 m connection cable permanently connected to the antenna; SMA connector, including mounting bracket, screws, plugs						
ANT896-4MA	1	6GK5896-4MA00-0AA3		1	1 unit	5M2
Rod antenna for mounting directly on the device; SMA male connector						
ANT896-4ME	1	6GK5896-4ME00-0AA0		1	1 unit	5M2
Cylindrical antenna for detached mounting, e.g. on a control cabinet; N-Connect female connector						
GPS antennas						
ANT895-6ML	1	6GK5895-6ML00-0AA0		1	1 unit	5M2
GPS/Glonass antenna for detached mounting in the indoor and outdoor areas, magnetic holder or screw holder, cable 30 cm with N-Connect female connector						
Antenna adapter cables						
N-Connect/SMA male/male flexible connection cable, pre-assembled connecting cable; suitable from 0 ... 6 GHz, IP68						
• 0,3 m	1	6XV1875-5LE30		1	1 unit	5M2
• 1 m	1	6XV1875-5LH10		1	1 unit	5M2
• 2 m	1	6XV1875-5LH20		1	1 unit	5M2
• 5 m	1	6XV1875-5LH50		1	1 unit	5M2
IWLAN RCoax/antenna N-Connect male/male flexible connection cables						
Flexible connection cable for connecting an RCoax cable or an antenna to a SCALANCE W-700 access point with N-Connect terminals; assembled with two connectors N-Connect male; suitable from 0 ... 6 GHz, IP68						
• 1 m	1	6XV1875-5AH10		1	1 unit	5W3
• 2 m	1	6XV1875-5AH20		1	1 unit	5W3
• 5 m	1	6XV1875-5AH50		1	1 unit	5W3
• 10 m	1	6XV1875-5AN10		1	1 unit	5W3
Control cabinet bushing						
IWLAN RCOAX N-Connect/N-Connect female/female panel feedthrough; cabinet bushing for panel thicknesses up to 4.5 mm; 2.4 GHz and 5 GHz, suitable from 0 ... 6 GHz, IP67						
LP798-2N lightning protector	1	6GK5798-2LP00-2AA6		1	1 unit	5W3
Lightning protector with N/N female/female connector for the antennas ANT 790, IP67 (-40 ... +85 °C), frequency range: 0 ... 6 GHz						
Patch cables						
IE TP Cord RJ45/RJ45						
TP cable 4 x 2 with 2 RJ45 connectors						
• 0,5 m	1	6XV1870-3QE50		1	1 unit	5K1
• 1 m	1	6XV1870-3QH10		1	1 unit	5K1
• 2 m	1	6XV1870-3QH20		1	1 unit	5K1
• 6 m	1	6XV1870-3QH60		1	1 unit	5K1
• 10 m	1	6XV1870-3QN10		1	1 unit	5K1
IE FC Outlet RJ45	1	6GK1901-1FC00-0AA0		1	1 unit	5K1
For connection of Industrial Ethernet FC cables and TP cords; scaled pricing from 10 and 50 units						
Stainless steel enclosure in IP68 degree of protection <i>NEW</i>	1	6NH3112-3BA00-1XX1		1	1 unit	5T1
Stainless steel enclosure in IP68 degree of protection; suitable for SIMATIC RTU3030C; temperature range -60 ... +135 °C; matte surface; cover with Pin Torx screws and padlock; 7 cable openings and opening for mobile radio antenna prepared Please order cable glands and sealing plugs separately in the necessary quantity.						
Aluminum enclosure in IP68 degree of protection <i>NEW</i>	1	6NH3112-3BA00-1XX3		1	1 unit	5T1
Aluminum enclosure in IP68 degree of protection; suitable for SIMATIC RTU3030C; temperature range -40 ... +80 °C; cover with Pin Torx screws; 7 cable openings and opening for mobile radio antenna prepared Please order cable glands and sealing plugs separately in the necessary quantity.						
Cable gland PG16 F for IP68 enclosure <i>NEW</i>	1	6NH3112-3BA00-1XX4		1	1 unit	5T1
Cable gland, M16, IP68, -40 ... +100 °C, nickel-plated brass, suitable for enclosures with article numbers 6NH3112-3BA00-1XX1 and 6NH3112-3BA00-1XX3 Pack quantity = 2 units						
M16 sealing plugs for IP68 enclosure <i>NEW</i>	1	6NH3112-3BA00-1XX5		1	1 unit	5T1
Sealing plug, M16, IP68, -40 to +100 °C; nickel-plated brass, suitable for enclosures with article numbers 6NH3112-3BA00-1XX1 and 6NH3112-3BA00-1XX3 pack quantity = 2 units						

LOGO! Logic Modules

LOGO!Contact

Overview



LOGO!Contact

Switching module for switching resistive loads and motors directly

Application

LOGO!Contact is a switching module for direct switching of resistive loads (up to 20 A) and motors (up to 4 kW). LOGO!Contact operates hum-free without noise pollution.

LOGO!Contact is universally applicable:

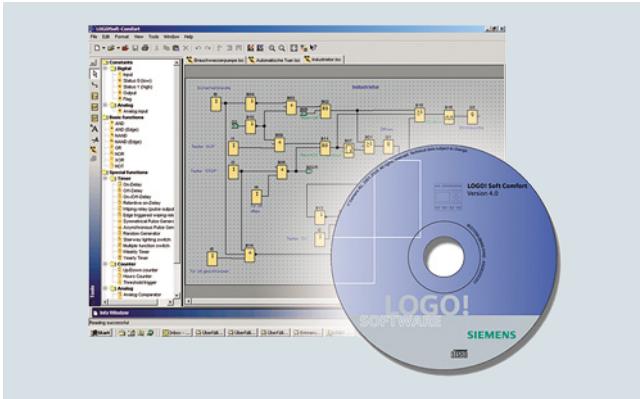
- Buildings/electrical installations
- Industry and commerce

Selection and ordering data

Version	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
LOGO!Contact					
Switching module for direct switching of resistive loads up to 20 A and motors up to 4 kW					
Switching voltage:					
• 24 V					
• 230 V					
	1	6ED1057-4CA00-0AA0		1	1 unit 200
	1	6ED1057-4EA00-0AA0		1	1 unit 200

For accessories, see page 10/34 onwards.

Overview



LOGO!Soft Comfort

- The user-friendly software for switching program generation on the PC for single mode and network mode
- Switching program generation for function diagrams (FBD) or contact diagrams (LAD)
- Additional testing, simulation, online testing and archiving of the switching programs
- Professional documentation with the help of various comment and print functions

The connection between LOGO! and the PC is made with the LOGO! PC cable (serial interface) or the LOGO! USB PC cable (USB interface).

With LOGO! 0BA7 and LOGO! 8, the connection is made via the integrated Ethernet interface.

Minimum system requirements

Windows XP (32-bit), 7 (32/64-bit) or 8 (32/64-bit)

- PC Pentium IV
- 150 MB free on hard disk
- 256 MB RAM
- SVGA graphics card with minimum resolution of 800 x 600 (256 colors)
- DVD ROM

Mac OS X

- Mac OS X 10.4

Linux

- Tested with SUSE Linux 11.3 SP2, Kernel 3.0.76
- Runs on all Linux distributions on which Java 2 runs.
- For hardware requirements, [please consult your Linux distribution.](#)

Application

LOGO!Soft Comfort is the multilingual software for switching program generation with LOGO! on the PC. LOGO!Soft Comfort can be used to program all devices of the LOGO! family.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
LOGO!Soft Comfort						
LOGO!Soft Comfort V8	1	6ED1058-0BA08-0YA1		1	1 unit	200
For programming on the PC in LAD/FBD; runs on Windows 8, 7, XP, Linux and Mac OSX; on DVD						

Relays

Timing Relays

General data

Overview



7PV15, SIRIUS 3RP25 and SIRIUS 3RP20 timing relays

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RP

Electronic timing relays are used in control, starting, and protective circuits for all switching operations involving time delays.

Their fully developed concept and space-saving, compact design make the SIRIUS 3RP timing relays ideal timer modules for control cabinet, switchgear and control manufacturers in the industry.

With their narrow design, the 7PV15 timing relays are ideal in particular for use in heating, ventilation and air-conditioning systems and in compressors. All 7PV15 timing relays in this enclosure version are suitable for snap-on mounting onto TH 35 standard mounting rails according to IEC 60175. The enclosure complies with DIN 43880.

Benefits

- The right design for every application
- Clear-cut basic range with five basic units in the case of the 7PV15 timing relays, and up to seven basic units in the case of the 3RP timing relays
- Considerable logistical advantages thanks to versions with wide voltage and wide time setting range
- No tools required for assembly or disassembly on standard mounting rails
- Cadmium-free relay contacts
- Recyclable, halogen-free enclosure
- Optimum price/performance ratio

Application

Timing relays with ON-delay

- Interference pulse suppression (gating of interference pulses)
- Gradual startup of motors so as not to overload the power supply

Timing relays with OFF-delay

- Generation of overtravel functions following removal of voltage
- Gradual, delayed shutdown, e.g. of motors or fans, to allow a plant to be shut down selectively

Clock-pulse relay

- Flashing, asymmetrical

The SIRIUS 3RA28 function modules enable the assembly of starters and contactor assemblies for direct-on-line and wye-delta starting. They include the key control functions required for the particular feeder, e.g. timing and electrical interlocking. The function modules that function as timing relays are mounted quickly and simply on SIRIUS contactors – without any great wiring effort.

The SIRIUS 3RA28 solid-state time-delay auxiliary switches which can be mounted onto contactors are designed for contactor coil voltages in the range from 24 to 240 V AC/DC (wide voltage range). Auxiliary switches for control and alarm signals are used specially for switching the smallest signals for electronics applications. They are used, for example, for allowing a pump or fan to run on, or for the delayed activation of a gate drive.

Simply by being plugged in place, the SIRIUS 3RT19 timing relays enable different functionalities required for the assembly of starters to be realized in the feeder. At the same time the timing relays for mounting onto contactors reduce the wiring work required within the feeder and save space in the control cabinet.

Device series

SIRIUS timing relays for standard rail mounting

- SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm, see page 10/39
- SIRIUS 3RP20 timing relays, 45 mm, see page 10/51
- 7PV15 timing relays, 17.5 mm, see page 10/57

SIRIUS timing relays for mounting onto contactors

- SIRIUS 3RA28 solid-state time-delay auxiliary switch blocks for mounting onto 3RT2 contactors and 3RH2 contactor relays, see page 3/101
- SIRIUS 3RA28 function modules for mounting onto 3RT2 contactors and 3RH2 contactor relays, see page 3/106
- SIRIUS 3RT19 timing relays for mounting onto 3RT1 contactors, see page 3/102

- Versions with logical separation
- Low variance: One design for distribution boards and for control cabinets
- Compliance with EMC requirements for buildings
- Environmentally friendly laser inscription instead of printing containing solvents
- Versions as snap-on modules for reducing wiring and saving space in the control cabinet
- Versions with screw terminals or alternatively with spring-type terminals

Wye-delta timing relays

- Switching over motors from Wye to delta with a dead interval of 50 ms to prevent phase-to-phase short circuits

Multifunctional timing relays

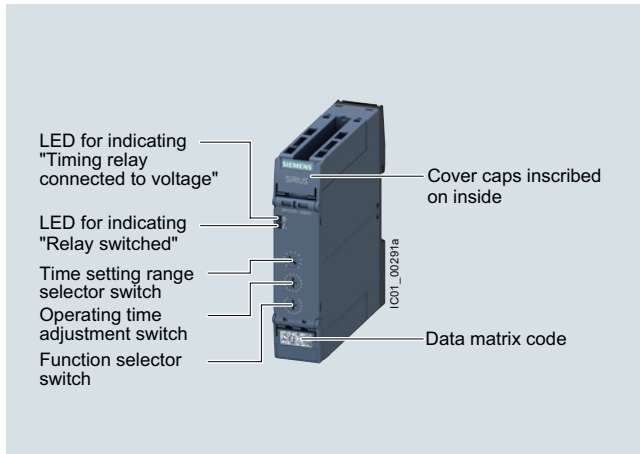
- Maximum flexibility, with a device for every application
- Available with relay and semiconductor output
- Versions for railway applications for more exacting requirements (e.g. temperature range, vibration/shock resistance and EMC)

Watchdog function

- Monitoring of cyclic events

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Overview



SIRIUS 3RP25 timing relays

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RP25

For the conversion tool, e.g. from 3RP15 to 3RP25, see www.siemens.com/sirius/conversion-tool

Electronic timing relays for general use in control systems and mechanical engineering with:

- 1 or 2 CO, 1 NO (semiconductor) or 3 NO
- Monofunction or multifunction
- Combination voltage or wide voltage range
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

Article No. scheme

Product versions		Article number								
Timing relays		3RP25	□	□	-	□	□	□	□	0
Product function/ time setting ranges	Multifunction	0	5							7 time ranges 0.05 s ... 100 h
	ON-delay	1	1							1 time range 0.5 ... 10 s
		1	2							1 time range 1 ... 3 s
		1	3							1 time range 5 ... 100 s
	OFF-delay with control signal	2	5							7 time ranges 0.05 s ... 100 h
		2	7							4 time ranges 0.05 s ... 240 s
		3	5							7 time ranges 0.05 s ... 100 h
	OFF-delay without control signal, non-volatile, passing make contact	4	0							7 time ranges 0.05 s ... 600 s
	Clock-pulse relay, flashing, asymmetrical	5	5							7 time ranges 0.05 s ... 100 h
Wye-delta function with coasting function (idling)	6	0							Wye-delta 1 ... 20 s, coasting time (idling) 600 s	
Wye-delta function	7	4							1 time range 1 ... 20 s	
		7	6							1 time range 3 ... 60 s
Connection type	Screw terminals							1		
	Spring-type terminals (push-in)							2		
Contacts	1 CO								A	
	2 CO								B	
	Semiconductors (transistor NPN)								C	
	Semiconductors (thyristor), two-wire								E	
	1 NO + 1 NO (SD)								N	
	2 CO positively driven								R	
3 NO								S		
Control supply voltage	24 V AC/DC								B	3
	200 ... 240 V/380 ... 440 V AC								M	2
	400 ... 440 V AC								T	2
	12 ... 240 V AC/DC or 24 ... 240 V AC/DC (3RP2505-.RW30)								W	3
Example										3RP25 0 5 - 1 A B 3 0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Relays

Timing Relays

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

3RP2505 multifunctional timing relays

Two setting options for implementing the multifunctions (A-M):



- ① Determination of 13 functions by the setting A to M, with 1 CO, 1 NO, 2 CO that switch in parallel.
- ② Extended function variance by selecting the time range and determining, whether 2 CO switch in parallel or whether 1 CO switches with delay + 1 CO switches immediately (1 CO + 1 CO)

Setting the functions on the device

The functions of the 3RP2505 multifunctional timing relays can be set by means of the function selector switch. Whether both CO contacts are switched in parallel or one CO contact with a delay and one instantaneously and the choice of time setting range are set by means of the time setting range selector switch. The exact operating time can be adjusted with the operating time switch.

Overview of functions

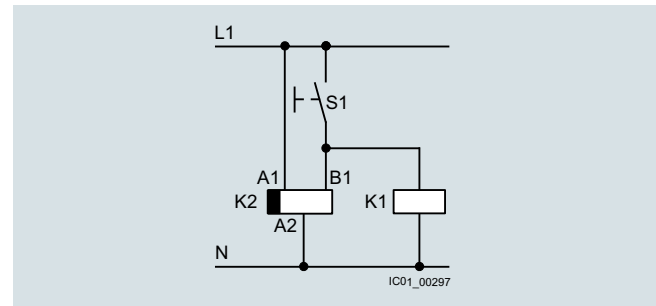
Identifica- tion letter	13 functions	27 functions
	1 CO contact (1 CO), 1 NO contact (1 NO) semiconductor, 2 CO contacts switched in parallel (2 CO) or 2 CO contacts positively driven and switched in parallel with delay (2 CO)	13 functions (A - M) 2 CO contacts switched in parallel (2 CO) + 13 functions (A - M) 1 delayed CO contact + 1 instantaneous CO contact (1 CO + 1 CO) and wye-delta function
A	ON-delay	ON-delay and instantaneous contact
B	OFF-delay with control signal	OFF-delay with control signal and instantaneous contact
C	ON-delay/OFF-delay with control signal	ON-delay/OFF-delay with control signal and instantaneous contact
D	Flashing, symmetrical, starting with interval	Flashing, symmetrical, starting with interval and instantaneous contact
E	Passing make contact, interval relay	Passing make contact, interval relay and instantaneous contact
F	Retriggerable interval relay with deactivated control signal (passing break contact with control signal)	Retriggerable interval relay with deactivated control signal (passing break contact with control signal) and instantaneous contact
G	Passing make contact, with control signal, not retriggerable (pulse-forming with control signal)	Passing make contact, with control signal, not retriggerable, (pulse-forming with control signal) and instantaneous contact
H	Additive ON-delay, instantaneous OFF with control signal	Additive ON-delay, instantaneous OFF with control signal and instantaneous contact
I	Additive ON-delay with control signal	Additive ON-delay with control signal and instantaneous contact
J	Flashing, symmetrical, starting with pulse	Flashing, symmetrical, starting with pulse and instantaneous contact
K	Pulse-delayed (fixed pulse (at 1 s) and settable pulse delay)	Pulse-delayed (fixed pulse (at 1 s) and settable pulse delay) and instantaneous contact
L	Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay)	Pulse-delayed with control signal (fixed pulse (at 1 s) and settable pulse delay) and instantaneous contact
M	Retriggerable interval relay with activated control signal (watchdog)	Retriggerable interval relay with activated control signal and instantaneous contact (watchdog)
--	--	Wye-delta function

With a set of foil labels the timing relay can be legibly marked with the functions which can be selected on the timing relay. This is supplied together with the multifunctional timing relay.

The same potential must be applied to terminals A. and B.

Note:

The activation of loads parallel to the start input is permissible when using AC/DC control voltage.



Diagram

Benefits

- Easy stock keeping and logistics thanks to low variance of devices
- Reduced space requirement in the control cabinet thanks to variants in width 17.5 mm and 22 mm
- Consistent for all functions thanks to wide voltage range from 12 to 240 V AC/DC
- Up to 27 functions according to IEC 61812 in the multifunctional timing relay with wide voltage range
- Multifunctional timing relay with semiconductor output for high switching frequencies, bounce-free and wear-free switching

Standards and approvals

- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1/DIN VDE 0435 Part 2021 "Specified time relays for industrial use"
- IEC 61000-6-2, IEC 61000-6-3 and IEC 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"

Application

Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. They guarantee a high level of functionality and a high repeat accuracy of timer settings.

Enclosure version

All timing relays are suitable for snap-on mounting onto TH 35 standard mounting rails according to IEC 60715 or for screw fixing.

Relays

Timing Relays

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

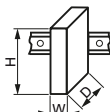
Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16354/td>
 Manual, see <https://support.industry.siemens.com/cs/ww/en/view/103532830>

Internal circuit diagrams, see [CAx Download Manager](#)
<https://support.industry.siemens.com/my/ww/en/CAxOnline#CAxOnline>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16354/faq>

Article number	3RP2505-.A, 3RP2505-.C, 3RP251., 3RP2525-.A, 3RP2527, 3RP253., 3RP255.	3RP2505-.B, 3RP2505-.R, 3RP2525-.B, 3RP254., 3RP256., 3RP257.
Width x height x depth	mm 17.5 x 100 x 90	22.5 x 100 x 90



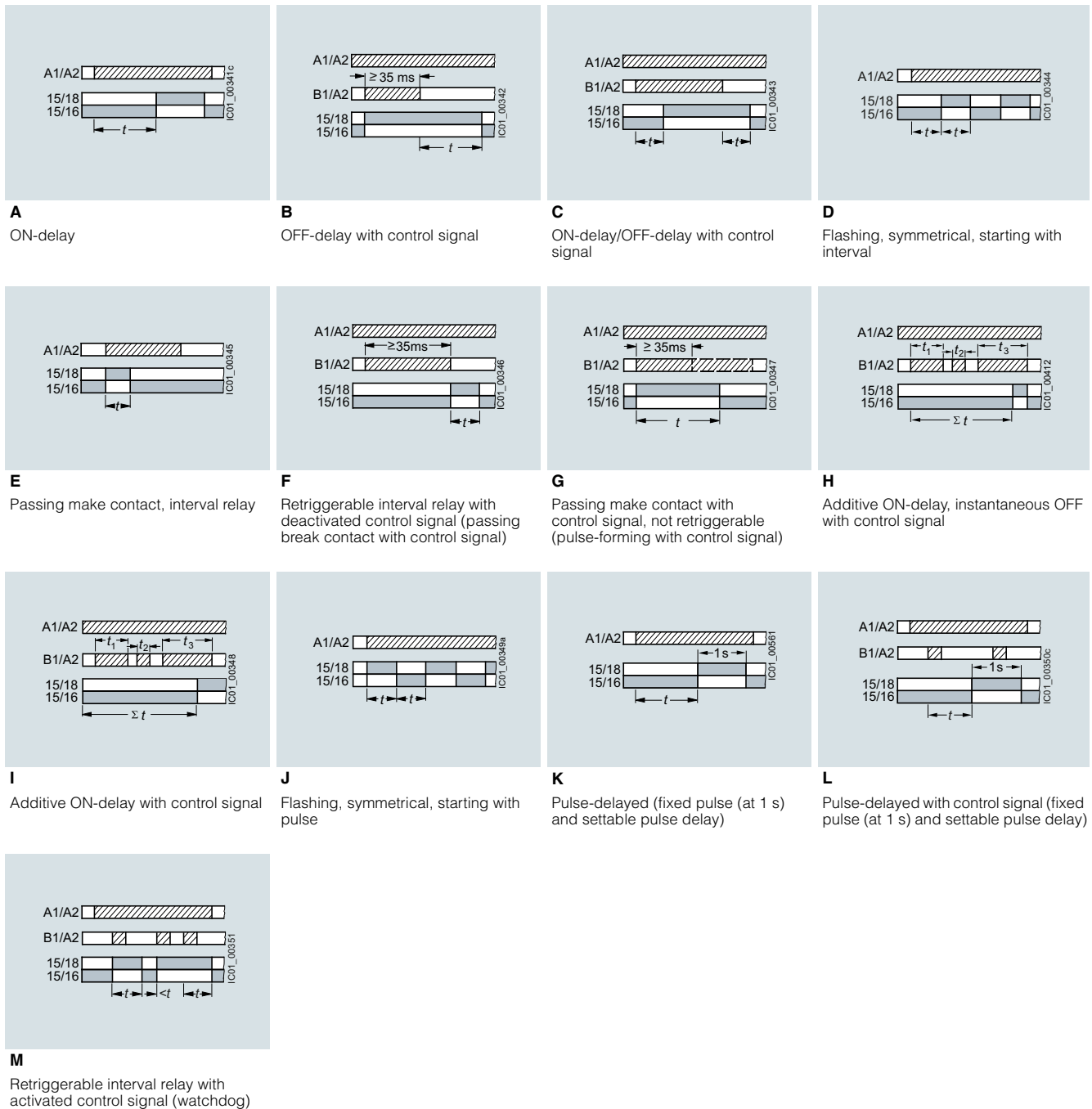
Article number	3RP25...-AB30, 3RP25...-AW30, 3RP25...-BB30, 3RP25...-BW30, 3RP25...-NW30, 3RP25...-SW30	3RP25...-BT20, 3RP25...-NM20	3RP25...-CW30	3RP25...-EW30	3RP25...-RW30
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General technical specifications:						
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3, rated value	V AC	300	500	300	--	300
Ambient temperature						
• During operation	°C	-25 ... +60				-40 ... +70
• During storage	°C	-40 ... +85				-40 ... +85
Operating range factor of the control supply voltage, rated value						
• At AC						
- At 50 Hz		0.85 ... 1.1	0.85 ... 1.1	0.85 ... 1.1	0.85 ... 1.1	0.7 ... 1.1
- At 60 Hz		0.85 ... 1.1	0.85 ... 1.1	0.85 ... 1.1	0.85 ... 1.1	0.7 ... 1.1
• At DC		0.85 ... 1.1	--	0.85 ... 1.1	0.85 ... 1.1	0.7 ... 1.1
Switching capacity current with inductive load	A	0.01 ... 3	0.01 ... 3	0.01 ... 1	0.01 ... 0.6	0.01 ... 3
Operational current of the auxiliary contacts						
• At AC-15						
- At 24 V	A	3	3	1	--	3
- At 250 V	A	3	3	1	--	3
- At 400 V	A	--	3	--	--	--
• At DC-12						
- At 24 V	A	--	--	1	--	--
- At 125 V	A	--	--	1	--	--
- At 250 V	A	--	--	1	--	--
• At DC-13						
- At 24 V	A	1	1	--	--	1
- At 125 V	A	0.2	0.2	--	--	0.2
- At 250 V	A	0.1	0.1	--	--	0.1
Thermal current	A	5	5	1	0.6	5
Mechanical endurance (operating cycles)		10 000 000				
Electrical endurance (operating cycles) for AC-15 at 230 V		100 000		300 000	100 000	

Article number	3RP25...-1...0	3RP25...-2...0
Type of electrical connection for auxiliary and control circuits	Screw terminals	Spring-type terminals (push-in)
Design of thread of connection screw	M3	--
Tightening torque	Nm 0.6 ... 0.8	--
Type of connectable conductor cross-sections		
• Solid	1x (0.5 ... 4 mm ²), 2 x (0.5 ... 2.5 mm ²)	1x (0.5 ... 4 mm ²)
• Finely stranded with end sleeve	1x (0.5 ... 4 mm ²), 2 x (0.5 ... 1.5 mm ²)	1x (0.5 ... 2.5 mm ²)
• For AWG cables		
- Solid	1x (20 ... 12), 2 x (20 ... 14)	1x (20 ... 12)
- Stranded	1x (20 ... 12), 2 x (20 ... 14)	1x (20 ... 12)

3RP25 function diagrams

Multifunction 3RP2505-.A, 1 CO, 13 functions and 3RP2505-.C, 1 NO (semiconductor), 13 functions



Legend

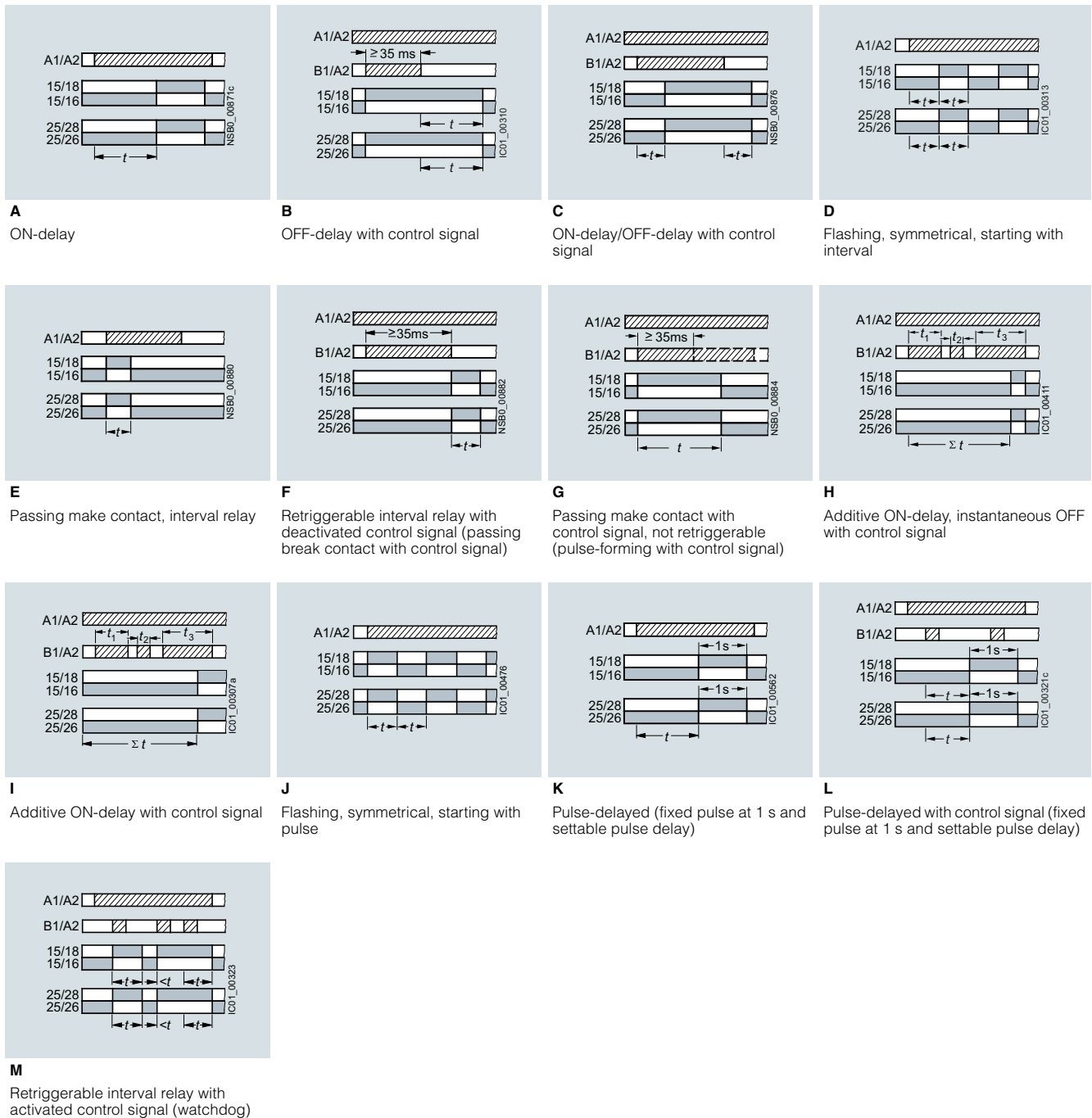
- A ... M** Identification letters
- Timing relay energized
- Contact closed
- Contact open

Relays

Timing Relays

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Multifunction 3RP2505-.R, 13 functions, 2 CO positively driven and switched in parallel with delay

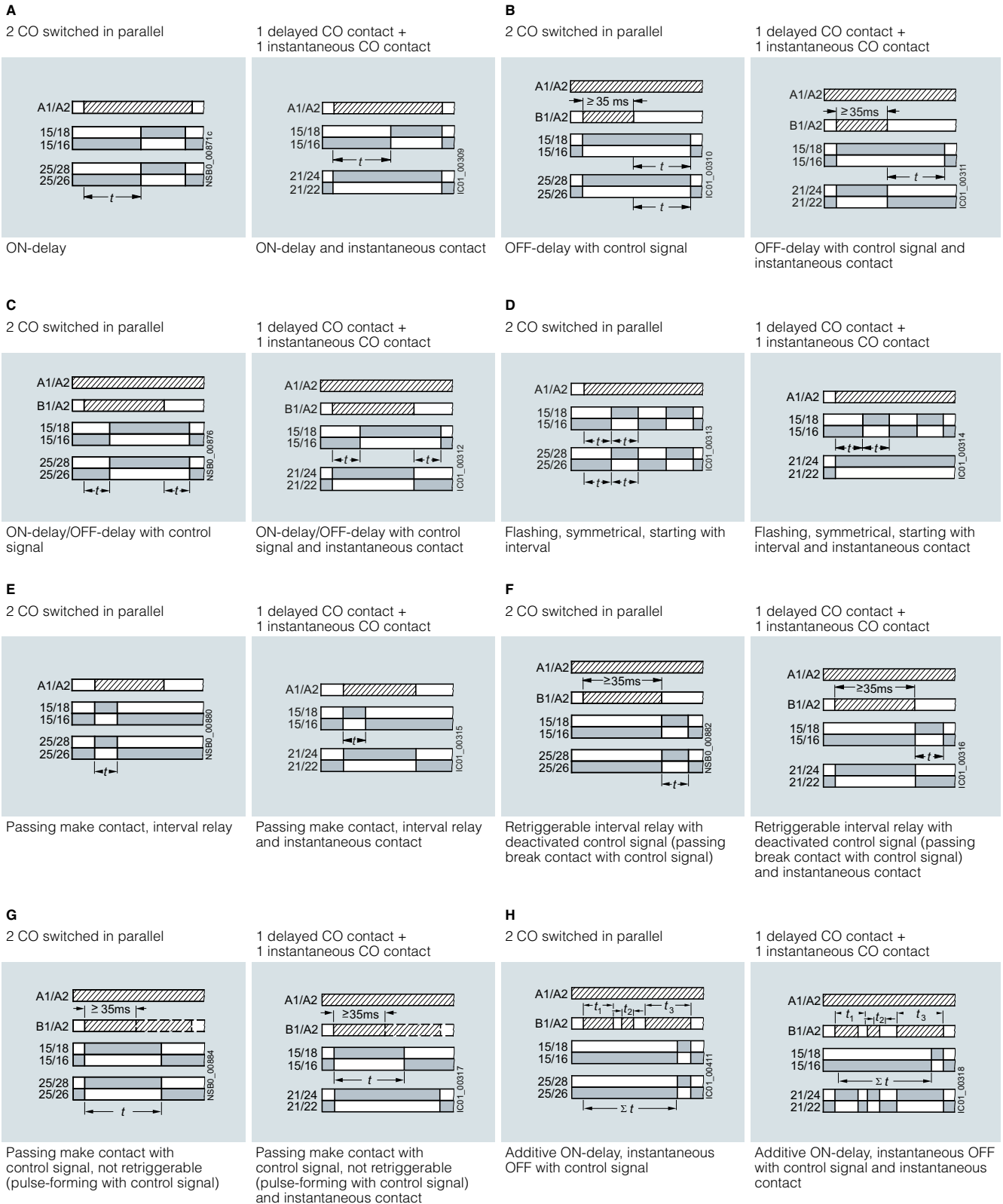


Legend

- A ... M** Identification letters
- Timing relay energized
- Contact closed
- Contact open

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Multifunction 3RP2505-B, 27 functions, 2 CO



Legend

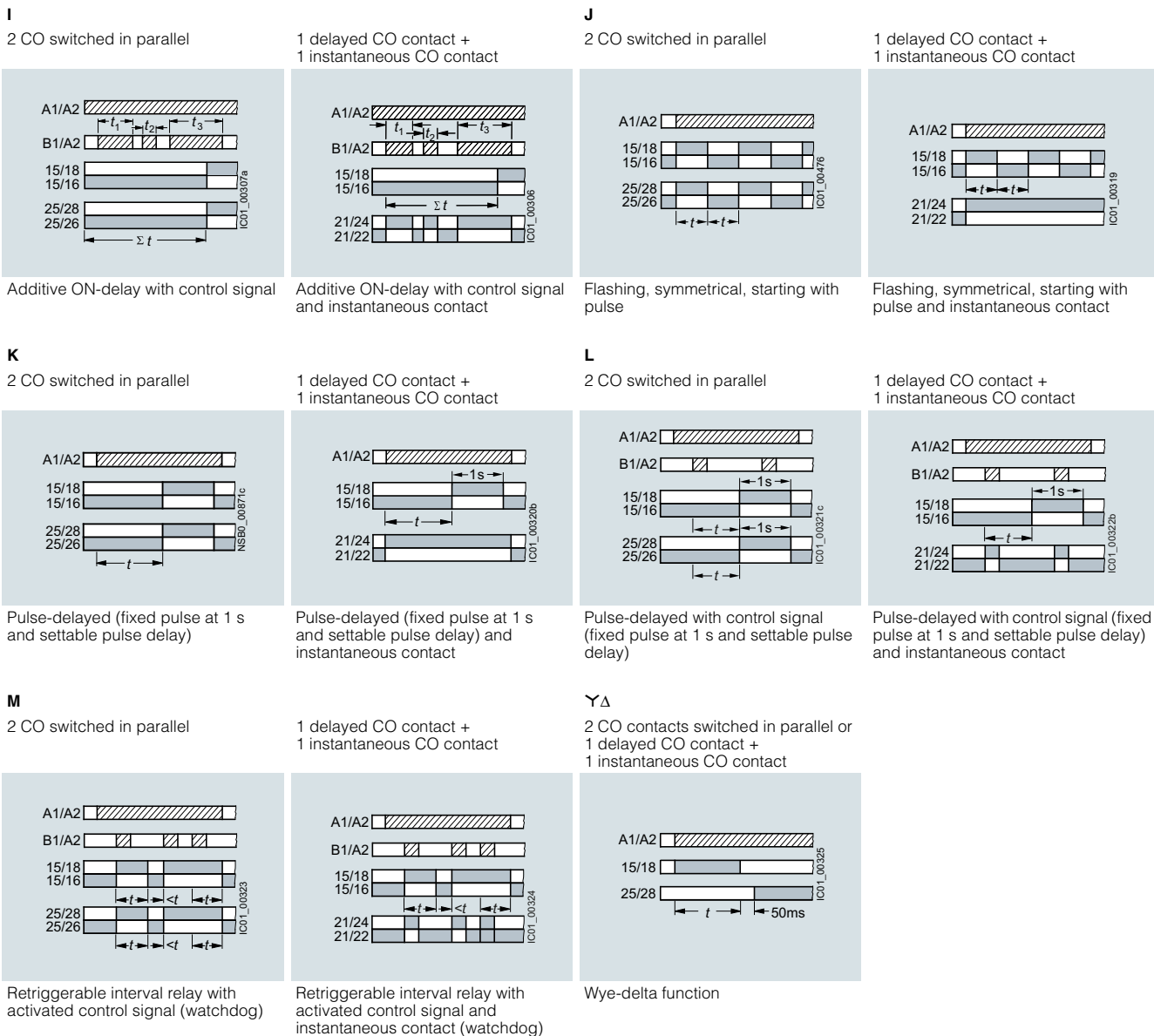
- A ... H** Identification letters
- Timing relay energized
- Contact closed
- Contact open

Relays

Timing Relays

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Multifunction 3RP2505-.B, 27 functions, 2 CO (continued)

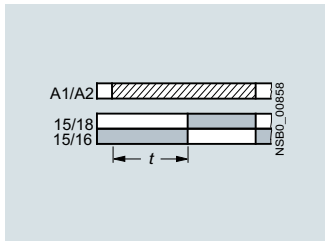


Legend

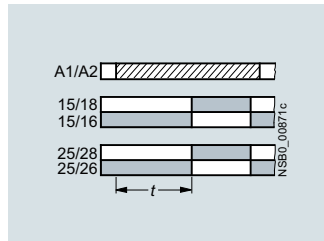
- I ... M Identification letters
- ▨ Timing relay energized
- Contact closed
- Contact open

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

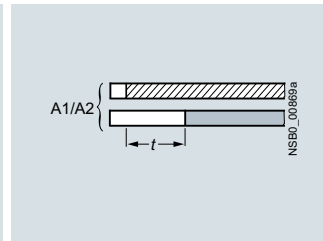
Monofunctions 3RP251. to 3RP257. ¹⁾



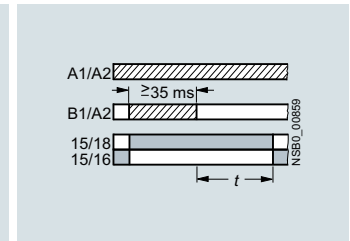
3RP251..AW30, 1 CO, ON-delay



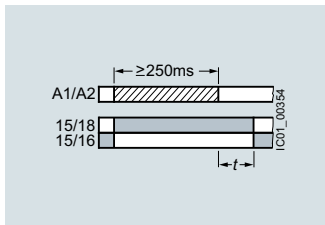
3RP2525..W30, 2 CO, ON-delay



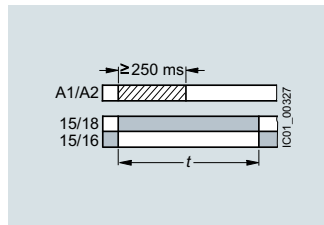
3RP2527..EW30, 1 NO (semiconductor), ON-delay



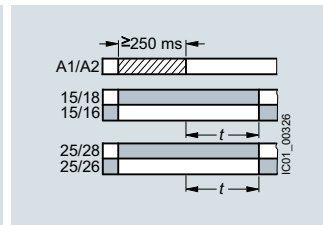
3RP2535..AW30, 1 CO, OFF-delay with control signal



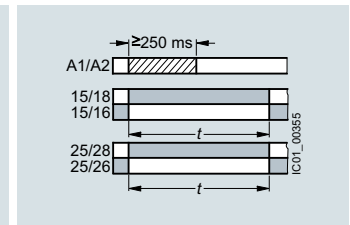
3RP2540..A.30, 1 CO, OFF-delay (N)¹⁾



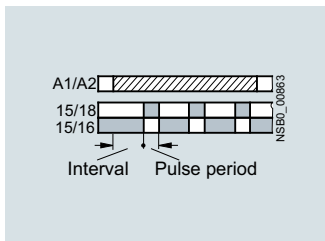
3RP2540..A.30, 1 CO, positive passing make contact (O)¹⁾



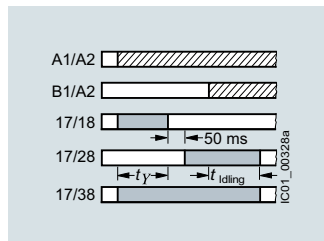
3RP2540..B.30, 2 CO, OFF-delay (N)¹⁾



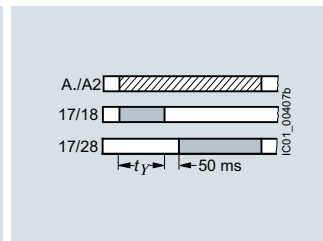
3RP2540..B.30, 2 CO, positive passing make contact (O)¹⁾



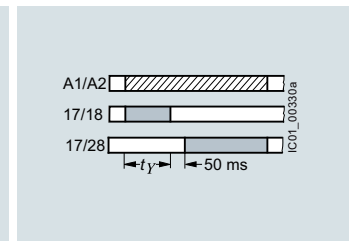
3RP2555..AW30, 1 CO, flashing, asymmetrical, starting with interval (clock-pulse relay)



3RP2560..SW30, 3 NO, wye-delta function with overtravel function (idling)



3RP257..NM20, 2 NO, wye-delta function



3RP257..NM30, 2 NO, wye-delta function

Legend

- Timing relay energized
- Contact closed
- Contact open

¹⁾ 3RP2540 has a double function:
Function N = OFF-delay
Function O = Positive passing make contact

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

Selection and ordering data



3RP2505-2AB30



3RP2505-2BB30



3RP2525-2AW30



3RP2540-2AW30



3RP2555-2AW30



3RP2576-2NW30

Number of NO contacts		Number of CO contacts		Semi-conductor output	Adjustable time	Control supply voltage		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Instantaneous switching	Delayed switching	Instantaneous switching	Delayed switching			At 50/60 Hz AC	At DC						
						V	V	d					
13 functions													
0	0	0	1	No	0.05 s ... 100 h	24	24	▶	3RP2505-□AB30		1	1 unit	41H
						12 ... 240	12 ... 240	▶	3RP2505-□AW30		1	1 unit	41H
0	1	0	0	Yes	0.05 s ... 100 h	12 ... 240	12 ... 240	2	3RP2505-□CW30		1	1 unit	41H
13 functions, suitable for railway applications													
0	0	0	2 ¹⁾	No	0.05 s ... 100 h	24 ... 240	24 ... 240	▶	3RP2505-□RW30		1	1 unit	41H
27 functions													
0	0	0	2 ²⁾	No	0.05 s ... 100 h	24	24	▶	3RP2505-□BB30		1	1 unit	41H
						400 ... 440	--	▶	3RP2505-□BT20		1	1 unit	41H
						12 ... 240	12 ... 240	▶	3RP2505-□BW30		1	1 unit	41H
ON-delay													
0	0	0	1	No	0.5 ... 10 s	12 ... 240	12 ... 240	▶	3RP2511-□AW30		1	1 unit	41H
					1 ... 30 s	12 ... 240	12 ... 240	▶	3RP2512-□AW30		1	1 unit	41H
					5 ... 100 s	12 ... 240	12 ... 240	▶	3RP2513-□AW30		1	1 unit	41H
					0.05 s ... 100 h	12 ... 240	12 ... 240	▶	3RP2525-□AW30		1	1 unit	41H
0	0	0	2	No	0.05 s ... 100 h	24	24	2	3RP2525-□BB30		1	1 unit	41H
						12 ... 240	12 ... 240	▶	3RP2525-□BW30		1	1 unit	41H
0	1	0	0	Yes	0.05 s ... 240 s	12 ... 240	12 ... 240	2	3RP2527-□EW30		1	1 unit	41H
OFF-delay with control signal													
0	0	0	1	No	0.05 s ... 100 h	12 ... 240	12 ... 240	▶	3RP2535-□AW30		1	1 unit	41H
OFF-delay without control signal, non-volatile, passing make contact													
0	0	0	1	No	0.05 s ... 600 s	24	24	2	3RP2540-□AB30		1	1 unit	41H
						12 ... 240	12 ... 240	▶	3RP2540-□AW30		1	1 unit	41H
0	0	0	2	No	0.05 s ... 600 s	24	24	2	3RP2540-□BB30		1	1 unit	41H
						12 ... 240	12 ... 240	▶	3RP2540-□BW30		1	1 unit	41H
Clock-pulse relay, flashing, asymmetrical													
0	0	0	1	No	0.05 s ... 100 h	12 ... 240	12 ... 240	▶	3RP2555-□AW30		1	1 unit	41H
Wye-delta function with coasting function (idling)													
1	2	0	0	No	1 ... 20 s	12 ... 240	12 ... 240	2	3RP2560-□SW30		1	1 unit	41H
Wye-delta function													
1	1	0	0	No	1 ... 20 s	380 ... 440 ³⁾	--	2	3RP2574-□NM20		1	1 unit	41H
						12 ... 240	12 ... 240	▶	3RP2574-□NW30		1	1 unit	41H
1	1	0	0	No	3 ... 60 s	380 ... 440 ³⁾	--	2	3RP2576-□NM20		1	1 unit	41H
						12 ... 240	12 ... 240	▶	3RP2576-□NW30		1	1 unit	41H

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

¹⁾ Positively-driven contacts.

²⁾ Optionally 1 CO delayed + 1 CO instantaneous.

³⁾ With 3RP2574-.NM20 and 3RP2576-.NM20, connection of 200 ... 240 V AC, 50/60 Hz control voltage is also possible.

Notes:

For accessories, see page 10/50.

In the case of 3RP2505, the functions can be adjusted by means of function selector switches on the device. With a set of foil labels the timing relay can be legibly marked with the functions which can be selected on the timing relay. This is included in the scope of supply. The same potential must be applied to terminals A. and B.

For functions, see the overview of functions on page 10/40.

Relays











Timing Relays

SIRIUS 3RP25 timing relays, 17.5 mm and 22.5 mm

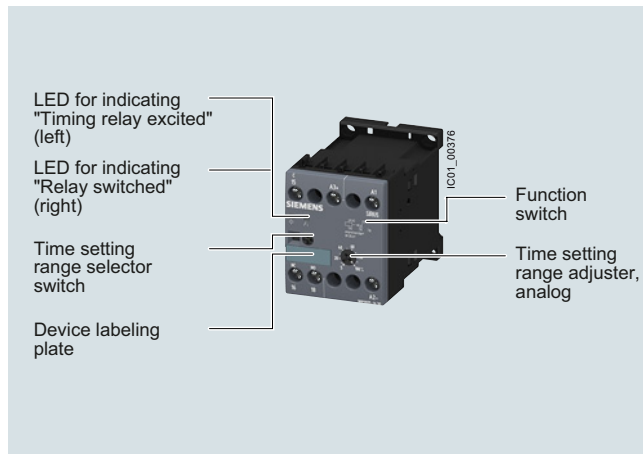
Accessories

More information

You can find information on configuring and dimensioning the accessories in the manual, see <https://support.industry.siemens.com/cs/ww/en/view/103532830>

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Accessories for enclosures							
 3ZY1321-2AA00		Sealing covers					
		<ul style="list-style-type: none"> • 17.5 mm • 22.5 mm 	2	3ZY1321-1AA00	1	5 units	41L
			2	3ZY1321-2AA00	1	5 units	41L
 3ZY1311-0AA00		Push-in lugs					
		For wall mounting	2	3ZY1311-0AA00	1	10 units	41L
 3ZY1440-1AA00		Coding pins					
		For removable terminals of SIRIUS devices in the industrial standard mounting rail enclosure; they enable the mechanical coding of terminals	2	3ZY1440-1AA00	1	12 units	41L
 3ZY1450-1AB00		Hinged cover NEW					
		Replacement cover, without terminal labeling, titanium gray	2	3ZY1450-1AA00	1	5 units	41H
		<ul style="list-style-type: none"> • 17.5 mm wide • 22.5 mm wide 	2	3ZY1450-1AB00	1	5 units	41H
Terminals for SIRIUS devices in the industrial standard mounting rail enclosure							
 3ZY1122-1BA00		Removable terminals					
		<ul style="list-style-type: none"> • 2-pole, 1 x 4 mm² 	2	Screw terminals 	1	6 units	41L
				3ZY1122-1BA00			
 3ZY1122-2BA00		Spring-type terminals (push-in) 					
		<ul style="list-style-type: none"> • 2-pole, 1 x 4 mm² 	2	3ZY1122-2BA00	1	6 units	41L
Tools for opening spring-type terminals							
 3RA2908-1A		Screwdrivers					
		For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm; length approx. 200 mm, titanium gray/black, partially insulated	2	Spring-type terminals(push-in) 	1	1 unit	41B
				3RA2908-1A			

Overview



SIRIUS 3RP20 timing relays

SIRIUS 3RP20 electronic timing relays for use in control systems and mechanical engineering with:

- 1 or 2 CO contacts
- Multifunction or monofunction
- Wide voltage range or combination voltage
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

Standards

The timing relays comply with:

- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1 "Specified time relays for industrial use"
- IEC 61000-6-2 and IEC 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"
- IEC 60947-1, Appendix N "Protective separation"

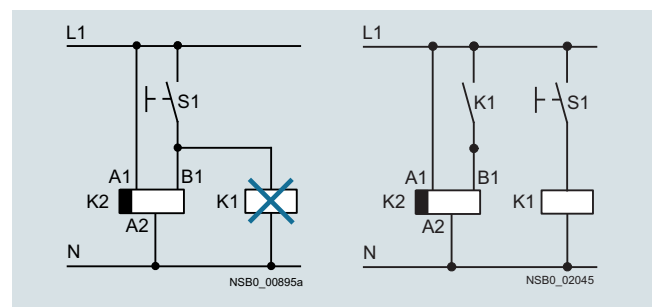
Multifunction

The functions of the 3RP2005 multifunctional timing relays can be set by means of the function selector switch. Insert labels can be used to adjust different functions of the timing relay clearly and unmistakably. The corresponding labels can be ordered as an accessory. The same potential must be applied to terminals A. and B.

For functions, see 3RP2901 label set, page 10/56.

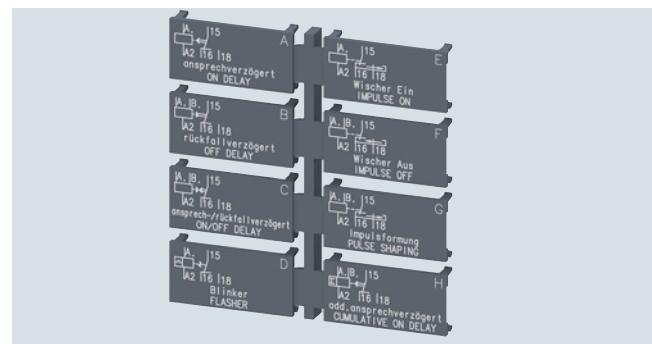
Note:

The activation of loads parallel to the start input is not permissible when using AC control voltage.



Diagrams

Accessories



Label set for marking the multifunctional relay

Article No. scheme

Product versions		Article number			
SIRIUS timing relays, 45 mm enclosure		3RP20	<input type="checkbox"/>	<input type="checkbox"/>	3 0
Product function/ time setting ranges	Multifunction	0 5			15 time ranges 0.05 s... 100 h
	ON-delay	2 5			15 time ranges 0.05 s... 100 h
Connection type	Screw terminals			1	
	Spring-type terminals			2	
Contacts	1 CO				A
	2 CO				B
Control supply voltage	24 V AC/DC/100 ... 127 V AC				Q Combination voltage
	24 V AC/DC/200 ... 240 V AC				P Combination voltage
	24 ... 240 V AC/DC				W Wide voltage range
Example		3RP20	0 5	- 1 A P 3 0	

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Relays

Timing Relays

SIRIUS 3RP20 timing relays, 45 mm

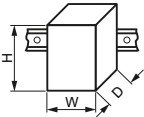


Benefits

- Suitable for 3RT miniature contactors
- Uniform design
- Ideal for small distance between standard mounting rails and/or for low mounting depth, e.g. in control boxes
- Labels are used on the multifunctional timing relay to document the function that has been set

Application

Timing relays are used in control, starting, and protective circuits for all switching operations involving time delays. They guarantee a high level of functionality and a high repeat accuracy of timer settings.

Technical specifications

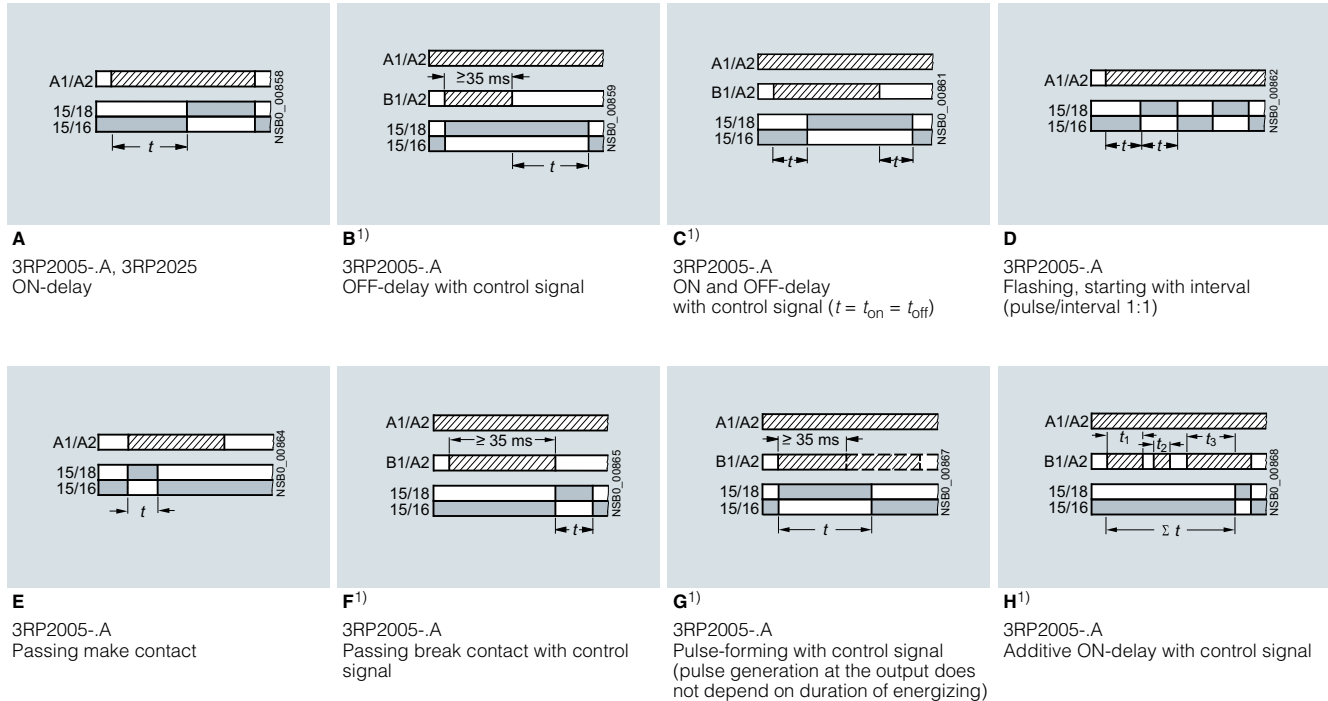
More information	
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16356/td	Internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/11647144
Operating instructions, see https://support.industry.siemens.com/cs/ww/en/view/11647144	FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16356/faq
Type	3RP2005, 3RP2025
Dimensions (W x H x D)	mm 45 x 57 x 73
	
Rated insulation voltage Pollution degree 3 Overvoltage category III	V AC 300
Permissible ambient temperature • During operation • During storage	°C -25 ... +60 °C -40 ... +85
Operating range of excitation¹⁾	0.85 ... 1.1 x U_N at AC; 0.8 ... 1.25 x U_N at DC; 0.95 ... 1.05 times the rated frequency
Mechanical endurance	Operating cycles 10 x 10 ⁶
Electrical endurance at I_e	Operating cycles 1 x 10 ⁵
Connection type	 Screw terminals
• Terminal screw • Solid • Finely stranded with end sleeve • Stranded • AWG cables • Tightening torque	mm ² M3 (for standard screwdriver, size 2 and Pozidriv 2) mm ² 2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾ mm ² 2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾ AWG 2 x (0.5 ... 1.5) ²⁾ , 2 x (0.75 ... 2.5) ²⁾ AWG 2 x (18 ... 14) Nm 0.8 ... 1.2
Connection type	 Spring-type terminals
• Solid • Finely stranded with end sleeve • Finely stranded without end sleeve • AWG cables, solid or stranded • Max. external diameter of the conductor insulation	mm ² 2 x (0.25 ... 2.5) mm ² 2 x (0.25 ... 1.5) mm ² 2 x (0.25 ... 2.5) AWG 2 x (24 ... 14) mm 3.6

¹⁾ If nothing else is stated.

²⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

3RP20 function diagrams and 3RP2901 label set

1 CO contact



Legend

A ... H Identification letters for 3RP2005

▨ Timing relay energized

■ Contact closed

□ Contact open

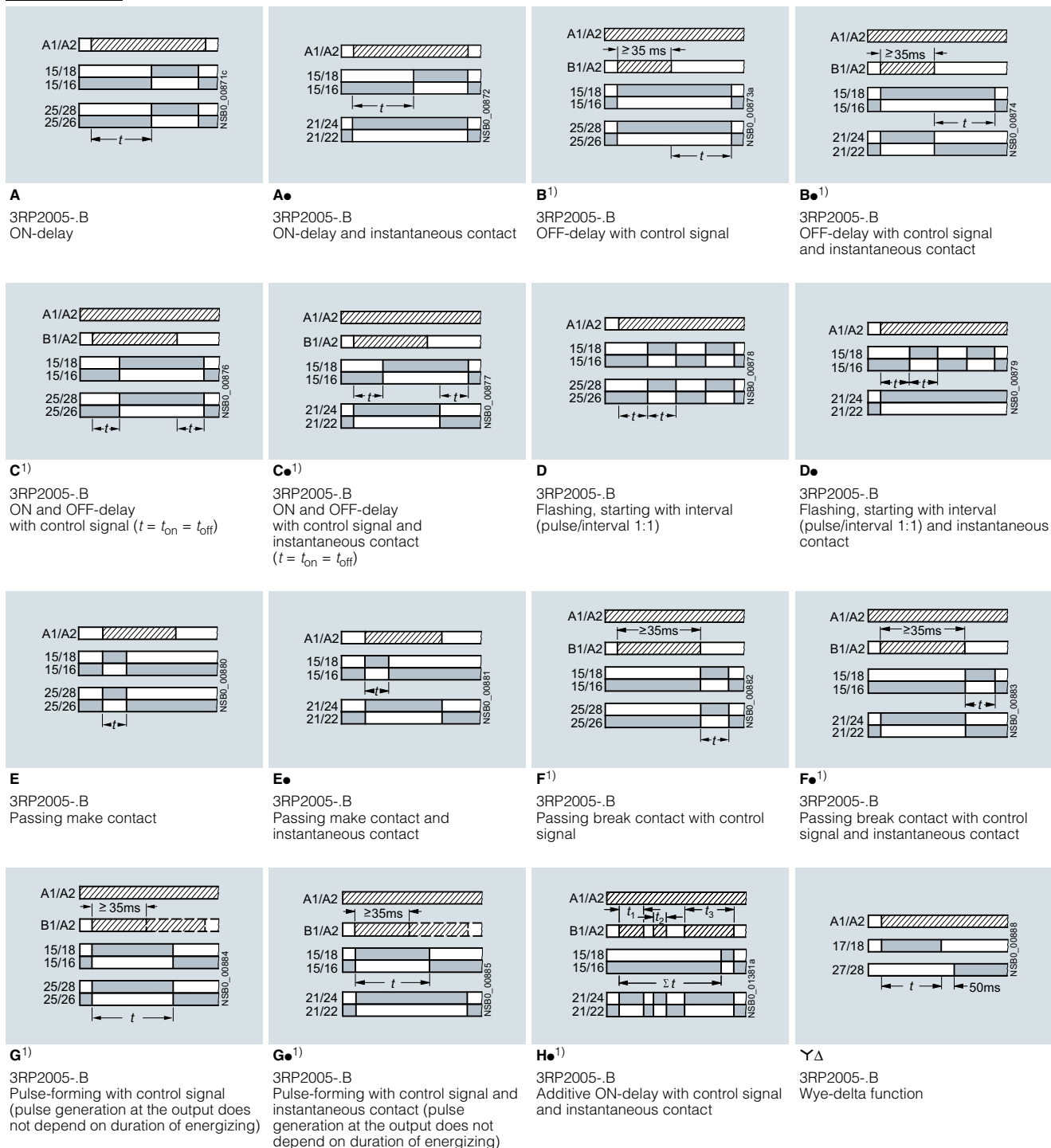
¹⁾ Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable). This does not apply to G, G● and H●, which are not retriggerable.

Relays

Timing Relays

SIRIUS 3RP20 timing relays, 45 mm

2 CO contacts



Legend

A ... H Identification letters for 3RP2005

Timing relay energized

Contact closed

Contact open

¹⁾ Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable). This does not apply to G, G● and H●, which are not retriggerable.

Selection and ordering data

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H



3RP2005-1AP30



3RP2005-1BW30



3RP2005-2AP30



3RP2025-2BW30

Version	Time setting range t	Rated control supply voltage U_s		SD	Screw terminals	SD	Spring-type terminals	
		50/60 Hz AC	DC					
		V	V	d	Article No.	Price per PU d	Article No.	Price per PU
3RP2005 timing relays, multifunction, 15 time setting ranges								
The functions can be adjusted by means of rotary switches. Insert labels can be used to adjust different functions of the 3RP2505 timing relay clearly and unmistakably. The corresponding labels can be ordered as an accessory. The same potential must be applied to terminals A. and B. For functions, see 3RP2901 label set, page 10/56.								
With LED and 1 CO contact ¹⁾ , 8 functions	0.05 ... 1 s 0.15 ... 3 s 0.5 ... 10 s	24/100 ... 127 24/200 ... 240	24 24	▶ ▶	3RP2005-1AQ30 3RP2005-1AP30	2 ▶	3RP2005-2AQ30 3RP2005-2AP30	
With LED and 2 CO contacts, 16 functions	1.5 ... 30 s 0.05 ... 1 min 5 ... 100 s 0.15 ... 3 min 0.5 ... 10 min 1.5 ... 30 min 0.05 ... 1 h 5 ... 100 min 0.15 ... 3 h 0.5 ... 10 h 1.5 ... 30 h 5 ... 100 h ∞ ²⁾	24 ... 240 ³⁾	24 ... 240 ⁴⁾	▶	3RP2005-1BW30	2	3RP2005-2BW30	
3RP2025. timing relays, ON-delay, 15 time setting ranges								
With LED and 1 CO contact ¹⁾	0.05 ... 1 s 0.15 ... 3 s 0.5 ... 10 s 1.5 ... 30 s 0.05 ... 1 min 5 ... 100 s 0.15 ... 3 min 0.5 ... 10 min 1.5 ... 30 min 0.05 ... 1 h 5 ... 100 min 0.15 ... 3 h 0.5 ... 10 h 1.5 ... 30 h 5 ... 100 h ∞ ²⁾	24/100 ... 127 24/200 ... 240	24 24	▶ ▶	3RP2025-1AQ30 3RP2025-1AP30	5 ▶	3RP2025-2AQ30 3RP2025-2AP30	

For accessories, see page 10/56.

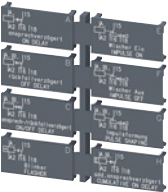

- 1) Units with protective separation.
- 2) With ∞ switch position no timing. For test purposes (ON/OFF function) on site. Relay is constantly on when activated, or relay remains constantly off when activated. Depending on which function is set.
- 3) Operating range 0.8 to 1.1 $\times U_s$.
- 4) Operating range 0.7 to 1.1 $\times U_s$.

Relays

Timing Relays

SIRIUS 3RP20 timing relays, 45 mm

Accessories

Version	Function	Identifi- cation letter	Use	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Label sets for 3RP20									
Accessories for 3RP20 (not included in the scope of supply). The label set can be used to label timing relays with the set function in English and German.									
 3RP2901-0A	1 label set (1 unit) with 8 functions	<ul style="list-style-type: none"> • ON-delay • OFF-delay with control signal • ON-delay and OFF-delay with control signal • Flashing, starting with interval • Passing make contact • Passing break contact with control signal • Pulse-forming with control signal • Additive ON-delay with control signal 	<ul style="list-style-type: none"> A B C D E F G H 	For devices with 1 CO	10	3RP2901-0A	1	5 units	41H
	 3RP2901-0B	1 label set (1 unit) with 16 functions	<ul style="list-style-type: none"> • ON-delay • OFF-delay with control signal • ON-delay and OFF-delay with control signal • Flashing, starting with interval • Passing make contact • Passing break contact with control signal • Pulse-forming with control signal • ON-delay and instantaneous contact • OFF-delay with control signal and instantaneous contact • ON-delay and OFF-delay with control signal and instantaneous contact • Flashing, starting with interval, and instantaneous contact • Passing make contact and instantaneous contact • Passing break contact with control signal and instantaneous contact • Pulse-forming with control signal and instantaneous contact • Additive ON-delay with control signal and instantaneous contact • Wye-delta function 	<ul style="list-style-type: none"> A B C D E F G A• B• C• D• E• F• G• H• YΔ 	For devices with 2 CO	10	3RP2901-0B	1	5 units
Blank inscription labels for 3RP20									
	Blank inscription labels, 20 mm x 7 mm, pastel turquoise ¹⁾		For 3RP20	20	3RT1900-1SB20		100	340 units	41B

¹⁾ PC labeling system for individual inscription
of unit labeling plates available from:
Conta-Clip Verbindungstechnik GmbH,
[see page 16/16](#).

Overview



7PV15 timing relay

Electronic timing relays for general use and in control systems, mechanical engineering and infrastructure with:

- 1 or 2 CO contacts
- Multifunction or monofunction
- Wide voltage range or combination voltage
- Single or selectable time setting ranges
- Switch position indication and voltage indication by LED

Standards

The timing relays comply with:

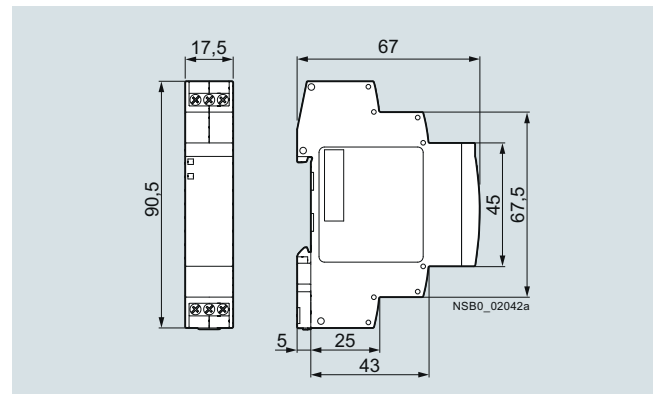
- IEC 60721-3-3 "Classification of environmental conditions"
- IEC 61812-1 "Specified time relays for industrial use"
- IEC 61000-6-2 and IEC 61000-6-4 "Electromagnetic compatibility"
- IEC 60947-5-1 "Low-voltage switchgear and controlgear – Electromechanical control circuit devices"
- DIN 43880 "Built-in equipment for electrical installations; overall dimensions and related mounting dimensions"

Multifunction

The functions of the 7PV1508-1A multifunctional timing relay can be set by means of rotary switches. The identification letters A to G are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

Enclosure version

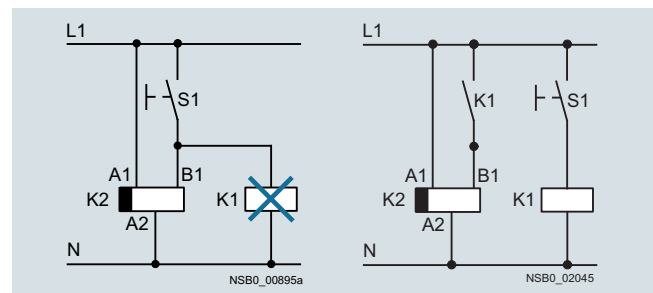
All timing relays are suitable for snap-on mounting onto TH 35 standard mounting rails according to IEC 60715. The enclosure complies with DIN 43880, 1 MW.



Dimensions

Note:

The activation of loads parallel to the start input is not permissible when using AC control voltage.



Diagrams

Relays

Timing Relays

7PV15 timing relays, 17.5 mm

Article No. scheme

Product versions		Article number	
Timing relays in industrial enclosure, 17.5 mm		7PV15	<input type="checkbox"/> <input type="checkbox"/> - 1 <input type="checkbox"/> <input type="checkbox"/> 3 0
Product function/ time setting ranges	Multifunction ON-delay	0 8	7 time ranges 0.05 s ... 100 h
		1 1	1 time range 0.05 ... 1 s
		1 2	1 time range 0.5 ... 10 s
		1 3	1 time range 5 ... 100 s
		1 8	7 time ranges 0.05 s ... 100 h
	OFF-delay with control signal	3 8	7 time ranges 0.05 s ... 100 h
	OFF-delay without control signal	4 0	7 time ranges 0.05 s ... 100 s
	Clock-pulse relay	5 8	7 time ranges 0.05 s ... 100 h
	Wye-delta function	7 8	7 time ranges 0.05 s ... 100 h
Contacts	e.g. A = 1 CO contact		<input type="checkbox"/>
Control supply voltage	e.g. W = 12 ... 240 V AC/DC		<input type="checkbox"/> Combination voltage
Example		7PV15 0 8 - 1 A W 3 0	

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.


Benefits

- Wide voltage range 12 to 240 V AC/DC
- High switching capacity, e.g. AC-15 at 230 V, 3 A
- Combination voltage, e.g. 24 V AC/DC and 200 to 240 V AC
- Changes to the time setting range during operation
- Changes to the function in the de-energized state
- High level of functionality and a high repeat accuracy of timer settings
- Integrated surge suppressor
- Function charts printed on the side of the device for reliable device adjustment

Application

Timing relays are used in control, starting and protective circuits for all switching operations involving time delays, e.g. in functional buildings, airports, building industry, etc.

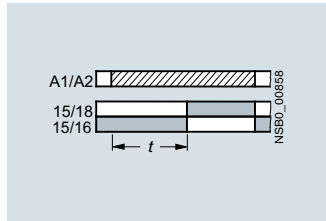
Technical specifications

More information		
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16358/td	Operating instructions and internal circuit diagrams, see https://support.industry.siemens.com/cs/ww/en/view/35210295	
Type		7PV15
Rated insulation voltage	V AC	300
Pollution degree 2, overvoltage category III		
Permissible ambient temperature		
• During operation	°C	-25 ... +55
• During storage	°C	-40 ... +70
Operating range of excitation¹⁾		0.85 ... 1.1 x U_s at V AC/DC, 50/60 Hz 0.8 ... 1.25 x U_s at 24 V DC; 0.95 ... 1.05 times the rated frequency
Rated operational current I_e		
• AC-15 at 24 ... 240 V, 50 Hz	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
Uninterrupted thermal current I_{th}	A	5
Mechanical endurance	Operating cycles	1×10^7
Electrical endurance at I_e	Operating cycles	1×10^5
Connection type		 Screw terminals
• Terminal screw		M3 (for standard screwdriver, size 2 and Pozidriv 2)
• Solid	mm ²	1 x (0.2 ... 2.5)
• Finely stranded with end sleeve	mm ²	1 x (0.25 ... 1.5)
• Finely stranded without end sleeve	mm ²	1 x (0.2 ... 1.5)
• AWG cables, solid or stranded	AWG	1 x (24 ... 14)
• Tightening torque	Nm	0.4 ... 0.5

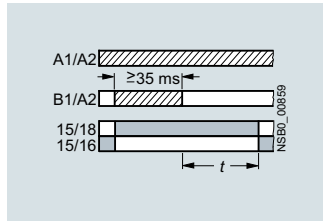
¹⁾ If nothing else is stated.

7PV15 function diagrams

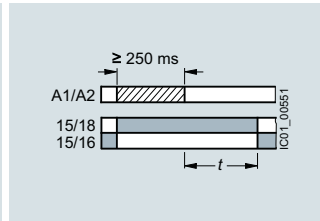
1 CO contact



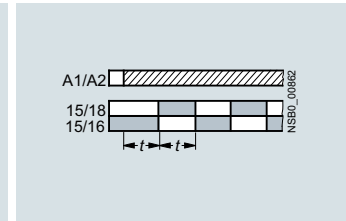
A
7PV1508-1A, 7PV1511, 7PV1512,
7PV1513, 7PV1518
ON-delay



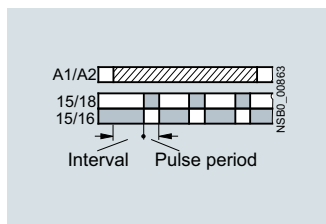
B¹⁾
7PV1508-1A, 7PV1538
OFF-delay with control signal



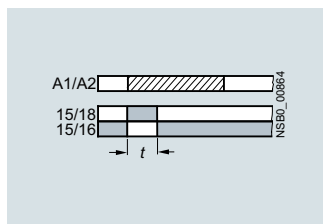
--
7PV1540
OFF-delay without control signal



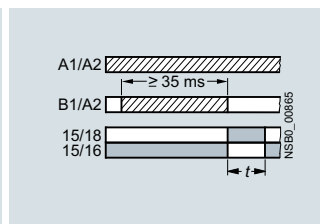
C
7PV1508-1A
Flashing, starting with interval
(pulse/interval 1:1)



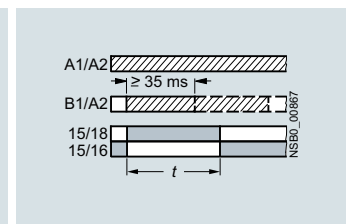
--
7PV1558
Clock-pulse, starting with interval
(dead period, pulse time, and time
setting ranges each separately
adjustable)



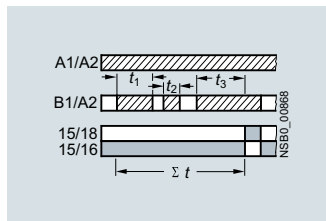
D
7PV1508-1A
Passing make contact



E¹⁾
7PV1508-1A
Passing break contact with control
signal



F¹⁾
7PV1508-1A
Pulse-forming with control signal
(pulse generation at the output does
not depend on duration of energizing)



G¹⁾
7PV1508-1A
Additive ON-delay with control signal

Legend

A ... G Identification letters for 7PV1508

▨ Timing relay energized

■ Contact closed

□ Contact open

¹⁾ Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable). This does not apply to E, F and G, which are not retriggerable.

Note:

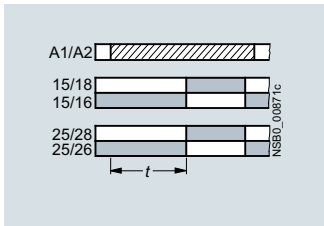
With the 7PV1508-1A multifunctional timing relay the identification letters A to G are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

Relays

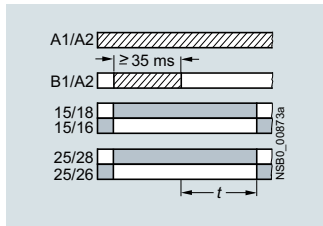
Timing Relays

7PV15 timing relays, 17.5 mm

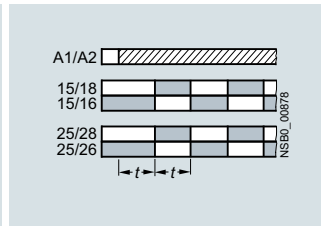
2 CO contacts



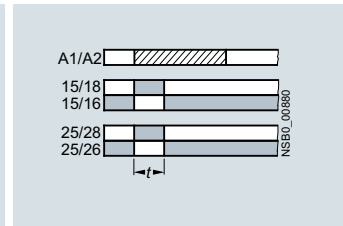
A
7PV1508-1B
ON-delay



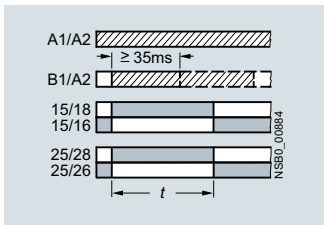
B1)
7PV1508-1B
OFF-delay with control signal



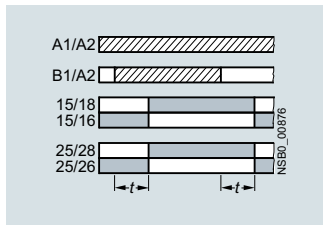
C
7PV1508-1B
Flashing, starting with interval
(pulse/interval 1:1)



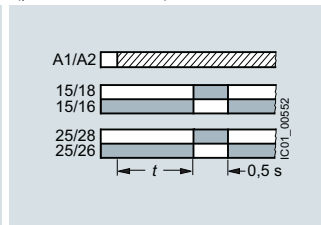
D
7PV1508-1B
Passing make contact



F1)
7PV1508-1B
Pulse-forming with control signal
(pulse generation at the output does not depend on duration of energizing)

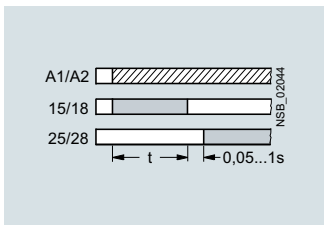


H1)
7PV1508-1B
ON-delay and OFF-delay with control signal



I
7PV1508-1B
Fixed pulse after ON-delay

2 NO contacts



-
7PV1578
Wye-delta function²⁾

Legend

A ... D, F, H, I Identification letters for 7PV1508

- Timing relay energized
- Contact closed
- Contact open

¹⁾ Note on function with start contact: A new control signal at terminal B, after the operating time has started, resets the operating time to zero (retriggerable). This does not apply to E, F and G, which are not retriggerable.

²⁾ With 7PV1578 the contacts 16 and 26 are not needed for the wye-delta function.

Note:

With the 7PV1508-1B multifunctional timing relay the identification letters A to D, F, H, I are printed on the front alongside the rotary selector switch of the unit. The related function can be found in the form of a bar graph on the side of the device.

Selection and ordering data



7PV1508-1AW30



7PV1512-1AP30



7PV1518-1AW30



7PV1538-1AW30



7PV1540-1AW30



7PV1558-1AW30



7PV1578-1BW30

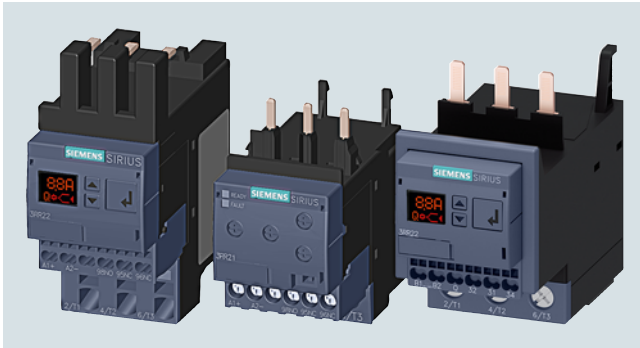
Version	Time setting range t adjustable by rotary switch to	Rated control supply voltage U_s		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		50/60 Hz AC V	DC V	d	Article No.	Price per PU		
7PV1508 timing relays, multifunction, 7 time setting ranges								
The functions can be adjusted by means of rotary switches. The same potential must be applied to terminals A. and B.								
With LED and 1 CO contact, 7 functions	0.05 ... 1 s 0.5 ... 10 s 5 ... 100 s	12 ... 240	12 ... 240	▶	7PV1508-1AW30	1	1 unit	41H
With LED and 2 CO contacts, 7 functions	30 s ... 10 min 3 min ... 1 h 30 min ... 10 h 5 ... 100 h	12 ... 240	12 ... 240	▶	7PV1508-1BW30	1	1 unit	41H
7PV151. timing relays, ON-delay, 1 time setting range								
With LED and 1 CO contact	0.05 ... 1 s	24/200 ... 240	24	▶	7PV1511-1AP30	1	1 unit	41H
	0.5 ... 10 s	24/100 ... 127	24	▶	7PV1512-1AQ30	1	1 unit	41H
		24/200 ... 240	24	▶	7PV1512-1AP30	1	1 unit	41H
	5 ... 100 s	24/100 ... 127	24	▶	7PV1513-1AQ30	1	1 unit	41H
24/200 ... 240		24	▶	7PV1513-1AP30	1	1 unit	41H	
7PV1518 timing relays, ON-delay, 7 time setting ranges								
With LED and 1 CO contact	0.05 ... 1 s	12 ... 240	12 ... 240	▶	7PV1518-1AW30	1	1 unit	41H
	0.5 ... 10 s	90 ... 127	90 ... 127	▶	7PV1518-1AJ30	1	1 unit	41H
	5 ... 100 s	180 ... 240	180 ... 240	▶	7PV1518-1AN30	1	1 unit	41H
	30 s ... 10 min							
	3 min ... 1 h 30 min ... 10 h 5 ... 100 h							
7PV1538 timing relays, OFF-delay, with control signal, 7 time setting ranges								
With LED and 1 CO contact	0.05 ... 1 s	12 ... 240	12 ... 240	▶	7PV1538-1AW30	1	1 unit	41H
	0.5 ... 10 s							
	5 ... 100 s							
	30 s ... 10 min							
	3 min ... 1 h							
	30 min ... 10 h							
	5 ... 100 h							
7PV1540 timing relays, OFF-delay, without control signal, 7 time setting ranges								
With LED and 1 CO contact	0.05 ... 1 s	12 ... 240	12 ... 240	▶	7PV1540-1AW30	1	1 unit	41H
	0.15 ... 3s							
	0.3 ... 6 s							
	0.5 ... 10 s							
	1.5 ... 30 s							
	3 ... 60 s							
	5 ... 100 s							
7PV1558 timing relays, clock-pulse relay, 7 time setting ranges								
With LED and 1 CO contact	0.05 ... 1 s	12 ... 240	12 ... 240	▶	7PV1558-1AW30	1	1 unit	41H
	0.5 ... 10 s							
	5 ... 100 s							
	30 s ... 10 min							
	3 min ... 1 h							
	30 min ... 10 h							
	5 ... 100 h							
7PV1578 timing relays, wye-delta function, 7 time setting ranges								
With LED and 2 NO contacts, dead interval 0.05 ... 1 s adjustable	0.05 ... 1 s	12 ... 240	12 ... 240	▶	7PV1578-1BW30	1	1 unit	41H
	0.5 ... 10 s							
	5 ... 100 s							
	30 s ... 10 min							
	3 min ... 1 h							
	30 min ... 10 h 5 ... 100 h							

Relays

SIRIUS 3RR21, 3RR22 Monitoring Relays for Mounting onto 3RT2 Contactors

Current and active current monitoring

Overview



SIRIUS 3RR2242, 3RR2142, 3RR2243 current monitoring relays

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RR21

The SIRIUS 3RR2 current monitoring relays are suitable for load monitoring of motors or other loads. In two or three phases they monitor the rms value of AC currents for overshooting or undershooting of set threshold values.

Whereas apparent current monitoring is used above all in connection with the rated torque or in case of overload, the active current monitoring option can be used to observe and evaluate the load factor over a motor's entire torque range.

The 3RR2 current monitoring relays can be integrated directly in the feeder by mounting onto the 3RT2 contactor; separate wiring of the main circuit is therefore superfluous. No separate transformers are required.

For a line-oriented configuration or simultaneous use of an overload relay, terminal supports for stand-alone installation are available for separate standard rail mounting.

Versions

Basic versions

The basic versions with two-phase apparent current monitoring, a CO contact output and analog adjustability provide a high level of monitoring reliability especially in the rated and overload range.

Standard versions

The standard versions monitor the current in three phases with selectable active current monitoring. They have additional diagnostics options such as residual-current monitoring and phase sequence monitoring, and they are also suitable for monitoring motors below the rated torque. These devices have an additional independent semiconductor output, an actual value indicator, and are digitally adjustable.

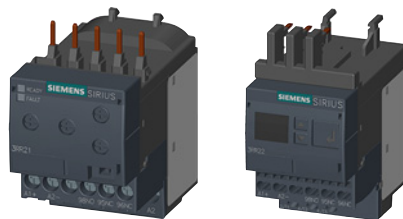
Both versions are available optionally with screw or spring-type terminals, in each case for sizes S00 and S0. With variants of size S2 the main current paths always have screw terminals; the control current side can have screw or spring-type terminals.

Note:

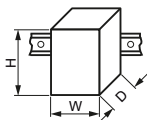
In addition to the features of the standard versions, the 3RR24 monitoring relays for mounting onto 3RT2 contactors for IO-Link also offer the possibility of transmitting the measured values and diagnostics data to a controller via an IO-Link. Furthermore, the devices can be parameterized on the devices themselves or via IO-Link.

For more information, see [page 10/70 onwards](#).

3RR21 and 3RR22 overview table

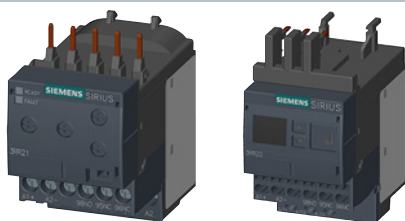


Features	3RR21	3RR22	Benefits
General data			
Sizes	S00, S0, S2	S00, S0, S2	<ul style="list-style-type: none"> • Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, soft starters, etc.) • Permit the mounting of slim-line and compact load feeders in widths of 45 mm (S00 and S0) and 55 mm (S2) • Simplify configuration
Dimensions in mm (W x H x D)	S00: 45 x 79 x 80, S0: 45 x 87 x 91, S2: 55 x 99 x 112	S00: 45 x 79 x 80, S0: 45 x 87 x 91, S2: 55 x 99 x 112	
• Screw terminals			
• Spring-type terminals	S00: 45 x 90 x 80, S0: 45 x 109 x 92, S2: 55 x 99 x 112	S00: 45 x 90 x 80, S0: 45 x 109 x 92, S2: 55 x 99 x 112	
Current range	S00: 1.6 ... 16 A S0: 4 ... 40 A S2: 8 ... 80 A	S00: 1.6 ... 16 A S0: 4 ... 40 A S2: 8 ... 80 A	<ul style="list-style-type: none"> • Is adapted to the other devices in the SIRIUS modular system • Just a single version per size with a wide setting range enables easy configuration
Permissible ambient temperature			
During operation	-25 ... +60 °C	-25 ... +60 °C	<ul style="list-style-type: none"> • Suitable for applications in the control cabinet, worldwide



SIRIUS 3RR21, 3RR22 Monitoring Relays for Mounting onto 3RT2 Contactors

Current and active current monitoring



Features	3RR21	3RR22	Benefits
Monitoring functions			
Current overshoot	✓ (Two-phase)	✓ (Three-phase)	<ul style="list-style-type: none"> Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload Enables detection of filter blockages or pumping against closed gate valves Enables drawing conclusions about wear, poor lubrication or other maintenance-relevant phenomena
Current undershoot	✓ (Two-phase)	✓ (Three-phase)	<ul style="list-style-type: none"> Enables detection of overload due to a slipping or torn belt Guarantees protection of pumps against dry running Facilitates monitoring of the functions of resistive loads such as heaters Permits energy savings through monitoring of no-load operation
Apparent current monitoring	✓	✓ (Selectable)	<ul style="list-style-type: none"> Precision current monitoring especially in a motor's rated and upper torque range
Active current monitoring	--	✓ (Selectable)	<ul style="list-style-type: none"> Optimum current monitoring over a motor's entire torque range through the patented combination of power factor and apparent current monitoring
Range monitoring	✓ (Two-phase)	✓ (Three-phase)	<ul style="list-style-type: none"> Simultaneous monitoring of current overshoot and undershoot with a single device
Phase failure, open circuit	✓ (Two-phase)	✓ (Three-phase)	<ul style="list-style-type: none"> Minimizes heating of three-phase motors during phase failure through immediate disconnection Prevents operation of hoisting equipment with reduced load carrying capacity
Phase sequence monitoring	--	✓ (Selectable)	<ul style="list-style-type: none"> Prevents starting of motors, pumps or compressors in the wrong direction of rotation
Internal ground-fault detection (residual-current monitoring)	--	✓ (Selectable)	<ul style="list-style-type: none"> Provides optimum protection of loads against high-resistance short circuits or ground faults due to moisture, condensed water, damage to the insulation material, etc. Eliminates the need for additional special equipment and thus space in the control cabinet Reduces wiring overhead and costs
Blocking current monitoring	--	✓ (Selectable)	<ul style="list-style-type: none"> Minimizes heating of three-phase motors when blocked during operation through immediate disconnection Minimizes mechanical loading of the system by acting as an electronic shear pin
Features			
RESET function	✓	✓	<ul style="list-style-type: none"> Allows manual or automatic resetting of the relay Resetting directly on the device or by switching the control supply voltage off and on (remote RESET)
ON-delay time	0 ... 60 s	0 ... 99 s	<ul style="list-style-type: none"> Enables motor starting without evaluation of the starting current Can be used for monitoring motors with lengthy start up
Tripping delay time	0 ... 30 s	0 ... 30 s	<ul style="list-style-type: none"> Permits brief threshold value violations during operation Prevents frequent warnings and disconnections with currents near the threshold values
Operating and indicating elements	LEDs and rotary potentiometers	Displays and buttons	<ul style="list-style-type: none"> For setting the threshold values and delay times and for fast and targeted diagnostics For selectable functions Displays for permanent display of measured values
Integrated contacts	1 CO contact	1 CO contact, 1 semiconductor output	<ul style="list-style-type: none"> Enable disconnection of the system or process when there is an irregularity Can be used to output signals

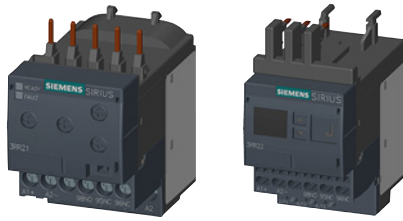
✓ Available

-- Not available

Relays

SIRIUS 3RR21, 3RR22 Monitoring Relays for Mounting onto 3RT2 Contactors

Current and active current monitoring



Features	3RR21	3RR22	Benefits
Design of load feeders			
Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	✓	✓	<ul style="list-style-type: none"> Provides optimum protection of the loads and operating personnel in the event of short circuits due to insulation faults or faulty switching operations
Electrical and mechanical matching to 3RT2 contactors	✓	✓	<ul style="list-style-type: none"> Simplifies configuration Reduces wiring overhead and costs Enables stand-alone installation as well as space-saving direct mounting
Spring-type terminals for main circuit (with S00, S0) and auxiliary circuits	✓ (optional)	✓ (optional)	<ul style="list-style-type: none"> Enables fast connections Permits vibration-resistant connections Enables maintenance-free connections
Other features			
Suitable for single- and three-phase loads	✓	✓	<ul style="list-style-type: none"> Enables the monitoring of single-phase systems through parallel infeed at the contactor or looping the current through the three phase connections
Wide setting ranges	✓	✓	<ul style="list-style-type: none"> Reduce the number of variants Minimize the configuration overhead and costs Minimize storage overhead, storage costs, tied-up capital
Wide-voltage supply range	✓ (optional)	✓ (optional)	<ul style="list-style-type: none"> Reduces the number of versions Minimizes the configuring overhead and costs Minimizes storage overhead, storage costs, tied-up capital

✓ Available

Possible combinations of 3RR21/3RR22 monitoring relays with 3RT2 contactors

Monitoring relays	Current range	Contactors (type, size, rating)		
		3RT201 S00	3RT202 S0	3RT203 S2
Type	A	3/4/5.5/7.5 kW	5.5/7.5/11/15/18.5 kW	18.5/22/30/37 kW
3RR2.41				
3RR2141	1.6 ... 16	✓	With stand-alone installation support	With stand-alone installation support
3RR2241	1.6 ... 16	✓	With stand-alone installation support	With stand-alone installation support
3RR2.42				
3RR2142	4 ... 40	With stand-alone installation support	✓	With stand-alone installation support
3RR2242	4 ... 40	With stand-alone installation support	✓	With stand-alone installation support
3RR2.43				
3RR2143	8 ... 80	With stand-alone installation support	With stand-alone installation support	✓
3RR2243	8 ... 80	With stand-alone installation support	With stand-alone installation support	✓

✓ Available

SIRIUS 3RR21, 3RR22 Monitoring Relays for Mounting onto 3RT2 Contactors

Current and active current monitoring

Article No. scheme

Product versions		Article number						
Monitoring relays		3	RR	2	1	0		
Type of setting	Analogically adjustable, two-phase	1						
	Digitally adjustable, three-phase	2						
Size	S00	1						
	S0	2						
	S2	3						
Connection type	Screw terminals				1			
	Spring-type terminals				2			
Number and type of outputs	1 CO contact					A		
	1 CO contact + 1 semiconductor					F		
Rated control supply voltage	24 V AC/DC						A	
	24 ... 240 V AC/DC						W	
Example		3	RR	2	1	0	A	F

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Can be mounted directly on 3RT2 contactors and 3RA23 reversing contactor assemblies, in other words, there is no need for additional wiring in the main circuit
- Optimally coordinated with the technical characteristics of the 3RT2 contactors
- No separate current transformer required
- Versions with wide voltage supply range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Display of ACTUAL value and status messages
- All versions with removable control current terminals
- All versions with screw terminals or spring-type terminals
- Simple determination of the threshold values through direct reference to actually measured values for setpoint loading
- Range monitoring and selectable active current measurement mean that only one device for monitoring a motor is required along the entire torque curve
- In addition to current monitoring it is also possible to monitor for broken cables, phase failure, phase sequence, residual current and motor blocking

Application

- Monitoring for current overshoot and undershoot
- Monitoring of broken conductors
- Monitoring of no-load operation and load shedding, e.g. in the event of a torn V-belt or no-load operation of a pump
- Monitoring of overload, e.g. on conveyor belts or cranes due to an excessive load
- Monitoring the functionality of electrical loads such as heaters
- Monitoring of wrong phase sequence on mobile equipment such as compressors or cranes
- Monitoring of high-impedance faults to ground, e.g. caused by damaged insulation or moisture

Relays

SIRIUS 3RR21, 3RR22 Monitoring Relays for Mounting onto 3RT2 Contactors

Current and active current monitoring

Technical specifications

More information

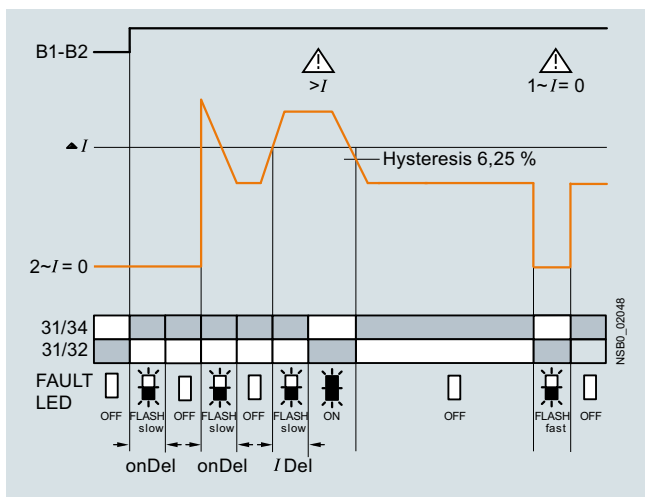
Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16205/td>
 Configuration Manual "Load Feeders – SIRIUS Modular System", see <https://support.industry.siemens.com/cs/ww/en/view/39714188>

System Manual "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>
 Manual, see <https://support.industry.siemens.com/cs/ww/en/view/54397927>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16205/faq>

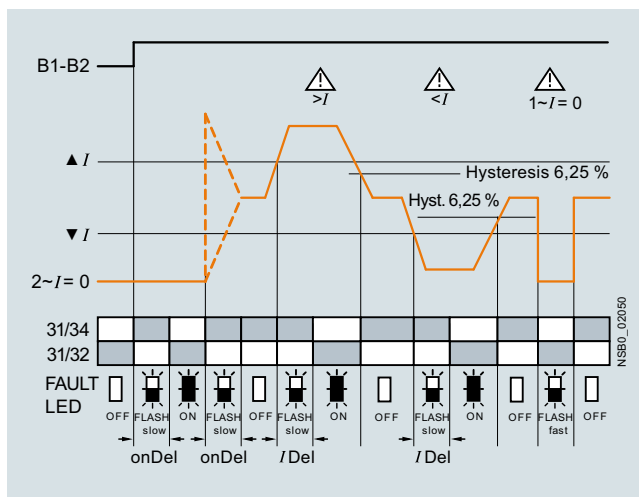
Function diagrams of 3RR214.-A.30 basic versions, analogically adjustable

Closed-circuit principle upon application of the control supply voltage

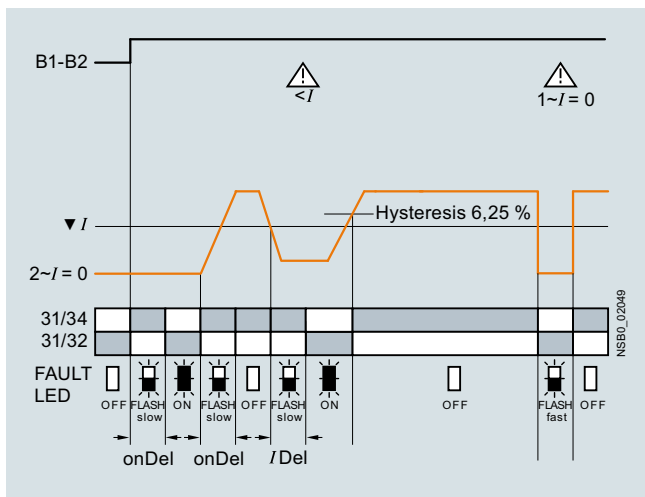
Current overshoot



Range monitoring



Current undershoot



10

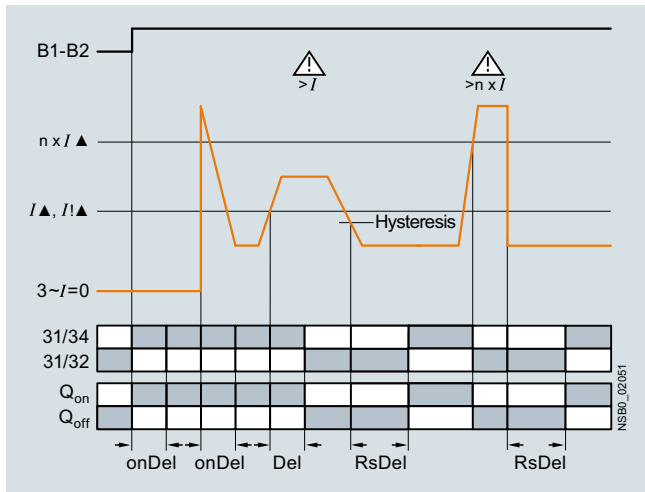
SIRIUS 3RR21, 3RR22 Monitoring Relays for Mounting onto 3RT2 Contactors

Current and active current monitoring

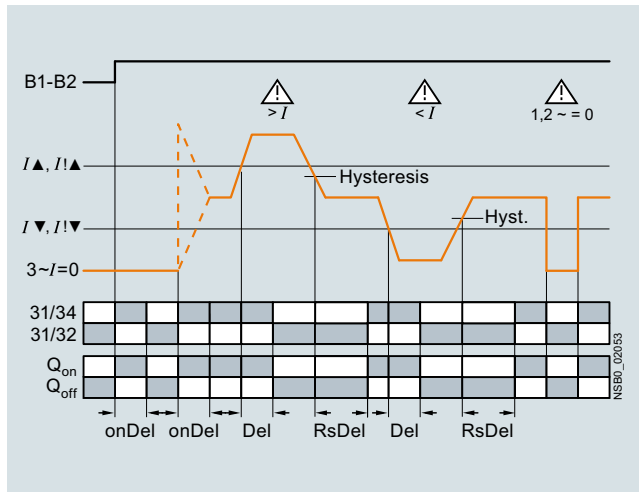
Function diagrams of 3RR224.-F.30 standard versions, digitally adjustable

With the closed-circuit principle selected upon application of the control supply voltage

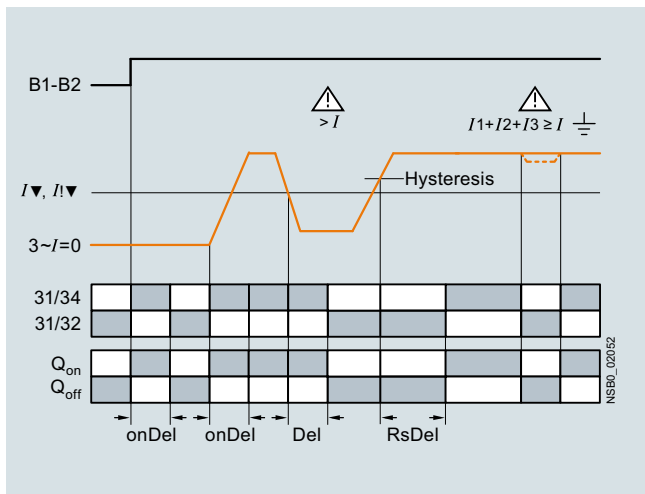
Current overshoot



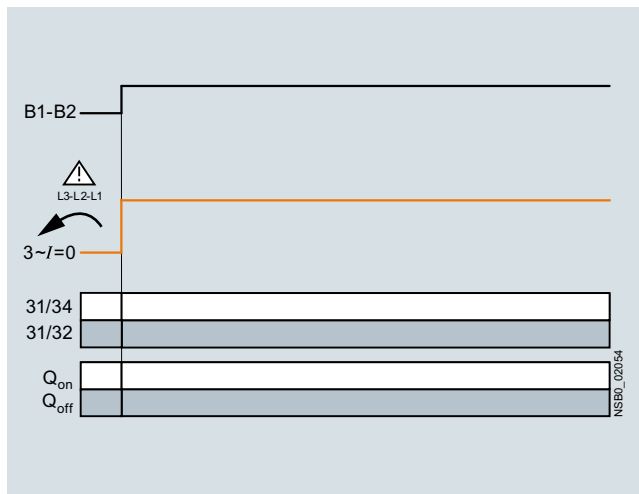
Range monitoring



Current undershoot with residual-current monitoring



Phase sequence monitoring



Relays

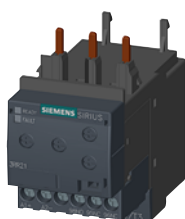
SIRIUS 3RR21, 3RR22 Monitoring Relays for Mounting onto 3RT2 Contactors

Current and active current monitoring

Selection and ordering data



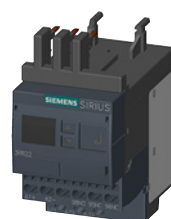
3RR2141-1AW30



3RR2142-1AW30



3RR2241-1FW30



3RR2242-2FW30



3RR2141-2AA30



3RR2243-2FW30

Size	Measuring range	Hysteresis	Supply voltage U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	A	A	V	d					

Basic versions

- Analogically adjustable
- Closed-circuit principle
- 1 CO contact
- Two-phase current monitoring
- Apparent current monitoring
- Start-up delay 0 ... 60 s
- Tripping delay 0 ... 30 s

S00	1.6 ... 16	6.25% of threshold value	24 AC/DC 24 ... 240 AC/DC	2	3RR2141-□AA30		1	1 unit	41H
				2					
S0	4 ... 40	6.25% of threshold value	24 AC/DC 24 ... 240 AC/DC	2	3RR2142-□AA30		1	1 unit	41H
				2					
S2	8 ... 80	6.25% of threshold value	24 AC/DC 24 ... 240 AC/DC	2	3RR2143-□AA30		1	1 unit	41H
				2					

Standard versions

- Digitally adjustable
- LC display
- Open- or closed-circuit principle
- 1 CO, 1 semiconductor output
- Three-phase current monitoring
- Active current or apparent current monitoring
- Phase sequence monitoring
- Residual-current monitoring
- Blocking current monitoring
- Reclosing delay time 0 ... 300 min
- Start-up delay 0 ... 99 s
- Separate settings for warning and alarm thresholds
- Tripping delay 0 ... 30 s

S00	1.6 ... 16	0.1 ... 3	24 AC/DC 24 ... 240 AC/DC	2	3RR2241-□FA30		1	1 unit	41H
				2					
S0	4 ... 40	0.1 ... 8	24 AC/DC 24 ... 240 AC/DC	2	3RR2242-□FA30		1	1 unit	41H
				2					
S2	8 ... 80	0.2 ... 16	24 AC/DC 24 ... 240 AC/DC	2	3RR2243-□FA30		1	1 unit	41H
				2					

Type of electrical connection

- Screw terminals
- Spring-type terminals

1
2

SIRIUS 3RR21, 3RR22 Monitoring Relays for Mounting onto 3RT2 Contactors

Current and active current monitoring

Accessories

Use	Version	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG			
Terminal supports for stand-alone installation¹⁾											
 3RU2916-3AA01	For 3RR21, 3RR22 For separate mounting of the overload relays or monitoring relays; screw and snap-on mounting onto TH 35 standard mounting rail according to IEC 60715	• Screw connection	S00 ▶	Screw terminals 							
			S0 ▶	3RU2916-3AA01					1	1 unit	41F
			S2 ▶	3RU2926-3AA01					1	1 unit	41F
 3RU2936-3AA01		• Spring-type connection	S00 ▶	Spring-type terminals 							
			S0 ▶						3RU2916-3AC01	1	1 unit
 3RU2926-3AC01			S00 ▶	3RU2926-3AC01							
			S0 ▶						3RU2926-3AC01	1	1 unit
Blank labels											
 3RT2900-1SB20	For 3RR21, 3RR22	Unit labeling plates²⁾ For SIRIUS devices, 20 mm x 7 mm, titanium gray	20	3RT2900-1SB20		100	340 units	41B			
Sealable covers											
 3RR2940	For 3RR21, 3RR22	Sealable covers For securing against unintentional or unauthorized adjustment of settings	2	3RR2940		1	5 units	41H			
Tools for opening spring-type terminals											
 3RA2908-1A	For auxiliary circuit connections	Screwdrivers For all SIRIUS devices with spring-type terminals; 3,0 mm x 0,5 mm; length approx. 200 mm, titanium gray/black, partially insulated	2	Spring-type terminals 		1	1 unit	41B			

¹⁾ The accessories are exactly the same as the accessories for the 3RU21 thermal overload relay and the 3RB3 electronic overload relay, see page 7/96 onwards.

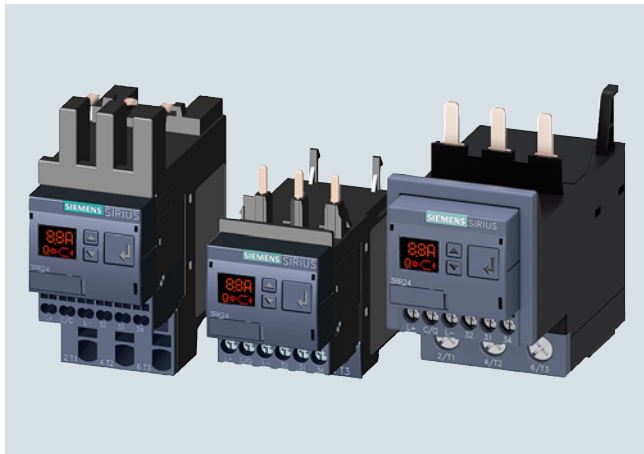
²⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/16.

Relays

SIRIUS 3RR24 Monitoring Relays for Mounting onto 3RT2 Contactors for IO-Link

Current and active current monitoring

Overview



SIRIUS 3RR2441, 3RR2442 and 3RR2443 current monitoring relays

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RR24

The SIRIUS 3RR24 current monitoring relays for IO-Link are suitable for the load monitoring of motors or other loads. In three phases they monitor the rms value of AC currents for overshooting or undershooting of set threshold values.

Whereas apparent current monitoring is used above all in connection with the rated torque or in case of overload, the active current monitoring option, which is also selectable, can be used to observe and evaluate the load factor over a motor's entire torque range.

The 3RR24 current monitoring relays for IO-Link can be integrated directly in the feeder by mounting onto the 3RT2 contactor; separate wiring of the main circuit is therefore superfluous. No separate transformers are required.

For a line-oriented configuration or simultaneous use of an overload relay, terminal supports for stand-alone installation are available for separate standard rail mounting.

The SIRIUS 3RR24 current monitoring relays for IO-Link also offer many other options based upon the monitoring functions of the conventional SIRIUS 3RR2 monitoring relays:

- Measured value transmission to a controller, including resolution and unit, may be parameterizable as to which value is cyclically transmitted
- Transmission of alarm flags to a controller
- Full diagnosis capability by inquiry as to the cause of the fault in the diagnosis data record
- Remote parameterization is also possible, in addition to or instead of local parameterization

- Rapid parameterization of the same devices by duplication of the parameterization in the controller
- Parameter transmission through upload to a controller by IO-Link call or by parameter server (if IO-Link master from IO-Link Specification V1.1 and higher is used)
- Consistent central data storage in the event of parameter change locally or via a controller
- Automatic reparameterizing when devices are exchanged
- Blocking of local parameterization via IO-Link possible
- Faults are saved in parameterizable and non-volatile fashion to prevent an automatic start-up after voltage failure and make sure diagnosis data is not lost
- Integration into the automation level provides the option of parameterizing the monitoring relays at any time via a display unit, or displaying the measured values in a control room or locally at the machine/control cabinet

Even without communication via IO-Link the devices continue to function fully autonomously:

- Parameterization can take place locally at the device, independently of a controller.
- In the event of failure or before the controller becomes available the monitoring relays work as long as the control supply voltage (24 V DC) is present.
- If the monitoring relays are operated without the controller, the 3RR24 monitoring relays for IO-Link have, thanks to the integrated SIO mode, an additional semiconductor output, which switches when the adjustable warning threshold is exceeded.

Thanks to the combination of autonomous monitoring relay function and integrated IO-Link communication, redundant sensors and/or analog signal converters – which previously took over the transmission of measured values to a controller, leading to considerable extra cost and wiring overhead – are no longer needed.

Because the output relays are still present, the monitoring relays increase the functional reliability of the system, since only the controller can fulfill the control tasks if the current measured values are available, whereas the output relays can also be used for the disconnection of the system if limit values that cannot be reached during operation are exceeded.

For more information on the IO-Link communication system, see [page 2/97 onwards](#).

Notes on security

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information on Industrial Security, see www.siemens.com/industrialsecurity.

SIRIUS 3RR24 Monitoring Relays for Mounting onto 3RT2 Contactors for IO-Link

Current and active current monitoring

3RR24 overview table



Features	3RR24	Benefits
General data		
Sizes	S00, S0, S2	<ul style="list-style-type: none"> Are coordinated with the dimensions, connections and technical characteristics of the other devices in the SIRIUS modular system (contactors, soft starters, etc.) Permit the mounting of slim-line and compact load feeders in widths of 45 mm (S00 and S0) and 55 mm (S2) Simplify configuration
Dimensions in mm (W x H x D) • Screw terminals • Spring-type terminals	 S00: 45 x 79 x 80, S0: 45 x 87 x 91, S2: 55 x 99 x 112 S00: 45 x 90 x 80, S0: 45 x 109 x 92, S2: 55 x 99 x 112	
Current range	S00: 1.6 ... 16 A S0: 4 ... 40 A S2: 8 ... 80 A	<ul style="list-style-type: none"> Is adapted to the other devices in the SIRIUS modular system Just a single version per size with a wide setting range enables easy configuration
Permissible ambient temperature		
During operation	-25 ... +60 °C	<ul style="list-style-type: none"> Suitable for applications in the control cabinet, worldwide
Monitoring functions		
Current overshoot	✓ (Three-phase)	<ul style="list-style-type: none"> Provides optimum inverse-time delayed protection of loads against excessive temperature rises due to overload Enables detection of filter blockages or pumping against closed gate valves Enables drawing conclusions about wear, poor lubrication or other maintenance-relevant phenomena
Current undershoot	✓ (Three-phase)	<ul style="list-style-type: none"> Enables detection of overload due to a slipping or torn belt Guarantees protection of pumps against dry running Facilitates monitoring of the functions of resistive loads such as heaters Permits energy savings through monitoring of no-load operation
Apparent current monitoring	✓ (Selectable)	<ul style="list-style-type: none"> Precision current monitoring especially in a motor's rated and upper torque range
Active current monitoring	✓ (Selectable)	<ul style="list-style-type: none"> Optimum current monitoring over a motor's entire torque range through the patented combination of power factor and apparent current monitoring
Range monitoring	✓ (Three-phase)	<ul style="list-style-type: none"> Simultaneous monitoring of current overshoot and undershoot with a single device
Phase failure, open circuit	✓ (Three-phase)	<ul style="list-style-type: none"> Minimizes heating of three-phase motors during phase failure through immediate disconnection Prevents operation of hoisting equipment with reduced load carrying capacity
Phase sequence monitoring	✓ (Selectable)	<ul style="list-style-type: none"> Prevents starting of motors, pumps or compressors in the wrong direction of rotation
Internal ground-fault detection (residual-current monitoring)	✓ (Selectable)	<ul style="list-style-type: none"> Provides optimum protection of loads against high-resistance short circuits or ground faults due to moisture, condensed water, damage to the insulation material, etc. Eliminates the need for additional special equipment Saves space in the control cabinet Reduces wiring overhead and costs
Blocking current monitoring	✓ (Selectable)	<ul style="list-style-type: none"> Minimizes heating of three-phase motors when blocked during operation through immediate disconnection Minimizes mechanical loading of the system by acting as an electronic shear pin
Operating hours counter	✓	<ul style="list-style-type: none"> Gives the time during which there was a measurable current in at least 2 current paths As an indicator for upcoming maintenance or replacement of machine and system components
Operating cycles counter	✓	<ul style="list-style-type: none"> Is incremented by one each time a breaking operation is detected, in other words a transition from three-phase current flow to no measurable current flow As an indicator for upcoming maintenance or replacement of contact blocks

✓ Available

Relays

SIRIUS 3RR24 Monitoring Relays for Mounting onto 3RT2 Contactors for IO-Link

Current and active current monitoring



Features	3RR24	Benefits
Features		
RESET function	✓	<ul style="list-style-type: none"> Allows manual or automatic resetting of the relay Resetting directly on the device, by switching the control supply voltage off and on or via IO-Link (remote RESET)
ON-delay time	0 ... 999.9 s	<ul style="list-style-type: none"> Enables motor starting without evaluation of the starting current Can be used for monitoring motors with lengthy start up
Tripping delay time	0 ... 999.9 s	<ul style="list-style-type: none"> Permits brief threshold value violations during operation Prevents frequent warnings and disconnections with currents near the threshold values
Operating and indicating elements	Displays and buttons	<ul style="list-style-type: none"> For setting the threshold values and delay times For selectable functions For quick and selective diagnostics Displays for permanent display of measured values
Integrated contacts	1 CO contact, 1 semiconductor output (in SIO mode)	<ul style="list-style-type: none"> Enable disconnection of the system or process when there is an irregularity Can be used to output signals
Design of load feeders		
Short-circuit strength up to 100 kA at 690 V (in conjunction with the corresponding fuses or the corresponding motor starter protector)	✓	<ul style="list-style-type: none"> Provides optimum protection of the loads and operating personnel in the event of short circuits due to insulation faults or faulty switching operations
Electrical and mechanical matching to 3RT2 contactors	✓	<ul style="list-style-type: none"> Simplifies configuration Reduces wiring overhead and costs Enables stand-alone installation as well as space-saving direct mounting
Spring-type terminals for main circuit (with S00, S0) and auxiliary circuits	✓ (optional)	<ul style="list-style-type: none"> Enables fast connections Permits vibration-resistant connections Enables maintenance-free connections
Other features		
Suitable for single- and three-phase loads	✓	<ul style="list-style-type: none"> Enables the monitoring of single-phase systems through parallel infeed at the contactor or looping the current through the three phase connections
Wide setting ranges	✓	<ul style="list-style-type: none"> Reduce the number of variants Minimize the configuration overhead and costs Minimize storage overhead, storage costs, tied-up capital
Power supply	24 V DC	<ul style="list-style-type: none"> Direct via IO-Link master or via an external auxiliary voltage independent of the IO-Link Minimizes the configuring overhead and costs

✓ Available

Possible ways of combining the 3RR24 monitoring relay with the 3RT2 contactor for IO-Link

Monitoring relays	Current range	Contactors (type, size, rating)		
		3RT201 S00 3/4/5.5/7.5 kW	3RT202 S0 5.5/7.5/11/15/18.5 kW	3RT203 S2 18.5/22/30/37 kW
3RR2441	1.6 ... 16	✓	With stand-alone installation support	With stand-alone installation support
3RR2442	4 ... 40	With stand-alone installation support	✓	With stand-alone installation support
3RR2443	8 ... 80	With stand-alone installation support	With stand-alone installation support	✓

✓ Available

Notes:

Devices required for the communication via IO-Link:

- Any controller that supports the IO-Link (e.g. ET 200SP with CPU or S7-1200); see [Catalog ST 70](#).
- IO-Link master (e.g. CM 4xIO-Link for SIMATIC ET 200SP, see [page 2/105](#) or SM 1278 for S7-1200, see [page 2/104](#)).

Each monitoring relay requires an IO-Link channel.

SIRIUS 3RR24 Monitoring Relays for Mounting onto 3RT2 Contactors for IO-Link

Current and active current monitoring

Article No. scheme

Product versions		Article number									
3RR24 monitoring relay, digitally adjustable with IO-Link		3RR2	4	4	<input type="checkbox"/>	-	<input type="checkbox"/>	A	A	4	0
Size	S00										
	S0										
	S2										
Connection type	Screw terminals										1
	Spring-type terminals										2
Example		3RR2	4	4	1	-	1	A	A	4	0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Can be mounted directly on 3RT2 contactors and 3RA23 reversing contactor assemblies, in other words, there is no need for additional wiring in the main circuit
- Optimally coordinated with the technical characteristics of the 3RT2 contactors
- No separate current transformer required
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Display of ACTUAL value and status messages
- All versions with removable control current terminals
- All versions with screw or spring-type terminals
- Simple determination of the threshold values through direct reference to actually measured values for setpoint loading
- Range monitoring and selectable active current measurement mean that only one device for monitoring a motor is required along the entire torque curve
- In addition to current monitoring it is also possible to monitor for current unbalance, broken cables, phase failure, phase sequence, residual current and motor blocking
- Integrated counter for operating cycles and operating hours to support requirements-based maintenance of the monitored machine or application
- Simple cyclical transmission of the current measured values, relay switching states and events to a controller
- Remote parameterization
- Automatic reparameterizing when devices are exchanged
- Simple duplication of identical or similar parameterizations
- Reduction of control current wiring
- Elimination of testing costs and wiring errors
- Reduction of configuration overhead
- Integration in TIA means clear diagnostics if a fault occurs
- Cost saving and space saving in control cabinet due to the elimination of AI and IO modules as well as analog signal converters and duplicated sensors

Application

- Monitoring for current overshoot and undershoot
- Monitoring of broken conductors
- Monitoring of no-load operation and load shedding, e.g. in the event of a torn V-belt or no-load operation of a pump
- Monitoring of overload, e.g. on pumps due to a dirty filter system
- Monitoring the functionality of electrical loads such as heaters
- Monitoring of wrong phase sequence on mobile equipment such as compressors or cranes
- Monitoring of high-impedance faults to ground, e.g. caused by damaged insulation or moisture

The use of SIRIUS monitoring relays for IO-Link is particularly recommended for machines and plants in which these relays, in addition to their monitoring function, are to be connected to the automation level for the rapid, simple and fault-free provision of the current measured values and/or for remote parameterization.

The monitoring relays can either relieve the controller of monitoring tasks or, as a second monitoring entity in parallel to and independent of the controller, increase the reliability in the process or in the system. In addition, the elimination of AI and IO modules allows the width of the controller to be reduced despite significantly expanded functionality.

Relays

SIRIUS 3RR24 Monitoring Relays for Mounting onto 3RT2 Contactors for IO-Link

Current and active current monitoring

Technical specifications

More information

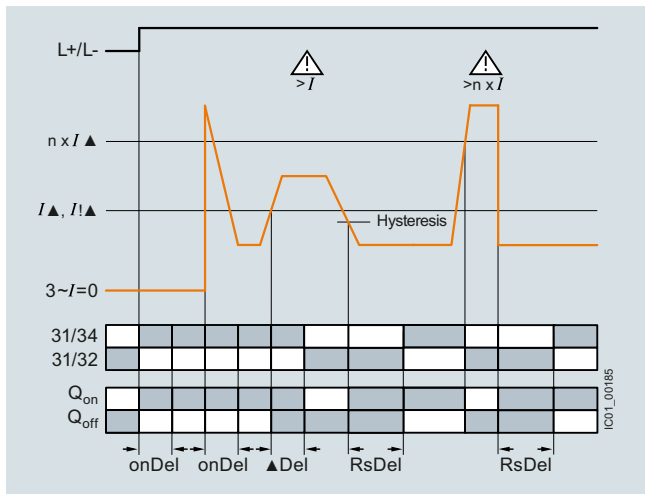
Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16206/td>
 Configuration Manual "Load Feeders – SIRIUS Modular System", see <https://support.industry.siemens.com/cs/ww/en/view/39714188>

System Manual "SIRIUS – System Overview", see <https://support.industry.siemens.com/cs/ww/en/view/60311318>
 Manual, see <https://support.industry.siemens.com/cs/ww/en/view/54375430>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16206/faq>

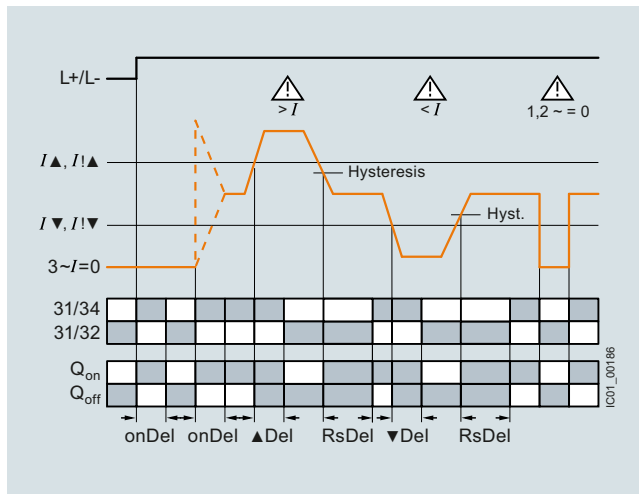
Function diagrams of 3RR24 for IO-Link, digitally adjustable

With the closed-circuit principle selected upon application of the control supply voltage

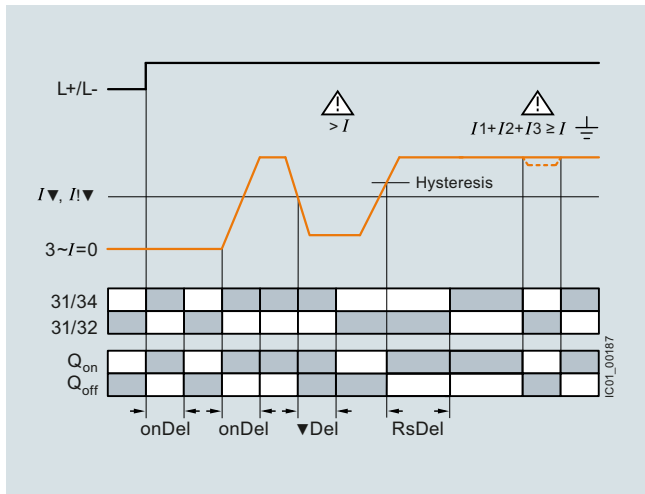
Current overshoot



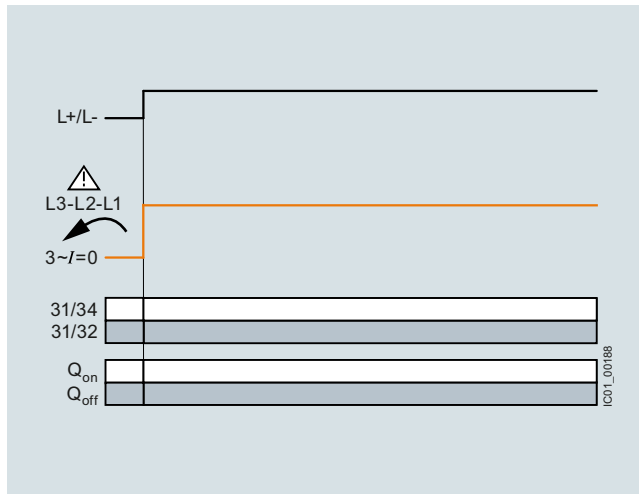
Range monitoring



Current undershoot with residual-current monitoring



Phase sequence monitoring

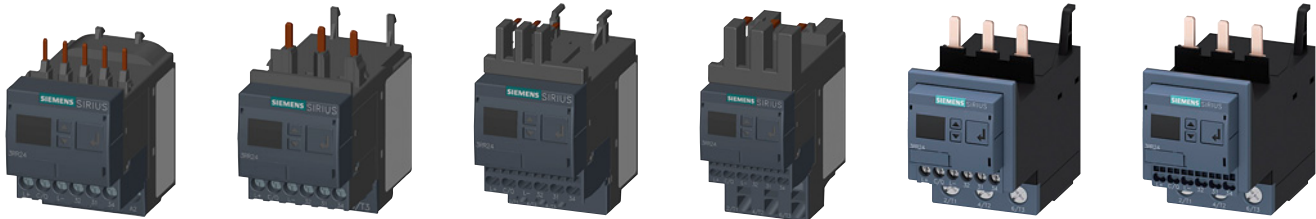


SIRIUS 3RR24 Monitoring Relays for Mounting onto 3RT2 Contactors for IO-Link

Current and active current monitoring

Selection and ordering data

SIRIUS 3RR24 current monitoring relays for IO-Link



3RR2441-1AA40

3RR2442-1AA40

3RR2441-2AA40

3RR2442-2AA40

3RR2443-1AA40

3RR2443-2AA40

Size	Measuring range	Hysteresis	Supply voltage U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	A	A	V	d					
<ul style="list-style-type: none"> Digitally adjustable LC display Open- or closed-circuit principle 1 CO contact 1 semiconductor output (in SIO mode) Three-phase current monitoring Active current or apparent current monitoring Current unbalance monitoring Phase sequence monitoring Residual-current monitoring Blocking current monitoring Operating hours counter Operating cycles counter Reclosing delay time 0 ... 300 min Start-up delay 0 ... 999.9 s Tripping delay 0 ... 999.9 s Separate settings for warning and alarm thresholds Auto or Manual RESET 									
S00	1.6 ... 16	0.1 ... 3	24 DC	2	3RR2441-□AA40		1	1 unit	41H
S0	4 ... 40	0.1 ... 8	24 DC	2	3RR2442-□AA40		1	1 unit	41H
S2	8 ... 80	0.2 ... 16	24 DC	2	3RR2443-□AA40		1	1 unit	41H

Type of electrical connection

- Screw terminals
- Spring-type terminals

1
2

Relays

SIRIUS 3RR24 Monitoring Relays for Mounting onto 3RT2 Contactors for IO-Link

Current and active current monitoring

Accessories

Use	Version	Size	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG					
Terminal supports for stand-alone installation¹⁾													
 3RU2916-3AA01	For 3RR24	For separate mounting of the overload relays or monitoring relays; screw and snap-on mounting onto TH 35 standard mounting rail according to IEC 60715		Screw terminals 									
		• Screw connection	S00						▶	3RU2916-3AA01	1	1 unit	41F
			S0						▶	3RU2926-3AA01	1	1 unit	41F
			S2	▶	3RU2936-3AA01	1	1 unit	41F					
 3RU2936-3AA01	For 3RR24			Spring-type terminals 									
		• Spring-type connection	S00						▶	3RU2916-3AC01	1	1 unit	41F
			S0	▶	3RU2926-3AC01	1	1 unit	41F					
 3RU2926-3AC01													
Blank labels													
 3RT2900-1SB20	For 3RR24	Unit labeling plates²⁾ For SIRIUS devices		3RT2900-1SB20									
									20	100	340 units	41B	
		20 mm x 7 mm, titanium gray											
Sealable covers													
 3RR2940	For 3RR24	Sealable covers		3RR2940									
									2	1	5 units	41H	
		For securing against unintentional or unauthorized adjustment of settings											
Tools for opening spring-type terminals													
 3RA2908-1A	For auxiliary circuit connections	Screwdrivers		Spring-type terminals 									
									2	3RA2908-1A	1	1 unit	41B
		For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm; length approx. 200 mm, titanium gray/black, partially insulated											

¹⁾ The accessories are exactly the same as the accessories for the 3RU21 thermal overload relay and the 3RB3 electronic overload relay, see page 7/96 onwards.

²⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/16.

Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation

General data

Benefits

- Customary screw and spring-type terminals for quick and reliable wiring
- Fast commissioning thanks to menu-guided parameterization and actual value display for limit value determination
- Reduced space requirement in the control cabinet thanks to a consistent width of 22.5 mm
- Parameterizable monitoring functions, delay times, RESET response, etc.
- Reduced stockkeeping thanks to minimized variance and large measuring ranges
- Wide-voltage power supply units for global applicability
- Device replacement without renewed wiring thanks to removable terminals
- Reliable system diagnostics thanks to actual value display and connectable fault memory
- Rapid diagnostics thanks to unambiguous error messages on the display

Application

The SIRIUS 3UG4 monitoring relays monitor the most diverse electrical and mechanical quantities in the feeder, and provide reliable protection against damage in the plant. For this purpose, they offer freely parameterizable limit values and diverse options for adapting to the respective task, and in the event of a fault, they provide clear diagnostics information.

The digitally adjustable products also display the current measured values direct on the device. This not only facilitates the display of valuable plant status information during operation, it also enables adjustment of the monitored limit values in accordance with the actual conditions.

The positive result: More selective avoidance of production faults – sustained increases in availability and productivity.

The 3UG4 monitoring relays are available for the following applications:

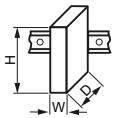
- Line and single-phase voltage monitoring
- Single-phase current monitoring or power factor and active current monitoring
- Residual-current monitoring
- Insulation monitoring
- Level monitoring
- Speed monitoring

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16367/td>
Manual and internal circuit diagrams, see <https://support.industry.siemens.com/cs/ww/en/view/54397927>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16367/faq>

Type	3UG	
General data		
Dimensions (W x H x D)		
• For 2 terminal blocks	mm	22.5 x 83 x 91
- Screw terminals	mm	22.5 x 84 x 91
- Spring-type terminals		
• For 3 terminal blocks	mm	22.5 x 92 x 91
- Screw terminals	mm	22.5 x 94 x 91
- Spring-type terminals		
• For 4 terminal blocks	mm	22.5 x 103 x 91
- Screw terminals	mm	22.5 x 103 x 91
- Spring-type terminals		
Permissible ambient temperature		
• During operation	°C	-25 ... +60
Connection type		
Screw terminals		
• Terminal screw		M3 (for standard screwdriver, size 2 and Pozidriv 2)
• Solid	mm ²	1 x (0.5 ... 4)/2 x (0.5 ... 2.5)
• Finely stranded with end sleeve	mm ²	1 x (0.5 ... 2.5)/2 x (0.5 ... 1.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)
Connection type		
Spring-type terminals		
• Solid	mm ²	2 x (0.25 ... 1.5)
• Finely stranded, with end sleeve acc. to DIN 46228	mm ²	2 x (0.25 ... 1.5)
• Finely stranded	mm ²	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)

Overview



SIRIUS 3UG4615 monitoring relay

Electronic line monitoring relays provide maximum protection for mobile machines and plants or for unstable networks. Network and voltage faults can thus be detected early and rectified before far greater damage ensues.

Depending on the version, the relays monitor phase sequence, phase failure with and without N conductor monitoring, phase asymmetry, undervoltage or overvoltage.

Phase asymmetry is evaluated as the difference between the greatest and the smallest phase voltage relative to the greatest phase voltage. Undervoltage or overvoltage exists when at least one phase voltage deviates by 20% from the set rated system voltage or the directly set limit values are overshoot or undershot. The rms value of the voltage is measured.

With the 3UG4617 or 3UG4618 relay, a wrong direction of rotation can also be corrected automatically.

Benefits

- Can be used without auxiliary voltage in any network from 160 to 630 V AC worldwide thanks to wide voltage range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Permanent display of actual value and line fault type on the digital versions
- Automatic correction of the direction of rotation by distinguishing between power system faults and wrong phase sequence
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The relays are used above all for mobile equipment, e.g. air conditioning compressors, refrigerating containers, building site compressors and cranes.

Function	Application
Phase sequence	<ul style="list-style-type: none"> • Direction of rotation of the drive
Phase failure	<ul style="list-style-type: none"> • A fuse has tripped • Failure of the control supply voltage • Broken cable
Phase asymmetry	<ul style="list-style-type: none"> • Overheating of the motor due to asymmetrical voltage • Detection of asymmetrically loaded networks
Undervoltage	<ul style="list-style-type: none"> • Increased current on a motor with corresponding overheating • Unintentional resetting of a device • Network collapse, particularly with battery power
Overtvoltage	<ul style="list-style-type: none"> • Protection of a plant against destruction due to overvoltage

Technical specifications

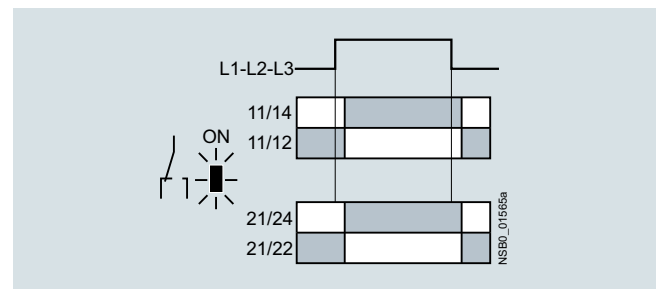
3UG4511 monitoring relays

The 3UG4511 phase sequenced relay monitors the phase sequence in a three-phase network. No adjustments are required for operation. The device has an internal power supply and works using the closed-circuit principle. If the phase sequence at the terminals L1-L2-L3 is correct, the output relay picks up after the delay time has elapsed and the LED is lit. If the phase sequence is wrong, the output relay remains in its rest position.

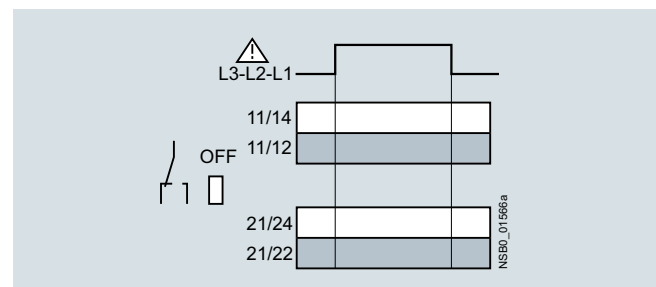
Note:

When one phase fails, connected loads (motor windings, lamps, transformers, coils, etc.) create a feedback voltage at the terminal of the failed phase due to the network coupling. Because the 3UG4511 relays are not resistant to voltage feedback, such a phase failure is not detected. Should this be required, then the 3UG4512 monitoring relay must be used.

Correct phase sequence



Wrong phase sequence



Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation

Line monitoring

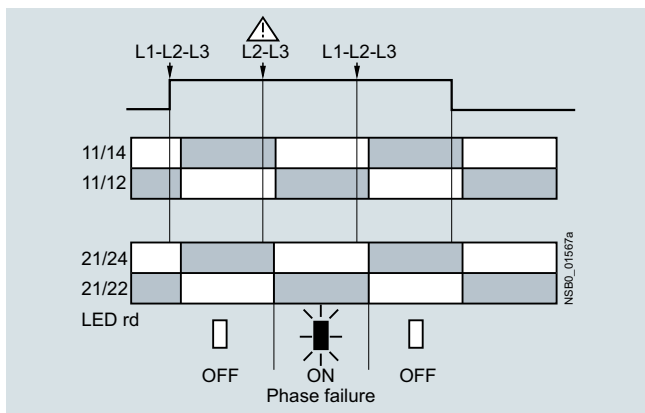
3UG4512 monitoring relays

The 3UG4512 line monitoring relay monitors three-phase networks with regard to phase sequence, phase failure and phase unbalance of 10%. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V AC and feedback through the load of up to 90%. The device has an internal power supply and works using the closed-circuit principle. No adjustments are required. If the line voltage is switched on, the green LED will light up. If the phase sequence at the terminals L1-L2-L3 is correct, the output relay picks up. If the phase sequence is wrong, the red LED flashes and the output relay remains in its rest position. If a phase fails, the red LED is permanently lit and the output relay drops.

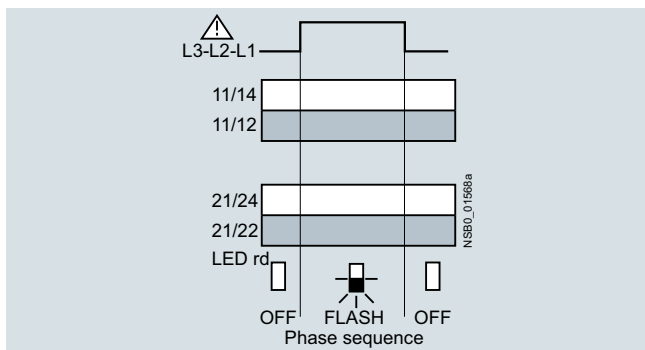
Note:

The red LED is a fault diagnostic indicator and does not show the current relay status. The 3UG4512 monitoring relay is suitable for line frequencies of 50/60 Hz.

Phase failure



Wrong phase sequence



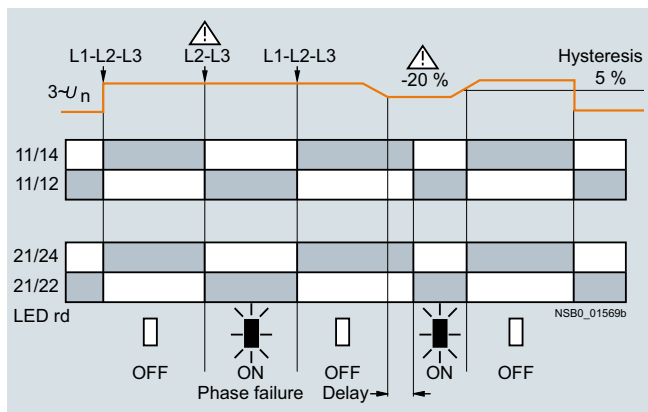
3UG4513 monitoring relays

The 3UG4513 line monitoring relay monitors three-phase networks with regard to phase sequence, phase failure, phase asymmetry and undervoltage of 20%. The device has an internal power supply and works using the closed-circuit principle. The hysteresis is 5%. The integrated response delay time T is adjustable from 0 to 20 s and responds to undervoltage. If the direction is incorrect, the device switches off immediately. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V and feedback through the load of up to 80%. If the line voltage is switched on, the green LED will light up. If the phase sequence at the terminals L1-L2-L3 is correct, the output relay picks up. If the phase sequence is wrong, the red LED flashes and the output relay remains in its rest position. If a phase fails, the red LED is permanently lit and the output relay drops.

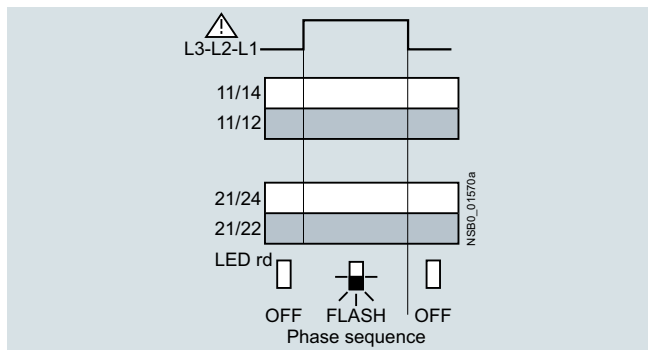
Note:

The red LED is a fault diagnostic indicator and does not show the current relay status. The 3UG4513 monitoring relay is suitable for line frequencies of 50/60 Hz.

Phase failure and undervoltage



Wrong phase sequence



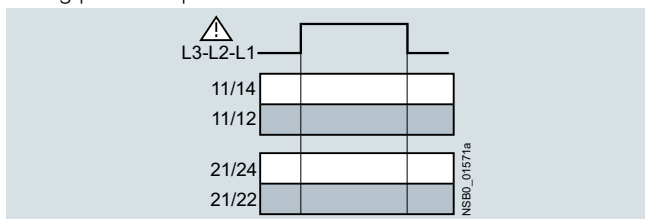
3UG4614 monitoring relays

The 3UG4614 line monitoring relay has a wide voltage range input and an internal power supply. The device is equipped with a display and is parameterized using three buttons. The unit monitors three-phase networks with regard to phase asymmetry from 5 to 20%, phase failure, undervoltage and phase sequence. The hysteresis is adjustable from 1 to 20 V. In addition the device has a response delay and ON-delay from 0 to 20 s in each case. The integrated response delay time responds to phase asymmetry and undervoltage. If the direction is incorrect, the device switches off immediately. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V and feedback through the load of up to 80%.

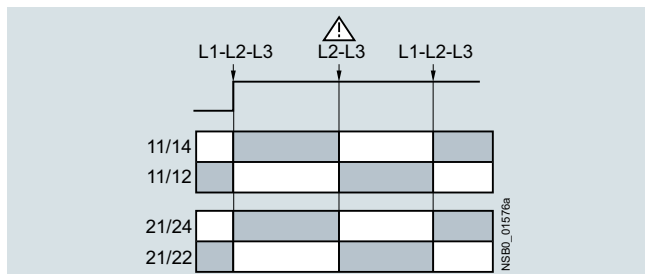
The 3UG4614 monitoring relay can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET.

With the closed-circuit principle selected

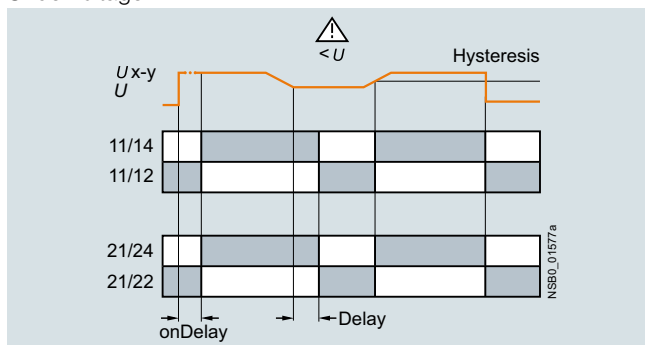
Wrong phase sequence



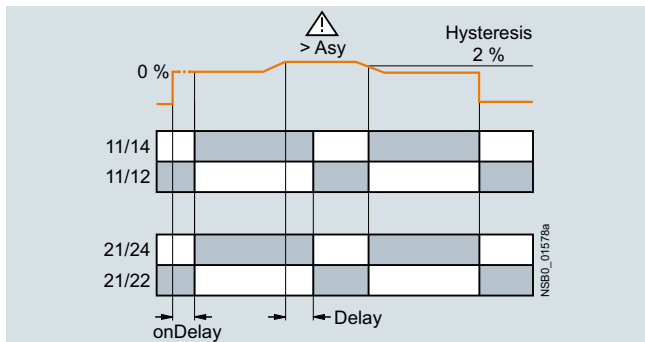
Phase failure



Undervoltage



Unbalance



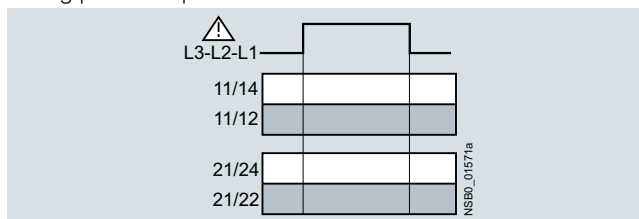
3UG4615/3UG4616 monitoring relays

The 3UG4615/3UG4616 line monitoring relay has a wide voltage range input and an internal power supply. The device is equipped with a display and is parameterized using three buttons. The 3UG4615 device monitors three-phase networks with regard to phase failure, undervoltage, overvoltage and phase sequence. The 3UG4616 monitoring relay monitors the neutral conductor as well. The hysteresis is adjustable from 1 to 20 V. In addition the device has two separately adjustable delay times for overvoltage and undervoltage from 0 to 20 s in each case. If the direction of rotation is incorrect, the device switches off immediately. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V and feedback through the load of up to 80%.

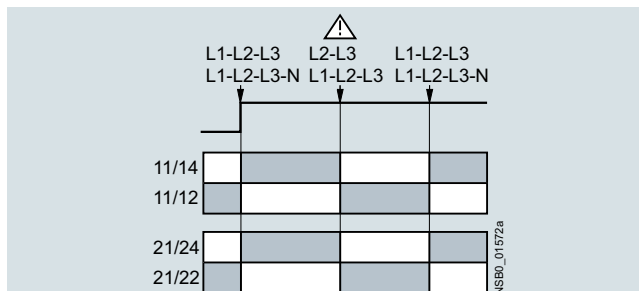
The 3UG4615/3UG4616 monitoring relay can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET.

With the closed-circuit principle selected

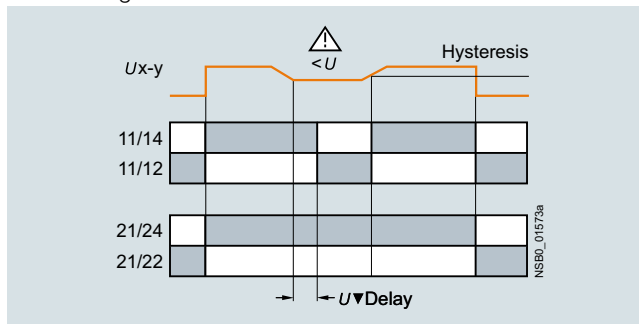
Wrong phase sequence



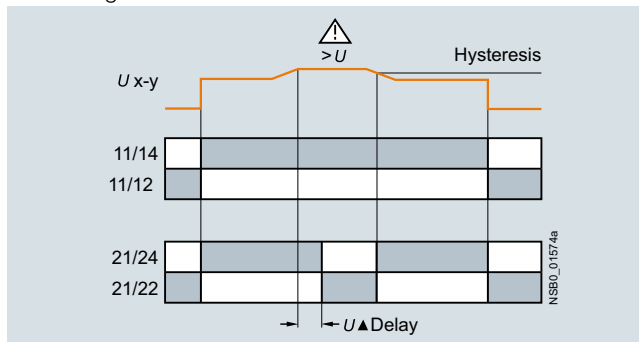
Phase failure



Undervoltage



Overvoltage



Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation

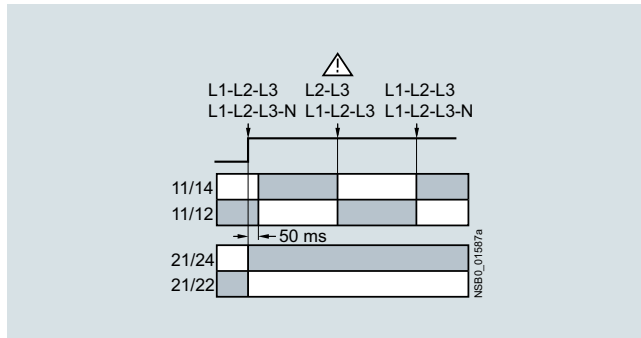
Line monitoring

3UG4617/3UG4618 monitoring relays

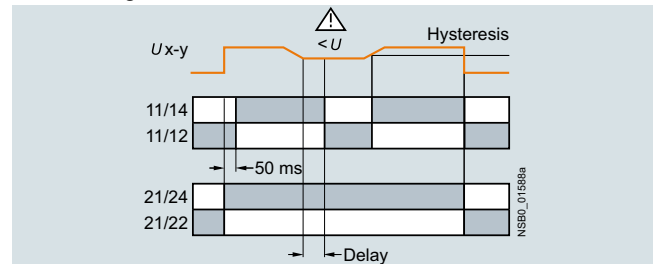
The 3UG4617/3UG4618 line monitoring relay has an internal power supply and can automatically correct a wrong direction of rotation. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from 160 to 690 V AC and feedback through the load of up to 80%. The device is equipped with a display and is parameterized using three buttons. The 3UG4617 line monitoring relay unit monitors three-phase networks with regard to phase sequence, phase failure, phase unbalance, undervoltage and overvoltage. The 3UG4618 monitoring relay monitors the neutral conductor as well. The hysteresis is adjustable from 1 to 20 V. In addition the device has delay times from 0 to 20 s in each case for overvoltage, undervoltage, phase failure and phase unbalance. The 3UG4617/3UG4618 monitoring relay can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET. The one changeover contact is used for warning or disconnection in the event of power system faults (voltage, asymmetry), the other responds only to a wrong phase sequence. In conjunction with a contactor reversing assembly it is thus possible to change the direction automatically.

With the closed-circuit principle selected

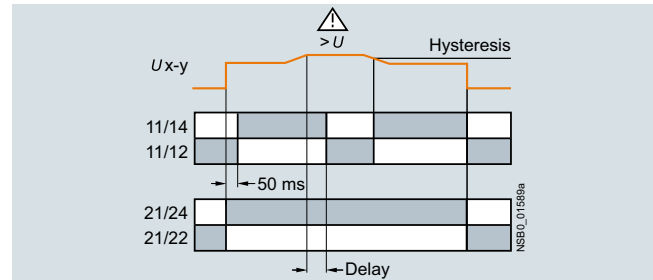
Phase failure



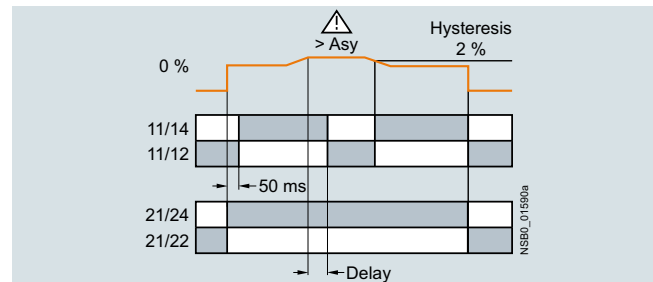
Undervoltage



Overvoltage



Unbalance



Type	3UG4511 ... 3UG4513, 3UG4614 ... 3UG4618	
General data		
Rated insulation voltage U_i	V	690
Pollution degree 3 Overvoltage category III acc. to VDE 0110		
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Load capacity of the output relay		
• Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 400 V	A	3
• DC-13/24 V	A	1
• DC-13/125 V	A	0.2
• DC-13/250 V	A	0.1
Minimum contact load at 17 V DC	mA	5
Electrical endurance AC-15	Million operating cycles	0.1
Mechanical endurance	Million operating cycles	10

Selection and ordering data

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H



3UG4511-1AP20	3UG4615-1CR20	3UG4616-1CR20	3UG4617-1CR20	3UG4618-1CR20	3UG4511-2BP20	3UG4512-2BR20					
Adjustable hysteresis	Under-voltage detection	Over-voltage detection	Stabilization time adjustable stDEL	Tripping delay time adjustable Del	Version of auxiliary contacts	Measurable line voltage ¹⁾	SD	Screw terminals	SD	Spring-type terminals	
		s	s	CO contact	V	d		Article No.	Price per PU	Article No.	Price per PU

Monitoring of phase sequence											
Auto RESET											
--	--	--	--	--	1	160 ... 260 AC	2	3UG4511-1AN20	2	3UG4511-2AN20	
					2			3UG4511-1BN20	2	3UG4511-2BN20	
					1	320 ... 500 AC	2	3UG4511-1AP20	2	3UG4511-2AP20	
					2			3UG4511-1BP20	2	3UG4511-2BP20	
					1	420 ... 690 AC	2	3UG4511-1AQ20	5	3UG4511-2AQ20	
					2			3UG4511-1BQ20	5	3UG4511-2BQ20	
Monitoring of phase sequence, phase failure and phase unbalance											
Auto RESET, closed-circuit principle, unbalance threshold permanently 10%											
--	--	--	--	--	1	160 ... 690 AC	2	3UG4512-1AR20	2	3UG4512-2AR20	
					2			3UG4512-1BR20	2	3UG4512-2BR20	
Monitoring of phase sequence, phase failure, unbalance and undervoltage											
Analogically adjustable, Auto RESET, closed-circuit principle, asymmetry and undervoltage threshold permanently 20%											
5% of set value	✓	--	--	0.1 ... 20	2	160 ... 690 AC	2	3UG4513-1BR20	2	3UG4513-2BR20	
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle, asymmetry threshold 0 or 5 ... 20%											
adjustable 1 ... 20 V	✓	--	0.1 ... 20	0.1 ... 20	2	160 ... 690 AC	2	3UG4614-1BR20	2	3UG4614-2BR20	
Monitoring of phase sequence, phase failure, overvoltage and undervoltage											
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle											
adjustable 1 ... 20 V	✓	✓	--	0.1 ... 20 ²⁾	2 ²⁾	160 ... 690 AC	2	3UG4615-1CR20	2	3UG4615-2CR20	
Monitoring of phase sequence, phase and N conductor failure, overvoltage and undervoltage											
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle											
adjustable 1 ... 20 V	✓	✓	--	0.1 ... 20 ²⁾	2 ²⁾	90... 400 AC against N	2	3UG4616-1CR20	2	3UG4616-2CR20	
Automatic correction of the direction of rotation in case of wrong phase sequence, phase failure, unbalance, overvoltage and undervoltage											
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle, asymmetry threshold 0 or 5 ... 20%											
adjustable 1 ... 20 V	✓	✓	--	0.1 ... 20	2 ³⁾	160 ... 690 AC	2	3UG4617-1CR20	2	3UG4617-2CR20	
Automatic correction of the direction of rotation in case of wrong phase sequence, phase and N conductor failure, phase unbalance, overvoltage and undervoltage											
Digitally adjustable, Auto RESET or Manual RESET, open-circuit or closed-circuit principle, asymmetry threshold 0 or 5 ... 20%											
adjustable 1 ... 20 V	✓	✓	--	0.1 ... 20	2 ³⁾	90 ... 400 AC against N	2	3UG4618-1CR20	2	3UG4618-2CR20	

- ✓ Function available
- Function not available

For accessories, see page 10/108.

1) Absolute limit values.
 2) 1 CO contact each and one tripping delay time each for U_{min} and U_{max} .
 3) 1 CO contact each for power system fault and phase sequence correction.

Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation

Voltage monitoring

Overview



SIRIUS 3UG4631 monitoring relay

The relays monitor single-phase AC voltages (rms value) and DC voltages against the set threshold value for overshoot and undershoot. The devices differ with regard to their power supply (internal or external).

Benefits

- Versions with wide voltage supply range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display of ACTUAL value and status messages
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Protection of a plant against destruction due to overvoltage
- Switch-on of a plant at a defined voltage and higher
- Protection from undervoltage due to overloaded control supply voltages, particularly with battery power
- Threshold switch for analog signals from 0.1 to 10 V

Technical specifications

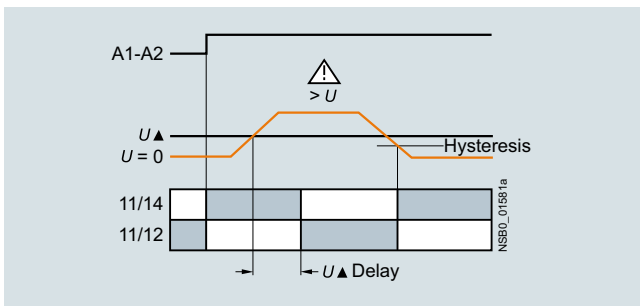
3UG4631/3UG4632 monitoring relays

The 3UG4631/3UG4632 voltage monitoring relay is supplied with an auxiliary voltage of 24 V AC/DC or 24 to 240 V AC/DC and performs overshoot, undershoot or range monitoring of the voltage depending on parameterization. The device is equipped with a display and is parameterized using three buttons.

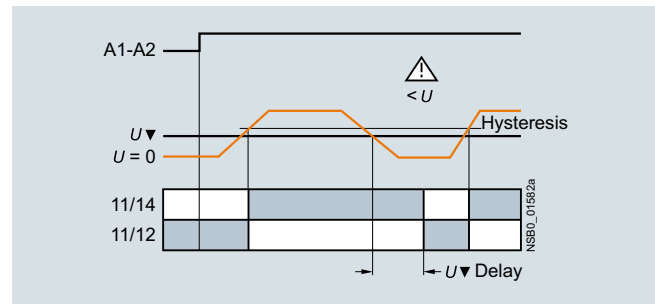
The measuring range extends from 0.1 to 60 V or 10 to 600 V AC/DC. The threshold values for overshoot or undershoot can be freely configured within this range. If one of these threshold values is reached, the output relay responds according to the set principle of operation as soon as the delay time has elapsed. This delay time U_{Del} can be set from 0.1 to 20 s. The hysteresis can be set from 0.1 to 30 V or 0.1 to 300 V. The device can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET. One output changeover contact is available as signaling contact.

With the closed-circuit principle selected

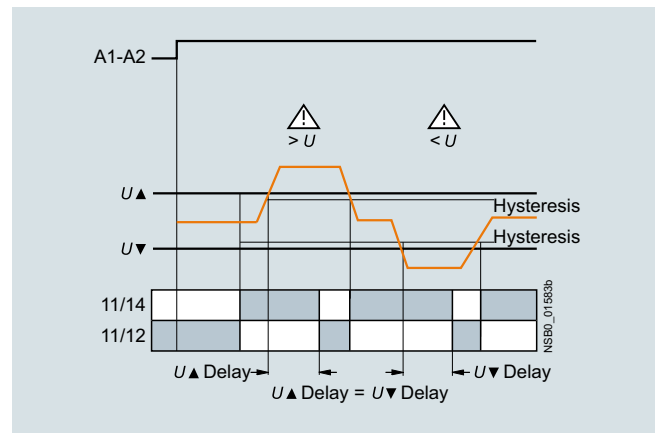
Overvoltage



Undervoltage



Range monitoring



3UG4633 monitoring relay

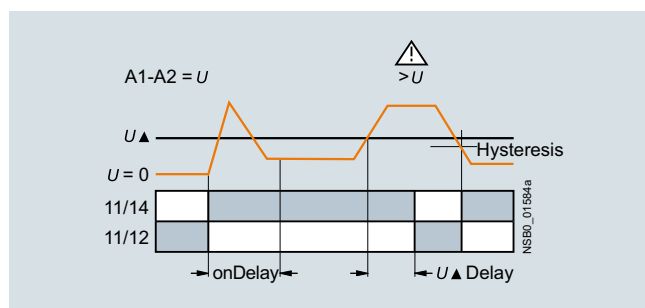
The 3UG4633 voltage monitoring relay has an internal power supply and performs overshoot, undershoot or range monitoring of the voltage depending on parameterization. The device is equipped with a display and is parameterized using three buttons.

The operating and measuring range extends from 17 to 275 V AC/DC. The threshold values for overshoot or undershoot can be freely configured within this range. If one of these threshold values is reached, the output relay responds according to the set principle of operation as soon as the tripping delay time has elapsed. This delay time U_{Del} can also be adjusted, just like the ON-delay time on_{Del} , from 0.1 to 20 s.

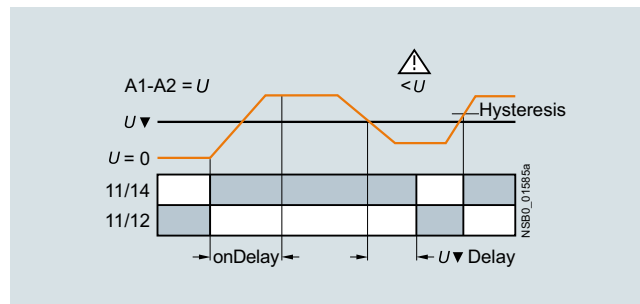
The hysteresis is adjustable from 0.1 to 150 V. The device can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET. One output changeover contact is available as signaling contact.

With the closed-circuit principle selected

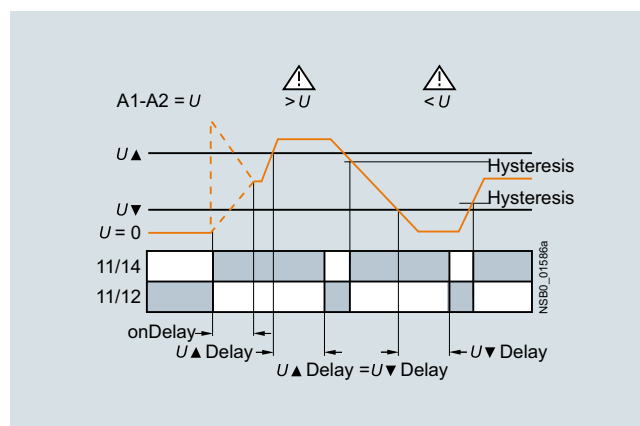
Overvoltage



Undervoltage



Range monitoring



Type		3UG4631	3UG4632	3UG4633
General data				
Rated insulation voltage U_i	V	690		
Pollution degree 3 Overvoltage category III acc. to VDE 0110				
Rated impulse withstand voltage U_{imp}	kV	6		
Measuring circuit				
Permissible measuring range single-phase AC/DC voltage	V	0.1 ... 68	10 ... 650	17 ... 275
Measuring frequency	Hz	40 ... 500		
Setting range single-phase voltage	V	0.1 ... 60	10 ... 600	17 ... 275
Control circuit				
Load capacity of the output relay				
• Thermal current I_{th}	A	5		
Rated operational current I_o at				
• AC-15/24 ... 400 V	A	3		
• DC-13/24 V	A	1		
• DC-13/125 V	A	0.2		
• DC-13/250 V	A	0.1		
Minimum contact load at 17 V DC	mA	5		

Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation

Voltage monitoring

Selection and ordering data

- Digitally adjustable, with illuminated LCD
- Auto or Manual RESET
- Open- or closed-circuit principle
- 1 CO contact



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H



3UG4631-1AA30



3UG4633-2AL30

Measuring range	Adjustable hysteresis	Rated control supply voltage U_s	SD	Screw terminals 		Spring-type terminals 	
				Article No.	Price per PU	Article No.	Price per PU
V	V	V	d				
Internal power supply without auxiliary voltage, separately adjustable ON-delay and tripping delay 0.1 ... 20 s							
17 ... 275 AC/DC	0.1 ... 150	17 ... 275 AC/DC ¹⁾	2	3UG4633-1AL30	2	3UG4633-2AL30	
Externally supplied with auxiliary voltage, tripping delay adjustable 0.1 ... 20 s							
0.1 ... 60 AC/DC 10 ... 600 AC/DC	0.1 ... 30 0.1 ... 300	24 AC/DC	2 2	3UG4631-1AA30 3UG4632-1AA30	2 2	3UG4631-2AA30 3UG4632-2AA30	
0.1 ... 60 AC/DC 10 ... 600 AC/DC	0.1 ... 30 0.1 ... 300	24 ... 240 AC/DC	2 2	3UG4631-1AW30 3UG4632-1AW30	2 2	3UG4631-2AW30 3UG4632-2AW30	

¹⁾ Absolute limit values.

For accessories, see page 10/108.

Overview



SIRIUS 3UG4622 monitoring relay

The relays monitor single-phase AC currents (rms value) and DC currents against the set threshold value for overshoot and undershoot. They differ with regard to their measuring ranges and control supply voltage types.

Benefits

- Versions with wide voltage supply range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display of ACTUAL value and status messages
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Overcurrent and undercurrent monitoring
- Monitoring the functionality of electrical loads
- Open-circuit monitoring
- Threshold switch for analog signals from 4 to 20 mA

Technical specifications

3UG4621/3UG4622 monitoring relays

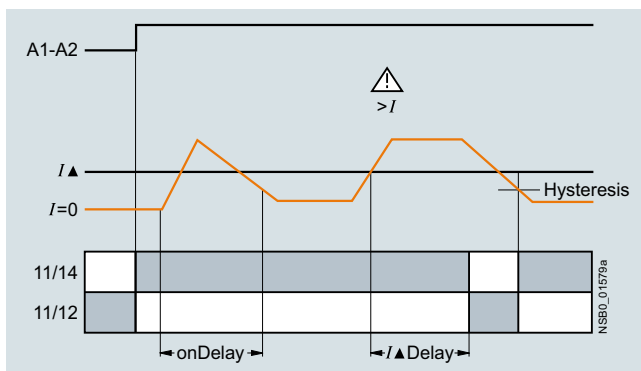
The 3UG4621 or 3UG4622 current monitoring relay is supplied with an auxiliary voltage of 24 V AC/DC or 24 to 240 V AC/DC and performs overshoot, undershoot or range monitoring of the current depending on parameterization. The device is equipped with a display and is parameterized using three buttons.

The measuring range extends from 3 to 500 mA or 0.05 to 10 A. The rms value of the current is measured. The threshold values for overshoot or undershoot can be freely configured within this range. If one of these threshold values is reached, the output relay responds according to the set principle of operation as soon as the tripping delay time I_{Del} has elapsed. This time and the ON-delay time on_{Del} are adjustable from 0.1 to 20 s.

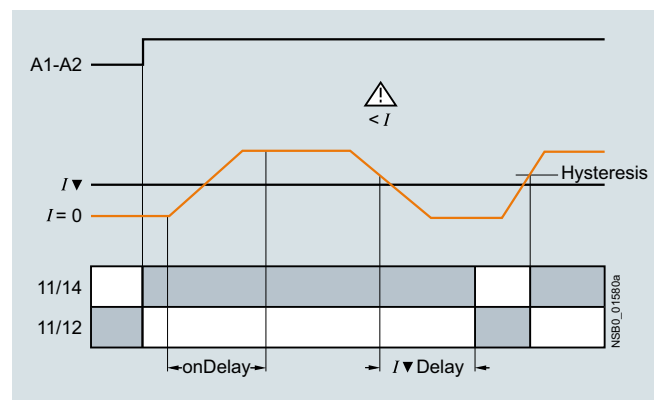
The hysteresis is adjustable from 0.1 to 250 mA or 0.01 to 5 A. The device can be operated with Manual or Auto RESET and on the basis of either the open-circuit or closed-circuit principle. You can decide here whether the output relay is to respond when the supply voltage $U_s = ON$ is applied, or not until the lower measuring range limit of the measuring current ($I > 3 \text{ mA}/50 \text{ mA}$) is reached. One output changeover contact is available as signaling contact.

With the closed-circuit principle selected upon application of the control supply voltage

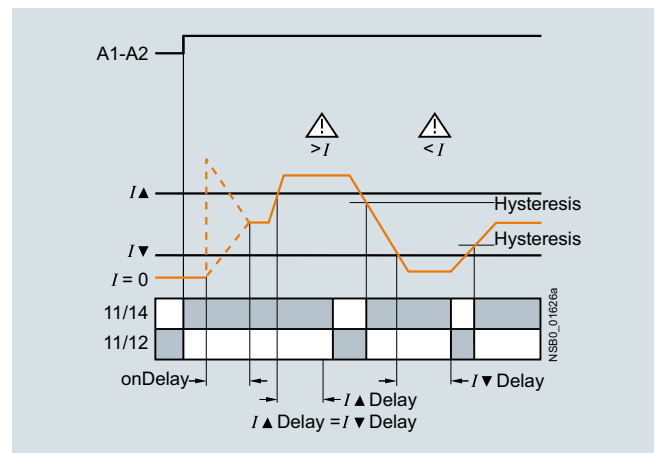
Current overshoot



Current undershoot



Range monitoring



Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation

Current monitoring

Type		3UG4621-.AA	3UG4621-.AW	3UG4622-.AA	3UG4622-.AW
General data					
Rated insulation voltage U_i Pollution degree 3; overvoltage category III according to VDE 0110	V	690			
Rated impulse withstand voltage U_{imp}	kV	6			
Measuring circuit					
Measuring range for single-phase AC/DC current	A	0.003 ... 0.6		0.05 ... 15	
Measuring frequency	Hz	40 ... 500			
Setting range for single-phase current	A	0.003 ... 0.5		0.05 ... 10	
Load supply voltage	V	24	Max. 300 ¹⁾ Max. 500 ²⁾	24	Max. 300 ¹⁾ Max. 500 ²⁾
Control circuit					
Load capacity of the output relay • Thermal current I_{th}	A	5			
Rated operational current I_o at • AC-15/24 ... 400 V • DC-13/24 V • DC-13/125 V • DC-13/250 V	A	3	1	0.2	0.1
Minimum contact load at 17 V DC	mA	5			

1) With protective separation.

2) With simple separation.

Selection and ordering data

- Digitally adjustable, with illuminated LCD
- Auto or Manual RESET
- Open- or closed-circuit principle
- 1 CO contact

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H



3UG4621-1AA30



3UG4622-2AW30

Measuring range	Adjustable hysteresis	Rated control supply voltage U_s	SD	Screw terminals		Spring-type terminals	
				Article No.	Price per PU	Article No.	Price per PU
Monitoring of undercurrent and overcurrent, start up delay and tripping delay times can be adjusted separately 0.1 ... 20 s							
3 ... 500 mA AC/DC	0.1 ... 250 mA	24 AC/DC ¹⁾	2	3UG4621-1AA30	2	3UG4621-2AA30	2
0.05 ... 10 A AC/DC	0.01 ... 5 A		2	3UG4622-1AA30	2	3UG4622-2AA30	2
3 ... 500 mA AC/DC	0.1 ... 250 mA	24 ... 240 AC/DC ²⁾	2	3UG4621-1AW30	2	3UG4621-2AW30	2
0.05 ... 10 A AC/DC	0.01 ... 5 A		2	3UG4622-1AW30	2	3UG4622-2AW30	2

1) No electrical separation. Load supply voltage 24 V.

2) Electrical separation between control circuit and measuring circuit. Load supply voltage for protective separation max. 300 V, for simple separation max. 500 V.

For accessories, see page 10/108.

For AC currents $I > 10$ A it is possible to use 4NC current transformers as an accessory, see Catalog LV 10.

Overview



SIRIUS 3UG4641 monitoring relay

The 3UG4641 power factor and active current monitoring device enables the load monitoring of motors.

Whereas power factor (p.f.) monitoring is used above all for monitoring no-load operation, the active current monitoring option can be used to observe and evaluate the load factor over the entire torque range.

Technical specifications

3UG4641 monitoring relay

The 3UG4641 monitoring relay is self-powered and serves the single-phase monitoring of the power factor or performs overshoot, undershoot or range monitoring of the active current depending on how it is parameterized. The load to be monitored is connected upstream of the IN terminal. The load current flows through the terminals IN and Ly/N. The setting range for the power factor is 0.1 to 0.99 and for the active current I_{res} it is 0.2 to 10 A. If the control supply voltage is switched on and no load current flows, the display will show $I < 0.2$ and a symbol for overrange, underrange or range monitoring. If the motor is now switched on and the current exceeds 0.2 A, the set ON-delay time begins. During this time, if the set limit values are undershot or exceeded, this does not lead to a relay reaction of the changeover contact. If the operational flowing active current and/or the power factor value falls below or exceeds the respective set threshold value, the spike delay begins. When this time has expired, the relay changes its switch position. The relevant measured variables for overshooting and undershooting in the display flash. If monitoring for active current undershoot is switched off ($I_{res} \nabla = \text{OFF}$), and if the load current undershoots the lower measuring range threshold (0.2 A), the CO contacts remain unchanged. If a threshold value is set for the monitoring of active current undershooting, then undershooting of the measuring range threshold (0.2 A) will result in a response of the CO contacts.

The relay operates either according to the open-circuit or closed-circuit principle. If the device is set to Auto RESET (Memory = No), depending on the set principle of operation, the switching relay returns to its initial state and the flashing ends when the hysteresis threshold is reached.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continue to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2 seconds, or by switching the supply voltage off and back on again.

Benefits

- Can be used worldwide thanks to wide voltage range from 90 to 690 V (absolute limit values)
- Monitoring of even small single-phase motors with a no-load supply current below 0.5 A
- Simple determination of threshold values by the direct collection of measured variables on motor loading
- Range monitoring and active current measurement enable detection of cable breaks between control cabinets and motors, as well as phase failures
- Power factor (p.f.) or I_{res} (active current) can be selected as the measurement principle
- Width 22.5 mm
- All versions with removable terminals

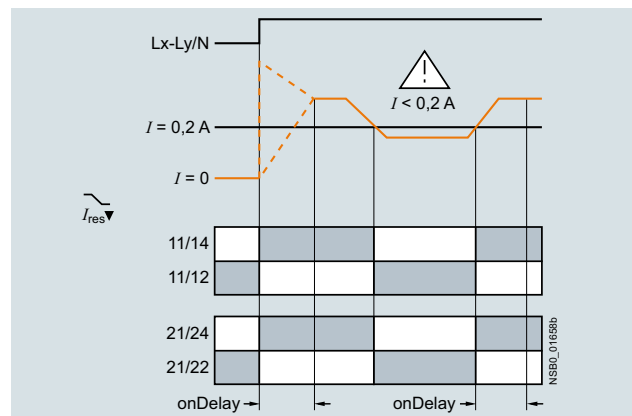
Application

- No-load monitoring and load shedding, such as in the event of a V-belt tear
- Underload monitoring in the low-end performance range, e.g. in the event of pump no-load operation
- Monitoring of overload, e.g. due to a dirty filter system
- Simple power factor monitoring in power systems for control of compensation equipment
- Broken cable between control cabinet and motor

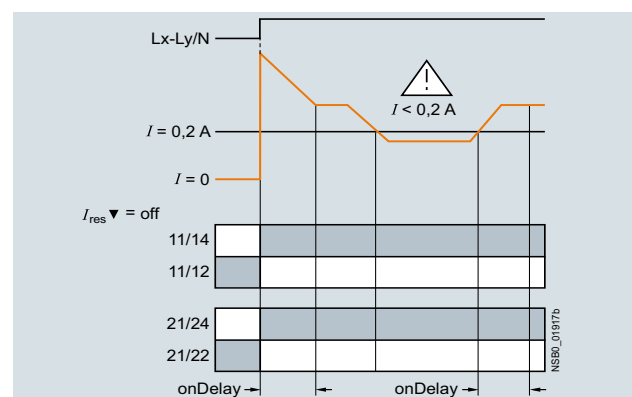
With the closed-circuit principle selected

Response in the event of undershooting the measuring range limit

- With activated monitoring of $I_{res} \nabla$



- With deactivated monitoring of active current undershooting

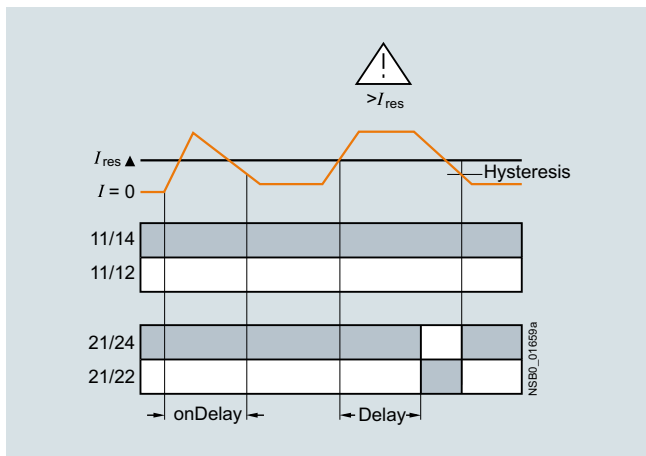


Relays

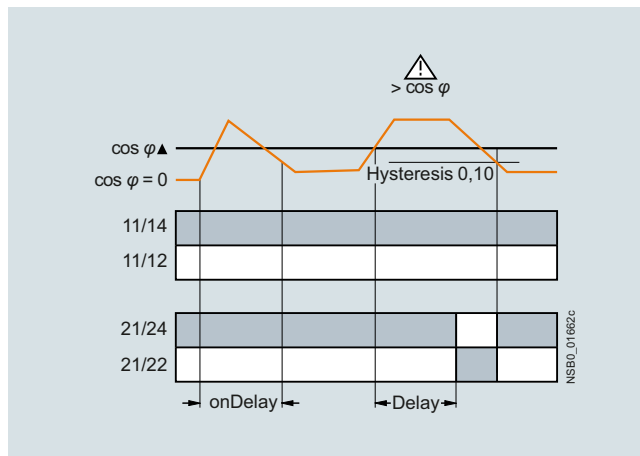
SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation

Power factor and active current monitoring

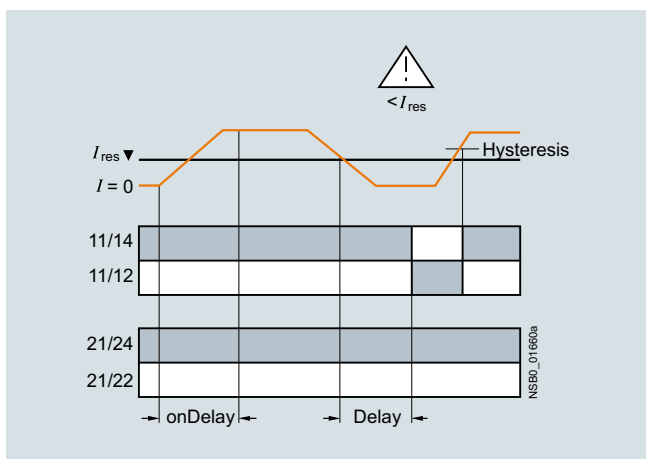
Overshooting of active current



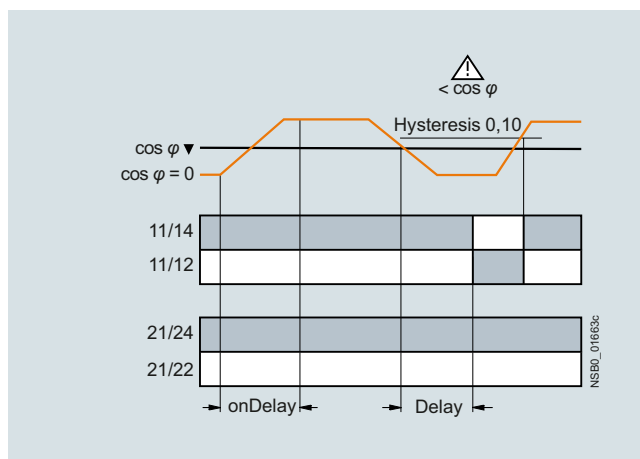
Overshooting of power factor



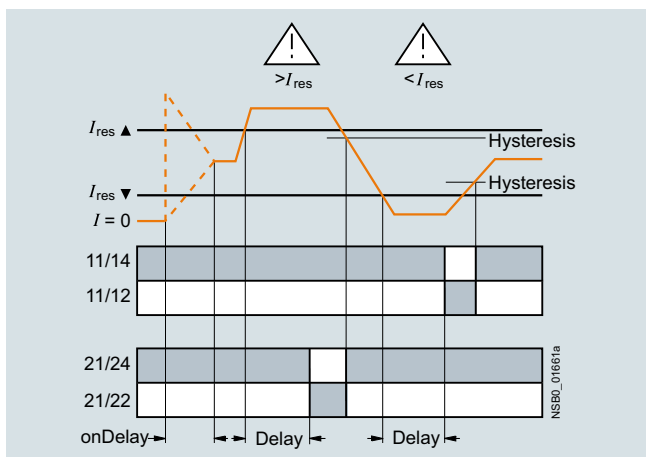
Undershooting of active current



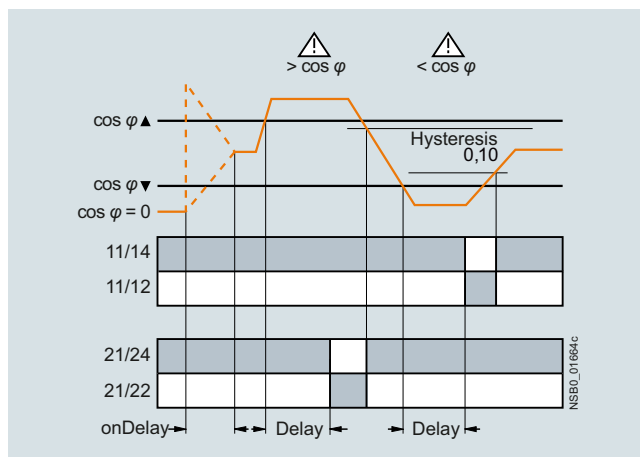
Undershooting of power factor



Range monitoring of active current



Range monitoring of power factor



SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation



Power factor and active current monitoring

Type	3UG4641	
General data		
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III acc. to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Number of CO contacts for auxiliary contacts		2
Load capacity of the output relay		
• Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 400 V	A	3
• DC-13/24 V	A	1
• DC-13/125 V	A	0.2
• DC-13/250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

Selection and ordering data

- For monitoring the power factor and the active current I_{res} (p.f. $\times I$)
- Suitable for single- and three-phase currents
- Digitally adjustable, with illuminated LCD
- Overshoot, undershoot or range monitoring adjustable
- Upper and lower threshold value can be adjusted separately
- Permanent display of actual value and tripping state
- 1 changeover contact each for undershoot/overshoot

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H

Measuring range		Adjustable hysteresis		ON-delay time adjustable onDel	Tripping delay time adjustable I/Δ Del/ I/∇ Del, ϕ/Δ Del/ ϕ/∇ Del	Rated control supply voltage U_s ¹⁾ 50/60 Hz AC	SD	Screw terminals 	SD	Spring-type terminals 	
For power factor	For active current I_{res}	For power factor	For active current I_{res}								
P.f.	A	P.f.	A	s	s	V	d	Article No.	Price per PU	d	
0.10 ... 0.99	0.2 ... 10.0	0.1	0.1 ... 2.0	0 ... 99	0.1 ... 20.0	90 ... 690	2	3UG4641-1CS20		2	3UG4641-2CS20

¹⁾ Absolute limit values.

For accessories, see page 10/108.

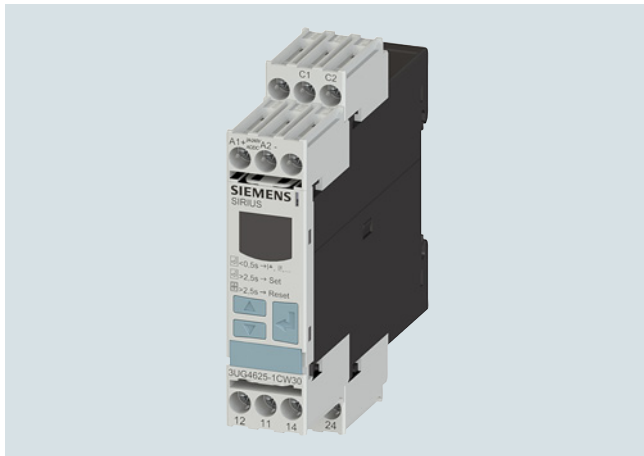
For AC active currents $I_{res} > 10$ A it is possible to use 4NC current transformers as an accessory, see Catalog LV 10.

Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation Residual-Current Monitoring

Residual-current monitoring relays

Overview



SIRIUS 3UG4625 monitoring relay

The 3UG4625 residual-current monitoring relays are used in conjunction with the 3UL23 residual-current transformers for monitoring plants in which higher residual currents are increasingly expected due to ambient conditions. Monitoring encompasses pure AC residual currents or AC residual currents with a pulsating DC fault current component (transformer type A in accordance with DIN VDE 0100-530/IEC TR 60755).

Benefits

- Worldwide use thanks to wide voltage range from 24 to 240 V AC/DC
- High measuring accuracy of $\pm 7.5\%$
- Permanent self-monitoring
- Variable threshold values for warning and disconnection
- Freely configurable delay times and RESET response
- Permanent display of the actual value and fault diagnostics via the display
- High level of flexibility and space saving through installation of the transformer inside or outside the control cabinet
- Width 22.5 mm
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

Monitoring of plants in which residual currents can occur, e.g. due to dust deposits or moisture, porous cables and leads, or capacitive residual currents.

Technical specifications

3UG4625 monitoring relays

The main conductor, and any neutral conductor to which a load is connected, are routed through the opening of the annular ring core of a residual-current transformer. A secondary winding is placed around this annular ring core to which the monitoring relay is connected.

If operation of a plant is fault-free, the sum of the inflowing and outward currents equals zero. No current is then induced in the secondary winding of the residual-current transformer.

However, if an insulation fault occurs downstream of the residual-current-operated circuit breaker, the sum of the inflowing currents is greater than that of the outward currents. The differential current – i.e. the residual current – induces a secondary current in the secondary winding of the transformer. This current is evaluated in the monitoring relay and is used on the one hand to display the actual residual current and on the other, to switch the relay if the set warning or tripping threshold is overshoot.

If the measured residual current exceeds the set warning value, the associated changeover contact instantly changes the switching state and an indication appears on the display.

If the measured residual current exceeds the set tripping value, the set delay time begins and the associated relay symbol flashes. On expiry of this time, the associated changeover contact changes the switching state.

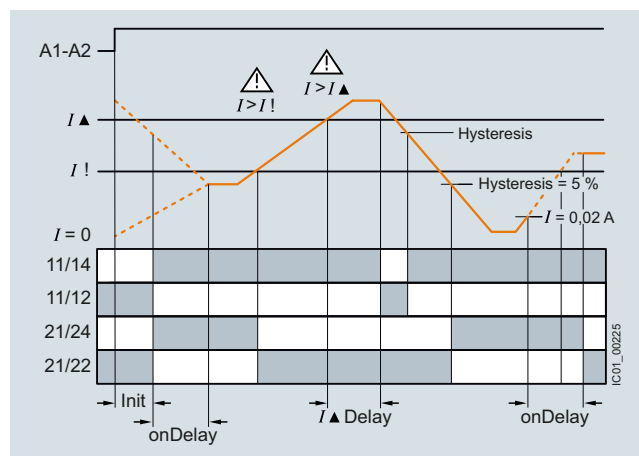
ON-delay time for motor start

To be able to start a drive when a residual current is detected, the output relays switch to the OK state for an adjustable ON-delay time depending on the selected open-circuit principle or closed-circuit principle.

The changeover contacts do not react if the set threshold values are overshoot during this period.

With the closed-circuit principle selected

Residual-current monitoring with Auto RESET (Memory = no)



If the device is set to Auto RESET, the relay switches back to the OK state for the tripping value once the value falls below the set hysteresis threshold and the display stops flashing.

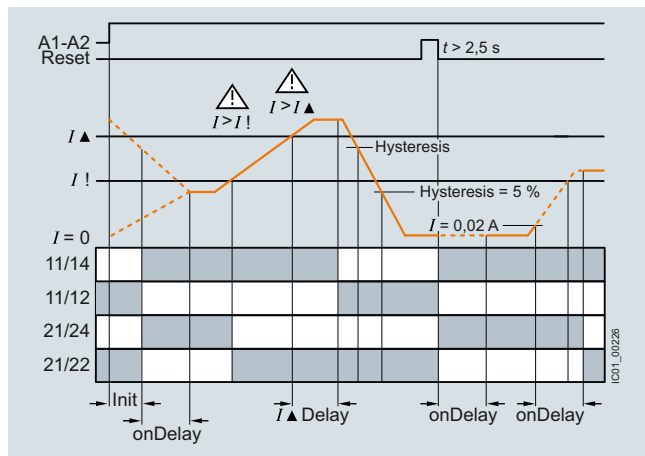
The associated relay changes its switching state if the value falls below the fixed hysteresis value of 5% of the set warning value.

Any overshoots are therefore not stored.

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation
Residual-Current Monitoring

Residual-current monitoring relays

Residual-current monitoring with Manual RESET (Memory = yes)



If Manual RESET is selected in the menu, the output relays remain in their current switching state and the current measured value and the symbol for overshooting continue to flash, even when the measured residual current returns to a permissible value. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for > 2 seconds, or by switching the supply voltage off and back on again.

Note:

Do not ground the neutral conductor downstream of the residual-current transformer as otherwise residual-current monitoring functions can no longer be ensured.

Type	3UG4625-1CW30, 3UG4625-2CW30	
General data		
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3, rated value	V	300
Impulse withstand voltage, rated value U_{imp}	kV	4
Control circuit		
Number of CO contacts for auxiliary contacts		2
Thermal current of the non-solid-state contact blocks, maximum	A	5
Current carrying capacity of the output relay	A	3
• At AC-15 at 250 V at 50/60 Hz		
• At DC-13		
- At 24 V	A	1
- At 125 V	A	0.2
- At 250 V	A	0.1
Operational current at 17 V, minimum	mA	5

Selection and ordering data

- For monitoring residual currents from 0.03 to 40 A, from 16 to 400 Hz
- For 3UL23 residual-current transformers with feed-through opening from 35 to 210 mm
- Permanent self-monitoring
- Certified in accordance with IEC 60947, functionality corresponds to IEC 62020
- Digitally adjustable, with illuminated LCD

- Permanent display of actual value and tripping state
- Separately adjustable limit value and warning threshold
- 1 changeover contact each for warning threshold and tripping threshold

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H



3UG4625-1CW30



3UG4625-2CW30

Measur-able current	Adjustable response value current	Switching hysteresis	Adjustable ON-delay time	Control supply voltage			SD	Screw terminals		SD	Spring-type terminals	
				For AC at 50 Hz rated value	For AC at 60 Hz rated value	At DC rated value		Article No.	Price per PU		Article No.	Price per PU
A	A	%	s	V	V	V	d			d		
0.01 ... 43	0.03 ... 40	0 ... 50	0 ... 20	24 ... 240	24 ... 240	24 ... 240	2	3UG4625-1CW30		2	3UG4625-2CW30	

For accessories, see page 10/108.

For the 3UL23 residual-current transformers, see page 10/94.

Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation Residual-Current Monitoring

3UL23 residual-current transformers

Overview




SIRIUS 3UL23 residual-current transformer

The 3UL23 residual-current transformers detect residual currents in machines and plants. They are suitable for pure AC residual currents or AC residual currents with a pulsating DC fault current component (transformer type A in accordance with DIN VDE 0100-530/IEC TR 60755).


Together with the 3UG4625, 3UG4825 residual-current monitoring relays for IO-Link or the SIMOCODE 3UF motor management and control device they enable residual-current and ground-fault monitoring.

The 3UL2302-1A and 3UL2303-1A residual-current transformers with a feed-through opening from 35 to 55 mm can be mounted in conjunction with the 3UL2900 accessories on a TH 35 standard mounting rail according to IEC 60715.

Selection and ordering data

Diameter of the bushing opening	Connectable cross-section of the connecting terminal	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
mm	mm ²	d	Article No.	Price per PU		
Residual-current transformers (essential accessories for 3UG4625, 3UG4825)						
35	2.5	2	3UL2302-1A		1	1 unit 41H
55	2.5	2	3UL2303-1A		1	1 unit 41H
80	2.5	2	3UL2304-1A		1	1 unit 41H
110	2.5	2	3UL2305-1A		1	1 unit 41H
140	2.5	2	3UL2306-1A		1	1 unit 41H
210	4	2	3UL2307-1A		1	1 unit 41H

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
 Adapters For mounting onto standard rail for 3UL23 to diameter 55 mm	2	3UL2900		1	2 units	41H

3UL2900

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation Insulation Monitoring

General data

Overview



SIRIUS 3UG458. insulation monitor

Insulation monitoring relays are used for monitoring the insulation resistance between ungrounded single- or three-phase AC supplies and a protective conductor.

Ungrounded, i.e. isolated networks (IT networks) are always used where high demands are placed on the reliability of the power supply, e.g. emergency lighting systems. IT systems are supplied via an isolating transformer or by power supply sources such as batteries or a generator. While an initial insulation fault between a phase conductor and the ground effectively grounds the conductor, as a result no circuit has been closed, so it is possible to continue work in safety (single-fault safety). However, the fault must be rectified as quickly as possible before a second insulation fault occurs (e.g. according to DIN VDE 0100-410). For this purpose insulation monitoring relays are used, which constantly measure the resistance to ground of the phase conductor and the neutral conductor, reporting a fault immediately if insulation resistance falls below the set value so that either a controlled shutdown can be performed or the fault can be rectified without interrupting the power supply.

Two device series

- 3UG4581 insulation monitoring relays for ungrounded AC networks
- 3UG4582 and 3UG4583 insulation monitoring relays for ungrounded DC and AC networks

Benefits

- Devices for AC and DC systems
- All devices have a wide control supply voltage range
- Direct connection to networks with mains voltages of up to 690 V AC and 1 000 V DC by means of a voltage reducer module
- For AC supply systems: Frequency range 15 to 400 Hz
- Monitoring of broken conductors
- Monitoring of setting errors
- Safety in use thanks to integrated system test after startup
- Option of resetting and testing (by means of button on front or using control contact)
- New predictive measurement principle allows very fast response times

Application

IT networks are used, for example:

- In emergency power supplies
- In safety lighting systems
- In industrial production facilities with high availability requirements (chemical industry, automobile manufacturing, printing plants)
- In shipping and railways
- For mobile generators (aircraft)
- For renewable energies, such as wind energy and photovoltaic power plants
- In the mining industry

Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation Insulation Monitoring

General data

Technical specifications

More information

For manuals, see

- <https://support.industry.siemens.com/cs/ww/en/view/54382552>
- <https://support.industry.siemens.com/cs/ww/en/view/54382528>

Type	3UG4581-1AW30	3UG4582-1AW30	3UG4583-1CW30
General data			
Setting range for the setpoint response values			
• 1 ... 100 kΩ	✓	✓	✓
• 2 ... 200 kΩ	--	--	✓
Rated voltage of the network being monitored			
• 0 ... 250 V AC	--	✓	--
• 0 ... 440 V AC	✓	--	✓
• 0 ... 690 V AC	--	--	✓ ¹⁾
• 0 ... 300 V DC	--	✓	--
• 0 ... 600 V DC	--	--	✓
• 0 ... 1 000 V DC	--	--	✓ ¹⁾
Max. leakage capacitance of the system			
• 10 μF	✓	✓	--
• 20 μF	--	--	✓
Output contacts			
• 1 CO	✓	✓	--
• 2 CO or 1 CO + 1 CO, adjustable	--	--	✓
Number of limit values			
• 1	✓	✓	--
• 1 or 2, adjustable	--	--	✓
Principle of operation	Closed-circuit principle	Closed-circuit principle	Open-circuit/closed-circuit principle, adjustable
Rated control supply voltage			
• 24 ... 240 V AC/DC	✓	✓	✓
Rated frequency			
• 15 ... 400 Hz	--	✓	✓
• 50/60 Hz	✓	--	--
Auto or Manual RESET	✓ Adjustable	✓ Adjustable	✓ Adjustable
Remote RESET	✓ Via control input	✓ Via control input	✓ Via control input
Non-volatile error memory	--	--	✓ Adjustable
Broken wire detection	--	--	✓ Adjustable
Replacement for			
Rated control supply voltage U_s	Voltage range of the network being monitored		
3UG3081-1AK20 110 ... 130/220 ... 240 V AC/DC	3 x 230/400 V AC	✓	--
3UG3081-1AW30 24 ... 240 V AC/DC	3 x 230/400 V AC	✓	--
3UG3082-1AW30 24 ... 240 V AC/DC	24 ... 240 V DC	--	✓

✓ Available

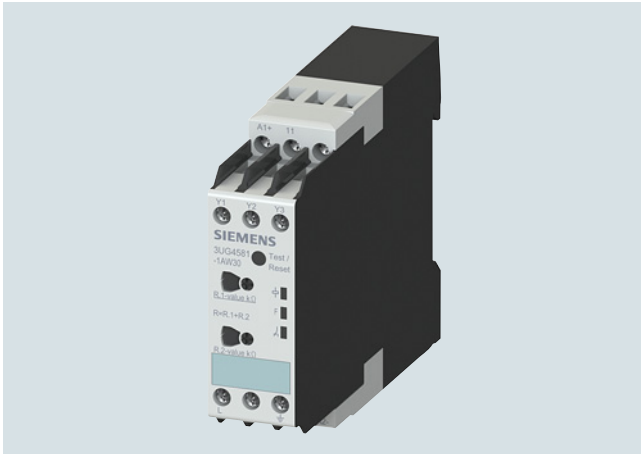
-- Not available

¹⁾ With voltage reducer module.

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation Insulation Monitoring

For ungrounded AC networks

Overview



SIRIUS 3UG4581 insulation monitor

The 3UG4581 insulation monitoring relays are used to monitor insulation resistance according to IEC 61557-8 in ungrounded AC networks with rated voltages of up to 400 V.

These devices can monitor control circuits (single-phase) and main circuits (three-phase).

They measure insulation resistances between system cables and system ground. If the value falls below the threshold value, the output relays are switched to fault status.

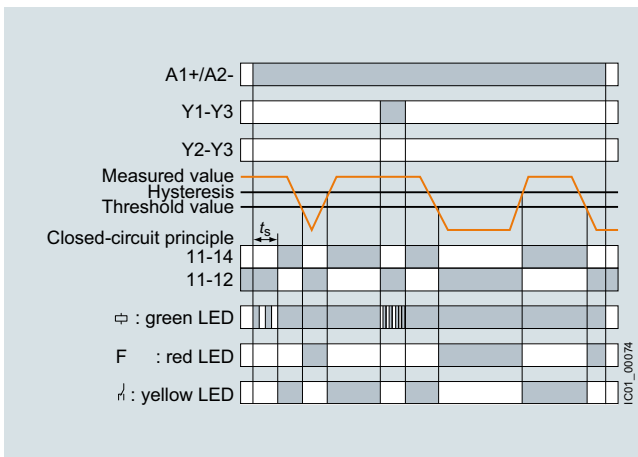
In the case of 3UG4581 a higher-level DC measuring signal is used. The higher-level DC measuring signal and the resulting current are used to determine the value of the insulation resistance of the network which is to be measured.

Technical specifications

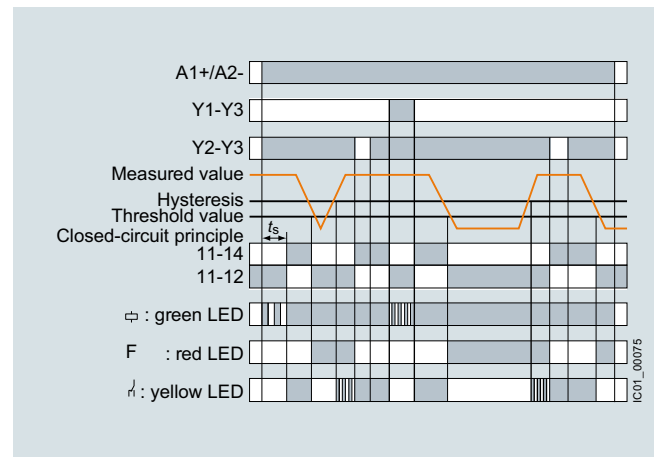
3UG4581 monitoring relay

With the closed-circuit principle selected

Insulation resistance monitoring without fault storage, with Auto RESET



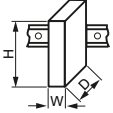
Insulation resistance monitoring with fault storage and Manual RESET



Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation Insulation Monitoring

For ungrounded AC networks

Type	3UG4581	
Dimensions (W x H x D)	mm	22.5 x 100 x 100
		
Connection type	⊕ Screw terminals	
• Solid	mm ²	2 x (0.5 ... 4)
• Finely stranded with end sleeve	mm ²	2 x (0.75 ... 2.5)
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)
General data		
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III acc. to IEC 60664	V	400 supply circuit/measuring circuit 300 supply circuit/output circuit
Rated impulse withstand voltage U_{imp}	kV	6
Rated control supply voltage	V	24 ... 240 AC/DC
Rated frequency	Hz	15 ... 400
Measuring circuit		
Rated line voltage of the network being monitored	V	0 ... 400
Rated frequency of the network being monitored	Hz	50 ... 60
Setting range for insulation resistance	k Ω	1 ... 100
Control circuit		
Load capacity of the output relay • Thermal current I_{th}	A	4
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13/24 V	A	3 2
Minimum contact load at 24 V DC	mA	10

Selection and ordering data

- Auto or Manual RESET
- Closed-circuit principle
- 1 CO contact
- Fault memory adjustable using control input (Y2-Y3)
- Reset by means of button on front or using control input (Y2-Y3)
- Test by means of button on front or using control input (Y1-Y3)

Rated line voltage U_n	Measuring range U_e	Rated control supply voltage U_s	System leakage capacitance	SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
V AC	k Ω	V	μ F	d	Article No.	Price per PU			

Insulation monitors for ungrounded AC networks

0 ... 400	1 ... 100	24 ... 240 AC/DC	Max. 10	5	3UG4581-1AW30		1	1 unit	41H
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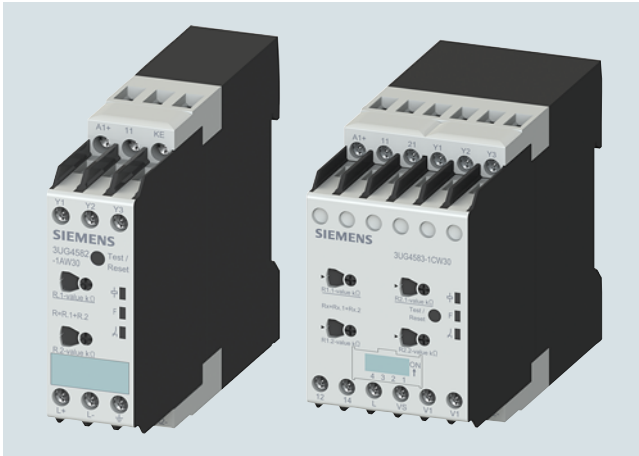
3UG4581-1AW30

For accessories, see page 10/108.

**SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation
Insulation Monitoring**

For ungrounded DC and AC networks

Overview



SIRIUS 3UG4582 and 3UG4583 insulation monitors

The 3UG4582 and 3UG4583 insulation monitoring relays are used to monitor insulation resistance in ungrounded IT AC or DC networks according to IEC 61557-8.

They measure insulation resistances between system cables and system ground. If the value falls below the threshold value, the output relays are switched to fault status. With these devices, which are suitable for both AC and DC networks, a pulsed test signal is fed into the network to be monitored and the isolation resistance is determined.

The pulsed test signal changes its form according to insulation resistance and network loss capacitance. The changed form is used to predict the changed insulation resistance.

If the predicted insulation resistance matches the insulation resistance calculated in the next measurement cycle, and is lower than the threshold value, the output relays are activated or deactivated, depending on the device configuration. This measurement principle is also suitable for identifying symmetrical insulation faults.

3UG4983 voltage reducer module

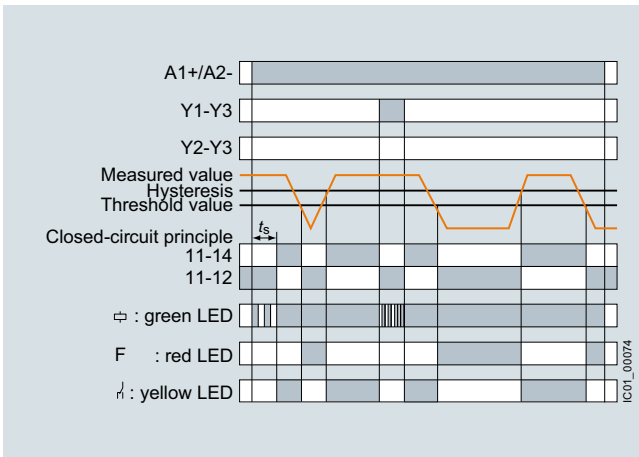
The 3UG4983 passive voltage reducer module can be used to allow the 3UG4583 insulation monitoring relay to be used for insulation monitoring of IT networks with rated voltages of up to 690 V AC and 1 000 V DC.

Technical specifications

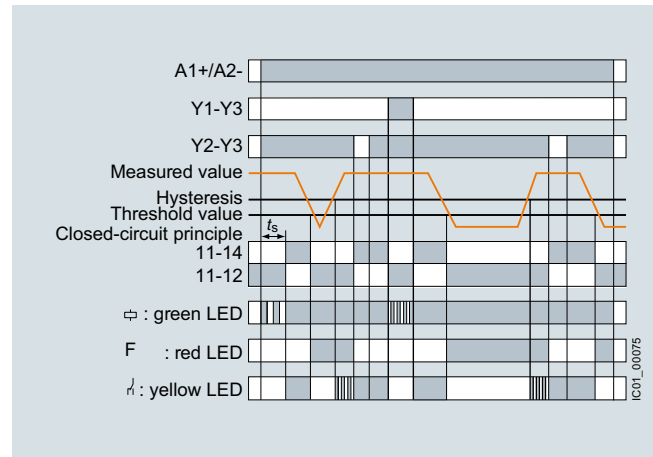
3UG4582 monitoring relays

With the closed-circuit principle selected

Insulation resistance monitoring without fault storage, with Auto RESET



Insulation resistance monitoring with fault storage and Manual RESET



Relays

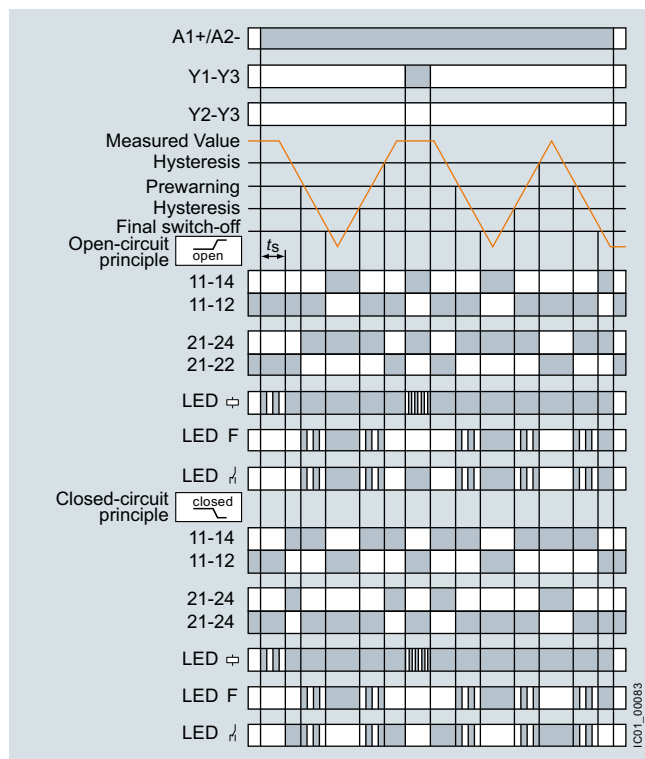
SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation Insulation Monitoring

For ungrounded DC and AC networks

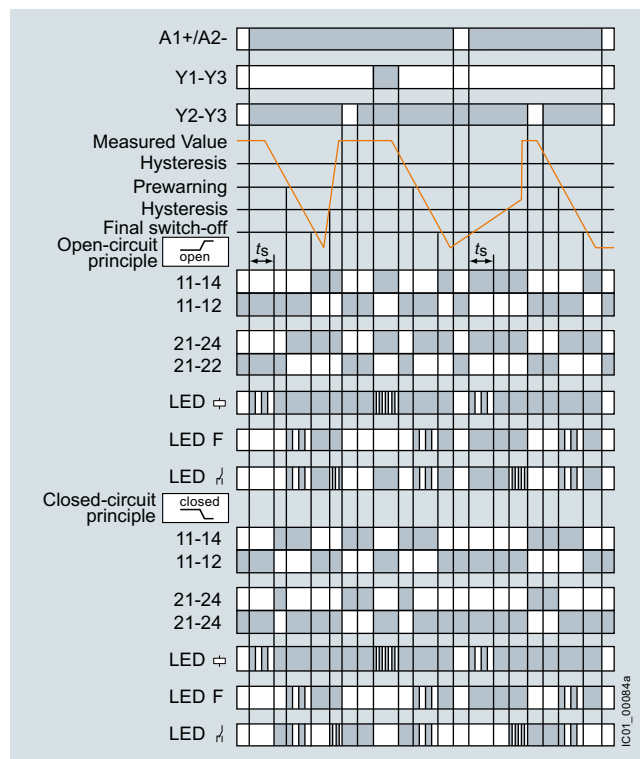
3UG4583 monitoring relays

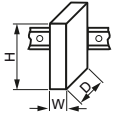
With the closed-circuit principle selected

Insulation resistance monitoring without fault storage,
with Auto RESET



Insulation resistance monitoring with fault storage and
Manual RESET



Type		3UG4582	3UG4583
Dimensions (W x H x D)	 mm	22.5 x 100 x 100	45 x 100 x 100
Connection type		⊕ Screw terminals	
<ul style="list-style-type: none"> Solid Finely stranded with end sleeve AWG cables, solid or stranded 	mm ² mm ² AWG	2 x (0.5 ... 4) 2 x (0.75 ... 2.5) 2 x (20 ... 14)	
General data			
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III acc. to IEC 60664	V	400 supply circuit/measuring circuit, 300 supply circuit/output circuit	400 supply circuit/measuring circuit 300 supply circuit/output circuit, 300 output circuit 1/output circuit 2
Rated impulse withstand voltage U_{imp}	kV	6	
Rated control supply voltage	V AC/DC	24 ... 240	
Rated frequency	Hz	15 ... 400	
Measuring circuit			
Rated line voltage of the network being monitored	V	0 ... 250 AC, 0 ... 300 DC	0 ... 300 AC, 0 ... 690 AC with 3UG49 83 0 ... 600 DC, 0 ... 1 000 DC with 3UG49 83
Rated frequency of the network being monitored	Hz	DC or 15 ... 400	
Setting range for insulation resistance	kΩ	1 ... 100	1 ... 100, 2 ... 200 for 2nd limit value (disconnectable)
Control circuit			
Number of CO contacts for auxiliary contacts		1	2 or 1 + 1, adjustable
Load capacity of the output relay			
• Thermal current I_{th}	A	4	
Rated operational current I_e at			
• AC-15/24 ... 400 V	A	3	
• DC-13/24 V	A	2	
Minimum contact load at 24 V DC	mA	10	

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation Insulation Monitoring





For ungrounded DC and AC networks

Selection and ordering data

- Auto or Manual RESET
- Rated control supply voltage U_s 24 ... 240 V AC/DC
- 3UG4582: Closed-circuit principle
- 3UG4583: Open-circuit or closed-circuit principle, adjustable
- 1 or 2 CO contacts
- Fault memory adjustable using control input (Y2-Y3)
- Reset by means of button on front or using control input (Y2-Y3)
- Test by means of button on front or using control input (Y1-Y3)
- 3UG4583: Non-volatile fault storage can be configured
- 3UG4583: 2 separate limit values (e.g. for warning and disconnection) or 2 CO contacts for one limit value (e.g. for a local alarm and signaling to the PLC via separate circuits) can be configured

Note:

With the 3UG4983-1A coupling unit, connection to networks with voltages of up to 690 V AC and 1 000 V DC is possible, see below.

Rated line voltage U_n	System leakage capacitance	Output relays	Measuring range U_e	Broken wire detection in the measuring range	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	
V	μF		k Ω		d	Article No.	Price per PU			
3UG4582 insulation monitors										
 3UG4582-1AW30	0 ... 250 AC, 0 ... 300 DC	Max. 10	1 CO	1 ... 100	✓	5	3UG4582-1AW30	1	1 unit	41H
3UG4583 insulation monitors										
 3UG4583-1CW30	0 ... 400 AC, 0 ... 600 DC ¹⁾	Max. 20	2 CO or 1 CO + 1 C O, adjust- able	1 ... 100, 2 ... 200 for 2nd limit value, adjustable	✓ Adjustable	5	3UG4583-1CW30	1	1 unit	41H
Voltage reducer module for 3UG4583										
 3UG4983-1A	For extending the network voltage range to max. 690 V AC and 1 000 V DC					5	3UG4983-1A	1	1 unit	41H

✓ Available

¹⁾ With 3UG4983-1A voltage reducer module suitable also for the insulation monitoring of IT networks of up to 690 V AC and 1 000 V DC.

For accessories, see page 10/108.

Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation

Level monitoring

Overview



SIRIUS 3UG4501 monitoring relay

The 3UG4501 level monitoring relay is used in combination with 2- or 3-pole sensors to monitor the levels of conductive liquids.

Benefits

- Can be used worldwide thanks to wide voltage range from 24 to 240 V (absolute limit values)
- Individually shortenable 2- and 3-pole wire electrodes for easy mounting from above/below
- Bow electrodes for installation from the side, for larger filling levels and minimum space requirements
- Can be flexibly adapted to different conductive liquids through analog setting of the sensitivity from 2 to 200 k Ω
- Compensation for wave movements through tripping delay times from 0.1 to 10 s
- Upstream or downstream function selectable
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Single-point and two-point level monitoring
- Overflow protection
- Dry run protection
- Leak monitoring

Technical specifications

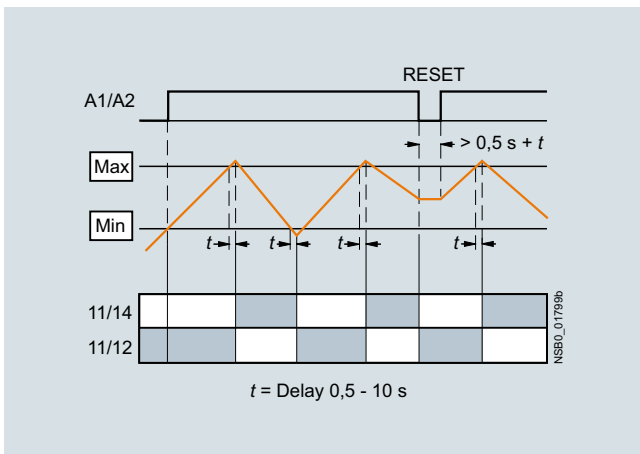
3UG4501 monitoring relays

The principle of operation of the 3UG4501 level monitoring relay is based on measuring the electrical resistance of the liquid between two immersion sensors and a reference terminal. If the measured value is lower than the sensitivity set at the front, the output relay changes its switching state. In order to preclude active current undershooting of the liquid, the sensors are supplied with alternating current.

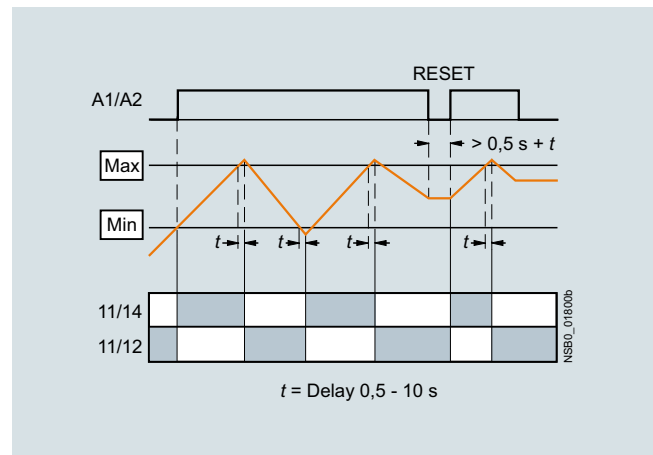
Two-point control

The output relay changes its switching state as soon as the liquid level reaches the maximum sensor, while the minimum sensor is submerged. The relay returns to its original switching state as soon as the minimum sensor no longer has contact with the liquid.

OVER, two-point control



UNDER, two-point control



Note:

It is also possible to connect other resistance sensors to the Min and Max terminals in the range 2 to 200 k Ω , e.g. photoresistors, temperature sensors, encoders based on resistance, etc. The monitoring relay can therefore also be used for other applications as well as for monitoring the levels of liquids.

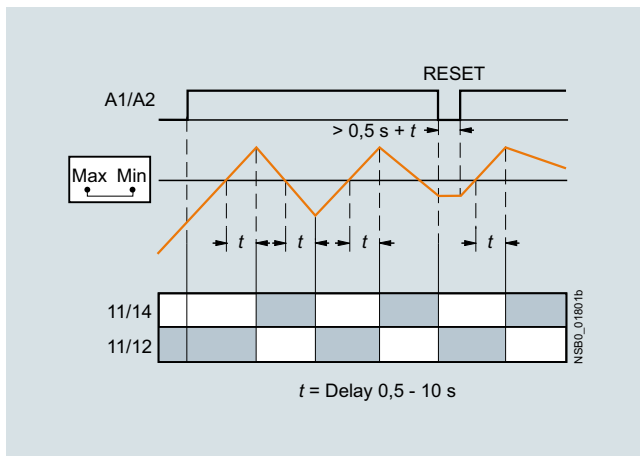
Single-point control

If only one level is being controlled, the terminals for Min and Max on the monitoring relay are bridged. The output relay changes its switching state as soon as the liquid level is reached and returns to its original switching state once the sensor no longer has contact with the liquid.

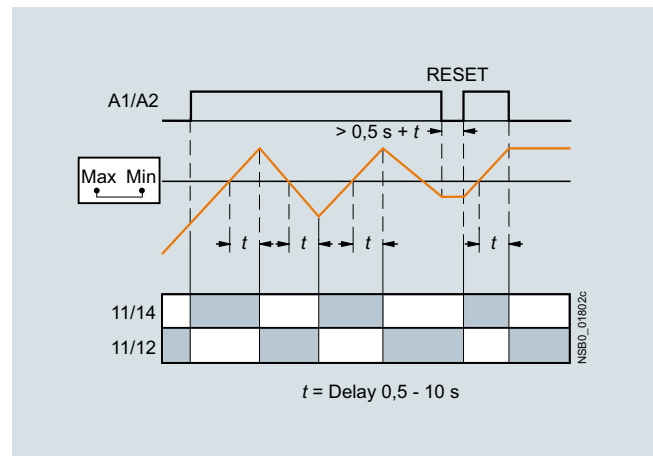
In order to prevent premature tripping of the switching function caused by wave motion or frothing, even though the set level has not been reached, it is possible to delay this function by 0.5 to 10 s.

For safe resetting, the control supply voltage must be interrupted for at least the set delay time of +0.5 s.

OVER, single-point control



UNDER, single-point control



Type	3UG4501	
General data		
Rated insulation voltage U_i	V	300
Pollution degree 3 Overvoltage category III acc. to VDE 0110		
Rated impulse withstand voltage U_{imp}	kV	4
Measuring circuit		
Electrode current, max. (typ. 70 Hz)	mA	1
Electrode voltage, max. (typ. 70 Hz)	V	15
Sensor feeder cable	m	Max. 100
Conductor capacitance of sensor cable¹⁾	nF	Max. 10
Control circuit		
Load capacity of the output relay		
Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 400 V	A	3
• DC-13/24 V	A	1
• DC-13/125 V	A	0,2
• DC-13/250 V	A	0,1
Minimum contact load at 17 V DC	mA	5

¹⁾ The sensor cable does not necessarily have to be shielded, but we do not recommend installing this cable parallel to the power supply lines. It is also possible to use a shielded cable, whereby the shield has to be connected to the M terminal.



Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation

Level monitoring

Selection and ordering data

- For level monitoring of electrically conductive liquids
 - Control principle: inlet or sequence control adjustable per rotary switch
 - Single-point and two-point control possible
 - Analogically adjustable sensitivity (specific resistance of the liquid)
 - Analogically adjustable tripping delay time
 - 1 yellow LED for displaying the relay state
 - 1 green LED for displaying the applied control supply voltage
 - 1 CO contact
- PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H

Sensitivity	Tripping delay time	Rated control supply voltage U_s	SD	Screw terminals 		Spring-type terminals 	
				Article No.	Price per PU	Article No.	Price per PU
kΩ	s	V AC/DC	d				
2 ... 200	0.5 ... 10	24 ¹⁾	2	3UG4501-1AA30		3UG4501-2AA30	
		24 ... 240	2	3UG4501-1AW30		3UG4501-2AW30	

¹⁾ The rated control supply voltage and the measuring circuit are not electrically separated.

For accessories, [see page 10/108](#).

Note:

Level monitoring sensors are available from various providers. We recommend sensors made by Jacob GmbH ([see "External partners", page 16/16](#)). The previous 3UG3 level sensors are also available from here.

Overview

SIRIUS 3UG4651 monitoring relay

The 3UG4651 monitoring relay is used in combination with a sensor to monitor motor drives for overspeed and/or underspeed.

Furthermore, the monitoring relay is ideal for all functions where a continuous pulse signal needs to be monitored (e.g. belt travel monitoring, completeness monitoring, passing monitoring, clock-time monitoring).

Benefits

- Can be used worldwide thanks to wide voltage range from 24 to 240 V (absolute limit values)
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Permanent display of actual value and fault type
- Use of up to 10 sensors per rotation for extremely slowly rotating motors
- 2- or 3-wire sensors and sensors with a mechanical switching output or semiconductor output can be connected
- Auxiliary voltage for sensor integrated
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Slip or tear of a belt drive
- Overload monitoring
- Transport monitoring for completeness

Technical specifications**3UG4651 monitoring relay**

The speed monitoring relay operates according to the principle of period duration measurement.

In the monitoring relay, the time between two successive rising edges of the pulse encoder is measured and compared to the minimum and/or maximum permissible period duration calculated from the set limit values for the speed.

Thus, the period duration measurement recognizes any deviation in speed after just two pulses, even at very low speeds or in the case of extended pulse gaps.

By using up to ten pulse encoders evenly distributed around the circumference, it is possible to shorten the period duration, and in turn the response time. By taking into account the number of sensors in the monitoring relay, the speed continues to be indicated in rpm.

ON-delay time for motor start

To be able to start a motor drive, and depending on whether the open-circuit or closed-circuit principle is selected, the output relay switches to the GO state during the ON-delay time, even if the speed is still below the set value.

The ON-delay time is started by either switching on the auxiliary voltage or, if the auxiliary voltage is already applied, by actuating the respective NC contact (e.g. auxiliary contact).

Speed monitoring with Auto RESET (Memory = no)

If the device is set to Auto RESET, the output relay switches to the GO state, once the adjustable hysteresis threshold is reached in the range of 0.1 to 99.9 rpm and the flashing stops. Any overshoots or undershoots are therefore not stored.



Speed monitoring with Manual RESET (Memory = yes)

If Manual RESET is selected in the menu, the output relay remains in its current switching state and the current measured value and the symbol for overshooting/undershooting continue to flash, even when the speed returns to a permissible value. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ buttons for > 2 s, by connecting the RESET device terminal to 24 V DC or by switching the control supply voltage off and back on again.

Selection and ordering data

- For speed monitoring in revolutions per minute (rpm)
- Two- or three-wire sensor with mechanical or electronic switching output can be connected
- Two-wire NAMUR sensor can be connected
- Sensor supply 24 V DC/50 mA integrated
- Input frequency 0.1 to 2 200 pulses per minute (0.0017 to 36.7 Hz)
- With or without enable signal for the drive to be monitored
- Digitally adjustable, with illuminated LCD
- Overshoot, undershoot or range monitoring adjustable
- Number of pulses per revolution can be adjusted
- Upper and lower threshold value can be adjusted separately
- Auto, Manual or remote RESET options after tripping
- Permanent display of actual value and tripping state
- 1 CO contact

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H

Measuring range	Hysteresis	ON-delay time	Tripping delay time	Pulses per revolution	Rated control supply voltage U_s AC/DC	SD	Screw terminals 		Spring-type terminals 	
							Article No.	Price per PU	Article No.	Price per PU
rpm	rpm	s	s		V	d		d		
0.1 ... 2 200	OFF 0.1 ... 99.9	0 ... 900	0.1 ... 99.9	1 ... 10	24 ¹⁾	2	3UG4651-1AA30	2	3UG4651-2AA30	
					24 ... 240	2	3UG4651-1AW30	2	3UG4651-2AW30	

¹⁾ The rated control supply voltage and the measuring circuit are not electrically separated.

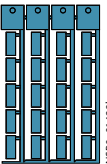
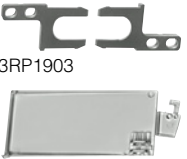
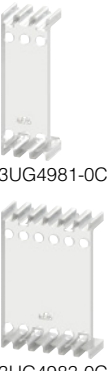


For accessories, see page 10/108.

Relays

SIRIUS 3UG45, 3UG46 Monitoring Relays for Stand-Alone Installation

Accessories

Selection and ordering data

Use	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Blank labels							
 3RT1900-1SB20	For 3UG4	Unit labeling plates For SIRIUS devices 20 mm x 7 mm, pastel turquoise ¹⁾	20	3RT1900-1SB20		100 340 units	41B
	For 3UG4	Adhesive labels for SIRIUS devices <ul style="list-style-type: none"> • 19 mm x 6 mm, pastel turquoise • 19 mm x 6 mm, zinc yellow 	15	3RT1900-1SB60		100 3 060 units	41B
			15	3RT1900-1SD60		100 3 060 units	41B
Push-in lugs and covers							
 3RP1903 3RP1902	For 3UG4	Push-in lugs For screw fixing, 2 units are required for each device	5	3RP1903		1 10 units	41H
	For 3UG4	Sealable covers For securing against unauthorized adjustment of setting knobs	5	3RP1902		1 5 units	41H
Covers for insulation monitoring relays							
 3UG4981-0C 3UG4983-0C	For 3UG4581 and 3UG4582	Sealable, transparent covers	5	3UG4981-0C		1 1 unit	41H
	For 3UG4583		5	3UG4983-0C		1 1 unit	41H
Tools for opening spring-type terminals							
 3RA2908-1A	For auxiliary circuit connections	Screwdrivers For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm; length approx. 200 mm, titanium gray/black, partially insulated	2	3RA2908-1A		1 1 unit	41B

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/16.

Note:

For products for mechanical bearing monitoring, e.g. condition monitoring systems, see www.siemens.com/siplus-cms.

Overview



SIRIUS 3UG48 monitoring relays

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3UG48

For the conversion tool, e.g. from 3UG3 to 3UG4, see www.siemens.com/sirius/conversion-tool

The SIRIUS 3UG4 monitoring relays for electronic and mechanical variables monitor all important characteristics that allow conclusions to be drawn about the functionality of a plant. Both sudden disturbances and gradual changes, which may indicate the need for maintenance, are detected.

Thanks to their relay outputs, the monitoring relays permit direct disconnection of the affected system components and alerting, e.g. by the triggering of a warning light. Thanks to adjustable delay times the 3UG4 monitoring relays can respond very flexibly to brief faults such as voltage dips or load changes and can thus avoid unnecessary alarms and disconnections and increase system availability.

3UG48 monitoring relays for IO-Link

The SIRIUS 3UG48 monitoring relays for IO-Link also offer many other options based upon the monitoring functions of the tried-and-tested SIRIUS 3UG4 monitoring relays:

- Measured value transmission to a controller, including resolution and unit, may be parameterizable as to which value is cyclically transmitted
- Transmission of alarm flags to a controller
- Full diagnosis capability by inquiry as to the cause of the fault in the diagnosis data record
- Remote parameterization is also possible, in addition to or instead of local parameterization
- Rapid parameterization of the same devices by duplication of the parameterization in the controller
- Parameter transmission through uploading to a controller by IO-Link call or by parameter server (if IO-Link master from IO-Link Specification V1.1 and higher is used)
- Consistent central data storage in the event of parameter change locally or via a controller
- Automatic reparameterizing when devices are exchanged
- Blocking of local parameterization via IO-Link possible
- Faults are saved in parameterizable and non-volatile fashion to prevent an automatic start up after voltage failure and to make sure diagnostics data is not lost
- Integration into the automation level provides the option of parameterizing the monitoring relays at any time via a display unit, or displaying the measured values in a control room or locally at the machine/control cabinet

Even without communication via IO-Link the devices continue to function fully autonomously:

- Parameterization can take place locally at the device, independently of a controller.
- In the event of failure or before the controller becomes available the monitoring relays work as long as the control supply voltage (24 V DC) is present.
- If the monitoring relays are operated without the controller, the 3UG48 monitoring relays have, thanks to the integrated SIO mode, an additional semiconductor output, which switches when the adjustable warning threshold is exceeded.

Thanks to the combination of autonomous monitoring relay function and integrated IO-Link communication, redundant sensors and/or analog signal converters – which previously took over the transmission of measured values to a controller, leading to considerable extra cost and wiring overhead – are no longer needed.

Because the output relays are still present, the monitoring relays increase the functional reliability of the system, since only the controller can fulfill the control tasks if the current measured values are available, whereas the output relays can also be used for the disconnection of the system if limit values that cannot be reached during operation are exceeded.

The individual 3UG48 monitoring relays for IO-Link offer the following functions in different combinations:

- Phase sequence
- Phase failure, neutral conductor failure
- Phase asymmetry
- Undershooting and/or overshooting of limit values for voltage
- Undershooting and/or overshooting of limit values for current
- Undershooting and/or overshooting of power factor limit values
- Monitoring of the active current or the apparent current
- Monitoring of the residual current
- Undershooting and/or overshooting of limit values for speed

Note:

For more information on the IO-Link bus system, see [page 2/97 onwards](#).

Notes on security

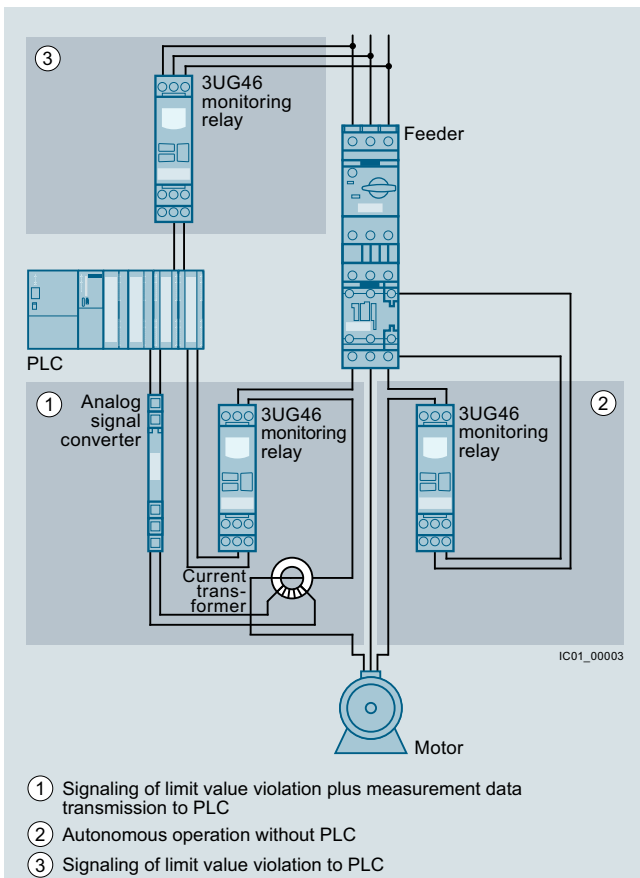
In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information on Industrial Security, see www.siemens.com/industrialsecurity.

Relays

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link

General data



Use of conventional monitoring relays

Notes:

Devices required for the communication via IO-Link:

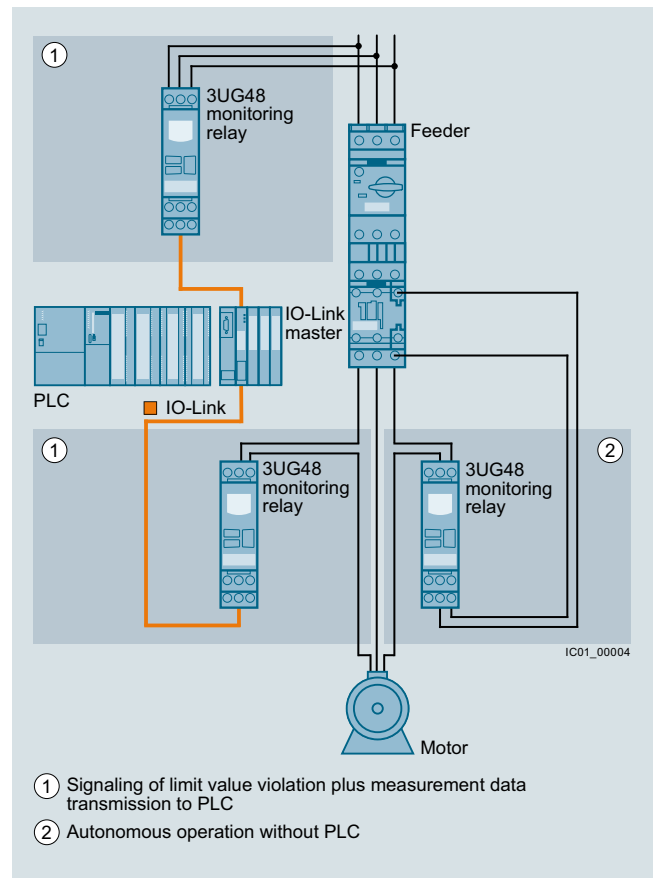
- Any controller that supports IO-Link (e.g. ET 200SP with CPU or S7-1200), see [Catalog ST 70](#).
- IO-Link master (e.g. CM 4xIO-Link for SIMATIC ET 200SP, see [page 2/105](#) or SM 1278 for S7-1200, see [page 2/104](#)).

Article No. scheme

Product versions		Article number	
3UG4 monitoring relay with IO-Link		3UG4	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0
Type of setting	e. g. 8 = analogically adjustable	<input type="checkbox"/>	
Functions	e.g. 15 = line monitoring	<input type="checkbox"/> <input type="checkbox"/>	
Connection type	Screw terminals		1
	Spring-type terminals (push-in)		2
Contacts	e.g. A = 1 CO contact	<input type="checkbox"/>	
Supply voltage	e.g. A4 = 160 ... 690 V AC	<input type="checkbox"/> <input type="checkbox"/>	
Example		3UG4	8 1 5 - 1 A A 4 0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.



Monitoring relays for IO-Link

Each monitoring relay requires an IO-Link channel.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Simple cyclical transmission of the current measured values, relay switching states and events to a controller
- Remote parameterization
- Automatic reparameterizing when devices are exchanged
- Simple duplication of identical or similar parameterizations
- Reduction of control current wiring
- Elimination of testing costs and wiring errors
- Reduction of configuration overhead
- Integration in TIA means clear diagnostics if a fault occurs
- Cost saving and space saving in control cabinet due to the elimination of AI and IO modules as well as analog signal converters and duplicated sensors

Application

The use of SIRIUS monitoring relays for IO-Link is particularly recommended for machines and plants in which these relays, in addition to their monitoring function, are to be connected to the automation level for the rapid, simple and fault-free provision of the current measured values and/or for remote parameterization.

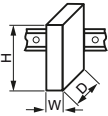


The monitoring relays can either relieve the controller of monitoring tasks or, as a second monitoring entity in parallel to and independent of the controller, increase the reliability in the process or in the system. In addition, the elimination of AI and IO modules allows the width of the controller to be reduced despite significantly expanded functionality.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16368/td>
Manual and internal circuit diagrams, see <https://support.industry.siemens.com/cs/ww/en/view/54375430>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16368/faq>

Type	3UG48		
General technical specifications			
Dimensions (W x H x D)			
• For 3 terminal blocks		mm	22.5 x 92 x 91
- Screw terminals		mm	22.5 x 94 x 91
- Spring-type terminals			
• For 4 terminal blocks		mm	22.5 x 103 x 91
- Screw terminals		mm	22.5 x 103 x 91
- Spring-type terminals			
Permissible ambient temperature			
• During operation	°C	-25 ... +60	
Connection type		 Screw terminals	
• Terminal screw		M3 (for standard screwdriver, size 2 and Pozidriv 2)	
• Solid	mm ²	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve	mm ²	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)	
• Tightening torque	Nm	0.8 ... 1.2	
Connection type		 Spring-type terminals	
• Solid	mm ²	2 x (0.25 ... 1.5)	
• Finely stranded, with end sleeve acc. to DIN 46228	mm ²	2 x (0.25 ... 1.5)	
• Finely stranded	mm ²	2 x (0.25 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)	

Relays

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link

Line monitoring

Overview



SIRIUS 3UG4815 monitoring relay

Solid-state line monitoring relays provide maximum protection for mobile machines, plants and hoisting equipment or for unstable networks. Network and voltage faults can thus be detected early and rectified before far greater damage ensues.

The line monitoring relays with IO-Link monitor phase sequence, phase failure (with or without N conductor monitoring), phase asymmetry and undervoltage and/or overvoltage.

Phase asymmetry is evaluated as the difference between the greatest and the smallest phase voltage relative to the greatest phase voltage. Undervoltage or overvoltage exist if the set limit values for at least one phase voltage are overshoot or undershot. The rms value of the voltage is measured.

Benefits

- Can be used in any network from 160 to 630 V AC worldwide thanks to wide voltage range
- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display and transmission of actual value and network fault type to controller
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The relays are used above all for mobile equipment, e.g. air conditioning compressors, refrigerating containers, building site compressors and cranes.

Function	Application
Phase sequence	<ul style="list-style-type: none"> • Direction of rotation of the drive
Phase failure	<ul style="list-style-type: none"> • A fuse has tripped • Failure of the control supply voltage • Broken cable
Phase asymmetry	<ul style="list-style-type: none"> • Overheating of the motor due to asymmetrical voltage • Detection of asymmetrically loaded networks
Undervoltage	<ul style="list-style-type: none"> • Increased current on a motor with corresponding overheating • Unintentional resetting of a device • Network collapse, particularly with battery power
Overvoltage	<ul style="list-style-type: none"> • Protection of a plant against destruction due to overvoltage

Technical specifications

3UG4815/3UG4816 monitoring relays

The 3UG4815 and 3UG4816 line monitoring relays have a wide voltage range input and are supplied with power through IO-Link or from an external 24 V DC source.

The device is equipped with a display and is parameterized using three buttons. The 3UG4815 monitoring relay monitors three-phase networks with regard to phase sequence, phase failure, phase asymmetry, undervoltage and overvoltage. The 3UG4816 monitoring relay monitors the neutral conductor as well. The hysteresis is adjustable from 1 to 20 V.

The device has two separately adjustable delay times for overvoltage and undervoltage and for line stabilization. If the direction of rotation is incorrect or a phase fails, the device switches off immediately. Thanks to a special measuring method, a phase failure is reliably detected in spite of the wide voltage range from and potentially high feedback through the load.

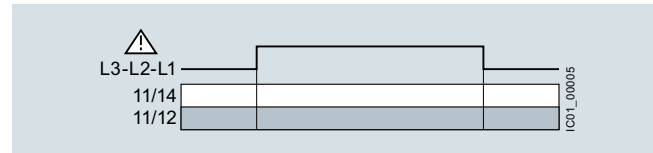
The 3UG4815 and 3UG4816 monitoring relays can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continue to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2.5 s.

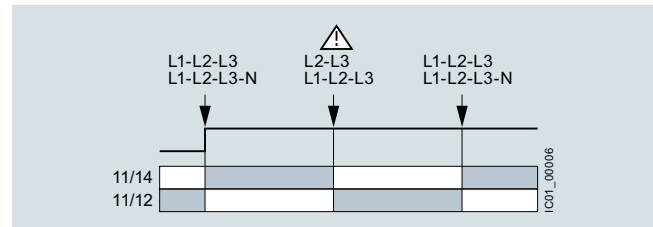
With Manual RESET through IO-Link it is possible in addition to set whether error signals are to be deleted when the control supply voltage is switched off and on (as remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

With the closed-circuit principle selected

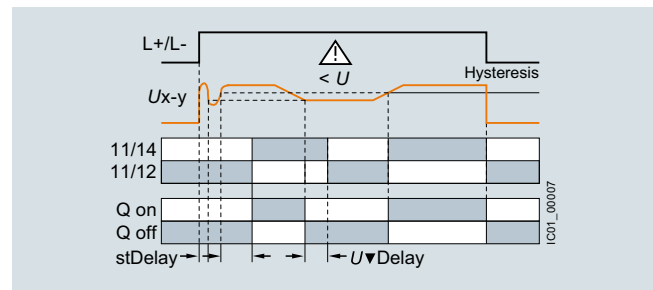
Wrong phase sequence



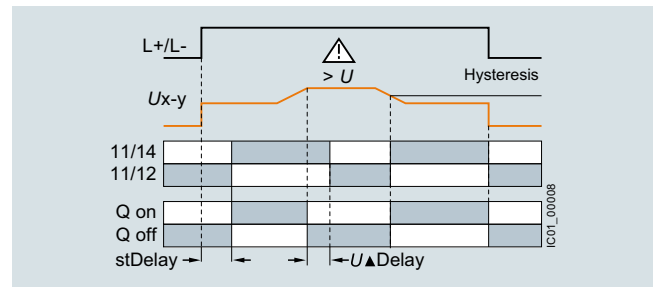
Phase failure



Undervoltage



Overvoltage



Type	3UG4815, 3UG4816	
General technical specifications		
Rated insulation voltage U_i	V	690
Pollution degree 2 Overvoltage category III acc. to VDE 0110		
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Load capacity of the output relay		
• Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 400 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
Minimum contact load at 17 V DC	mA	5
Electrical endurance AC-15	Million operating cycles	0.1
Mechanical endurance	Million operating cycles	10

Relays

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link

Line monitoring

Selection and ordering data

- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Auto or Manual RESET
- Open- or closed-circuit principle
- 1 CO contact, 1 semiconductor output (in SIO mode)

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H



3UG4815-1AA40





3UG4816-1AA40



3UG4815-2AA40



3UG4816-2AA40

Adjustable hysteresis	Under-voltage detection	Over-voltage detection	Stabilization time adjustable stDEL	Tripping delay time adjustable Del	Version of auxiliary contacts	Measurable line voltage ¹⁾	SD	Screw terminals 	SD	Spring-type terminals 	
V			s	s		V AC	d	Article No.	Price per PU	Article No.	Price per PU
Monitoring of phase sequence, phase failure, phase asymmetry, overvoltage and undervoltage											
1 ... 20	✓	✓	0.1 ... 999.9	0.1 ... 999.9	1 CO + 1 Q ²⁾	160 ... 690	2	3UG4815-1AA40	2	3UG4815-2AA40	
Monitoring of phase sequence, phase and N conductor failure, phase asymmetry, overvoltage and undervoltage											
1 ... 20	✓	✓	0.1 ... 999.9	0.1 ... 999.9	1 CO + 1 Q ²⁾	90 ... 400 to N	2	3UG4816-1AA40	2	3UG4816-2AA40	

✓ Function available

¹⁾ Absolute limit values.

²⁾ In SIO mode.

For accessories, see page 10/131.

Overview



SIRIUS 3UG4832 monitoring relays

The relays monitor single-phase AC voltages (rms value) and DC voltages against the set limit value for overshoot and undershoot.

Benefits

- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display and transmission of actual value and status messages to controller
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Protection of a plant against destruction due to overvoltage
- Switch-on of a plant at a defined voltage and higher
- Protection from undervoltage due to overloaded control supply voltages, particularly with battery power

Technical specifications

3UG4832 monitoring relays

The 3UG4832 voltage monitoring relays are supplied with power through IO-Link or with an external auxiliary voltage of 24 V DC and perform overshoot, undershoot or range monitoring of the voltage depending on parameterization. The devices are equipped with a display and are parameterized by means of three buttons or through IO-Link.

The measuring range extends from 10 to 600 V AC/DC. The limit values for overshoot or undershoot can be freely configured within this range. If one of these limit values is reached, the output relay responds according to the set principle of operation as soon as the delay time has elapsed. This tripping delay time $U\blacktriangle Del/U\blacktriangledown Del$ can be set from 0 to 999.9 s, as can the ON-delay time onDel. The hysteresis is adjustable from 0.1 to 300 V.

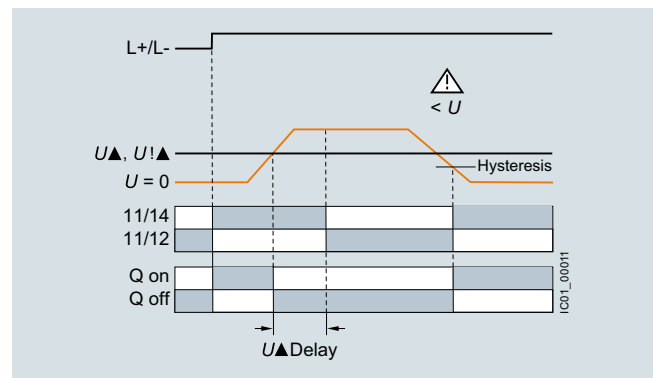
The device can be operated on the basis of either the open-circuit or closed-circuit principle and with Manual or Auto RESET. One output changeover contact is available as a signaling contact, and a semiconductor output is available in addition in SIO mode.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continue to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP \blacktriangle and DOWN \blacktriangledown keys for 2.5 s.

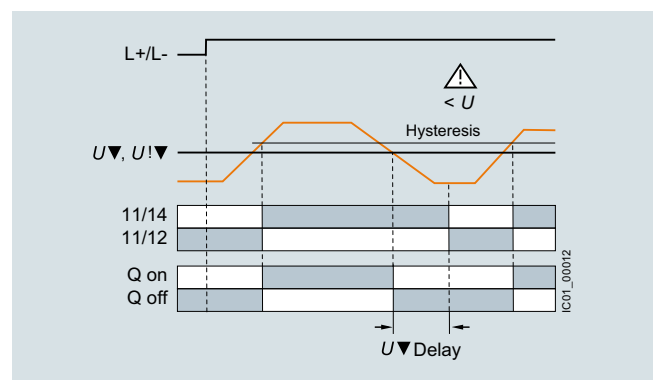
With Manual RESET through IO-Link it is possible in addition to set whether error signals are to be deleted when the control supply voltage is switched off and on (as remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

With the closed-circuit principle selected

Overvoltage



Undervoltage



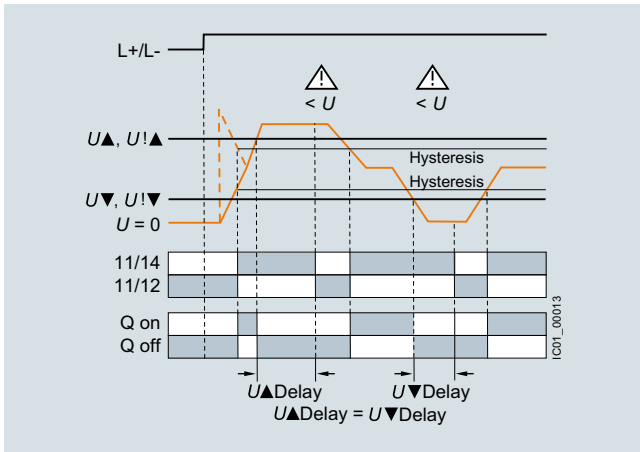
Relays

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link

Voltage monitoring

With the closed-circuit principle selected

Range monitoring



Type	3UG4832	
General technical specifications		
Rated insulation voltage U_i	V	690
Pollution degree 2 Overvoltage category III acc. to VDE 0110		
Rated impulse withstand voltage U_{imp}	kV	6
Measuring circuit		
Permissible measuring range single-phase AC/DC voltage	V	10 ... 690
Measuring frequency	Hz	40 ... 500
Setting range single-phase voltage	V	10 ... 600
Control circuit		
Load capacity of the output relay		
• Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 400 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link

Voltage monitoring

Selection and ordering data

- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Auto or Manual RESET
- Open- or closed-circuit principle
- 1 CO contact, 1 semiconductor output (in SIO mode)



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H



3UG4832-1AA40



3UG4832-2AA40

Measuring range	Adjustable hysteresis	ON-delay time adjustable onDel	Tripping delay time separately adjustable U▲Del/U▼Del	SD	Screw terminals 	SD	Spring-type terminals 	
V AC/DC	V	s	s	d	Article No.	Price per PU	Article No.	Price per PU
Monitoring of voltage for overshoot or undershoot								
10 ... 600	0.1 ... 300	0 ... 999.9	0 ... 999.9	2	3UG4832-1AA40	2	3UG4832-2AA40	

For accessories, see page 10/131.

Relays

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link

Current monitoring

Overview



SIRIUS 3UG4822 monitoring relays

The relays monitor single-phase AC (rms value) and DC currents against the set limit value for overshoot and undershoot.

Benefits

- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Width 22.5 mm
- Display and transmission of actual value and status messages to controller
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Overcurrent and undercurrent monitoring
- Monitoring the functionality of electrical loads
- Monitoring for broken conductors

Technical specifications

3UG4822 monitoring relays

The 3UG4822 current monitoring relays are supplied with power through IO-Link or with an external voltage of 24 V DC and perform overshoot, undershoot or range monitoring of the current depending on the parameterization. The devices are equipped with a display and are parameterized using three buttons.

The measuring range extends from 0.05 to 10 A. For larger AC currents the measuring range can be extended by using commercially available current transformers. Using the adjustable transformer factor, the display of the measured primary currents up to 750 A instead of the secondary currents (max. 1 A or 5 A) is possible.

The rms value of the current is measured. The limit values for overshoot or undershoot can be freely configured within this range. If one of these limit values is reached, the output relay responds according to the set principle of operation as soon as the delay time $I\blacktriangle\text{Del}/I\blacktriangledown\text{Del}$ has elapsed. This time and the ON-delay time onDel are adjustable from 0 to 999.9 s.

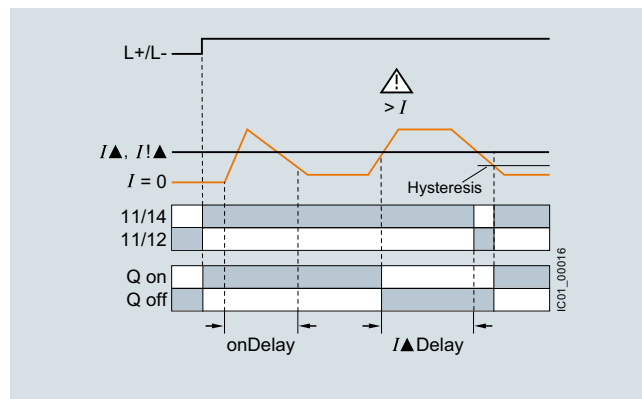
The hysteresis is adjustable from 0.01 to 5 A. The device can be operated with Manual or Auto RESET and on the basis of either the open-circuit or closed-circuit principle. You can decide here whether the output relay is to respond when the supply voltage $U_s = \text{ON}$ is applied, or not until the lower measuring range limit of the measuring current ($I > 50 \text{ mA}$) is reached. One output changeover contact is available as a signaling contact, and a semiconductor output is available in addition in SIO mode.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continue to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP \blacktriangle and DOWN \blacktriangledown keys for 2.5 s.

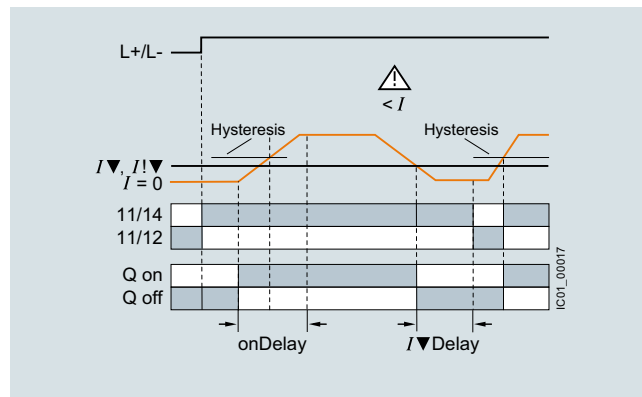
With Manual RESET through IO-Link it is possible in addition to set whether error signals are to be deleted when the control supply voltage is switched off and on (as remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

With the closed-circuit principle selected upon application of the control supply voltage

Current overshoot

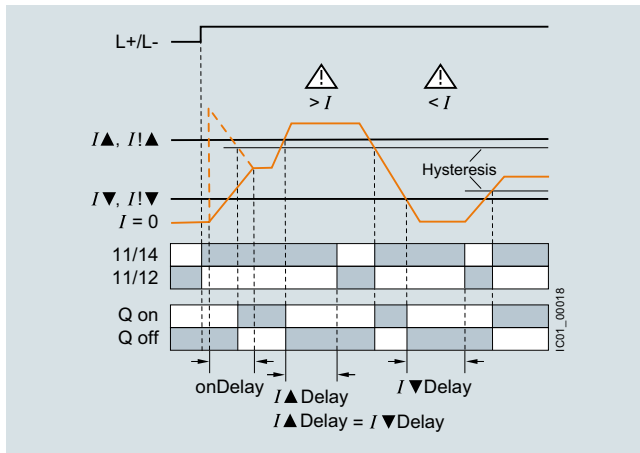


Current undershoot



With the closed-circuit principle selected
upon application of the control supply voltage

Range monitoring



Type	3UG4822	
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III acc. to VDE 0110	V	690
Rated impulse withstand voltage U_{imp}	kV	6
Measuring circuit		
Measuring range for single-phase AC/DC current	A	0.05 ... 15
Measuring frequency	Hz	40 ... 500
Setting range for single-phase current	A	0.05 ... 10
Load supply voltage	V	Max. 300 (with protective separation) Max. 500 (with simple separation)
Control circuit		
Load capacity of the output relay • Thermal current I_{th}	A	5
Rated operational current I_e at • AC-15/24 ... 400 V • DC-13 at	A	3
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

Relays

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link

Current monitoring

Selection and ordering data

- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Adjustable converter factor to display the measured primary current when an external current transformer is used
- Auto or Manual RESET
- Open- or closed-circuit principle
- 1 CO contact, 1 semiconductor output (in SIO mode)



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H



3UG4822-1AA40



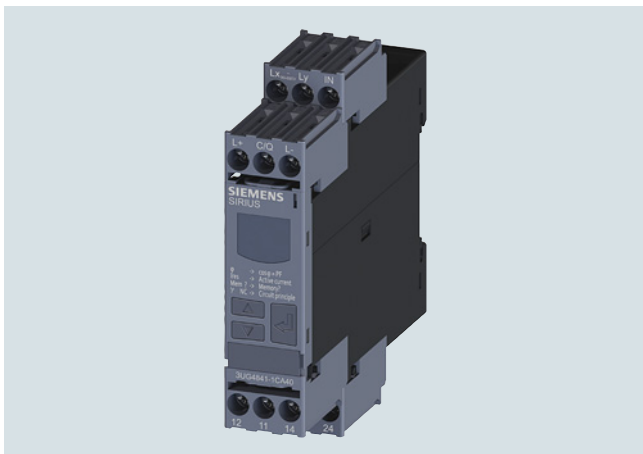
3UG4822-2AA40

Measuring range	Adjustable hysteresis	ON-delay time adjustable onDel	Tripping delay time separately adjustable /▲Del/▼Del	SD	Screw terminals 	SD	Spring-type terminals 	
A AC/DC	A	s	s	d	Article No.	Price per PU	Article No.	Price per PU
Monitoring of current for overshooting and undershooting								
0.05 ... 10	0.01 ... 5	0.1 ... 999.9	0.1 ... 999.9	2	3UG4822-1AA40	2	3UG4822-2AA40	

For accessories, [see page 10/131](#).

For AC currents $I > 10$ A it is possible to use commercially available current transformers, e.g. the Siemens 4NC current transformer, as accessories, [see Catalog LV 10](#).

Overview



SIRIUS 3UG4841 monitoring relay

The 3UG4841 power factor and active current monitoring devices enable the load monitoring of motors.

Whereas power factor (p.f.) monitoring is used above all for monitoring no-load operation, the active current monitoring option can be used to observe and evaluate the load factor over the entire torque range.

Benefits

- Monitoring of even small single-phase motors with a no-load supply current below 0.5 A
- Simple determination of threshold values by the direct collection of measured variables on motor loading
- Range monitoring and active current measurement enable detection of cable breaks between control cabinets and motors, as well as phase failures
- Power factor (p.f.) and/or I_{res} (active current) can be selected as the measurement principle
- Width 22.5 mm
- Display and transmission of actual value and status messages to controller
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- No-load monitoring and load shedding, such as in the event of a V-belt tear
- Underload monitoring in the low-end performance range, e.g. in the event of pump no-load operation
- Monitoring of overload, e.g. due to a dirty filter system
- Power factor monitoring in networks for control of compensation equipment
- Broken cable between control cabinet and motor

Technical specifications

3UG4841 monitoring relays

The 3UG4841 monitoring relays are supplied with power through IO-Link or with an external auxiliary voltage of 24 V DC and are used for performing overshoot, undershoot or range monitoring of the power factor and/or the resulting active current, depending on parameterization. The load to be monitored is connected upstream of the IN terminal. The load current flows through the terminals IN and Ly/N. The setting range for the power factor is 0 to 0.99 and for the active current I_{res} it is 0.2 to 10 A. If the control supply voltage is switched on and no load current flows, the display will show $I < 0.2$ and a symbol for overrange, underrange or range monitoring. If the motor is now switched on and the current exceeds 0.2 A, the set ON-delay time onDel begins. During this time, if the set limit values are undershot or exceeded, this does not lead to a relay reaction of the changeover contact. If the operational flowing active current and/or the p.f. value falls below or exceeds the respective set threshold value, the tripping delay time begins. When this time has expired, the relay changes its switch position. The relevant measured variables for overshooting and undershooting in the display flash. If monitoring for active current undershoot is switched off ($I_{res} \blacktriangledown = \text{OFF}$), and if the load current undershoots the lower measuring range threshold (0.2 A), the CO contacts remain unchanged. If a threshold value is set for the monitoring of active current undershooting, then undershooting of the measuring range threshold (0.2 A) will result in a response of the CO contacts.

The relay operates either according to the open-circuit or closed-circuit principle.

If the device is set to Auto RESET (Memory = No), depending on the set principle of operation, the switching relay returns to its initial state and the flashing ends when the hysteresis threshold is reached.

If Manual RESET is selected in the menu (Memory = Yes), the switching relay remains in its current switching state and the current measured value and the symbol for undershooting and overshooting continue to flash, even when the measured variable reaches a permissible value again. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for 2.5 s.

With Manual RESET through IO-Link it is possible in addition to set whether error signals are to be deleted when the control supply voltage is switched off and on (as remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

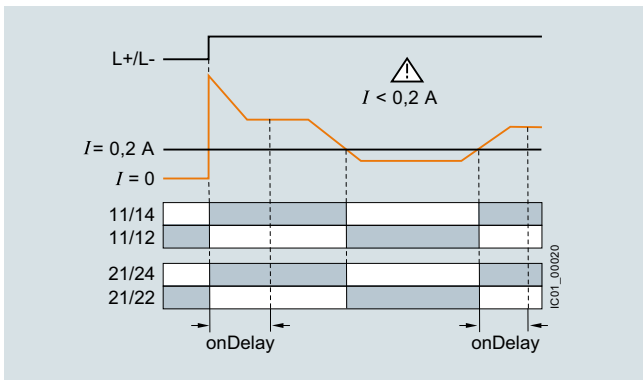
Relays

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link

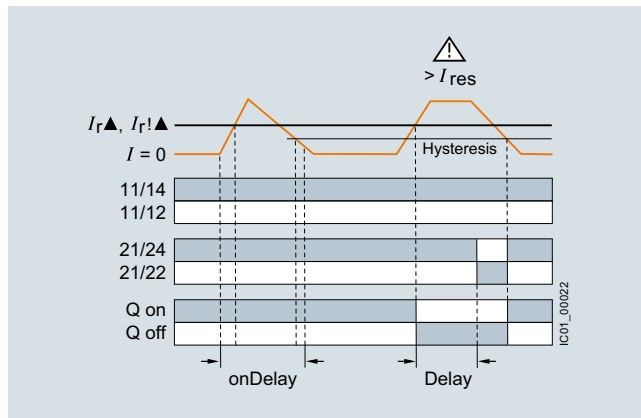
Power factor and active current monitoring

With the closed-circuit principle selected

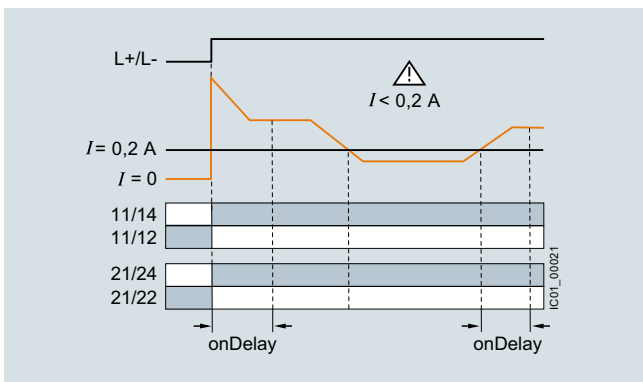
Response in the event of undershooting the measuring range limit with activated monitoring of I_{res} ▼



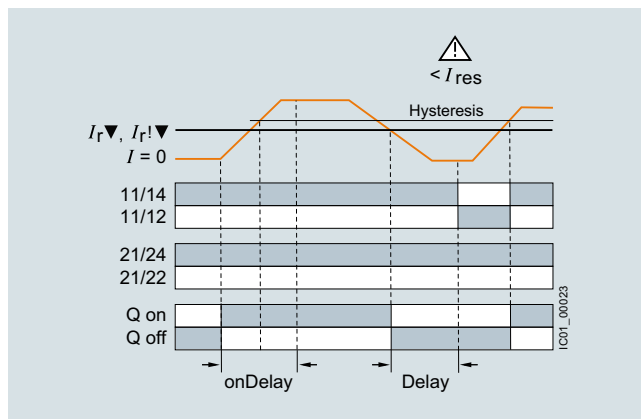
Overshooting of active current



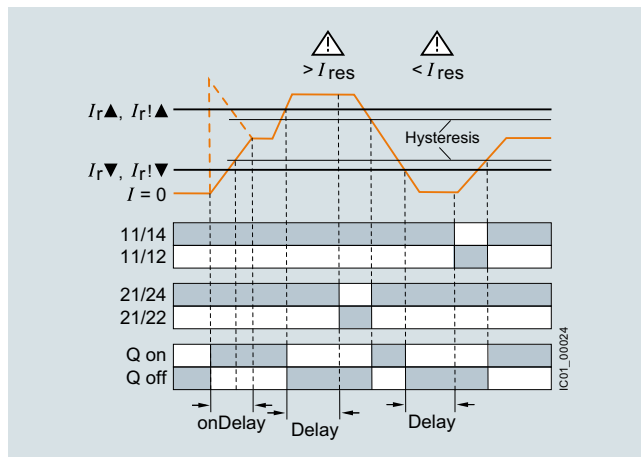
Response in the event of undershooting the measuring range limit with deactivated monitoring of active current undershooting



Undershooting of active current

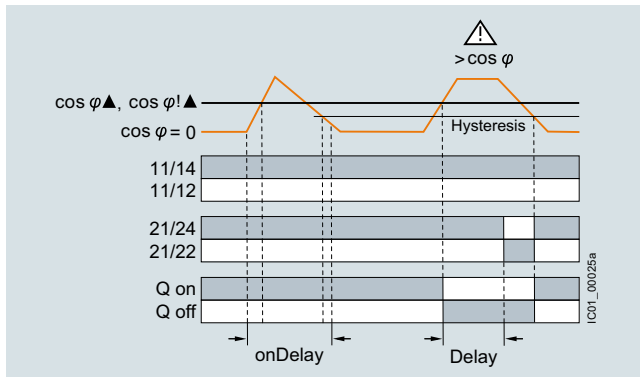


Range monitoring of active current

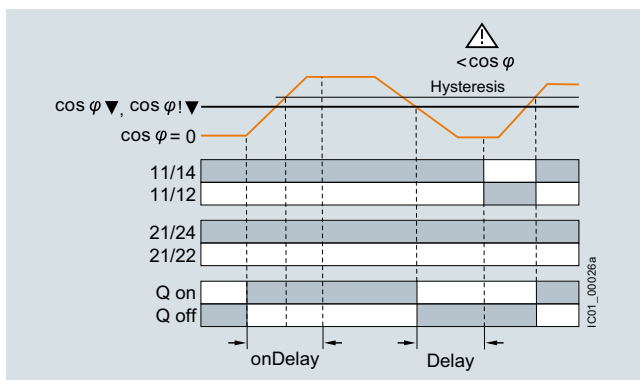


With the closed-circuit principle selected

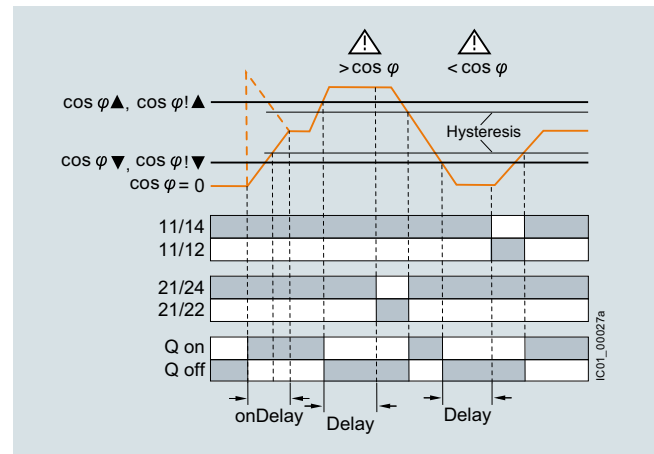
Overshooting of power factor



Undershooting of power factor



Range monitoring of power factor



Type	3UG4841	
General technical specifications		
Rated insulation voltage U_i	V	690
Pollution degree 2 Overvoltage category III according to IEC 60664-1		
Rated impulse withstand voltage U_{imp}	kV	6
Control circuit		
Number of CO contacts for auxiliary contacts		2
Load capacity of the output relay		
• Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 400 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

Relays

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link

Power factor and active current monitoring

Selection and ordering data

- For monitoring the power factor and the active current I_{res} (p.f. $\times I$)
- Suitable for single- and three-phase currents
- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Overshoot, undershoot or range monitoring adjustable
- Upper and lower limit values can be adjusted separately
- Permanent display of actual value and tripping state
- 1 CO contact each for undershoot and overshoot, 1 semiconductor output (in SIO mode)



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H



3UG4841-1CA40



3UG4841-2CA40

Measuring range		Voltage range of the measuring voltage ¹⁾ 50/60 Hz AC	Hysteresis		ON-delay time adjustable onDel	Tripping delay time separately adjustable $U\blacktriangle\text{Del}/U\blacktriangledown\text{Del},$ $\varphi\blacktriangle\text{Del}/\varphi\blacktriangledown\text{Del}$	SD	Screw terminals 		SD	Spring-type terminals 	
For power factor	For active current I_{res}		P.f.	A				Article No.	Price per PU		Article No.	Price per PU
P.f.	A	V	P.f.	A	s	s	d					
Monitoring of power factor and active current for overshooting or undershooting												
0.1 ... 0.99	0.2 ... 10	90 ... 690	0.1 ... 0.2	0.1 ... 3	0 ... 999.9	0 ... 999.9	2	3UG4841-1CA40	2	3UG4841-2CA40		

¹⁾ Absolute limit values.

For accessories, see page 10/131.

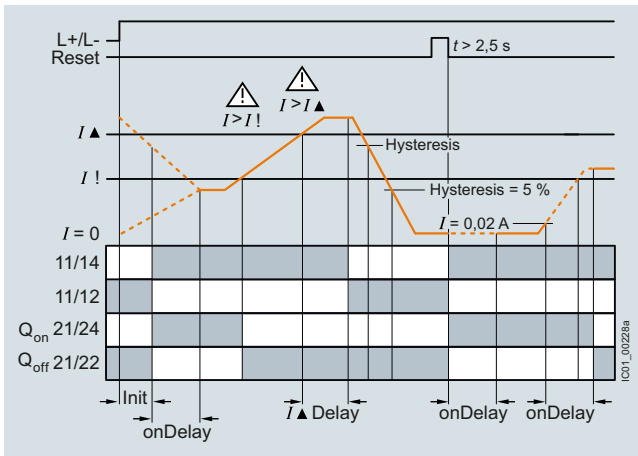
For AC active currents $I_{res} > 10$ A it is possible to use commercially available current transformers, e.g. Siemens 4NC current transformers, as accessories, see Catalog LV 10.

Relays

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link Residual-Current Monitoring

Residual-current monitoring relays

Residual-current monitoring with Manual RESET (Memory = yes)



If Manual RESET is selected in the menu, the output relays remain in their current switching state and the current measured value and the symbol for overshooting continue to flash, even when the measured residual current returns to a permissible value. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ keys for > 2 seconds, or by switching the supply voltage off and back on again.

Note:

The neutral conductor must not be grounded downstream of the summation current transformer as this may impair the function of the residual-current monitoring device.

Type	3UG4825-1CA40, 3UG4825-2CA40	
General data		
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3 rated value	V	300
Impulse withstand voltage, rated value U_{imp}	kV	4
Control circuit		
Number of CO contacts for auxiliary contacts		2
Thermal current of the non-solid-state contact blocks, maximum	A	5
Current carrying capacity of the output relay		
• At AC-15 at 250 V at 50/60 Hz	A	3
• At DC-13		
- At 24 V	A	1
- At 125 V	A	0.2
- At 250 V	A	0.1
Operational current at 17 V, minimum	mA	5

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link Residual-Current Monitoring

Residual-current monitoring relays

Selection and ordering data

- For monitoring residual currents from 0.03 to 40 A, from 16 to 400 Hz
- For 3UL23 residual-current transformers with feed-through opening from 35 to 210 mm
- Permanent self-monitoring
- Certified in accordance with IEC 60947, functionality corresponds to IEC 62020
- Digitally adjustable, with illuminated LCD
- Permanent display of actual value and tripping state
- Separately adjustable limit value and warning threshold
- 1 changeover contact each for warning threshold and tripping threshold



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H



3UG4825-1CA40



3UG4825-2CA40

Measurable current	Adjustable response value current	Switching hysteresis	Adjustable ON-delay time	Control supply voltage At DC rated value	SD	Screw terminals 		Spring-type terminals 	
						Article No.	Price per PU	Article No.	Price per PU
A	A	%	s	V	d				
0.01 ... 43	0.03 ... 40	0 ... 50	0 ... 999.9	24	2	3UG4825-1CA40		3UG4825-2CA40	

For accessories, see page 10/131.

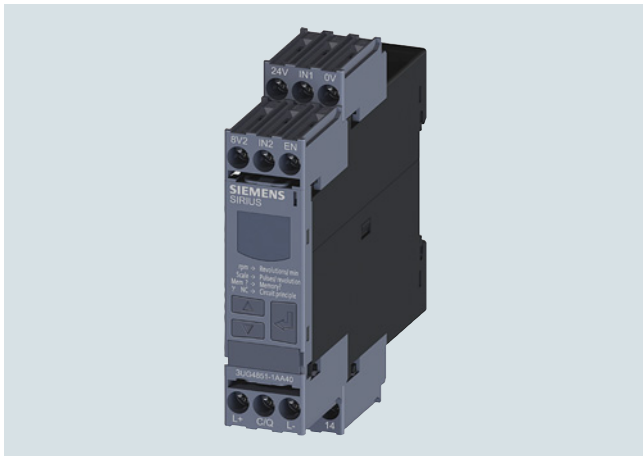
For 3UL23 residual-current transformers and accessories for 3UL23, see page 10/94.

Relays

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link

Speed monitoring

Overview



SIRIUS 3UG4851 monitoring relay

3UG4851 monitoring relays are used in combination with a sensor to monitor drives for overspeed and/or underspeed.

Furthermore, the monitoring relays are ideal for all functions where a continuous pulse signal needs to be monitored (e.g. belt travel monitoring, completeness monitoring, passing monitoring, clock-time monitoring).

Benefits

- Variably adjustable to overshoot, undershoot or range monitoring
- Freely configurable delay times and RESET response
- Display and transmission of actual value and fault type to controller
- Use of up to 10 sensors per rotation for extremely slowly rotating motors
- 2- or 3-wire sensors and sensors with a mechanical switching output or semiconductor output can be connected
- Auxiliary voltage for sensor integrated
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

- Slip or tear of a belt drive
- Overload monitoring
- Transport monitoring for completeness

Technical specifications

3UG4851 monitoring relays

The speed monitoring relay operates according to the principle of period duration measurement.

In the monitoring relay, the time between two successive rising edges of the pulse encoder is measured and compared to the minimum and/or maximum permissible period duration calculated from the set limit values for the speed.

Thus, the period duration measurement recognizes any deviation in speed after just two pulses, even at very low speeds or in the case of extended pulse gaps.

By using up to ten pulse encoders evenly distributed around the circumference, it is possible to shorten the period duration, and in turn the response time. By taking into account the number of sensors in the monitoring relay, the speed continues to be indicated in rpm.

ON-delay time for motor start

To be able to start a motor drive, and depending on whether the open-circuit or closed-circuit principle is selected, the output relay switches to the GO state during the ON-delay time, even if the speed is still below the set value.

The ON-delay time is started by either switching on the auxiliary voltage or, if the auxiliary voltage is already applied, by actuating the respective NC contact (e.g. auxiliary contact).

Speed monitoring with Auto RESET (Memory = no)

If the device is set to Auto RESET, the output relay switches to the GO state, once the adjustable hysteresis threshold is reached in the range of 1 to 99.9 rpm and the flashing stops. Any overshoots or undershoots are therefore not stored.

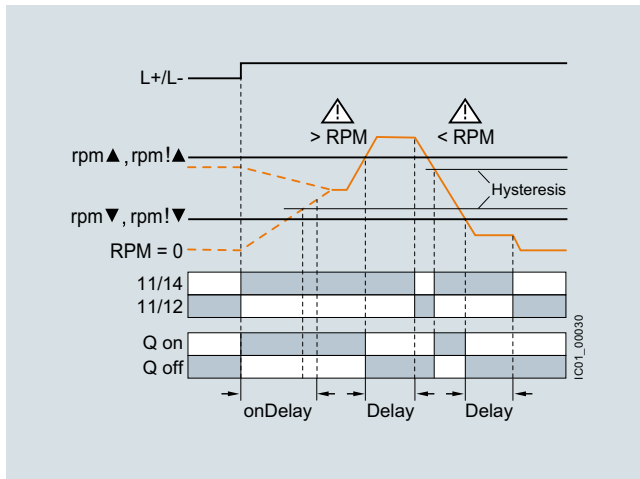
Speed monitoring with Manual RESET (Memory = yes)

If Manual RESET is selected in the menu, the output relay remains in its current switching state and the current measured value and the symbol for overshooting/undershooting continue to flash, even when the speed returns to a permissible value. This stored fault status can be reset by simultaneously pressing the UP▲ and DOWN▼ buttons for > 2.5 s or by connecting the RESET device terminal to 24 V DC.

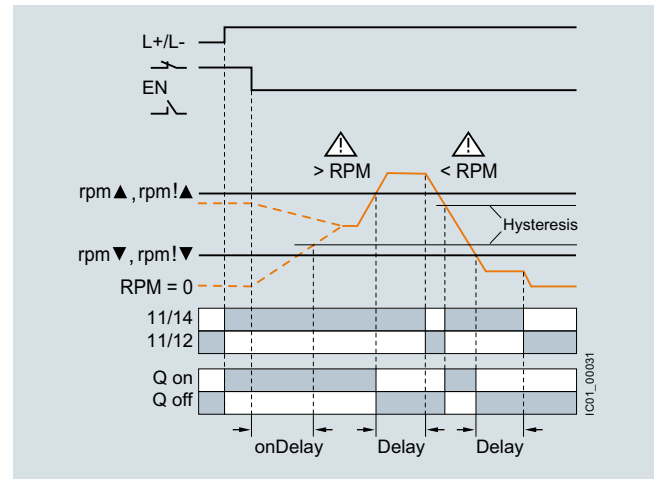
With Manual RESET through IO-Link it is possible in addition to set whether error signals are to be deleted when the control supply voltage is switched off and on (as remote RESET) or whether the signals are to be permanently saved even in a voltage failure, with confirmation possible only through local RESET or via IO-Link.

With the closed-circuit principle selected

Range monitoring without enable input



Range monitoring with enable input



Type	3UG4851	
General technical specifications		
Rated insulation voltage U_i Pollution degree 2 Overvoltage category III acc. to VDE 0110	V	300
Rated impulse withstand voltage U_{imp}	kV	4
Measuring circuit		
Sensor supply		
• For 3-wire sensor (24 V/0 V)	mA	Max. 50
• For 2-wire NAMUR sensor (8V2)	mA	Max. 8.2
Signal input		
• IN1	k Ω	16, 3-wire sensor, pnp operation
• IN2	k Ω	1, floating contact, 2-wire NAMUR sensor
Voltage level		
• For level 1 at IN1	V	4.5 ... 30
• For level 0 at IN1	V	0 ... 1
Current level		
• For level 1 at IN2	mA	> 2.1
• For level 0 at IN2	mA	< 1.2
Minimum pulse duration of signal	ms	5
Minimum interval between 2 pulses	ms	5
Control circuit		
Number of CO contacts for auxiliary contacts		1
Load capacity of the output relay Thermal current I_{th}	A	5
Rated operational current I_e at		
• AC-15/24 ... 250 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
Minimum contact load at 17 V DC	mA	5

Relays

SIRIUS 3UG48 Monitoring Relays for Stand-Alone Installation for IO-Link

Speed monitoring

Selection and ordering data

- For speed monitoring in revolutions per minute (rpm)
- Two- or three-wire sensor with mechanical or electronic switching output can be connected
- Two-wire NAMUR sensor can be connected
- Sensor supply 24 V DC/50 mA integrated
- Input frequency 0.1 to 2 200 pulses per minute (0.0017 to 36.7 Hz)
- With or without enable signal for the drive to be monitored
- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Overshoot, undershoot or range monitoring adjustable
- Number of pulses per revolution can be adjusted
- Upper and lower limit values can be adjusted separately
- Auto, Manual or remote RESET options after tripping
- Permanent display of actual value and tripping state
- 1 CO contact, 1 semiconductor output (in SIO mode)



PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H



3UG4851-1AA40

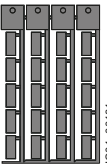
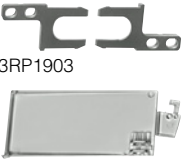




3UG4851-2AA40

Measuring range	Adjustable hysteresis	ON-delay time adjustable onDel	Tripping delay time separately adjustable rpm▲Del/rpm▼Del	Pulses per revolution	SD	Screw terminals 	SD	Spring-type terminals 		
rpm	rpm	s	s		d	Article No.	Price per PU	d	Article No.	Price per PU
Speed monitoring for overshooting and undershooting										
0.1 ... 2 200	OFF 1 ... 99.9	0 ... 999.9	0 ... 999.9	1 ... 10	2	3UG4851-1AA40	2	3UG4851-2AA40		

For accessories, see page 10/131.

Selection and ordering data

Use	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Blank labels								
 3RT2900-1SB20	For 3UG48		Unit labeling plates For SIRIUS devices 20 mm x 7 mm, titanium gray ¹⁾	20	3RT2900-1SB20	100	340 units	41B
	For 3UG48		Adhesive labels for SIRIUS devices	15	3RT1900-1SB60	100	3 060 units	41B
			<ul style="list-style-type: none"> • 19 mm x 6 mm, pastel turquoise • 19 mm x 6 mm, zinc yellow 	15	3RT1900-1SD60	100	3 060 units	41B
Push-in lugs and covers								
 3RP1903 3RP1902	For 3UG48		Push-in lugs For screw fixing, 2 units are required for each device	5	3RP1903	1	10 units	41H
	For 3UG48		Sealable covers For securing against unauthorized adjustment of setting knobs	5	3RP1902	1	5 units	41H
Tools for opening spring-type terminals								
 3RA2908-1A	For auxiliary circuit con- nections		Screwdrivers For all SIRIUS devices with spring-type terminals 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	2	Spring-type terminals 	1	1 unit	41B
					3RA2908-1A			

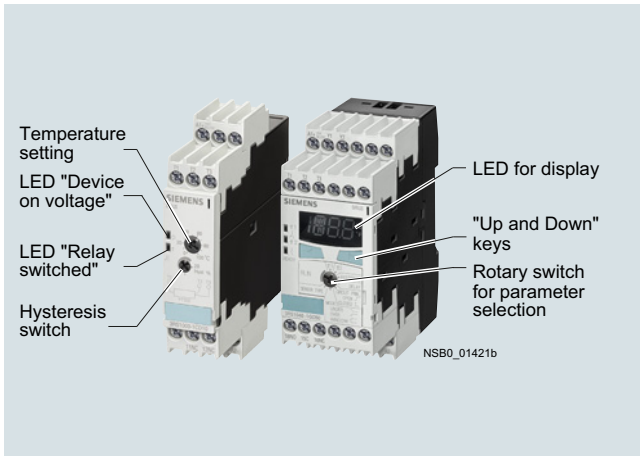
¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/16.

Relays

SIRIUS 3RS10, 3RS11, 3RS20, 3RS21 Temperature Monitoring Relays

General data

Overview



SIRIUS 3RS temperature monitoring relays

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RS10

The 3RS10, 3RS11, 3RS20 and 3RS21 temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperatures are acquired by means of sensors in the medium, evaluated by the device and monitored for overshoot, undershoot or location within a specified range (window function).

The range comprises adjustable analog units with one or two threshold values, digital units for 1 sensor, which are also a good alternative to temperature controllers for the low-end range, and digital units for up to 3 sensors which have been optimized for monitoring large motors.

Article No. scheme

Product versions	Article number
Temperature monitoring relays	3RS <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 0
Device type	e.g. 10 = analogically adjustable, 1 sensor <input type="checkbox"/> <input type="checkbox"/>
Version and type of sensor	e.g. 00 = one threshold value, Pt100 sensor <input type="checkbox"/> <input type="checkbox"/>
Connection type	Screw terminals 1
	Spring-type terminals (push-in) 2
Number and type of outputs	e.g. C = 1 NO + 1 NC <input type="checkbox"/>
Control supply voltage	e.g. D = 24 V AC/DC <input type="checkbox"/>
Measuring range	e.g. 0 = -50 ... +50 °C <input type="checkbox"/>
Example	3RS 1 0 0 0 - 1 C D 0 0

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16369/td>

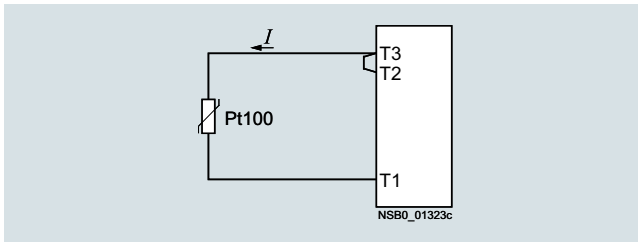
Manual and internal circuit diagrams, see <https://support.industry.siemens.com/cs/ww/en/view/54999309>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16369/faq>

Connection of resistance-type thermometers

Two-wire measurement

When two-wire temperature sensors are used, the resistances of the sensor and wiring are added. The resulting systematic error must be taken into account when the signal evaluation unit is calibrated. A jumper must be clamped between terminals T2 and T3 for this purpose.



Wiring errors

The errors that are generated by the wiring comprise approximately 2.5 K/Ω. If the resistance of the cable is not known and cannot be measured, the wiring errors can also be estimated using the following table.

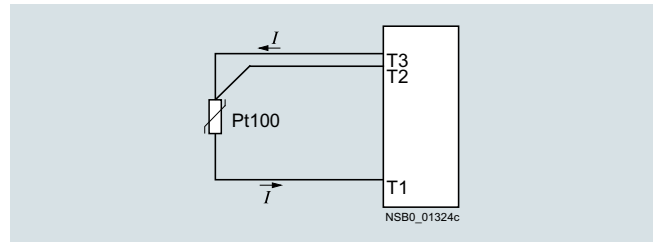
Temperature drift dependent on the length and cross-section of the cable with Pt100 sensors and an ambient temperature of 20 °C, in K:

Cable length in m	Cross-section mm ²			
	0.5	0.75	1	1.5
	Temperature drift in K:			
0	0	0	0	0
10	1.8	1.2	0.9	0.6
25	4.5	3.0	2.3	1.5
50	9.0	6.0	4.5	3.0
75	13.6	9.0	6.8	4.5
100	18.1	12.1	9.0	6.0
200	36.3	24.2	18.1	12.1
500	91.6	60.8	45.5	30.2

Example: On a Pt100 sensor with a cable length of 10 m and a conductor cross-section of 1 mm² the temperature drift equals 0.9 K.

Three-wire measurement

To minimize the effects of the line resistances, a three-wire circuit is often used. Using the additional cable, two measuring circuits can be formed of which one is used as a reference. The signal evaluation unit can then automatically calculate the line resistance and take it into account.



Connection of thermocouples

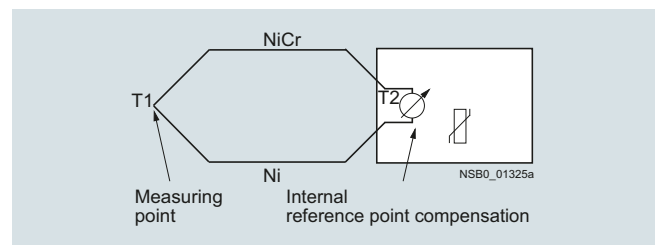
Based on the thermo-electrical effect, a differential temperature measurement will be performed between the measuring point and the signal evaluation unit.

This principle assumes that the signal evaluation unit knows the temperature at the clamping point (T2). For this reason, the 3RS11 temperature monitoring relay has an integral compensator that determines this comparison temperature and builds it into the result of the measurement. The thermal sensors and cables must be insulated therefore.

The absolute temperature is therefore calculated from the ambient temperature of the signal evaluation unit and the temperature difference measured by the thermocouple.

Temperature detection is therefore possible (T1) without needing to know the precise ambient temperature of the clamping point at the signal evaluation unit (T2).

The connecting cable is only permitted to be extended using connecting leads that are made from the same material as the thermocouple. If a different type of conductor is used, an error will result in the measurement.



For more information, see

- www.ephy-mess.com
- Page 16/16

Relays

SIRIUS 3RS10, 3RS11, 3RS20, 3RS21 Temperature Monitoring Relays

General data

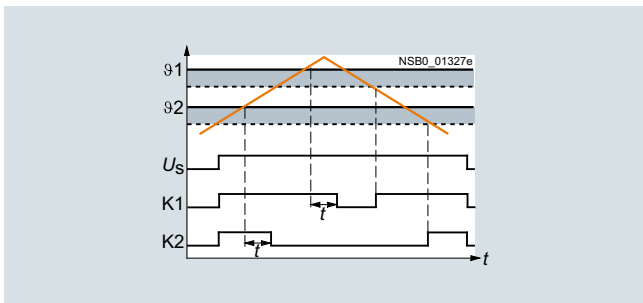
Principle of operation

Once the temperature has reached the set threshold value ϑ_1 , the output relay K1 changes its switching state as soon as the set time t has elapsed (K2 responds in the same manner to ϑ_2). The delay time can only be adjusted with digital units (on analog units $t = 0$).

The relays return to their original state as soon as the temperature reaches the set hysteresis value.

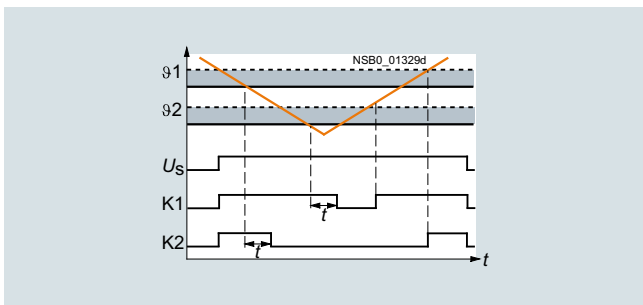
Temperature overshoot

Closed-circuit principle



Temperature undershoot

Closed-circuit principle

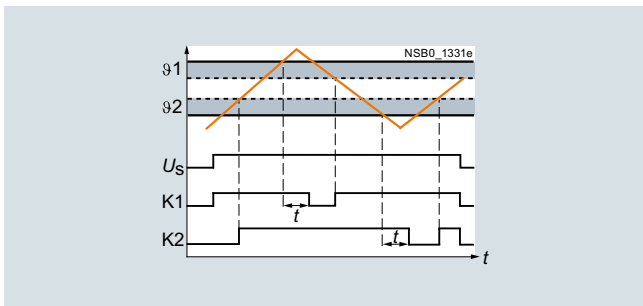


Range monitoring (digital units only)

Once the temperature has reached the upper threshold value ϑ_1 , the output relay K1 changes its switching state as soon as the set time t has elapsed. The relay returns to its original state as soon as the temperature reaches the set hysteresis value.

K2 responds in the same manner to the lower threshold value of ϑ_2 .

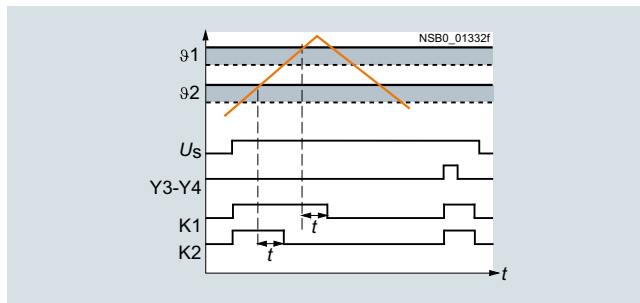
Closed-circuit principle



Principle of operation with memory function (3RS1042, 3RS1142) based on the example of temperature overshoot

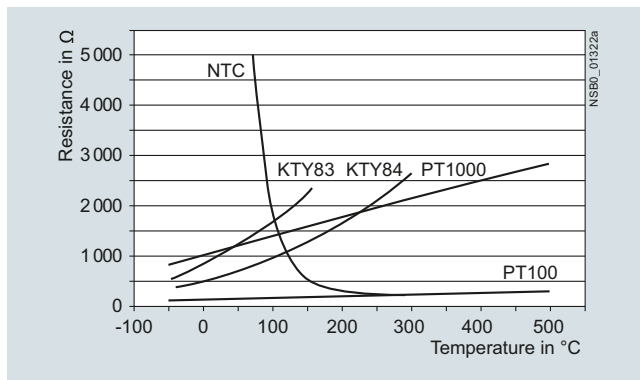
Once the temperature has reached the set threshold value ϑ_1 , the output relay K1 changes its switching state as soon as the set time t has elapsed (K2 responds in the same manner to ϑ_2). The relays only return to the original state when the temperature falls below the set hysteresis value and when terminals Y3-Y4 have been briefly jumpered.

Closed-circuit principle



Characteristic curves

For resistance sensors



The short-circuit and open-circuit detection as well as the measuring range is limited, depending on the sensor type.

Measuring ranges in °C for resistance sensors

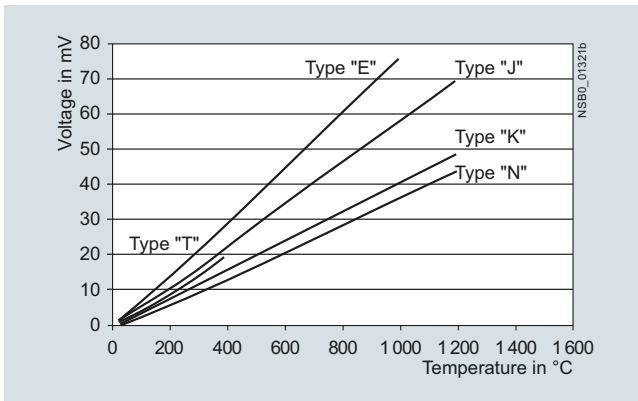
Sensor type	Short circuit	Open circuit	3RS1040/ 3RS1041 Measuring range in °C	3RS1042 Measuring range in °C
Pt100	✓	✓	-50 ... +500	-50 ... +750
Pt1000	✓	✓	-50 ... +500	-50 ... +500
KTY83-110	✓	✓	-50 ... +175	-50 ... +175
KTY84	✓	✓	-40 ... +300	-40 ... +300
NTC ¹⁾	✓	--	80 ... 160	80 ... 160

✓ Detection possible
 -- Detection not possible

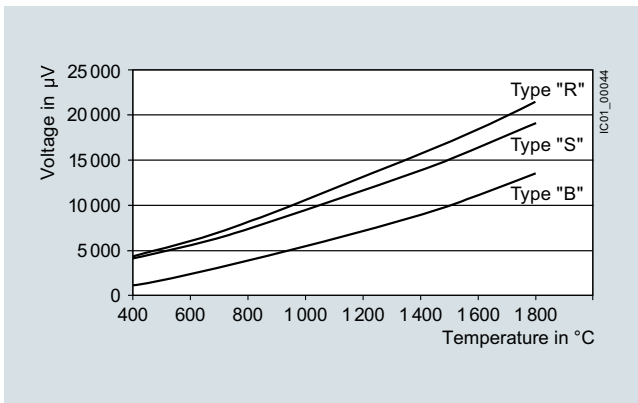
¹⁾ NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

Characteristic curves

For thermocouples



Characteristic curves for sensor types J, K, T, E, N



Characteristic curves for sensor types S, R and B

Measuring range in °C for thermocouples

Sensor type	Short circuit	Open circuit	3RS1140 Measuring range in °C	3RS1142 Measuring range in °C
J	--	✓	-99 ... +999	-99 ... +1 200
K	--	✓	-99 ... +999	-99 ... +1 350
T	--	✓	-99 ... +400	-99 ... +400
E	--	✓	-99 ... +999	-99 ... +999
N	--	✓	-99 ... +999	-99 ... +999
S	--	✓	--	0 ... 1 750
R	--	✓	--	0 ... 1 750
B	--	✓	--	400 ... 1 800

✓ Detection possible

-- Detection not possible

Type		3RS10, 3RS11 analog	3RS10, 3RS11, 3RS20, 3RS21 digital
General technical specifications			
Dimensions (W x H x D)			
• Screw terminals		mm 22.5 x 102 x 91	45 x 106 x 91
• Spring-type terminals		mm 22.5 x 103 x 91	45 x 108 x 91
Permissible ambient temperature			
• During operation	°C	-25 ... +60	
Connection type		Screw terminals	
• Terminal screw		M3 (for standard screwdriver, size 2 and Pozidriv 2)	
• Solid	mm ²	1 x (0.5 ... 4)/2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve	mm ²	1 x (0.5 ... 2.5)/2 x (0.5 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)	
Connection type		Spring-type terminals	
• Solid	mm ²	2 x (0.25 ... 1.5)	
• Finely stranded, with end sleeve acc. to DIN 46228	mm ²	2 x (0.25 ... 1.5)	
• Finely stranded	mm ²	2 x (0.25 ... 1.5)	
• AWG cables, solid or stranded	AWG	2 x (24 ... 16)	

Relays

SIRIUS 3RS10, 3RS11, 3RS20, 3RS21 Temperature Monitoring Relays

Relays, analogically adjustable for 1 sensor

Overview



SIRIUS 3RS analog temperature monitoring relays for 1 sensor

The 3RS10, 3RS11 analog temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperature is detected by the sensors in the medium, evaluated by the device and monitored for overshoot or undershoot. When the threshold values are reached, the output relay switches on or off depending on the parameterization.

Benefits

- All devices except for 24 V AC/DC feature electrical separation
- Extremely easy operation using a rotary potentiometer
- Adjustable hysteresis
- Adjustable working principle for devices with 2 threshold values
- All versions with removable terminals
- All versions with screw terminals, many versions alternatively with spring-type terminals

Application

The analogically adjustable SIRIUS 3RS10, 3RS11 temperature monitoring relays can be used in almost any application in which temperature overshoot or undershoot is not permitted, e.g. in the monitoring of set temperature limits and the output of alarm messages for:

- Motor and system protection
- Control cabinet temperature monitoring
- Freeze monitoring
- Temperature limits for process variables e.g. in the packaging industry or electroplating
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Technical specifications

Type		3RS1000, 3RS1010	3RS1100, 3RS1101	3RS1020, 3RS1030	3RS1120, 3RS1121
Auxiliary circuit					
Rated operational currents I_e					
• AC-15/24 ... 250 V	A	3			
• DC-13 at					
- 24 V	A	1			
- 125 V	A	0.2			
- 250 V	A	0.1			
Measuring accuracy at 20 °C ambient temperature (T20)		< ±5% of full-scale value			
Reference point accuracy	K	--	< ±5	--	< ±5
Deviations due to ambient temperature		< 2	< 3	< 2	< 3
In % of the measuring range					
Hysteresis settings					
• For temperature 1	%	2 ... 20 from upper limit of scale			
• For temperature 2	%	5 from upper limit of scale			
Sensor circuit					
Typical sensor current					
• Pt100	mA	1	--	1	--
Open-circuit detection		No			
Short-circuit detection		No			
Three-wire conductor connection¹⁾		Yes	--	Yes	--
Enclosure					
Rated insulation voltage U_i (pollution degree 3)	V	300			

¹⁾ Two-wire connection of resistance sensors with wire jumper between T2 and T3.



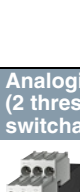



SIRIUS 3RS10, 3RS11, 3RS20, 3RS21 Temperature Monitoring Relays

Relays, analogically adjustable for 1 sensor

Selection and ordering data

- For temperature monitoring with resistance sensors or thermocouples
- Temperature range -55 °C to +1 000 °C, depending on the sensor type
- Wide voltage range versions are electrically separated
- Analogically adjustable, setting accuracy $\pm 5\%$
- Versions with 2 separately adjustable threshold values and adjustable open/closed-circuit principle
- Hysteresis for threshold value 1 is adjustable (2 to 20%), hysteresis for threshold value 2 is non-adjustable (5%)
- 1 NC + 1 NO for versions with one threshold value
- 1 CO for threshold value 1 and 1 NO for threshold value 2

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H

Sensors	Function	Measuring range	Rated control supply voltage U_s 50/60 Hz AC	SD	Screw terminals		Spring-type terminals	
					Article No.	Price per PU	Article No.	Price per PU
		°C	V	d				
Analogically adjustable, 1 threshold value, width 22.5 mm; closed-circuit principle; without memory; 1 NO + 1 NC								
	Pt100 (resistance sensor)	Overshoot	- 50 ... + 50	24 AC/DC	10	3RS1000-1CD00	10	3RS1000-2CD00
			110/230 AC	10	3RS1000-2CK00			
		0 ... + 100	24 AC/DC	10	3RS1000-1CD10	10	3RS1000-2CD10	
			110/230 AC	2	3RS1000-1CK10	2	3RS1000-2CK10	
		0 ... + 200	24 AC/DC	10	3RS1000-1CD20	10	3RS1000-2CD20	
			110/230 AC	2	3RS1000-1CK20	10	3RS1000-2CK20	
	Type J (thermocouple)	Overshoot	- 50 ... + 50	24 AC/DC	10	3RS1010-1CD00	10	---
			110/230 AC	10	3RS1010-1CK00			
		0 ... + 100	24 AC/DC	10	3RS1010-1CD10	10	---	
			110/230 AC	10	3RS1010-1CK10	10	---	
		0 ... + 200	24 AC/DC	10	3RS1010-1CD20	10	---	
			110/230 AC	10	3RS1010-1CK20	10	---	
	Type K (thermocouple)	Overshoot	0 ... + 200	24 AC/DC	10	3RS1100-1CD20	10	3RS1100-2CD20
			110/230 AC	10	3RS1100-1CK20			
		0 ... + 600	24 AC/DC	10	3RS1100-1CD30	10	---	
			110/230 AC	10	3RS1100-1CK30	10	---	
		0 ... + 200	24 AC/DC	10	3RS1101-1CD20	10	---	
			110/230 AC	10	3RS1101-1CK20	10	---	
0 ... + 600	24 AC/DC	10	3RS1101-1CD30	10	---			
	110/230 AC	10	3RS1101-1CK30	10	---			
+ 500 ... + 1 000	24 AC/DC	10	3RS1101-1CD40	10	---			
	110/230 AC	10	3RS1101-1CK40	10	---			
Analogically adjustable for warning and disconnection (2 threshold values), 22.5 mm width; open/closed-circuit principle switchable; without memory; 1 NO + 1 CO								
	Pt100 (resistance sensor)	Overshoot	- 50 ... + 50	24 AC/DC	10	3RS1020-1DD00	10	---
			24 ... 240 AC/DC	10	3RS1020-1DW00			
		0 ... + 100	24 AC/DC	10	3RS1020-1DD10	10	---	
			24 ... 240 AC/DC	10	3RS1020-1DW10	10	---	
		0 ... + 200	24 AC/DC	10	3RS1020-1DD20	10	---	
			24 ... 240 AC/DC	2	3RS1020-1DW20	10	3RS1020-2DW20	
	Type J (thermocouple)	Overshoot	- 50 ... + 50	24 AC/DC	10	3RS1030-1DD00	10	---
			24 ... 240 AC/DC	10	3RS1030-1DW00			
		0 ... + 100	24 AC/DC	10	3RS1030-1DD10	10	---	
			24 ... 240 AC/DC	10	3RS1030-1DW10	10	---	
		0 ... + 200	24 AC/DC	10	3RS1030-1DD20	10	3RS1030-2DD20	
			24 ... 240 AC/DC	10	3RS1030-1DW20	10	---	
	Type K (thermocouple)	Overshoot	0 ... + 200	24 AC/DC	10	3RS1120-1DD20	10	3RS1120-2DD20
			24 ... 240 AC/DC	10	3RS1120-1DW20			
		0 ... + 600	24 AC/DC	10	3RS1120-1DD30	10	---	
			24 ... 240 AC/DC	10	3RS1120-1DW30	10	---	
		0 ... + 200	24 ... 240 AC/DC	10	3RS1121-1DW20	10	---	
			24 ... 240 AC/DC	10	3RS1121-1DW30	10	---	
+ 500 ... + 1 000	24 AC/DC	10	3RS1121-1DD40	10	---			
	24 AC/DC	10	---	10	---			

For accessories, see page 10/142.

Relays

SIRIUS 3RS10, 3RS11, 3RS20, 3RS21 Temperature Monitoring Relays

Relays, digitally adjustable for 1 sensor

Overview



SIRIUS 3RS digital temperature monitoring relay for 1 sensor

The 3RS10, 3RS11, 3RS20 and 3RS21 temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperatures are acquired by means of sensors in the medium, evaluated by the device and monitored for overshoot, undershoot or location within a specified range (window function). The 3RS10 and 3RS11 units indicate the measured temperature in °C, the 3RS20 and 3RS21 units in °F.

The units are also an excellent alternative to temperature controllers in the low-end performance range (two- or three-point control).

Benefits

- Very simple operation without complicated menu selections
- Two- or three-point control can be parameterized quickly
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The temperature monitoring relays can be used in almost any application in which temperature overshoot or undershoot is not permitted, e.g. in the monitoring of set temperature limits and the output of alarm messages for:

- Plant and environment protection
- Temperature limits for process variables e.g. in the packaging industry or electroplating
- Temperature limits for district heating plants
- Exhaust temperature monitoring
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Technical specifications

Type		3RS1040, 3RS1042, 3RS2040	3RS1140, 3RS2140	3RS1142
Auxiliary circuit				
Rated operational currents I_e				
• AC-15/24 ... 250 V	A	3		
• DC-13 at:				
- 24 V	A	1		
- 125 V	A	0.2		
- 250 V	A	0.1		
Evaluation unit				
Measuring accuracy at 20 °C ambient temperature (T20)		< ± 2 K, ± 1 digit	< ± 5 K, ± 1 digit	< ± 7 K, ± 1 digit
Reference point accuracy		--	< ± 5 K	
Deviations due to ambient temperature In % of measuring range	%	0.05 °C per K deviation from T20		
Measuring cycle	ms	500		
Hysteresis settings for temperature	K	1 ... 99, for both values		
Adjustable delay time	s	0 ... 999		
Sensor circuit				
Typical sensor current				
• Pt100	mA	1	--	--
• Pt1000/KTY83/KTY84/NTC	mA	0.2	--	--
Open-circuit detection		Yes ¹⁾	Yes	Yes
Short-circuit detection		Yes	No	No
Three-wire conductor connection		Yes ²⁾	--	--
Enclosure				
Rated insulation voltage U_i (pollution degree 3)	V AC	300		

¹⁾ Not for NTC type B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

²⁾ Two-wire connection of resistance sensors with wire jumper between T2 and T3.

SIRIUS 3RS10, 3RS11, 3RS20, 3RS21 Temperature Monitoring Relays

Relays, digitally adjustable for 1 sensor

Selection and ordering data

- For temperature monitoring with resistance sensors or thermocouples
- Temperature range dependent on sensor type
- Wide voltage range versions are electrically separated
- Non-volatile
- Short-circuit and open-circuit detection in sensor circuit
- Digitally adjustable, with illuminated LCD
- Overshoot, undershoot or range monitoring adjustable
- Exact sensor type can be set
- 2 separately adjustable threshold values
- 1 hysteresis applies to both thresholds (0 to 99 K)
- 1 delay time applies to both thresholds (0 to 999 s)
- Adjustable open/closed-circuit principle
- Adjustable Manual/remote RESET
- Permanent display of actual value in °C or °F and tripping state
- 1 CO contact each per threshold value
- 1 NO for sensor monitoring

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H

Sensors	Measuring range (measuring range limit depends on the sensor)	Rated control supply voltage U_s 50/60 Hz AC	SD	Screw terminals	SD	Spring-type terminals	
		V	d	Article No.	Price per PU	Article No.	Price per PU

Temperature monitoring relay, digitally adjustable, 2 threshold values, width 45 mm, 1 CO + 1 CO + 1 NO, memory function possible with external jumper, device parameters are non-volatile


3RS1040-1GD50

Pt100/1000; KTY83/84; NTC (resistance sensors) ¹⁾	- 50 ... + 500 °C	24 AC/DC	2	3RS1040-1GD50	2	3RS1040-2GD50
		24 ... 240 AC/DC	2	3RS1040-1GW50	2	3RS1040-2GW50
	- 58 ... + 932 °F	24 AC/DC	10	3RS2040-1GD50	10	3RS2040-2GD50
		24 ... 240 AC/DC	10	3RS2040-1GW50	10	3RS2040-2GW50



3RS1040-2GW50

TYPE J, K, T, E, N (thermocouple)	- 99 ... + 999 °C	24 AC/DC	2	3RS1140-1GD60	10	3RS1140-2GD60
		24 ... 240 AC/DC	2	3RS1140-1GW60	10	3RS1140-2GW60
	- 99 ... + 1 830 °F	24 AC/DC	10	3RS2140-1GD60	15	3RS2140-2GD60
		24 ... 240 AC/DC	10	3RS2140-1GW60	15	3RS2140-2GW60

Temperature monitoring relay, digitally adjustable, 2 threshold values, width 45 mm, 1 CO + 1 CO + 1 NO, tripping state and device parameters are non-volatile

Pt100/1000; KTY83/84; NTC (resistance sensors) ¹⁾	- 50 ... + 750 °C	24 AC/DC	10	3RS1042-1GD70	10	3RS1042-2GD70
		24 ... 240 AC/DC	2	3RS1042-1GW70	10	3RS1042-2GW70

TYPE J, K, T, E, N, R, S, B (thermocouple)	- 99 ... + 1 800 °C	24 AC/DC	10	3RS1142-1GD80	10	3RS1142-2GD80
		24 ... 240 AC/DC	2	3RS1142-1GW80	10	3RS1142-2GW80

¹⁾ NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

For accessories, see page 10/142.

Relays

SIRIUS 3RS10, 3RS11, 3RS20, 3RS21 Temperature Monitoring Relays

Relays, digitally adjustable for up to 3 sensors

Overview



SIRIUS 3RS digital temperature monitoring relay for up to 3 sensors

The 3RS10, 3RS20 temperature monitoring relays can be used for measuring temperatures in solid, liquid and gas media. The temperature is detected by the sensor in the medium, evaluated by the device and monitored for overshoot or undershoot or for staying within an operating range (window function). The 3RS10 units indicate the measured temperature in °C, the 3RS20 units in °F. The evaluation unit can evaluate up to 3 resistance sensors at the same time and is specially designed for monitoring motor windings and bearings.

Benefits

- Very simple operation without complicated menu selections
- Space-saving with 45 mm width
- Two- or three-point control can be parameterized quickly
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The 3RS10, 3RS20 temperature monitoring relays can be used in almost any application in which several temperatures have to be monitored simultaneously for overshoot or undershoot or within a range.

Monitoring of set temperature limits and output of alarm messages for:

- Plant and environment protection
- Temperature limits for process variables e.g. in the packaging industry or electroplating
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Technical specifications

Type	3RS1041, 3RS2041	
Auxiliary circuit		
Rated operational currents I_e		
• AC-15/24 ... 250 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
DIASED fuse protection		
• Operational class gG	A	4
Evaluation unit		
Measuring accuracy at 20 °C ambient temperature (T20)		< ± 2 K, ± 1 digit
Deviations due to ambient temperature In % of measuring range	%	0.05 per K deviation from T20
Measuring cycle	ms	500
Hysteresis settings for temperature 1		1 ... 99 K, for both values
Adjustable delay time	s	0 ... 999
Sensor circuit		
Typical sensor current		
• Pt100	mA	1
• Pt1000/KTY83/KTY84/NTC	mA	0.2
Open-circuit detection		Yes ¹⁾
Short-circuit detection		Yes
Three-wire conductor connection		Yes ²⁾
Enclosure		
Rated insulation voltage U_i (pollution degree 3)	V AC	300

¹⁾ Not for NTC type B57227-K333-A1 (100 °C: 1.8 k Ω ; 25 °C: 32.762 k Ω).

²⁾ Two-wire connection of resistance sensors with wire jumper between T2 and T3.



SIRIUS 3RS10, 3RS11, 3RS20, 3RS21 Temperature Monitoring Relays

Relays, digitally adjustable for up to 3 sensors

Selection and ordering data

- For temperature monitoring of solids, liquids, and gases
- For two- and three-conductor resistance sensors or thermocouples
- Temperature range dependent on sensor type
 - for 3RS10: - 50 to + 500 °C
 - for 3RS20: - 58 to + 932 °F
- Wide voltage range versions are electrically separated
- Non-volatile
- Short-circuit and open-circuit detection in sensor circuit
- Digitally adjustable, with illuminated LCD
- Overshoot, undershoot or range monitoring adjustable
- Exact sensor type and number of sensors can be set
- 2 separately adjustable threshold values
- 1 hysteresis; applies to both thresholds (0 to 99 K)
- 1 delay time; applies to both thresholds (0 to 999 s)
- Adjustable open-/closed-circuit principle
- With connectable and disconnectable error memory
- Permanent display of actual value in °C or °F and tripping state
- 1 CO contact each per threshold value
- 1 NO for sensor monitoring

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41H

Sensors	Number of sensors	Measuring range (limit of measuring range dependent on sensor)	Rated control supply voltage U_s	SD	Screw terminals 	SD	Spring-type terminals 		
			V	d	Article No.	Price per PU	d	Article No.	Price per PU

Motor monitoring relays, digitally adjustable for up to 3 sensors, width 45 mm; 1 CO + 1 CO + 1 NO



3RS1041-1GW50

¹⁾ NTC type: B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

For accessories, see page 10/142.

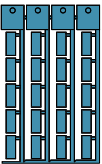




	Pt100/1000; KTY83/84; NTC (resistance sensors) ¹⁾	1 ... 3 sensors	-50 ... +500 °C -58 ... +932 °F	24 ...240 AC/DC 24 ...240 AC/DC	2 10	3RS1041-1GW50 3RS2041-1GW50	2 15	3RS1041-2GW50 3RS2041-2GW50
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Relays

SIRIUS 3RS10, 3RS11, 3RS20, 3RS21 Temperature Monitoring Relays

Accessories

Selection and ordering data

Use	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Blank labels							
 3RT1900-1SB20	For 3RS10, 3RS11, 3RS20, 3RS21	Unit labeling plates For SIRIUS devices 20 mm x 7 mm, pastel turquoise ¹⁾	20	3RT1900-1SB20		100 340 units	41B
	For 3RS10, 3RS11, 3RS20, 3RS21	Adhesive labels for SIRIUS devices <ul style="list-style-type: none"> • 19 mm x 6 mm, pastel turquoise • 19 mm x 6 mm, zinc yellow 	15	3RT1900-1SB60		100 3 060 units	41B
			15	3RT1900-1SD60		100 3 060 units	41B
Push-in lugs and covers							
 3RP1903	For 3RS10, 3RS11, 3RS20, 3RS21	Push-in lugs For screw fixing, 2 units are required for each device	5	3RP1903		1 10 units	41H
 3RP1902	For 22.5 mm wide 3RS10, 3RS11, 3RS20, 3RS21	Sealable covers For securing against unauthorized adjustment of setting knobs	5	3RP1902		1 5 units	41H
Tools for opening spring-type terminals							
 3RA2908-1A	For auxiliary circuit connections	Screwdrivers For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm; length approx. 200 mm, titanium gray/black, partially insulated	2	Spring-type terminals  3RA2908-1A		1 1 unit	41B

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/16.

For matching sensors, see www.siemens.com/temperature.

Overview



SIRIUS 3RS14, 3RS15 temperature monitoring relay

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RS14

The temperature monitoring relays for IO-Link are used to measure temperatures in solid, liquid and gas media.

The temperatures are acquired by means of sensors in the medium, evaluated by the device and monitored up to two limit values for overshooting or undershooting a working range (window function).

In addition to warnings and disconnection in case of temperature deviations, the devices can also be used as a temperature controller (one-point, two-point or three-point control).

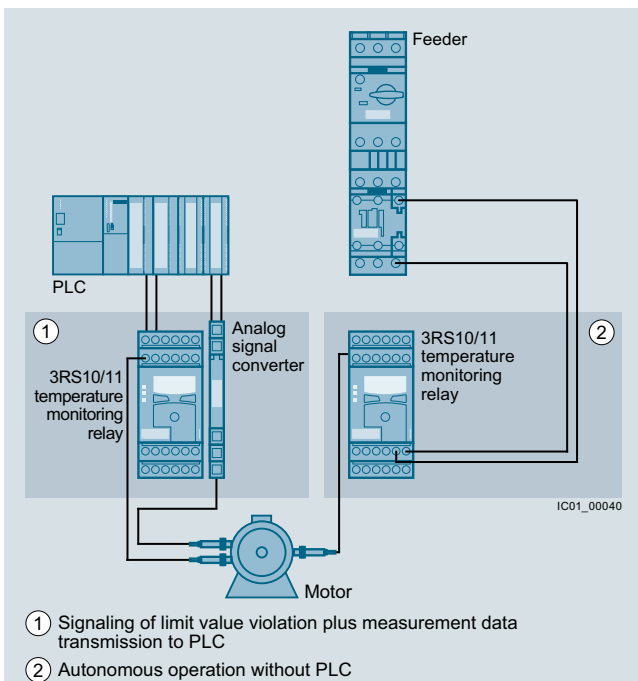
The devices differ from one another in terms of the type and number of connectable temperature sensors.

- 3RS14: Connection for resistance sensor
- 3RS15: Connection for thermocouples

Function	Temperature monitoring relays		
	3RS1440	3RS1441	3RS1540
Connectable sensor type			
Number of sensors monitored	1	3	1
Resistance sensor	✓	✓	--
Thermocouples	--	--	✓
Temperature monitoring			
Temperature monitoring – overshoot	✓	✓	✓
Temperature monitoring – undershoot	✓	✓	✓
Number of adjustable limit values	2	2	2

✓ Function supported

-- Function not supported



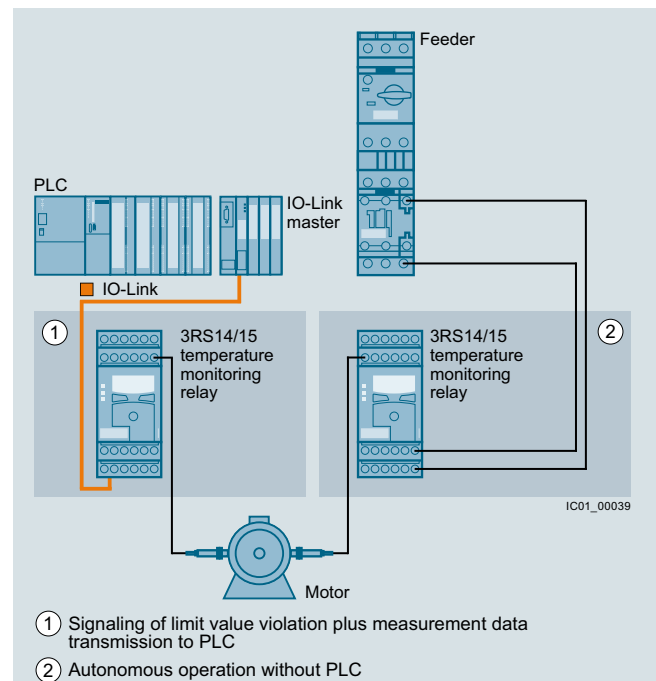
Conventional temperature monitoring relays

Notes:

Devices required for the communication via IO-Link:

- Any controller that supports IO-Link (e.g. ET 200SP with CPU or S7-1200), see [Catalog ST 70](#).
- IO-Link master (e.g. CM 4xIO-Link for SIMATIC ET 200SP, see [page 2/105](#) or SM 1278 for S7-1200, see [page 2/104](#)).

Each monitoring relay requires an IO-Link channel.



Temperature monitoring relays for IO-Link

Notes on security

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information on Industrial Security, see www.siemens.com/industrialsecurity.

Relays

SIRIUS 3RS14, 3RS15 Temperature Monitoring Relays for IO-Link

General data

Article No. scheme

Product versions		Article number														
Temperature monitoring relays		3RS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0
Device type	e.g. 14 = digitally adjustable, 1 sensor		<input type="checkbox"/>	<input type="checkbox"/>												
Version and type of sensor	e.g. 40 = one threshold value, Pt100/Pt1000, KTY83/KTY84, NTC			<input type="checkbox"/>	<input type="checkbox"/>											
Connection type	Screw terminals									1						
	Spring-type terminals (push-in)									2						
Number and type of outputs	e.g. H = 1 CO										<input type="checkbox"/>					
Control supply voltage	e.g. B = 24 V DC										<input type="checkbox"/>					
Measuring range	e.g. 5 = -50 ... +750 °C											<input type="checkbox"/>				
Example		3RS	1	4	4	0	-	1	H	B	5	0				

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Technical specifications

More information

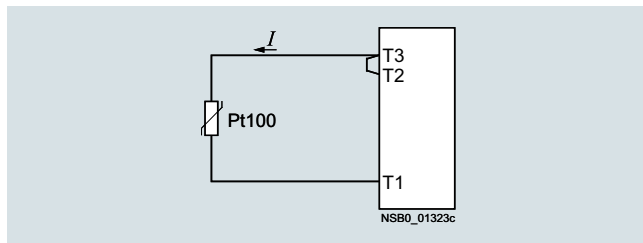
Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16370/td>
 Manual and internal circuit diagrams, see <https://support.industry.siemens.com/cs/ww/en/view/54375463>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16370/faq>

Connection for resistance sensors

Two-wire measurement

When two-wire temperature sensors are used, the resistances of the sensor and wiring are added. The resulting systematic error must be taken into account when the signal evaluation unit is calibrated. A jumper must be clamped between terminals T2 and T3 for this purpose.



Wiring errors

The errors that are generated by the wiring comprise approximately 2.5 K/Ω. If the resistance of the cable is not known and cannot be measured, the wiring errors can also be estimated using the following table.

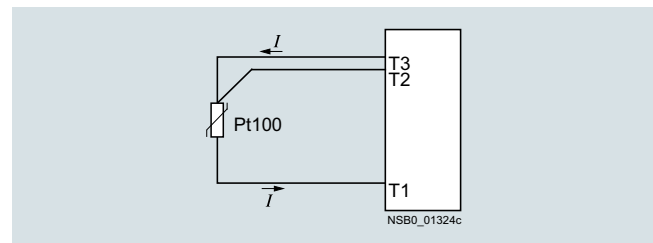
Temperature drift dependent on the length and cross-section of the cable with Pt100 sensors and an ambient temperature of 20 °C, in K:

Cable length in m	Cross-section mm ²			
	0.5	0.75	1	1.5
	Temperature drift in K:			
0	0	0	0	0
10	1.8	1.2	0.9	0.6
25	4.5	3.0	2.3	1.5
50	9.0	6.0	4.5	3.0
75	13.6	9.0	6.8	4.5
100	18.1	12.1	9.0	6.0
200	36.3	24.2	18.1	12.1
500	91.6	60.8	45.5	30.2

Example: On a Pt100 sensor with a cable length of 10 m and a conductor cross-section of 1 mm² the temperature drift equals 0.9 K.

Three-wire measurement

To minimize the effects of the line resistances, a three-wire circuit is often used. Using the additional cable, two measuring circuits can be formed of which one is used as a reference. The signal evaluation unit can then automatically calculate the line resistance and take it into account.



Connection of thermocouples

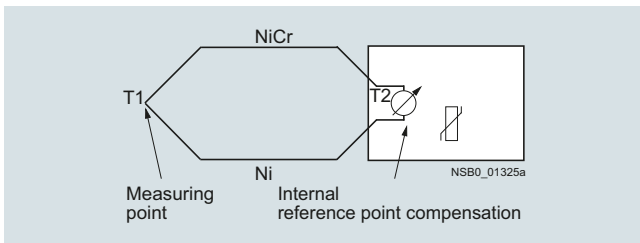
Based on the thermo-electrical effect, a differential temperature measurement will be performed between the measuring point and the signal evaluation unit.

This principle assumes that the signal evaluation unit knows the temperature at the clamping point (T2). For this reason, the 3RS15 temperature monitoring relay has an integral compensator that determines this comparison temperature and builds it into the result of the measurement. The thermal sensors and cables must be insulated therefore.

The absolute temperature is therefore calculated from the ambient temperature of the signal evaluation unit and the temperature difference measured by the thermocouple.

Temperature detection is therefore possible (T1) without needing to know the precise ambient temperature of the clamping point at the signal evaluation unit (T2).

The connecting cable is only permitted to be extended using connecting leads that are made from the same material as the thermocouple. If a different type of conductor is used, an error will result in the measurement.



For more information, see

- www.ephy-mess.com
- Page 16/16

Principle of operation

When the temperature has reached the set upper limit value $\vartheta 1$, the K1 output relay changes its switching state after the configured time t has expired. The delay time can be adjusted. The K2 output relay responds in the same manner to the lower limit value of $\vartheta 2$.

The output relays return immediately to their original state (the RESET response is configured at Auto RESET) once the temperature reaches the respective hysteresis value.

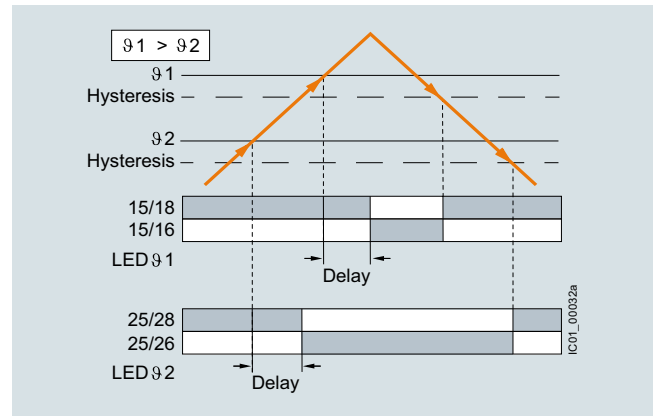
Both thresholds $\vartheta 1$ and $\vartheta 2$ can be parameterized for overshooting or undershooting. This makes it possible to use a limit value for issuing an alarm signal to announce that a limit value is about to be overshoot or undershot. The other limit value can be used for disconnection or to implement two-point or three-point control.

Note:

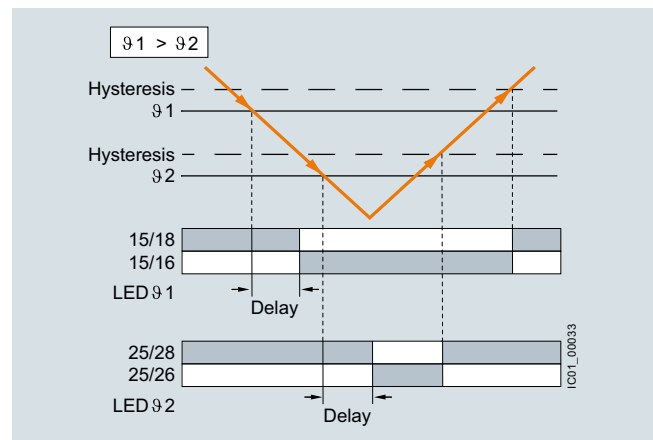
The "Temperature monitoring mode" parameter can be used to set the desired type of monitoring (monitoring for overshooting or undershooting or range monitoring).

With the closed-circuit principle selected

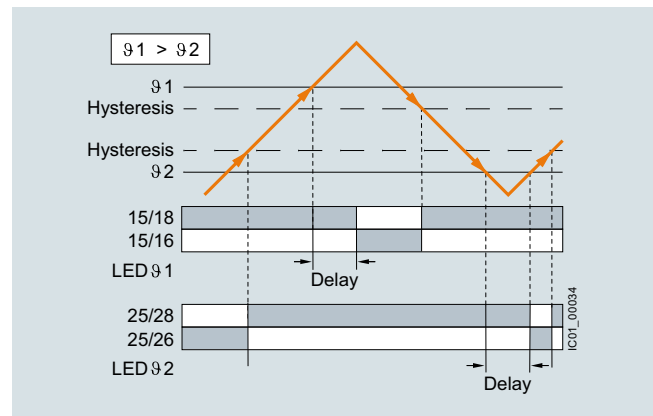
Temperature overshoot



Temperature undershoot



Range monitoring



Relays

SIRIUS 3RS14, 3RS15 Temperature Monitoring Relays for IO-Link

General data

Memory function

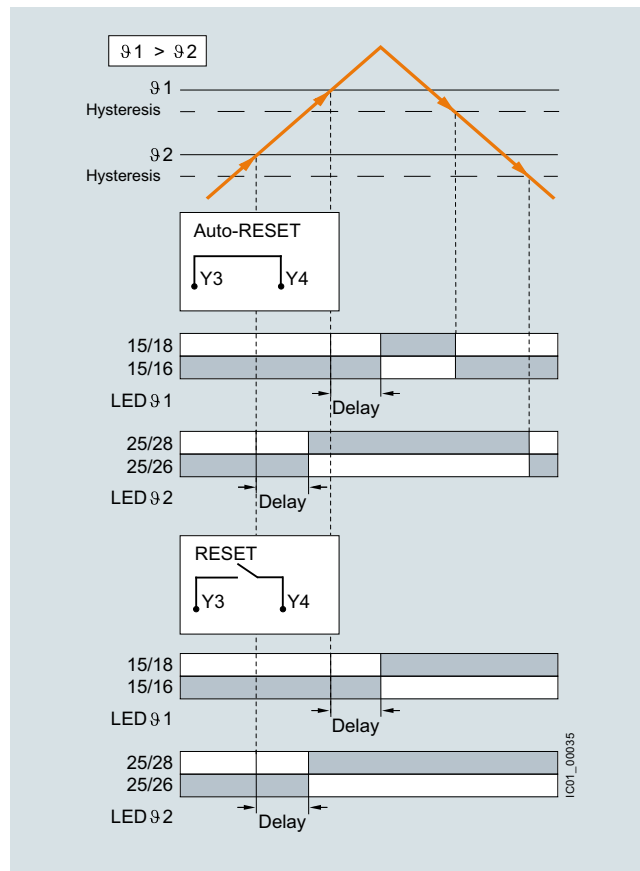
The digitally adjustable temperature monitoring relays for IO-Link have a memory function. The memory function is illustrated below by the example of a temperature overshoot.

When the temperature has reached the set limit value ϑ_1 , the output relay K1 changes its switching state after the configured time t has expired (output relay K2 responds to ϑ_2 in the same way).

The temperature monitoring relays for IO-Link respond as described below:

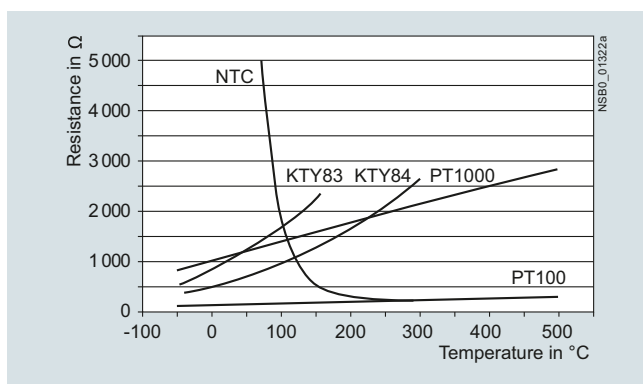
- With temperature monitoring relays for IO-Link the memory function is activated as standard (RESET). The output relays only return to the original state when the temperature falls below the set hysteresis value and when one of the following steps is performed:
 - Brief jumpering of the Y3/Y4 terminals
 - Set the rotary knob to "RUN" position and press the right-hand arrow key
 - Perform a RESET via IO-Link
- If the Y3/Y4 terminals are permanently jumpered, the memory function is deactivated (Auto RESET). The output relays return immediately to their original state once a previously occurred fault has been rectified and the temperature falls below the respective hysteresis value.

With the closed-circuit principle selected



Characteristic curves

For resistance sensors



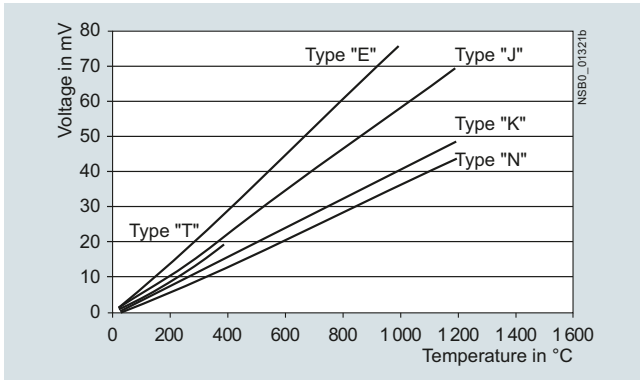
The short-circuit and open-circuit detection as well as the measuring range is limited, depending on the sensor type. Measuring ranges for resistance sensors

Sensor type	Short circuit	Open circuit	3RS1440, 3RS1441 Measuring range in $^{\circ}\text{C}$	Measuring range in $^{\circ}\text{F}$
Pt100	✓	✓	-50 ... +750	-58 ... +1 382
Pt1000	✓	✓	-50 ... +500	-58 ... +932
KTY83-110	✓	✓	-50 ... +175	-58 ... +347
KTY84	✓	✓	-40 ... +300	-40 ... +572
NTC ¹⁾	✓	--	+80 ... +160	+176 ... +320

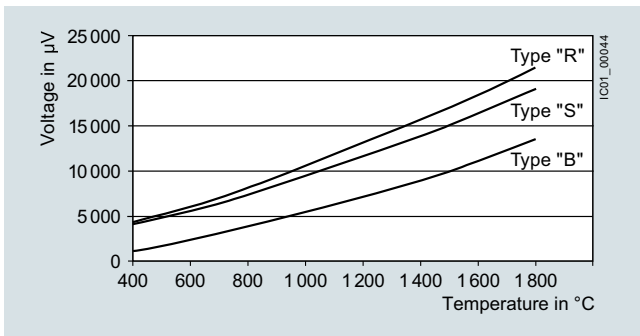
- ✓ Detection possible
- Detection not possible

¹⁾ NTC type: B57227-K333-A1 (100 $^{\circ}\text{C}$: 1.8 k Ω ; 25 $^{\circ}\text{C}$: 32.762 k Ω).

For thermocouples



Characteristic curves for sensor types K, N, J, E and T



Characteristic curves for sensor types S, R and B

Measuring ranges for thermocouples

Sensor type	Short circuit	Open circuit	3RS1540 Measuring range in °C	Measuring range in °F
K	--	✓	-99 ... +1 350	-146.2 ... +2 462
N	--	✓	-99 ... +1 300	-146.2 ... +2 372
J	--	✓	-99 ... +1 200	-146.2 ... +2 192
E	--	✓	-99 ... +999	-146.2 ... +1 830.2
T	--	✓	-99 ... +400	-146.2 ... +752
S	--	✓	0 ... 1 750	32 ... 3 182
R	--	✓	0 ... 1 750	32 ... 3 182
B	--	✓	400 ... 1 800	752 ... 3 272

✓ Detection possible

-- Detection not possible

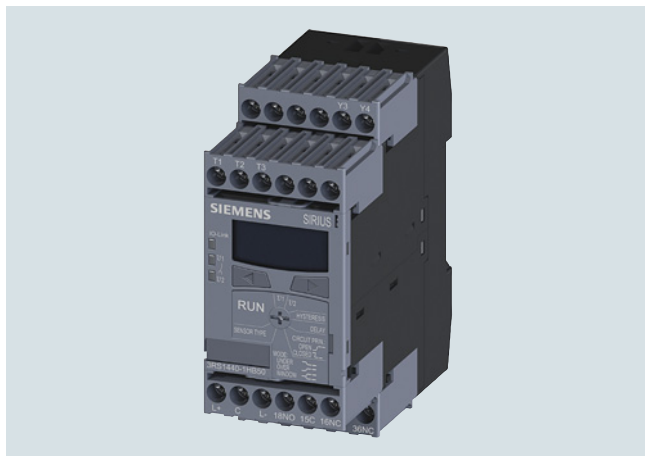
Type	3RS14, 3RS15	
General technical specifications		
Dimensions (W x H x D)		mm 45 x 106 x 91
<ul style="list-style-type: none"> Screw terminals Spring-type terminals 		mm 45 x 108 x 91
Permissible ambient temperature	°C	-25 ... +60
Connection type		Screw terminals
<ul style="list-style-type: none"> Terminal screw Solid Finely stranded with end sleeve AWG cables, solid or stranded Tightening torque 	mm ² 1 x (0.5 ... 4), 2 x (0.5 ... 2.5) mm ² 1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5) AWG 2 x (20 ... 14) Nm 0.8 ... 1.2	
Connection type		Spring-type terminals
<ul style="list-style-type: none"> Solid Finely stranded, with end sleeve acc. to DIN 46228 Finely stranded AWG cables, solid or stranded 	mm ² 2 x (0.25 ... 1.5) mm ² 2 x (0.25 ... 1.5) mm ² 2 x (0.25 ... 1.5) AWG 2 x (24 ... 16)	

Relays

SIRIUS 3RS14, 3RS15 Temperature Monitoring Relays for IO-Link

Relays, digitally adjustable for 1 sensor

Overview



SIRIUS 3RS1440 digital monitoring relay for 1 sensor

The 3RS14 and 3RS15 temperature monitoring relays for IO-Link are used to measure temperatures in solid, liquid and gas media. The temperatures are acquired by means of sensors in the medium, evaluated by the device and monitored for overshooting or undershooting a working range (window function). The digital temperature monitoring relays have two separately adjustable limit values, are non-volatile and can be operated as desired using the open- or closed-circuit principle.

The devices differ in terms of the number of temperature sensors which can be evaluated. The 3RS1440 and 3RS1540 for IO-Link temperature monitoring relays can be digitally adjusted for one sensor and represent an alternative to temperature controllers in the low-end range (two-point or three-point control).

The devices with two-point control can, for example, be used as a thermostat. The devices with three-point control can, for example, independently switch between heating and cooling.

The 3RS1441 temperature monitoring relays for IO-Link can be digitally adjusted to evaluate up to three resistance sensors at one time. The devices were designed specifically for monitoring motor windings and positions.

The temperature monitoring relays are powered through the control supply voltages IO-Link (L+) and ground (L-) or via an external 24 V DC power supply.

Monitoring

When the temperature has reached the set limit value ϑ_1 , the output relay K1 changes its switching state after the configured time t has expired (output relay K2 responds to ϑ_2 in the same way). The delay time can be adjusted.

The output relays return immediately to their original state once the temperature reaches the respective hysteresis value.

When the temperature has reached the upper limit value ϑ_1 , the output relay K1 changes its switching state after the configured time t has expired. The output relay returns immediately to its original state once the temperature reaches the respective hysteresis value.

The K2 output relay responds in the same manner to the lower limit value of ϑ_2 . Both thresholds ϑ_1 and ϑ_2 can be parameterized for overshooting or undershooting. This makes it possible to use a limit value for issuing an alarm signal to announce that a limit value is about to be overshoot or undershot.

Note:

The "Temperature monitoring mode" parameter can be used to set the desired type of monitoring (monitoring for overshooting or undershooting or range monitoring).

Benefits

- Very simple operation without complicated menu selections
- Two- or three-point control can be parameterized quickly
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The temperature monitoring relays can be used in almost any application in which temperature overshoot or undershoot is not permitted, e.g. in the monitoring of set temperature limits and the output of alarm messages for:

- Plant and environment protection
- Temperature limits for process variables e.g. in the packaging industry or electroplating
- Temperature limits for district heating plants
- Exhaust temperature monitoring
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

SIRIUS 3RS14, 3RS15 Temperature Monitoring Relays for IO-Link

Relays, digitally adjustable for 1 sensor

Technical specifications

Type		3RS1440	3RS1540
Auxiliary circuit			
Rated operational currents I_e			
• AC-15/24 ... 250 V	A	3	
• DC-13 at			
- 24 V	A	1	
- 125 V	A	0.2	
- 250 V	A	0.1	
Evaluation unit			
Measuring accuracy at 20 °C ambient temperature (T20)		< ± 2 K, ± 1 digit	< ± 5 K, ± 1 digit
Reference point accuracy		--	< ± 5 K
Deviations due to ambient temperature	%	0.05 °C per K deviation from T20	
In % of measuring range			
Measuring cycle	ms	500	
Hysteresis settings for temperature	K	1 ... 99, for both values	
Adjustable delay time	s	0 ... 999.9	
Sensor circuit			
Typical sensor current			
• Pt100	mA	1	--
• Pt1000/KTY83/KTY84/NTC	mA	0.2	--
Open-circuit detection		✓ ¹⁾	✓
Short-circuit detection		✓	--
Three-wire conductor connection		✓ ²⁾	--
Enclosure			
Rated insulation voltage U_i	V AC	300	
Pollution degree 2			

✓ Available

-- Not available

1) Not for NTC type B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

2) Two-wire connection of resistance sensors with wire jumper between T2 and T3.

Relays

SIRIUS 3RS14, 3RS15 Temperature Monitoring Relays for IO-Link

Relays, digitally adjustable for 1 sensor

Selection and ordering data

- To monitor temperatures with a resistance sensor or thermocouple
- Temperature range dependent on sensor type
- 99 to + 1 800 °C or - 146.2 to + 3 272 °F
- Short-circuit and open-circuit detection in sensor circuit
- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Overshoot, undershoot or range monitoring adjustable
- Exact sensor type can be set
- 2 limit values, can be adjusted separately
- Adjustable open-/closed-circuit principle
- Can be adjusted by Manual or remote RESET (via an external contact)
- Actual value, tripping state for control displayed and conveyed, adjustable in °C or °F
- 1 CO contact per limit value
- 1 CO contact for monitoring sensors and devices

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H



3RS1440-1HB50





3RS1540-1HB80



3RS1440-2HB50



3RS1540-2HB80

Sensors	Measuring range (limit of measuring range dependent on sensor)	Adjustable hysteresis for ϑ_1 and ϑ_2	Tripping delay time adjustable for ϑ_1 and ϑ_2 DELAY	Supply voltage U_s	SD	Screw terminals 	SD	Spring-type terminals 		
		K	s	V DC	d	Article No.	Price per PU	d	Article No.	Price per PU
Temperature monitoring relay, digitally adjustable for a sensor, non-volatile fault storage can be selected										
Pt100/Pt1000, KTY83/KTY84, NTC (resistance sensor) ¹⁾	- 50 ... + 750 °C or - 58 ... + 1 382 °F	0 ... 99	0 ... + 999.9	24	2	3RS1440-1HB50	2		3RS1440-2HB50	
Type B, E, J, K, N, R, S, T (thermocouples)	- 99 ... + 1 800 °C or - 146.2 ... + 3 272 °F	0 ... 99	0 ... + 999.9	24	2	3RS1540-1HB80	2		3RS1540-2HB80	

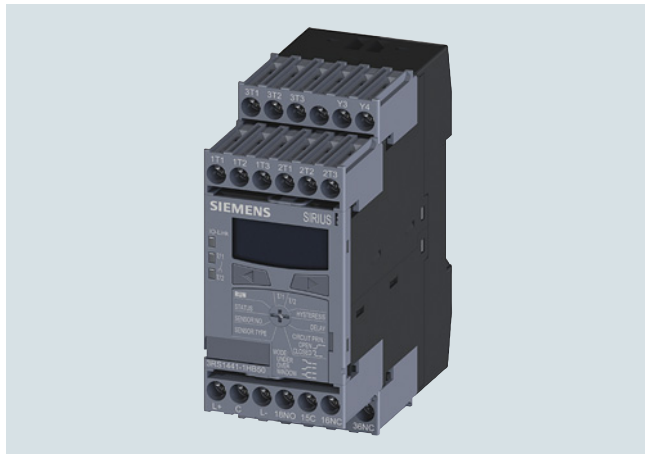
¹⁾ NTC type B57227-K333-A1 (100 °C: 1.8 k Ω ; 25 °C: 32.762 k Ω).

For accessories, see page 10/153.

SIRIUS 3RS14, 3RS15 Temperature Monitoring Relays for IO-Link

Relays, digitally adjustable for up to 3 sensors

Overview



SIRIUS 3RS1441 digital temperature monitoring relay for up to 3 sensors

The 3RS14 temperature monitoring relays can be used to measure temperatures in solid, liquid and gas media. The temperatures are acquired by means of sensors in the medium, evaluated by the device and monitored for overshooting or undershooting a working range (window function).

The devices can be parameterized to indicate the measured temperature in °C or °F. The 3RS1441 evaluation unit can evaluate up to 3 resistance sensors at the same time.

Benefits

- Very simple operation without complicated menu selections
- Space-saving with 45 mm width
- Two- or three-point control can be parameterized quickly
- All versions with removable terminals
- All versions with screw or spring-type terminals

Application

The 3RS1441 temperature monitoring relays can be used almost anywhere where several temperatures must be monitored at one time for overshooting, undershooting or staying within a certain range.

Monitoring of set temperature limits and output of alarm messages for:

- Plant and environment protection
- Temperature limits for process variables e.g. in the packaging industry or electroplating
- Controlling equipment and machines such as heating, climate and ventilation systems, solar collectors, heat pumps or warm water supplies
- Motor, bearing and gear oil monitoring
- Monitoring of coolants

Technical specifications

Type	3RS1441	
Auxiliary circuit		
Rated operational currents I_e		
• AC-15/24 ... 250 V	A	3
• DC-13 at		
- 24 V	A	1
- 125 V	A	0.2
- 250 V	A	0.1
DIAZED fuse protection		
• Operational class gG	A	4
Evaluation unit		
Measuring accuracy at 20 °C ambient temperature (T20)		< ±2 K, ±1 digit
Deviations due to ambient temperature	%	0.05 per K deviation from T20
In % of measuring range		
Measuring cycle	ms	500
Hysteresis settings for temperature 1	K	1 ... 99, for both values
Adjustable delay time	s	0 ... 999.9
Sensor circuit		
Typical sensor current		
• Pt100	mA	1
• Pt1000/KTY83/KTY84/NTC	mA	0.2
Open-circuit detection		✓ ¹⁾
Short-circuit detection		✓
Three-wire conductor connection		✓ ²⁾
Enclosure		
Rated insulation voltage U_i	V AC	300
Pollution degree 2		

✓ Available

¹⁾ Not for NTC type B57227-K333-A1 (100 °C: 1.8 kΩ; 25 °C: 32.762 kΩ).

²⁾ Two-wire connection of resistance sensors with wire jumper between T2 and T3.

Relays

SIRIUS 3RS14, 3RS15 Temperature Monitoring Relays for IO-Link

Relays, digitally adjustable for up to 3 sensors

Selection and ordering data

- For temperature monitoring with up to 3 resistance sensors
- Temperature range dependent on sensor type
- 50 to + 750 °C or - 58 to + 1 382 °F
- Short-circuit and open-circuit detection in sensor circuit
- Adjustable via IO-Link and locally, with illuminated LCD
- Power supply with 24 V DC via IO-Link or external auxiliary voltage
- Overshoot, undershoot or range monitoring adjustable
- Exact sensor type and number of sensors can be set
- 2 limit values, can be adjusted separately
- Adjustable open-/closed-circuit principle
- Can be adjusted by manual or remote RESET (via an external contact)
- Actual value, tripping state for control displayed and conveyed, adjustable in °C or °F
- 1 CO contact per limit value
- 1 CO contact for monitoring sensors and devices



PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41H



3RS1441-1HB50



3RS1441-2HB50

Sensors	Number of sensors that can be set	Measuring range (limit of measuring range dependent on sensor)	Adjustable hysteresis for $\vartheta 1$ and $\vartheta 2$	Tripping delay time adjustable for $\vartheta 1$ and $\vartheta 2$ DELAY	Supply voltage U_s	SD	Screw terminals 	SD	Spring-type terminals 				
			K	s	V DC	d	Article No.		Price per PU	d	Article No.		Price per PU

Temperature monitoring relay, digitally adjustable for up to 3 sensors, non-volatile fault storage can be selected

Pt100/Pt1000, KTY83/KTY84, NTC (resistance sensor) ¹⁾	1 ... 3 sensors	-50 ... +750 °C or -58 ... +1 382 °F	0 ... 99	0 ... 999.9	24	2
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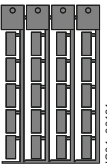



3RS1441-1HB50	2
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3RS1441-2HB50	2
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¹⁾ NTC type: B57227-K333-A1 (100 °C: 1.8 k Ω ; 25 °C: 32.762 k Ω).

For accessories, see page 10/153.

Selection and ordering data

Use	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Blank labels							
 3RT2900-1SB20	For 3RS14 and 3RS15	Unit labeling plates For SIRIUS devices 20 mm x 7 mm, titanium gray ¹⁾	20	3RT2900-1SB20	100	340 units	41B
	For 3RS14 and 3RS15	Adhesive labels for SIRIUS devices <ul style="list-style-type: none"> • 19 mm x 6 mm, pastel turquoise • 19 mm x 6 mm, zinc yellow 	15	3RT1900-1SB60	100	3 060 units	41B
			15	3RT1900-1SD60	100	3 060 units	41B
Push-in lugs and covers							
 3RP1903	For 3RS14 and 3RS15	Push-in lugs For screw fixing, 2 units are required for each device	5	3RP1903	1	10 units	41H
Tools for opening spring-type terminals							
 3RA2908-1A	For auxiliary circuit connections	Screwdrivers For all SIRIUS devices with spring-type terminals 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated	2	Spring-type terminals  3RA2908-1A	1	1 unit	41B

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/16.

For matching sensors, see www.siemens.com/temperature.

Relays

SIRIUS 3RN2 thermistor motor protection

Overview



SIRIUS 3RN2 thermistor motor protection

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RN2

For the conversion tool, e.g. from 3RN1 to 3RN2, see www.siemens.com/sirius/conversion-tool

Thermistor motor protection devices are used for direct monitoring of the motor winding temperature. For this purpose, the motors are equipped with temperature-dependent resistors (PTC) that are directly installed in the motor winding and abruptly change their resistance at their temperature limit.

Article No. scheme

Product versions		Article number					
Thermistor motor protection relay with PTC sensor, type A		3RN20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number and version of the sensor circuits	1 sensor circuit, supply voltage = root voltage	0					
	1 sensor circuit	1					
	2 sensor circuits for warning and disconnection	2					
RESET	Auto RESET	0					
	Manual RESET, with open-circuit and short-circuit detection	1					
	Manual/Auto/remote RESET, non-volatile, with open-circuit and short-circuit detection	2					
	Manual/Auto/remote RESET, non-volatile, with open-circuit and short-circuit detection, with protective separation	3					
Connection method	Screw terminals	1					
	Spring-type terminals (push-in)	2					
Auxiliary switches	1 CO	A					
	2 CO	B					
	1 NO + 1 NC	C					
	1 NO + 1 CO	D					
	2 CO, hard gold-plated	G					
Rated control supply voltage	24 V AC/DC	A 3					
	24 ... 240 V AC/DC	W 3					
Response to failure	Monostable	0					
	Bistable	1					
Example		3RN20 0 0 - 1 A A 3 0					

Note:

The Article No. scheme is presented here merely for information purposes and for better understanding of the logic behind the article numbers.

Versions

SIRIUS 3RN2 thermistor motor protection relays are available in the following versions:

- 3RN2000 compact evaluation unit
- 3RN2010 compact/standard evaluation unit
- 3RN2012-.BW31 bistable evaluation unit
- 3RN2011, 3RN2012-...30, 3RN2013 standard evaluation unit with ATEX approval
- 3RN2023 evaluation unit with ATEX approval and 2 sensor circuits for warning and disconnection

They comply with

- IEC 60947-8. Low-voltage switchgear and controlgear – Part 8: "Control units for built-in thermal protection (PTC) for rotating electrical machines"
- IEC 61000-6-2, IEC 61000-6-4. "Electromagnetic compatibility for industrial-process measurement and control equipment"

The 3RN2 thermistor motor protection relays with ATEX approval fulfill SIL1 in compliance with EN 50495.

The terminals of the auxiliary contacts are designated in accordance with EN 60947-1.

3RN2 evaluation units are suitable for snap-on mounting onto TH 35 standard mounting rails according to IEC 60715 or for screw fixing using an adapter (accessory).

SIRIUS 3RN2 thermistor motor protection

Benefits

- Thanks to direct motor protection, overdimensioning of the motors is not necessary
- No settings on the device are necessary
- Semiconductor compatible output thanks to versions with hard gold-plated contacts
- Rapid error diagnosis thanks to versions that indicate open and short circuits in the sensor circuit
- All versions with removable terminals
- All versions with screw or spring-type terminals with push-in functionality

Application

Direct motor protection through temperature monitoring of the motor winding offers 100% motor protection even under the most difficult ambient conditions, without the need to make adjustments on the device. Versions with hard gold-plated contacts ensure, in addition, a high switching reliability that is even higher than an electronic control.

Direct motor protection

- At increased ambient temperatures
- When switching frequency is too high
- When start up and braking procedures are too long

ATEX approval for operation in hazardous areas

The SIRIUS 3RN2011, 3RN2012-...30, 3RN2013 and 3RN2023 thermistor motor protection relays for PTC sensors are certified according to ATEX Ex II (2) G and D for environments with explosive gas or dust loads.

Motor protection using current- and temperature-dependent protective devices

IEC 60204 stipulates that motors must be protected from overheating at a rating of 0.5 kW and higher. The protection can take the form of overload protection, overtemperature protection or current limiting.

For motors with frequent starting and braking and in environments where cooling may be impaired (e.g. by dust), it is recommended to use the overtemperature protection option in the form of a protective device coordinated with this mode of operation. A good choice in this case is the use of 3RN2 thermistor motor protection devices.

On rotor-critical motors, overtemperature detection in the stator windings can lead to delayed and hence inadequate protection. In this case the standards stipulate additional protection, e.g. by means of an overload relay.

This combination of thermistor motor protection and an overload relay is recommended for full motor protection in case of frequent starting and braking of motors, irregular intermittent duty or excessive switching frequency. To prevent premature tripping of the overload relay in such operating conditions, a higher setting than that normally required for the operational current is chosen. The overload relay then performs stall protection, and the 3RN2 thermistor motor protection relay monitors the temperature of the motor windings.

Application	Motor protection		
	Only current dependent, e.g. with overload relay	Temperature dependent only, e.g. with thermistor motor protection relay	Current and temperature dependent
Motor protection in case of			
Overloading in uninterrupted duty	✓	✓	✓
Long start up and braking operations	○	✓	✓
Irregular intermittent duty	○	✓	✓
Excessively high switching frequency	○	✓	✓
Single-phase operation and current unbalance	✓	✓	✓
Voltage and frequency fluctuations	✓	✓	✓
Stalling of the rotor	✓	✓	✓
Switching on a stalled rotor of a stator-critical motor	✓	✓	✓
Switching on a stalled rotor of a rotor-critical motor	✓	○	✓
Elevated ambient temperature	--	✓	✓
Impeded cooling	--	✓	✓

- ✓ Full protection
- Conditional protection
- No protection

Relays

SIRIUS 3RN2 thermistor motor protection

Technical specifications

More information

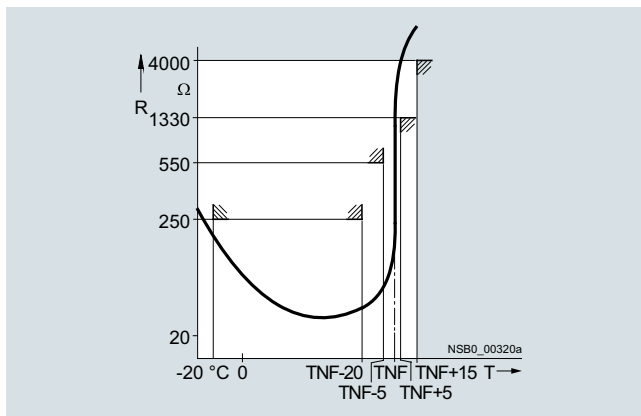
Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/24302/td>
 Operating instructions and internal circuit diagrams, see <https://support.industry.siemens.com/cs/ww/en/ps/24302/man>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/24302/faq>
 For more information on explosion protection (ATEX), see www.siemens.com/sirius/atex

Type A PTC temperature sensor

If a Type A temperature sensor is connected to a Type A evaluation unit, compliance with the operating temperatures is assured (on pick-up and reset) according to IEC 60947-8.

The characteristic curves of the Type A temperature sensors are described in IEC 60947-8, EN 44081 and EN 44082 standards.



Characteristic curve of the 3RN2 evaluation unit

Bimetallic switch

In some applications, bimetallic switches (e.g. Klixon, Thermoclick) are used as sensors instead of PTC temperature sensors. Bimetallic switches are temperature- and current-dependent NC contacts and are available for different temperature ranges. Because bimetallic switches have practically no resistance below their opening temperature, short-circuit detection is not possible when using bimetallic switches. A bimetallic switch can be used for versions 3RN2000 and 3RN2010 on the SIRIUS thermistor motor protection relay.

Note:

Never use bimetallic switches in applications subject to an explosion hazard! Because of their non-standardized tripping characteristic, bimetallic switches must not be used in applications where there is an explosion hazard. Use Type A PTC sensors instead!

Use in hazardous areas

Increased danger in hazardous areas means it is necessary to observe the following notes and standards carefully:

- EN 60079-14/VDE 0165-1 for electrical apparatus for explosive gas atmospheres
- EN 60079-17 Explosive atmospheres – Electrical installations inspection and maintenance
- EN 50495 Safety devices required for the safe functioning of equipment with respect to explosion risks

The following SIRIUS 3RN2 thermistor motor protection relays with short-circuit detection are approved for Equipment Group II, Category (2) in Area "G" (areas in which potentially explosive gas, vapor, mist, or air mixtures are present) and are additionally approved for Area "D" (areas containing combustible dust):

- 3RN2011
- 3RN2012-...30
- 3RN2013
- 3RN2023

PTB 15 ATEX 3011 ex II (2) G (Ex E) (EX d) (Ex px)

PTB 15 ATEX 3011 ex II (2) D (Ex T) (Ex p)

For 3RN2 thermistor motor protection relays, the EC type examination certificate is available for Group II, Category (2) G [Ex e] [Ex d] [Ex px] and D [Ex t] [Ex p]. The number is PTB 15 ATEX 3011.

SIRIUS 3RN2 thermistor motor protection relays are not intended for installation in hazardous areas. If they are installed in a potentially explosive atmosphere, the SIRIUS 3RN2 thermistor motor protection relays must be adapted to the applicable type of protection.

The machine or plant must shut down immediately if the SIRIUS 3RN2 thermistor motor protection relay is tripped, even if connected through a frequency converter. This must be implemented with circuitry.

SIRIUS 3RN2 thermistor motor protection relays with functional safety in accordance with EN 50495 are suitable for protecting explosion-proof motors/machines.

On evaluation units with a supply voltage of 24 V AC/DC, you must ensure electrical separation with a battery network or a power supply unit with electrical separation (e.g. isolating transformer) (does not apply to 3RN2013-.BA30).

A SIRIUS 3RN2 thermistor motor protection relay set to "automatic RESET" mode will be reset automatically after the recovery time has elapsed, without the RESET button being pressed. An additional ON button has to be used to ensure that the motor does not start up automatically following tripping. "Automatic RESET" mode must not be used in applications where there is a risk of personal injury or damage to property if the motor restarts unexpectedly.

SIRIUS 3RN2 thermistor motor protection

⚠ NOTICE!

When used in a hazardous area, the thermistor motor protection relay must not be operated with automatic RESET (terminal Y1 and Y2 permanently jumpered).

A risk analysis must be performed for the complete plant or machine. If this analysis yields a lower hazard potential (Category 1), all SIRIUS 3RN2 thermistor motor protection relays can be used, provided the safety regulations are observed.

⚠ WARNING!

All work involved in connecting, commissioning and maintenance must be carried out by qualified, responsible personnel. Improper handling may result in serious personal injury and considerable damage to property.

Cable routing

The measuring circuit leads must be routed as separate control cables. It is not permitted to use cores from the supply line of the motor or any other main supply cables. If extreme inductive or capacitive interference is expected as a result of power lines routed in parallel, shielded control cables must be used.

Maximum length of sensor circuit cables for evaluation units without short-circuit detection in the sensor circuit:

Cable cross-section	3RN2000, 3RN2010
2.5 mm ²	2 x 2 800 m
1.5 mm ²	2 x 1 500 m
0.5 mm ²	2 x 500 m

Maximum length of sensor circuit cables for evaluation units with short-circuit detection ¹⁾

Cable cross-section	3RN2011, 3RN2012, 3RN2013, 3RN2023
2.5 mm ²	2 x 250 m
1.5 mm ²	2 x 150 m
0.5 mm ²	2 x 50 m

¹⁾ A short circuit in the sensor circuit will be detected up to this maximum cable length.

Principle of operation

SIRIUS 3RN2 thermistor motor protection relays are thermal protection devices that are suitable, in combination with Type A PTC thermistors, for monitoring temperatures of electrical drives, transformer windings, oils, bearings, air, etc.

The most frequent application is monitoring of three-phase motors in which the motor manufacturer has fitted a PTC sensor into every winding overhang and in which these PTC sensors are connected in series.

The SIRIUS 3RN2 thermistor motor protection relays operate in accordance with the closed-circuit principle and therefore monitor themselves for loss of supply voltage. The exceptions are the warning output on 3RN2023, which always works on the open-circuit principle and the bistable relays of the 3RN2012-BW31, which always retain the last switching state.

A micro-interruption in the power supply of less than 30 ms does not change the status of the output relays.

For devices with the "Manual RESET" function, the test function can be activated and a trip simulated by pressing the blue Test/RESET button for > 2 seconds.

The 3RN2011, 3RN2012, 3RN2013 and 3RN2023 devices are additionally equipped with open-circuit and short-circuit detection in the sensor circuit. The unit will trip in the event of a short circuit (resistance in sensor circuit < 10 Ω) or open circuit in the sensor circuit (dynamic open-circuit detection). Tripping as the result of a short circuit in the sensor circuit is indicated by a flickering red LED (TRIPPED). In the event of a short circuit in the sensor circuit for warning on the 3RN2023, the yellow warning LED (WARNING) flickers. The devices with dynamic open-circuit detection evaluate the rise time of the sensor circuit resistance. If the sensor circuit resistance rises from 3 300 Ω to 12 kΩ within 200 ms, the unit will not only trip, but also indicate the open circuit via a flashing red LED (TRIPPED). In the event of an open circuit in a sensor circuit, the yellow warning LED (WARNING) flashes for the 3RN2023.

All evaluation units (except for the 3RN2000 compact evaluation unit) feature electrical separation between the control circuit and the sensor circuit. The relay outputs are also electrically separated from all other circuits. The 3RN2013 and 3RN2023 evaluation units incorporate protective electrical separation between all circuits up to $U_i = 300$ V.

3RN2000 compact evaluation unit

The compact unit, which is only 17.5 mm wide, is equipped with a red LED (TRIPPED) for the tripped indicator and a changeover contact. After the unit has tripped, it is automatically reset once the thermistors have cooled down. The root of the changeover contact is connected to the control voltage (terminal 11 is connected to terminal A1). This unit is particularly suitable in circuits in which the control circuit and signaling circuit have the same potential, e.g. in local control boxes.

3RN2010, 3RN2011, 3RN2012 and 3RN2013 compact/standard evaluation units

The units are equipped with two LEDs (READY and TRIPPED) for an operating and tripped display and are available with either 1 NO + 1 NC contacts (3RN2010, overall width 17.5 mm) or with 2 CO contacts. Depending on the version, they are available with Auto RESET (3RN2010), Manual/remote RESET (3RN2011) or Manual/Auto and remote RESET (3RN2012 and 3RN2013). Remote RESET can be achieved by connecting an external pushbutton with a normally-open function to terminals Y1 and Y2. If terminals Y1 and Y2 are jumpered, the unit is automatically reset once the thermistors have cooled down (Auto RESET). 3RN2012 and 3RN2013 are non-volatile. This means a previous trip remains stored in the event of a control supply voltage failure – the thermistor motor protection relay remains in the safe state with an opened output relay until it is intentionally reset by pressing the TEST/RESET button of the unit or an external pushbutton.

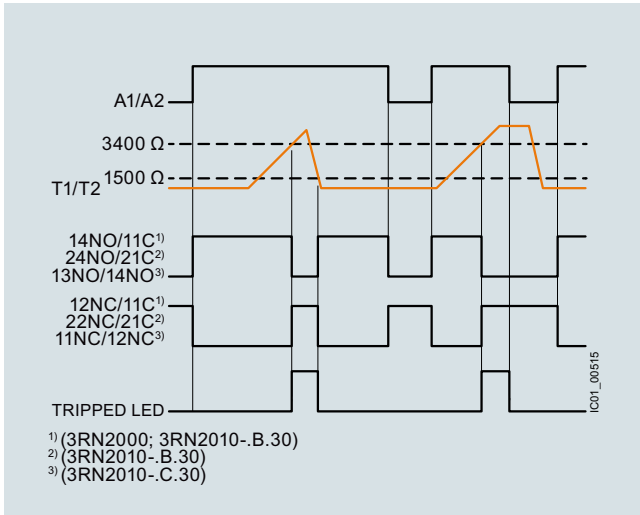
3RN2023 "warning and disconnection" evaluation units

Two sensor circuits can be connected to one 3RN2023 evaluation unit that act on two separate output relays with 1 NO contact for warning and 1 CO contact for disconnection. Thermistors with different rated response temperatures TNF are used to implement the "Warning" and "Disconnection" functions. When sensor circuit 2 for "Warning" responds, a yellow LED is lit and when the "Disconnection" circuit responds, a red LED is lit. The sensor circuits have a different reset response and operating behavior: The "Warning" thermistor sensor circuit 2 (terminals 2T1, T2) works only with Auto RESET and according to the open-circuit principle (output relay K2, NO contact). The "Disconnection" thermistor sensor circuit 1 (terminals 1T1, T2) can be changed from Manual RESET to Auto RESET by jumpering terminals Y1 and Y2. Remote RESET is implemented by connecting an external pushbutton with a normally-open function to these terminals.

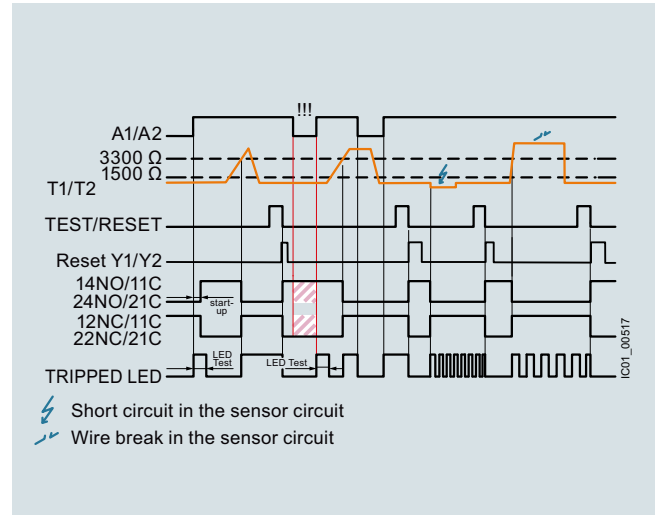
Relays

SIRIUS 3RN2 thermistor motor protection

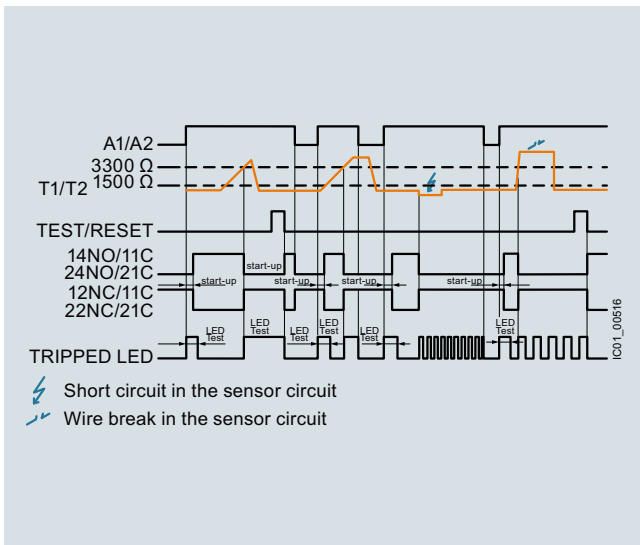
Function diagrams



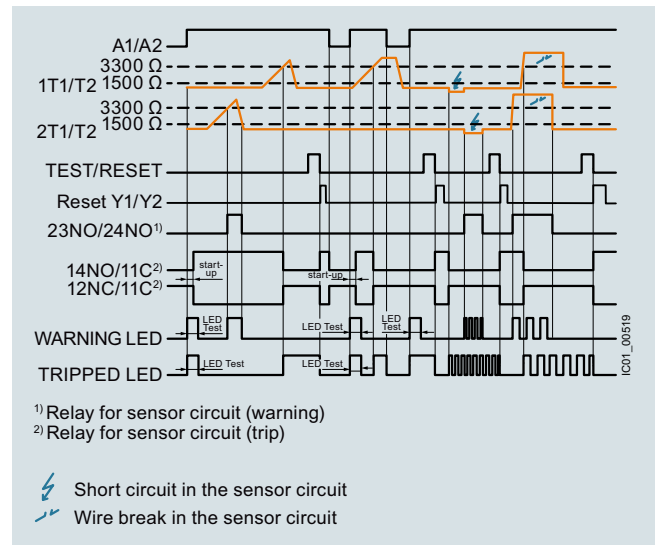
3RN2000, 3RN2010



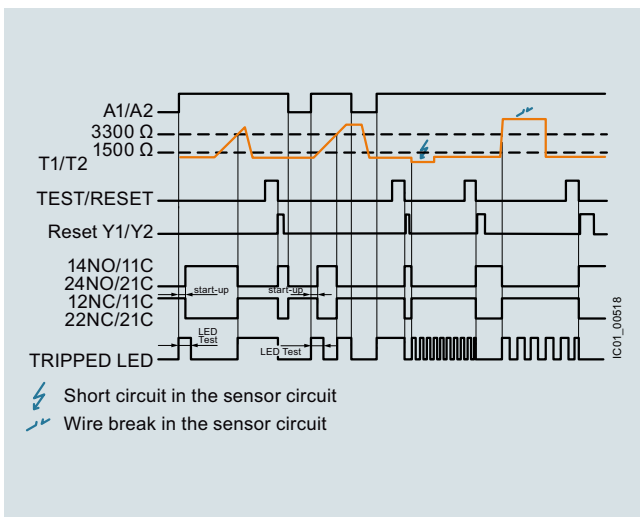
3RN2012-.BW31: resetting via the TEST/RESET button or external pushbutton



3RN2011: resetting via external pushbutton or interruption of the supply voltage



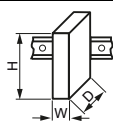
3RN2023: resetting via the TEST/RESET button or external pushbutton



3RN2012-.B.30, 3RN2013: resetting via the TEST/RESET button or external pushbutton

SIRIUS 3RN2 thermistor motor protection

Article number	3RN2000-A, 3RN2010-C	3RN201.-B, 3RN2013-G, 3RN2023-D
Width x height x depth	17.5 x 100 x 90	22.5 x 100 x 90





Article number	3RN2000- .AA30	3RN2000- .AW30, 3RN2010- .BW30, 3RN2010- .CW30	3RN2010- .BA30, 3RN2010- .CA30	3RN2011- .BA30, 3RN2012- .BA30	3RN2011- .BW30, 3RN2012- .BW30	3RN2012- .BW31	3RN2013- .BA30	3RN2013- .BW30, 3RN2013- .GW30	3RN2023- .DW30
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General technical specifications:										
Type of electrical isolation		None	Isolated				Protective separation			
Electrical endurance (operating cycles) for AC-15 at 230 V		100 000								
Mechanical endurance (operating cycles)		10 000 000								
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3 rated value	V	300								
Impulse withstand voltage, rated value	kV	4					6			
Minimum mains failure buffering time	ms	40							30	
Pollution degree		3								
Degree of protection		IP20								
Shock resistance acc. to IEC 60068-2-27		11g/15 ms								
Vibration resistance acc. to IEC 60068-2-6		10 ... 55 Hz: 0.35 mm								
Type of mounting		For screw-fixing and snap-on mounting to 35 mm standard mounting rail								
• Mounting position		Any								
• Installation altitude at height above sea level, maximum	m	2 000								
Ambient temperature during operation	°C	-25 ... +60								
Relative humidity during operation, maximum	%	70								
ATEX										
Ex device group and Ex category according to ATEX product directive 2014/34/EU		--			II 2G, II 2D		--		II 2G, II 2D	
Safety device type according to IEC 61508-2		--			Type B		--		Type B	
Safety integrity level (SIL) according to IEC 61508		--			SIL1		--		SIL1	
Performance level (PL) according to EN ISO 13849-1		--			c		--		c	
T1 value for proof test interval or service duration according to IEC 61508	y	--			3		--		3	
Measuring circuit:										
Number of measuring circuits		1							2	
Relative measuring accuracy	%	9			2					
Maximum number of sensors in series		6								
Cable length of sensor, maximum	m	2 800			250					
Thermistor resistance response value	Ω	1 500 ... 1 650			1 500 ... 1 550					
Thermistor resistance return value	Ω	3 400 ... 3 600			3 300 ... 3 350					

Relays

SIRIUS 3RN2 thermistor motor protection

Article number	3RN2000- .AA30	3RN2000- .AW30, 3RN2010- .BW30, 3RN2010- .CW30	3RN2010- .BA30, 3RN2010- .CA30	3RN2011- .BA30, 3RN2012- .BA30	3RN2011- .BW30, 3RN2012- .BW30	3RN2012- .BW31	3RN2013- .BA30	3RN2013- .BW30, 3RN2013- .GW30	3RN2023- .DW30
Control circuit:									
Current carrying capacity of the output relay									
• At AC-15 at 250 V at 50/60 Hz	A	3							
• At DC-13 at 24 V	A	1							
• At DC-13 at 125 V	A	0.2							
• At DC-13 at 250 V	A	0.1							
Thermal current of the non-solid-state contact blocks, maximum	A	5							
Continuous current of the output relay's DIAZED fuse link	A	6							
Supply voltage:									
Control supply voltage									
• At AC									
- At 50 Hz rated value	V	24 ... 24	24 ... 240	24 ... 24	24 ... 240	24 ... 24	24 ... 240	24 ... 240	24 ... 240
- At 60 Hz rated value	V	24 ... 24	24 ... 240	24 ... 24	24 ... 240	24 ... 24	24 ... 240	24 ... 240	24 ... 240
• At DC, rated value	V	24 ... 24	24 ... 240	24 ... 24	24 ... 240	24 ... 24	24 ... 240	24 ... 240	24 ... 240
Operating range factor of the control supply voltage, rated value									
• At AC at 50 Hz		0.85 ... 1.1							
• At AC at 60 Hz		0.85 ... 1.1							
• At DC		0.85 ... 1.1							

Article number	3RN20..-1	3RN20..-2
Type of electrical connection	 Screw terminals	 Spring-type terminals (push-in)
Tightening torque	Nm 0.6 ... 0.8	--
Type of connectable conductor cross-sections		
• Solid	mm ² 1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²)	1x (0.5 ... 4 mm ²)
• Finely stranded with end sleeve	mm ² 1x (0.5 ... 4 mm ²), 2x (0.5 ... 1.5 mm ²)	1x (0.5 ... 2.5 mm ²)
• For AWG cables		
- Solid	AWG 1x (20 ... 12), 2x (20 ... 14)	1x (20 ... 12)
- Stranded	AWG --	1x (20 ... 12)

Selection and ordering data



3RN2000-1AA30



3RN2010-1BA30



3RN2011-1BA30



3RN2012-1BW30



3RN2023-1DW30

Product function	Number of CO contacts for auxiliary contacts	Number of NO contacts for auxiliary contacts	Number of NC contacts for auxiliary contacts	Material of switching contacts	Control supply voltage		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
					At AC at 50 Hz rated value	At DC, rated value						
					V	V	d					

Compact evaluation unit, suitable for bimetallic switch

Terminal A1 jumpered with root of changeover contact

Auto RESET	1	0	0	AgSnO2	24 ... 24	24 ... 24	2	3RN2000-□AA30		1	1 unit	41H
					24 ... 240	24 ... 240	2	3RN2000-□AW30		1	1 unit	41H
	0	1	1	AgSnO2	24 ... 24	24 ... 24	2	3RN2010-□CA30		1	1 unit	41H
					24 ... 240	24 ... 240	2	3RN2010-□CW30		1	1 unit	41H

Standard evaluation unit, suitable for bimetallic switch

Auto RESET	2	0	0	AgSnO2	24 ... 24	24 ... 24	2	3RN2010-□BA30		1	1 unit	41H
					24 ... 240	24 ... 240	2	3RN2010-□BW30		1	1 unit	41H

Bistable evaluation unit, open-circuit and short-circuit detection in the sensor circuit

Does not trigger in the event of control supply voltage failure

Auto RESET	2	0	0	AgSnO2	24 ... 240	24 ... 240	2	3RN2012-□BW31		1	1 unit	41H
Manual RESET												
External RESET												
Error memory												

Standard evaluation unit with ATEX approval, open-circuit and short-circuit detection in the sensor circuit¹⁾

Manual RESET	2	0	0	AgSnO2	24 ... 24	24 ... 24	2	3RN2011-□BA30		1	1 unit	41H
External RESET					24 ... 240	24 ... 240	2	3RN2011-□BW30		1	1 unit	41H

Non-volatile³⁾

Auto RESET	2	0	0	AgSnO2	24 ... 24	24 ... 24	2	3RN2012-□BA30		1	1 unit	41H
Manual RESET					24 ... 240	24 ... 240	2	3RN2012-□BW30		1	1 unit	41H
External RESET												
Error memory												

Protective separation, non-volatile²⁾³⁾

Auto RESET	2	0	0	AgSnO2	24 ... 24	24 ... 24	2	3RN2013-□BA30		1	1 unit	41H
Manual RESET					24 ... 240	24 ... 240	2	3RN2013-□BW30		1	1 unit	41H
External RESET												
Error memory				AgSnO2 Hard gold-plated	24 ... 240	24 ... 240	2	3RN2013-□GW30		1	1 unit	41H

Evaluation unit with ATEX approval and 2 sensor circuits for warning and disconnection, open-circuit and short-circuit detection in both sensor circuits

Protective separation, non-volatile²⁾³⁾

Auto RESET	1	1	0	AgSnO2	24 ... 240	24 ... 240	2	3RN2023-□DW30		1	1 unit	41H
Manual RESET												
External RESET												
Error memory												

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

¹⁾ For 3RN2011: The unit can be reset with the RESET button or by disconnecting the control supply voltage.










²⁾ Protective separation up to 300 V acc. to DIN/VDE 0160, IEC 60947-1.

³⁾ Protection against voltage failure or non-volatile fault storage means that previous tripping due to a fault remains stored even if the control supply voltage fails. The monitoring device is not reset if the voltage fails. With an active fault, meaning a fault which has not been manually confirmed, an automatic restart of the plant upon recovery of the power is prevented therefore and plant safety increased as the result.

Relays

SIRIUS 3RN2 thermistor motor protection

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminals for SIRIUS devices in the industrial standard mounting rail enclosure						
	Removable terminals • 2-pole, up to 1 x 4 mm ² or 2 x 2.5 mm ²	2	Screw terminals 			
3ZY1122-1BA00			3ZY1122-1BA00	1	6 units	41L
	• 2-pole, up to 1 x 4 mm ² or 2 x 1.5 mm ²	2	Spring-type terminals (push-in) 			
			3ZY1122-2BA00	1	6 units	41L
Accessories for enclosures						
	Push-in lugs For wall mounting	2	3ZY1311-0AA00	1	10 units	41L
3ZY1311-0AA00						
	Coding pins For removable terminals of SIRIUS devices in the industrial standard mounting rail enclosure; they enable the mechanical coding of terminals	2	3ZY1440-1AA00	1	12 units	41L
3ZY1440-1AA00						
	Hinged cover NEW Replacement cover, without terminal labeling, titanium gray	2	3ZY1450-1AA00	1	5 units	41H
	• 17.5 mm wide	2	3ZY1450-1AB00	1	5 units	41H
	• 22.5 mm wide	2				
3ZY1450-1AB00						
Tools for opening spring-type terminals						
	Screwdrivers For all SIRIUS devices with spring-type terminals	2	Spring-type terminals (push-in) 			
3RA2908-1A	3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated		3RA2908-1A	1	1 unit	41B

Overview



SIRIUS 3RS70 signal converters

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RS70

For the conversion tool, e.g. from 3RS17 to 3RS70, see www.siemens.com/sirius/conversion-tool

Signal converters perform the coupling function for analog signals on both the input side and the output side. They are indispensable when processing analog values with electronic controls. Under harsh industrial conditions in particular, it is often necessary to transmit analog signals over long distances. Electrical separation is then needed as a result of the different power supplies. The resistance of the wiring causes potential differences and losses which must be prevented.

Electromagnetic disturbance and overvoltages can affect the signals on the input side in particular or even destroy the analog modules. All terminals of the 3RS70 signal converters are safe up to a voltage of 30 V DC and protected against switching poles. Short-circuit protection is an especially important function for the outputs.

The devices are EMC-tested according to

- IEC 61000-6-4 (generic standard for emitted interference)
- IEC 61000-6-2 (generic standard for interference immunity)

The analog signals comply with

- IEC 60381-1/2

Article No. scheme

Product versions		Article number	
Signal converters		3RS70	□ □ - □ □ □ 0 0
Product function/type of input signal	Single-range converters, active	0 0	
		0 2	
		0 3	
	Switchable multi-range converters, active	0 5	
	Switchable universal converters, active	0 6	
	Single-range converters, passive	2 0	
	Switchable multi-range converters, active	2 5	
Connection type	Screw terminals		1
	Spring-type terminals (push-in)		2
Type of output signal	0 ... 10 V		A
	0 ... 20 mA		C
	4 ... 20 mA		D
	Loop power isolator 4 ... 20 mA		E
	3 standard signals can be switched		F
	4 frequencies can be switched		K
Supply voltage	24 V AC/DC		E
	None		T
	24 ... 240 V AC/DC		W
Example		3RS70 0 0 - 1 A E 0 0	

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Relays

Coupling Relays and Signal Converters/Interface Converters

SIRIUS 3RS70 signal converters

Benefits

- Narrow width
- Easy-to-set universal converters
- Converters with frequency output
- All ranges are fully calibrated
- Universal family of devices – the perfect solution for every application
- Integrated manual/automatic switch with a setpoint generator
- Outputs are short-circuit-proof
- Up to 30 V – protected against damage caused by wiring errors

Application

Signal converters are used in analog signal processing for

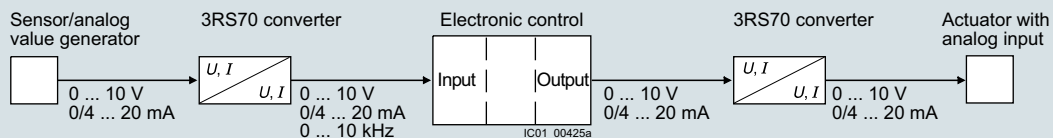
- Electrical separation
- Conversion of normalized and non-normalized signals
- Amplification and impedance adaptation
- Conversion to a frequency for processing by a digital input
- Overvoltage and EMC protection
- Short-circuit protection of the outputs

3RS7025 manual/automatic converter

For special applications in which analog signals have to be simulated, or during plant commissioning when the actual process value is not yet available, the 3RS7025 devices feature an adjustable potentiometer for manual setpoint selection and a manual/automatic switch.

The potentiometer for the 3RS7025 devices is used to simulate analog output signals when the changeover switch is set to "Manual" and the control supply voltage is applied, without the need for an analog input signal. The scale ranges from 0 ... 100%.

Example: When it is set for an output of 4 ... 20 mA, the left stop on the potentiometer represents an output current of 4 mA and the right stop represents an output current of 20 mA. In the "Auto" switch position, the output signal follows the input signal proportionally regardless of the potentiometer setting.



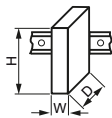
Application example of analog signal processing

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16691/td>
 Operating instructions, see
<https://support.industry.siemens.com/cs/ww/en/view/109475738>

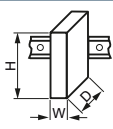
Circuit diagrams, see
<https://support.industry.siemens.com/cs/ww/en/view/109475738>

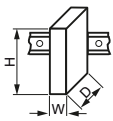
Article number	3RS7000-.AE00	3RS7002-.AE00, 3RS7003-.AE00	3RS7000-.CE00, 3RS7000-.DE00	3RS7002-.CE00, 3RS7002-.DE00, 3RS7003-.CE00, 3RS7003-.DE00	3RS7020-.ET00
Product designation Product version	Single-range converters, active			Single-range converters, passive	
General data:					
Width x height x depth		mm	6.2 × 93 × 72.5		6.2 × 93 × 71
Ambient temperature		°C	-25 ... +60		
• During operation		°C	-40 ... +80		
• During storage					
Relative humidity during operation		%	10 ... 95		
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3 rated value		V	50		
Active power input		W	0.29		--
Degree of protection			IP20		
Input:					
Input voltage		V	30		
• Max.					
Input impedance		Ω	--	100	--
• Of current input, maximum		kΩ	330	--	330
• Of voltage input, minimum					100
Output:					
Load		Ω	--	500	1 000
• Maximum at current output		kΩ	2	--	--
• Minimum at voltage output					
Relative measuring accuracy		%	0.1		
Short-circuit-proof			Yes		No



Relays

Coupling Relays and Signal Converters/Interface Converters

SIRIUS 3RS70 signal converters

Article number		3RS7005- .FE00	3RS7005- .KE00	3RS7005- .FW00	3RS7005- .KW00	3RS7025- .FE00	3RS7025- .FW00
Product designation Product version		Switchable multi-range converters, active				Switchable multi-range converters, active, with manual/automatic switch and setting potentiometer	
General data:							
Width x height x depth	 mm	6.2 × 93 × 72.5		17.5 × 93 × 72.5		17.5 × 93 × 75	
Ambient temperature							
• During operation	°C	-25 ... +60					
• During storage	°C	-40 ... +80					
Relative humidity during operation	%	10 ... 95					
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3 rated value	V	50		300		50	300
Active power input	W	0.29		0.5	0.34	0.5	
Degree of protection		IP20					
Input:							
Input voltage							
• Max.	V	30					
Input impedance							
• Of current input, maximum	Ω	100					
• Of voltage input, minimum	kΩ	330					
Output:							
Load							
• Maximum at current output	Ω	500	--	500	--	500	
• Minimum at voltage output	kΩ	2	--	2	--	2	
Relative measuring accuracy	%	0.1					
Short-circuit-proof		Yes					

Article number		3RS7006-FE00	3RS7006-FW00
Product designation Product version		Switchable universal converters, active	
General data:			
Width x height x depth		mm	17.5 × 93 × 72.5
Ambient temperature		°C	-25 ... +60
• During operation		°C	-40 ... +80
• During storage			
Relative humidity during operation		%	10 ... 95
Insulation voltage for overvoltage category III to IEC 60664 for pollution degree 3 rated value		V	50
			300
Active power input		W	0.5
Degree of protection			IP20
Input:			
Input voltage		V	30
• Max.			
Input impedance		Ω	100
• Of current input, maximum		kΩ	330
• Of voltage input, minimum			
Output:			
Load		Ω	500
• Maximum at current output		kΩ	2
• Minimum at voltage output			
Relative measuring accuracy		%	0.1
Short-circuit-proof			Yes

Article number	3RS70..-1....	3RS70..-2....
Type of electrical connection	 Screw terminals	 Spring-type terminals (push-in)
Type of connectable conductor cross-sections		
• Solid	1x (0.25 ... 2.5 mm ²)	1x (0.25 ... 2.5 mm ²)
• Finely stranded		
- Without end sleeves	--	1x (0.25 ... 2.5 mm ²)
- With end sleeves	1x (0.25 ... 1.5 mm ²)	1x (0.25 ... 1.5 mm ²)
• Solid for AWG cables	1x (20 ... 14)	1x (20 ... 14)

Relays

Coupling Relays and Signal Converters/Interface Converters

SIRIUS 3RS70 signal converters

Selection and ordering data

Signal type		Supply voltage	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
At the input	At the output		mm	d					

Single-range converters

Passive

Type of electrical isolation, 2-way

4 ... 20 mA	4 ... 20 mA	--	6.2	2	3RS7020-□ET00		1	1 unit	41H
-------------	-------------	----	-----	---	----------------------	--	---	--------	-----

Single-range converters

Active

Type of electrical isolation, 3-way

0 ... 10 V	0 ... 10 V	24 V AC/DC	6.2	2	3RS7000-□AE00		1	1 unit	41H
0 ... 20 mA	0 ... 10 V	24 V AC/DC	6.2	2	3RS7002-□AE00		1	1 unit	41H
4 ... 20 mA	0 ... 10 V	24 V AC/DC	6.2	2	3RS7003-□AE00		1	1 unit	41H
0 ... 10 V	0 ... 20 mA	24 V AC/DC	6.2	2	3RS7000-□CE00		1	1 unit	41H
0 ... 20 mA	0 ... 20 mA	24 V AC/DC	6.2	2	3RS7002-□CE00		1	1 unit	41H
4 ... 20 mA	0 ... 20 mA	24 V AC/DC	6.2	2	3RS7003-□CE00		1	1 unit	41H
0 ... 10 V	4 ... 20 mA	24 V AC/DC	6.2	2	3RS7000-□DE00		1	1 unit	41H
0 ... 20 mA	4 ... 20 mA	24 V AC/DC	6.2	2	3RS7002-□DE00		1	1 unit	41H
4 ... 20 mA	4 ... 20 mA	24 V AC/DC	6.2	2	3RS7003-□DE00		1	1 unit	41H



3RS7000-1AE00



3RS7000-2AE00

Multi-range converters

Active, switchable

Type of electrical isolation, 3-way

0 ... 10 V,	0 ... 10 V,	24 V AC/DC	6.2	2	3RS7005-□FE00		1	1 unit	41H
0 ... 20 mA,	0 ... 20 mA,	24 ... 240 V AC/DC	17.5	2	3RS7005-□FW00		1	1 unit	41H
4 ... 20 mA	4 ... 20 mA								
	0 ... 50 Hz	24 V AC/DC	6.2	2	3RS7005-□KE00		1	1 unit	41H
	0 ... 100 Hz	24 ... 240 V AC/DC	17.5	2	3RS7005-□KW00		1	1 unit	41H
	0 ... 1 kHz								
	0 ... 10 kHz								

3RS7005-1FW00

Multi-range converters

Active, with manual/automatic switch and setting potentiometer

Type of electrical isolation, 3-way

0 ... 10 V,	0 ... 10 V,	24 V AC/DC	17.5	2	3RS7025-□FE00		1	1 unit	41H
0 ... 20 mA,	0 ... 20 mA,	24 ... 240 V AC/DC	17.5	2	3RS7025-□FW00		1	1 unit	41H
4 ... 20 mA	4 ... 20 mA								

Universal converters

Active, switchable

Type of electrical isolation, 3-way

0 ... 60 mV,	0 ... 10 V,	24 V AC/DC	17.5	2	3RS7006-□FE00		1	1 unit	41H
0 ... 100 mV,	0 ... 20 mA,	24 ... 240 V AC/DC	17.5	2	3RS7006-□FW00		1	1 unit	41H
0 ... 300 mV,	4 ... 20 mA								
0 ... 500 mV,									
0 ... 1 V,									
0 ... 2 V,									
0 ... 5 V,									
0 ... 10 V,									
0 ... 20 V,									
2 ... 10 V,									
0 ... 5 mA,									
0 ... 10 mA,									
0 ... 20 mA,									
4 ... 20 mA,									
-5 ... +5 mA,									
-20 ... +20 mA									





3RS7006-1FE00

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Galvanic isolation plates						
		Galvanic isolation plates For electrical separation of different potentials when devices of different types are installed side by side				
3RQ3900-0A	2	3RQ3900-0A		1	10 units	41H
Connecting combs						
		Connecting combs For linking the same potentials, current carrying capacity for infeed max. 6 A				
3RQ3901-0B	2	3RQ3901-0A		1	10 units	41H
	2	3RQ3901-0B		1	10 units	41H
	2	3RQ3901-0C		1	10 units	41H
	2	3RQ3901-0D		1	10 units	41H
Clip-on labels						
		Clip-on labels For terminal marking and equipment labeling, white • 5 x 5 mm ¹⁾				
	2	3RQ3902-0A		100	2 000 units	41H
Tools for opening spring-type terminals						
		Screwdrivers For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm; length approx. 200 mm, titanium gray/black, partially insulated				
3RA2908-1A	2	Spring-type terminals (push-in) 3RA2908-1A		1	1 unit	41B

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: Conta-Clip Verbindungstechnik GmbH, see page 16/16.

Relays

Coupling Relays and Signal Converters/Interface Converters

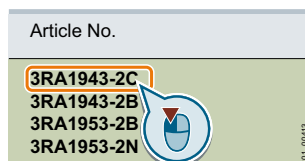
Notes

Safety Technology



clickable

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.



Or directly on the Internet, e.g.
www.siemens.com/product?3RA1943-2C

Price groups

PG 4N1, 41B, 41H, 41L, 42B, 42C, 42F, 42J

11/2 Introduction

Safety relays

SIRIUS 3SK safety relays

11/12 General data

Basic units

11/19 - SIRIUS 3SK1 Standard basic units

11/20 - SIRIUS 3SK1 Advanced basic units

11/21 - SIRIUS 3SK2 basic units

Expansion units

11/22 - Output expansions

11/23 - Input expansions

11/24 **Accessories** **NEW**

SIRIUS 3TK28 safety relays

11/27 With special functions

11/29 Accessories

SIRIUS 3RK3 Modular Safety System

11/30 General data

11/38 3RK31 central units

11/39 3RK32, 3RK33 expansion modules

11/39 3RK35 interface modules

11/40 **Accessories** **NEW**

Note:

Conversion tool,
 e.g. from 3TK28 to 3SK, see
www.siemens.com/sirius/conversion-tool

Safety Technology

Introduction

Overview

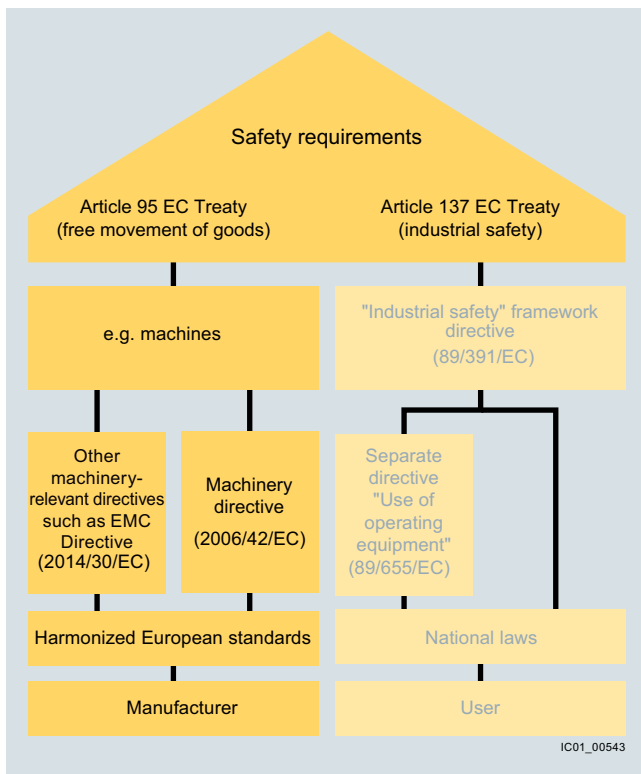
Functional safety of machines and plants – Basic safety requirements in the manufacturing industry

In order to protect people and the environment in many industrial applications in the manufacturing and process industries, machines and plants must meet the fundamental safety requirements of the EU Directives, particularly the Machinery Directive. In addition to design solutions, automation systems and components are also expected to perform safety-related tasks. This means that the life and health of people and the physical integrity of capital goods and the environment depend on the proper operation of these systems and components, on "functional safety".

With the introduction of the uniform European Single Market, national standards and regulations affecting the technical realization of machines were consistently harmonized. This involved defining basic safety requirements which address, on the one hand, machine manufacturers in terms of the free movement of goods (Article 95) and, on the other hand, machine operators in terms of industrial safety (Article 137).

The EU directives:

- Define requirements which must be met by plants and their operating companies in order to protect the health of people and the quality of the environment
- Include standards for health & safety at work (minimum requirements)
- Define product requirements (e.g. for machines) to protect the health and safety of consumers
- Differentiate between the requirements which must be met by the implementation of products in order to ensure the free movement of goods and the requirements which must be met for the use of products



Safety requirements imposed on machines and plants

Objective of the standards

It is the objective of safety technology to minimize as far as possible the hazards from technical facilities for people and the environment while restricting no more than absolutely necessary the scope of industrial production, the use of machines or the production of chemical products.

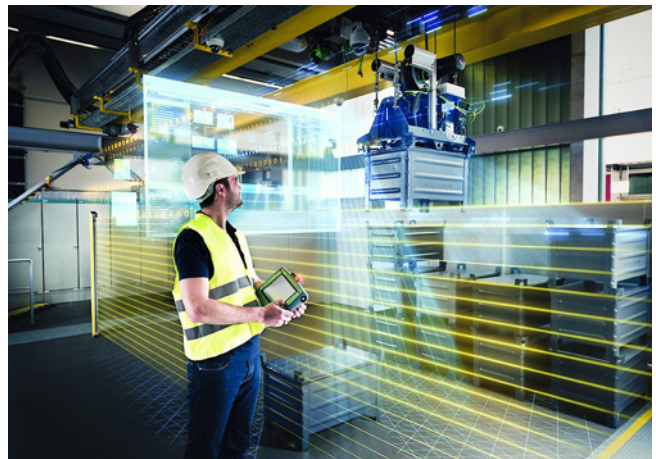
Production automation is governed in particular by the following standards:

- IEC 61508 or IEC 62061 and
- EN ISO 13849-1

The IEC 62061 standard

The IEC 62061 standard "Safety of machines – Functional safety of electrical, electronic and programmable electronic control systems" defines comprehensive requirements. It includes recommendations for the development, integration and validation of safety-related electrical, electronic and programmable electronic control systems (SRECS) for machines. With the implementation of EN 62061, for the first time, one standard covers the entire safety chain, from the sensor to the actuator. The Safety Integrity Level, or SIL for short, is defined as the application parameter for this standard.

Requirements placed on the capacity of non-electrical – e.g. hydraulic, pneumatic, or electromechanical – safety-related control elements for machines are not specified by the standard.



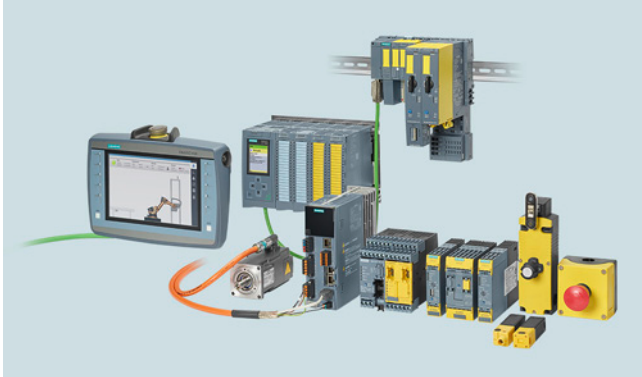
Safety of machines and systems

The EN ISO 13849-1 standard

EN ISO 13849-1 "Safety of machines – Safety-related components of controls, Part 1: General principles" replaced EN 954-1 at the end of 2011. It considers the complete range of safety functions with all the devices which are involved in their performance. EN ISO 13849-1 also makes a quantitative analysis of the safety functions. The standard describes how to determine the performance level (PL) for safety-relevant parts of control systems on the basis of architectures specified for the intended service life.

When combining several safety-related parts to form a complete system, the standard explains how to determine the resulting PL. It can be applied to safety-related parts of control systems (SRP/CS) and all types of machines, regardless of the technology and energy used, e.g. electrical, hydraulic, pneumatic or mechanical.

Safety Integrated – Integrated safety technology from a single source



Safety Integrated

The following applies equally for machine manufacturers and the companies which operate their machines: Maximum possible safety for personnel and machines. The solution: our Safety Integrated concept based on Totally Integrated Automation. Whether for simple safety functions or highly complex tasks – our portfolio offers you maximum safety.

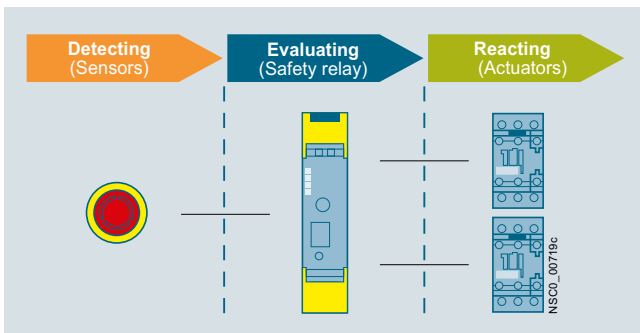
Safety Integrated is a unique, complete and consistent range of safety products covering all safety-related tasks – from detecting, evaluating and reacting, from switches and control systems to operating mechanisms (see graphic on page 11/4). Our products meet the safety requirements in force in industry, including IEC, ISO, NFPA and UL, and are certified in accordance with the latest safety standards.

All Safety Integrated products or systems can be seamlessly integrated in the standard automation environment. They are therefore particularly flexible and economical, reduce engineering time, increase plant availability and enable practice-related machine operation.

Designing a safety function

A safety chain normally comprises the following functions: detect, evaluate and react. In detail this means:

- Detect = the detection of a safety requirement with corresponding sensors, such as EMERGENCY STOP or position switches
- Evaluate = the detection of a safety requirement and the reliable initiation of a reaction, e.g. shutting down the enabling circuits.
- React = Shutting down the hazard using contactors or fail-safe motor starters.



Designing a safety function

Our offering

As a partner for all safety requirements, we not only support you with the respective safety-related products and systems, but also consistently provide you with the most current know-how on international standards and regulations. Machine manufacturers and plant managers are offered a comprehensive training portfolio as well as services for the entire lifecycle of safety-related systems and machines.

- A uniform, certified product range
- Courses on CE marking, risk assessment and standards, see www.siemens.com/sitrain-safetyintegrated
- Worldwide service and support, see <http://support.industry.siemens.com>
- More information, see www.siemens.com/safety-integrated

Safety Evaluation Tool



Safety Evaluation Tool

The Safety Evaluation Tool for the IEC 62061 and EN ISO 13849-1 standards guides you quickly and safely through all the calculation steps involved in implementing safety functions on a machine, from definition of the safety system structure through to selection of the components, all the way through to determination of the achieved safety integrity level (SIL/PL). You receive the results as a standards-compliant report that can be integrated in the documentation as proof of safety.

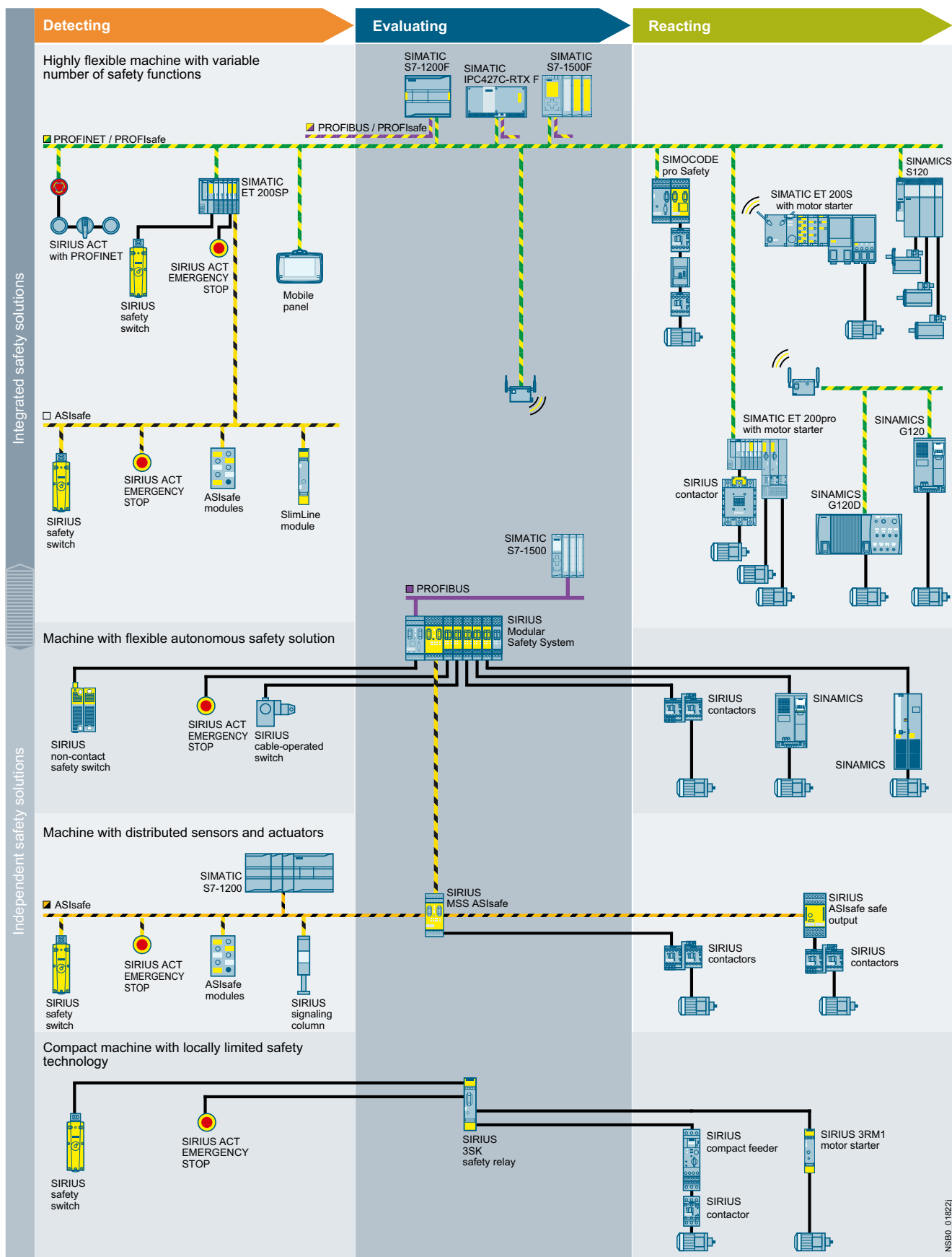
Your advantages at a glance:

- Reliability when dealing with the standards: TÜV-certified tool
- Free use of the online tool
- Automatic calculation in accordance with current standards
- Fast results: Standards-compliant report
- Less time needed to evaluate the safety functions
- Fast access to the latest product data
- User-friendly archiving: Projects can be saved and called up again as required
- Fast and easy handling: comprehensive, predefined libraries of examples
- Selection menus for calculating the DC and CCF
- Different switching cycles can be input when used in a two-channel configuration
- Failure rate calculation
- Selection wizard for drive components.

For more information, see www.siemens.com/safety-evaluation-tool.

Safety Technology

Introduction



Safety Integrated

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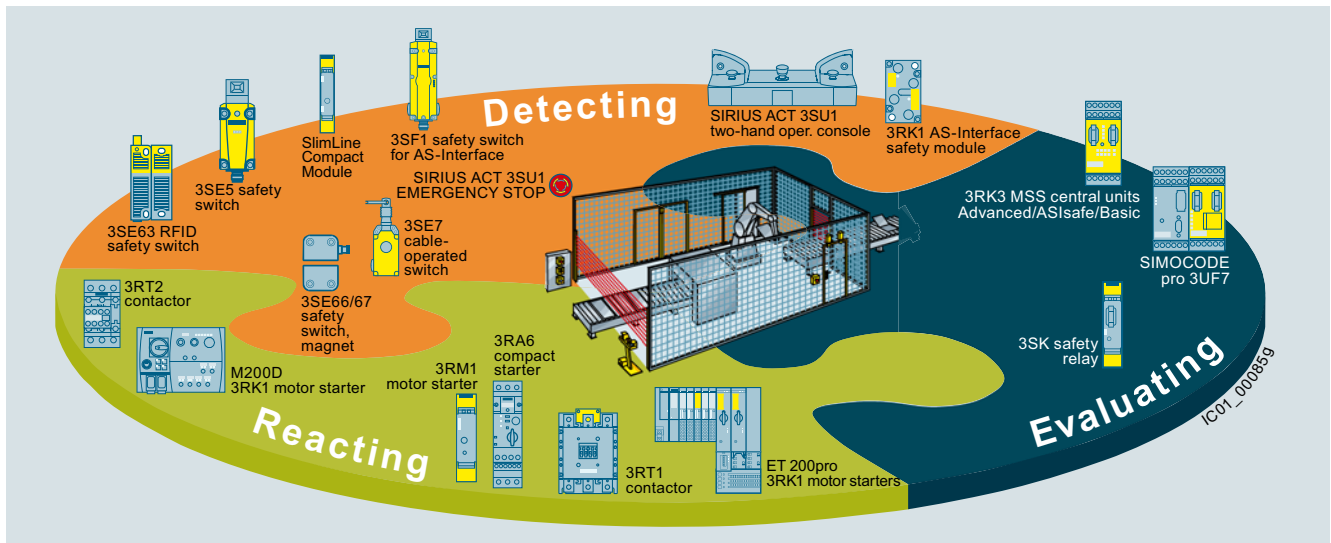
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SIRIUS Safety Integrated

Our SIRIUS Safety Integrated controls are a central element of the Siemens Safety Integrated concept. Whether for fail-safe detecting, commanding and signaling, monitoring and evaluating or starting and reliable shutting down – our SIRIUS Safety Integrated controls are experts at performing safety tasks in your plant.

SIRIUS Safety Integrated uses fail-safe communication via standard fieldbus systems, such as ASIsafe via AS-Interface and PROFIsafe via PROFIBUS and PROFINET, to solve even networked safety tasks of greater complexity. This opens the door for flexible safety solutions for compact machines or large-scale plants.

Implementation of many typical safety applications, see [Application Manual "SIRIUS Safety Integrated"](#).



SIRIUS Safety Integrated

Monitoring with fail-safe evaluation units from the 3SK and 3RK3 series

Position monitoring with non-contact safety switches:

Safe protective door tumbler with safety switches and separate actuator, in accordance with EN ISO 14119:

Safe evaluation units	Maximum achievable safety level according to type of switch
<p>Magnetically operated switches RFID safety switches</p> <p>2 NC/2 NC + 1 NC (signaling contact) 3SE66/3SE67 3SE63</p>	<p>SIL 3/PL e</p>
<p>3SK1, 3SK2</p>	
<p>3RK3</p>	

Safe evaluation units	Maximum achievable safety level according to type of switch
<p>Safety switches with tumbler</p> <p>3SE53 3SE53</p>	<p>SIL 2/PL d</p>
<p>3SK2</p>	
	<p>SIL 3/PL e</p>

Notes:

For more information, see [FAQ article](#).
For information on safety switches, see [page 12/1](#).

Safety Technology

Introduction










Using SIRIUS 3RT contactors with fail-safe controllers and safety relays

Safety relays and fail-safe controllers work perfectly with SIRIUS contactors optimized for safety application regardless of their size:

- For sizes S00 and S0 we recommend 3RT2 contactors with DC operating mechanism
- 3RT2 coupling contactors with electronic operating mechanisms are available in sizes S2 and S3
- The innovative 3RT1 versions with electronic operating mechanism and fail-safe control input are ideal for higher power ranges, such as sizes S6 to S12

They offer the following advantages:

- Reduced current load on the controller outputs
- Minimization of wear for mechanical relays on controllers or safety relays
- Coupling elements between controllers and contactors are no longer required

SIRIUS safety relays				SIMATIC controllers		
						
Perfect combination						
						
S00				S0		S2
S3				S6		S10
S12						
3RT2 contactors				3RT1 contactors		

Combination of SIRIUS 3RT contacts with fail-safe controllers and safety relays



IC01_00634

SIRIUS Safety Integrated		Type	Page
	3SK safety relays		
	<ul style="list-style-type: none"> • Key modules of a consistent and cost-effective safety chain • Can be used for all safety applications thanks to compliance with the highest safety requirements (PL e according to EN ISO 13849-1 or SIL 3 according to IEC 61508) • Suitable for use all over the world through compliance with all globally established certifications 		
3SK111	<u>SIRIUS 3SK1 Standard basic units</u>	3SK111	11/19
	<ul style="list-style-type: none"> • Simple, compact devices for all important requirements for monitoring safety sensors and actuators 		
3SK112	<u>SIRIUS 3SK1 Advanced basic units</u>	3SK112	11/20
	<ul style="list-style-type: none"> • Multifunctional series of safety relays with safe relay outputs, semiconductor outputs or time-delayed outputs for: <ul style="list-style-type: none"> - EMERGENCY STOP monitoring - Protective door monitoring - Monitoring of non-floating sensors such as light arrays, laser scanners, etc. - Monitoring of two-hand operation consoles - Monitoring of equivalent (NC/NC) and antivalent (NO/NC) sensors • Setting by means of DIP switch 		
3SK2	<u>SIRIUS 3SK2 basic units</u>	3SK2	11/21
	<ul style="list-style-type: none"> • Series of safety relays that can be parameterized by software, with semiconductor outputs and independent output functions for: <ul style="list-style-type: none"> - EMERGENCY STOP monitoring - Protective door monitoring - Protective door monitoring with tumbler - Monitoring of non-floating sensors such as light arrays, laser scanners, etc. - Monitoring of two-hand operation consoles - Monitoring of equivalent (NC/NC) and antivalent (NO/NC) sensors - Muting 		
3SK121	<u>Expansion units</u>	3SK121, 3SK122, 3SK123	11/22, 11/23
	3TK2810 safety relays		
	<ul style="list-style-type: none"> • Further modules of a consistent and cost-effective safety chain • Can be used for all safety applications thanks to compliance with the highest safety requirements (PL e according to EN ISO 13849-1 or SIL 3 according to IEC 61508) • Suitable for use all over the world through compliance with all globally established certifications 		
3TK2810-1BA41	<u>Safe standstill monitoring with 3TK2810-0</u>	3TK2810	11/27
	<ul style="list-style-type: none"> • Monitoring without external sensors • Universal use in applications possible 		
	<u>Safe speed monitoring with 3TK2810-1</u>		
	<ul style="list-style-type: none"> • Monitoring of speed with encoders and proximity switches possible • Easy diagnostics options via display • Integrated monitoring of a spring-type locking protective door 		

		Type	Page
SIRIUS Safety Integrated (continued)			
 3RK3	3RK3 Modular Safety System (MSS) <ul style="list-style-type: none"> • Freely configurable modular safety relays • Safety-related applications up to PL e according to EN ISO 13849-1 or SIL 3 according to IEC 62061 can be implemented • High flexibility and planning reliability thanks to a modular design • More space in the control cabinet and lower costs thanks to highly modular project data • More functionality and time savings thanks to a software-configurable system • Comprehensive on-site diagnostics with the SIRIUS Safety ES software and diagnostics display • Improved plant diagnostics and higher plant availability thanks to exchange of data using PROFIBUS • Automatic creation of plant documentation with regard to MSS and software parameterization • Up to 9 expansion modules can be plugged in for standard I/Os and fail-safe I/Os – optionally electronic or relay-based fail-safe outputs • Graphic parameterization of the logic, online diagnostics, and automatic creation of documentation using SIRIUS Safety ES • Consistent further development of the safety monitors with the Advanced and ASIsafe central units of the SIRIUS 3RK3 Modular Safety System (MSS) Additionally with AS-Interface (ASIsafe): <ul style="list-style-type: none"> • Modularly expandable and freely configurable safety monitor • With MSS Advanced/ASIsafe up to 50 two-channel, fail-safe outputs (38 central outputs and 12 outputs via AS-i) • Safety-related and standard communication between multiple MSS devices and/or safety monitors • Distributed detection of sensors and disconnection of actuators through AS-Interface • Much more space is available without wiring outlay using AS-Interface • Ready-to-use function blocks (e.g. muting or protective door with tumbler) can also be used on AS-i 	3RK3	11/30
 3RK3 MSS ASIsafe	AS-Interface safety modules <ul style="list-style-type: none"> • Complete portfolio of ASIsafe modules • For connection of safety switches with contacts (e.g. position switches) as well as solid-state safety sensors (ESPE) • Degree of protection IP65/IP67 or IP20 • Especially compact dimensions, with widths from 17.5 mm • Up to four safe inputs per module • Up to one safe output per module • Standard outputs are available on the module in addition • Up to Category 4, PL e, SIL 3 Advantage: Easy integration of safe signals both in the control cabinet or in the field	3RK1	2/29
 K45F SC17.5F	AS-i Master and AS-i Safety module for ET 200SP <p>The CM AS-i Master ST and F-CM AS-i Safety ST modules are plugged into an ET 200SP configuration and connect an AS-i network, including safety-related inputs and outputs, with the controller.</p> <ul style="list-style-type: none"> • Single, double and multiple masters possible • Per CM AS-i Master ST up to 496 DI/496 DQ/124 AI/124 AQ possible • Up to 31 safe input signals (two-channel)/16 safe output channels possible per F-CM AS-i Safety ST module • Configuration from STEP 7 V5.5 or from V15 (TIA Portal) and higher • Plant-wide safety programming of the F-CPU via SIMATIC Distributed Safety/ Safety Advanced • Integrated diagnostics • No other programming tools required Advantage: Modular connection of fail-safe AS-i networks with system-wide programming in SIMATIC and SINUMERIK controllers.	6ES7	2/36, 2/40
 CM AS-i Master ST and F-CM AS-i Safety ST	SIRIUS 3RT contactors, 3-pole, 55 to 250 kW <ul style="list-style-type: none"> • Solid-state operating mechanism with fail-safe control input for safety-related applications to SIL 2 with a contactor or SIL 3 with two contactors • 3RT10 for motor loads or 3RT14 for resistive loads • Version with removable lateral auxiliary switches or permanently mounted auxiliary switches and additional approval according to SUVA on request 	3RT10, 3RT14	3/72, 4/16
 3RT1...-S.36			

		Type	Page
SIRIUS Safety Integrated (continued)			
 3RM1	<p>3RM1 Failsafe motor starters</p> <ul style="list-style-type: none"> • Motor starters for safety-related shutdown as 3RM11 direct-on-line starters or 3RM13 reversing starters • Compact devices with 22.5 mm width comprising combinations of relay contacts and power semiconductors (hybrid technology) and an electronic overload relay • For switching three-phase motors up to 3 kW (at 400 V) and resistive loads up to 10 A at AC voltages up to 500 V under normal operating conditions • Safety-related shutdown according to PL e or SIL 3 by shutting down the control supply voltage or control inputs possible without additional devices in the main circuit • Combination with 3SK safety relay through conventional wiring or 3ZY12 device connectors • Simple wiring and collective shutdown with device connectors in assemblies; there is no further need for complex looping of the connecting cables 	3RM1	8/85
 3RK1308-0CB00-0CP0	<p>ET 200SP fail-safe motor starters</p> <ul style="list-style-type: none"> • Fully integrated into the ET 200SP I/O system (including TIA Selection Tool and TIA Portal) • Fully pre-wired motor starters for switching and protecting any AC loads up to 5.5 kW from 48 V AC to 500 V AC • Less space required in the control cabinet (20 to 80%) as a result of greater functional density (direct-on-line and reversing starters in same width) • Longer service life and reduced heat losses thanks to hybrid technology • Self-assembling 32 A power bus, i.e. the load voltage is only fed in once for a group of motor starters • High degree of flexibility when it comes to safety applications via SIMATIC F-CPU or SIRIUS 3SK safety relays up to SIL 3 and PL e Category 4 • Diagnostics capability for active monitoring of the switching and protection functions • Digital inputs can optionally be used via a 3DI/LC module 	3RK1	8/95
 ET 200pro Safety	<p>ET 200pro Safety Motor Starter Solutions</p> <p>The ET 200pro Safety Motor Starter Solutions comprise:</p> <ul style="list-style-type: none"> • PROFIsafe modules • Safety repair switch modules • Disconnecting modules • Standard motor starters • High-Feature motor starters <p><u>ET 200pro Safety Motor Starter Solutions local</u></p> <p>Safety Motor Starter Solutions local are preferred from the safety technology point of view for locally restricted safety applications. These motor starters are not dependent on a safe control system.</p> <p><u>ET 200pro Safety Motor Starter Solutions PROFIsafe</u></p> <p>Safety Motor Starter Solutions PROFIsafe are often found by contrast in safety applications of the more complex type that are interlinked. In this case a safe control system is used with the PROFINET or PROFIBUS bus systems with the PROFIsafe profile.</p>	3RK1	9/11
 SIMOCODE pro V	<p>SIMOCODE pro motor management and control devices</p> <ul style="list-style-type: none"> • Flexible, modular motor management system for motors with constant speeds in the low-voltage range • Provides an intelligent interface between the higher-level automation system and the motor feeder • Multi-functional, electronic full motor protection which is independent of the automation system • Integrated control functions for the motor control • Detailed operating, service and diagnostics data • Open communication via PROFIBUS DP, PROFINET/OPC UA, Modbus RTU or EtherNet/IP • Safety relay function for the fail-safe disconnection of motors up to SIL 3 (IEC 61508/IEC 62061) or PL e with Category 4 (EN ISO 13849-1) 	3UF7	10/5
 SIMOCODE pro S	<p><u>Fail-safe digital modules</u></p> <ul style="list-style-type: none"> • DM-F Local for direct assignment between a fail-safe hardware shutdown signal and a motor feeder • DM-F PROFIsafe for when a fail-safe controller (F-CPU) creates the fail-safe signal for the disconnection 		

		Type	Page
SIRIUS Safety Integrated (continued)			
 <p>3SE51</p>	<p>Mechanical position switches</p> <ul style="list-style-type: none"> • Easy assembly thanks to modular design • Solid, rugged design • Special versions are easily generated and quickly available, also in combination with standard modules • With a 3SE51/3SE52 position switch it is possible to achieve Category 2 according to EN ISO 13849-1 or SIL 1 according to IEC 61508 • Categories 3 and 4 can be achieved by using a second 3SE51/3SE53 position switch 	3SE51, 3SE52	12/5
 <p>3SE53</p>	<p>Mechanical safety switches</p> <ul style="list-style-type: none"> • With separate actuator, hinge switch, or separate actuator and tumbler • With a position switch it is possible to achieve Category 3 according to EN ISO 13849-1 or SIL 2 according to IEC 61508 • Category 4 according to EN ISO 13849-1 or SIL 3 according to IEC 61508 can be achieved by using a second 3SE51 or 3SE52 position switch • Version in various sizes made of metal or plastic • In the case of safety switches with tumbler, versions in the high IP69K degree of protection • Integrated ASIsafe electronics for all enclosure designs 	3SE51, 3SE52, 3SE53	12/47
 <p>3SE66, 3SE67</p>	<p>Non-contact magnetically operated safety switches</p> <ul style="list-style-type: none"> • Small, compact, safe • Simple installation even in restricted spaces thanks to connector versions • Two safety contacts and one signaling contact enable simple diagnostics at the maximum safety level 	3SE66, 3SE67	12/100
 <p>3SE63</p>	<p>Non-contact RFID safety switches</p> <ul style="list-style-type: none"> • Long service life due to non-contact switching • Only one switch required for the maximum safety level PL e or SIL 3 according to EN ISO 13849-1 and IEC 61508 • Tamper protection better than with mechanical safety switches thanks to switches and actuators with individual coding • LED status indication including threshold indication for door displacement • Degree of protection up to IP69K and resistance to cleaning products • Larger switching displacement than mechanical switches; offers better mounting tolerance and sagging tolerance of the protective door 	3SE63	12/106
 <p>3SU14</p>	<p>Command devices</p> <ul style="list-style-type: none"> • Using a special F adapter, EMERGENCY STOP devices according to ISO 13850 can be directly connected through the standard AS-Interface or PROFIsafe with safety-related communication. This F adapter/fail-safe interface module is snapped from the rear onto the EMERGENCY STOP device, enabling the achievement of maximum performance level "e" according to EN ISO 13849-1, or SIL 3 according to IEC 62061. • Thanks to SIRIUS ACT with PROFINET, commanding and signaling devices can be connected directly via PROFINET to the controller and HMI devices – including with safety functions. Engineering and commissioning are simplified by the TIA Portal. • EMERGENCY STOP devices for disconnecting plants in an emergency situation • With positive latching function according to EN ISO 13850 and performance level "e" according to EN ISO 13849-1 or SIL 3 according to IEC 62061 • Various mushroom diameters (also illuminated), with lock, in plastic/metal, as individual or complete units, and in combination with 3SU1 enclosure or two-hand operation console. The 3SU1 enclosures are also optionally available with ASIsafe interface 	3SU1	13/5
 <p>3SU1 with PROFINET</p>			
 <p>3SU1</p>			

SIRIUS Safety Integrated (continued)		Type	Page
 <p>3SE7</p>	<p>Cable-operated switches</p> <ul style="list-style-type: none"> • Control functions and EMERGENCY STOP always within reach • More safety over long distances of up to 2 x 100 m length • Easy release • Fail-safe applications with SIRIUS Safety Integrated • Status display directly on the switch • Signal display for long distances in innovative LED technology with visibility over 50 m • Cable-operated switches with latching according to ISO 13850 (EN 418) and full EMERGENCY STOP function with positive-opening contacts • Quick and safe mounting using uniform mounting accessories • Versions with 1 NO/2 NC with yellow lid 	3SE7	13/161
 <p>3SE2924-3AA20</p>	<p>Safety foot switches</p> <ul style="list-style-type: none"> • Are used wherever manual operation is not possible • With hood, IP65 metal enclosure • With interlock function according to ISO 13850, manual release by pushbutton switch • With 2 NO + 2 NC, NO contacts close by momentary contact, positive-opening NC contacts with independent latching (safety function) 	3SE2924-3AA20	13/165

Connection methods

The 3SK safety relays are available with screw or spring-type terminals (push-in).

The 3TK2810 safety relays and the 3RK3 Modular Safety System are available with screw or spring-type terminals.



Screw terminals



Spring-type terminals, spring-type terminals (push-in)

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

3SK safety relays: Spring-type terminals (push-in)

Push-in connections are a form of spring-type terminals allowing fast wiring without tools for rigid conductors or conductors equipped with end sleeves.

As with other spring-type terminals, a screwdriver (with 3.0 x 0.5 mm blade) is required to disconnect the conductor. The same tool can also be used to wire finely stranded or stranded conductors with no end finishing.

The advantages of the push-in terminals are found, as with all spring-type terminals, in speed of assembly and disassembly and vibration-proof connection. There is no need for the checking and tightening required with screw terminals, [see video "SIRIUS spring-type terminals – strong, flexible, safe and fast!"](#)

Safety Relays

SIRIUS 3SK Safety Relays

General data

Overview



SIRIUS 3SK safety relays

More information

Homepage, see www.siemens.com/safety-relays

Industry Mall, see www.siemens.com/product?3SK

Conversion tool, e.g. from 3TK28 to 3SK, see www.siemens.com/sirius/conversion-tool

SIRIUS 3SK safety relays are the key elements of a consistent, cost-effective safety chain. Whether you need EMERGENCY STOP functionality, protective door monitoring, light arrays, laser scanners or the protection of presses or punches – slimline SIRIUS safety relays enable all safety applications to be implemented in the best possible way in terms of engineering and price.

The following safety-related functions are available:

- Monitoring the safety functions of sensors
- Monitoring the sensor leads
- Monitoring the correct device function of the safety relay
- Monitoring the actuators in the shutdown circuit
- Safety-related disconnection when dangers arise

SIRIUS 3SK safety relays are approved for applications up to SIL 3 (IEC 61508/IEC 62061) or PL e (EN ISO 13849-1).

Device series

SIRIUS 3SK safety relays stand out due to their flexibility for both parameterization and system designs with several evaluation units. This reduces device variance, thus bringing advantages in terms of device selection and spare parts management. Optimized solutions when selecting components and reduced spare part inventory requirements are facilitated by a clearly structured component range:

The following device series are available:

- 3SK1 Standard basic units
- 3SK1 Advanced basic units
- 3SK2 basic units
- 3SK1 output expansions
- 3SK1 input expansions
- Accessories

3SK1 Standard basic units

The 3SK1 Standard basic units are characterized by the following features:

- Compact design
- Simple operation
- Relay and semiconductor outputs
- Economical solution

3SK1 Advanced basic units

The 3SK1 Advanced basic units also offer:

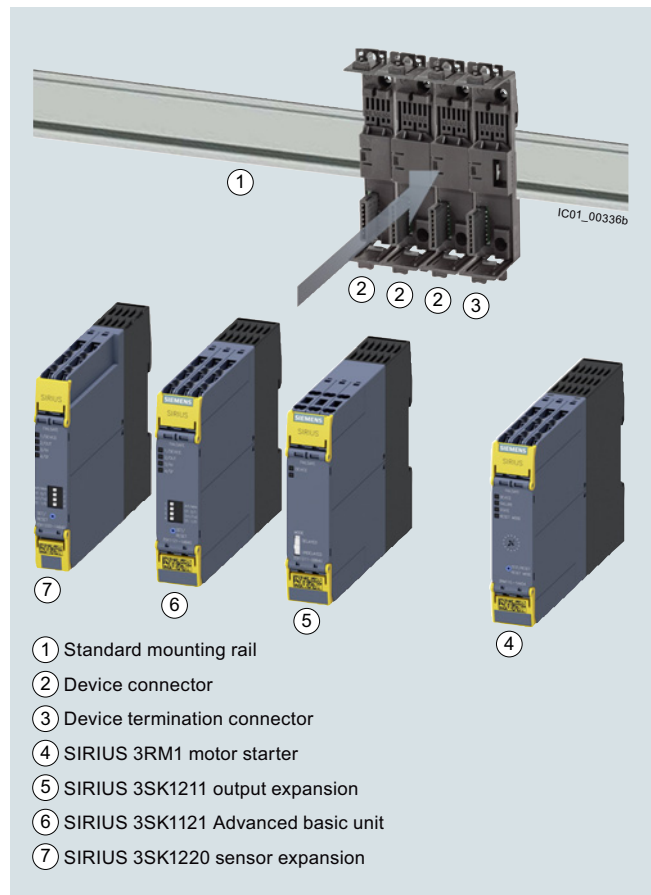
- Universal application possibilities thanks to multifunctionality
- Time-delayed outputs
- Expansion of inputs and outputs

3SK2 basic units

The 3SK2 basic units also offer:

- Up to six fail-safe, independent shutdown functions
- Flexible in use thanks to software parameterization
- Powerful semiconductor outputs
- Convenient diagnostics using diagnostics display and configuration software

In the case of 3SK1 Advanced basic units or 3SK2 basic units, the 3ZY12 device connector allows safety functions involving several sensors and actuators to be constructed very quickly.



System configuration example

The 3SK1 Standard and Advanced and 3SK2 series are a high-quality replacement for the 3TK28 safety relays. In their narrower design, and equipped with greater functionality, they

can replace every 3TK28 device. The only exception to this are the 3TK2810 devices.

Overview of functions of the 3SK series

Type	3SK1 Standard basic units		3SK1 Advanced basic units		3SK2 basic units	
	Safe relay outputs	Safe semiconductor outputs	Safe relay outputs	Safe semiconductor outputs	22.5 mm Safe semiconductor outputs	45 mm Safe semiconductor outputs
Sensors						
• Mechanical	✓	✓	✓	✓	✓	✓
• Non-floating	✓ ¹⁾	✓	✓	✓	✓	✓
• Antivalent	--	--	✓	✓	✓	✓
• Expandable	--	✓ by means of cascading	✓	✓	--	--
Inputs						
	2 x single-channel, 1 x two-channel	2 x single-channel, 1 x two-channel	2 x single-channel, 1 x two-channel	2 x single-channel, 1 x two-channel	Freely configurable: 10 x single-channel, 5 x two-channel	Freely configurable: 20 x single-channel, 10 x two-channel
Parameters						
• Start (auto/monitored)	✓	✓	✓	✓	A variety of functions can be set for each input/output by means of software parameterization.	
• Sensor connection 2 x single-channel/ 1 x two-channel	✓ by means of wiring	✓	✓	✓		
• Cross-circuit detection	✓ by means of wiring	✓	✓	✓		
• Start test ON/OFF	--	✓	✓	✓		
• Monitoring of two-hand operation consoles according to EN 574	--	--	✓	✓		
• Pressure-sensitive mat	--	--	✓	✓		
Safe outputs						
• Instantaneous	✓	✓	✓	✓	Configurable	Configurable
• Time-delayed	--	--	✓	✓	Configurable	Configurable
• Expandable with safe relay outputs	✓ by means of wiring	✓ by means of wiring	✓	✓	✓	✓
• Independent	--	--	--	--	✓ ⁴⁾	✓ ⁵⁾
• Device connectors	--	--	✓	✓	✓	✓
Options						
• External memory module	--	--	--	--	--	✓
• Display on the device	--	--	--	--	--	✓
• External diagnostics module can be connected	--	--	--	--	✓	✓
Control supply voltage						
• 24 V DC	✓ ²⁾	✓	✓	✓	✓	✓
• 110 ... 240 V AC/DC	✓	✓ ⁶⁾	✓ ³⁾	✓ ³⁾	--	--

✓ Available

-- Not available

¹⁾ 24 V basic units only.

²⁾ 24 V AC/DC.

³⁾ Possible using 3SK1230 power supply via device connector.

⁴⁾ Up to four independent safe outputs, two of which via device connectors.

⁵⁾ Up to six independent safe outputs, two of which via device connectors.

⁶⁾ Possible using 3SK1230 power supply by means of wiring.

Safety Relays

SIRIUS 3SK Safety Relays

General data

Parameter assignment

3SK112 and 3SK1112 with DIP switch

The 3SK112 and 3SK1112 safety relays are configurable safety relays. They are used as evaluation units for typical safety chains (detect, evaluate, react). A number of functions can be set using the DIP switches on the front. 3SK112 and 3SK1112 are therefore universally applicable.

DIP switch No.	OFF	ON	Schematic
1	Sensor input Autostart	Sensor input Monitored start	
2	Without crossover monitoring	With crossover monitoring	
3	2 x single-channel sensor connection	1 x two-channel sensor connection	
4	With start test	Without start test	

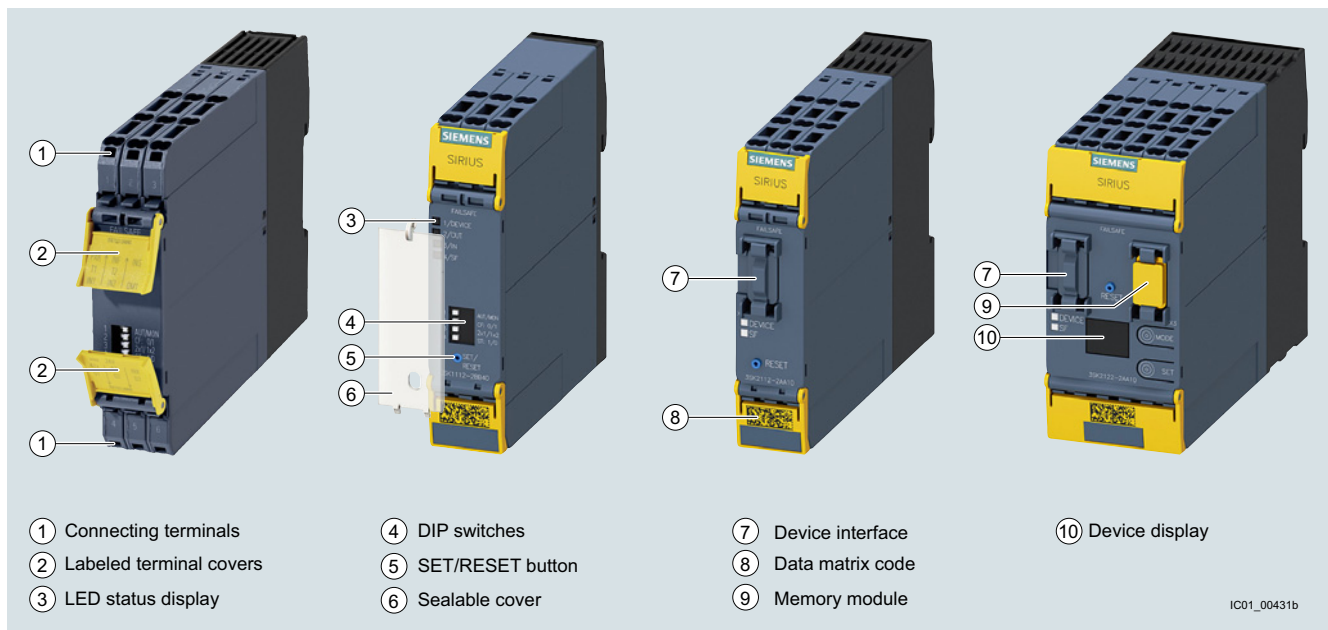
3SK2 with software

The 3SK2 safety relays are configured with the SIRIUS Safety ES software. The behavior of a 3SK2 device as well as the functioning of the individual safe outputs can thus be parameterized simply and conveniently in the logic diagram. In addition, the configuration can be printed out for documentation purposes. The software also supports users in commissioning and troubleshooting by means of online diagnostics and the option of "forcing" signals in the logic diagram. The 3SK2 safety relays thus offer maximum flexibility and universal application options.

Note:

SIRIUS Safety ES, [see page 14/22](#).

Enclosure concept



Innovative enclosure concept for SIRIUS 3SK safety relays

Connection methods

The 3SK safety relays are available with screw or spring-type terminals (push-in).

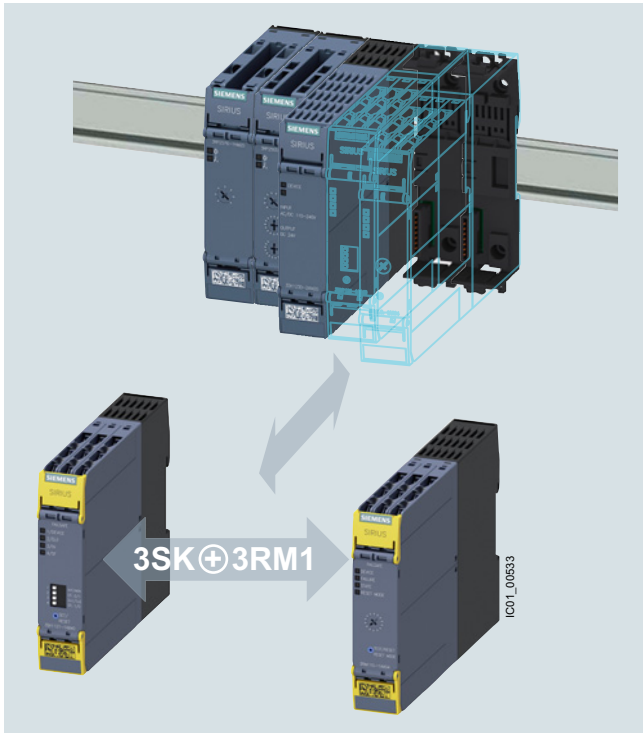
Spring-type terminals (push-in)

Push-in connections are a form of spring-type terminals allowing fast wiring without tools for rigid conductors or conductors equipped with end sleeves.

As with other spring-type terminals, a screwdriver (with 3.0 x 0.5 mm blade) is required to disconnect the conductor. The same tool can also be used to wire finely stranded or stranded conductors with no end finishing.

The advantages of the push-in terminals are found, as with all spring-type terminals, in speed of assembly and disassembly and vibration-proof connection. There is no need for the checking and tightening required with screw terminals.

Seamlessly integrated safety right through to the main circuit



Problem-free integration of functional safety into the main circuit through the simple combination of 3RM1 and 3SK1 devices

Functional safety in the main circuit needs to be both simple and flexible

The unique compatibility of hybrid 3RM1 fail-safe motor starters and 3SK safety relays means that integrated functional safety right through to the main circuit is no longer a problem.

Their compact design allows the motor starters to be installed to the right of the safety relay in a simple manner, just like an output expansion. The wiring of the safety-related signals to the relay can be performed simply, quickly and in an error-free manner using the device connector.

The ergonomically designed enclosure with removable terminals and terminal labeling in the hinged cover allows for the cables to be conveniently diagonally mounted from the front. Either screw or spring-type terminals with push-in technology are available.

Highlights

- Fail-safe disconnection of motors up to 3 kW
- Problem-free combination of fail-safe motor starters and safety relays
- End-to-end system, simple setup using device connectors
- Ergonomic enclosure

Note:

SIRIUS 3RM1 motor starters, [see page 8/85](#).

Article No. scheme

Product versions		Article number									
3SK1 safety relays		3SK1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Device version	Basic unit	1									
	Expansion unit	2									
Device variants	3SK11: Standard; 3SK12: Output expansion	1									
	3SK11: Advanced; 3SK12: Input expansion	2									
Type of outputs	Relay outputs	1									
	Semiconductor outputs	2									
	Power outputs	3									
Connection type	Screw terminals						1				
	Spring-type terminals (push-in)						2				
Control circuit/actuation	3SK11: 3 enabling circuits							A			
	3SK11: 2 enabling circuits							B			
	3SK11: 4 enabling circuits							C			
Type of control supply voltage	3SK1213: 24 V AC, 50/60 Hz							B 0			
	3SK1: 24 V AC/DC, 50/60 Hz							B 3			
	3SK1: 24 V DC							B 4			
	3SK1213: 115 V AC, 50/60 Hz							J 2			
	3SK1213: 230 V AC, 50/60 Hz							L 2			
	3SK1: 110 ... 240 V AC/DC; 50/60 Hz							W 2			
Time delay	None								0		
	0.05 ... 3 s								1		
	0.5 ... 30 s								2		
	5 ... 300 s								4		
Example		3SK1	1	1	1	-	1	A	B	3	0

Safety Relays

SIRIUS 3SK Safety Relays

General data

Product versions		Article number									
3SK2 safety relays		3SK2	1	<input type="checkbox"/>	2	-	<input type="checkbox"/>	A	A	1	0
Device variants	10 F-DI, 2 F-DQ, width 22.5 mm		1								
	20 F-DI, 4 F-DQ, width 45 mm		2								
Connection type	Screw terminals								1		
	Spring-type terminals (push-in)								2		
Example		3SK2	1	1	2	-	1	A	A	1	0

Note:

The Article No. schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

General

- Approved for all safety applications because of its compliance with the highest safety requirements (SIL 3 and PL e)
- Universally usable thanks to adjustable parameters
- Usable worldwide thanks to globally valid certificates
- Compact SIRIUS design
- Device connectors with standard rail mounting for flexible connectability and expandability
- Removable terminals for greater plant availability
- Yellow terminal covers clearly identify the device as a safety component
- Sensor cable up to 2 000 m long allows it to be used in extensive plants

Relay outputs

- Different voltages can be switched through the floating contacts
- The relay contacts allow currents of up to 5 A at AC-15/DC-13 to be connected

Semiconductor outputs

- Wear-free
- Suitable for operation in frequently switching applications
- Insensitive to vibrations and dirt
- Good electrical endurance

Power outputs (3SK1213 output expansion)

- Different voltages can be switched through the floating contacts
- With the power relay contacts currents up to 10 A AC-15/6 A DC-13 can be switched
- High mechanical and electrical endurance
- Protective separation between safe outputs and electronics

Expansion option by adding the 3RM1 motor starter

SIRIUS 3SK safety relays are ideal for combining with the SIRIUS 3RM1 motor starters.

Combinations are made by means of

- SIRIUS 3ZY12 device connectors (in combination with 3SK1 Advanced/3SK2) or
- Conventional wiring (for all 3SK1 and 3SK2 basic units)

This makes collective shutdown very easy in assemblies. The wiring, and ultimately the shutting down of the control supply voltage for the expansion components in EMERGENCY STOP situations, is performed via the device connector. There is no further need for complex looping of the connecting cables between the safety relay and the motor starters.

The 3RM1 motor starter combines the benefits of semiconductor technology and relay technology. This combination is also known as hybrid technology.

The hybrid technology in the motor starter is characterized by the following features:

- The inrush current in the case of motorized loads is conducted briefly via the semiconductors. Advantages include protection of the relay contacts and a long service life due to low wear.
- The uninterrupted current is conducted via relay contacts. Advantages include lower heat losses compared with the semiconductor.
- Shutdown is implemented again via the semiconductor. The contacts are only slightly exposed to arcs, and this results in a longer service life.
- Integrated overload protection

Note:

SIRIUS 3RM1 motor starters, [see page 8/85](#).

3ZY12 device connectors

Using 3ZY12 device connectors to combine devices reduces the time required to configure and wire the components. At the same time errors are avoided during wiring, and this considerably reduces the testing required for the fully-assembled application.

Configuration and stock keeping

Variable setting options by means of DIP switches or software, a wide voltage range (3SK1111) and a special power supply unit (3SK1 only) reduce the cost of keeping stocks and the considerations involved in configuration where the evaluation units to be selected are concerned.

Application

3SK1 safety relays

SIRIUS 3SK1 safety relays are used mainly in autonomous safety applications which are not connected to a safety-related bus system. Their function here is to evaluate the sensors and the safety-related shutdown of hazards. Also they check and monitor the sensors, actuators and safety-related functions of the safety relay.

3SK2 safety relays

SIRIUS 3SK2 safety relays are used primarily in autonomous, more complex safety applications for which the functional scope of the 3SK1 devices is no longer sufficient, such as in the implementation of independent shutdown functions or integration into higher-level control systems for diagnostics via fieldbus. Their function here is to evaluate the sensors and the safety-related shutdown of hazards. Also they check and monitor the sensors, actuators and safety-related functions of the safety relay.

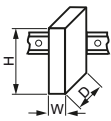
Technical specifications

More information

Manual 3SK1, see
<https://support.industry.siemens.com/cs/ww/en/view/67585885>
 Technical specifications 3SK1230, see
<https://support.industry.siemens.com/cs/ww/en/ps/16388/td>

Manual 3SK2, see
<https://support.industry.siemens.com/cs/ww/en/view/109444336>
 FAQs, see
<https://support.industry.siemens.com/cs/ww/en/ps/16382/faq>

SIRIUS 3SK1 safety relays

Article number	3SK1111- .AB30, 3SK1211- .BB00, 3SK1211- .BB40	3SK1111- .AW20, 3SK1121, 3SK1211- .BW20	3SK1112	3SK1120	3SK1122	3SK1213	3SK1220		
General data:									
Width x height x depth			mm	22.5 x 100 x 121.6	22.5 x 100 x 91.6	17.5 x 100 x 121.6	22.5 x 100 x 121.6	90 x 100 x 121.6	17.5 x 100 x 121.6
Ambient temperature		°C	-25 ... +60						
• During operation		°C	-40 ... +80						
• During storage									
Installation altitude at height above sea level, maximum	m		2 000						
Air pressure acc. to SN 31205	kPa		90 ... 106						
Shock resistance			10 g/11 ms			5 g/10 ms	10 g/11 ms		
Vibration resistance according to IEC 60068-2-6			5 ... 500 Hz: 0.75 mm						
Degree of protection of the enclosure			IP20						
Touch protection against electric shock			Finger-safe						
Insulation voltage, rated value	V		300	50		300	50		
Impulse withstand voltage, rated value	V		4 000	800		4 000	800		
Safety integrity level (SIL) according to IEC 61508			3						
Performance level (PL) according to EN ISO 13849-1			e						
T1 value for proof test interval or service duration according to IEC 61508	y		20						
EMC emitted interference			IEC 60947-5-1, class B	IEC 60947-5-1, class A		IEC 60947-5-1, class B	IEC 60947-5-1, class A		
Certificate of suitability			Yes						
• UL certification			Yes						
• TÜV approval			Yes						

Safety Relays

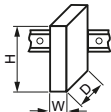
SIRIUS 3SK Safety Relays

General data

Article number		3SK1111, 3SK1121-.AB40, 3SK1211	3SK1112, 3SK1122	3SK1120	3SK1121-.CB4.	3SK1213
Switching capacity current of the NO contacts of the relay outputs						
• At AC-15 at 230 V	A	5	--		3	10
• At DC-13 at 24 V	A	5	--		3	6
Switching capacity current of the semiconductor outputs at DC-13 at 24 V	A	--	2	0.5	--	

Article number		3SK1111- .AB30, 3SK1211	3SK1111- .AW20	3SK1112, 3SK1220	3SK1120, 3SK1122- .AB40	3SK1121- .AB40	3SK1121- .CB4.	3SK1122- .CB4.	3SK1213
PFHD at high demand rate according to EN 62061	1/h	1.7×10^{-9}	1.5×10^{-9}	1.0×10^{-9}	1.3×10^{-9}	2.5×10^{-9}	3.7×10^{-9}	1.5×10^{-9}	1.0×10^{-9}
PFDAvg at low demand rate according to IEC 61508		1.0×10^{-6}		7.0×10^{-6}					1.0×10^{-6}

SIRIUS 3SK2 safety relays

Article number		3SK2112- .AA10	3SK2122- .AA10
General data:			
Width x height x depth	mm	22.5 x 100 x 124.5	45 x 100 x 124.5
			
Ambient temperature			
• During operation	°C	-25 ... +60	
• During storage	°C	-40 ... +80	
Installation altitude at height above sea level, maximum	m	2 000	
Air pressure acc. to SN 31205	kPa	90 ... 106	
Shock resistance		15 g/11 ms	
Vibration resistance acc. to IEC 60068-2-6		5 ... 500 Hz: 0.75 mm	
Degree of protection of the enclosure		IP20	
Touch protection against electric shock		Finger-safe	
Insulation voltage, rated value	V	50	
Impulse withstand voltage, rated value	V	800	
Safety integrity level (SIL) according to IEC 61508		3	
Performance level (PL) according to EN ISO 13849-1		e	
T1 value for proof test interval or service duration according to IEC 61508	y	20	
EMC emitted interference according to IEC 60947-1		Class A	
Certificate of suitability			
• UL certification		Yes	
• TÜV approval		Yes	
Switching capacity current of the semiconductor outputs at DC-13 at 24 V	A	4	
PFHD at high demand rate according to EN 62061	1/h	1.0×10^{-8}	1.2×10^{-8}
PFDAvg at low demand rate according to IEC 61508		1.5×10^{-5}	1.8×10^{-5}

Overview



3SK111 Standard basic units

The 3SK111 Standard basic units are characterized by simple, variable functionality. These devices are recommended for safety functions requiring only a few sensors and a small number of outputs on the safety relay.

Note:

Use of device connectors not possible.

Selection and ordering data



3SK1111-1AB30



3SK1111-1AW20



3SK1112-1BB40

Control supply voltage		Number of outputs			as contactless semiconductor contact block			SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
at AC at 50 Hz	at DC	as contacting contact block			as contactless semiconductor contact block								
V	V	as NO contact, instantaneous switching	as NO contact, delayed switching	for signaling function, instantaneous switching	instantaneous switching	delayed switching	for signaling function, instantaneous switching	d					
24	24	3	0	1	0	0	0	▶	3SK1111-□AB30		1	1 unit	41L
110 ... 240	110 ... 240	3	0	1	0	0	0	1	3SK1111-□AW20		1	1 unit	41L
--	24	0	0	0	2	0	1	2	3SK1112-□BB40		1	1 unit	41L

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

Safety Relays

SIRIUS 3SK Safety Relays

Basic Units

SIRIUS 3SK1 Advanced basic units

Overview



3SK112 Advanced basic units

The 3SK112 Advanced basic units form an innovative system landscape that allows even complex safety functions with large numbers of sensors and outputs to be built up using the device connectors. It is possible to increase both the number of inputs for sensors and the number of safe outputs of the basic unit without the need for wiring outlay between the devices.

Note:

Use of device connectors possible.

Selection and ordering data



3SK1121-1AB40



3SK1120-1AB40



3SK1122-1AB40



3SK1122-1CB41

Control supply voltage at DC	Number of outputs as contacting contact block			as contactless semiconductor contact block			Adjustable OFF-delay time	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	as NO contact, instantaneous switching	as NO contact, delayed switching	as NC contact for signaling function, instantaneous switching	instantaneous switching	delayed switching	for signaling function, instantaneous switching							
24	3	0	1	0	0	0	--	▶	3SK1121-□AB40		1	1 unit	41L
	2	2	0	0	0	0	0.05 ... 3	2	3SK1121-□CB41		1	1 unit	41L
							0.5 ... 30	1	3SK1121-□CB42		1	1 unit	41L
							5 ... 300	5	3SK1121-□CB44		1	1 unit	41L
24	0	0	0	1	0	0	--	2	3SK1120-□AB40		1	1 unit	41L
				3	0	1	--	2	3SK1122-□AB40		1	1 unit	41L
				2	2	0	0.05 ... 3	5	3SK1122-□CB41		1	1 unit	41L
							0.5 ... 30	2	3SK1122-□CB42		1	1 unit	41L
						5 ... 300	5	3SK1122-□CB44		1	1 unit	41L	

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

Overview



3SK2 basic units

The 3SK2 basic units have a large number of inputs and outputs within a narrow width. In addition, demanding safety applications can be implemented simply with several independent safety functions. Flexible application options are enabled by powerful semiconductor outputs, as well as by expandability with additional 3SK output expansions and 3RM1 Failsafe motor starters. Flexible time functions and diagnostics options are available. The 22.5-mm-wide version of the 3SK2 basic units has 10 x single-channel (5 x two-channel) inputs, while the 45-mm-wide 3SK2 version comes with 20 x single-channel (10 x two-channel) inputs.



Starter Kit

Starter Kit

The Starter Kit is a favorably-priced complete package for the simple creation of complex safety applications and comprises:

- 3SK2112-2AA10 basic unit, 22.5 mm wide, with spring-type terminals (push-in)
- SIRIUS Safety ES Standard software for configuring, commissioning, operating and diagnosing
- USB PC cable for easy transmission of the configuration to the device by means of USB

Selection and ordering data



3SK2112



3SK2122

Control supply voltage at DC	Number of outputs as contactless semiconductor contact block, safety-related, two-channel	Number of outputs as contactless semiconductor contact block, non-safety-related, two-channel	Number of outputs to the device connector, safety-related	Width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
V				mm	d						
3SK2 basic units											
24	2	1	2	22.5	2	3SK2112-□AA10		1	1 unit	41L	
	4	2	2	45	2	3SK2122-□AA10		1	1 unit	41L	
Type of electrical connection											
<ul style="list-style-type: none"> • Screw terminals • Spring-type terminals (push-in) 											
<div style="border: 1px solid black; padding: 2px; display: inline-block;"> 1 2 </div>											
Control supply voltage at DC	Number of outputs as contactless semiconductor contact block, safety-related, two-channel	Number of outputs as contactless semiconductor contact block, non-safety-related, two-channel	Number of outputs to the device connector, safety-related	Width	SD	Spring-type terminals (push-in)	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
V				mm	d						
Starter Kit											
Contains 3SK2112-2AA10 basic unit, SIRIUS Safety ES Standard and 3UF7941-0AA00-0 USB PC cable											
24	2	1	2	22.5	2	3SK2941-2AA10		1	1 unit	4N1	

* You can order this quantity or a multiple thereof. Illustrations are approximate

Safety Relays

SIRIUS 3SK Safety Relays

Expansion Units

Output expansions

Overview



3SK121 output expansion

The 3SK121 output expansions can be used to expand all 3SK basic units.

3SK1211 output expansion

The 3SK1211 output expansion is used to expand the safe outputs of a basic unit by adding another four safe outputs. These outputs have a switching capacity of AC-15 5 A at a switching voltage of 230 V. The devices can be connected to any 3SK basic unit by means of wiring. In addition, the devices with a 24 V DC control supply voltage can also be connected to 3SK1 Advanced basic units and 3SK2 basic units by means of the 3ZY12 device connectors.

3SK1213 output expansion

The 3SK1213 output expansion is used to expand the safe outputs of a basic unit by adding three safe outputs with high switching capacity. These outputs have a switching capacity of AC-15 10 A at a switching voltage of 230 V. The devices can be connected to any 3SK basic unit by means of wiring. As with the 3SK1211, the devices with a 24 V DC control supply voltage can also be connected to 3SK1 Advanced and 3SK2 basic units by means of the 3ZY12 device connectors.

Note:

It is only possible to expand the Standard basic units by means of wiring. Advanced basic units and 3SK2 basic units can be expanded using the 3ZY12 device connector.

Benefits

- Perfect adaptation of the number of outputs
- Simple expansion of instantaneous and time-delayed safe outputs of the Advanced basic units using device connectors
- When using the device connector the outputs on the terminals of the basic device can still be used
- Another two freely configurable shutdown functions on 3SK2 basic units when using device connectors
- Expansion with power contacts for high AC-15/DC-13 currents in the control circuit
- No wiring of the feedback circuit to the basic units is required when using device connectors
- Shorter installation times
- Less configuring and testing required

Selection and ordering data



3SK1211-1BB40



3SK1213-1AB40

Control supply voltage		Number of outputs as contacting contact block			3ZY12 device connectors	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
at AC at 50 Hz	at DC	as NO contact, instantaneous switching	as NO contact, delayed switching	as NC contact instantaneous switching for feedback circuit							
V	V				d						
24	--	4	0	1	No	5	3SK1211-□BB00		1	1 unit	41L
--	24	4	0	1	Yes	1	3SK1211-□BB40		1	1 unit	41L
110 ... 240	110 ... 240	4	0	1	No	2	3SK1211-□BW20		1	1 unit	41L
--	24	3	0	1	Yes	5	3SK1213-□AB40		1	1 unit	41L
115	--	3	0	1	No	5	3SK1213-□AJ20		1	1 unit	41L
230	--	3	0	1	No	5	3SK1213-□AL20		1	1 unit	41L

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

Overview



3SK1220 sensor expansion

With the input expansions

- 3SK1220 sensor expansion
- 3SK1230 power supply

the 3SK1 Advanced basic units can be made more flexible.

3SK1220 sensor expansion

The 3SK1220 input expansion allows additional sensors to be integrated easily and flexibly. The device monitors two single-channel sensors or one two-channel sensor, whatever their output technology (floating/single-ended).

Note:

The 3SK1220 sensor expansion can only be connected to the 3SK1 Advanced basic units by means of the 3ZY12 device connector, [see page 11/24](#).

3SK1230 power supply

The 3SK1230 power supply makes the 3SK1 devices universally usable, whatever control supply voltage is to be used.

Note:

Alongside the 3ZY12 device connector, the 3SK1230 power supply can also be wired to act as a power supply for 3SK1 devices.

Benefits

- A wide voltage range of 110 ... 240 V AC/DC allows the devices to be used worldwide
- Low stock keeping due to little variance
- Flexible expansion of the number of sensors without the need for additional wiring between the devices
- Perfect adaptation of the number of inputs to suit the application
- Universal use thanks to the wide range of adjustable parameters for sensor expansion (parameters as for 3SK1 Advanced basic units)

Selection and ordering data



3SK1220-1AB40



3SK1230-1AW20

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Sensor expansions						
For safety-related expansion of the 3SK1 Advanced basic units by adding a further two-channel sensor or two single-channel sensors	2	3SK1220-□AB40		1	1 unit	41L
Power supply						
For supplying 3SK1 Advanced basic units via 3ZY12 device connectors at voltages of 110 ... 240 V AC/DC	2	3SK1230-□AW20		1	1 unit	41L

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

1
2

Safety Relays

SIRIUS 3SK Safety Relays

Accessories

Overview

Numerous accessories are available for 3SK, such as device connectors, terminals, cables, adapters, covers, memory and diagnostics modules or software.

Device connectors for 3SK112., 3SK12.. and 3SK2

The device connector can be used to connect devices of the 3SK/3RM1 system together, with the last device in a system configuration being placed on a device termination connector. Use of device connectors not possible with 3SK1 standard.

Device connectors are available in various versions specifically for the 3SK safety relays:

For type	Device connectors				Device termination connectors	
	3ZY1212-1BA00 (for 3SK1, width 17.5 mm)	3ZY1212-2BA00 (for 3SK1, width 22.5 mm)	3ZY1212-2GA00 (for 3SK2, width 22.5 mm)	3ZY1212-4GA01 (for 3SK2, width 45 mm)	3ZY1212-2DA00 (for 3SK1, width 22.5 mm)	3ZY1212-0FA01 (for 3SK1, set for enclosures ≥ 45 mm)
3SK1 Advanced basic units						
3SK1120	✓	--	--	--	--	--
3SK1121	--	✓	--	--	✓	--
3SK1122	--	✓	--	--	✓	--
3SK2 basic units						
3SK2112	--	--	✓	--	--	--
3SK2122	--	--	--	✓	--	--
Output expansions						
3SK1211	--	✓	--	--	✓	--
3SK1213	--	--	--	--	--	✓
Input expansions						
3SK1220	✓	--	--	--	--	--
3SK1230	--	✓	--	--	--	--

✓ Available

-- Not available

Removable terminals for 3SK

The following removable terminals are available for the 3SK safety relays for pre-wiring of the terminals in the control cabinet, or for replacing terminals:

For type	Removable terminals			
	Screw terminals		Spring-type terminals (push-in)	
	2-pole 3ZY1121-1BA00	3-pole 3ZY1131-1BA00	2-pole 3ZY1121-2BA00	3-pole 3ZY1131-2BA00
3SK1 basic units				
3SK1111	--	✓	--	✓
3SK1112	✓	--	✓	--
3SK1120	--	✓	--	✓
3SK1121	--	✓	--	✓
3SK1122	✓ bottom	✓ top	✓ bottom	✓ top
3SK2 basic units				
3SK2112	--	✓	--	✓
3SK2122	--	✓ ¹⁾	--	✓ ¹⁾
Output expansions				
3SK1211	✓	--	✓	--
3SK1213	--	--	--	--
Input expansions				
3SK1220	--	✓ top	--	✓ top
3SK1230	✓ bottom	--	✓ bottom	--

✓ Available


-- Not available










¹⁾ Two sets of terminals are required for 3SK2122.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Device connectors for the electrical connection of SIRIUS devices in the industrial standard mounting rail enclosure






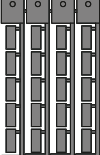


	Device connector for 3SK1 <ul style="list-style-type: none"> • Width 17.5 mm • Width 22.5 mm 	2	3ZY1212-1BA00	1	1 unit	41L
		2	3ZY1212-2BA00	1	1 unit	41L
	Device connector for 3SK2 <ul style="list-style-type: none"> • Width 22.5 mm • Width 45 mm 	2	3ZY1212-2GA00	1	1 unit	41L
		2	3ZY1212-4GA01	1	1 unit	41L
	Device termination connectors For 3SK1, width 22.5 mm <u>Note:</u> Observe positions of the slide switch, see Manual "3SK1".	2	3ZY1212-2DA00	1	1 unit	41L
	Device daisy chain connectors For 3RM1 and 3SK, 24 V DC, 22.5 mm, for implementation of distances between devices according to the installation guidelines	2	3ZY1212-2AB00	1	1 unit	41L
	Device connectors For height adjustment for devices without electrical connection via device connector, with a width of 22.5 mm or greater	2	3ZY1210-2AA00	1	1 unit	41L
	Device termination connector set For 3SK1213, width > 45 mm, comprising 3ZY1212-2FA00 and 3ZY1210-2AA00	2	3ZY1212-0FA01	1	1 unit	41L

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG		
Terminals for SIRIUS devices in the industrial standard mounting rail enclosure								
 3ZY1121-1BA00	Removable terminals							
	<ul style="list-style-type: none"> 2-pole, up to 2 x 1.5 mm² or 1 x 2.5 mm² 3-pole, up to 2 x 1.5 mm² or 1 x 2.5 mm² ¹⁾ 	2	3ZY1121-1BA00	1	6 units	41L		
		2	3ZY1131-1BA00	1	6 units	41L		
	<ul style="list-style-type: none"> 2-pole, up to 2 x 1.5 mm² 3-pole, up to 2 x 1.5 mm² ¹⁾ 	2	3ZY1121-2BA00	1	6 units	41L		
	2	3ZY1131-2BA00	1	6 units	41L			
PC cables and adapters for 3SK2 (essential accessories)								
 3UF7941-0AA00-0	USB PC cables	▶	3UF7941-0AA00-0	1	1 unit	42J		
For connecting to the USB interface of a PC/PG, for communication with 3SK2 through the system interface, recommended for use in connection with 3SK2								
Connecting cables for 3SK2 (essential accessory for diagnostics module)								
 3UF7932-0AA00-0	For connecting diagnostics module to 3SK2 basic unit							
	Central units with expansion modules	Diagnostics modules with central unit	Length					
	✓	✓	• 0.025 m (flat)	▶	3UF7930-0AA00-0	1	1 unit	42J
	--	✓	• 0.1 m (flat)	▶	3UF7931-0AA00-0	1	1 unit	42J
	--	✓	• 0.15 m (flat) NEW	▶	3UF7934-0AA00-0	1	1 unit	42J
	--	✓	• 0.3 m (flat)	▶	3UF7935-0AA00-0	1	1 unit	42J
	--	✓	• 0.5 m (flat)	▶	3UF7932-0AA00-0	1	1 unit	42J
	--	✓	• 0.5 m (round)	▶	3UF7932-0BA00-0	1	1 unit	42J
	--	✓	• 1.0 m (round)	▶	3UF7937-0BA00-0	1	1 unit	42J
--	✓	• 2.5 m (round)	▶	3UF7933-0BA00-0	1	1 unit	42J	
Operating and monitoring modules for 3SK2								
 3SK2611-3AA00	Diagnostics modules	2	3SK2611-3AA00	1	1 unit	41L		
For direct display of errors, e.g. of cross-circuits								
<u>Note:</u>								
The 3RK3611-3AA00 MSS diagnostics module cannot be operated on the 3SK2 devices.								
Door adapters for 3SK2								
 3UF7920-0AA00-0	For external connection of the system interface, e.g. outside a control cabinet	▶	3UF7920-0AA00-0	1	1 unit	42J		
Interface covers for 3SK2								
 3RA6936-0B	For system interface	10	3RA6936-0B	1	5 units	42F		
	• Titanium gray							
 3UF7950-0AA00-0	• Light gray	▶	3UF7950-0AA00-0	1	5 units	42J		
Memory modules for 3SK2								
 3RK3931-0AA00	For backing up the complete parameterization of the 3SK2 safety system without a PC/PG through the system interface	2	3RK3931-0AA00	1	1 unit	42C		
Software for 3SK2								
 3ZS1316-.C.10-0Y.5	SIRIUS Safety ES							
Software for configuring, commissioning, operating and diagnosing of 3SK2 and 3RK3, see page 14/22.								
¹⁾ For 3SK2122 two terminal sets are required.								

Safety Relays

SIRIUS 3SK Safety Relays

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Accessories for enclosures							
 3ZY1321-2AA00	Sealing covers						
	<ul style="list-style-type: none"> • 17.5 mm (for 3SK1120 and 3SK1220) • 22.5 mm (for all 3SK1 devices except 3SK1120 and 3SK1220) 	2	3ZY1321-1AA00		1	5 units	41L
	2	3ZY1321-2AA00		1	5 units	41L	
 3ZY1311-0AA00	Push-in lugs						
	For wall mounting	2	3ZY1311-0AA00		1	10 units	41L
 3ZY1440-1AA00	Coding pins						
	For removable terminals of SIRIUS devices in the industrial standard mounting rail enclosure; they enable the mechanical coding of terminals, see Manual "3SK1"	2	3ZY1440-1AA00		1	12 units	41L
 3ZY1450-1AB00	Hinged cover NEW						
	Replacement cover, without terminal labeling						
	<ul style="list-style-type: none"> • Titanium gray - 22.5 mm wide (for 3SK1230) 	2	3ZY1450-1AB00		1	5 units	41H
	<ul style="list-style-type: none"> • Yellow - 17.5 mm wide (for 3SK1220, 3SK1120) 	2	3ZY1450-1BA00		1	5 units	41H
	<ul style="list-style-type: none"> - 22.5 mm wide (for 3SK11 except 3SK1120, 3SK1211, 3SK2112) 	2	3ZY1450-1BB00		1	5 units	41H
<ul style="list-style-type: none"> - 45 mm wide (for 3SK2122) 	2	3ZY1450-1BC00		1	5 units	41H	
 3ZY1450-1BB00							
Blank labels							
 3RT2900-1SB20	Unit labeling plates						
	For SIRIUS devices 20 mm x 7 mm, titanium gray ¹⁾	20	3RT2900-1SB20		100	340 units	41B
Tools for opening spring-type terminals							
 3RA2908-1A	Screwdrivers						
	For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm; length approx. 200 mm, titanium gray/black, partially insulated	2	3RA2908-1A		1	1 unit	41B
			Spring-type terminals (push-in) 				

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/16.

Overview



SIRIUS 3TK2810 safety relays

More information

Homepage, see www.siemens.com/safety-relays

Industry Mall, see www.siemens.com/product?3TK28

Article No. scheme

Product versions		Article number					
Safety relays with special functions		3TK2810	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Device version	Standstill monitor	0					
	Speed monitor for NPN/PNP proximity switches and encoders	1					
Type of control supply voltage	24 V DC		B				
	230 V AC, 50/60 Hz		G				
	400 V AC, 50/60 Hz		J				
	120 ... 240 V AC/DC; 50/60 Hz		K				
Time delay	0.2 ... 6 s (standstill)				0		
	0 ... 999 s (release delay)				4		
Connection type	Screw terminals						1
	Spring-type terminals (push-in)						2
Version	Speed monitor for NAMUR proximity switches and encoders						- 0 A A 0
Example		3TK2810	-	0	B	A	0 1

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

3TK2810-0 standstill monitors

- No additional sensors required
- Signaling of faults with diagnostics display
- Standstill time can be set
- Unit can be used with frequency converters

3TK2810-1 speed monitors

- Menu-prompted, easy parameterization
- Direct diagnosis on the display means shorter downtimes thanks to early fault detection
- Integrated protective door monitoring means greater safety because access to the plant is allowed only in the safe state
- Suitable for all standard sensors, i.e. high flexibility

Safety Relays

SIRIUS 3TK28 Safety Relays

With special functions

Technical specifications

More information

Operating instructions 3TK2810-0, see
<https://support.industry.siemens.com/cs/ww/en/view/25437254>
 Manual 3TK2810-1, see
<https://support.industry.siemens.com/cs/ww/en/view/43707376>

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16391/td>
 FAQs, see
<https://support.industry.siemens.com/cs/ww/en/ps/16391/faq>

Type	3TK2810-0 standstill monitors	3TK2810-1 speed monitors
Sensors		
• Inputs	3	4
• Electronic	--	3
• With contacts	--	1
• Without sensors (measuring inputs)	3	--
• Magnetically operated switch (Reed contacts)	--	--
Safety mats		
	--	--
Start		
• Auto	✓	✓
• Monitored	--	✓
Cascading input 24 V DC		
	--	--
Key-operated switch		
	--	--
Enabling circuit, floating		
• Stop category 0	3 NO + 1 NC	2
• Stop category 1	--	--
Enabling circuit, electronic		
• Stop category 0	--	--
• Stop category 1	--	--

✓ Available
 -- Not available

Type	3TK2810-0 standstill monitors	3TK2810-1 speed monitors
Signaling outputs		
• Floating	1 CO	--
• Electronic	2	2
Standards		
	IEC 60204-1, EN ISO 12100, EN ISO 13849-1, IEC 61508	IEC 60947-5-1, EN ISO 13849-1, IEC 60204-1, IEC 61508
Test certificates		
	TÜV, UL, CSA	TÜV, UL, CSA
SIL level max. acc. to IEC 61508		
	3	3
Performance level PL acc. to EN ISO 13849-1		
	e	e
Probability of a dangerous failure per hour (PFH_d)		
	1.5 x 10 ⁻⁸ 1/h	3.38 x 10 ⁻⁹ 1/h
Rated control supply voltage		
• 24 V DC	✓	✓
• 230 V AC	✓	--
• 400 V AC	✓	--
• 120 ... 240 V AC/DC	--	✓

Selection and ordering data

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41L



3TK2810-0BA01



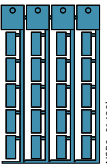




3TK2810-0GA02



3TK2810-1BA41

Rated control supply voltage U_s	Times	SD	Screw terminals	SD	Spring-type terminals	
V	s	d	Article No.	Price per PU	Article No.	Price per PU
Standstill monitors						
3TK2810-0						
• 24 DC	0.2 ... 6 (standstill)	5	3TK2810-0BA01	15	3TK2810-0BA02	
• 230 AC	0.2 ... 6 (standstill)	15	3TK2810-0GA01	15	3TK2810-0GA02	
• 400 AC	0.2 ... 6 (standstill)	15	3TK2810-0JA01	15	3TK2810-0JA02	
Speed monitors						
3TK2810-1 for NPN/PNP proximity switches and encoders						
• 24 DC	0 ... 999 (release delay)	2	3TK2810-1BA41	2	3TK2810-1BA42	
• 120 ... 240 AC/DC	0 ... 999 (release delay)	5	3TK2810-1KA41	5	3TK2810-1KA42	
3TK2810-1 for NAMUR proximity switches and encoders						
• 24 DC	0 ... 999 (release delay)	5	3TK2810-1BA41-0AA0	5	3TK2810-1BA42-0AA0	
• 120 ... 240 AC/DC	0 ... 999 (release delay)	5	3TK2810-1KA41-0AA0	5	3TK2810-1KA42-0AA0	

Selection and ordering data

Use	Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Blank labels							
 3RT1900-1SB20	For 3TK28	Unit labeling plates For SIRIUS devices 20 mm x 7 mm, pastel turquoise ¹⁾	20	3RT1900-1SB20	100	340 units	41B
	For 3TK28	Adhesive labels For SIRIUS devices <ul style="list-style-type: none"> • 19 mm x 6 mm, pastel turquoise • 19 mm x 6 mm, zinc yellow 	15	3RT1900-1SB60	100	3 060 units	41B
			15	3RT1900-1SD60	100	3 060 units	41B
Push-in lugs and covers							
 3RP1903	For 3TK28	Push-in lugs For screw fixing, 2 units required per device	5	3RP1903	1	10 units	41H
Adapters and connection cables for speed monitors							
 3TK2810-1A 3TK2810-1B	For 3TK2810-1	Adapters For connecting encoders of type Siemens/Heidenhain <ul style="list-style-type: none"> • 15-pole • 25-pole 	2	3TK2810-1A	1	1 unit	41L
			2	3TK2810-1B	1	1 unit	41L
 3TK2810-0A	For 3TK2810-1	Connection cables For connecting the speed monitor to the 3TK2810-1A or 3TK2810-1B adapter	15	3TK2810-0A	1	1 unit	41L
Tools for opening spring-type terminals							
 3RA2908-1A	For auxiliary circuit connections	Screwdrivers For all SIRIUS devices with spring-type terminals; 3.0 mm x 0.5 mm; length approx. 200 mm, titanium gray/black, partially insulated	2	3RA2908-1A	1	1 unit	41B

¹⁾ PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH, see page 16/16.

SIRIUS 3RK3 Modular Safety System

General data

Overview



SIRIUS 3RK3 Modular Safety System

More information

Homepage, see www.siemens.com/sirius-mss

Industry Mall, see www.siemens.com/product?3RK3

The 3RK3 Modular Safety System (MSS) is a freely configurable modular safety relay. Depending on the external circuit version, safety-related applications up to performance level e according to EN ISO 13849-1 or SIL 3 according to IEC 62061 can be realized.

The modular safety relay enables the interconnection of several safety applications.

The comprehensive error and status diagnostics provides the possibility of finding errors in the system and localizing signals from sensors. Plant downtimes can be reduced as the result.

The MSS comprises the following system components:

- Central units
- Expansion modules
- Interface modules
- Diagnostics modules
- Parameterization software
- Accessories

Central units

MSS Basic

The 3RK3 Basic central unit is used wherever several safety functions need to be evaluated and the wiring parameterization of safety relays would involve significant cost and effort. It reads in inputs, controls outputs and communicates through an interface module with higher-level control systems. An application's entire safety program is processed in the central unit. The 3RK3 Basic central unit is the lowest expansion level and fully functional on its own, without the optional expansion modules.

MSS Advanced

The 3RK3 Advanced central unit is the logical expansion of the Basic central unit with the functionality of an AS-i safety monitor. In addition to having a larger volume of project data and scope of functionality it can be integrated in AS-Interface and therefore make use of the many different possibilities offered by this bus system. The function can be optionally activated in the central unit.

The service-proven insulation piercing method of AS-Interface enables not only the distributed expansion of the project data volume using safe AS-i outputs, safe AS-i sensors and other MSS Advanced or safety monitors (F cross traffic) but also a highly flexible adaptation of the application, e.g. very fast connection of AS-i outputs, EMERGENCY STOP command devices, position switches with and without tumbler, or light curtains.

Safety-related disconnection using MSS or by distributed means using safe AS-i outputs and the formation of switch-off groups can be realized very easily. The same applies for any subsequent modifications. They are now possible by simply readdressing, meaning that rewiring is no longer necessary.

The AS-i bus is connected directly to the central unit.

MSS ASIsafe

The MSS ASIsafe basic and MSS ASIsafe extended central units are a logical development of the AS-i safety monitors based on the 3RK3 Modular Safety System.

Like MSS Advanced, MSS ASIsafe detects – in a comparable way to the safety monitors – safe sensor technology on the AS-i bus and switches actuators off in a safety-related manner via a configurable safety logic. It stands out by virtue of its greater project data volume, wider range of functions and the possibility of increasing the integrated I/O project data volume by means of expansion modules from the MSS system family. In this case the range of functions, such as the number and type of the logic elements that can be interconnected, is equivalent to that of MSS Advanced.

Expansion modules

With the optional expansion modules, both safety-related and standard, the system is flexibly adapted to the required safety applications.

Interface modules

The DP interface module is used for transferring diagnostics data and device status data to a higher-level PROFIBUS network, e.g. for purposes of visualization using HMI. When using the Basic central unit, 32-bit cyclic data can be exchanged with the control system. If an Advanced/ASIsafe central unit is used, the number is doubled to 64-bit cycle data. In acyclic mode, both central units can call up diagnostic data.

Diagnostics modules

Actuated sensors or faults, e.g. cross-circuit, are indicated directly on the diagnostics display. The fault is diagnosed directly in plain text by the detailed alarm message. The device is fully functional upon delivery. No programming is required.

Parameterization software

Using the SIRIUS Safety ES graphical parameterization tool, it is very easy to create the safety functions as well as their logical links on the PC. You can define disconnection ranges, ON-delays, OFF-delays and other dependencies for example.

SIRIUS Safety ES also offers comprehensive functions for diagnostics and commissioning. Documentation of the MSS hardware configuration and the parameterized logic is created automatically.

SIRIUS 3RK3 Modular Safety System

General data

Article No. scheme

Product versions		Article number									
Basic units		3RK3	1	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	A	<input type="checkbox"/>	<input type="checkbox"/>	0
Device variants	3RK3 Basic		1	1							
	3RK3 ASIsafe "basic" variant		2	1							
	3RK3 ASIsafe "extended" variant		2	2							
	3RK3 Advanced		3	1							
Connection type	Screw terminals						1				
	Spring-type terminals						2				
Communication 1	None							A			
	AS-Interface without master							C			
Communication 2	3RK3122: max. 2 expansion modules can be connected									0	
	3RK3131: max. 9 expansion modules can be connected									1	
Example		3RK3	1	1	1	-	1	A	A	1	0

Product versions		Article number									
Expansion modules with safe inputs/outputs		3RK3	2	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	A	A	1	0
Device variants	4/8 F-DI		1	1							
	2/4 F-DI 1/2 F-RO		2	1							
	2/4 F-DI 2 F-DO		3	1							
	4 F-DO		4	2							
	4/8 F-RO		5	1							
Connection type	Screw terminals									1	
	Spring-type terminals									2	
Example		3RK3	2	1	1	-	1	A	A	1	0

Product versions		Article number									
Expansion modules with standard inputs/outputs		3RK3	3	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	A	A	1	0
Device variants	8 DO		1	1							
	8 DI		2	1							
Connection type	Screw terminals									1	
	Spring-type terminals									2	
Example		3RK3	3	1	1	-	1	A	A	1	0

Product versions		Article number									
DP interface modules		3RK3	5	1	1	-	<input type="checkbox"/>	B	A	1	0
Connection type	Screw terminals									1	
	Spring-type terminals									2	
Example		3RK3	5	1	1	-	1	B	A	1	0

Note:

The Article No. schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- More functionality and flexibility through freely configurable safety logic
- Suitable for all safety applications thanks to compliance with the highest safety standards in production automation
- For use all over the world through compliance with all product-relevant, globally established certifications
- Modular hardware configuration
- Parameterization by means of software instead of wiring
- Removable terminals for greater plant availability
- Distributed detection of sensors and disconnection of actuators through AS-Interface
- All logic functions can also be used for AS-Interface, e.g. muting, protective door with tumbler
- Up to 12 independent safe switch-off groups on the AS-i bus
- Volume of project data can be greatly increased by means of AS-Interface
- Up to 50 two-channel enabling circuits per system

Communication via PROFIBUS

The 3RK3 Modular Safety System can be connected to PROFIBUS through the DP interface and exchange data with higher-level control systems.

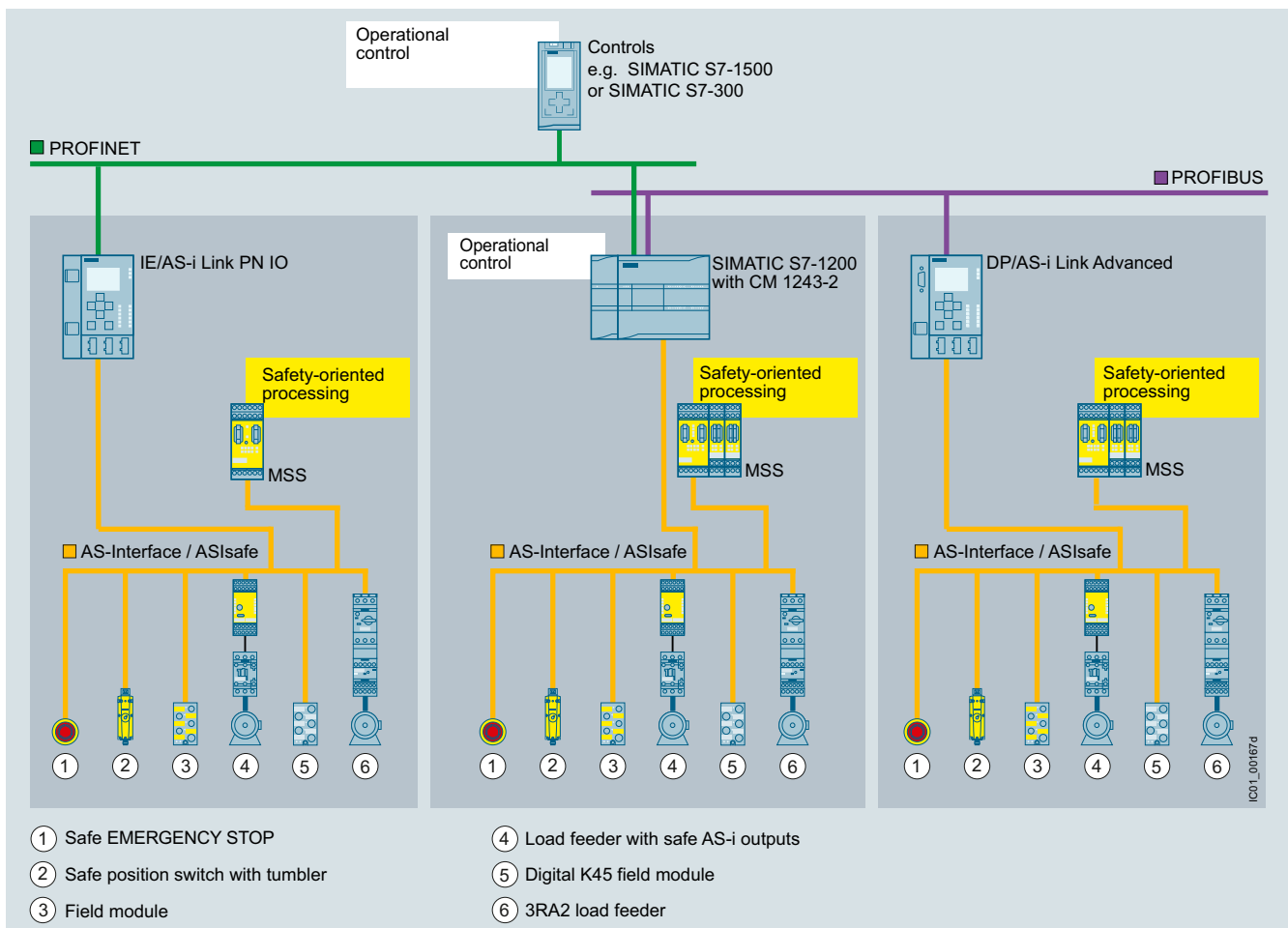
The MSS supports among other things:

- Baud rates up to 12 Mbps
- Automatic baud rate detection
- Cyclic services (DPV0) and acyclic services (DPV1)
- Exchange of 32-bit cyclic data with MSS Basic or 64-bit cyclic data with MSS Advanced/MSS ASIsafe
- Diagnostics using data record invocations

AS-Interface communication

Using the Advanced and ASIsafe "basic" and "extended" central units, the 3RK3 Modular Safety System can be integrated in AS-Interface.

- MSS can read and evaluate the I/O data of up to 31 AS-i modules
- Up to 12 safe output signals per MSS can be placed on the AS-i bus for switching safe AS-i output modules or for fail-safe cross traffic between multiple MSS stations
- Safe cross traffic between multiple MSS stations or between one MSS and AS-i safety monitors
- Standard signals, e.g. for acknowledgment, can also be output on the AS-i bus



Integration of the MSS into AS-Interface

Notes:

MSS with communication function, see page 11/38 onwards.
 Accessories, see page 11/40 onwards.
 SIRIUS Safety ES, see page 14/22.












For more information on AS-Interface with ASIsafe, see also page 2/18.

SIRIUS 3RK3 Modular Safety System

General data





















Application

The 3RK3 Modular Safety System can be used for all safety-related requirements in the manufacturing industry and offers the following safety functions:

	Symbol	MSS Basic	MSS Advanced, MSS ASIsafe
Monitoring functions			
Universal monitoring Evaluation of any binary signals from single-channel and two-channel sensors		--	✓
EMERGENCY STOP Evaluation of EMERGENCY STOP devices with positive-opening contacts		✓	✓
Safety shutdown mat Evaluation of switching mats with NC contacts and/or crossover detection		✓	✓
Protective door monitoring Evaluation of protective door signals and/or protective flap signals		✓	✓
Protective door tumbler mechanism Evaluation of protective doors with tumbler and of the actuation/release of this tumbler		--	✓
Approval switches Evaluation of OK buttons with NO contact		✓	✓
Two-hand operator controls Evaluation of two-hand operator controls		✓	✓
ESPE monitoring Evaluation of non-contact protective devices, e.g. light curtains and laser scanners		✓	✓
Muting Temporary bridging of non-contact protective devices, 2/4 sensors in parallel, 4 sensors in sequence		--	✓
Mode selector switches Evaluation of operating mode selector switches with NO contacts		✓	✓
Monitoring AS-i (AS-i 2F-DI) Logic element for monitoring of AS-i input slaves		--	✓

✓ Available

-- Not available

	Symbol	MSS Basic	MSS Advanced, MSS ASIsafe
Logic operation functions			
AND		✓	✓
OR		✓	✓
XOR		✓	✓
NAND		✓	✓
NOR		✓	✓
Negation		✓	✓
Flip-flop		✓	✓
Counting functions			
Counter 0 -> 1		✓	✓
Counter 1 -> 0		✓	✓
Counter 0 -> 1/1 -> 0		✓	✓
Timer functions			
With ON-delay		✓	✓
Passing make contact		✓	✓
With OFF-delay		✓	✓
Clock-pulsing		✓	✓
Start functions			
Monitored start		✓	✓
Manual start		✓	✓
Output functions			
Standard output		✓	✓
F output		✓	✓
AS-i output function		--	✓
Status functions			
Element status		--	✓

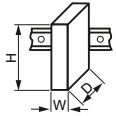
Technical specifications

More information

Manual, see
<https://support.industry.siemens.com/cs/ww/en/view/26493228>
 Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16392/td>

FAQs, see
<https://support.industry.siemens.com/cs/ww/en/ps/16392/faq>

Central units and expansion modules

Type	Central units				Expansion modules						
	Basic	Advanced	ASIsafe basic	ASIsafe extended	4/8F-DI	2/4 F-DI 1/2 F-RO	2/4 F-DI 2F-DO	4/8 F-RO	4 F-DO	8 DI	8 DO
Dimensions (W x H x D)											
											
• Screw terminals	mm	45 x 111 x 124			22.5 x 111 x 124			45 x 111 x 124	22.5 x 111 x 124		
• Spring-type terminals	mm	45 x 113 x 124			22.5 x 113 x 124			45 x 113 x 124	22.5 x 113 x 124		
Device data											
Shock resistance (sine pulse)	g/ms	15/11									
Touch protection acc. to IEC 60529		IP20									
Permissible mounting position		Vertical mounting surface (+10°/-10°), deviating mounting positions are permitted for reduced ambient temperature									
Minimum distances		For heat dissipation through convection from the devices 25 mm to the ventilation openings (top and bottom)									
Permissible ambient temperature											
• During operation	°C	-20 ... +60									
• During storage and transport	°C	-40 ... +85									
Number of sensor inputs (single-channel)											
• Fail-safe		8	8	2	4	8	4	4	--	--	--
• Not fail-safe		--	--	6	4	--	--	--	--	8	--
Number of test outputs		2									
Number of outputs											
• Relay outputs											
- Single-channel		--	--	--	--	--	2	--	8	--	--
- Two-channel		1	1	1	1	--	--	--	--	--	--
• Electronic outputs											
- Single-channel		--	--	--	--	--	--	--	--	--	8
- Two-channel		1	1	1	1	--	2	--	4	--	--
Weight	g	300			160			400	135	125	160
Installation altitude above sea level	m	2 000									
Environmental data											
EMC interference immunity		IEC 60947-5-1									
Vibrations											
• Frequency	Hz	5 ... 500									
• Amplitude	mm	0.75									
Climatic withstand capability		IEC 60068-2-78									

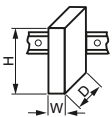
SIRIUS 3RK3 Modular Safety System

General data

Type	Central units				Expansion modules						
	Basic	Advanced	ASIsafe basic	ASIsafe extended	4/8 F-DI	2/4 F-DI 1/2 F-RO	2/4 F-DI 2 F-DO	4/8 F-RO	4 F-DO	8 DI	8 DO
Electrical specifications											
Rated control supply voltage U_s acc. to IEC 61131-2	V	24 DC \pm 15% ¹⁾									
Operating range		0.85 ... 1.15 x U_s									
Rated insulation voltage U_i	V	300			50	300	50	300	50		
Rated impulse voltage U_{imp}	kV	4			0.5	4	0.5	4	0.5		
Total current input	mA	185			60	85		140	8	78	60
Rated power at U_s	W	4.5			1.5	2		3	4.8	1.9	1.5
Utilization category acc. to IEC 60947-5-1											
Relay outputs											
• AC-15 at 230 V	A	2			--	2	--	2	--	--	--
• DC-13 at 24 V	A	1			--	1	--	1	--	--	--
Semiconductor outputs											
• DC-13 at 24 V	A	1.5			--	--	1.2	--	2	--	0.5
Mechanical endurance During rated operation	Operat- ing cycles (relay)	10 x 10 ⁶			--	10 x 10 ⁶	--	10 x 10 ⁶	--		
Switching frequency z At rated operational current	1/h	1 000			--	1 000		360	1 000	--	1 000
Conventional thermal current I_{th}	A	2/1.5			--	1	1.2	3	2	--	0.5
Protection for output contacts											
Fuse links LV HRC type 3NA, DIAZED type 5SB, NEOZED type 5SE											
• Operational class gG	A	4			--	4	--	4	--		
• Operational class quick	A	6			--	6	--	6	--		
Safety specifications											
Probability of a dangerous failure											
• per hour (PFH _d)	1/h	5.14 x 10 ⁻⁹	3.8 x 10 ⁻⁹ with AS-i, 2.8 x 10 ⁻⁹ without AS-i		1.89 x 10 ⁻⁹	3.79 x 10 ⁻⁹	2.7 x 10 ⁻⁹	7.15 x 10 ⁻⁹	3.18 x 10 ⁻⁹	--	
• On demand (PFD)		1.28 x 10 ⁻⁵	1.7 x 10 ⁻⁴		4.29 x 10 ⁻⁶	5.85 x 10 ⁻⁶	8.34 x 10 ⁻⁶	4.36 x 10 ⁻⁵	2.2 x 10 ⁻⁵	--	
Parameters for cables											
Line resistance	Ω	100						--		100	--
Cable length from terminal to terminal With Cu 1.5 mm ² and 150 nF/km	m	1 000						--		1 000	--
Conductor capacity	nF	330						--		330	--

¹⁾ Device current supply through a power supply unit according to IEC 60536 protection class III (SELV or PELV).

Interface and diagnostics modules

Type		Interface modules	Diagnostics modules
Dimensions (W x H x D)			
• Screw terminals	mm	45 x 111 x 124	96 x 60 x 44
• Spring-type terminals	mm	45 x 113 x 124	--
Device data			
Shock resistance (sine pulse)	g/ms	15/11	
Touch protection acc. to IEC 60529		IP20	
Permissible mounting position		Vertical mounting surface (+10°/-10°), deviating mounting positions are permitted for reduced ambient temperature	
Minimum distances		For heat dissipation through convection from the devices 25 mm to the ventilation openings (top and bottom)	
Permissible ambient temperature			
• During operation	°C	-20 ... +60	
• During storage and transport	°C	-40 ... +85	
Weight	g	270	90
Installation altitude above sea level	m	2 000	
Environmental data			
EMC interference immunity		IEC 60947-5-1	
Vibrations			
• Frequency	Hz	5 ... 500	
• Amplitude	mm	0.75	
Climatic withstand capability		IEC 60068-2-78	
Electrical specifications			
Rated control supply voltage U_s acc. to IEC 61131-2	V	24 DC ± 15%	24 DC ± 15% via connecting cable to the central unit
Operating range		0.85 ... 1.15 x U_s	
Rated insulation voltage U_i	V	50	
Rated impulse voltage U_{imp}	kV	0.5	
Total current input	mA	--	24
Rated power at U_s	W	--	0.6

SIRIUS 3RK3 Modular Safety System

3RK31 central units

Selection and ordering data



3RK3111-1AA10


 3RK3121-1AC00
 3RK3122-1AC00
 3RK3131-1AC10

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK31 central units						
3RK3 Basic Central units with safety-related inputs and outputs <ul style="list-style-type: none"> • 8 fail-safe inputs • 1 two-channel relay output • 1 two-channel electronic output Max. 7 expansion modules can be connected <u>Note:</u> Memory module 3RK3931-0AA00 is included in the scope of supply.	2	3RK3111-□AA10		1	1 unit	42B
3RK3 Advanced Central units for connecting to AS-Interface with safety-related inputs and outputs and extended functional scope <ul style="list-style-type: none"> • 8 fail-safe inputs • 1 two-channel relay output • 1 two-channel electronic output Max. 9 expansion modules can be connected <u>Note:</u> Memory module 3RK3931-0AA00 is included in the scope of supply.	2	3RK3131-□AC10		1	1 unit	42B
3RK3 ASIsafe Central units for connecting to AS-Interface with safety-related inputs and outputs and extended functional scope <ul style="list-style-type: none"> • 1 two-channel relay output • 1 two-channel electronic output "Basic" version <ul style="list-style-type: none"> • 2 fail-safe inputs • 6 non-fail-safe inputs No expansion modules can be connected "Extended" version <ul style="list-style-type: none"> • 4 fail-safe inputs • 4 non-fail-safe inputs Max. 2 expansion modules can be connected <u>Note:</u> Memory module 3RK3931-0AA00 is included in the scope of supply.	2	3RK3121-□AC00		1	1 unit	42B
	2	3RK3122-□AC00		1	1 unit	42B
Type of electrical connection <ul style="list-style-type: none"> • Screw terminals • Spring-type terminals (push-in) 						

 1
 2

Selection and ordering data



3RK3211-1AA10
3RK3221-1AA10
3RK3231-1AA10
3RK3242-1AA10



3RK3251-1AA10



3RK3311-1AA10
3RK3321-1AA10



3RK3511-1BA10

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RK32, 3RK33 expansion modules						
4/8 F-DI Safety-related input module • 8 inputs	2	3RK3211-□AA10		1	1 unit	42B
2/4 F-DI 1/2 F-RO Safety-related input/output module • 4 inputs • 2 single-channel relay outputs	2	3RK3221-□AA10		1	1 unit	42B
2/4 F-DI 2F-DO Safety-related input/output module • 4 inputs • 2 two-channel electronic outputs	2	3RK3231-□AA10		1	1 unit	42B
4/8 F-RO Safety-related output module • 8 single-channel relay outputs	2	3RK3251-□AA10		1	1 unit	42B
4 F-DO Safety-related output module • 4 two-channel electronic outputs	2	3RK3242-□AA10		1	1 unit	42B
8 DI Standard input module • 8 inputs	2	3RK3321-□AA10		1	1 unit	42B
8 DO Standard output module • 8 electronic outputs	2	3RK3311-□AA10		1	1 unit	42B
3RK35 interface modules						
DP interface PROFIBUS DP interface, 12 Mbps, RS 485, 32-bit cyclic data exchange with Basic central unit or 64-bit with Advanced and ASIsafe central unit, acyclic exchange of diagnostics data	2	3RK3511-□BA10		1	1 unit	42B

Type of electrical connection

- Screw terminals
- Spring-type terminals (push-in)

Notes:

For the required connection cable, see page 11/40.

1
2

SIRIUS 3RK3 Modular Safety System

Accessories

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG		
d								
Connection cables (essential accessory)								
 3UF7932-0AA00-0	For connection of							
	Central units with expansion modules or interface module	Diagnostics modules with central unit or interface module	Length					
	✓	✓	• 0.025 m (flat)	▶	3UF7930-0AA00-0	1	1 unit	42J
	--	✓	• 0.1 m (flat)	▶	3UF7931-0AA00-0	1	1 unit	42J
	--	✓	• 0.15 m (flat) NEW	▶	3UF7934-0AA00-0	1	1 unit	42J
	--	✓	• 0.3 m (flat)	▶	3UF7935-0AA00-0	1	1 unit	42J
	--	✓	• 0.5 m (flat)	▶	3UF7932-0AA00-0	1	1 unit	42J
	--	✓	• 0.5 m (round)	▶	3UF7932-0BA00-0	1	1 unit	42J
	--	✓	• 1.0 m (round)	▶	3UF7937-0BA00-0	1	1 unit	42J
--	✓	• 2.5 m (round)	▶	3UF7933-0BA00-0	1	1 unit	42J	
Operating and monitoring modules for 3RK3								
 3SK2611-3AA00	Diagnostics modules		2					
	For direct display of errors, e.g. of cross-circuits			3SK2611-3AA00	1	1 unit	41L	
PC cables and adapters								
 3UF7941-0AA00-0	USB PC cables		▶					
	For connecting to the USB interface of a PC/PG, for communication with 3RK3 through the system interface, recommended for use in connection with 3RK3			3UF7941-0AA00-0	1	1 unit	42J	
Door adapter								
 3UF7920-0AA00-0			▶					
	For external connection of the system interface, e.g. outside a control cabinet			3UF7920-0AA00-0	1	1 unit	42J	
Interface covers								
 3UF7950-0AA00-0			▶					
	For system interface			3UF7950-0AA00-0	1	5 units	42J	
Memory modules								
 3RK3931-0AA00			2					
	For backing up the complete parameterization of the 3RK3 Modular Safety System without a PC/PG through the system interface			3RK3931-0AA00	1	1 unit	42C	
Push-in lugs								
 3RP1903			5					
	For screw fixing, e.g. on mounting plate, 2 units required per device Can be used for 3RK3			3RP1903	1	10 units	41H	
Software for 3RK3								
 3ZS1316-.C.10-0Y.5	SIRIUS Safety ES							
	Software for configuring, commissioning, operating and diagnosing of 3SK2 and 3RK3, see page 14/22.							

✓ Available
-- Not available

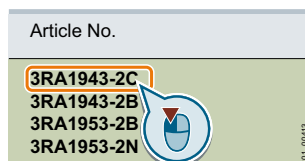
Note:

For more accessories and components that can be combined with MSS, see page 2/31.

Position and Safety Switches

**clickable**

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.



Or directly on the Internet, e.g. www.siemens.com/product?3RA1943-2C

	Price groups PG 41K, 41L, 42A, 42D		<u>Shock and vibration test according to railway standard</u> SIRIUS 3SE5 mechanical position switches <i>NEW</i>
12/2	Introduction	12/72 12/76	- 3SE5, plastic enclosures - 3SE5, metal enclosures SIRIUS 3SE5 mechanical safety switches with separate actuator - 3SE5, plastic enclosures SIRIUS 3SE5 mechanical safety switches with tumbler <i>NEW</i> - 3SE5, plastic enclosures
12/5	SIRIUS 3SE5 mechanical position switches General data 3SE5, plastic enclosures	12/81	
12/12	- Enclosure width 31 mm according to EN 50047 <i>NEW</i>	12/82	
12/18	- Enclosure width 40 mm according to EN 50041		
12/22	- Enclosure width 50 mm 3SE5, metal enclosures		
12/26	- Enclosure width 31 mm according to EN 50047 <i>NEW</i>		
12/30	- Enclosure width 40 mm according to EN 50041 <i>NEW</i>		
12/34	- Enclosure width 56 mm		
12/38	- Enclosure width 56 mm, XL		
12/41	- Compact design <i>NEW</i> 3SE5, open-type design		
12/43	- Enclosure width 30 mm		
12/44	Accessories and spare parts <i>NEW</i>		
	SIRIUS 3SE5, 3SE2 mechanical safety switches <u>With separate actuator</u> General data	12/83 12/85 12/87	SIRIUS 3SF1 mechanical safety switches for AS-Interface General data 3SF1, plastic enclosures 3SF1, metal enclosures <u>With separate actuator</u> General data 3SF1, plastic enclosures 3SF1, metal enclosures Accessories <u>With tumbler</u> General data
12/47	General data	12/91	3SF1, plastic enclosures
12/49	3SE5, plastic enclosures <i>NEW</i>	12/92	3SF1, metal enclosures
12/52	3SE5, metal enclosures <i>NEW</i>	12/93	3SF1, metal enclosures
12/54	Accessories	12/94	Accessories
12/55	3SE2, plastic enclosures	12/95	<u>With tumbler</u> General data
12/56	<u>With tumbler</u> General data	12/96	3SF1, plastic enclosures with locking force greater than 1 200 N
12/59	3SE5, plastic enclosures with locking force greater than 1 200 N <i>NEW</i>	12/97	3SF1, metal enclosures with locking force greater than 2 000 N <u>Safety hinge switches</u>
12/61	3SE5, metal enclosures with locking force greater than 2 000 N	12/98	3SF1, plastic enclosures
12/62	Accessories	12/99	3SF1, metal enclosures
	SIRIUS 3SE5, 3SE2 mechanical safety hinge switches General data		
12/64	General data		
12/65	3SE5, plastic enclosures		
12/66	3SE5, metal enclosures		
12/67	3SE2, plastic enclosures - with integrated hinge		
	SIRIUS 3SE5 mechanical position switches for ambient temperatures down to -40 °C <u>Shock and vibration test</u> SIRIUS 3SE5 mechanical position switches	12/100	SIRIUS 3SE6 non-contact safety switches <u>Magnet</u> 3SE66, 3SE67 magnetically operated switches
12/69	- 3SE5, plastic enclosures		<u>RFID</u> 3SE63 RFID safety switches
12/70	SIRIUS 3SE5 mechanical safety switches with tumbler - 3SE5, plastic enclosures	12/106	
12/71	SIRIUS 3SE5 mechanical safety hinge switches - 3SE5, plastic enclosures		
			<u>Note:</u> Conversion tool, e.g. from 3SE2 to 3SE5, see www.siemens.com/sirius/conversion-tool

Position and Safety Switches

Introduction

Overview



	Position switches, standard					Compact design	Open-type
Enclosure							
Plastic	✓	✓	✓	--	--	--	✓
Metal	✓	--	✓	✓	✓	✓	--
Dimensions (W x H x D) in mm	31 x 68 x 33	50 x 53 x 33	40 x 78 x 38	56 x 78 x 38	56 x 100 x 38	30 x 50 x 16 40 x 50 x 16	30 x 48.5 x 20
Degree of protection	IP65, IP66/IP67	IP66/IP67	IP66/IP67	IP66/IP67	IP66/IP67	IP66/IP67	IP10 or IP20
Standards							
IEC 60947-5-1	Mounting and operating points acc. to EN 50047	Operating points acc. to EN 50047	Mounting and operating points acc. to EN 50041	Operating points acc. to EN 50041	Operating points acc. to EN 50041	--	Mounting and operating points acc. to EN 50047
Approvals	CE, TÜV, UL, CSA, CCC					CE, UL, CSA, CCC	CE, TÜV, UL, CSA, CCC
Contact blocks							
2 slow-action contacts	1 NO + 1 NC; 2 NC		1 NO + 1 NC; 2 NC		2 x (1 NO + 1 NC) --		1 NO + 1 NC
2 snap-action contacts	1 NO + 1 NC		1 NO + 1 NC		2 x (1 NO + 1 NC) 1 NO + 1 NC		1 NO + 1 NC
• Short stroke	1 NO + 1 NC		✓		--		✓
• With 2 x 2 mm contact gap	1 NO + 1 NC		✓		--		✓
3 slow-action contacts	1 NO + 2 NC; 2 NO + 1 NC		1 NO + 2 NC; 2 NO + 1 NC		--		1 NO + 2 NC; 2 NO + 1 NC
• With make-before-break	1 NO + 2 NC		1 NO + 2 NC		2 x (1 NO + 2 NC) --		1 NO + 2 NC
3 snap-action contacts	1 NO + 2 NC		1 NO + 2 NC		--		1 NO + 2 NC
Special features							
LED status display	✓		✓		--	--	--
Increased corrosion protection	✓		✓		✓	--	--
ASIsafe integrated	✓		✓		--	--	--
Electrical specifications							
Insulation voltage U_i	400 V		400 V			400 V	400 V
Conventional thermal current I_{th}	6 A/10 A (3-/2-pole)		6 A/10 A (3-/2-pole)			6 A	6 A
Connections							
Cable entry	1 x M20 x 1.5	2 x M20 x 1.5	1 x M20 x 1.5	3 x M20 x 1.5	3 x M20 x 1.5	--	--
M12 plug, 4-, 5- or 8-pole	✓	✓	✓	✓	✓	✓	--
Plug, 6-pole + PE	--	--	✓	✓	--	--	--
Molded cables	--	--	--	--	--	✓	--
Actuators							
Rounded plungers and roller plungers	✓		✓		✓	--	--
Roller levers and angular roller levers	✓		✓		✓	--	--
Spring rod	✓		✓		--	--	--
Twist levers and rod actuators	✓		✓		✓	--	--
Fork lever	--		✓		--	--	--
Hinge switches	--		--		--	--	--
Plungers, twist levers	--		--		✓	✓	✓
Page							
Complete units	12/12, 12/26	12/22	12/18, 12/30	12/34	12/38	12/41	12/43
Modular system	12/16, 12/28	12/24	12/20, 12/32	12/36	12/39	--	--
Ambient temperature -40 °C	12/69, 12/72	12/72	12/75	12/78	12/79	--	--
ASIsafe	12/85, 12/87	12/85	12/89	12/89	--	--	--

✓ Available -- Not available



**3SE5232,
3SE5212,
3SF12.4**

**3SE5132,
3SE5112,
3SF11.4**

**3SE5232,
3SE5242,
3SF12.4**

**3SE5112,
3SE5122,
3SF11.4**

**3SE5322,
3SE5312,
3SF13.4**

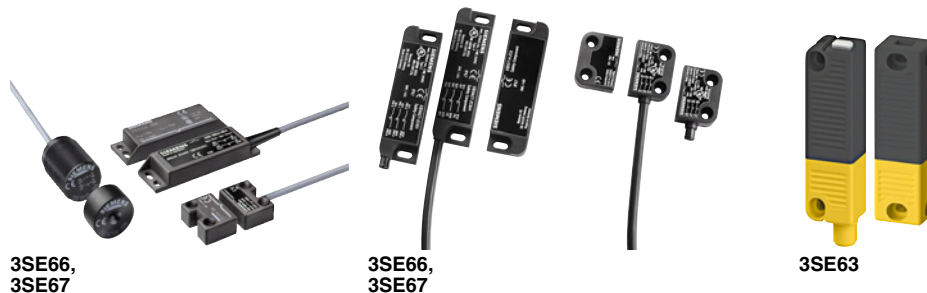
	Safety hinge switches		Safety switches with separate actuator		Safety switches with tumbler
Enclosure					
Plastic	✓	✓	✓	✓	✓
Metal	✓	✓	✓	✓	✓
Dimensions (W x H x D) in mm	31 x 68 x 33	40 x 78 x 38	31 x 68 x 33, 50 x 53 x 33	40 x 78 x 38, 56 x 78 x 38	54 x 185 x 44
Degree of protection	IP65, IP66/IP67	IP66/IP67	IP65, IP66/IP67	IP66/IP67	IP66/IP67, IP69K
Standards	Mounting and operating points acc. to EN 50047		Mounting acc. to EN 50047		EN ISO 14119
IEC 60947-5-1					
Approvals	CE, TÜV, UL, CSA, CCC		CE, TÜV, UL, CSA, CCC		CE, TÜV, UL, CSA, CCC
Contact blocks/outputs					
2 slow-action contacts	--	--	1 NO + 1 NC; 2 NC	--	--
2 snap-action contacts	1 NO + 1 NC	--	--	--	--
• Short stroke	--	--	--	--	--
• With 2 x 2 mm contact gap	--	--	--	--	--
3 slow-action contacts	--	--	1 NO + 2 NC	--	2 x (1 NO + 2 NC)
• With make-before-break	--	--	--	--	--
3 snap-action contacts	1 NO + 2 NC	--	--	--	--
Electronic safety outputs	--	--	--	--	--
Special features					
LED status display	✓	✓	✓	✓	✓
Increased corrosion protection	✓	✓	✓	✓	✓
ASIsafe integrated	✓	✓	✓	✓	✓
Electrical specifications					
Insulation voltage U_i	400 V	400 V	400 V	400 V	400 V
Conventional thermal current I_{th}	6 A/10 A (3-/2-pole)	6 A	6 A	6 A	6 A
Connections					
Cable entry	1 x M20 x 1.5	1 x M20 x 1.5	1 x M20 x 1.5, 2 x M20 x 1.5	1 x M20 x 1.5, 3 x M20 x 1.5	3 x M20 x 1.5
M12 plug, 4-, 5- or 8-pole	✓	✓	✓	✓	✓
Molded cables	--	--	--	--	--
AS-Interface	--	--	✓	✓	✓
Actuators					
Plungers, twist levers	--	--	--	--	--
Separate actuators	--	--	✓	✓	✓
Hinge switches	✓	✓	--	--	--
Page					
Complete units	12/65	12/65	12/49, 12/52	12/50, 12/53	12/59 ... 12/61
Modular system	--	--	--	--	--
Ambient temperature -40 °C	12/71	--	12/81	--	12/82
ASIsafe	12/98	12/99	12/92	12/93	12/96, 12/97

✓ Available

-- Not available

Position and Safety Switches

Introduction



	Safety switches, solenoid	Safety switches, solenoid supplementary range in new design ¹⁾	RFID safety switches ¹⁾
Enclosure			
Plastic	✓	✓	✓
Metal	--	--	--
Dimensions (W x H x D) in mm	M30; 25 x 88; 25 x 33	25 x 88; 26 x 36	25 x 91 x 22
Degree of protection	IP67	IP67	IP69K
Standards	IEC 60947-5-3 Category 4 acc. to ISO 13849-1, PL e acc. to ISO 13849-1, SIL 3 acc. to IEC 61508	IEC 60947-5-3	Category 4 acc. to ISO 13849-1, PL e acc. to ISO 13849-1, SIL 3 acc. to IEC 61508
Approvals	CE, TÜV, UL, CSA, CCC	CE, TÜV, UL, CSA	CE, TÜV, UL, CSA
Contact blocks/outputs			
Reed contacts	1 NO + 1 NC 2 NC 1 NO + 1 NC (+ 1 NC signaling contact)	1 NO + 1 NC (+ 1 NC signaling contact) 2 NC 2 NC (+ 1 NC signaling contact)	--
Special features			
LED status display	--	✓	✓
Increased corrosion protection	--	--	✓
ASIsafe integrated	--	--	--
Electrical specifications			
Insulation voltage U_i	100 V AC/DC 24 V DC	75 V DC 50 V AC	--
Conventional thermal current I_{th}	250 mA 400 mA	250 mA	--
Connections			
M8 plug, 4-pole	✓	✓	--
8 mm Ø, latching connection, plug, 6-pole	--	✓	--
M12 plug, 4-pole	✓	--	✓
Molded cables	✓	✓	--
AS-Interface	--	--	--
Actuators			
RFID	--	--	✓
Switching magnet	✓	✓	--
Page	12/100	12/100	12/106

✓ Available

-- Not available

¹⁾ CCC not required for voltages < 36 V.Note:

Safety characteristics, see page 16/6.

Overview

More information

Homepage, see www.siemens.com/sirius-detecting
 Industry Mall, see www.siemens.com/product?3SE
 Configurator, see www.siemens.com/sirius/configurators
 System Manual, see <https://support.industry.siemens.com/cs/ww/en/view/43920150>
 Conversion tool, see www.siemens.com/sirius/conversion-tool

The innovative SIRIUS 3SE5 position switches are modern in design, compact, modular and simple to connect. They save time and increase flexibility during installation of a whole range of switch variants. In principle it is possible to combine any enclosure with any operating mechanism, paying due consideration to the EN 50041 and EN 50047 standards where necessary.

Complete units

Popular versions of the position switches in standard enclosures are available as complete units.



3SE5 position switches with plastic and metal enclosures

Modular system

The 3SE5 series is the modular system comprising different sizes of the basic switch and an actuator which must be ordered separately. Thanks to the modular design of the switch the user can select the right solution for his application from numerous versions and install it himself in a very short time.

Simple plug-in mounting enables fast replacement of the actuator heads.



Examples of selection options in the modular system

Design

All enclosure variants have an integrated chlorinated rubber diaphragm for high functional safety in cold and aggressive environments.

Enclosure sizes

The 3SE5 switches are available in five different enclosure sizes with 2 or 3 contacts and with the XL enclosure:

- Open-type position switch IP20 or IP10
- Plastic enclosures according to EN 50047, 31 mm wide, IP65, 1 cable entry
- Metal enclosures according to EN 50047, 31 mm wide, IP66/IP67, 1 cable entry
- Plastic and metal enclosures according to EN 50041, 40 mm wide, IP66/IP67, 1 cable entry
- Plastic enclosures, 50 mm wide, IP66/IP67, 2 cable entries
- Metal enclosures, 56 mm wide, IP66/IP67, 3 cable entries
- XL metal enclosures with 4 to 6 contacts, 56 mm wide, IP66/IP67, 3 cable entries

Enclosure versions

Various basic switches can be selected for the enclosures of the 3SE5 series:

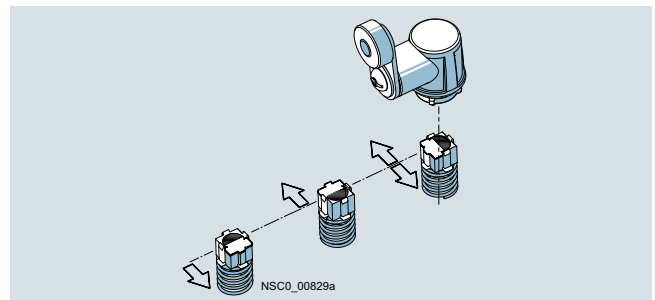
- With contact blocks with two or three contacts (screw terminals) designed as slow-action or snap-action contacts; the slow-action contacts also with make-before-break
- Optional LED status display
- With mounted 4- or 5-pole M12 device plug (available for the wide enclosures as an accessory for self-assembly)
- With 6-pole device plug + PE on the metal enclosures
- Versions with increased corrosion protection
- Versions for operating temperatures down to -40 °C
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs (see page 12/83)

Actuator variants

All operating mechanisms can be rotated around the axis in increments of 22.5°. The following actuator variants are available:

- Plain, rounded and roller plungers
- Roller levers and angular roller levers
- Spring rod
- Twist levers and rod actuators with twist actuator
- Fork levers with twist actuator

The actuator rollers are available with various materials and diameters.



Twist actuator for twist levers and rod levers, with setting of switching direction to right, left or right/left (standard for all twist actuators except fork levers)

SIRIUS 3SE5 Mechanical Position Switches

General data

Cover design

The mechanical position switches have a turquoise cover and the mechanical safety switches have a yellow cover.



On request the switches can be delivered ex works with a yellow cover. The cover has no effect on the mode of operation. Both versions can be used in safety applications (see also page 12/14).

Diverse contact types

Exchangeable two- and three-pole contact blocks for all enclosure sizes



The three-pole contact block with snap-action or slow-action contacts is regularly available for all enclosure forms. The same installation space is required as for a two-pole block. The version with 1 NO + 2 NC offers, for example, more safety through redundant shutdowns (2 NC contacts) with simultaneous signaling (NO contact). The three-pole blocks are also available with make-before-break and with 2 NO + 1 NC.

Contact reliability

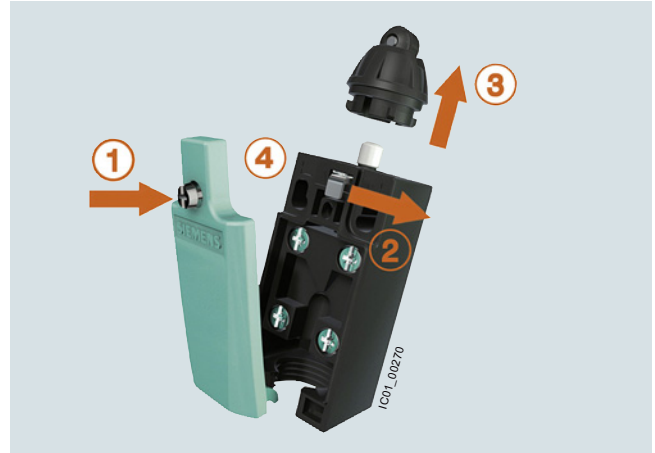
The contact blocks ensure an extremely high contact stability. This applies even when the devices are switching low voltages and currents, e.g. 1 mA at 5 V DC.

Positive opening ☺

The NC contacts of the switch are forced open mechanically, positively-driven and reliably by the plunger. This is referred to as "positive opening".

Mounting

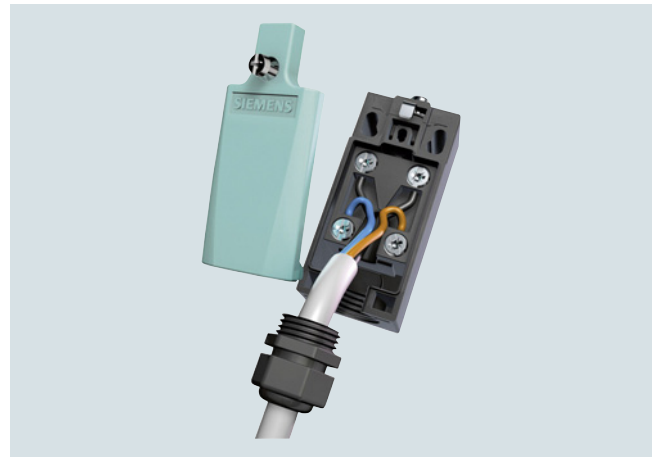
Easy plug-in method for fast replacement of the actuator heads



Open the cover (1)
Actuate the locking lever (2)
Replace the head (turnable by 16 x 22.5°) (3)
Lock and close the cover (4)

Quick-connect technology

For plastic enclosure with a width of 31 mm



These position switches can be wired quickly and easily as an added customer benefit. The connecting cable is first connected to the terminals of the contact block and then guided through a slit into the cable gland opening. The time saved through this new connection method is approx. 20 to 25%.

A cable gland with seal must be used with the quick-connect method.

Optional LED indicators

LED indicators are available for all enclosure sizes except for XL. The enclosures are supplied with an LED signaling indicator (1 x green + 1 x yellow). This is the first time that optical signaling equipment is also available for small standard enclosures according to EN 50047. The LEDs are implemented in 24 V DC and 230 V AC.

Article No. scheme

Product versions		Article number													
SIRIUS position and safety switches		3	S	E	□	□	□	□	-	□	□	□	□	□	
Series		5													
Standard		EN 50041	1												
		EN 50047	2												
		with tumbler	3												
Enclosure material and width		e.g. 1 = metal, narrow				□									
Connection		Cable entry, device plug						2							
								4/5							
LEDs		None								0					
		24 V DC								1					
		115 V AC								2					
		230 V AC								3					
Version of contacts		e.g. C = snap-action 1 NO + 1 NC									□				
Version of operating mechanism		e.g. C02 = rounded plunger										□	□	□	
Example			3	S	E	5	1	1	2	-	0	C	C	0	2

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

The 3SE5 position switches differ from the previous series through the following new characteristics:

- The modular design of the product range allows a number of versions with a smaller number of bearing types for enclosures and operating mechanisms.
- All actuators can be turned around the axis in increments of 22.5° (see picture, page 12/6).
- Rounded and roller plungers according to EN 50041 with 3 mm overtravel (total travel 9 mm) for greater tolerance when switching.
- All enclosure sizes – now also including the small enclosure 31 mm wide – are optionally available with an LED signaling indicator (see picture, page 12/6).
- All enclosure variants have an integrated chlorinated rubber diaphragm for high functional safety in cold and aggressive environments.
- All contact blocks are replaceable (see page 12/45).

- The three-pole contact blocks are available for all enclosure sizes (see picture, page 12/6).
- Elements with 1 NO + 2 NC slow-action contacts with make-before-break and 2 NO + 1 NC.
- The short-stroke contact block 1 NO + 1 NC improves the precision of the switching operation through a reduced actuation path.
- The contact block with 1 NO + 1 NC snap-action contacts with 2 x 2 mm contact opening is suitable for simultaneous shutdown and signaling, particularly in the elevator industry.
- XL metal enclosures for accommodating two 2- or 3-pole contact blocks.
- The plastic enclosure with a width of 31 mm has simple and fast wiring equipment which makes it possible to save approx. 20 to 25% of the time when connecting (see picture, page 12/6).

Application

With the standard position switches, mechanical positions of moving machine parts are converted into electrical signals. Through their modular and uniform design and large number of variants, the devices can comply with practically all requirements in industry.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the contact blocks best suited for the particular purpose. And many different actuator variants are available to match the mechanical configuration of the moving machine parts. Dimensions, fixing points and characteristics are largely in accordance with the EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

IEC/EN 60947-5-1

The protective measure of "total insulation" by the molded-plastic enclosure is ensured by the use of molded-plastic screw glands.

Safety position switches

For controls according to IEC/EN 60204-1, the devices can be used as a safety position switch. They comply with the standard EN ISO 14119. A TÜV certificate is available. To secure position switches against changes in their position, keyed techniques must be employed on installation.

Safety circuits

The IEC/EN 60947-5-1 standard requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked in accordance with the standard IEC 60947-5-1 with the symbol ☹.

Category 2 according to EN ISO 13849-1 can be attained with 3SE5 position switches with ☹, and category 3 or 4 when using an additional position switch, if the corresponding fail-safe evaluation units are selected and correctly connected. Example: 3SK or 3TK28 safety relays or the corresponding devices from the ASIsafe, SIMATIC or SINUMERIK programs. The operating mechanisms (actuators) must also be connected to the enclosure by keyed techniques. The corresponding operating mechanisms are marked in the catalog with ☹.

SIRIUS 3SE5 Mechanical Position Switches

General data

Contacts for every application

- **Snap-action contacts:** NC and NO contacts switch simultaneously – regardless of the actuating speed ($v_{\min} = 0.01$ m/s) and contact erosion.
- **Slow-action contacts:** Difference in travel between "NC contact opens" and "NO contact closes"; the switching speed is the same as or proportional to the actuating speed ($v_{\min} = 0.4$ m/s).
- **Slow-action contacts with make-before-break:** e.g. suitable for adding a second function to a sequence control.

Operating mechanisms for every application

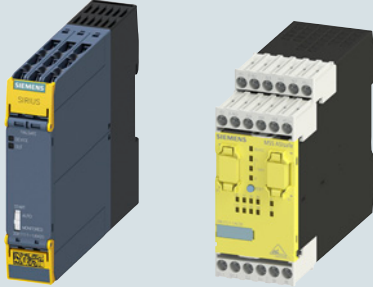





Standard, rounded and roller plungers

- Operation in direction of the plunger axis or in case of roller plunger with bar at right angles to the plunger axis.
- The roller plunger is recommended for lateral actuation and relatively long overtravel.

Roller levers and angular roller levers

- For actuators made of finely ground steel in the form of cams, straight-edges (approach angle 30°) or cam disks.

Monitoring with fail-safe evaluation units from the 3SK and 3RK3 series

Safe evaluation units	Maximum achievable safety level according to type of switch				
	Compact	Standard	Hinge	Separate actuator	Tumbler
 <p>3SK 3RK3</p>	 <p>3SE54</p>	 <p>3SE51/3SE52</p>	 <p>3SE51/3SE52</p>	 <p>3SE51/3SE52</p>	 <p>3SE53</p>
Use of only one position/safety switch					
Monitoring with 1 contact: 1 x NC contact	SIL 1 / PL c				
Monitoring with 2 contacts: 2 x NC contact or 1 x NC contact + 1 x NO contact	SIL 1 / PL c	SIL 2 / PL d			
Use of a second position/safety switch					
Standard switch	SIL 3 / PL e				
Safety switch/hinge switch					
Safety switch with separate actuator					
Safety switch with tumbler					

Note:

Taking account of certain fault exclusions (e.g. actuator breakage), use of just one hinge switch or a switch with separate actuator with or without tumbler up to SIL 2 or PL d is possible as described in the table.

Since the machine manufacturer must provide proof of fault exclusion, the component manufacturer is unable to carry out a definitive assessment of the measures taken.

Spring rod

- Can be used for undefined actuations and changing starting conditions
- Starting from any direction is possible

Twist levers and rod actuators

- For high starting speeds ($v = 1.5$ m/s)
- Variety of starting options
- Insensitive to oil, grinding dust and coarse-grained material
- Adjustment of the lever in increments of 10°
- Can be adjusted with left or right switching

Fork lever

- Switchable in two directions
- Latching actuator
- For reciprocating movements

For more information, see

<https://support.industry.siemens.com/cs/ww/en/view/35443942>.

The maximum achievable SIL or PL always depends on other assumptions as well. Factors to be taken into account include the DC (declaration), the CCF, and the number of actuations.

For information on the safe evaluation units and an introduction to safety systems, see page 11/1 onwards.

Technical specifications

Type		3SE51.. ¹⁾ , 3SE52.. ¹⁾	3SE541.	3SE542.
General data				
Standards		IEC/EN 60947-5-1, EN ISO 14119		
Rated insulation voltage U_i	V	400 ²⁾	400	
Degree of pollution according to IEC 60664-1		Class 3	Class 3	
Rated impulse withstand voltage U_{imp}	kV	6	4	
Rated operational voltage U_e	V	400 AC; over 300 V AC same potential only ³⁾	300 AC	
Conventional thermal current I_{th}	A	10	10	
Rated operational current I_e				
• For alternating current 50/60 Hz		I_e / AC-15	I_e / AC-15	
- At 24 V	A	6	6	
- At 120 V	A	6	6	
- At 240 V	A	6	3	
- At 400 V	A	4	--	
• For direct current		I_e / DC-13	I_e / DC-13	
- At 24 V	A	3	3	
- At 125 V	A	0.55	0.55	
- At 250 V	A	0.27	0.27	
- At 400 V	A	0.12	--	
Short-circuit protection⁴⁾				
• With DIAZED fuse links, utilization category gG	A	6	10	
• With miniature circuit breaker, C char. ($I_{K < 400A}$)	A	1	3	
Mechanical endurance				
• Basic switch		15 × 10 ⁶ operating cycles	10 × 10 ⁶ operating cycles	10 × 10 ⁶ operating cycles
• With spring rod, 3SE5...-R..		10 × 10 ⁶ operating cycles	--	--
• With fork lever, 3SE51...T..		1 × 10 ⁶ operating cycles	--	--
Electrical endurance				
• With 3RH.1, 3RT contactors in size S00, S0		10 × 10 ⁶ operating cycles	500 000 operating cycles	500 000 operating cycles
• For utilization category AC-15 when switching off I_e / AC-15 at 240 V		100 000 operating cycles	100 000 operating cycles	100 000 operating cycles
• With utilization category DC-12/DC-13		For direct current depending on the loading of the switch		
Switching frequency				
With 3RH.1, 3RT contactors in size S00, S0		6 000 operating cycles/h	1 800 operating cycles/h	
Switching accuracy				
• For repeated switching, measured at the plunger of the contact block	mm	0.05	0.05	
• With twist actuators		1°	1°	
Rated data according to \mathcal{E}, \mathcal{S} and \mathcal{M}				
• Rated voltage	V	300	300	
• Uninterrupted current	A	6	10	
• Switching capacity		Heavy duty, A 300/B 300/Q 300	A 300/Q 300	

¹⁾ Special versions, see data sheet.

²⁾ For slow-action contacts 1 NO + 2 NC with make-before-break ("M") and 2 NO + 1 NC ("P") the following applies: 250 V.

³⁾ For slow-action contacts 1 NO + 2 NC with make-before-break ("M") and 2 NO + 1 NC ("P") the following applies: Over 250 V AC same potential only.

⁴⁾ Without any welds according to IEC 60947-5-1.

Type		3SE523.	3SE513.	3SE524.	3SE521.	3SE511.	3SE512., 3SE516.	3SE54..	3SE525.	
Enclosure										
Enclosure		Plastic P66			Zinc die-casting			Zn/Al	--	
• Material								30/40	30	
• Width	mm	31	40	50	31	40	56			
Degree of protection acc. to IEC 60529		IP65	IP66/IP67 ¹⁾					IP67	IP20, IP10	
Ambient temperature										
• During operation	°C	-25 ... +85; -40...+85 for 3SE5*-1AJ0 and 3SE5*-1AY0 versions							-25 ... +85	-25 ... +85
• In operation, switch with LEDs	°C	-25 ... +60							--	--
• Storage, transport	°C	-40 ... +90							-40 ... +90	-40 ... +90
Mounting position		Any								
Connection										
Cable entry		1 x (M20 x 1.5)	2 x (M20 x 1.5)	1 x (M20 x 1.5)	3 x (M20 x 1.5)	--	--	--	--	
Conductor cross-sections										
• Solid	mm ²	1 x (0.5 ... 1.5), 2 x (0.5 ... 0.75)								
• Finely stranded with end sleeve	mm ²	1 x (0.5 ... 1.5), 2 x (0.5 ... 0.75)								
• AWG cables, solid or stranded	AWG	1 x (AWG 20 ... 16), 2 x (AWG 20 ... 18)								
Tightening torque , contact block	Nm	0.8 ... 1.0								
Protective conductor connection inside enclosure		--	M3.5			--	--	--	--	

¹⁾ For actuator heads with spring rod and rod actuators: IP65/IP67.

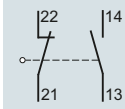
SIRIUS 3SE5 Mechanical Position Switches

General data

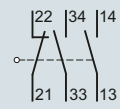
Circuit diagrams

Enclosure widths 31, 40, 50 and 56 mm

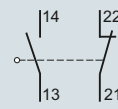
Slow-action contacts
1 NO + 1 NC
3SE5...-B..., -R...



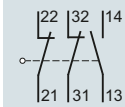
Slow-action contacts
2 NO + 1 NC
3SE5...-P...



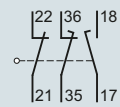
Snap-action contacts
1 NO + 1 NC
3SE5...-C..., -F..., -G..., -H..., -N...



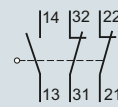
Slow-action contacts
1 NO + 2 NC
3SE5...-K..., -Q...



Slow-action contacts
1 NO + 2 NC with
make-before-break, 3SE5...-M...

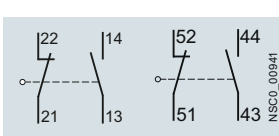


Snap-action contacts
1 NO + 2 NC
3SE5...-L...

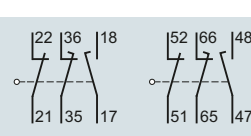


XL enclosures, width 56 mm

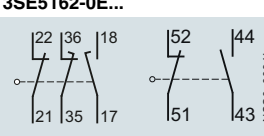
Slow-action contacts
2 x (1 NO + 1 NC)
3SE5162-0B...



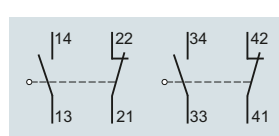
Slow-action contacts
2 x (1 NO + 2 NC) with
make-before-break, 3SE5162-0D...



Slow-action contacts
1 NO + 2 NC with make-before-break,
1 NO + 1 NC
3SE5162-0E...

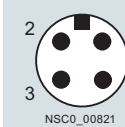


Snap-action contacts
2 x (1 NO + 1 NC)
3SE5162-0C...



3SE5 pin assignment

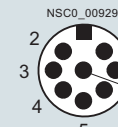
M12 device plug, 4-pole
3SY3127



M12 device plugs, 5-pole
3SY3128



M12 device plugs, 8-pole
3SX5100-1SS08



Device plugs, 6-pole + PE
3SY3131



Type	Device plugs Type	Contacts Version	LEDs Version	Connections											
				Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	PE			
M12 device plugs, 4-, 5- or 8-pole															
3SE5..4-0....-1AC4	3SY3127	1 NO + 1 NC	--	21	22	13	14	--	--	--	--	--	--	--	--
3SE5..4-0....-1AL0	3SY3128	1 NO + 1 NC	--	21	22	13	14	PE	--	--	--	--	--	--	--
3SE5..4-0....-1AE0	3SY3127	2 NC	--	21	22	31	32	--	--	--	--	--	--	--	--
3SE5..4-0....-1AE1	3SY3128	2 NC	--	21	22	31	32	PE	--	--	--	--	--	--	--
3SE5..4-1C...-1AF5	3SY3128	1 NO + 1 NC snap-action	2 LEDs	21	22	13/ LED gn	14/ LED ye	Ground LED	--	--	--	--	--	--	--
3SE5..4-1B...-1AF3	3SY3128	1 NO + 1 NC slow-action	2 LEDs	21	22	14/ LED gn	13/ LED ye	Ground LED	--	--	--	--	--	--	--
3SE5..4-1L...-1AD4	3SY3134	1 NO + 2 NC snap-action	2 LEDs	21	22	13/ LED gn	14/ LED ye	31	32	Ground LED	PE	--	--	--	--
3SE5..4-1K...-1AD4	3SY3134	1 NO + 2 NC slow-action	2 LEDs	21	22	14/ LED gn	13/ LED ye	31	32	Ground LED	PE	--	--	--	--
Device plugs, 6-pole + PE															
3SE5..5-0....-1AD0	3SY3131	1 NO + 1 NC	--	21	22	13	14	--	--	--	--	--	--	--	✓
3SE5..5-0....-1AD1	3SY3131	1 NO + 2 NC	--	21	22	13	14	31	32	--	--	--	--	--	✓
3SE5..5-C...-1AF2	3SY3131	1 NO + 1 NC snap-action	2 LEDs	21	22	13/ LED gn	14/ LED ye	--	Ground LED	--	--	--	--	--	✓
3SE5..5-B...-1AF2	3SY3131	1 NO + 1 NC slow-action	2 LEDs	21	22	14/ LED gn	13/ LED ye	--	Ground LED	--	--	--	--	--	✓
3SE5..5-L...-1AD2	3SY3131	2 NC snap-action	2 LEDs	21	22	31	32	13/ LED gn	Ground LED	--	--	--	--	--	✓
3SE5..5-K...-1AD2	3SY3131	2 NC slow-action	2 LEDs	21	22	31	32	14/ LED gn	Ground LED	--	--	--	--	--	✓

Legend:

gn = green, ye = yellow

✓ Connected

-- Not available

Options

On the following pages you will find selection tables for complete units as well as components of the modular system.

Complete units

Modular system

The differences between the units are indicated in the selection and ordering data by the symbols shown on orange backgrounds.

Using the modular system you can assemble switch variants which are not available as complete units. Each complete unit can also be supplied as a module.

A basic switch for the modular system comprises an enclosure with a contact block and a cover. Among the basic switches the following versions, for example, can be selected:

- Basic enclosure with teflon plunger
- Version with increased corrosion protection
- Version with M12 device plug and/or with 2 LEDs
- Version with M12 device plug or 6-pole + PE

Complete units

Ordering example

Required:

- Position switch according to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Angular roller lever, metal lever and plastic roller

Support functions

The 3SE5/3SF1 position and safety switches can also be ordered using an online configurator.

This also enables a complete documentation to be prepared:

- Product data sheets
- Dimension drawings
- Operating travel diagrams
- CAD data in 2D and 3D model images
- Ordering data
- Product photos

For online configurator, see www.siemens.com/sirius/configurators.

To be ordered:

Version	Complete units	<input type="checkbox"/>
		Article No.

Complete units • Enclosure width 31 mm



Angular roller lever

With metal lever and plastic roller 13 mm

Slow-action contacts
1 NO + 1 NC

3SE5232-0BF10

Modular system

Ordering example 1

Required:

- Position switch according to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Angular roller lever, metal lever and plastic roller

To be ordered separately:

Version	Modular system	<input checked="" type="checkbox"/>
		Article No.

Basic switches • Enclosure width 31 mm



With teflon plunger

Slow-action contacts
1 NO + 1 NC

3SE5232-0BC05

+

Operating mechanisms



Angular roller levers

Metal lever,
plastic roller

3SE5000-0AF10

Ordering example 2

Required:

- Position switch according to EN 50047 in a plastic enclosure
- Contact block with slow-action contacts 1 NO + 1 NC
- Twist levers, high-grade steel lever and plastic roller

To be ordered separately:

Version	Modular system	<input checked="" type="checkbox"/>
		Article No.

Basic switches • Enclosure width 31 mm



With teflon plunger

Slow-action contacts
1 NO + 1 NC

3SE5232-0BC05

+

Twist actuators



Twist actuators

3SE5000-0AK00

Twist levers

High-grade steel lever,
plastic roller

3SE5000-0AA31

SIRIUS 3SE5 Mechanical Position Switches






3SE5, Plastic Enclosures

Enclosure width 31 mm according to EN 50047

Selection and ordering data

Complete units for installation in control cabinets

2 contacts · Degree of protection IP40 · Cable entry by means of a locking plug with Ø 6 mm

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Complete units¹⁾ · Enclosure width 31 mm							
Control cabinet type, IP40, rounded plungers, type B, acc. to EN 50047							
	Flat cover Snap-action contacts, integrated ²⁾		1 NO + 1 NC --	⊕ 5	3SE5232-0HC05-1AB1	1	1 unit 41K
3SE5232-0HC05-1AB1	With mounting plate and screws for attachment profile						
	Snap-action contacts, integrated ²⁾		1 NO + 1 NC --	⊕ 5	3SE5232-0HC05-1AB2	1	1 unit 41K
3SE5232-0HC05-1AB2	With mounting plate and screws for attachment profile						
	Standard cover Snap-action contacts, integrated ²⁾		1 NO + 1 NC --	⊕ 5	3SE5232-0HC05-1AB3	1	1 unit 41K
3SE5232-0HC05-1AB3	With mounting plate and screws for attachment profile						
	Snap-action contacts, integrated ²⁾		1 NO + 1 NC --	⊕ 5	3SE5232-0HC05-1AB4	1	1 unit 41K
3SE5232-0HC05-1AB4							
Accessories							
	Mounting plate Suitable for 3SE523. and 3SE521. position switches with a width of 31 mm		--	--	5	3SX5100-1A	1 1 unit 41K
3SX5100-1A							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ The control cabinet types are not basic switches for the modular system.






²⁾ Subsequent replacement of contact blocks is not possible.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 31 mm according to EN 50047

Complete units2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5¹⁾

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Complete units²⁾ · Enclosure width 31 mm							
Rounded plungers, type B, acc. to EN 50047							
With teflon plunger							
 3SE5232-0HC05-1AB1	Slow-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5232-0BC05		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0CC05		1	1 unit 41K
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ ▶	3SE5232-0HC05		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0FC05		1	1 unit 41K
	• Short stroke, integrated ³⁾						
	Snap-action contacts	1 NO + 1 NC --	⊕ 15	3SE5232-0GC05		1	1 unit 41K
	• 2 × 2 mm contact gap						
	Slow-action contacts	1 NO + 2 NC --	⊕ ▶	3SE5232-0KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ ▶	3SE5232-0LC05		1	1 unit 41K
Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 2	3SE5232-0MC05		1	1 unit 41K	
Slow-action contacts	2 NO + 1 NC --	⊕ 2	3SE5232-0PC05		1	1 unit 41K	
With increased corrosion protection							
 3SE5232-0BC05-1CA0	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0BC05-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0CC05-1CA0		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0KC05-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0LC05-1CA0		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5232-0MC05-1CA0		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5232-0PC05-1CA0		1	1 unit 41K
With M12 device plug, 4-pole (250 V, 4 A)							
 3SE5232-1KC05	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5234-0BC05-1AC4		1	1 unit 41K
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ 2	3SE5234-0HC05-1AC4		1	1 unit 41K
	Slow-action contacts	2 NC --	⊕ 5	3SE5234-0KC05-1AE0		1	1 unit 41K
	Snap-action contacts	2 NC --	⊕ 2	3SE5234-0LC05-1AE0		1	1 unit 41K
	With 2 LEDs, yellow/green						
 3SE5232-1KC05	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5232-1KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5232-1LC05		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5232-3KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5232-3LC05		1	1 unit 41K
With M12 device plug, 5-pole (125 V, 4 A), and 2 LEDs							
 3SE5234-0LC05-1AE2	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5234-1BC05-1AF3		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5234-1CC05-1AF3		1	1 unit 41K
With M12 device plug, 5-pole (125 V, 4 A), with pin assignment as for SIMATIC ET 200⁴⁾ NEW							
	Snap-action contacts	1 NO + 1 NC 24 V DC	⊕ X	3SE5234-0LC05-1AE2		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) A cable gland with seal must be used with the quick-connect method.

2) Popular versions.

3) Subsequent replacement of contact blocks is not possible.


4) The 3SE5234-.....-1AE2 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all compact block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN, ET 200eco PN-F and ET 200AL series with IP65/IP67 degree of protection for cabinet-free installation directly at the machine.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 31 mm according to EN 50047

2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5¹⁾

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Complete units²⁾ · Enclosure width 31 mm							
Roller plungers, type C, acc. to EN 50047							
With plastic roller 10 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0BD03		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5232-0HD03		1	1 unit 41K
	• Integrated ³⁾						
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0FD03		1	1 unit 41K
	• Short stroke, integrated ³⁾						
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0KD03		1	1 unit 41K
3SE5232-0BD03	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0LD03		1	1 unit 41K
Actuator head rotated by 90°							
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0LD03-1AH0		1	1 unit 41K
With M12 device plug, 4-pole (250 V, 4 A)							
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ 5	3SE5234-0HD03-1AC4		1	1 unit 41K
With M12 device plug, 5-pole (125 V, 4 A), with pin assignment as for SIMATIC ET 200⁴⁾ NEW							
	Snap-action contacts	1 NO + 2 NC --	⊕ X	3SE5234-0LD03-1AE2		1	1 unit 41K
With yellow cover							
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0LD03-1AG0		1	1 unit 41K
3SE5232-0LD03-1AG0							
Roller plungers with central fixing							
With plastic roller 10 mm							
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ 5	3SE5232-0HD10		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0KD10		1	1 unit 41K
3SE5232-0HD10							
Roller levers, type E acc. to EN 50047							
With metal lever and plastic roller 13 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕ 2	3SE5232-0BE10		1	1 unit 41K
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ ▶	3SE5232-0HE10		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0KE10		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0LE10		1	1 unit 41K
3SE5232-0HE10							
With increased corrosion protection, with high-grade steel lever and plastic roller 13 mm							
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0CE12-1CA0		1	1 unit 41K
With M12 device plug, 4-pole (250 V, 4 A)							
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ 5	3SE5234-0HE10-1AC4		1	1 unit 41K
With M12 device plug, 5-pole (125 V, 4 A), with pin assignment as for SIMATIC ET 200⁴⁾ NEW							
	Snap-action contacts	1 NO + 2 NC --	⊕ X	3SE5234-0LE11-1AE2		1	1 unit 41K
With high-grade steel lever and plastic roller 13 mm							
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0LE12		1	1 unit 41K
Angular roller lever							
With metal lever and plastic roller 13 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0BF10		1	1 unit 41K
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ 2	3SE5232-0HF10		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0KF10		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0LF10		1	1 unit 41K
3SE5232-0BF10							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) A cable gland with seal must be used with the quick-connect method.

2) Popular versions.

3) Subsequent replacement of contact blocks is not possible.






4) The 3SE5234-.....-1AE2 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all compact block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN, ET 200eco PN-F and ET 200AL series with IP65/IP67 degree of protection for cabinet-free installation directly at the machine.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 31 mm according to EN 50047

2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5¹⁾

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Complete units²⁾ · Enclosure width 31 mm							
	Spring rod						
	Length 142.5 mm, with plastic plunger 50 mm						
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	2	3SE5232-0HR01		1	1 unit 41K
	With M12 device plug, 4-pole (250 V, 4 A)						
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	5	3SE5234-0HR01-1AC4		1	1 unit 41K
	Twist levers, type A, acc. to EN 50047						
	With metal lever 21 mm and plastic roller 19 mm						
	Slow-action contacts	1 NO + 1 NC --	⊕ 2	3SE5232-0BK21		1	1 unit 41K
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ 5	3SE5232-0HK21		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0KK21		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0LK21		1	1 unit 41K
	With M12 device plug, 4-pole (250 V, 4 A)						
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ 5	3SE5234-0HK21-1AC4		1	1 unit 41K
	Twist levers, adjustable length						
	With metal lever with grid hole and plastic roller 19 mm						
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ 2	3SE5232-0HK60		1	1 unit 41K
	With metal lever and plastic roller 19 mm						
	Slow-action contacts	1 NO + 1 NC --	5	3SE5232-0BK50		1	1 unit 41K
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	▶	3SE5232-0HK50		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	5	3SE5232-0LK50		1	1 unit 41K
	With M12 device plug, 4-pole (250 V, 4 A)						
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	5	3SE5234-0HK50-1AC4		1	1 unit 41K
	Rod actuator						
	With aluminum rod, length 200 mm						
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	5	3SE5232-0HK80		1	1 unit 41K
	With plastic rod, length 200 mm						
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	5	3SE5232-0HK82		1	1 unit 41K
	With M12 device plug, 4-pole (250 V, 4 A)						
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	5	3SE5234-0HK82-1AC4		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) A cable gland with seal must be used with the quick-connect method.

2) Popular versions.

3) Subsequent replacement of contact blocks is not possible.

Note:If the device you require is not available as a complete unit, see [Modular system, page 12/16](#).






SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 31 mm according to EN 50047

Modular system

2 or 3 contacts · Degree of protection IP65 · Cable entry M20 × 1.5¹⁾

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Basic switches · Enclosure width 31 mm (with rounded plunger²⁾)							
Teflon plungers							
	Slow-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5232-0BC05		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0CC05		1	1 unit 41K
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ ▶	3SE5232-0HC05		1	1 unit 41K
	Snap-action contacts • Short stroke, integrated ³⁾	1 NO + 1 NC --	⊕ 5	3SE5232-0FC05		1	1 unit 41K
	Snap-action contacts • 2 × 2 mm contact gap	1 NO + 1 NC --	⊕ 15	3SE5232-0GC05		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ ▶	3SE5232-0KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ ▶	3SE5232-0LC05		1	1 unit 41K
	Snap-action contacts with make-before-break	1 NO + 2 NC --	⊕ 2	3SE5232-0MC05		1	1 unit 41K
Slow-action contacts	2 NO + 1 NC --	⊕ 2	3SE5232-0PC05		1	1 unit 41K	
Increased corrosion protection⁴⁾							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0BC05-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0CC05-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0KC05-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0LC05-1CA0		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5232-0MC05-1CA0		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5232-0PC05-1CA0		1	1 unit 41K
M12 device plug, 4-pole (250 V, 4 A)							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5234-0BC05-1AC4		1	1 unit 41K
	Snap-action contacts, integrated ³⁾	1 NO + 1 NC --	⊕ 2	3SE5234-0HC05-1AC4		1	1 unit 41K
	Slow-action contacts	2 NC --	⊕ 5	3SE5234-0KC05-1AE0		1	1 unit 41K
	Snap-action contacts	2 NC --	⊕ 2	3SE5234-0LC05-1AE0		1	1 unit 41K
2 LEDs yellow/green							
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5232-1KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5232-1LC05		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5232-3KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5232-3LC05		1	1 unit 41K
M12 device plug, 5-pole (125 V, 4 A), and 2 LEDs							
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5234-1BC05-1AF3		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5234-1CC05-1AF3		1	1 unit 41K
With M12 device plug, 5-pole (125 V, 4 A), with pin assignment as for SIMATIC ET 200⁵⁾ NEW							
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ X	3SE5234-0LC05-1AE2		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

¹⁾ A cable gland with seal must be used with the quick-connect method.

²⁾ For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

³⁾ Subsequent replacement of contact blocks is not possible.

⁴⁾ Use corresponding high-grade steel lever.

⁵⁾ The 3SE5234-.....-1AE2 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all compact block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN, ET 200eco PN-F and ET 200AL series with IP65/IP67 degree of protection for cabinet-free installation directly at the machine.











Note:

For the selection aid, see page 12/11.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 31 mm according to EN 50047

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG	
	mm	d	Article No.	Price per PU			
Operating mechanisms							
	Roller plungers, type C, acc. to EN 50047						
	Plastic rollers	10	⊕ 2	3SE5000-0AD03	1	1 unit	41K
3SE5000-0AD03	High-grade steel rollers	10	⊕ 5	3SE5000-0AD04	1	1 unit	41K
	Roller plungers with central fixing						
	Plastic rollers	10	⊕ 2	3SE5000-0AD10	1	1 unit	41K
3SE5000-0AD10	High-grade steel rollers	10	⊕ 5	3SE5000-0AD11	1	1 unit	41K
	Roller levers, type E, acc. to EN 50047						
	Metal lever, plastic roller	13	⊕ 2	3SE5000-0AE10	1	1 unit	41K
	Metal lever, high-grade steel roller	13	⊕ 5	3SE5000-0AE11	1	1 unit	41K
	High-grade steel lever, plastic roller	13	⊕ 5	3SE5000-0AE12	1	1 unit	41K
3SE5000-0AE10	High-grade steel lever, high-grade steel roller	13	⊕ 5	3SE5000-0AE13	1	1 unit	41K
	Angular roller levers						
	Metal lever, plastic roller	13	⊕ 2	3SE5000-0AF10	1	1 unit	41K
	Metal lever, high-grade steel roller	13	⊕ 5	3SE5000-0AF11	1	1 unit	41K
	High-grade steel lever, plastic roller	13	⊕ 2	3SE5000-0AF12	1	1 unit	41K
3SE5000-0AF10	High-grade steel lever, high-grade steel roller	13	⊕ 5	3SE5000-0AF13	1	1 unit	41K
	Spring rods (for switches with snap-action contacts only)						
	Plunger made of plastic, spring of high-grade steel: 7						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)	5		3SE5000-0AR01	1	1 unit	41K
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)	5		3SE5000-0AR03	1	1 unit	41K
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)	5		3SE5000-0AR04	1	1 unit	41K
	Plunger and spring made of high-grade steel: 7						
3SE5000-0AR01	• Length 142.5 mm (spring 50 mm, plunger 50 mm)	5		3SE5000-0AR02	1	1 unit	41K
Twist actuators							
	Twist actuators, for 31 mm/50 mm, EN 50047						
	Switching right and/or left, adjustable		⊕ 2	3SE5000-0AK00	1	1 unit	41K
	Levers						
	Twist levers 21 mm, straight, type A acc. to EN 50047						
3SE5000-0AA00	Metal lever, plastic roller	19	⊕ 2	3SE5000-0AA21	1	1 unit	41K
	Metal lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA22	1	1 unit	41K
	Metal lever, high-grade steel roller with ball bearing	19	⊕ 5	3SE5000-0AA23	1	1 unit	41K
	Metal lever, plastic roller	30	⊕ 5	3SE5000-0AA25	1	1 unit	41K
	High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA31	1	1 unit	41K
3SE5000-0AA21	High-grade steel lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA32	1	1 unit	41K
	Twist levers 30 mm, straight						
	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA24	1	1 unit	41K
	Metal lever, plastic roller	30	⊕ 5	3SE5000-0AA26	1	1 unit	41K
	Twist levers, adjustable length, with grid hole						
	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA60	1	1 unit	41K
	Metal lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA61	1	1 unit	41K
	Metal lever, plastic roller	50	⊕ 5	3SE5000-0AA67	1	1 unit	41K
	Metal lever, rubber roller	50	⊕ 5	3SE5000-0AA68	1	1 unit	41K
	High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA62	1	1 unit	41K
	3SE5000-0AA60	High-grade steel lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA63	1	1 unit
3SE5000-0AA50	Twist levers, adjustable length						
	Metal lever, plastic roller	19	2	3SE5000-0AA50	1	1 unit	41K
	Metal lever, high-grade steel roller	19	5	3SE5000-0AA51	1	1 unit	41K
	Metal lever, plastic roller	30	5	3SE5000-0AA55	1	1 unit	41K
	Metal lever, plastic roller	50	5	3SE5000-0AA57	1	1 unit	41K
	Metal lever, rubber roller	50	5	3SE5000-0AA58	1	1 unit	41K
	High-grade steel lever, plastic roller	19	5	3SE5000-0AA52	1	1 unit	41K
3SE5000-0AA80	High-grade steel lever, high-grade steel roller	19	5	3SE5000-0AA53	1	1 unit	41K
	Rod actuator						
	Aluminum rod, length 200 mm	6	5	3SE5000-0AA80	1	1 unit	41K
	Spring rod, length 200 mm	6	5	3SE5000-0AA81	1	1 unit	41K
	Plastic rod, length 200 mm	6	5	3SE5000-0AA82	1	1 unit	41K

⊕ Positively driven actuator, necessary in safety circuits.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS 3SE5 Mechanical Position Switches







3SE5, Plastic Enclosures

Enclosure width 40 mm according to EN 50041

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Complete units¹⁾ · Enclosure width 40 mm							
Plain plungers							
With high-grade steel plunger							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0BB01		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0CB01		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0KB01		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0LB01		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5132-0PB01		1	1 unit 41K
3SE5132-0BB01							
Rounded plungers, type B, acc. to EN 50041							
With plastic plunger							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0BC03		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5132-0CC03		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0KC03		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0LC03		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5132-0PC03		1	1 unit 41K
3SE5132-0BC03							
Roller plungers, type C, acc. to EN 50041							
With plastic roller 13 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0BD05		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5132-0CD05		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0KD05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0LD05		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5132-0PD05		1	1 unit 41K
3SE5132-0BD05							
Roller levers							
With metal lever and plastic roller 22 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0BE05		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5132-0CE05		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0KE05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0LE05		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5132-0PE05		1	1 unit 41K
3SE5132-0BE05							
Angular roller lever							
With metal lever and plastic roller 22 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0BF05		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0CF05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0LF05		1	1 unit 41K
3SE5132-0BF05							
Spring rod							
Length 142.5 mm, with plastic plunger 50 mm							
	Snap-action contacts	1 NO + 1 NC --	5	3SE5132-0CR01		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	5	3SE5132-0LR01		1	1 unit 41K
3SE5132-0CR01							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.





¹⁾ Popular versions.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 40 mm according to EN 50041

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Complete units¹⁾ · Enclosure width 40 mm							
Twist levers, type A, acc. to EN 50041							
With metal lever 27 mm and plastic roller 19 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕ 2	3SE5132-0BJ01		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5132-0CJ01		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0KJ01		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0LJ01		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5132-0PJ01		1	1 unit 41K
Twist levers, adjustable length							
With metal lever with grid hole and plastic roller 19 mm							
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0CJ60		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0LJ60		1	1 unit 41K
With metal lever and plastic roller 19 mm							
	Snap-action contacts	1 NO + 1 NC --	2	3SE5132-0CJ50		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	5	3SE5132-0LJ50		1	1 unit 41K
Rod actuators, type D, acc. to EN 50041							
With aluminum rod, length 200 mm							
	Snap-action contacts	1 NO + 1 NC --	5	3SE5132-0CJ80		1	1 unit 41K
	With plastic rod, length 200 mm						
	Snap-action contacts	1 NO + 1 NC --	2	3SE5132-0CJ82		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.

Note:If the device you require is not available as a complete unit, see [Modular system, page 12/20](#).





SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 40 mm according to EN 50041

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Basic switches • Enclosure width 40 mm							
	Connecting thread M20 × 1.5						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0BA00		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0CA00		1	1 unit 41K
	• Gold-plated contacts		⊕ 5	3SE5132-0CA00-1AC1		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0KA00		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0LA00		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5132-0MA00		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5132-0PA00		1	1 unit 41K
	Increased corrosion protection¹⁾						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0BA00-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5132-0CA00-1CA0		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0KA00-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0LA00-1CA0		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5132-0MA00-1CA0		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5132-0PA00-1CA0		1	1 unit 41K
		M12 device plug, 4-pole (250 V, 4 A)					
Slow-action contacts		1 NO + 1 NC --	⊕ 5	3SE5134-0BA00-1AC4		1	1 unit 41K
Snap-action contacts		1 NO + 1 NC --	⊕ 5	3SE5134-0CA00-1AC4		1	1 unit 41K
Slow-action contacts		2 NC --	⊕ 5	3SE5134-0KA00-1AE0		1	1 unit 41K
Snap-action contacts		2 NC --	⊕ 5	3SE5134-0LA00-1AE0		1	1 unit 41K
	2 LEDs, yellow/green						
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5132-1KA00		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5132-1LA00		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5132-3KA00		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5132-3LA00		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

¹⁾ Use corresponding high-grade steel lever.


































Note:

For the selection aid, see page 12/11.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 40 mm according to EN 50041

Version	Diameter	SD	Modular system	 PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		
Operating mechanisms						
 3SE5000-0AB01	Plain plungers High-grade steel plunger	10	⊕ 2	3SE5000-0AB01	1	1 unit 41K
 3SE5000-0AC03	Rounded plungers, type B, acc. to EN 50041 Plastic plungers	10	⊕ 5	3SE5000-0AC03	1	1 unit 41K
 3SE5000-0AD05 3SE5000-0AD06	Roller plungers, type C, acc. to EN 50041 Plastic plunger, plastic roller Plastic plunger, high-grade steel roller	13 13	⊕ 5 ⊕ 5	3SE5000-0AD05 3SE5000-0AD06	1 1	1 unit 41K 1 unit 41K
 3SE5000-0AE05	Roller levers Metal lever with plastic roller, plastic base	22	⊕ 5	3SE5000-0AE05	1	1 unit 41K
 3SE5000-0AF05	Angular roller levers Metal lever with plastic roller, plastic base	22	⊕ 5	3SE5000-0AF05	1	1 unit 41K
 3SE5000-0AR01	Spring rods (for switches with snap-action contacts only) Plunger made of plastic, spring of high-grade steel: • Length 142.5 mm (spring 50 mm, plunger 50 mm) • Length 76 mm (spring 23.5 mm, plunger 10 mm) • Length 242.5 mm (spring 150 mm, plunger 50 mm) Plunger and spring made of high-grade steel: • Length 142.5 mm (spring 50 mm, plunger 50 mm)	7 7	5 5 5 5	3SE5000-0AR01 3SE5000-0AR03 3SE5000-0AR04 3SE5000-0AR02	1 1 1 1	1 unit 41K 1 unit 41K 1 unit 41K 1 unit 41K
Twist actuators						
 3SE5000-0AH00	Twist actuators, for 40 mm, EN 50041 • For twist levers and rod actuators, switching right and/or left, adjustable		⊕ 2	3SE5000-0AH00	1	1 unit 41K
Levers						
 3SE5000-0AA01	Twist levers, offset, type A, acc. to EN 50041 Metal lever 27 mm, plastic roller	19	⊕ 2	3SE5000-0AA01	1	1 unit 41K
 3SE5000-0AA01	Metal lever 27 mm, high-grade steel roller	19	⊕ 2	3SE5000-0AA02	1	1 unit 41K
 3SE5000-0AA01	Metal lever 27 mm, high-grade steel roller with ball bearing	19	⊕ 5	3SE5000-0AA03	1	1 unit 41K
 3SE5000-0AA01	Metal lever 27 mm, 2 plastic rollers	19	⊕ 5	3SE5000-0AA04	1	1 unit 41K
 3SE5000-0AA01	Metal lever 27 mm, plastic roller	30	⊕ 5	3SE5000-0AA05	1	1 unit 41K
 3SE5000-0AA01	Metal lever 27 mm, rubber roller	50	⊕ 5	3SE5000-0AA08	1	1 unit 41K
 3SE5000-0AA01	High-grade steel lever 27 mm, plastic roller	19	⊕ 5	3SE5000-0AA11	1	1 unit 41K
 3SE5000-0AA01	High-grade steel lever 27 mm, high-grade steel roller	19	⊕ 5	3SE5000-0AA12	1	1 unit 41K
 3SE5000-0AA01	Metal lever 35 mm, plastic roller	19	⊕ 5	3SE5000-0AA15	1	1 unit 41K
 3SE5000-0AA01	High-grade steel lever 35 mm, plastic roller	19	⊕ 5	3SE5000-0AA16	1	1 unit 41K
Twist levers 30 mm, straight						
 3SE5000-0AA24	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA24	1	1 unit 41K
 3SE5000-0AA26	Metal lever, plastic roller	30	⊕ 5	3SE5000-0AA26	1	1 unit 41K
Twist levers, adjustable length, with grid hole						
 3SE5000-0AA60	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA60	1	1 unit 41K
 3SE5000-0AA61	Metal lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA61	1	1 unit 41K
 3SE5000-0AA68	Metal lever, rubber roller	50	⊕ 5	3SE5000-0AA68	1	1 unit 41K
 3SE5000-0AA62	High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA62	1	1 unit 41K
 3SE5000-0AA63	High-grade steel lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA63	1	1 unit 41K
Twist levers, adjustable length						
 3SE5000-0AA50	Metal lever, plastic roller	19	2	3SE5000-0AA50	1	1 unit 41K
 3SE5000-0AA51	Metal lever, high-grade steel roller	19	5	3SE5000-0AA51	1	1 unit 41K
 3SE5000-0AA55	Metal lever, plastic roller	30	5	3SE5000-0AA55	1	1 unit 41K
 3SE5000-0AA58	Metal lever, rubber roller	50	5	3SE5000-0AA58	1	1 unit 41K
 3SE5000-0AA52	High-grade steel lever, plastic roller	19	5	3SE5000-0AA52	1	1 unit 41K
 3SE5000-0AA53	High-grade steel lever, high-grade steel roller	19	5	3SE5000-0AA53	1	1 unit 41K
Rod actuators, type D, acc. to EN 50041						
 3SE5000-0AA80	Aluminum rod, length 200 mm	6	5	3SE5000-0AA80	1	1 unit 41K
 3SE5000-0AA81	Spring rod, length 200 mm	6	5	3SE5000-0AA81	1	1 unit 41K
 3SE5000-0AA82	Plastic rod, length 200 mm	6	5	3SE5000-0AA82	1	1 unit 41K

⊕ Positively driven actuator, necessary in safety circuits.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 50 mm





Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 2 × (M20 × 1.5)

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		

Complete units¹⁾ · Enclosure width 50 mm

 3SE5242-0BC05	Rounded plungers						
	With teflon plunger						
	Slow-action contacts	1 NO + 1 NC --	⊕ 2	3SE5242-0BC05	1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5242-0CC05	1	1 unit	41K
	Snap-action contacts, integrated ²⁾	1 NO + 1 NC --	⊕ ▶	3SE5242-0HC05	1	1 unit	41K
	Snap-action contacts • Short stroke, integrated ²⁾	1 NO + 1 NC --	⊕ 15	3SE5242-0FC05	1	1 unit	41K
	Snap-action contacts • 2 × 2 mm contact gap	1 NO + 1 NC --	⊕ 30	3SE5242-0GC05	1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5242-0KC05	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5242-0LC05	1	1 unit	41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5242-0MC05	1	1 unit	41K
Slow-action contacts	2 NO + 1 NC --	⊕ 2	3SE5242-0PC05	1	1 unit	41K	
 3SE5242-0BC05-1CA0	With increased corrosion protection						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5242-0BC05-1CA0	1	1 unit	41K
	Snap-action contacts, integrated ²⁾	1 NO + 1 NC --	⊕ 30	3SE5242-0HC05-1CA0	1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5242-0KC05-1CA0	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5242-0LC05-1CA0	1	1 unit	41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5242-0MC05-1CA0	1	1 unit	41K
Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5242-0PC05-1CA0	1	1 unit	41K	
 3SE5242-1KC05	With 2 LEDs, yellow/green						
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5242-1KC05	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5242-1LC05	1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5242-3KC05	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5242-3LC05	1	1 unit	41K
 3SE5242-0BD03	Roller plunger						
	With plastic roller 10 mm						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5242-0BD03	1	1 unit	41K
	Snap-action contacts, integrated ²⁾	1 NO + 1 NC --	⊕ 5	3SE5242-0HD03	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5242-0LD03	1	1 unit	41K	

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.

2) Subsequent replacement of contact blocks is not possible.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 50 mm

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 2 × (M20 × 1.5)

Version	Contacts	LEDs	SD	Complete units	<input type="checkbox"/>	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU			

Complete units¹⁾ · Enclosure width 50 mm



3SE5242-0BE10

Roller levers

With metal lever and plastic roller 13 mm

Slow-action contacts	1 NO + 1 NC --	⊕	5	3SE5242-0BE10		1	1 unit	41K
Snap-action contacts, integrated ²⁾	1 NO + 1 NC --	⊕	2	3SE5242-0HE10		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC --	⊕	5	3SE5242-0LE10		1	1 unit	41K

With M12 device plug, 4-pole right (250 V, 4 A)

Snap-action contacts	2 NC --	⊕	5	3SE5244-0LE10-1AE0		1	1 unit	41K
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3SE5242-0BK21

Twist levers

With metal lever 21 mm and plastic roller 19 mm

Slow-action contacts	1 NO + 1 NC --	⊕	5	3SE5242-0BK21		1	1 unit	41K
Snap-action contacts, integrated ²⁾	1 NO + 1 NC --	⊕	5	3SE5242-0HK21		1	1 unit	41K
Snap-action contacts	1 NO + 2 NC --	⊕	5	3SE5242-0LK21		1	1 unit	41K

Twist levers, adjustable length

With metal lever and plastic roller 19 mm

Snap-action contacts, integrated ²⁾	1 NO + 1 NC --		5	3SE5242-0HK50		1	1 unit	41K
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3SE5242-0HK50

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.

2) Subsequent replacement of contact blocks is not possible.

Note:

If the device you require is not available as a complete unit, see [Modular system, page 12/24](#).




SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 50 mm

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 2 × (M20 × 1.5)

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Basic switches · Enclosure width 50 mm (with rounded plunger¹⁾)							
Teflon plungers							
 3SE5242-0BC05	Slow-action contacts	1 NO + 1 NC --	⊕ 2	3SE5242-0BC05		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5242-0CC05		1	1 unit 41K
	Snap-action contacts, integrated ²⁾	1 NO + 1 NC --	⊕ ▶	3SE5242-0HC05		1	1 unit 41K
	Snap-action contacts • Short stroke, integrated ²⁾	1 NO + 1 NC --	⊕ 15	3SE5242-0FC05		1	1 unit 41K
	Snap-action contacts • 2 × 2 mm contact gap	1 NO + 1 NC --	⊕ 30	3SE5242-0GC05		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5242-0KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5242-0LC05		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5242-0MC05		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 2	3SE5242-0PC05		1	1 unit 41K
	Increased corrosion protection³⁾						
 3SE5242-0BC05-1CA0	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5242-0BC05-1CA0		1	1 unit 41K
	Snap-action contacts, integrated ²⁾	1 NO + 1 NC --	⊕ 30	3SE5242-0HC05-1CA0		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5242-0KC05-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5242-0LC05-1CA0		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5242-0MC05-1CA0		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5242-0PC05-1CA0		1	1 unit 41K
2 LEDs yellow/green							
 3SE5242-1KC05	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5242-1KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5242-1LC05		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5242-3KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5242-3LC05		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.



1) For enclosures with widths of 50 mm, the basic switch is a complete unit with rounded plungers.

2) Subsequent replacement of contact blocks is not possible.

3) Use corresponding high-grade steel lever.

Note:

For the selection aid, see page 12/11.






Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		
Operating mechanisms						
Roller plungers, type C, acc. to EN 50047						
 3SE5000-0AD03	Plastic rollers	10	⊕ 2	3SE5000-0AD03		1 1 unit 41K
	High-grade steel rollers	10	⊕ 5	3SE5000-0AD04		1 1 unit 41K
Roller plungers with central fixing						
 3SE5000-0AD10	Plastic rollers	10	⊕ 2	3SE5000-0AD10		1 1 unit 41K
	High-grade steel rollers	10	⊕ 5	3SE5000-0AD11		1 1 unit 41K

⊕ Positively driven actuator, necessary in safety circuits.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Plastic Enclosures

Enclosure width 50 mm

Version	Diameter	SD	Modular system	 PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		
Operating mechanisms						
	Roller levers, type E, acc. to EN 50047					
3SE5000-0AE10	Metal lever, plastic roller	13	⊕ 2	3SE5000-0AE10	1	1 unit 41K
	Metal lever, high-grade steel roller	13	⊕ 5	3SE5000-0AE11	1	1 unit 41K
	High-grade steel lever, plastic roller	13	⊕ 5	3SE5000-0AE12	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	13	⊕ 5	3SE5000-0AE13	1	1 unit 41K
	Angular roller levers					
3SE5000-0AF10	Metal lever, plastic roller	13	⊕ 2	3SE5000-0AF10	1	1 unit 41K
	Metal lever, high-grade steel roller	13	⊕ 5	3SE5000-0AF11	1	1 unit 41K
	High-grade steel lever, plastic roller	13	⊕ 2	3SE5000-0AF12	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	13	⊕ 5	3SE5000-0AF13	1	1 unit 41K
	Spring rods (for switches with snap-action contacts only)					
3SE5000-0AR01	Plunger made of plastic, spring of high-grade steel: 7					
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	3SE5000-0AR01	1	1 unit 41K
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	3SE5000-0AR03	1	1 unit 41K
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	3SE5000-0AR04	1	1 unit 41K
	Plunger and spring made of high-grade steel: 7					
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	3SE5000-0AR02	1	1 unit 41K
Twist actuators						
	Twist actuators, for 31 mm/50 mm, EN 50047					
3SE5000-0AK00	Switching right and/or left, adjustable		⊕ 2	3SE5000-0AK00	1	1 unit 41K
Levers						
Twist levers 21 mm, straight, type A acc. to EN 50047						
	Metal lever, plastic roller	19	⊕ 2	3SE5000-0AA21	1	1 unit 41K
	Metal lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA22	1	1 unit 41K
	Metal lever, high-grade steel roller with ball bearing	19	⊕ 5	3SE5000-0AA23	1	1 unit 41K
	Metal lever, plastic roller	30	⊕ 5	3SE5000-0AA25	1	1 unit 41K
3SE5000-0AA21	High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA31	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA32	1	1 unit 41K
Twist levers 30 mm, straight						
	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA24	1	1 unit 41K
	Metal lever, plastic roller	30	⊕ 5	3SE5000-0AA26	1	1 unit 41K
Twist levers, adjustable length, with grid hole						
	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA60	1	1 unit 41K
	Metal lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA61	1	1 unit 41K
	Metal lever, plastic roller	50	⊕ 5	3SE5000-0AA67	1	1 unit 41K
3SE5000-0AA60	Metal lever, rubber roller	50	⊕ 5	3SE5000-0AA68	1	1 unit 41K
3SE5000-0AA24	High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA62	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA63	1	1 unit 41K
Twist levers, adjustable length						
	Metal lever, plastic roller	19	2	3SE5000-0AA50	1	1 unit 41K
	Metal lever, high-grade steel roller	19	5	3SE5000-0AA51	1	1 unit 41K
	Metal lever, plastic roller	30	5	3SE5000-0AA55	1	1 unit 41K
	Metal lever, plastic roller	50	5	3SE5000-0AA57	1	1 unit 41K
	Metal lever, rubber roller	50	5	3SE5000-0AA58	1	1 unit 41K
	High-grade steel lever, plastic roller	19	5	3SE5000-0AA52	1	1 unit 41K
3SE5000-0AA50	High-grade steel lever, high-grade steel roller	19	5	3SE5000-0AA53	1	1 unit 41K
Rod actuator						
	Aluminum rod, length 200 mm	6	5	3SE5000-0AA80	1	1 unit 41K
	Spring rod, length 200 mm	6	5	3SE5000-0AA81	1	1 unit 41K
	Plastic rod, length 200 mm	6	5	3SE5000-0AA82	1	1 unit 41K

⊕ Positively driven actuator, necessary in safety circuits.

SIRIUS 3SE5 Mechanical Position Switches







3SE5, Metal Enclosures

Enclosure width 31 mm according to EN 50047

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG	
			d	Article No.	Price per PU			
Complete units¹⁾ · Enclosure width 31 mm								
Rounded plungers, type B, acc. to EN 50047								
With plunger								
	Slow-action contacts	1 NO + 1 NC --	⊕ 2	3SE5212-0BC05		1	1 unit 41K	
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5212-0CC05		1	1 unit 41K	
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KC05		1	1 unit 41K	
	Snap-action contacts	1 NO + 2 NC --	⊕ 2	3SE5212-0LC05		1	1 unit 41K	
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 2	3SE5212-0MC05		1	1 unit 41K	
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5212-0PC05		1	1 unit 41K	
	With increased corrosion protection							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0BC05-1CA0		1	1 unit 41K	
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0CC05-1CA0		1	1 unit 41K	
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KC05-1CA0		1	1 unit 41K	
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0LC05-1CA0		1	1 unit 41K	
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5212-0MC05-1CA0		1	1 unit 41K	
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5212-0PC05-1CA0		1	1 unit 41K	
	With M12 device plug, 5-pole (125 V, 4 A)							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5214-0BC05-1AC5		1	1 unit 41K	
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5214-0CC05-1AC5		1	1 unit 41K	
	Slow-action contacts	2 NC --	⊕ 5	3SE5214-0KC05-1AE1		1	1 unit 41K	
	Snap-action contacts	2 NC --	⊕ 5	3SE5214-0LC05-1AE1		1	1 unit 41K	
	With 2 LEDs, yellow/green							
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5212-1KC05		1	1 unit 41K	
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ 2	3SE5212-1LC05		1	1 unit 41K	
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5212-3KC05		1	1 unit 41K	
	Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5212-3LC05		1	1 unit 41K	
	With M12 device plug, 5-pole (125 V, 4 A), and 2 LEDs							
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5214-1BC05-1AF3		1	1 unit 41K	
	Snap-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5214-1CC05-1AF3		1	1 unit 41K	
Plain plungers								
With high-grade steel plunger								
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0BB01		1	1 unit 41K	
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0CB01		1	1 unit 41K	
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KB01		1	1 unit 41K	
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0LB01		1	1 unit 41K	
	Roller plungers, type C, acc. to EN 50047							
With plastic roller 10 mm								
	Slow-action contacts	1 NO + 1 NC --	⊕ 2	3SE5212-0BD03		1	1 unit 41K	
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0CD03		1	1 unit 41K	
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KD03		1	1 unit 41K	
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0LD03		1	1 unit 41K	

⊕ Positive opening according to IEC 60947-5-1, Appendix K.






1) Popular versions.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 31 mm according to EN 50047

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Complete units¹⁾ · Enclosure width 31 mm							
	Roller plungers with central fixing With plastic roller 10 mm						
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KD10		1	1 unit 41K
3SE5212-0KD10							
	Roller levers, type E acc. to EN 50047 With metal lever and plastic roller 13 mm						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0BE10		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0CE10		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KE10		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0LE10		1	1 unit 41K
3SE5212-0BE10							
	Angular roller lever With metal lever and plastic roller 13 mm						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0BF10		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0CF10		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KF10		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0LF10		1	1 unit 41K
3SE5212-0BF10							
	Twist levers, type A, acc. to EN 50047 With metal lever 21 mm and plastic roller 19 mm						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0BK21		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0CK21		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KK21		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0LK21		1	1 unit 41K
3SE5212-0BK21							
	Twist levers, adjustable length With metal lever with grid hole and plastic roller 19 mm						
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0CK60		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KK60		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0LK60		1	1 unit 41K
	With metal lever and plastic roller 19 mm						
	Slow-action contacts	1 NO + 1 NC --	5	3SE5212-0BK50		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	5	3SE5212-0CK50		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	5	3SE5212-0LK50		1	1 unit 41K
3SE5212-0CK60							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.

Note:If the device you require is not available as a complete unit, see [Modular system, page 12/28](#).






SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 31 mm according to EN 50047

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Basic switches · Enclosure width 31 mm (with rounded plunger¹⁾)							
Plunger							
 3SE5212-0BC05	Slow-action contacts	1 NO + 1 NC --	⊕ 2	3SE5212-0BC05		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5212-0CC05		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 2	3SE5212-0LC05		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 2	3SE5212-0MC05		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5212-0PC05		1	1 unit 41K
Increased corrosion protection²⁾							
 3SE5212-0BC05-1CA0	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0BC05-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0CC05-1CA0		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KC05-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0LC05-1CA0		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5212-0MC05-1CA0		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5212-0PC05-1CA0		1	1 unit 41K
M12 device plug, 5-pole (125 V, 4 A)							
 3SE5214-0BC05-1AC5	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5214-0BC05-1AC5		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5214-0CC05-1AC5		1	1 unit 41K
	Slow-action contacts	2 NC --	⊕ 5	3SE5214-0KC05-1AE1		1	1 unit 41K
	Snap-action contacts	2 NC --	⊕ 5	3SE5214-0LC05-1AE1		1	1 unit 41K
2 LEDs yellow/green							
 3SE5212-1KC05	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5212-1KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ 2	3SE5212-1LC05		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5212-3KC05		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5212-3LC05		1	1 unit 41K
M12 device plug, 5-pole (125 V, 4 A), and 2 LEDs							
 3SE5214-1BC05-1AF3	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5214-1BC05-1AF3		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5214-1CC05-1AF3		1	1 unit 41K
	Snap-action contacts	NEW 1 NO + 1 NC 24 V DC	⊕ 5	3SE5114-1CA00-1AF5		1	1 unit 41K



⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

2) Use corresponding high-grade steel lever.

Note:

For the selection aid, see page 12/11.









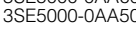
Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		
Operating mechanisms						
Plain plungers						
 3SE5000-0AB01	High-grade steel plunger	10	⊕ 2	3SE5000-0AB01		1 1 unit 41K
Roller plungers, type C, acc. to EN 50047						
 3SE5000-0AD03	Plastic rollers	10	⊕ 2	3SE5000-0AD03		1 1 unit 41K
	High-grade steel rollers	10	⊕ 5	3SE5000-0AD04		1 1 unit 41K

⊕ Positively driven actuator, necessary in safety circuits.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 31 mm according to EN 50047

Version	Diameter	SD	Modular system		PU (UNIT, SET, M)	PS*	PG	
	mm	d	Article No.	Price per PU				
Operating mechanisms								
	Roller plungers with central fixing							
	Plastic rollers	10	↻ 2	3SE5000-0AD10		1	1 unit 41K	
	High-grade steel rollers	10	↻ 5	3SE5000-0AD11		1	1 unit 41K	
3SE5000-0AD10								
	Roller levers, type E, acc. to EN 50047							
	Metal lever, plastic roller	13	↻ 2	3SE5000-0AE10		1	1 unit 41K	
	Metal lever, high-grade steel roller	13	↻ 5	3SE5000-0AE11		1	1 unit 41K	
	High-grade steel lever, plastic roller	13	↻ 5	3SE5000-0AE12		1	1 unit 41K	
	High-grade steel lever, high-grade steel roller	13	↻ 5	3SE5000-0AE13		1	1 unit 41K	
3SE5000-0AE10								
	Angular roller levers							
	Metal lever, plastic roller	13	↻ 2	3SE5000-0AF10		1	1 unit 41K	
	Metal lever, high-grade steel roller	13	↻ 5	3SE5000-0AF11		1	1 unit 41K	
	High-grade steel lever, plastic roller	13	↻ 2	3SE5000-0AF12		1	1 unit 41K	
	High-grade steel lever, high-grade steel roller	13	↻ 5	3SE5000-0AF13		1	1 unit 41K	
3SE5000-0AF10								
	Spring rods (for switches with snap-action contacts only)							
	Plunger made of plastic, spring of high-grade steel:	7						
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	3SE5000-0AR01		1	1 unit 41K	
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	3SE5000-0AR03		1	1 unit 41K	
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	3SE5000-0AR04		1	1 unit 41K	
	Plunger and spring made of high-grade steel:	7						
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	3SE5000-0AR02		1	1 unit 41K		
3SE5000-0AR01								
Twist actuators								
	Twist actuators, for 31 mm/50 mm, EN 50047							
	Switching right and/or left, adjustable		↻ 2	3SE5000-0AK00		1	1 unit 41K	
3SE5000-0AK00								
	Levers							
	Twist levers, straight, type A, acc. to EN 50047							
	Metal lever 21 mm, plastic roller	19	↻ 2	3SE5000-0AA21		1	1 unit 41K	
	Metal lever 21 mm, high-grade steel roller	19	↻ 5	3SE5000-0AA22		1	1 unit 41K	
	Metal lever 21 mm, high-grade steel roller with ball bearing	19	↻ 5	3SE5000-0AA23		1	1 unit 41K	
	Metal lever 21 mm, plastic roller	30	↻ 5	3SE5000-0AA25		1	1 unit 41K	
	High-grade steel lever 21 mm, plastic roller	19	↻ 5	3SE5000-0AA31		1	1 unit 41K	
	High-grade steel lever 21 mm, high-grade steel roller	19	↻ 5	3SE5000-0AA32		1	1 unit 41K	
	3SE5000-0AA21							
	Twist levers 30 mm, straight							
Metal lever, plastic roller	19	↻ 5	3SE5000-0AA24		1	1 unit 41K		
Metal lever, plastic roller	30	↻ 5	3SE5000-0AA26		1	1 unit 41K		
3SE5000-0AA24								
	Twist levers, adjustable length, with grid hole							
	Metal lever, plastic roller	19	↻ 5	3SE5000-0AA60		1	1 unit 41K	
	Metal lever, high-grade steel roller	19	↻ 5	3SE5000-0AA61		1	1 unit 41K	
	Metal lever, plastic roller	50	↻ 5	3SE5000-0AA67		1	1 unit 41K	
	Metal lever, rubber roller	50	↻ 5	3SE5000-0AA68		1	1 unit 41K	
	High-grade steel lever, plastic roller	19	↻ 5	3SE5000-0AA62		1	1 unit 41K	
	High-grade steel lever, high-grade steel roller	19	↻ 5	3SE5000-0AA63		1	1 unit 41K	
	3SE5000-0AA60							
	Twist levers, adjustable length							
	Metal lever, plastic roller	19	2	3SE5000-0AA50		1	1 unit 41K	
	Metal lever, high-grade steel roller	19	5	3SE5000-0AA51		1	1 unit 41K	
	Metal lever, plastic roller	30	5	3SE5000-0AA55		1	1 unit 41K	
	Metal lever, plastic roller	50	5	3SE5000-0AA57		1	1 unit 41K	
	Metal lever, rubber roller	50	5	3SE5000-0AA58		1	1 unit 41K	
	High-grade steel lever, plastic roller	19	5	3SE5000-0AA52		1	1 unit 41K	
	High-grade steel lever, high-grade steel roller	19	5	3SE5000-0AA53		1	1 unit 41K	
	3SE5000-0AA50							
Rod actuators, type D, acc. to EN 50041								
Aluminum rod, length 200 mm	6	5	3SE5000-0AA80		1	1 unit 41K		
Spring rod, length 200 mm	6	5	3SE5000-0AA81		1	1 unit 41K		
Plastic rod, length 200 mm	6	5	3SE5000-0AA82		1	1 unit 41K		
Plastic rod, length 330 mm	6	5	3SE5000-0AA83		1	1 unit 41K		
3SE5000-0AA80								

↻ Positively driven actuator, necessary in safety circuits.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 40 mm according to EN 50041


Selection and ordering data


Complete units


2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		

Complete units¹⁾ · Enclosure width 40 mm


Plain plungers		With high-grade steel plunger					
	Slow-action contacts	1 NO + 1 NC --	⊕ 2	3SE5112-0BB01	1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5112-0CB01	1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0KB01	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0LB01	1	1 unit	41K


Rounded plungers, type B, acc. to EN 50041		With high-grade steel plungers, with 3 mm overtravel					
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5112-0BC02	1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5112-0CC02	1	1 unit	41K
	Snap-action contacts ²⁾	1 NO + 1 NC --	⊕ 5	3SE5112-0CC02-1AA7	1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0KC02	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0LC02	1	1 unit	41K
	Snap-action contacts with M12 device plug, 4-pole	1 NO + 1 NC --	⊕ 5	3SE5114-0CC02-1AC4	1	1 unit	41K


Roller plungers, type C, acc. to EN 50041		With high-grade steel roller 13 mm, with 3 mm overtravel					
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5112-0BD02	1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5112-0CD02	1	1 unit	41K
	Snap-action contacts ²⁾	1 NO + 1 NC --	⊕ 5	3SE5112-0CD02-1AA7	1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0KD02	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0LD02	1	1 unit	41K
	Snap-action contacts ²⁾	1 NO + 2 NC --	⊕ 5	3SE5112-0LD02-1AA7	1	1 unit	41K
	Slow-action contacts ²⁾	2 NO + 1 NC --	⊕ 5	3SE5112-0PD02-1AA7	1	1 unit	41K

With M12 device plug, 5-pole (125 V, 4 A)							
Snap-action contacts with 2 LEDs	1 NO + 1 NC 24 V DC	⊕ 5	3SE5114-1CD02-1AF3	1	1 unit	41K	
Snap-action contacts with 2 LEDs NEW	1 NO + 1 NC 24 V DC	⊕ 5	3SE5114-1CD02-1AF5	1	1 unit	41K	
Snap-action contacts without LED	1 NO + 1 NC 24 V DC	⊕ 5	3SE5114-0CD02-1AC5	1	1 unit	41K	
Snap-action contacts without LED ²⁾³⁾	1 NO + 1 NC 24 V DC	⊕ 5	3SE5114-0CD02-1AL0	1	1 unit	41K	

With M12 device plug, 5-pole (125 V, 4 A), with pin assignment as for SIMATIC ET 200³⁾							
Snap-action contacts without LED NEW	1 NO + 2 NC 24 V DC	⊕ X	3SE5114-0LD02-1AE3	1	1 unit	41K	

Roller levers		With metal lever and plastic roller 22 mm					
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5112-0BE01	1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5112-0CE01	1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0KE01	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0LE01	1	1 unit	41K

Angular roller lever		With metal lever and plastic roller 22 mm					
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5112-0BF01	1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5112-0CF01	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0LF01	1	1 unit	41K

Spring rod		Length 142.5 mm, with plastic plunger 50 mm					
	Snap-action contacts	1 NO + 1 NC --	▶	3SE5112-0CR01	1	1 unit	41K

¹⁾ Positive opening according to IEC 60947-5-1, Appendix K.

²⁾ Popular versions.

³⁾ Increased operation or restoring force 30 N; only available as complete unit, no modular design








³⁾ The 3SE5114-.....-1AE3 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all compact block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN, ET 200eco PN-F and ET 200AL series with IP65/IP67 degree of protection for cabinet-free installation directly at the machine.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 40 mm according to EN 50041

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG	
			d	Article No.	Price per PU			
Complete units¹⁾ · Enclosure width 40 mm								
	Twist levers, type A, acc. to EN 50041							
	With metal lever 27 mm and plastic roller 19 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕	5	3SE5112-0BH01	1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶		3SE5112-0CH01	1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC --	⊕	5	3SE5112-0KH01	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕	5	3SE5112-0LH01	1	1 unit	41K
	With M12 device plug, 5-pole (125 V, 4 A)							
	Snap-action contacts	1 NO + 1 NC --	⊕	2	3SE5114-0CH01-1AC5	1	1 unit	41K
	With M12 device plug, 5-pole (125 V, 4 A), with pin assignment as for SIMATIC ET 200³⁾ NEW							
	Snap-action contacts	1 NO + 2 NC --	⊕ X		3SE5114-0LH01-1AE3	1	1 unit	41K
	With M12 device plug, 5-pole (125 V, 4 A), and 2 LEDs							
	Snap-action contacts	1 NO + 1 NC 24 V DC	⊕	5	3SE5114-1CH01-1AF3	1	1 unit	41K
	With metal lever 27 mm and high-grade steel roller 19 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕	5	3SE5112-0BH02	1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	⊕	2	3SE5112-0CH02	1	1 unit	41K
	With M12 device plug, 5-pole (125 V, 4 A), and 2 LEDs							
	Snap-action contacts	1 NO + 1 NC --	⊕	5	3SE5114-1CH02-1AF3	1	1 unit	41K
	With metal lever 30 mm and plastic roller 19 mm							
Snap-action contacts	1 NO + 1 NC --	⊕ ▶		3SE5112-0CH24	1	1 unit	41K	
	Twist levers, adjustable length							
	Metal lever, grid hole and plastic roller 19 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕	5	3SE5112-0BH60	1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶		3SE5112-0CH60	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕	5	3SE5112-0LH60	1	1 unit	41K
	Metal lever, grid hole with high-grade steel roller NEW							
Snap-action contacts	1 NO + 1 NC --	X		3SE5114-0CH61-1AC5	1	1 unit	41K	
	With metal lever and plastic roller 19 mm							
	Slow-action contacts	1 NO + 1 NC --		5	3SE5112-0BH50	1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --		▶	3SE5112-0CH50	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --		5	3SE5112-0LH50	1	1 unit	41K
	With M12 device plug, 5-pole (125 V, 4 A), and 2 LEDs							
	Snap-action contacts	1 NO + 1 NC 24 V DC		5	3SE5114-1CH60-1AF3	1	1 unit	41K
	With M12 device plug, 8-pole (30 V, 2 A), and 2 LEDs							
	Snap-action contacts	1 NO + 2 NC 24 V DC		5	3SE5114-1LH50-1AD4	1	1 unit	41K
	With metal lever and high-grade steel roller 19 mm							
	Snap-action contacts	1 NO + 1 NC --		5	3SE5112-0CH51	1	1 unit	41K
	Fork levers, latching							
	With metal lever and 2 plastic rollers 19 mm							
Snap-action contacts	1 NO + 1 NC --	⊕	5	3SE5112-0CT11	1	1 unit	41K	
	Rod actuators, type D, acc. to EN 50041							
	With aluminum rod, length 200 mm							
	Snap-action contacts	1 NO + 1 NC --		▶	3SE5112-0CH80	1	1 unit	41K
	With plastic rod, length 200 mm							
	Snap-action contacts	1 NO + 1 NC --		5	3SE5112-0CH82	1	1 unit	41K
	Nagara switch²⁾ With M12 device plug, 5-pole (125 V, 4 A) NEW							
Snap-action contacts, short-stroke	1 NO + 1 NC --		5	3SE5114-0NH82-1AM2	1	1 unit	41K	

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.

2) Start switch triggerable via one-hand operation (during operation)

3) The 3SE5114-...-1AE3 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all compact block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN, ET 200eco PN-F and ET 200AL series with IP65/IP67 degree of protection for cabinet-free installation directly at the machine.

Note:If the device you require is not available as a complete unit, see [Modular system, page 12/32](#).

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 40 mm according to EN 50041

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Basic switches · Enclosure width 40 mm							
	Connecting thread M20 × 1.5						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5112-0BA00		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5112-0CA00		1	1 unit 41K
	• Gold-plated contacts		⊕ 5	3SE5112-0CA00-1AC1		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 2	3SE5112-0KA00		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 2	3SE5112-0LA00		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 2	3SE5112-0MA00		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 2	3SE5112-0PA00		1	1 unit 41K
	Increased corrosion protection¹⁾						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5112-0BA00-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5112-0CA00-1CA0		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0KA00-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0LA00-1CA0		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5112-0MA00-1CA0		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5112-0PA00-1CA0		1	1 unit 41K
	M12 device plug, 5-pole (125 V, 4 A)						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5114-0BA00-1AC5		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5114-0CA00-1AC5		1	1 unit 41K
	Slow-action contacts	2 NC --	⊕ 5	3SE5114-0KA00-1AE1		1	1 unit 41K
	Snap-action contacts	2 NC --	⊕ 5	3SE5114-0LA00-1AE1		1	1 unit 41K
	With M12 device plug, 5-pole (125 V, 4 A), with pin assignment as for SIMATIC ET 200²⁾ <i>NEW</i>						
	Snap-action contacts	1 NO + 2 NC --	⊕ X	3SE5114-0LA00-1AE3		1	1 unit 41K
	Device plug, 6-pole + PE (250 V, 10 A)						
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5115-0KA00-1AD1		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5115-0LA00-1AD1		1	1 unit 41K
	Device plug, 6-pole + PE (250 V, 10 A), and quick-release device						
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5115-0CA00-1AD0		1	1 unit 41K
	2 LEDs, yellow/green						
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5112-1KA00		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5112-1LA00		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5112-3KA00		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5112-3LA00		1	1 unit 41K
	M12 device plug, 5-pole (125 V, 4 A), and 2 LEDs						
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5114-1BA00-1AF3		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5114-1CA00-1AF3		1	1 unit 41K
	M12 device plug, 8-pole (30 V, 2 A), and 2 LEDs						
Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5114-1LA00-1AD4		1	1 unit 41K	
	Device plug, 6-pole + PE (10 A), and 2 LEDs						
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5115-1BA00-1AF2		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5115-1CA00-1AF2		1	1 unit 41K
	Snap-action contacts	2 NC 24 V DC	⊕ 5	3SE5115-1LA00-1AD2		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) Use corresponding high-grade steel lever.

2) The 3SE5114-....-1AE3 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all compact block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN, ET 200eco PN-F and ET 200AL series with IP65/IP67 degree of protection for cabinet-free installation directly at the machine.


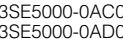





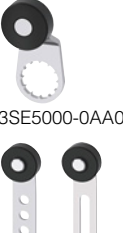
Note:

For the selection aid, see page 12/11.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 40 mm according to EN 50041

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG	
	mm	d	Article No.	Price per PU			
Operating mechanisms							
	Plain plungers						
	High-grade steel plunger	10	⊕ 2	3SE5000-0AB01	1	1 unit 41K	
	Rounded plungers, type B, acc. to EN 50041						
	High-grade steel plungers, with 3 mm overtravel	10	⊕ 5	3SE5000-0AC02	1	1 unit 41K	
	Roller plungers, type C, acc. to EN 50041						
	High-grade steel roller, with 3 mm overtravel	13	⊕ 5	3SE5000-0AD02	1	1 unit 41K	
	Roller levers						
	Metal lever, plastic roller	22	⊕ 2	3SE5000-0AE01	1	1 unit 41K	
	Metal lever, high-grade steel roller	22	⊕ 5	3SE5000-0AE02	1	1 unit 41K	
	High-grade steel lever, plastic roller	22	⊕ 5	3SE5000-0AE03	1	1 unit 41K	
	High-grade steel lever, high-grade steel roller	22	⊕ 5	3SE5000-0AE04	1	1 unit 41K	
	Angular roller levers						
	Metal lever, plastic roller	22	⊕ 2	3SE5000-0AF01	1	1 unit 41K	
	Metal lever, high-grade steel roller	22	⊕ 5	3SE5000-0AF02	1	1 unit 41K	
	High-grade steel lever, plastic roller	22	⊕ 5	3SE5000-0AF03	1	1 unit 41K	
	High-grade steel lever, high-grade steel roller	22	⊕ 5	3SE5000-0AF04	1	1 unit 41K	
	Spring rods (for switches with snap-action contacts only)						
	Plunger made of plastic, spring of high-grade steel:	7					
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	3SE5000-0AR01	1	1 unit 41K	
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	3SE5000-0AR03	1	1 unit 41K	
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	3SE5000-0AR04	1	1 unit 41K	
	Plunger and spring made of high-grade steel:	7					
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	3SE5000-0AR02	1	1 unit 41K		
Twist actuators							
	Twist actuators, for 40/56/56 XL mm EN 50041						
	• For twist levers and rod actuators, switching right and/or left, adjustable		⊕ 2	3SE5000-0AH00	1	1 unit 41K	
	• For fork levers, latching		⊕ 5	3SE5000-0AT10	1	1 unit 41K	
Levers							
	Twist levers, offset, type A, acc. to EN 50041						
	Metal lever 27 mm, plastic roller	19	⊕ 2	3SE5000-0AA01	1	1 unit 41K	
	Metal lever 27 mm, high-grade steel roller	19	⊕ 2	3SE5000-0AA02	1	1 unit 41K	
	Metal lever 27 mm, high-grade steel roller with ball bearing	19	⊕ 5	3SE5000-0AA03	1	1 unit 41K	
	Metal lever 27 mm, 2 plastic rollers	19	⊕ 5	3SE5000-0AA04	1	1 unit 41K	
	Metal lever 27 mm, plastic roller	30	⊕ 5	3SE5000-0AA05	1	1 unit 41K	
	Metal lever 27 mm, rubber roller	50	⊕ 5	3SE5000-0AA08	1	1 unit 41K	
	High-grade steel lever 27 mm, plastic roller	19	⊕ 5	3SE5000-0AA11	1	1 unit 41K	
	High-grade steel lever 27 mm, high-grade steel roller	19	⊕ 5	3SE5000-0AA12	1	1 unit 41K	
	Metal lever 35 mm, plastic roller	19	⊕ 5	3SE5000-0AA15	1	1 unit 41K	
	High-grade steel lever 35 mm, plastic roller	19	⊕ 5	3SE5000-0AA16	1	1 unit 41K	
	Twist levers 30 mm, straight						
	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA24	1	1 unit 41K	
	Metal lever, plastic roller	30	⊕ 5	3SE5000-0AA26	1	1 unit 41K	
	Twist levers, adjustable length, with grid hole						
	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA60	1	1 unit 41K	
Metal lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA61	1	1 unit 41K		
Metal lever, rubber roller	50	⊕ 5	3SE5000-0AA68	1	1 unit 41K		
High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA62	1	1 unit 41K		
High-grade steel lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA63	1	1 unit 41K		
Twist levers, adjustable length							
Metal lever, plastic roller	19	2	3SE5000-0AA50	1	1 unit 41K		
Metal lever, high-grade steel roller	19	5	3SE5000-0AA51	1	1 unit 41K		
Metal lever, plastic roller	30	5	3SE5000-0AA55	1	1 unit 41K		
Metal lever, rubber roller	50	5	3SE5000-0AA58	1	1 unit 41K		
High-grade steel lever, plastic roller	19	5	3SE5000-0AA52	1	1 unit 41K		
High-grade steel lever, high-grade steel roller	19	5	3SE5000-0AA53	1	1 unit 41K		
Fork levers (for switches with snap-action contacts only)							
2 metal levers, 2 plastic rollers	19	⊕ 5	3SE5000-0AT01	1	1 unit 41K		
2 metal levers, 2 high-grade steel rollers	19	⊕ 5	3SE5000-0AT02	1	1 unit 41K		
2 high-grade steel levers, 2 plastic rollers	19	⊕ 5	3SE5000-0AT03	1	1 unit 41K		
Rod actuators, type D, acc. to EN 50041							
Aluminum rod, length 200 mm	6	5	3SE5000-0AA80	1	1 unit 41K		
Spring rod, length 200 mm	6	5	3SE5000-0AA81	1	1 unit 41K		
Plastic rod, length 200 mm	6	5	3SE5000-0AA82	1	1 unit 41K		

⊕ Positively driven actuator, necessary in safety circuits.

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS 3SE5 Mechanical Position Switches






3SE5, Metal Enclosures

Enclosure width 56 mm

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Complete units¹⁾ · Enclosure width 56 mm							
Plain plungers							
With high-grade steel plunger							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0BB01		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0CB01		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0KB01		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0LB01		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5122-0PB01		1	1 unit 41K
3SE5122-0BB01							
Rounded plungers							
With high-grade steel plungers, with 3 mm overtravel							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0BC02		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ ▶	3SE5122-0CC02		1	1 unit 41K
	Snap-action contacts ²⁾	1 NO + 1 NC --	⊕ 5	3SE5122-0CC02-1AA7		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0KC02		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0LC02		1	1 unit 41K
3SE5122-0BC02	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5122-0PC02		1	1 unit 41K
Roller plunger							
With high-grade steel roller 13 mm, with 3 mm overtravel							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0BD02		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5122-0CD02		1	1 unit 41K
	Snap-action contacts ²⁾	1 NO + 1 NC --	⊕ 5	3SE5122-0CD02-1AA7		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0KD02		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0LD02		1	1 unit 41K
3SE5122-0BD02							
Roller levers							
With metal lever and plastic roller 22 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0BE01		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5122-0CE01		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0KE01		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0LE01		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5122-0PE01		1	1 unit 41K
3SE5122-0BE01							
With metal lever and high-grade steel roller 22 mm							
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0CE02		1	1 unit 41K
Angular roller lever							
With metal lever and plastic roller 22 mm							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0BF01		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0CF01		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5122-0PF01		1	1 unit 41K
3SE5122-0BF01							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.






2) Increased operation or restoring force 30 N; only available as complete unit, no modular design

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 56 mm

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	LEDs	SD	Complete units	<input type="checkbox"/>	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU			
Complete units¹⁾ · Enclosure width 56 mm								
	Spring rod Length 142.5 mm, with plastic plunger 50 mm							
3SE5122-0CR01	Snap-action contacts	1 NO + 1 NC --	5	3SE5122-0CR01		1	1 unit	41K
	Twist levers With metal lever 27 mm and plastic roller 19 mm							
3SE5122-0BH01	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0BH01		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5122-0CH01		1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0KH01		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0LH01		1	1 unit	41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5122-0PH01		1	1 unit	41K
3SE5122-0BH01	With metal lever 27 mm and high-grade steel roller 19 mm							
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0CH02		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0LH02		1	1 unit	41K
	Twist levers, adjustable length With metal lever with grid hole and plastic roller 19 mm							
3SE5122-0BH60	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0BH60		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0CH60		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0LH60		1	1 unit	41K
3SE5122-0BH60	With metal lever and plastic roller 19 mm							
	Slow-action contacts	1 NO + 1 NC --	5	3SE5122-0BH50		1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC --	2	3SE5122-0CH50		1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	5	3SE5122-0LH50		1	1 unit	41K
	Fork levers, latching With metal lever and 2 plastic rollers 19 mm							
3SE5122-0CT11	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0CT11		1	1 unit	41K
	Rod actuator With aluminum rod, length 200 mm							
3SE5122-0CH80	Snap-action contacts	1 NO + 1 NC --	5	3SE5122-0CH80		1	1 unit	41K
	With plastic rod, length 200 mm							
	Snap-action contacts	1 NO + 1 NC --	5	3SE5122-0CH82		1	1 unit	41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) Popular versions.

Note:If the device you require is not available as a complete unit, see [Modular system, page 12/36](#).




SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 56 mm

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)






Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Basic switches · Enclosure width 56 mm							
	With 3 × connection thread M20 × 1.5						
	Slow-action contacts	1 NO + 1 NC --	⊕ 2	3SE5122-0BA00		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5122-0CA00		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0KA00		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 2	3SE5122-0LA00		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 2	3SE5122-0MA00		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 2	3SE5122-0PA00		1	1 unit 41K
	With increased corrosion protection¹⁾						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0BA00-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5122-0CA00-1CA0		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0KA00-1CA0		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0LA00-1CA0		1	1 unit 41K
	Slow-action contacts with make-before-break	1 NO + 2 NC --	⊕ 5	3SE5122-0MA00-1CA0		1	1 unit 41K
	Slow-action contacts	2 NO + 1 NC --	⊕ 5	3SE5122-0PA00-1CA0		1	1 unit 41K
	With 2 LEDs, yellow/green						
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5122-1KA00		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5122-1LA00		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5122-3KA00		1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5122-3LA00		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

¹⁾ Use corresponding high-grade steel lever.

Note:






For the selection aid, see page 12/11.

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		
Operating mechanisms						
	Plain plungers					
	High-grade steel plungers	10	⊕ 2	3SE5000-0AB01		1 1 unit 41K
	Rounded plungers, type B, acc. to EN 50041					
	High-grade steel plungers, with 3 mm overtravel	10	⊕ 5	3SE5000-0AC02		1 1 unit 41K
	Roller plungers, type C, acc. to EN 50041					
	High-grade steel roller, with 3 mm overtravel	13	⊕ 5	3SE5000-0AD02		1 1 unit 41K
	Roller levers					
	Metal lever, plastic roller	22	⊕ 2	3SE5000-0AE01		1 1 unit 41K
	Metal lever, high-grade steel roller	22	⊕ 5	3SE5000-0AE02		1 1 unit 41K
	High-grade steel lever, plastic roller	22	⊕ 5	3SE5000-0AE03		1 1 unit 41K
	High-grade steel lever, high-grade steel roller	22	⊕ 5	3SE5000-0AE04		1 1 unit 41K
	Angular roller levers					
	Metal lever, plastic roller	22	⊕ 2	3SE5000-0AF01		1 1 unit 41K
	Metal lever, high-grade steel roller	22	⊕ 5	3SE5000-0AF02		1 1 unit 41K
	High-grade steel lever, plastic roller	22	⊕ 5	3SE5000-0AF03		1 1 unit 41K
	High-grade steel lever, high-grade steel roller	22	⊕ 5	3SE5000-0AF04		1 1 unit 41K
	Spring rods (for switches with snap-action contacts only)					
	Plunger made of plastic, spring of high-grade steel: 7					
	• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	3SE5000-0AR01		1 1 unit 41K
	• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	3SE5000-0AR03		1 1 unit 41K
	• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	3SE5000-0AR04		1 1 unit 41K
	Plunger and spring made of high-grade steel: 7					
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	3SE5000-0AR02		1 1 unit 41K	

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 56 mm

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		
Twist actuators						
	Twist actuators, for 40/56/56 XL mm EN 50041					
		⊕ 2	3SE5000-0AH00		1	1 unit 41K
		⊕ 5	3SE5000-0AT10		1	1 unit 41K
Levers						
	Twist levers 27 mm, offset, type A, acc. to EN 50041					
	Metal lever, plastic roller	19 ⊕ 2	3SE5000-0AA01		1	1 unit 41K
	Metal lever, high-grade steel roller	19 ⊕ 2	3SE5000-0AA02		1	1 unit 41K
	Metal lever, high-grade steel roller with ball bearing	19 ⊕ 5	3SE5000-0AA03		1	1 unit 41K
	Metal lever, 2 plastic rollers	19 ⊕ 5	3SE5000-0AA04		1	1 unit 41K
	Metal lever, plastic roller	30 ⊕ 5	3SE5000-0AA05		1	1 unit 41K
	Metal lever, plastic roller	50 ⊕ 5	3SE5000-0AA07		1	1 unit 41K
	Metal lever, rubber roller	50 ⊕ 5	3SE5000-0AA08		1	1 unit 41K
	High-grade steel lever, plastic roller	19 ⊕ 5	3SE5000-0AA11		1	1 unit 41K
	High-grade steel lever, high-grade steel roller	19 ⊕ 5	3SE5000-0AA12		1	1 unit 41K
	Twist levers 35 mm, offset					
	Metal lever, plastic roller	19 ⊕ 5	3SE5000-0AA15		1	1 unit 41K
	High-grade steel lever, plastic roller	19 ⊕ 5	3SE5000-0AA16		1	1 unit 41K
	Twist levers 30 mm, straight (can be mounted rotated by 180°)					
	Metal lever, plastic roller	19 ⊕ 5	3SE5000-0AA24		1	1 unit 41K
	Metal lever, plastic roller	30 ⊕ 5	3SE5000-0AA26		1	1 unit 41K
	Twist levers, adjustable length, with grid hole					
	Metal lever, plastic roller	19 ⊕ 5	3SE5000-0AA60		1	1 unit 41K
	Metal lever, high-grade steel roller	19 ⊕ 5	3SE5000-0AA61		1	1 unit 41K
	Metal lever, plastic roller	50 ⊕ 5	3SE5000-0AA67		1	1 unit 41K
	Metal lever, rubber roller	50 ⊕ 5	3SE5000-0AA68		1	1 unit 41K
	High-grade steel lever, plastic roller	19 ⊕ 5	3SE5000-0AA62		1	1 unit 41K
	High-grade steel lever, high-grade steel roller	19 ⊕ 5	3SE5000-0AA63		1	1 unit 41K
	Twist levers, adjustable length					
	Metal lever, plastic roller	19 2	3SE5000-0AA50		1	1 unit 41K
	Metal lever, high-grade steel roller	19 5	3SE5000-0AA51		1	1 unit 41K
	Metal lever, plastic roller	30 5	3SE5000-0AA55		1	1 unit 41K
	Metal lever, plastic roller	50 5	3SE5000-0AA57		1	1 unit 41K
	Metal lever, rubber roller	50 5	3SE5000-0AA58		1	1 unit 41K
	High-grade steel lever, plastic roller	19 5	3SE5000-0AA52		1	1 unit 41K
	High-grade steel lever, high-grade steel roller	19 5	3SE5000-0AA53		1	1 unit 41K
	Fork levers (for switches with snap-action contacts only)					
	2 metal levers, 2 plastic rollers	19 ⊕ 5	3SE5000-0AT01		1	1 unit 41K
	2 metal levers, 2 high-grade steel rollers	19 ⊕ 5	3SE5000-0AT02		1	1 unit 41K
	2 high-grade steel levers, 2 plastic rollers	19 ⊕ 5	3SE5000-0AT03		1	1 unit 41K
	2 high-grade steel levers, 2 high-grade steel rollers	19 ⊕ 5	3SE5000-0AT04		1	1 unit 41K
	Rod actuators, type D, acc. to EN 50041					
	Aluminum rod, length 200 mm	6 5	3SE5000-0AA80		1	1 unit 41K
	Spring rod, length 200 mm	6 5	3SE5000-0AA81		1	1 unit 41K
	Plastic rod, length 200 mm	6 5	3SE5000-0AA82		1	1 unit 41K

⊕ Positively driven actuator, necessary in safety circuits.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 56 mm, XL

Selection and ordering data

Complete units

4 or 5 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		

Complete units¹⁾ · Enclosure width 56 mm, XL

	Plain plungers						
	With high-grade steel plunger						
3SE5162-0CB01	Snap-action contacts	2 × (1 NO + 1 NC) --	⊕ 5	3SE5162-0CB01		1	1 unit 41K
	Rounded plungers						
	With high-grade steel plungers, with 3 mm overtravel						
3SE5162-0EC02	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5162-0EC02		1	1 unit 41K
	Roller plunger						
	With high-grade steel roller 13 mm, with 3 mm overtravel						
3SE5162-0BD02	Slow-action contacts	2 × (1 NO + 1 NC) --	⊕ 5	3SE5162-0BD02		1	1 unit 41K
	Snap-action contacts	2 × (1 NO + 1 NC) --	⊕ 2	3SE5162-0CD02		1	1 unit 41K
	Roller levers						
	With metal lever and plastic roller 22 mm						
3SE5162-0BE01	Slow-action contacts	2 × (1 NO + 1 NC) --	⊕ 5	3SE5162-0BE01		1	1 unit 41K
	Snap-action contacts	2 × (1 NO + 1 NC) --	⊕ 2	3SE5162-0CE01		1	1 unit 41K
	With metal lever and high-grade steel roller 22 mm						
	Snap-action contacts	2 × (1 NO + 1 NC) --	⊕ 5	3SE5162-0CE02		1	1 unit 41K
	Angular roller lever						
	With metal lever and plastic roller 22 mm						
3SE5162-0CF01	Snap-action contacts	2 × (1 NO + 1 NC) --	⊕ 5	3SE5162-0CF01		1	1 unit 41K
	Twist levers						
	With metal lever 27 mm and plastic roller 19 mm						
3SE5162-0CH01	Snap-action contacts	2 × (1 NO + 1 NC) --	⊕ 2	3SE5162-0CH01		1	1 unit 41K
	With high-grade steel lever 27 mm and high-grade steel roller 19 mm, increased corrosion protection						
	Snap-action contacts (gold contacts)	2 × (1 NO + 1 NC) --	⊕ 5	3SE5162-0CH12-1CC1		1	1 unit 41K
3SE5162-0CH01	Twist levers, adjustable length						
	High-grade steel lever with grid hole and high-grade steel roller 19 mm, increased corrosion protection Adapter 3SX5100-3B included						
	Snap-action contacts (gold contacts)	2 × (1 NO + 1 NC) --	⊕ 5	3SE5162-0CH63-1AN4		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Popular versions.

Note:

If the device you require is not available as a complete unit, see [Modular system, page 12/39](#).

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 56 mm, XL

Modular system

4 or 6 contacts · Degree of protection IP66/IP67 · Cable entry 3 × (M20 × 1.5)

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		

Basic switches • Enclosure width 56 mm, XL



3SE5162-0BA00

With 3 × connection thread M20 × 1.5

Slow-action contacts	2 × (1 NO + 1 NC) --	⊕ 2	3SE5162-0BA00	1	1 unit	41K
Snap-action contacts	2 × (1 NO + 1 NC) --	⊕ 2	3SE5162-0CA00	1	1 unit	41K
Slow-action contacts with make-before-break	2 × (1 NO + 2 NC) --	⊕ 30	3SE5162-0DA00	1	1 unit	41K

With increased corrosion protection¹⁾

Slow-action contacts	2 × (1 NO + 1 NC) --	⊕ 5	3SE5162-0BA00-1CA0	1	1 unit	41K
Snap-action contacts	2 × (1 NO + 1 NC) --	⊕ 5	3SE5162-0CA00-1CA0	1	1 unit	41K
Slow-action contacts with make-before-break	2 × (1 NO + 2 NC) --	⊕ 30	3SE5162-0DA00-1CA0	1	1 unit	41K

⊕ Positively opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

¹⁾ Use corresponding high-grade steel lever.

Note:

For the selection aid, see page 12/11.

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		

Operating mechanisms



3SE5000-0AB01

Plain plungers

High-grade steel plunger	10	⊕ 2	3SE5000-0AB01	1	1 unit	41K
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3SE5000-0AC02

Rounded plungers, type B, acc. to EN 50041

High-grade steel plungers, with 3 mm overtravel	10	⊕ 5	3SE5000-0AC02	1	1 unit	41K
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3SE5000-0AD02

Roller plungers, type C, acc. to EN 50041

High-grade steel roller, with 3 mm overtravel	13	⊕ 5	3SE5000-0AD02	1	1 unit	41K
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3SE5000-0AE01

Roller levers

Metal lever, plastic roller	22	⊕ 2	3SE5000-0AE01	1	1 unit	41K
Metal lever, high-grade steel roller	22	⊕ 5	3SE5000-0AE02	1	1 unit	41K
High-grade steel lever, plastic roller	22	⊕ 5	3SE5000-0AE03	1	1 unit	41K
High-grade steel lever, high-grade steel roller	22	⊕ 5	3SE5000-0AE04	1	1 unit	41K



3SE5000-0AF01

Angular roller levers

Metal lever, plastic roller	22	⊕ 2	3SE5000-0AF01	1	1 unit	41K
Metal lever, high-grade steel roller	22	⊕ 5	3SE5000-0AF02	1	1 unit	41K
High-grade steel lever, plastic roller	22	⊕ 5	3SE5000-0AF03	1	1 unit	41K
High-grade steel lever, high-grade steel roller	22	⊕ 5	3SE5000-0AF04	1	1 unit	41K



3SE5000-0AR01

Spring rods (for switches with snap-action contacts only)



Plunger made of plastic, spring of high-grade steel:	7					
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	3SE5000-0AR01	1	1 unit	41K
• Length 76 mm (spring 23.5 mm, plunger 10 mm)		5	3SE5000-0AR03	1	1 unit	41K
• Length 242.5 mm (spring 150 mm, plunger 50 mm)		5	3SE5000-0AR04	1	1 unit	41K
Plunger and spring made of high-grade steel:	7					
• Length 142.5 mm (spring 50 mm, plunger 50 mm)		5	3SE5000-0AR02	1	1 unit	41K

⊕ Positively driven actuator, necessary in safety circuits.

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Enclosure width 56 mm, XL

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG	
	mm	d	Article No.	Price per PU			
Twist actuators							
	Twist actuators, for 40/56/56 XL mm EN 50041						
	<ul style="list-style-type: none"> For twist levers and rod actuators, switching right and/or left, adjustable For fork levers, latching 						
3SE5000-0AH00		2	3SE5000-0AH00		1	1 unit 41K	
		5	3SE5000-0AT10		1	1 unit 41K	
Levers							
	Twist levers 27 mm, offset, type A, acc. to EN 50041						
	Metal lever, plastic roller	19	2	3SE5000-0AA01		1 1 unit 41K	
	Metal lever, high-grade steel roller	19	2	3SE5000-0AA02		1 1 unit 41K	
	Metal lever, high-grade steel roller with ball bearing	19	5	3SE5000-0AA03		1 1 unit 41K	
	Metal lever, 2 plastic rollers	19	5	3SE5000-0AA04		1 1 unit 41K	
	Metal lever, plastic roller	30	5	3SE5000-0AA05		1 1 unit 41K	
	Metal lever, plastic roller	50	5	3SE5000-0AA07		1 1 unit 41K	
	Metal lever, rubber roller	50	5	3SE5000-0AA08		1 1 unit 41K	
	High-grade steel lever, plastic roller	19	5	3SE5000-0AA11		1 1 unit 41K	
	High-grade steel lever, high-grade steel roller	19	5	3SE5000-0AA12		1 1 unit 41K	
	Twist levers 35 mm, offset						
	Metal lever, plastic roller	19	5	3SE5000-0AA15		1 1 unit 41K	
	High-grade steel lever, plastic roller	19	5	3SE5000-0AA16		1 1 unit 41K	
Twist levers 30 mm, straight							
Metal lever, plastic roller	19	5	3SE5000-0AA24		1 1 unit 41K		
Metal lever, plastic roller	30	5	3SE5000-0AA26		1 1 unit 41K		
Twist levers, adjustable length, with grid hole							
Metal lever, plastic roller	19	5	3SE5000-0AA60		1 1 unit 41K		
Metal lever, high-grade steel roller	19	5	3SE5000-0AA61		1 1 unit 41K		
Metal lever, plastic roller	50	5	3SE5000-0AA67		1 1 unit 41K		
Metal lever, rubber roller	50	5	3SE5000-0AA68		1 1 unit 41K		
High-grade steel lever, plastic roller	19	5	3SE5000-0AA62		1 1 unit 41K		
High-grade steel lever, high-grade steel roller	19	5	3SE5000-0AA63		1 1 unit 41K		
Twist levers, adjustable length							
Metal lever, plastic roller	19	2	3SE5000-0AA50		1 1 unit 41K		
Metal lever, high-grade steel roller	19	5	3SE5000-0AA51		1 1 unit 41K		
Metal lever, plastic roller	30	5	3SE5000-0AA55		1 1 unit 41K		
Metal lever, plastic roller	50	5	3SE5000-0AA57		1 1 unit 41K		
Metal lever, rubber roller	50	5	3SE5000-0AA58		1 1 unit 41K		
High-grade steel lever, plastic roller	19	5	3SE5000-0AA52		1 1 unit 41K		
High-grade steel lever, high-grade steel roller	19	5	3SE5000-0AA53		1 1 unit 41K		
Fork levers (for switches with snap-action contacts only)							
2 metal levers, 2 plastic rollers	19	5	3SE5000-0AT01		1 1 unit 41K		
2 metal levers, 2 high-grade steel rollers	19	5	3SE5000-0AT02		1 1 unit 41K		
2 high-grade steel levers, 2 plastic rollers	19	5	3SE5000-0AT03		1 1 unit 41K		
2 high-grade steel levers, 2 high-grade steel rollers	19	5	3SE5000-0AT04		1 1 unit 41K		
3SE5000-0AT01							
Rod actuators, type D, acc. to EN 50041							
Aluminum rod, length 200 mm	6	5	3SE5000-0AA80		1 1 unit 41K		
Spring rod, length 200 mm	6	5	3SE5000-0AA81		1 1 unit 41K		
Plastic rod, length 200 mm	6	5	3SE5000-0AA82		1 1 unit 41K		
Plastic rod, length 330 mm	6	5	3SE5000-0AA83		1 1 unit 41K		
3SE5000-0AA80							

☞ Positively driven actuator, necessary in safety circuits.

SIRIUS 3SE5 Mechanical Position Switches 3SE5, Metal Enclosures

Compact design

Overview



Compact design in width 30 mm

Particularly in harsh environments or on equipment with limited space, the small 3SE54 position switches in compact design with a depth of 16 mm and a weight of only 80 g (without cable) are ideal. Above all the versions with molded cable can be mounted in the most confined spaces.

3SE54 compact position switches are available in two different widths as complete units:

- The 3SE5413 series complies with the EU standard and features a 30-mm-wide enclosure with drilled holes at a distance of 20 mm.
- The 3SE5423 series meets the requirements of the US market and features a 40-mm-wide enclosure with drilled holes at a spacing of 25 mm.

Both the enclosure and the actuator head are made of metal and comply with the high IP67 degree of protection. The following actuators are available:

- Rounded plungers
- Rounded plungers with central fixing
- Rounded plungers with external seal
- Roller plungers
- Roller plungers with central fixing
- Twist levers

The contact block is designed with snap-action contacts 1 NO + 1 NC. The NC contact complies with the requirements for positive opening acc. to IEC 60947-5-1.

Use in safety circuits up to category 4 according to EN ISO 13849-1.

Connection:

- With molded cable, 2 m or 5 m long
- With M12 device plug

Benefits

- Very compact yet with the same rating as the 3SE51 standard switches, for notable space savings in confined installation conditions
- Various actuator versions available
- Roller plungers can be rotated through 90°
- Twist levers can be rotated through 180°; twist levers can be adjusted in 15° increments
- Time is saved when mounting the fully assembled unit
- With metal enclosure of degree of protection IP67, ideal for use in rough industrial environments
- Insensitive to electromagnetic interference








SIRIUS 3SE5 Mechanical Position Switches

3SE5, Metal Enclosures

Compact design

Selection and ordering data

2 snap-action contacts 1 NO + 1 NC · Degree of protection IP67 · With connecting cable or M12 device plug

Operating mechanism	Enclosure width	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm	d					
Complete units • Enclosure width 30 or 40 mm							
Rounded plungers							
	• Standard mounting						
	- With 2 m cable 5 x 0.75 mm ²	30	⊕ 2	3SE5413-0CC20-1EA2		1	1 unit 41K
		40	⊕ 2	3SE5423-0CC20-1EA2		1	1 unit 41K
	- With 5 m cable 5 x 0.75 mm ²	30	⊕ 5	3SE5413-0CC20-1EA5		1	1 unit 41K
	- With M12 device plug, 5-pole	30	⊕ 2	3SE5413-0CC20-1EB1		1	1 unit 41K
	40	⊕ 5	3SE5423-0CC20-1EB1		1	1 unit 41K	
3SE5413-0CC20-1EA2							
	• With central fixing M12 x 1						
	- With 2 m cable 5 x 0.75 mm ²	30	⊕ 2	3SE5413-0CC21-1EA2		1	1 unit 41K
		40	⊕ 5	3SE5423-0CC21-1EA2		1	1 unit 41K
3SE5413-0CC21-1EA2							
	• With external seal						
	- With 2 m cable 5 x 0.75 mm ²	30	⊕ 5	3SE5413-0CC22-1EA2		1	1 unit 41K
		40	⊕ 5	3SE5423-0CC22-1EA2		1	1 unit 41K
3SE5413-0CC22-1EA2							
Roller plungers							
	• Standard mounting						
	- With 2 m cable 5 x 0.75 mm ²	30	⊕ 2	3SE5413-0CD20-1EA2		1	1 unit 41K
		40	⊕ 2	3SE5423-0CD20-1EA2		1	1 unit 41K
	- With 5 m cable 5 x 0.75 mm ²	30	⊕ 5	3SE5413-0CD20-1EA5		1	1 unit 41K
	- With M12 device plug, 5-pole	30	⊕ 2	3SE5413-0CD20-1EB1		1	1 unit 41K
	40	⊕ 2	3SE5423-0CD20-1EB1		1	1 unit 41K	
3SE5413-0CD20-1EA2							
	• With central fixing M12 x 1						
	- With 2 m cable 5 x 0.75 mm ²	30	⊕ 2	3SE5413-0CD21-1EA2		1	1 unit 41K
		40	⊕ 5	3SE5423-0CD21-1EA2		1	1 unit 41K
3SE5413-0CD21-1EA2							
	• Actuator head rotated 90°						
	- With 2 m cable 5 x 0.75 mm ²	30	⊕ 2	3SE5413-0CD23-1EA2		1	1 unit 41K
3SE5413-0CD23-1EA2							
Twist levers							
	• Standard mounting						
	- With 2 m cable 5 x 0.75 mm ²	30	⊕ 2	3SE5413-0CN20-1EA2		1	1 unit 41K
		40	⊕ 5	3SE5423-0CN20-1EA2		1	1 unit 41K
	- With 5 m cable 5 x 0.75 mm ²	30	⊕ 2	3SE5413-0CN20-1EA5		1	1 unit 41K
	- With M12 device plug, 5-pole	30	⊕ 2	3SE5413-0CN20-1EB1		1	1 unit 41K
	40	⊕ 5	3SE5423-0CN20-1EB1		1	1 unit 41K	
3SE5413-0CN20-1EA2							
• Twist levers with a smaller mounting depth and lower height							
	- With 2 m cable 5 x 0.75 mm ²	30	⊕ 5	3SE5413-0CP20-1EA2		1	1 unit 41K
• Twist levers, adjustable length							
- With 2 m cable 5 x 0.75 mm ²	30	⊕ X	3SE5413-0CQ20-1EA2		1	1 unit 41K	

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

NEW

SIRIUS 3SE5 Mechanical Position Switches

3SE5, Open-Type Design

Enclosure width 30 mm

Overview



Open-type design

Their compact design makes these switches particularly suitable for use in confined conditions. The fixing dimensions and operating points are according to EN 50047.

The switches are equipped with two or three contacts in snap-action, slow-action or slow-action with make-before-break versions. The stroke is 6 mm.





The empty enclosure can be equipped with all contact block versions (see page 12/45).

Improved version

The switches have a robust metal plunger with increased abrasion resistance (instead of the teflon plunger). This enables the switch to be approached from a 30° angle.

Selection and ordering data

2 or 3 contacts · Degree of protection IP20 (2 contacts), IP10 (3 contacts)

Version	Contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Plastic enclosures · Enclosure width 30 mm							
With metal plunger							
	Slow-action contacts	1 NO + 1 NC	⊕ 2	3SE5250-0BC05	1	1 unit	41K
	Snap-action contacts	1 NO + 1 NC	⊕ ▶	3SE5250-0CC05	1	1 unit	41K
	Slow-action contacts	1 NO + 2 NC	⊕ 5	3SE5250-0KC05	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC	⊕ ▶	3SE5250-0LC05	1	1 unit	41K
	Slow-action contacts with make-before-break	1 NO + 2 NC	⊕ 2	3SE5250-0MC05	1	1 unit	41K
	Slow-action contacts	2 NO + 1 NC	⊕ 2	3SE5250-0PC05	1	1 unit	41K
	Empty enclosures without contact block	--	⊕ 5	3SE5250-0AC05	1	1 unit	41K
Contact blocks with 2 contacts For open-type design ¹⁾							
	• Slow-action contacts	1 NO + 1 NC	⊕ 5	3SE5050-0BA00	1	1 unit	41K
	• Snap-action contacts	1 NO + 1 NC	⊕ 5	3SE5050-0CA00	1	1 unit	41K
	- Standard		⊕ 30	3SE5050-0GA00	1	1 unit	41K
	- 2 × 2 mm switching interval		⊕ 30	3SE5050-0NA00	1	1 unit	41K
	- Short stroke						

⊕ Positive opening according to IEC 60947-5-1, Appendix K.














¹⁾ Contact blocks with 3 contacts, see page 12/45.

SIRIUS 3SE5 Mechanical Position Switches

Accessories and spare parts

Selection and ordering data

The quick-release devices and plug-in connections are used for fast installation and replacement of position switches.









Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Quick-release devices for enclosure width 40 mm						
	5	3SY3110		1	1 unit	41K
	5	3SY3027		1	1 unit	41K
						
3SY3110						
3SY3027						
Plug-in connections for M20 × 1.5 connecting threads						
	5	3SY3131		1	1 unit	41K
	2	3SY3136		1	1 unit	41K
3SY3131						
3SY3136						
	5	3SY3127		1	1 unit	41K
	5	3SY3128		1	1 unit	41K
	NEW X	3SX5100-1SS51		1	1 unit	41K
3SY3127						
3SX5100-1SS51						
	5	3RK1902-4CA00-4AA0		1	1 unit	42D
3RK1902-4CA00-4AA0						
Adapters and cable glands for M20 × 1.5 connecting threads						
	5	3SX9917		1	1 unit	41K
	30	3SX9918		1	1 unit	41K
3SX9917						
3SX9918						
	2	3SX9926		1	1 unit	41K
	5	3SX5601-1A		1	1 unit	41K
3SX9926						
3SX5601-1A						

¹⁾ For wiring, a crimping tool is necessary, max. conductor cross-section 1 mm².

²⁾ Suitable for wiring sensors to be connected to all compact block I/O modules in the SIMATIC ET 200eco PN, ET 200eco PN-F and ET 200AL series.

SIRIUS 3SE5 Mechanical Position Switches

Accessories and spare parts

Version	Color/ contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories for 3SE51, 3SE52							
	Protective caps For rounded plungers acc. to EN 50047, 3SE5...-...C05	Black	2	3SE5000-0AC30		1	1 unit 41K
3SE5000-0AC30							
	Adapters with screw¹⁾ For an increase in the mounting depth on the 3SE5000-0AH00 twist actuator, in combination with twist lever with adjustable length or rod actuator		5	3SX5100-3B		1	1 unit 41K
3SX5100-3B							
	Mounting plate Suitable for 3SE523. and 3SE521. position switches with a width of 31 mm (in particular for control cabinet types)		5	3SX5100-1A		1	1 unit 41K
3SX5100-1A							
Spare parts for 3SE51, 3SE52							
	Empty enclosures, plastic Enclosure width 31 mm • With increased corrosion protection	Turquoise	5	3SE5232-0AC05		1	1 unit 41K
3SE5232-0AC05							
	Enclosure width 40 mm • With increased corrosion protection		5	3SE5232-0AC05-1CA0		1	1 unit 41K
	Enclosure width 50 mm • With increased corrosion protection		5	3SE5132-0AA00		1	1 unit 41K
			5	3SE5242-0AC05		1	1 unit 41K
			5	3SE5242-0AC05-1CA0		1	1 unit 41K
	Empty enclosures, metal Enclosure width 31 mm • With increased corrosion protection	Turquoise	5	3SE5212-0AC05		1	1 unit 41K
3SE5212-0AC05							
	Enclosure width 40 mm • With increased corrosion protection		5	3SE5212-0AC05-1CA0		1	1 unit 41K
	Enclosure width 56 mm • With increased corrosion protection		5	3SE5112-0AA00		1	1 unit 41K
	Enclosure width 56 mm, XL ²⁾		5	3SE5112-0AA00-1CA0		1	1 unit 41K
			5	3SE5162-0AA00		1	1 unit 41K
	Contact blocks with 2 contacts³⁾ • Slow-action contacts • Snap-action contacts - Standard - Gold-plated contacts - 2 x 2 mm switching interval - Short stroke	1 NO + 1 NC 1 NO + 1 NC	⊕ 5	3SE5000-0BA00		1	1 unit 41K
3SE5000-0BA00							
			⊕ 5	3SE5000-0CA00		1	1 unit 41K
			⊕ 5	3SE5000-0CA00-1AC1		1	1 unit 41K
			⊕ 30	3SE5000-0GA00		1	1 unit 41K
			⊕ 5	3SE5000-0NA00		1	1 unit 41K
	Contact blocks with 3 contacts • Slow-action contacts • Snap-action contacts • Slow-action contacts with make-before-break • Slow-action contacts	1 NO + 2 NC 1 NO + 2 NC 1 NO + 2 NC	⊕ 5 ⊕ 5 ⊕ 2	3SE5000-0KA00 3SE5000-0LA00 3SE5000-0MA00		1 1 1	1 unit 41K 1 unit 41K 1 unit 41K
3SE5000-0KA00							
		2 NO + 1 NC	⊕ 2	3SE5000-0PA00		1	1 unit 41K
	Contact blocks for XL enclosure²⁾ • Slow-action contacts • Snap-action contacts • Slow-action contacts with make-before-break	1 NO + 1 NC 1 NO + 1 NC 1 NO + 2 NC	⊕ 5 ⊕ 5 ⊕ 30	3SE5060-0BA00 3SE5060-0CA00 3SE5060-0MA00		1 1 1	1 unit 41K 1 unit 41K 1 unit 41K
3SE5060-0BA00							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.







1) Possibly required for the conversion from 3SE21 to 3SE51.

2) Equip XL enclosures only with contact combinations, see pages 12/10, 12/38 and 12/39.

3) Unsuitable for open-type position switches, see page 12/43.

SIRIUS 3SE5 Mechanical Position Switches

Accessories and spare parts

Version	Rated voltage LED	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG					
	V	d										
Spare parts for 3SE51, 3SE52												
	Covers for plastic enclosures, width 31 mm											
	• Turquoise with LED	24 DC	5	3SE5230-1AA00		1	1 unit 41K					
		230 AC	5	3SE5230-3AA00		1	1 unit 41K					
	• Yellow	--	5	3SE5230-0AA00-1AG0		1	1 unit 41K					
	• Yellow with LED	24 DC	5	3SE5230-1AA00-1AG0		1	1 unit 41K					
							230 AC	5	3SE5230-3AA00-1AG0		1	1 unit 41K
3SE5230-1AA00												
	Covers for plastic enclosures, width 40 mm											
	• Turquoise with LED	24 DC	5	3SE5130-1AA00		1	1 unit 41K					
		230 AC	5	3SE5130-3AA00		1	1 unit 41K					
	• Yellow	--	5	3SE5130-0AA00-1AG0		1	1 unit 41K					
	• Yellow with LED	24 DC	5	3SE5130-1AA00-1AG0		1	1 unit 41K					
							230 AC	5	3SE5130-3AA00-1AG0		1	1 unit 41K
3SE5130-1AA00-1AG0												
	Covers for plastic enclosures, width 50 mm											
	• Turquoise with LED	24 DC	5	3SE5240-1AA00		1	1 unit 41K					
		230 AC	5	3SE5240-3AA00		1	1 unit 41K					
	• Yellow	--	5	3SE5240-0AA00-1AG0		1	1 unit 41K					
	• Yellow with LED	24 DC	5	3SE5240-1AA00-1AG0		1	1 unit 41K					
							230 AC	5	3SE5240-3AA00-1AG0		1	1 unit 41K
3SE5240-1AA00												
	Covers for metal enclosures, width 31 mm											
	• Turquoise with LED	24 DC	5	3SE5210-1AA00		1	1 unit 41K					
		230 AC	5	3SE5210-3AA00		1	1 unit 41K					
	• Yellow	--	5	3SE5210-0AA00-1AG0		1	1 unit 41K					
	• Yellow with LED	24 DC	5	3SE5210-1AA00-1AG0		1	1 unit 41K					
							230 AC	5	3SE5210-3AA00-1AG0		1	1 unit 41K
3SE5210-1AA00												
	Covers for metal enclosures, width 40 mm											
	• Turquoise with LED	24 DC	5	3SE5110-1AA00		1	1 unit 41K					
		230 AC	5	3SE5110-3AA00		1	1 unit 41K					
	• Yellow	--	5	3SE5110-0AA00-1AG0		1	1 unit 41K					
	• Yellow with LED	24 DC	5	3SE5110-1AA00-1AG0		1	1 unit 41K					
							230 AC	5	3SE5110-3AA00-1AG0		1	1 unit 41K
3SE5110-1AA00												
	Covers for metal enclosures, width 56 mm											
	• Turquoise with LED	24 DC	5	3SE5120-1AA00		1	1 unit 41K					
		230 AC	5	3SE5120-3AA00		1	1 unit 41K					
	• Yellow	--	5	3SE5120-0AA00-1AG0		1	1 unit 41K					
	• Yellow with LED	24 DC	5	3SE5120-1AA00-1AG0		1	1 unit 41K					
							230 AC	5	3SE5120-3AA00-1AG0		1	1 unit 41K
3SE5120-0AA00-1AG0												
Covers for XL metal enclosures, width 56 mm												
• Yellow	--	5	3SE5160-0AA00-1AG0		1	1 unit 41K						

Overview

Safety switches with separate actuator are used where the position of doors, covers or protective grilles must be monitored for safety reasons.

3SE5 safety switches with separate actuator have the same enclosures as the 3SE5 position switches (modular system).



3SE5 safety switches with head for separate actuator

Design

Enclosure sizes

The 3SE5 safety switches are available in four different enclosure sizes:

- Plastic enclosures according to EN 50047, 31 mm wide, IP65, 1 cable entry
- Metal enclosures according to EN 50047, 31 mm wide, IP66/IP67, 1 cable entry
- Plastic and metal enclosures according to EN 50041, 40 mm wide, IP66/IP67, 1 cable entry
- Plastic enclosures, 50 mm wide, IP66/IP67, 2 cable entries
- Metal enclosures, 56 mm wide, IP66/IP67, 3 cable entries

Also available are safety switches in the 3SE2 series which have been developed in this form according to general market requirements:

- Molded-plastic enclosures outside of the standards, enclosure width 52 mm, IP67

Enclosure versions

Various basic versions can be selected for the enclosures of the 3SE5 series:

- Available with two- or three-pole contact blocks designed as slow-action contacts
- Optional LED status display
- With mounted four or five-pole M12 device plug (available for the wide enclosures as an accessory for self-assembly)
- With 6-pole device plug + PE on the metal enclosures
- Similarly with a combination of plug and LED indicators
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs (see page 12/91)

For a description of the basic switches, see page 12/5.

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through $4 \times 90^\circ$. The switches can also be approached from above.

The actuator heads of the 3SE2243 and 3SE2257 switches with special enclosures cannot be changed. The switches can be approached from the two broad sides and from above.

The actuator is not included in the scope of supply of the safety switches and must be ordered separately from a choice of different versions to suit the application (see page 12/54).

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

Radius actuators

The safety switches with radius actuators are particularly suitable for rotary protective devices. The movable actuation key allows even small radii to be approached. Damage to the switch and the actuator due to inaccurate approach is prevented.

Locking devices

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more security (see page 12/54).



Blocking inserts with padlock

Dust protection

For use in dusty environments, a rubber cap is offered that protects the actuator entries of the actuator head from contamination (see page 12/54).

Contact reliability

The contact blocks ensure an extremely high contact stability. This applies even when the devices are switching low voltages and currents, e.g. 1 mA at 5 V DC.

Positive opening

The NC contacts of the switch are forced open mechanically, positively-driven and reliably by the plunger. This is referred to as "positive opening".

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Separate Actuator

General data

Benefits

The 3SE5 safety switches with separate actuator differ from the previous series through the following new properties:

- All enclosure sizes with increased corrosion protection are optionally available with an LED signaling indicator.
- The three-pole contact block 1 NO + 2 NC is available for all enclosure sizes.
- The plastic enclosure has simple and fast wiring equipment which makes it possible to save approx. 20 to 25% of the time when connecting.
- The ASI-safe electronics are integrated in the enclosure for the versions with AS-Interface connection (see page 12/91); an additional adapter is not required.

Application

Safety switches with separate actuator are used where the position of doors, covers or protective grilles must be monitored for safety reasons.

The safety switch can only be operated with the matching coded actuator. Simple overruling by hand or auxiliary devices is impossible.

Devices are available with enclosure versions to suit the particular ambient conditions. The high-grade steel actuator IP69K with optimized geometry is suitable for extreme environmental conditions as low as -40 °C. Different control tasks can be performed with the best contact blocks suited for the particular purpose. Dimensions and fixing points of the enclosure are in accordance with EN 50041 or EN 50047 standards. The devices are suitable for use in any climate.

Standards

IEC/EN 60947-5-1

The protective measure of "total insulation" by the molded-plastic enclosure is ensured by the use of molded-plastic screw glands.

Safety position switches

For controls according to IEC/EN 60204-1, the devices can be used as a safety position switch. They comply with the standard EN ISO 14119. A TÜV certificate is available. To secure position switches against changes in their position, keyed techniques must be employed on installation.

Safety circuits

The IEC/EN 60947-5-1 standard requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked in accordance with the standard IEC 60947-5-1 with the symbol ☹.

Category 3 according to EN ISO 13849-1 can be attained with a safety switch with separate actuator if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK, 3TK28 safety relays or matching units from the ASI-safe, SIMATIC or SINUMERIK product ranges.

Category 4 can be achieved when using an additional 3SE5 safety switch.

Technical specifications




Type		3SE51...-...V.., 3SE52...-...V..	3SE2257-.XX..	3SE2243-.XX..
General data				
Standards		IEC 60947-5-1, EN 60947-5-1, EN ISO 14119		
Rated insulation voltage U_i	V	400	500	
Degree of pollution according to IEC 60664-1		Class 3		Class 3
Rated impulse withstand voltage U_{imp}	kV	6		
Rated operational voltage U_e	V	400 AC; over 300 V AC same potential only	500 AC; over 380 V AC same potential only	
Conventional thermal current I_{th}	A	6	10	
Rated operational current I_e			1-pole	3-pole
• With alternating current 50/60 Hz		I_e / AC-15	I_e / AC-12	I_e / AC-15
- At 24 V	A	6	10	10
- At 120 V	A	6	10	10
- At 240 V	A	4	6	10
- At 400 V	A	4	4	10
- At 500 V	A	--	3	10
• For direct current		I_e / DC-13	I_e / DC-12	I_e / DC-13
- At 24 V	A	3	10	10
- At 125 V	A	0.55	--	--
- At 250 V	A	0.27	--	--
- At 110 V	A	--	4	1
- At 220 V	A	--	1	0.4
- At 400 V	A	0.12	--	--
- At 440 V	A	--	0.5	0.2
Short-circuit protection				
• With DIAZED fuse links, operational class gG	A	6	6	
• With fuse links, quick	A	--	10	
• With miniature circuit breaker, C char. ($I_{K < 400A}$)	A	1	--	
Mechanical endurance		1 × 10 ⁶ operating cycles		
Electrical endurance				
• With 3RH.1, 3RT contactors in size S00, S0		1 × 10 ⁶ operating cycles	> 1 × 10 ⁶ operating cycles	
• For utilization category AC-15 when switching off I_e / AC-15 at 240 V		100 000 operating cycles	500 000 operating cycles	
Switching frequency		6 000 operating cycles/h		
With 3RH.1, 3RT contactors in size S00, S0				
Minimum pull-out force for positive opening	N	20	10	30

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Separate Actuator

3SE5, plastic enclosures, enclosure width 31 mm according to EN 50047

Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP65 · Cable entry M20 × 1.5

Version ¹⁾	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Enclosure width 31 mm according to EN 50047							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0RV40		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ ▶	3SE5232-0QV40		1	1 unit 41K
	With increased minimum pull-out force 30 N						
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0QV40-1AA1		1	1 unit 41K
With M12 device plug, 4-pole (250 V, 4 A)							
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5234-0RV40-1AC4		1	1 unit 41K
	Slow-action contacts	2 NC --	⊕ 5	3SE5234-0QV40-1AE0		1	1 unit 41K
With M12 device plug, 5-pole (125 V, 4 A), with pin assignment as for SIMATIC ET 200²⁾ <i>NEW</i>							
	Slow-action contacts	2 NC --	⊕ X	3SE5234-0QV40-1AE2		1	1 unit 41K
With 2 LEDs, yellow/green							
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5232-1RV40		1	1 unit 41K
	Slow-action contacts	1 NO + 1 NC 230 V AC	⊕ 5	3SE5232-3RV40		1	1 unit 41K
With M12 device plug, 5-pole (125 V, 4 A), and 2 LEDs							
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5234-1RV40-1AF3		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 12/54).



²⁾ The 3SE5234-.....-1AE2 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all compact block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN, ET 200eco PN-F and ET 200AL series with IP65/IP67 degree of protection for cabinet-free installation directly at the machine.

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Separate Actuator

3SE5, plastic enclosures, enclosure width 40 mm according to EN 50041

Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version ¹⁾	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Enclosure width 40 mm acc. to EN 50041							
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5132-0QV20		1	1 unit 41K
3SE5132-0QV20	With 2 LEDs, yellow/green						
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5132-1QV20		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5132-3QV20		1	1 unit 41K
3SE5132-1QV20							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.



¹⁾ Supplied without actuator. Please order separately (see page 12/54).

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Separate Actuator

3SE5, plastic enclosures, enclosure width 50 mm

Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version ¹⁾	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Enclosure width 50 mm							
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5242-0QV40		1	1 unit 41K
	With increased minimum pull-out force 30 N						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5242-0RV40-1AA1		1	1 unit 41K
3SE5242-0QV40							
With 2 LEDs, yellow/green							
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5242-1QV40		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5242-3QV40		1	1 unit 41K
3SE5242-1QV40							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.



¹⁾ Supplied without actuator. Please order separately (see page 12/54).

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Separate Actuator

3SE5, metal enclosures, enclosure width 31 mm according to EN 50047

Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version ¹⁾	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Enclosure width 31 mm according to EN 50047							
	Slow-action contacts	1 NO + 1 NC --	⊕ 2	3SE5212-0RV40		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0QV40		1	1 unit 41K
3SE5212-0RV40	With 2 LEDs, yellow/green						
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5212-1RV40		1	1 unit 41K
	Slow-action contacts	1 NO + 1 NC 230 V AC	⊕ 5	3SE5212-3RV40		1	1 unit 41K
3SE5212-1RV40							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 12/54).

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Separate Actuator

3SE5, metal enclosures, enclosure width 40 mm according to EN 50041 / 56 mm

Selection and ordering data

2 or 3 contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version ¹⁾	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Enclosure width 40 mm acc. to EN 50041							
	Slow-action contacts	1 NO + 2 NC --	⊕ ▶	3SE5112-0QV10		1	1 unit 41K
	With increased minimum pull-out force 30 N						
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5112-0QV10-1AA7		1	1 unit 41K
	With M12 device plug, 5-pole (125 V, 4 A)						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5114-0RV10-1AC5		1	1 unit 41K
	Slow-action contacts	2 NC --	⊕ 5	3SE5114-0QV10-1AE1		1	1 unit 41K
	With M12 device plug, 5-pole (125 V, 4 A), with pin assignment as for SIMATIC ET 200²⁾ NEW						
	Slow-action contacts	2 NC --	⊕ X	3SE5114-0QV10-1AE3		1	1 unit 41K
With device plug, 6-pole + PE (250 V, 10 A)							
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5115-0QV10-1AD1		1	1 unit 41K
	With 2 LEDs, yellow/green						
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5112-1QV10		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5112-3QV10		1	1 unit 41K
	With M12 device plug, 5-pole (125 V, 4 A), and 2 LEDs						
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5114-1RV10-1AF3		1	1 unit 41K
	With device plug, 6-pole + PE (250 V, 10 A), and 2 LEDs						
	Slow-action contacts	1 NO + 1 NC 24 V DC	⊕ 5	3SE5115-1RV10-1AF2		1	1 unit 41K
Enclosure width 56 mm							
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0QV10		1	1 unit 41K
	With increased minimum pull-out force 30 N						
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5122-0QV10-1AA7		1	1 unit 41K
	With 2 LEDs, yellow/green						
	Slow-action contacts	1 NO + 2 NC 24 V DC	⊕ 5	3SE5122-1QV10		1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC 230 V AC	⊕ 5	3SE5122-3QV10		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.













¹⁾ Supplied without actuator. Please order separately (see page 12/54).

²⁾ The 3SE5114-...-1AE3 position switches, prewired with an M12 plug, 5-pole, have the same pin assignment as all compact block I/O modules with a PROFINET connection in the SIMATIC ET 200eco PN, ET 200eco PN-F and ET 200AL series with IP65/IP67 degree of protection for cabinet-free installation directly at the machine.

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Separate Actuator

Accessories

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IP66/IP67						
		Standard actuator				
3SE5000-0AV01		• Length 75.6 mm				
	▶	3SE5000-0AV01		1	1 unit	41K
		• With vertical fixing, length 53 mm				
3SE5000-0AV02	5	3SE5000-0AV02		1	1 unit	41K
		• With transverse fixing, length 47 mm				
3SE5000-0AV03	5	3SE5000-0AV03		1	1 unit	41K
		• With transverse fixing, plastic ¹⁾ , length 40 mm				
3SE5000-0AW11	5	3SE5000-0AW11		1	1 unit	41K
High-grade steel actuator, IP69K²⁾						
		• Length 75.6 mm				
3SE5000-0AW51	5	3SE5000-0AW51		1	1 unit	41K
Radius actuator, length 51 mm						
		• Direction of approach from the left				
3SE5000-0AV06	2	3SE5000-0AV04		1	1 unit	41K
	5	3SE5000-0AV06		1	1 unit	41K
Universal radius actuator						
		• Length 77 mm				
3SE5000-0AV05-1AA6	5	3SE5000-0AV05		1	1 unit	41K
	5	3SE5000-0AV05-1AA6		1	1 unit	41K
Universal radius actuator, heavy duty						
		• Length 67 mm				
3SE5000-0AV07	2	3SE5000-0AV07-1AK2		1	1 unit	41K
	5	3SE5000-0AV07		1	1 unit	41K
Optional accessories for 3SE5						
		Protective caps, black rubber				
3SE5000-0AV08-1AA2	5	For the actuator head, to protect the actuator openings from contamination (Only for enclosure width 40 or 56 mm)				
		3SE5000-0AV08-1AA2		1	1 unit	41K
		Blocking inserts, high-grade steel, for actuator head				
3SE5000-0AV08-1AA3	5	For up to eight padlocks				
		3SE5000-0AV08-1AA3		1	1 unit	41K
Connections for 3SE5, 3SE2						
		Device plugs (4-pole), M12, fixed for M20 x 1.5				
3SY3127		With connecting cable 0.25 mm ² , plastic, degree of protection IP67, ambient temperature -40 to +85 °C				
	5	For max. 250 V, 4 A				
	5	For max. 125 V, 4 A				
		3SY3127		1	1 unit	41K
		3SY3128		1	1 unit	41K
		Cable glands M20 x 1.5				
3SX9926	2	Plastic				
		3SX9926		1	1 unit	41K

¹⁾ Not suitable for safety switches with tumbler.







²⁾ With optimized geometry and suitable for extreme environmental conditions such as -40 °C

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Separate Actuator

3SE2, plastic enclosures, special width 52 mm

Selection and ordering data

1 or 3 contacts · 3 directions of approach · Degree of protection IP67

Version	Operation	SD	Complete units	PU (UNIT, SET, M)	PS*	PG	
		d	Article No.	Price per PU			
Plastic enclosures in special width of 52 mm							
 3SE2243	Lateral and front-end actuation¹⁾		6 mm stroke				
	• With connecting thread M20 × 1.5						
	- Slow-action contacts 1 NO + 2 NC	Holding force 5 N	⊕ 2	3SE2243-0XX40	1	1 unit	41K
		Holding force 30 N	⊕ 2	3SE2243-0XX	1	1 unit	41K
		With automatic ejection	⊕ 2	3SE2243-0XX30	1	1 unit	41K
	- Slow-action contacts 1 NC	Holding force 5 N	⊕ 15	3SE2257-6XX40	1	1 unit	41K
		Holding force 30 N	⊕ 15	3SE2257-6XX	1	1 unit	41K
		With automatic ejection	⊕ 5	3SE2257-6XX30	1	1 unit	41K
	• With connecting thread M16 × 1.5						
	- Slow-action contacts 1 NO + 2 NC	Holding force 30 N	⊕ 10	3SE2243-0XX18	1	1 unit	41K
Accessories							
Actuators							
 3SX3218	• Standard actuators ($r_{\min} = 150$ mm), length 28 mm		2	3SX3218	1	1 unit	41K
	 3SX3228	• Universal radius actuator ($r_{\min} = 45$ mm), length 34 mm		2	3SX3228	1	1 unit
 3SX3256		• Radius actuator, adjustable radius, length 34 mm		10	3SX3256	1	1 unit
	 3SX3217	• Ball locating, force adjustable up to max. 100 N by 2 adjustable screws, length 28 mm		2	3SX3217	1	1 unit
 3SX3234		• Actuator, length 34 mm, with dust protection and slit cover		30	3SX3234	1	1 unit
	Accessories						
	• Slit cover (1 set = 3 units)		30	3SX3233	1	3 units	41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) Supplied without actuator.

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Tumbler

General data

Overview

The safety switches with tumbler are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grilles or other covers as long as a dangerous situation is present (i.e. follow-on motion of the switched-off machine).



3SE5 safety switch with tumbler

The safety switches with tumbler are comprised of a switch part with electromechanical tumbler and a mechanical actuator which has to be ordered separately.

They are rugged protective devices that enable the greatest possible safety for man and machine.

The safety switches with tumbler are offered in plastic or metal enclosures.

Dimensions (W × H × D): 54 mm × 185 mm × 43.5 mm

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through $4 \times 90^\circ$. The switches can also be approached from above.

The actuator is not included in the scope of supply of the safety switches and must be ordered separately from a choice of different versions to suit the application (see page 12/62).

Actuation data:

- Maximum actuating speed $v_{\max} = 1.5 \text{ m/s}$
- Minimum actuating speed $v_{\min} = 0.4 \text{ mm/s}$
- Minimum force in the direction of actuation $F_{\min} = 30 \text{ N}$

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

Radius actuators

The safety switches with radius actuators are particularly suitable for rotary protective devices. The movable actuation key allows even small radii to be approached. Damage to the switch and the actuator due to inaccurate approach is prevented.

Locking devices

A high-grade steel locking device for attaching up to eight padlocks is available for even more security (see page 12/63).

Dust protection

A rubber cap to protect the actuator entry of the actuator head from contamination is available for operation in dusty environments (see page 12/63).

Tumbler

There are two versions for interlocking the actuator:

- Spring-actuated lock (closed-circuit principle) with various release mechanisms
- Solenoid-locked (open-circuit principle)

The spring-actuated lock switch is equipped with an auxiliary release for emergency situations or setup mode. Available as options:

- Escape release or
- Emergency release

Contact blocks

The safety switches with tumbler have one switching block each for:




- Monitoring the actuator or the position of the protective door
- Monitoring the position of the solenoid

The mechanical design of the switches corresponds to the requirements of the fail-safe principle according to EN ISO 14119.

Optical signaling equipment

The safety switches with tumbler are available with an optional optical signaling device.

The signaling device indicates the switch position of the interlock and the protective device optically by means of 2 LEDs on the front.

Protective device	Tumbler	Display	Meaning
Closed	Released		Actuator able to be pulled
Closed	Locked		Actuator locked
Open	Released		Actuator pulled

Internal wiring:

- The yellow LED is pre-wired to the solenoid monitoring NO contact.
- The green LED is pre-wired to the actuator monitoring NC contact.
- LED ground is pre-wired to the ground of the solenoid.

Note:

- The operational voltage must be connected to the corresponding contacts by the customer.
- This voltage for the LEDs must match the operational voltage of the solenoid (same potential).

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Tumbler

General data

Benefits

The new generation of 3SE53 safety switches offers:

- More safety through higher locking forces:
 - 1 300 N with plastic enclosure
 - 2 600 N with metal enclosure
- Various release mechanisms: lock release, escape release and emergency release
- Two contact blocks each with three contacts as standard equipment, hence fewer versions needed
- Same dimensions for all enclosure versions: Plastic, metal or with integrated ASIsafe
- An extensive range of actuators
- An optional LED status display 24 V DC, 115 V or 230 V AC for all switch versions
- Devices with ASIsafe electronics integrated in the enclosure/ wired to 8-pole M12 device plug (see page 12/95)
- 3SE5322-1S.21-1AG4 series with high degree of protection IP69, IP69K in accordance with IEC 60529, cover with foamed seal

Application

The safety switches with tumbler are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grilles or other covers as long as a dangerous situation is present (i.e. follow-on motion of the switched-off machine).

The safety position switches with tumbler have the following functions:

- Enabling the machine or process with closed and locked protective device
- Locking the machine or process with opened protective device
- Position monitoring of the protective device and tumbler

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Devices).

The mechanical design of the switch corresponds to the requirements of the fail-safe principle according to EN ISO 14119.

Approvals

The switches are approved for use with locking devices according to EN ISO 14119 and EN 292, Parts 1 and 2.

Category 3 according to EN ISO 13849-1 can be attained with a safety switch with tumbler if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK or 3TK28 safety relays or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

Category 4 can be achieved when using an additional 3SE5 safety switch.

These switches are approved according to UL 508, UL 50 and UL 746-C.

Tumbler

The separate actuator works like a key using coding and protects against manipulation. It transmits the locking force to the protective device and helps to monitor its position.

There are two versions of locking:

Spring-actuated lock (closed-circuit principle)

- In the standard version, the safety switch locks by means of spring force and releases by means of electromagnetic force. In the case of voltage failure, it reliably prevents the protective device from opening when machine parts are still moving.
- The switch is equipped with an auxiliary release for emergency situations or setup mode.
- An auxiliary release which can be secured with a lock to prevent misuse is available as a version.

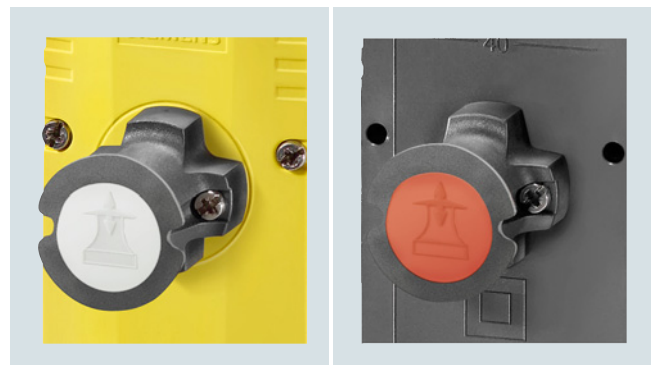


Auxiliary release

Auxiliary release with lock

The 3SE5 3 safety switches are also available with an escape release or emergency release.

- Personnel working inside the hazard zone can use the escape release feature to manually release the tumbler without tools from the escape side (hazardous area side) so that they can exit the hazard area. An intentional act (in this case pulling the gray actuator) is required to release the locking mechanism and restore the normal operating state.
- The emergency release enables someone in an emergency situation to manually release the tumbler without tools from the access side (outside the hazardous area). Releasing the lock and restoring the normal operating state must require effort which is comparable to repair activity: in this case disassembly of the red actuator and resetting of the mechanical lock.



Escape release from the front

Emergency release from the back

Solenoid-locked (open-circuit principle)

- The second version offers locking by means of electromagnetic force and release by means of spring force. This version has an advantage when it is necessary to quickly access the machine after a power failure occurs, or in the case of very short coasting times.

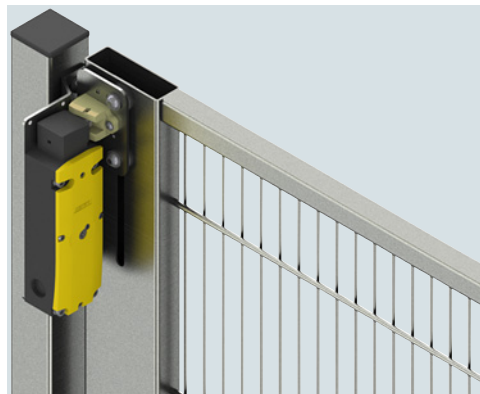
SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Tumbler

General data

Examples of door interlocking



X-Lock door interlocking from Axelent



Door interlocking from Brühl

For the addresses of the door interlock manufacturers, see page 16/16.

Technical specifications

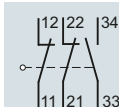
Type		3SE5322	3SE5312
General data			
Standards		IEC/EN 60947-5-1, EN ISO 14119	
Rated insulation voltage U_i	V	250	
Degree of pollution according to IEC 60664-1		Class 3	
Rated impulse withstand voltage U_{imp}	kV	4	
Rated operational voltage U_e			
• DC	V	24	
• 50/60 Hz AC	V	230	
Conventional thermal current I_{th}	A	6	
Rated operational current I_e			
• With alternating current 50/60 Hz		I_e / AC-15 or B300	
- At 24 V	A	6	
- At 120 V	A	6	
- At 240 V	A	3	
• For direct current		I_e / DC-13 or Q300	
- At 24 V	A	3	
- At 125 V	A	0.55	
- At 250 V	A	0.27	
Solenoid			
• Locking force, max.	N	1 300	2 600
• Locking force acc. to EN ISO 14119	N	1 000	2 000
• Power consumption at U_C	W	3.5	
Short-circuit protection¹⁾			
• With DIAZED fuse links, utilization category gG	A	6	
• With miniature circuit breaker, C char.	A	0.5	
Mechanical endurance	Operating cycles	1×10^6	
Electrical endurance			
• With 3RH.1, 3RT contactors in size S00, S0	Operating cycles	1×10^6	
• For utilization category AC-15 when switching off I_e / AC-15 at 230 V	Operating cycles	100 000	
• With utilization category DC-12/DC-13		For direct current depending on the loading of the switch	
Switching frequency	Operating cycles/h	6 000	
With 3RH.1, 3RT contactors in size S00, S0			
Shock resistance acc. to IEC 60068-2-27	g/ms	30/11	

¹⁾ Without any welds according to IEC 60947-5-1.

Circuit diagrams

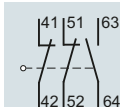
Monitoring the actuator

Slow-action contacts 1 NO + 2 NC



Monitoring the solenoid

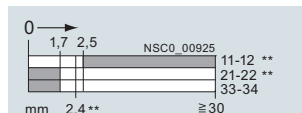
Slow-action contacts 1 NO + 2 NC



Operating travel

Monitoring the actuator

Slow-action contacts 1 NO + 2 NC









SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Tumbler

3SE5, plastic enclosures with locking force greater than 1 200 N

Selection and ordering data

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 × M20 × 1.5 · Locking force 1 300 N

Tumbler ¹⁾	LEDs	Solenoid, rated operational voltage	SD	Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
		V	d						
1 300 N locking force · Enclosure width 54 mm									
Spring-actuated lock									
	• With auxiliary release	--	24 DC	⊕ ▶	3SE5322-0SD21		1	1 unit	41K
		--	115 AC	⊕ 5	3SE5322-0SD22		1	1 unit	41K
		--	230 AC	⊕ 5	3SE5322-0SD23		1	1 unit	41K
		Yellow/Green	24 DC	⊕ 2	3SE5322-1SD21		1	1 unit	41K
		Yellow/Green	115 AC	⊕ 5	3SE5322-2SD22		1	1 unit	41K
		Yellow/Green	230 AC	⊕ 5	3SE5322-3SD23		1	1 unit	41K
3SE5322-0SD21									
	• With auxiliary release with lock	--	24 DC	⊕ 5	3SE5322-0SE21		1	1 unit	41K
		--	115 AC	⊕ 5	3SE5322-0SE22		1	1 unit	41K
		--	230 AC	⊕ 5	3SE5322-0SE23		1	1 unit	41K
		Yellow/Green	24 DC	⊕ 5	3SE5322-1SE21		1	1 unit	41K
		Yellow/Green	115 AC	⊕ 5	3SE5322-2SE22		1	1 unit	41K
		Yellow/Green	230 AC	⊕ 5	3SE5322-3SE23		1	1 unit	41K
3SE5322-0SE21									
	• With escape release from the front	--	24 DC	⊕ 5	3SE5322-0SF21		1	1 unit	41K
		--	115 AC	⊕ 5	3SE5322-0SF22		1	1 unit	41K
		--	230 AC	⊕ 5	3SE5322-0SF23		1	1 unit	41K
		Yellow/Green	24 DC	⊕ 5	3SE5322-1SF21		1	1 unit	41K
		Yellow/Green	115 AC	⊕ 5	3SE5322-2SF22		1	1 unit	41K
		Yellow/Green	230 AC	⊕ 5	3SE5322-3SF23		1	1 unit	41K
3SE5322-0SF21									
	• With escape release from the front and emergency release from the back	--	24 DC	⊕ 5	3SE5322-0SL21		1	1 unit	41K
		--	115 AC	⊕ 5	3SE5322-0SG21		1	1 unit	41K
		--	230 AC	⊕ 5	3SE5322-0SG22		1	1 unit	41K
		--	230 AC	⊕ 5	3SE5322-0SG23		1	1 unit	41K
		Yellow/Green	24 DC	⊕ 5	3SE5322-1SG21		1	1 unit	41K
		Yellow/Green	115 AC	⊕ 5	3SE5322-2SG22		1	1 unit	41K
Yellow/Green	230 AC	⊕ 5	3SE5322-3SG23		1	1 unit	41K		
3SE5322-0SG21									
	• With escape release from the back and auxiliary release with lock from the front	--	24 DC	⊕ 5	3SE5322-0SH21		1	1 unit	41K
		--	115 AC	⊕ 5	3SE5322-0SJ21		1	1 unit	41K
		--	115 AC	⊕ 5	3SE5322-0SJ22		1	1 unit	41K
		--	230 AC	⊕ 5	3SE5322-0SJ23		1	1 unit	41K
		Yellow/Green	24 DC	⊕ 5	3SE5322-1SJ21		1	1 unit	41K
		Yellow/Green	115 AC	⊕ 5	3SE5322-2SJ22		1	1 unit	41K
Yellow/Green	230 AC	⊕ 5	3SE5322-3SJ23		1	1 unit	41K		
3SE5322-0SJ21									
	Solenoid-locked	--	24 DC	⊕ ▶	3SE5322-0SB21		1	1 unit	41K
		--	115 AC	⊕ 5	3SE5322-0SB22		1	1 unit	41K
		--	230 AC	⊕ 5	3SE5322-0SB23		1	1 unit	41K
		Yellow/Green	24 DC	NEW ⊕ 5	3SE5334-0SB21-1AC8		1	1 unit	41K
		Yellow/Green	24 DC	NEW ⊕ 5	3SE5324-0SB21-1AP0		1	1 unit	41K
		Yellow/Green	24 DC	⊕ 2	3SE5322-1SB21		1	1 unit	41K
Yellow/Green	115 AC	⊕ 5	3SE5322-2SB22		1	1 unit	41K		
Yellow/Green	230 AC	⊕ 5	3SE5322-3SB23		1	1 unit	41K		
3SE5322-1SB21									





⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 12/62).

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Tumbler

3SE5, plastic enclosures with locking force greater than 1 200 N


6 slow-action contacts · 5 directions of approach · **Degree of protection IP69K** · Cable entry 3 × M20 × 1.5 · Locking force 1 300 N
• With foamed seal and special cover

Tumbler ¹⁾	LEDs	Solenoid, rated operational voltage	SD	Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC	PU (UNIT, SET, M)	PS*	PG
		V	d	Article No.	Price per PU		
1 300 N locking force · Enclosure width 54 mm · Degree of protection IP69K							
Spring-actuated locks							
	• With auxiliary release	Yellow/Green	24 DC	⊕ 5	3SE5322-1SD21-1AG4	1	1 unit 41K
3SE5322-1SD21-1AG4							
	• With auxiliary release with lock	Yellow/Green	24 DC	⊕ 5	3SE5322-1SE21-1AG4	1	1 unit 41K
3SE5322-1SE21-1AG4							
	• With escape release from the front	Yellow/Green	24 DC	⊕ 5	3SE5322-1SF21-1AG4	1	1 unit 41K
3SE5322-1SF21-1AG4							
	• With escape release from the back and auxiliary release from the front	Yellow/Green	24 DC	⊕ 5	3SE5322-1SG21-1AG4	1	1 unit 41K
3SE5322-1SG21-1AG4							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 12/62).

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Accessories						
		Cable glands M20 × 1.5 Plastic High degree of protection IP69, IEC 60529	5	3SX5601-1A	1	1 unit 41K
3SX5601-1A						

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Tumbler


3SE5, metal enclosures with locking force greater than 2 000 N

Selection and ordering data

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 × M20 × 1.5 · Locking force 2 600 N

Tumbler ¹⁾	LEDs	Solenoid, rated operational voltage	SD	Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC	PU (UNIT, SET, M)	PS*	PG
		V	d	Article No.	Price per PU		

2 600 N locking force · Enclosure width 54 mm

Spring-actuated locks								
	• With auxiliary release	--	24 DC	⊕ ▶	3SE5312-0SD11	1	1 unit	41K
		--	115 AC	⊕ 5	3SE5312-0SD12	1	1 unit	41K
		--	230 AC	⊕ 5	3SE5312-0SD13	1	1 unit	41K
		Yellow/Green	24 DC	⊕ 5	3SE5312-1SD11	1	1 unit	41K
		Yellow/Green	115 AC	⊕ 5	3SE5312-2SD12	1	1 unit	41K
		Yellow/Green	230 AC	⊕ 5	3SE5312-3SD13	1	1 unit	41K
	• With auxiliary release with lock	--	24 DC	⊕ 5	3SE5312-0SE11	1	1 unit	41K
		--	115 AC	⊕ 5	3SE5312-0SE12	1	1 unit	41K
		--	230 AC	⊕ 5	3SE5312-0SE13	1	1 unit	41K
		Yellow/Green	24 DC	⊕ 5	3SE5312-1SE11	1	1 unit	41K
		Yellow/Green	115 AC	⊕ 5	3SE5312-2SE12	1	1 unit	41K
		Yellow/Green	230 AC	⊕ 5	3SE5312-3SE13	1	1 unit	41K
	• With escape release from the front	--	24 DC	⊕ 5	3SE5312-0SF11	1	1 unit	41K
		--	115 AC	⊕ 5	3SE5312-0SF12	1	1 unit	41K
		--	230 AC	⊕ 5	3SE5312-0SF13	1	1 unit	41K
		Yellow/Green	24 DC	⊕ 5	3SE5312-1SF11	1	1 unit	41K
		Yellow/Green	115 AC	⊕ 5	3SE5312-2SF12	1	1 unit	41K
		Yellow/Green	230 AC	⊕ 5	3SE5312-3SF13	1	1 unit	41K
	• With escape release from the back and auxiliary release from the front	--	24 DC	⊕ 5	3SE5312-0SG11	1	1 unit	41K
		--	115 AC	⊕ 5	3SE5312-0SG12	1	1 unit	41K
		--	230 AC	⊕ 5	3SE5312-0SG13	1	1 unit	41K
		Yellow/Green	24 DC	⊕ 5	3SE5312-1SG11	1	1 unit	41K
		Yellow/Green	115 AC	⊕ 5	3SE5312-2SG12	1	1 unit	41K
		Yellow/Green	230 AC	⊕ 5	3SE5312-3SG13	1	1 unit	41K
	• With escape release from the back and auxiliary release with lock from the front	--	24 DC	⊕ 5	3SE5312-0SH11	1	1 unit	41K
	• With emergency release from the back and auxiliary release from the front	--	24 DC	⊕ 5	3SE5312-0SJ11	1	1 unit	41K
		--	115 AC	⊕ 5	3SE5312-0SJ12	1	1 unit	41K
		--	230 AC	⊕ 5	3SE5312-0SJ13	1	1 unit	41K
		Yellow/Green	24 DC	⊕ 5	3SE5312-1SJ11	1	1 unit	41K
		Yellow/Green	115 AC	⊕ 5	3SE5312-2SJ12	1	1 unit	41K
		--	230 AC	⊕ 5	3SE5312-3SJ13	1	1 unit	41K
	Solenoid-locked	--	24 DC	⊕ ▶	3SE5312-0SB11	1	1 unit	41K
		--	115 AC	⊕ 5	3SE5312-0SB12	1	1 unit	41K
		--	230 AC	⊕ 5	3SE5312-0SB13	1	1 unit	41K
		Yellow/Green	24 DC	⊕ 5	3SE5312-1SB11	1	1 unit	41K
		Yellow/Green	115 AC	⊕ 5	3SE5312-2SB12	1	1 unit	41K
	Yellow/Green	230 AC	⊕ 5	3SE5312-3SB13	1	1 unit	41K	

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 12/62).

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Tumbler

Accessories

Selection and ordering data





Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
IP66/IP67						
 3SE5000-0AV01		Standard actuator • Length 75.6 mm		1	1 unit	41K
 3SE5000-0AV02	5	• With vertical fixing, length 53 mm		1	1 unit	41K
 3SE5000-0AV03	5	• With transverse fixing, length 47 mm		1	1 unit	41K
 3SE5000-0AW51	5	High-grade steel actuator, IP69K¹⁾ • Length 75.6 mm		1	1 unit	41K
 3SE5000-0AW52	5	• With vertical fixing, length 53 mm		1	1 unit	41K
 3SE5000-0AW53	5	• With transverse fixing, length 47 mm		1	1 unit	41K
 3SE5000-0AV06	2	Radius actuator, length 51 mm • Direction of approach from the left		1	1 unit	41K
	5	• Direction of approach from the right		1	1 unit	41K
 3SE5000-0AV05-1AA6	5	Universal radius actuator • Length 77 mm		1	1 unit	41K
	5	• Length 77 mm, tab rotated 90°		1	1 unit	41K
 3SE5000-0AV07	2	Universal radius actuator, heavy duty • Length 67 mm		1	1 unit	41K
	5	• Length 77 mm		1	1 unit	41K

For further plug versions, see page 12/44.

¹⁾ With optimized geometry and suitable for extreme environmental conditions such as -40 °C

SIRIUS 3SE5, 3SE2 Mechanical Safety Switches With Tumbler

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories for 3SE5						
 3SE5000-0AV08-1AA2		Protective caps , black rubber For the actuator head, to protect the actuator openings from contamination	5	3SE5000-0AV08-1AA2	1	1 unit 41K
 3SE5000-0AV08-1AA3		Blocking inserts , high-grade steel, for actuator head For up to eight padlocks	5	3SE5000-0AV08-1AA3	1	1 unit 41K
Spare parts for 3SE5						
		Spare keys	5	3SX5100-1F	1	1 unit 41K
Connection for 3SE5						
 3SY3127		Device plugs (4-pole), M12, fixed for M20 x 1.5 For max. 250 V, 4 A With connecting cable 0.25 mm ² , plastic, degree of protection IP67, ambient temperature -40 to +85 °C	5	3SY3127	1	1 unit 41K
 3SX9926		Device plugs (5-pole), M12, fixed for M20 x 1.5 For max. 125 V, 4 A With connecting cable 0.25 mm ² , plastic, degree of protection IP67, ambient temperature -40 to +85 °C	5	3SY3128	1	1 unit 41K
		Cable glands M20 x 1.5 Plastic	2	3SX9926	1	1 unit 41K
		• Degree of protection IP67	5	3SX5601-1A	1	1 unit 41K
		• High degree of protection IP69, IEC 60529				

For further plug versions, see page 12/44.

SIRIUS 3SE5, 3SE2 Mechanical Safety Hinge Switches

General data

Overview

3SE5 hinge switches have the same enclosures as the 3SE5 position switches (modular system).



Hinge switches

Design

Enclosure sizes

The 3SE5 switches are available as complete units in two enclosure sizes:

- Plastic enclosures according to EN 50047, 31 mm wide, IP65, 1 cable entry
- Metal enclosures according to EN 50047, 31 mm wide, IP66/IP67, 1 cable entry
- Plastic and metal enclosures according to EN 50041, 40 mm wide, IP66/IP67, 1 cable entry

Enclosure versions

Various basic versions can be selected for the enclosures:

- With two or three-pole switching elements designed as snap-action contacts
- AS-Interface version with integrated ASIsafe electronics for all enclosure designs (see page 12/98)

For a description of the basic switches, see page 12/5.

Operating mechanism

The hinge switches are provided for mounting on hinges. The actuator head is included in the scope of supply. There are two versions:

- Operating mechanism with hollow shaft, inner diameter 8 mm, outer 12 mm
- Operating mechanism with solid shaft, diameter 10 mm

3SE2283 hinge switches

The 3SE2283 hinge switches with integrated hinge are available in a special design. They are particularly suitable for use in machine doors and flaps.

Benefits

The 3SE5 hinge switches differ from the previous series through the following new characteristics:

- All actuators can be turned around the axis in increments of 22.5° (see picture, page 12/6).
- The new three-pole contact block 1 NO + 2 NC is available for all enclosure sizes (see picture, page 12/6).
- The plastic enclosure with a width of 31 mm has simple and fast wiring equipment which makes it possible to save approx. 20 to 25% of the time when connecting (see picture, page 12/6).
- The ASIsafe electronics are integrated in the enclosure for the versions with AS-Interface connection (see page 12/83); an additional adapter is not required.

Application

The hinge switches are used in those areas where the position of swiveling protective devices such as doors or flaps must be monitored. With these switches, the position of the doors and flaps is converted into electric signals. The switches allow shutdown and signaling without delay in the event of a small opening angle through the snap-action contacts with an operating angle of 10°.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the contact blocks best suited for the particular purpose. Dimensions and fixing points of the enclosures are in accordance with EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

IEC/EN 60947-5-1

The protective measure of "total insulation" by the plastic enclosure is ensured by the use of molded-plastic screw glands.

Safety position switches

For controls according to IEC/EN 60204-1, the devices can be used as a safety position switch. To secure position switches against changes in their position, keyed techniques must be employed on installation.

Safety circuits

The IEC/EN 60947-5-1 standard requires positive opening of the NC contacts. In other words, for the purposes of personal safety, the assured opening of NC contacts is expressly stipulated for the electrical equipment of machines in all safety circuits and marked in accordance with IEC 60947-5-1 with the symbol \ominus .

Category 4 according to EN ISO 13849-1 can be attained with the 3SE5 hinge switches with \ominus if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK or 3TK28 safety relays or matching devices from the ASIsafe, SIMATIC or SINUMERIK product ranges.

SIRIUS 3SE5, 3SE2 Mechanical Safety Hinge Switches

3SE5, Plastic Enclosures

Enclosure width 31 mm acc. to EN 50047 / 40 mm according to EN 50041





Technical specifications

The technical specifications are the same as for the standard switches (see page 12/9).

Selection and ordering data

Complete units



2 or 3 contacts · Degree of protection IP65 (31 mm) or IP67/IP68 (40 mm) · Cable entry M20 × 1.5

Version	Snap-action contacts	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
		d	Article No.	Price per PU		
Plastic enclosures · Enclosure width 31 mm acc. to EN 50047						
	With hollow shaft					
	Operating angle 10°	1 NO + 1 NC ¹⁾ ⊕ 5	3SE5232-0HU21		1	1 unit 41K
	Operating angle 10°	1 NO + 2 NC ⊕ 5	3SE5232-0LU21		1	1 unit 41K
	With solid shaft					
	Operating angle 10°	1 NO + 1 NC ¹⁾ ⊕ 5	3SE5232-0HU22		1	1 unit 41K
	Operating angle 10°	1 NO + 2 NC ⊕ 5	3SE5232-0LU22		1	1 unit 41K
Plastic enclosures · Enclosure width 40 mm acc. to EN 50041						
	With hollow shaft					
	Operating angle 10°	1 NO + 2 NC ⊕ 5	3SE5132-0LU21		1	1 unit 41K
	With solid shaft					
	Operating angle 10°	1 NO + 2 NC ⊕ 5	3SE5132-0LU22		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Contact blocks permanently integrated, replacement not available.

Spare parts

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Actuator heads						
	With hollow shaft					
	Operating angle 10°	5	3SE5000-0AU21		1	1 unit 41K
	With solid shaft					
	Operating angle 10°	5	3SE5000-0AU22		1	1 unit 41K

Note:

The respective actuators are included in the scope of supply for the complete units.

SIRIUS 3SE5, 3SE2 Mechanical Safety Hinge Switches

3SE5, Metal Enclosures

Enclosure width 31 mm acc. to EN 50047 / 40 mm according to EN 50041



Selection and ordering data

Complete units



3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5

Version	Snap-action contacts	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
		d	Article No.	Price per PU		

Metal enclosures · Enclosure width 31 mm acc. to EN 50047

	With hollow shaft Operating angle 10°	1 NO + 2 NC	⊕ 5	3SE5212-0LU21	1	1 unit	41K
3SE5212-0LU21							
	With solid shaft Operating angle 10°	1 NO + 2 NC	⊕ 5	3SE5212-0LU22	1	1 unit	41K
3SE5212-0LU22							

Metal enclosures · Enclosure width 40 mm acc. to EN 50041



	With hollow shaft Operating angle 10°	1 NO + 2 NC	⊕ 5	3SE5112-0LU21	1	1 unit	41K
3SE5112-0LU21							
	With solid shaft Operating angle 10°	1 NO + 2 NC	⊕ 5	3SE5112-0LU22	1	1 unit	41K
3SE5112-0LU22							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

Spare parts

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Actuator heads

	With hollow shaft Operating angle 10°		5	3SE5000-0AU21	1	1 unit	41K
3SE5000-0AU21							
	With solid shaft Operating angle 10°		5	3SE5000-0AU22	1	1 unit	41K
3SE5000-0AU22							

Note:

The respective actuators are included in the scope of supply for the complete units.

SIRIUS 3SE5, 3SE2 Mechanical Safety Hinge Switches 3SE2, Plastic Enclosures

With integrated hinge

Overview

The 3SE2283 hinge switches with built-in hinge are particularly suitable for use in doors and flaps of machines that must be closed to ensure the safety of operating personnel. Their thin profile and the compact design allow them to be directly mounted on a hinged protective cover and the stable frame.

Benefits

- Easy mounting through use of versions with integrated hinge
- Versions with small operating angle of 4° or 8°
- Protection against personal injury provided by positively driven NC contacts according to IEC 60947-5-1
- Simultaneous shutdown and signaling by 1 NO + 2 NC contacts

Technical specifications

Type	3SE2283	
Rated insulation voltage U_i	V	250
Conventional thermal current I_{th}	A	2.5
Rated operational current I_e		
• At AC-15, 120 V	A	4.2
• At AC-15, 250 V	A	2
• At DC-13, 24 V	A	1
Min. make-break capacity		> 5 V/1 mA
Short-circuit protection		
• Operational class gG	A	2
Mechanical endurance		> 1×10^6 operating cycles
Switching frequency		1 200 operating cycles/h
Positive opening		2 mm after opening point
Enclosure material		Plastic
Degree of protection		IP65
Ambient temperature	°C	-25 ... +65
Shock resistance		30 g / 18 ms
Resistance to vibrations		20 g / 10 ... 200 Hz
Cable entry		2 × (M20 × 1.5)
Screw terminals		0.5 ... 1.5 mm ² / AWG 15

SIRIUS 3SE5, 3SE2 Mechanical Safety Hinge Switches

3SE2, Plastic Enclosures

With integrated hinge

Selection and ordering data

3 contacts · Degree of protection IP65 · Cable entry 2 × (M20 × 1.5)

Version	Slow-action contacts	SD	Complete units	<input type="checkbox"/>	PU (UNIT, SET, M)	PS*	PG
		d	Article No.	Price per PU			

Plastic enclosures with integrated hinge



3SE2283

With integrated hinge

(Scope of supply includes additional hinge and fixing accessories)

• Aluminum hinge

- 4° actuating angle	1 NO + 2 NC	⊕ 15	3SE2283-0GA43		1	1 unit	41K
- 4° actuating angle	3 NC	⊕ 5	3SE2283-6GA43		1	1 unit	41K
- 8° actuating angle	1 NO + 2 NC	⊕ 10	3SE2283-0GA53		1	1 unit	41K
- 8° actuating angle	3 NC	⊕ 15	3SE2283-6GA53		1	1 unit	41K

• High-grade steel hinge

- 4° actuating angle	1 NO + 2 NC	⊕ 5	3SE2283-0GA44		1	1 unit	41K
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⊕ Positive opening according to IEC 60947-5-1, Appendix K.

Accessories/spare parts

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Accessories



3SX3225

Additional hinge

(Scope of supply includes fixing accessories)

- Made of aluminum

	10	3SX3225		1	1 unit	41K
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SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C





Shock and Vibration Test

SIRIUS 3SE5 Mechanical Position Switches

3SE5, plastic enclosures, enclosure width 31 mm according to EN 50047

Selection and ordering data**Complete units**

2 or 3 contacts · Degree of protection IP65 or IP66/IP67 · Cable entry M20 × 1.5, with increased corrosion protection

Version	Contacts	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			Article No.	Price per PU		
Complete units¹⁾ · Enclosure width 31 mm						
	Twist levers, 21 mm long, acc. to EN 50047 With plastic roller 19 mm Snap-action contacts		1 NO + 2 NC	5		
3SE5232-OLK21-1AY0			3SE5232-OLK21-1AY0		1	1 unit 41K
	Roller levers, acc. to EN 50047 With plastic roller 13 mm Snap-action contacts		1 NO + 2 NC	5		
3SE5232-OLE10-1AY0			3SE5232-OLE10-1AY0		1	1 unit 41K
	Rod actuators, acc. to EN 50047 Plastic rod, length 200 mm Snap-action contacts		1 NO + 1 NC	30		
3SE5232-OHK82-1AY0			3SE5232-OHK82-1AY0		1	1 unit 41K
	Spring rod Snap-action contacts		1 NO + 1 NC	30		
3SE5232-OHR01-1AY0			3SE5232-OHR01-1AY0		1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

¹⁾ Popular versions.

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C

Shock and Vibration Test

SIRIUS 3SE5 Mechanical Safety Switches with Tumbler

3SE5, plastic enclosures, enclosure width 54 mm

Selection and ordering data

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 × M20 × 1.5 · Locking force 1 300 N

Tumbler ¹⁾	Solenoid, rated operational voltage	SD	Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC	PU (UNIT, SET, M)	PS*	PG
	V	d	Article No.	Price per PU		

1 300 N locking force · Enclosure width 54 mm**Spring-actuated locks**

- With front auxiliary release

24 DC

⊕ 5

3SE5322-0SD21-1AY0

1 1 unit

41K



3SE5322-0SD21-1AY0

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

1) Supplied without actuator. Please order separately.

Accessories/spare parts

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Accessories**Standard actuator**

- Length 75.6 mm

▶

3SE5000-0AV01

1 1 unit

41K

3SE5000-0AV01

**High-grade steel actuator, standard, IP69K¹⁾**

- Length 75.6 mm

5

3SE5000-0AW51

1 1 unit

41K

3SE5000-0AW51



- With vertical fixing, length 53 mm

5

3SE5000-0AW52

1 1 unit

41K

3SE5000-0AW52



- With transverse fixing, length 47 mm

5

3SE5000-0AW53

1 1 unit

41K

3SE5000-0AW53

1) With optimized geometry and suitable for extreme environmental conditions such as -40 °C

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C

Shock and Vibration Test

SIRIUS 3SE5 Mechanical Safety Hinge Switches

3SE5, plastic enclosures, enclosure width 31 mm according to EN 50047

Selection and ordering data

With increased corrosion protection

Version	Contacts	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
		d	Article No.	Price per PU		

Complete units¹⁾ • Enclosure width 31 mm



Hinge switches, acc. to EN 50047

With hollow shaft D = 8 mm,
operating angle 10 degrees,

Snap-action contacts

1 NO + 1 NC

⊕ 30

3SE5232-0HU21-1AY0

1 1 unit 41K

3SE5232-0HU21-1AY0

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ With optimized geometry and suitable for extreme environmental conditions such as -40 °C

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C

Shock and Vibration Test according to Railway Standard






SIRIUS 3SE5 Mechanical Position Switches

3SE5, plastic enclosures, enclosure width 31 mm according to EN 50047 / 50 mm

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP65 or IP66/IP67 · Cable entry M20 × 1.5, with increased corrosion protection

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Complete units¹⁾ • Enclosure width 31 mm							
	Roller plungers, type C, acc. to EN 50047 With plastic roller 10 mm, with M12 device plug, 4-pole (250 V, 4 A)						
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5234-0CD03-1AJ1	1	1 unit	41K
3SE5234-0CD03-1AJ1							
	Roller plungers with central fixing						
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0CD10-1AJ0	1	1 unit	41K
3SE5232-0CD10-1AJ0							
	Twist levers, type A, acc. to EN 50047 With high-grade steel lever 21 mm and plastic roller 19 mm						
	Snap-action contacts	1 NO + 1 NC --	⊕ 2	3SE5232-0CK31-1AJ0	1	1 unit	41K
3SE5232-0CK31-1AJ0							
	Twist levers, adjustable length With high-grade steel lever with grid hole and plastic roller 19 mm						
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0CK62-1AJ0	1	1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0LK62-1AJ0	1	1 unit	41K
3SE5232-0CK62-1AJ0							
Complete units¹⁾ • Enclosure width 50 mm							
	Twist levers With metal lever 21 mm and plastic roller 19 mm						
	Snap-action contacts, integrated ²⁾	1 NO + 1 NC --	⊕ 5	3SE5242-0HK21-1AJ0	1	1 unit	41K
	Twist levers, adjustable length With high-grade steel lever with grid hole and plastic roller 19 mm						
	Snap-action contacts, integrated ²⁾	1 NO + 1 NC --	⊕ 5	3SE5242-0HK62-1AJ0	1	1 unit	41K
3SE5242-0HK21-1AJ0							

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) Popular versions.

2) Subsequent replacement of contact blocks is not possible.

Note:

If the device you require is not available as a complete unit, see [Modular system, page 12/73](#).

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C



Shock and Vibration Test according to Railway Standard

SIRIUS 3SE5 Mechanical Position Switches

3SE5, plastic enclosures, enclosure width 31 mm according to EN 50047 / 50 mm

Modular system

2 or 3 contacts · Degree of protection IP65 or IP66/IP67 · Cable entry M20 × 1.5, with increased corrosion protection

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU		
Basic switches • Enclosure width 31 mm (with rounded plunger¹⁾)							
 3SE5232-0CC05-1AJ0	With teflon plunger						
	Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5232-0CC05-1AJ0		1 1 unit	41K
	Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0KC05-1AJ0		1 1 unit	41K
	Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5232-0LC05-1AJ0		1 1 unit	41K
Basic switches • Enclosure width 50 mm (with rounded plunger¹⁾)							
 3SE5242-0BC05-1AJ0	With teflon plunger						
	Slow-action contacts	1 NO + 1 NC --	⊕ 5	3SE5242-0BC05-1AJ0		1 1 unit	41K
	Snap-action contacts, integrated ²⁾	1 NO + 1 NC --	⊕ 5	3SE5242-0HC05-1AJ0		1 1 unit	41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

1) For enclosures with widths of 31 and 50 mm, the basic switch is a complete unit with rounded plungers.

2) Subsequent replacement of contact blocks is not possible.

Note:






For the selection aid, [see page 12/11](#).

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C

Shock and Vibration Test according to Railway Standard

SIRIUS 3SE5 Mechanical Position Switches

3SE5, plastic enclosures, enclosure width 31 mm according to EN 50047 / 50 mm

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		
Operating mechanisms						
	Roller plungers, type C, acc. to EN 50047					
	Plastic roller	10	⊕ 5	3SE5000-0AD03-1AJ0	1	1 unit 41K
3SE5000-0AD03-1AJ0	Roller levers, type E, acc. to EN 50047					
	Metal lever, plastic roller	13	⊕ 5	3SE5000-0AE10-1AJ0	1	1 unit 41K
	High-grade steel lever, plastic roller	13	⊕ 5	3SE5000-0AE12-1AJ0	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	13	⊕ 5	3SE5000-0AE13-1AJ0	1	1 unit 41K
	Angular roller levers					
	Metal lever, plastic roller	13	⊕ 5	3SE5000-0AF10-1AJ0	1	1 unit 41K
	High-grade steel lever, plastic roller	13	⊕ 5	3SE5000-0AF12-1AJ0	1	1 unit 41K
3SE5000-0AF10-1AJ0	Twist actuators					
	Twist actuators, for 31 mm/50 mm, EN 50047					
	Switching right and/or left, adjustable		⊕ 5	3SE5000-0AK00-1AJ0	1	1 unit 41K
3SE5000-0AK00-1AJ0	Levers					
	Twist levers straight, 21 mm, type A acc. to EN 50047					
	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA21-1AJ0	1	1 unit 41K
	High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA31-1AJ0	1	1 unit 41K
3SE5000-0AA21-1AJ0	High-grade steel lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA32-1AJ0	1	1 unit 41K
	Twist levers, adjustable length, with grid hole					
	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA60-1AJ0	1	1 unit 41K
	High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA62-1AJ0	1	1 unit 41K
3SE5000-0AA60-1AJ0						

⊕ Positively driven actuator, necessary in safety circuits.

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C

Shock and Vibration Test according to Railway Standard

SIRIUS 3SE5 Mechanical Position Switches

3SE5, plastic enclosures, enclosure width 40 mm according to EN 50041

Selection and ordering data

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5, with increased corrosion protection

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		

Basic switches • Enclosure width 40 mm



3SE5132-0CA00-1AJ0

With connecting thread M20 × 1.5

Snap-action contacts	1 NO + 1 NC --	⊕	5	3SE5132-0CA00-1AJ0	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC --	⊕	5	3SE5132-0KA00-1AJ0	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC --	⊕	5	3SE5132-0LA00-1AJ0	1	1 unit	41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

Note:

For the selection aid, see page 12/11.

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		

Operating mechanisms



3SE5000-0AC03-1AJ0

Rounded plungers, type B, acc. to EN 50041

Plastic plungers	10	⊕	5	3SE5000-0AC03-1AJ0	1	1 unit	41K
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3SE5000-0AD05-1AJ0

Roller plungers, type C, acc. to EN 50041

Plastic plunger, plastic roller	13	⊕	5	3SE5000-0AD05-1AJ0	1	1 unit	41K
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3SE5000-0AE05-1AJ0

Roller levers

Metal lever with plastic roller, plastic base	22	⊕	5	3SE5000-0AE05-1AJ0	1	1 unit	41K
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Twist actuators



3SE5000-0AH00-1AJ0

Twist actuators, for 31 mm/50 mm, EN 50047

• For twist levers and rod actuators, switching right and/or left, adjustable		⊕	5	3SE5000-0AH00-1AJ0	1	1 unit	41K
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3SE5000-0AA01-1AJ0

Levers

Twist levers, type A, acc. to EN 50041

Metal lever, plastic roller	19	⊕	5	3SE5000-0AA01-1AJ0	1	1 unit	41K
High-grade steel lever, plastic roller	19	⊕	5	3SE5000-0AA11-1AJ0	1	1 unit	41K



3SE5000-0AA60-1AJ0

Twist levers, adjustable length, with grid hole

Metal lever, plastic roller	19	⊕	5	3SE5000-0AA60-1AJ0	1	1 unit	41K
High-grade steel lever, plastic roller	19	⊕	5	3SE5000-0AA62-1AJ0	1	1 unit	41K

⊕ Positively driven actuator, necessary in safety circuits.

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C

Shock and Vibration Test according to Railway Standard

SIRIUS 3SE5 Mechanical Position Switches

3SE5, metal enclosures, enclosure width 31 mm according to EN 50047

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5, with increased corrosion protection

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		

Complete units • Enclosure width 31 mm

Rounded plungers, type B, acc. to EN 50047



3SE5212-0CC05-1AJ0

Snap-action contacts	1 NO + 1 NC --	⊕	5	3SE5212-0CC05-1AJ0	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC --	⊕	5	3SE5212-0KC05-1AJ0	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC --	⊕	5	3SE5212-0LC05-1AJ0	1	1 unit	41K

Twist levers, type A, acc. to EN 50047



3SE5212-0CH22-1AJ0

With metal lever 21 mm and high-grade steel roller 19 mm, twist actuator for 40 mm

Snap-action contacts	1 NO + 1 NC --	⊕	5	3SE5212-0CH22-1AJ0	1	1 unit	41K
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⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

Note:

If the device you require is not available as a complete unit, see [Modular system on page 12/75](#).

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C

Shock and Vibration Test according to Railway Standard

SIRIUS 3SE5 Mechanical Position Switches

3SE5, metal enclosures, enclosure width 31 mm according to EN 50047

Modular system

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5, with increased corrosion protection

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		

Basic switches • Enclosure width 31 mm (with rounded plunger¹⁾)



With plunger

Snap-action contacts	1 NO + 1 NC --	⊕ 5	3SE5212-0CC05-1AJ0	1	1 unit	41K
Slow-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0KC05-1AJ0	1	1 unit	41K
Snap-action contacts	1 NO + 2 NC --	⊕ 5	3SE5212-0LC05-1AJ0	1	1 unit	41K

3SE5212-0CC05-1AJ0

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, necessary in safety circuits.

¹⁾ For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

Note:

For the selection aid, see page 12/11.

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		

Operating mechanisms



Roller plungers, type C, acc. to EN 50047

Plastic roller	10	⊕ 5	3SE5000-0AD03-1AJ0	1	1 unit	41K
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3SE5000-0AD03-1AJ0



Roller levers, type E, acc. to EN 50047

Metal lever, plastic roller	13	⊕ 5	3SE5000-0AE10-1AJ0	1	1 unit	41K
High-grade steel lever, plastic roller	13	⊕ 5	3SE5000-0AE12-1AJ0	1	1 unit	41K
High-grade steel lever, high-grade steel roller	13	⊕ 5	3SE5000-0AE13-1AJ0	1	1 unit	41K

3SE5000-0AE10-1AJ0



Angular roller levers

Metal lever, plastic roller	13	⊕ 5	3SE5000-0AF10-1AJ0	1	1 unit	41K
High-grade steel lever, plastic roller	13	⊕ 5	3SE5000-0AF12-1AJ0	1	1 unit	41K

3SE5000-0AF10-1AJ0

Twist actuators



Twist actuators, for 31 mm/50 mm, EN 50047

Switching right and/or left, adjustable		⊕ 5	3SE5000-0AK00-1AJ0	1	1 unit	41K
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3SE5000-0AK00-1AJ0

Levers

Twist levers straight, 21 mm, type A acc. to EN 50047

Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA21-1AJ0	1	1 unit	41K
High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA31-1AJ0	1	1 unit	41K

3SE5000-0AA21-1AJ0



Twist levers, adjustable length, with grid hole

Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA60-1AJ0	1	1 unit	41K
High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA62-1AJ0	1	1 unit	41K

3SE5000-0AA60-1AJ0

⊕ Positively driven actuator, necessary in safety circuits.

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C

Shock and Vibration Test according to Railway Standard







SIRIUS 3SE5 Mechanical Position Switches

3SE5, metal enclosures, enclosure width 40 mm according to EN 50041 / 56 mm, XL

Selection and ordering data

Complete units

2 or 3 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5, with increased corrosion protection

Version	Contacts	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
		d	Article No.	Price per PU		
Complete units • Enclosure width 40 mm						
	Rounded plungers, type B, acc. to EN 50041 With high-grade steel plungers, with 3 mm overtravel Snap-action contacts	1 NO + 1 NC	⊕ 5	3SE5112-0CC02-1AJ0	1	1 unit 41K
3SE5112-0CC02-1AJ0						
	Roller plungers, type C, acc. to EN 50041 With high-grade steel plungers, with 3 mm overtravel Snap-action contacts	1 NO + 2 NC	⊕ 5	3SE5112-0LD02-1AJ0	1	1 unit 41K
3SE5112-0LD02-1AJ0						
	Twist levers, type A, acc. to EN 50041 With high-grade steel lever 27 mm and plastic roller 19 mm Snap-action contacts	1 NO + 2 NC	⊕ 5	3SE5112-0LH11-1AJ0	1	1 unit 41K
3SE5112-0LH11-1AJ0						
	Twist levers, adjustable length With high-grade steel lever with grid hole and plastic roller 19 mm Snap-action contacts	1 NO + 1 NC	⊕ 5	3SE5112-0CH62-1AJ0	1	1 unit 41K
3SE5112-0CH62-1AJ0						
Complete units • Enclosure width 56 mm, XL, 3 x M20 x 1.5						
	Twist levers, adjustable length With metal lever with grid hole and plastic roller 19 mm Snap-action contacts	1 NO + 1 NC	⊕ 5	3SE5162-0CH60-1AJ0	1	1 unit 41K
3SE5162-0CH60-1AJ0						
	Twist levers, adjustable length With high-grade steel lever and high-grade steel roller 19 mm Snap-action contacts	2 × (1 NO + 1 NC) NEW	⊕ 10	3SE5162-0CH63-1AN6	1	1 unit 41K
3SE5162-0CH63-1AN6						

⊕ Positive opening according to IEC 60947-5-1, Appendix K or positively driven actuator, necessary in safety circuits.

Note:

If the device you require is not available as a complete unit, see [Modular system on page 12/79](#).

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C




Shock and Vibration Test according to Railway Standard
SIRIUS 3SE5 Mechanical Position Switches

3SE5, metal enclosures, enclosure width 40 mm according to EN 50041 / 56 mm / 56 mm, XL

Selection and ordering data

Modular system

2, 3 or 4 contacts · Degree of protection IP66/IP67 · Cable entry M20 × 1.5, with increased corrosion protection

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		
Basic switches • Enclosure width 40 mm							
With connecting thread M20 × 1.5							
	Snap-action contacts	1 NO + 1 NC	--	⊕ 5	3SE5112-0CA00-1AJ0	1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC	--	⊕ 5	3SE5112-0KA00-1AJ0	1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC	--	⊕ 5	3SE5112-0LA00-1AJ0	1	1 unit 41K
3SE5112-0CA00-1AJ0							
Basic switches • Enclosure width 56 mm							
With 3 × connection thread M20 × 1.5							
	Snap-action contacts	1 NO + 1 NC	--	⊕ 5	3SE5122-0CA00-1AJ0	1	1 unit 41K
	Slow-action contacts	1 NO + 2 NC	--	⊕ 5	3SE5122-0KA00-1AJ0	1	1 unit 41K
	Snap-action contacts	1 NO + 2 NC	--	⊕ 5	3SE5122-0LA00-1AJ0	1	1 unit 41K
3SE5122-0CA00-1AJ0							
Basic switches • Enclosure width 56 mm, XL							
With 3 × connection thread M20 × 1.5							
	Slow-action contacts	2 × (1 NO + 1 NC)	--	⊕ 5	3SE5162-0BA00-1AJ0	1	1 unit 41K
	Snap-action contacts	2 × (1 NO + 1 NC)	--	⊕ 5	3SE5162-0CA00-1AJ0	1	1 unit 41K
3SE5162-0BA00-1AJ0							

⊕ Positive opening according to IEC 60947-5-1, Appendix K or positively driven actuator, necessary in safety circuits.








Note:

For the selection aid, [see page 12/11](#).

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C

Shock and Vibration Test according to Railway Standard

SIRIUS 3SE5 Mechanical Position Switches**3SE5, metal enclosures, enclosure width 40 mm according to EN 50041 / 56 mm / 56 mm, XL**

Version	Diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		
Operating mechanisms						
	Rounded plungers, type B, acc. to EN 50041 High-grade steel plunger, with 3 mm overtravel	10	⊕ 5	3SE5000-0AC02-1AJ0	1	1 unit 41K
3SE5000-0AC02-1AJ0						
	Roller plungers, type C, acc. to EN 50041 High-grade steel roller, with 3 mm overtravel	10	⊕ 5	3SE5000-0AD02-1AJ0	1	1 unit 41K
3SE5000-0AD02-1AJ0						
	Roller levers Metal lever, plastic roller High-grade steel lever, plastic roller	13 13	⊕ 5 ⊕ 5	3SE5000-0AE01-1AJ0 3SE5000-0AE03-1AJ0	1 1	1 unit 41K 1 unit 41K
3SE5000-0AE01-1AJ0						
	Angular roller levers Metal lever, plastic roller High-grade steel lever, plastic roller	13 13	⊕ 5 ⊕ 5	3SE5000-0AF01-1AJ0 3SE5000-0AF03-1AJ0	1 1	1 unit 41K 1 unit 41K
3SE5000-0AF01-1AJ0						
Twist actuators						
	Twist actuators, for 40/56/56 XL mm EN 50041 Switching right and/or left, adjustable		⊕ 5	3SE5000-0AH00-1AJ0	1	1 unit 41K
3SE5000-0AH00-1AJ0						
Levers						
	Twist levers, type A, acc. to EN 50041 Metal lever, plastic roller High-grade steel lever, plastic roller	19 19	⊕ 5 ⊕ 5	3SE5000-0AA01-1AJ0 3SE5000-0AA11-1AJ0	1 1	1 unit 41K 1 unit 41K
3SE5000-0AA01-1AJ0						
	Twist levers, adjustable length, with grid hole Metal lever, plastic roller High-grade steel lever, plastic roller	19 19	⊕ 5 ⊕ 5	3SE5000-0AA60-1AJ0 3SE5000-0AA62-1AJ0	1 1	1 unit 41K 1 unit 41K
3SE5000-0AA60-1AJ0						

⊕ Positively driven actuator, necessary in safety circuits.

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C

Shock and Vibration Test according to Railway Standard
SIRIUS 3SE5 Mechanical Safety Switches with Separate Actuator

3SE5, plastic enclosures, enclosure width 31 mm according to EN 50047

Selection and ordering data**Complete units**

2 or 3 contacts · 5 directions of approach · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · Cable entry M20 × 1.5

Version	Contacts	LEDs	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		

Enclosure width 31 mm according to EN 50047

3SE5232-0RV40-1AJ0

Ambient temperature down to -40° C
With increased corrosion protection

 Slow-action contacts 1 NO + 1 NC -- ⤴ 5 **3SE5232-0RV40-1AJ0** 1 1 unit 41K
Accessories/spare parts

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Accessories

3SE5000-0AW11

Standard actuator

- With transverse fixing, plastic, length 40 mm

5 **3SE5000-0AW11** 1 1 unit 41K

3SE5000-0AW51

High-grade steel actuator¹⁾

- Length 75.6 mm

5 **3SE5000-0AW51** 1 1 unit 41K

3SE5000-0AW52

- With vertical fixing, length 53 mm

5 **3SE5000-0AW52** 1 1 unit 41K

3SE5000-0AW53

- With transverse fixing, length 47 mm

5 **3SE5000-0AW53** 1 1 unit 41K

¹⁾ With optimized geometry and suitable for extreme environmental conditions such as -40 °C

SIRIUS 3SE5 Mechanical Position Switches for Ambient Temperatures down to -40 °C

Shock and Vibration Test according to Railway Standard

SIRIUS 3SE5 Mechanical Safety Switches with Tumbler

3SE5, plastic enclosures

Selection and ordering data

6 slow-action contacts · 5 directions of approach · Degree of protection IP66/IP67 · Cable entry 3 × M20 × 1.5 · Locking force 1 300 N

Tumbler ¹⁾	Solenoid, rated operational voltage	SD	Complete units Position monitoring: Actuators: 1 NO + 2 NC Solenoid: 1 NO + 2 NC	<input type="checkbox"/>	PU (UNIT, SET, M)	PS*	PG
	V	d	Article No.		Price per PU		

1 300 N locking force · Enclosure width 54 mm



3SE5322-0SL21-1AJ0

Spring-actuated locks

- With escape release from the front and emergency release from the back 24 DC 5
- With auxiliary release **NEW** 5

3SE5322-0SL21-1AJ0

1 1 unit 41K

3SE5322-0SD21-1AJ0

1 1 unit 41K

Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately.

Accessories/spare parts

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Accessories



3SE5000-0AV01

Standard actuator

- Length 75.6 mm

3SE5000-0AV01

1 1 unit 41K



3SE5000-0AW51

High-grade steel actuator¹⁾

- Length 75.6 mm

5 **3SE5000-0AW51**

1 1 unit 41K



3SE5000-0AW52

- With vertical fixing, length 53 mm **NEW**

5 **3SE5000-0AW52**

1 1 unit 41K



3SE5000-0AW53

- With transverse fixing, length 47 mm

5 **3SE5000-0AW53**

1 1 unit 41K

¹⁾ With optimized geometry and suitable for extreme environmental conditions such as -40 °C

Overview

The 3SF1 position switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 position switches the ASIsafe electronics are integrated in the switch enclosure.



Examples of selection options in the modular system

Modular system

The position switches of the 3SF11.4 and 3SF12.4 series are designed as a modular system comprising different versions of the basic switch and an actuator which must be ordered separately. Thanks to the modular design of the switch the end users can select the right solution for their application from numerous versions and install it themselves in a very short time.

Design

The 3SF1 switches are available in four different enclosure sizes:

- Plastic and metal enclosures according to EN 50047, 31 mm wide, with M12 device plug
- Metal enclosures according to EN 50041, 40 mm wide, with M12 device plug
- Plastic enclosures, 50 mm wide, with M12 device plug and M12 socket
- Metal enclosures, 56 mm wide, with M12 device plug and M12 socket

Display

The switches have a status display with three LEDs:

- LED 1 (yellow): F-IN1
- LED 2 (yellow): F-IN2
- LED 3 (green/red): AS-I/FAULT

Connection

Connection to the AS-Interface is by means of a 4-pole M12 device plug (plastic version) connected to the yellow AS-Interface bus cable.

The wide enclosures (50 or 56 mm) also have an M12 socket for connecting a second position switch. Category 4 according to EN ISO 13849-1 is thus achieved.

Benefits

The new generation of 3SF1 position switches offers:

- ASIsafe electronics integrated in the enclosure, with low power consumption < 60 mA
- An extensive range of actuators
- Status display with three LEDs
- Can be integrated easily via TIA Portal

Application

With the standard position switches, mechanical positions of moving machine parts are converted into electrical signals. Through their modular and uniform design and large number of variants, the devices can comply with practically all requirements in industry.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the contact blocks best suited for the particular purpose. And many different actuator variants are available to match the mechanical configuration of the moving machine parts. Dimensions, fixing points and characteristics are largely in accordance with the EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Devices).

The mechanical design of the switch corresponds to the requirements of the fail-safe principle according to EN ISO 14119.

Approvals

AS-Interface according to EN 50295 and IEC 62026-2.

With a 3SF1 position switch it is possible to achieve Category 2 according to EN ISO 13849-1 or SIL 1 according to IEC 61508.

Categories 3 or 4 according to EN ISO 13849-1 or SIL 2 or 3 according to IEC 61508 can be achieved by using a second 3SE5 position switch.

The 3SF1 position switches are approved according to UL 508, UL 50 and UL 746-C.

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface

General data

Technical specifications

Type	3SF11..., 3SF12..	
General data		
Standards	IEC/EN 60947-5-1, EN ISO 14119	
According to AS-Interface specification		
• I/O configuration/ID configuration		0/B
• ID1 code/ID2 code (Hex)		F/F
• Power consumption, overall	mA	≤ 60
Inputs		
• Low signal range		Contact open
• High signal range		Contact closed, I_{in} dynamic ($I_{peak} \geq 5$ mA)
Status display	Green/red dual LED	
Rated impulse withstand voltage U_{imp}	kV	0.6
EMC strength		
• IEC 61000-1-2	kV	4
• IEC 61000-4-3	V/m	10
• IEC 61000-4-4 (A/B)	kV	1/2
Mechanical endurance		
• Basic switch		15×10^6 operating cycles
• With separate actuator, 3SF1...-..V..		1×10^6 operating cycles
PFH value		
Probability of failure upon request of the safety function, with 1 actuation per hour and $B_{10} = 5 \times 10^6$		
• Basic switch	1/h	4×10^{-9}
• With separate actuator, 3SF1...-..V..	1/h	2×10^{-9}
• Hinge switches, 3SF1...-..U..	1/h	2×10^{-9}
Shock resistance acc. to IEC 60068-2-27		30 g/11 ms

Type	3SF1234	3SF1134	3SF1244	3SF1214	3SF1114	3SF1124
Enclosure						
Enclosure	Ultradim A3X2G7			Zinc die casting GD Zn Al4 Cu1		
• Material						
• Width	mm	31	40	50	31	40
• Dimensions according to EN		EN 50047	EN 50041	--	EN 50047	EN 50041
Degree of protection acc. to IEC 60529		IP65	IP66/IP67			
Ambient temperature						
• During operation	°C	-25 ... +60				
• Storage, transport	°C	-40 ... +80				
Mounting position	Any					

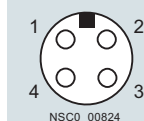
Pin assignment

M12 device plug, 4-pole



- 1 ASi +
- 2 Not assigned
- 3 ASi -
- 4 Not assigned

M12 socket, 4-pole



- 1 Channel 2
- 2 Channel 2
- 3 Not assigned
- 4 Not assigned

LEDs

Status display (operating state)

LED	No voltage on AS-Interface chip	Communication OK	Communication failed	Slave has address "0"
ASi/Fault (GN/RD)				

Safe inputs

LED	Not actuated	Actuated		
F-IN1 (YE)				
F-IN2 (YE)				

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface

3SF1, plastic enclosures, enclosure width 31 mm according to EN 50047 / 50 mm

Selection and ordering data

Modular system

For the ASIsafe version of the position switch, the basic switch and actuator must be ordered separately.

1 or 2 contacts · 3 LEDs · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · M12 device plug

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		

Basic switches (with rounded plunger¹⁾) • Enclosure width 31 mm acc. to EN 50047



With teflon plunger

With M12 device plug, 4-pole, channel 1 on NC contact, channel 2 on NC contact

Slow-action contacts	2 NC	24 V DC	⊕ 5	3SF1234-1KC05-1BA1	1	1 unit	42A
Snap-action contacts	2 NC	24 V DC	⊕ 5	3SF1234-1LC05-1BA1	1	1 unit	42A

3SF1234-1KC05-1BA1

Basic switches (with rounded plunger¹⁾) • Enclosure width 50 mm



With teflon plunger

With M12 device plug, 4-pole, channel 1 on NC contact, channel 2 on M12 socket, right

Slow-action contacts	1 NC	24 V DC	⊕ 5	3SF1244-1KC05-1BA2	1	1 unit	42A
Snap-action contacts	1 NC	24 V DC	⊕ 5	3SF1244-1LC05-1BA2	1	1 unit	42A

3SF1244-1KC05-1BA2

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, for use in safety circuits.








¹⁾ For enclosures with widths of 31 mm and 50 mm, the basic switch is a complete unit with rounded plungers.

Note:

For the selection aid, see page 12/11.

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface

3SF1, plastic enclosures, enclosure width 31 mm according to EN 50047 / 50 mm

Version	Roller diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG	
	mm	d	Article No.	Price per PU			
Operating mechanisms							
 3SE5000-0AD03	Roller plungers, type C, acc. to EN 50047						
	Plastic roller	10	↻ 2	3SE5000-0AD03	1	1 unit 41K	
	High-grade steel roller	10	↻ 5	3SE5000-0AD04	1	1 unit 41K	
 3SE5000-0AD10	Roller plungers with central fixing						
	Plastic roller	10	↻ 2	3SE5000-0AD10	1	1 unit 41K	
	High-grade steel roller	10	↻ 5	3SE5000-0AD11	1	1 unit 41K	
 3SE5000-0AE10	Roller levers, type E, acc. to EN 50047						
	Metal lever, plastic roller	13	↻ 2	3SE5000-0AE10	1	1 unit 41K	
	Metal lever, high-grade steel roller	13	↻ 5	3SE5000-0AE11	1	1 unit 41K	
	High-grade steel lever, plastic roller	13	↻ 5	3SE5000-0AE12	1	1 unit 41K	
	High-grade steel lever, high-grade steel roller	13	↻ 5	3SE5000-0AE13	1	1 unit 41K	
 3SE5000-0AF10	Angular roller levers						
	Metal lever, plastic roller	13	↻ 2	3SE5000-0AF10	1	1 unit 41K	
	Metal lever, high-grade steel roller	13	↻ 5	3SE5000-0AF11	1	1 unit 41K	
	High-grade steel lever, plastic roller	13	↻ 2	3SE5000-0AF12	1	1 unit 41K	
	High-grade steel lever, high-grade steel roller	13	↻ 5	3SE5000-0AF13	1	1 unit 41K	
Twist actuators with lever							
 3SE5000-0AK00	Twist actuators, for 31 mm/50 mm, EN 50047						
	Switching right or left, adjustable		↻ 2	3SE5000-0AK00	1	1 unit 41K	
 3SE5000-0AA21	Levers						
	Twist levers, type A, acc. to EN 50047						
	Metal lever, plastic roller	19	↻ 2	3SE5000-0AA21	1	1 unit 41K	
	Metal lever, high-grade steel roller	19	↻ 5	3SE5000-0AA22	1	1 unit 41K	
	Metal lever, high-grade steel roller with ball bearing	19	↻ 5	3SE5000-0AA23	1	1 unit 41K	
	Metal lever, plastic roller	30	↻ 5	3SE5000-0AA25	1	1 unit 41K	
	High-grade steel lever, plastic roller	19	↻ 5	3SE5000-0AA31	1	1 unit 41K	
	High-grade steel lever, high-grade steel roller	19	↻ 5	3SE5000-0AA32	1	1 unit 41K	
	Twist levers 30 mm, straight¹⁾						
	Metal lever, plastic roller	19	↻ 5	3SE5000-0AA24	1	1 unit 41K	
Metal lever, plastic roller	30	↻ 5	3SE5000-0AA26	1	1 unit 41K		
 3SE5000-0AA60	Twist levers, adjustable length, with grid hole						
	Metal lever, plastic roller	19	↻ 5	3SE5000-0AA60	1	1 unit 41K	
	Metal lever, high-grade steel roller	19	↻ 5	3SE5000-0AA61	1	1 unit 41K	
	Metal lever, plastic roller	50	↻ 5	3SE5000-0AA67	1	1 unit 41K	
	Metal lever, rubber roller	50	↻ 5	3SE5000-0AA68	1	1 unit 41K	
	High-grade steel lever, plastic roller	19	↻ 5	3SE5000-0AA62	1	1 unit 41K	
	High-grade steel lever, high-grade steel roller	19	↻ 5	3SE5000-0AA63	1	1 unit 41K	

↻ Positively driven actuator, for use in safety circuits.

¹⁾ Can be clinch mounted (turned through 180°, rear of lever).

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface

3SF1, metal enclosures, enclosure width 31 mm according to EN 50047

Selection and ordering data

Modular system

For the ASIsafe version of the position switch, the basic switch and actuator must be ordered separately.

2 contacts · 3 LEDs · Degree of protection IP66/IP67 · M12 device plug

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		

Basic switches (with rounded plunger¹⁾) • Enclosure width 31 mm acc. to EN 50047



3SF1214-1KC05-1BA1

With plunger

With M12 device plug, 4-pole, channel 1 on NC contact, channel 2 on NC contact

Slow-action contacts	2 NC	24 V DC	⊕	5
Snap-action contacts	2 NC	24 V DC	⊕	5

3SF1214-1KC05-1BA1	1	1 unit	42A
3SF1214-1LC05-1BA1	1	1 unit	42A

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, for use in safety circuits.









¹⁾ For enclosures with widths of 31 mm, the basic switch is a complete unit with rounded plungers.

Note:

For the selection aid, see page 12/11.

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface

3SF1, metal enclosures, enclosure width 31 mm according to EN 5047

Version	Roller diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		
Operating mechanisms						
	Plain plungers					
3SE5000-0AB01	High-grade steel plunger	10	⊕ 2	3SE5000-0AB01	1	1 unit 41K
	Roller plungers, type C, acc. to EN 5047					
3SE5000-0AD03	Plastic roller	10	⊕ 2	3SE5000-0AD03	1	1 unit 41K
	High-grade steel roller	10	⊕ 5	3SE5000-0AD04	1	1 unit 41K
	Roller plungers with central fixing					
3SE5000-0AD10	Plastic roller	10	⊕ 2	3SE5000-0AD10	1	1 unit 41K
	High-grade steel roller	10	⊕ 5	3SE5000-0AD11	1	1 unit 41K
	Roller levers, type E, acc. to EN 5047					
3SE5000-0AE10	Metal lever, plastic roller	13	⊕ 2	3SE5000-0AE10	1	1 unit 41K
	Metal lever, high-grade steel roller	13	⊕ 5	3SE5000-0AE11	1	1 unit 41K
	High-grade steel lever, plastic roller	13	⊕ 5	3SE5000-0AE12	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	13	⊕ 5	3SE5000-0AE13	1	1 unit 41K
	Angular roller levers					
3SE5000-0AF10	Metal lever, plastic roller	13	⊕ 2	3SE5000-0AF10	1	1 unit 41K
	Metal lever, high-grade steel roller	13	⊕ 5	3SE5000-0AF11	1	1 unit 41K
	High-grade steel lever, plastic roller	13	⊕ 2	3SE5000-0AF12	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	13	⊕ 5	3SE5000-0AF13	1	1 unit 41K
Twist actuators with lever						
	Twist actuators, for 31 mm/50 mm, EN 5047					
3SE5000-0AK00	Switching right or left, adjustable		⊕ 2	3SE5000-0AK00	1	1 unit 41K
	Levers					
3SE5000-0AA21	Twist levers, type A, acc. to EN 5047					
	Metal lever, plastic roller	19	⊕ 2	3SE5000-0AA21	1	1 unit 41K
	Metal lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA22	1	1 unit 41K
	Metal lever, high-grade steel roller with ball bearing	19	⊕ 5	3SE5000-0AA23	1	1 unit 41K
	Metal lever, plastic roller	30	⊕ 5	3SE5000-0AA25	1	1 unit 41K
	High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA31	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA32	1	1 unit 41K
	Twist levers 30 mm, straight¹⁾					
	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA24	1	1 unit 41K
	Metal lever, plastic roller	30	⊕ 5	3SE5000-0AA26	1	1 unit 41K
	Twist levers, adjustable length, with grid hole					
3SE5000-0AA60	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA60	1	1 unit 41K
	Metal lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA61	1	1 unit 41K
	Metal lever, plastic roller	50	⊕ 5	3SE5000-0AA67	1	1 unit 41K
	Metal lever, rubber roller	50	⊕ 5	3SE5000-0AA68	1	1 unit 41K
	High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA62	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA63	1	1 unit 41K

⊕ Positively driven actuator, for use in safety circuits.

¹⁾ Can be clinch mounted (turned through 180°, rear of lever).

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface

3SF1, metal enclosures, enclosure width 40 mm according to EN 50041 / 56 mm

Selection and ordering data

Modular system

For the ASIsafe version of the position switch, the basic switch and actuator must be ordered separately.

1 or 2 contacts · 3 LEDs · Degree of protection IP66/IP67 · M12 device plug

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU		

Basic switches - Enclosure width 40 mm acc. to EN 50041



With M12 device plug, 4-pole, channel 1 on NC contact, channel 2 on NC contact

Slow-action contacts	2 NC	24 V DC	⊕ 5	3SF1114-1KA00-1BA1		1	1 unit	42A
Snap-action contacts	2 NC	24 V DC	⊕ 5	3SF1114-1LA00-1BA1		1	1 unit	42A

3SF1114-1KA00-1BA1

Basic switches - Enclosure width 56 mm



With M12 device plug, 4-pole, channel 1 on NC contact, channel 2 on M12 socket, right

Slow-action contacts	1 NC	24 V DC	⊕ 5	3SF1124-1KA00-1BA2		1	1 unit	42A
Snap-action contacts	1 NC	24 V DC	⊕ 5	3SF1124-1LA00-1BA2		1	1 unit	42A

3SF1124-1KA00-1BA2

⊕ Positive opening according to IEC 60947-5-1, Appendix K, or positively driven actuator, for use in safety circuits.

Note:

For the selection aid, see page 12/11.

Version	Roller diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		

Operating mechanisms



3SE5000-0AB01

Plain plungers

High-grade steel plunger	10	⊕ 2	3SE5000-0AB01		1	1 unit	41K
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3SE5000-0AC02

Rounded plungers, type B, acc. to EN 50041

High-grade steel plunger, with 3 mm overtravel	10	⊕ 5	3SE5000-0AC02		1	1 unit	41K
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3SE5000-0AD02







Roller plungers, type C, acc. to EN 50041

High-grade steel roller, with 3 mm overtravel	13	⊕ 5	3SE5000-0AD02		1	1 unit	41K
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⊕ Positively driven actuator, for use in safety circuits.

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface

3SF1, metal enclosures, enclosure width 40 mm according to EN 50041 / 56 mm

Version	Roller diameter	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
	mm	d	Article No.	Price per PU		
Operating mechanisms						
 3SE5000-0AE01	Roller levers					
	Metal lever, plastic roller	22	⊕ 2	3SE5000-0AE01	1	1 unit 41K
	Metal lever, high-grade steel roller	22	⊕ 5	3SE5000-0AE02	1	1 unit 41K
	High-grade steel lever, plastic roller	22	⊕ 5	3SE5000-0AE03	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	22	⊕ 5	3SE5000-0AE04	1	1 unit 41K
 3SE5000-0AF01	Angular roller levers					
	Metal lever, plastic roller	22	⊕ 2	3SE5000-0AF01	1	1 unit 41K
	Metal lever, high-grade steel roller	22	⊕ 5	3SE5000-0AF02	1	1 unit 41K
	High-grade steel lever, plastic roller	22	⊕ 5	3SE5000-0AF03	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	22	⊕ 5	3SE5000-0AF04	1	1 unit 41K
Twist actuators with lever						
 3SE5000-0AH00	Twist actuators, for 40/56/56 XL mm EN 50041					
	• For twist levers, switching right or left, adjustable - For enclosure width 40 and 56 mm		⊕ 2	3SE5000-0AH00	1	1 unit 41K
	• For fork levers, latching		⊕ 5	3SE5000-0AT10	1	1 unit 41K
 3SE5000-0AA01	Levers					
	Twist levers 27 mm, offset, type A, acc. to EN 50041					
	Metal lever, plastic roller	19	⊕ 2	3SE5000-0AA01	1	1 unit 41K
	Metal lever, high-grade steel roller	19	⊕ 2	3SE5000-0AA02	1	1 unit 41K
	Metal lever, high-grade steel roller with ball bearing	19	⊕ 5	3SE5000-0AA03	1	1 unit 41K
	Metal lever, 2 plastic rollers	19	⊕ 5	3SE5000-0AA04	1	1 unit 41K
	Metal lever, plastic roller	30	⊕ 5	3SE5000-0AA05	1	1 unit 41K
	Metal lever, plastic roller	50	⊕ 5	3SE5000-0AA07	1	1 unit 41K
	Metal lever, rubber roller	50	⊕ 5	3SE5000-0AA08	1	1 unit 41K
	High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA11	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA12	1	1 unit 41K
	Twist levers 35 mm, offset					
Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA15	1	1 unit 41K	
High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA16	1	1 unit 41K	
Twist levers 30 mm, straight¹⁾						
Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA24	1	1 unit 41K	
Metal lever, plastic roller	30	⊕ 5	3SE5000-0AA26	1	1 unit 41K	
 3SE5000-0AA60	Twist levers, adjustable length, with grid hole					
	Metal lever, plastic roller	19	⊕ 5	3SE5000-0AA60	1	1 unit 41K
	Metal lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA61	1	1 unit 41K
	Metal lever, plastic roller	50	⊕ 5	3SE5000-0AA67	1	1 unit 41K
	Metal lever, rubber roller	50	⊕ 5	3SE5000-0AA68	1	1 unit 41K
	High-grade steel lever, plastic roller	19	⊕ 5	3SE5000-0AA62	1	1 unit 41K
	High-grade steel lever, high-grade steel roller	19	⊕ 5	3SE5000-0AA63	1	1 unit 41K
 3SE5000-0AT01	Fork levers (for switches with snap-action contacts only)					
	Metal lever, 2 plastic rollers	19	⊕ 5	3SE5000-0AT01	1	1 unit 41K
	Metal lever, 2 high-grade steel rollers	19	⊕ 5	3SE5000-0AT02	1	1 unit 41K
	High-grade steel lever, 2 plastic rollers	19	⊕ 5	3SE5000-0AT03	1	1 unit 41K
	High-grade steel lever, 2 high-grade steel rollers	19	⊕ 5	3SE5000-0AT04	1	1 unit 41K

⊕ Positively driven actuator, for use in safety circuits.

¹⁾ Can be clinch mounted (turned through 180°, rear of lever).

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface With Separate Actuator

General data

Overview

The 3SF1 safety switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 safety switches the ASIsafe electronics are integrated in the switch enclosure.



3SF1 safety switches with head for separate actuator and with integrated ASIsafe electronics

3SF1 safety switches with separate actuator have the same enclosures as the 3SF1 position switches.

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through $4 \times 90^\circ$. The switches can also be approached from above.

The actuators are not included in the scope of supply of the safety switch and must be ordered separately from a choice of different versions to suit the application (see page 12/94).

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more safety.

A rubber cap to protect the actuator head from contamination is available for operation in dusty environments.

Display

The switches have a status display with three LEDs:

- LED 1 (yellow): F-IN1
- LED 2 (yellow): F-IN2
- LED 3 (green/red): AS-i/FAULT

Connection

Connection to the AS-Interface is by means of a 4-pole M12 device plug (plastic version) connected to the yellow AS-Interface bus cable.

The wide enclosures (50 or 56 mm) also have an M12 socket for connecting a second safety switch. Category 4 according to EN ISO 13849-1 is thus achieved.

Benefits

The new generation of 3SF1 safety switches with separate actuator offers

- ASIsafe electronics integrated in the enclosure, with low power consumption < 60 mA
- An extensive range of actuators
- Status display with three LEDs

Application

Safety switches with separate actuator are used where the position of doors, covers or protective grilles must be monitored for safety reasons.

The safety switch can only be operated with the matching coded actuator. Simple overruling by hand or auxiliary devices is impossible.

Devices are available with enclosure versions to suit the particular ambient conditions. Different control tasks can be performed with the contact blocks best suited for the particular purpose. Dimensions and fixing points of the enclosure are in accordance with EN 50041 or EN 50047 standards.

The devices are suitable for use in any climate.

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Devices).

The mechanical design of the switch corresponds to the requirements of the fail-safe principle according to EN ISO 14119.

Approvals

AS-Interface according to EN 50295 and IEC 62026-2.

With a 3SF1 safety switch it is possible to achieve Category 3 according to EN ISO 13849-1 or SIL 2 according to IEC 61508.

Category 4 according to EN ISO 13849-1 or SIL 3 according to IEC 61508 can be achieved by using an additional 3SE5 safety switch.

The 3SF1 safety switches are approved according to UL 508, UL 50 and UL 746-C.



SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface With Separate Actuator

3SF1, plastic enclosures, enclosure width 31 mm according to EN 50047 / 50 mm

Overview

- Contacts: 1 or 2 slow-action contacts
- Status display with 3 LEDs 24 V DC;
1: F-IN1, 2: F-IN2, 3: AS-i/FAULT
- Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm)

Selection and ordering data

Version ¹⁾	Contacts	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			Article No.	Price per PU		
Enclosure width 31 mm according to EN 50047						
	5 directions of approach With M12 device plug, 4-pole, channel 1 on NC contact, channel 2 on NC contact Slow-action contacts	2 NC	⊕ 5	3SF1234-1QV40-1BA1	1	1 unit 42A
3SF1234-1QV40-1BA1						
Enclosure width 50 mm						
	5 directions of approach With M12 device plug, 4-pole, channel 1 on NC contact, channel 2 on M12 socket, right Slow-action contacts	1 NC	⊕ 5	3SF1244-1QV40-1BA2	1	1 unit 42A
3SF1244-1QV40-1BA2						

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 12/94).




SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface With Separate Actuator

3SF1, metal enclosures, enclosure width 31 mm according to EN 50047 / 40 mm according to EN 50041 / 56 mm

Overview

- Contacts: 1 or 2 slow-action contacts
- Status display with 3 LEDs 24 V DC;
1: F-IN1, 2: F-IN2, 3: AS-i/FAULT
- Degree of protection IP66/IP67

Selection and ordering data

Version ¹⁾	Contacts	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
			Article No.	Price per PU		
Enclosure width 31 mm acc. to EN 50047						
	5 directions of approach With M12 device plug, 4-pole, channel 1 on NC contact, channel 2 on NC contact Slow-action contacts	2 NC	⊕ 5	3SF1214-1QV40-1BA1	1	1 unit 42A
3SF1214-1QV40-1BA1						
Enclosure width 40 mm acc. to EN 50041						
	5 directions of approach With M12 device plug, 4-pole, channel 1 on NC contact, channel 2 on NC contact Slow-action contacts	2 NC	⊕ 5	3SF1114-1QV10-1BA1	1	1 unit 42A
3SF1114-1QV10-1BA1						
Enclosure width 56 mm						
	5 directions of approach With M12 device plug, 4-pole, channel 1 on NC contact, channel 2 on M12 socket, right Slow-action contacts	1 NC	⊕ 5	3SF1124-1QV10-1BA2	1	1 unit 42A
3SF1124-1QV10-1BA2						

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately (see page 12/94).

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface With Separate Actuator

Accessories

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Actuators						
 3SE5000-0AV01		Standard actuator • Length 75.6 mm				
	▶	3SE5000-0AV01		1	1 unit	41K
 3SE5000-0AV02		• With vertical fixing, length 53 mm				
	5	3SE5000-0AV02		1	1 unit	41K
 3SE5000-0AV03		• With transverse fixing, length 47 mm				
	5	3SE5000-0AV03		1	1 unit	41K
 3SE5000-0AW11		• With transverse fixing, plastic ¹⁾ , length 40 mm				
	5	3SE5000-0AW11		1	1 unit	41K
Radius actuators						
 3SE5000-0AV04		• Length 51 mm, direction of approach from the left				
	2	3SE5000-0AV04		1	1 unit	41K
 3SE5000-0AV06		• Length 51 mm, direction of approach from the right				
	5	3SE5000-0AV06		1	1 unit	41K
Universal radius actuator						
 3SE5000-0AV05-1AA6		• Length 77 mm				
	5	3SE5000-0AV05		1	1 unit	41K
	5	3SE5000-0AV05-1AA6		1	1 unit	41K
Universal radius actuator, heavy duty						
 3SE5000-0AV07		• Length 67 mm				
	2	3SE5000-0AV07-1AK2		1	1 unit	41K
	5	3SE5000-0AV07		1	1 unit	41K
Optional accessories						
 3SE5000-0AV08-1AA2		Protective caps , black rubber For the actuator head, to protect the actuator openings from contamination (Only for enclosure width 40 mm or 56 mm)				
	5	3SE5000-0AV08-1AA2		1	1 unit	41K
 3SE5000-0AV08-1AA3		Blocking inserts , high-grade steel, for actuator head For up to eight padlocks				
	5	3SE5000-0AV08-1AA3		1	1 unit	41K

¹⁾ Not suitable for safety switches with tumbler.

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface With Tumbler

General data

Overview

The 3SF1 safety switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 safety switches the ASIsafe electronics are integrated in the switch enclosure.



3SF1 safety switch with tumbler and with integrated ASIsafe electronics

Operation

The actuator head is included in the scope of supply. For actuation from four directions it can be adjusted through $4 \times 90^\circ$. The switches can also be approached from above.

The actuators are not included in the scope of supply of the safety switch and must be ordered separately from a choice of different versions to suit the application (see page 12/94).

The actuator is encoded. Simple overruling by hand or auxiliary devices is impossible.

A high-grade steel blocking insert for attaching up to eight padlocks is available for even more safety.

A rubber cap to protect the actuator entry of the actuator head from contamination is available for operation of the enclosures in dusty environments.

Tumbler

There are two versions for interlocking the actuator:

- Spring-actuated lock (closed-circuit principle) with various release mechanisms
- Solenoid-locked (open-circuit principle)

For more explanations, see page 12/57.

Display

The switches have a status display with four LEDs:

- LED 1 (green): AS-i
- LED 2 (red): FAULT
- LED 3 (yellow): F-IN1
- LED 4 (yellow): F-IN2

Connection

Connection to the AS-Interface is by means of a 4-pole M12 device plug (plastic version) connected to the yellow AS-Interface bus cable (no additional supply of auxiliary power is required thanks to the low current consumption of the solenoid of max. 170 mA).

Benefits

The new generation of 3SF13 safety switches with tumbler offers:

- More safety through higher locking forces:
 - 1 300 N for the plastic version
 - 2 600 N for the metal version
- Various release mechanisms: lock release, escape release and emergency release
- ASIsafe electronics integrated in the enclosure; connected through 4-pole M12 device plug
- Current consumption of the solenoid no more than 170 mA
- Two contact blocks as standard equipment, hence fewer versions needed
- Same dimensions for all enclosure versions: plastic, metal
- An extensive range of actuators
- Status display with four LEDs
- 3SF1324-1S.21-1BK4 series with high degree of protection IP69K, IP69 in accordance with IEC 60529, cover with foamed seal

Application

The safety switches with tumbler are exceptional safety-related devices which prevent an unforeseen or intentional opening of protective doors, protective grilles or other covers as long as a dangerous situation is present (i.e. follow-on motion of the switched-off machine).

The safety switches with tumbler have the following functions:

- Enabling the machine or process with closed and locked protective device
- Locking the machine or process with opened protective device
- Position monitoring of the protective device and tumbler

Standards

The switches comply with the standards IEC 60947-1 (Low-Voltage Controlgear, General) and IEC 60947-5-1 (Electromechanical Control Devices).

The mechanical design of the switch corresponds to the requirements of the fail-safe principle according to EN ISO 14119.

Approvals

AS-Interface according to EN 50295 and IEC 62026-2

The switches are approved for use with locking devices according to EN ISO 14119 and EN 292, Parts 1 and 2.

3SF13 safety switches with tumbler have a VDE test mark.

With a 3SF13 safety switch with tumbler it is possible to achieve Category 3 according to EN ISO 13849-1 or SIL 2 according to IEC 61508.

Category 4 according to EN ISO 13849-1 or SIL 3 according to IEC 61508 can be achieved by using an additional 3SE5 safety switch.

The 3SF1 safety switches are approved according to UL 508, UL 50 and UL 746-C.

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface With Tumbler

3SF1, plastic enclosures with locking force greater than 1 200 N

Overview

Versions

- 1BA1: ASIsafe channel 1 on 1 NC contact from the actuator, and channel 2 on 1 NC contact from the solenoid
- 1BA3: ASIsafe channel 1 on the first NC contact from the actuator and channel 2 on the second NC contact from the actuator
- 1BA4: ASIsafe channel 1 on 2 NC contacts (two-channel) from the actuator, and channel 2 on 1 NC contact from the solenoid. The position switch transfers the information of actuators to a transfer channel because the discrepancy of the two actuator contacts is already evaluated in the switch.

The 3SF1324-1S.21-1BA4 safety switches are also recommended where there are several protective door tumblers and reliable diagnostics and quick restart capability of equipment is required.

- A response is received from the solenoid.
- No opening of the doors required after the solenoid is unlocked.

Comparison of versions

Safety switches	Contacts	Achievable safety level	Diagnostics	Reclosing condition after unlocking the solenoid (depending on the type of evaluation)
Type	Actuator/solenoid		Feedback from the solenoid	
3SF1324-1S.21-1BA1	1 NC/1 NC	SIL 1/PL c	✓	Door does <u>not</u> have to be opened
	1 NC/1 NC	SIL 2/PL d	✓	Door must be opened
3SF1324-1S.21-1BA3	2 NC/--	SIL 2/PL d	--	Door does <u>not</u> have to be opened
3SF1324-1S.21-1BA4	2 NC/1 NC	SIL 2/PL d	✓	Door does <u>not</u> have to be opened
3SF1324-1S.21-1BK4 (IP69K)	2 NC/1 NC	SIL 2/PL d	✓	Door does <u>not</u> have to be opened




✓ Available -- Not available

In connection with an ASIsafe MSS modular safety system or an ET 200SP F-CM AS-i Safety ST module, it is possible to achieve SIL 2 according to IEC 61508 or PL d according to ISO 13849-1. They comply with the standard EN ISO 14119. A TÜV certificate is available.

Features:

- Slow-action contacts
- 5 directions of approach
- Solenoid: Rated operational voltage 24 V DC
- 1 300 N locking force
- Degree of protection IP66/IP67 (IP69K)
- Status display with 4 LEDs 24 V DC; 1: AS-i, 2: FAULT, 3: F-IN1, 4: F-IN2

Selection and ordering data

Tumbler ¹⁾	Contacts Actuator/solenoid	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
		d	Article No.	Price per PU		
1 300 N locking force · Enclosure width 54 mm						
Spring-actuated locks						
	• With auxiliary release	1 NC/1 NC	⊕ 5	3SF1324-1SD21-1BA1	1	1 unit 42A
		2 NC/--	⊕ 5	3SF1324-1SD21-1BA3	1	1 unit 42A
		2 NC/1 NC	⊕ 5	3SF1324-1SD21-1BA4	1	1 unit 42A
	- Degree of protection IP69 acc. to 60529; IP69K acc. to DIN 40050	2 NC/1 NC	⊕ 5	3SF1324-1SD21-1BK4	1	1 unit 42A
	• With auxiliary release with lock	1 NC/1 NC	⊕ 5	3SF1324-1SE21-1BA1	1	1 unit 42A
3SF1324-1SD21-1BA1						
	• With escape release from the front	1 NC/1 NC	⊕ 5	3SF1324-1SF21-1BA1	1	1 unit 42A
		2 NC/1 NC	⊕ 5	3SF1324-1SF21-1BA4	1	1 unit 42A
		2 NC/1 NC	⊕ 5	3SF1324-1SF21-1BK4	1	1 unit 42A
	- Degree of protection IP69 acc. to 60529; IP69K acc. to DIN 40050	2 NC/1 NC	⊕ 5	3SF1324-1SG21-1BA1	1	1 unit 42A
	• With escape release from the back and auxiliary release from the front	1 NC/1 NC	⊕ 5	3SF1324-1SG21-1BA1	1	1 unit 42A
	2 NC/1 NC	⊕ 5	3SF1324-1SG21-1BA4	1	1 unit 42A	
	2 NC/1 NC	⊕ 5	3SF1324-1SG21-1BK4	1	1 unit 42A	
- Degree of protection IP69 acc. to 60529; IP69K acc. to DIN 40050	2 NC/1 NC	⊕ 5	3SF1324-1SG21-1BK4	1	1 unit 42A	
• With emergency release from the back and auxiliary release from the front	1 NC/1 NC	⊕ 5	3SF1324-1SJ21-1BA1	1	1 unit 42A	
3SF1324-1SF21-1BA1						
	Solenoid-locked	1 NC/1 NC	⊕ 5	3SF1324-1SB21-1BA1	1	1 unit 42A
		2 NC/--	⊕ 5	3SF1324-1SB21-1BA3	1	1 unit 42A
3SF1324-1SB21-1BA1						

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately. For actuators and optional accessories, see page 12/62.

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface With Tumbler

3SF1, metal enclosures with locking force greater than 2 000 N

Overview

Version

- 1BA1: ASIsafe channel 1 on 1 NC contact from the actuator, and channel 2 on 1 NC contact from the solenoid

Features




- Slow-action contacts
- Solenoid: Rated operational voltage 24 V DC
- 2 600 N locking force
- Degree of protection IP66/IP67
- Status display with 4 LEDs 24 V DC; 1: AS-i, 2: FAULT, 3: F-IN1, 4: F-IN2

Comparison of versions

Safety switches	Contacts	Achievable safety level	Diagnostics	Reclosing condition after unlocking the solenoid (depending on the type of evaluation)
Type	Actuator/solenoid		Feedback from the solenoid	
3SF1314-1S.11-1BA1	1 NC/1 NC	SIL 1/PL c	✓	Door does <u>not</u> have to be opened

✓ Available

Selection and ordering data

Tumbler ¹⁾	Contacts Actuator/solenoid	SD	Complete units	PU (UNIT, SET, M)	PS*	PG
		d	Article No.	Price per PU		
2 600 N locking force · Enclosure width 54 mm						
	Spring-actuated locks					
	• With auxiliary release	1 NC/1 NC	⊕ 5	3SF1314-1SD11-1BA1	1	1 unit 42A
	• With auxiliary release with lock	1 NC/1 NC	⊕ 5	3SF1314-1SE11-1BA1	1	1 unit 42A
3SF1314-1SD11-1BA1						
	• With escape release from the front	1 NC/1 NC	⊕ 5	3SF1314-1SF11-1BA1	1	1 unit 42A
	• With escape release from the back and auxiliary release from the front	1 NC/1 NC	⊕ 5	3SF1314-1SG11-1BA1	1	1 unit 42A
	• With escape release from the back and auxiliary release with lock from the front	1 NC/1 NC	⊕ 5	3SF1314-1SH11-1BA1	1	1 unit 42A
	• With emergency release from the back and auxiliary release from the front	1 NC/1 NC	⊕ 5	3SF1314-1SJ11-1BA1	1	1 unit 42A
3SF1314-1SF11-1BA1						
	Solenoid-locked	1 NC/1 NC	⊕ 5	3SF1314-1SB11-1BA1	1	1 unit 42A
3SF1314-1SB11-1BA1						

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

¹⁾ Supplied without actuator. Please order separately.

For actuators and optional accessories, see page 12/62.

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface Safety Hinge Switches

3SF1, plastic enclosures, enclosure width 31 mm according to EN 50047 / 50 mm

Overview

The 3SF1 safety hinge switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 hinge switches the ASIsafe electronics are integrated in the switch enclosure.

The hinge switches are provided for mounting on hinges. There are two actuator variants here:

- Hollow shaft, inner diameter 8 mm, outer 12 mm
- Solid shaft, diameter 10 mm





For the ASIsafe version of the hinge switch, the basic switch and actuator head must be ordered separately. The basic switches correspond to the 3SF1 position switches (use only versions with snap-action contacts).

The provisions and approvals are the same as for the 3SF1 standard switches (see page 12/83).

Selection and ordering data

Modular system

1 or 2 contacts · 3 LEDs · Degree of protection IP65 (31 mm) or IP66/IP67 (50 mm) · M12 device plug

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU		
Basic switches · Enclosure width 31 mm acc. to EN 50047							
	With Teflon plunger, with M12 device plug , 4-pole, channel 1 on NC contact, channel 2 on NC contact						
3SF1234-1LC05-1BA1	Snap-action contacts	2 NC	24 V DC	⊕ 5	3SF1234-1LC05-1BA1	1	1 unit 42A
Basic switches · Enclosure width 50 mm							
	With Teflon plunger, with M12 device plug , 4-pole, channel 1 on NC contact, channel 2 on M12 socket, right						
3SF1244-1LC05-1BA2	Snap-action contacts	1 NC	24 V DC	⊕ 5	3SF1244-1LC05-1BA2	1	1 unit 42A
Actuator heads							
	With hollow shaft						
3SE5000-0AU21	Operating angle 10°			5	3SE5000-0AU21	1	1 unit 41K
	With solid shaft						
3SE5000-0AU22	Operating angle 10°			5	3SE5000-0AU22	1	1 unit 41K

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

SIRIUS 3SF1 Mechanical Safety Switches for AS-Interface Safety Hinge Switches

3SF1, metal enclosures, enclosure width 31 mm according to EN 50047 / 40 mm according to EN 50041 / 56 mm

Overview

The 3SF1 safety hinge switches with safety-related communication can be directly connected using the AS-Interface bus system. The safety functions no longer have to be wired up conventionally.

With the 3SF1 hinge switches the ASIsafe electronics are integrated in the switch enclosure.

The hinge switches are provided for mounting on hinges. There are two actuator variants here:

- Hollow shaft, inner diameter 8 mm, outer 12 mm
- Solid shaft, diameter 10 mm






For the ASIsafe version of the hinge switch, the basic switch and actuator head must be ordered separately. The basic switches correspond to the 3SF1 position switches (use only versions with snap-action contacts).

The provisions and approvals are the same as for the 3SF1 standard switches (see page 12/83).

Selection and ordering data

Modular system

1 or 2 contacts · 3 LEDs · Degree of protection IP66/IP67 · M12 device plug

Version	Contacts	LEDs	SD	Modular system	PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU		
Basic switches · Enclosure width 31 mm acc. to EN 50047							
	With plunger With M12 device plug, 4-pole, channel 1 on NC contact, channel 2 on NC contact Snap-action contacts	2 NC	24 V DC	⊕ 5	3SF1214-1LC05-1BA1	1	1 unit 42A
3SF1214-1LC05-1BA1							
Basic switches · Enclosure width 40 mm acc. to EN 50041							
	With M12 device plug , 4-pole, channel 1 on NC contact, channel 2 on NC contact Snap-action contacts	2 NC	24 V DC	⊕ 5	3SF1114-1LA00-1BA1	1	1 unit 42A
3SF1114-1LA00-1BA1							
Basic switches · Enclosure width 56 mm							
	With M12 device plug , 4-pole, channel 1 on NC contact, channel 2 on M12 socket, right Snap-action contacts	1 NC	24 V DC	⊕ 5	3SF1124-1LA00-1BA2	1	1 unit 42A
3SF1124-1LA00-1BA2							
Actuator heads							
	Hollow shaft Operating angle 10°			5	3SE5000-0AU21	1	1 unit 41K
3SE5000-0AU21							
	Solid shaft Operating angle 10°			5	3SE5000-0AU22	1	1 unit 41K
3SE5000-0AU22							

⊕ Positive opening according to IEC 60947-5-1, Appendix K.

SIRIUS 3SE6 Non-Contact Safety Switches Magnet

3SE66, 3SE67 magnetically operated switches

Overview



3SE66 contact blocks and 3SE67 switching magnets

A magnetically operated switch comprises a coded switching magnet and a contact block (sensor unit). The switch must be connected to a safety relay, e.g. SIRIUS 3SK1, or a bus system, e.g. SIMATIC ET 200SP, for evaluation. The switches use reed contacts as mechanical contacts. The status of the contacts is monitored using an evaluation unit.



3SE66 contact blocks and 3SE67 switching magnets, supplementary range in new design

Safety relays

3SK safety relays can be used worldwide since they possess all the required certification. Since they satisfy the most exacting safety requirements, they are suitable for all kinds of safety applications.

The following can be selected:

- 3SK1 Standard basic units: simple and compact to satisfy all the essential requirements of safety sensor monitoring systems
- 3SK1 Advanced basic units: multifunctional series with relay enabling circuits, semiconductor outputs or time-delay outputs
- 3SK2 basic units: multifunctional series whose functionality is parameterized using software. The basic units have solid-state outputs. Relay outputs from the 3SK1 portfolio can also be connected via device connectors.
- Expansion units for inputs and outputs

The 3SE6806 safety relay is also available with two floating enabling circuits (safe circuits) as NO contact circuits and one floating signaling circuit as an NC contact circuit.

Benefits

Standard range

- Non-contact round, rectangular, small (25 mm x 33 mm) and larger (25 mm x 88 mm) versions
- Small, compact, safe
- Simple mounting with alignment of sensor and actuator, and concealed installation also easy
- Suitable for restricted spaces

Supplementary range

- New design for rectangular shape
- More functionality
- Greater switching intervals and a larger horizontal or vertical displacement
- Various mounting positions possible (e.g. at 90° offset)
- SIL 3 and PL e diagnostics possible because there are two safety contacts and one signaling contact
- LED variant
- Fast connection possible using plug-in variants

SIRIUS 3SE6 Non-Contact Safety Switches Magnet

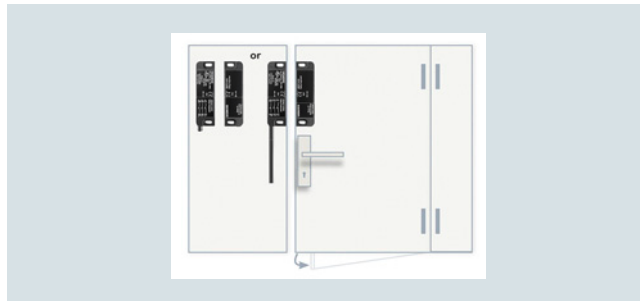
3SE66, 3SE67 magnetically operated switches

Application

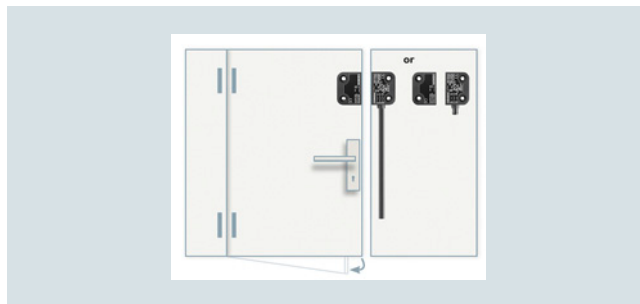
SIRIUS 3SE6 magnetically operated switches are designed for mounting on movable protective guards (hoods, hinged covers, doors, etc.). Evaluation can be performed by means of a safety relay or through connection to a bus system.

The 3SE66 non-contact, magnetically operated safety switches stand out due to their enclosed design with degree of protection IP67. Since they are coded, they do not have to be concealed when installed. They are particularly suitable therefore for areas exposed to contamination, cleaning or disinfecting.

A magnetic monitoring system comprises one or more magnetically operated switches and an evaluation unit, e.g. a safety relay. When contact blocks 1 NO + 1 NC (+ 1 NC signaling contact) or 2 NC (+ 1 NC signaling contact) are used, the 3SK safety relay, for example, provides a high degree of protection against manipulation and can be installed in safety circuits up to SIL 3 according to IEC 62061 and PL e according to EN ISO 13849-1.



Non-contact safety magnetically operated switches (with plug or cable) for right-hinged door













Non-contact safety magnetically operated switches (with plug or cable) for left-hinged door

SIRIUS 3SE6 Non-Contact Safety Switches

Magnet

3SE66, 3SE67 magnetically operated switches

Combination of monitoring units and magnetically operated switches

Monitoring units			Magnetically operated switches (contact block + switching magnet)			Achievable SIL (IEC 61508, IEC 62061) Performance Level (EN ISO 13849-1)
			1 NO + 1 NC 3SE6605-. BA..	2 NC 3SE6604-2BA.. 1 NO + 2 NC 3SE6606-2BA04	--	
						
			3SE6704-. BA	3SE6704-2BA		
			1 NO + 1 NC (+ 1 NC signaling contact) 3SE6616-3CA01 3SE6626-3CA01	2 NC; 2 NC (+ 1 NC signaling contact) 3SE6614-4CA01 3SE6624-4CA01 3SE6617-2CA01 3SE6627-2CA01 3SE6617-2CA04 3SE6627-2CA04	2 NC (+ 1 NC signaling contact) 3SE6617-3CA01 3SE6627-3CA01 3SE6617-3CA04 3SE6627-3CA04	
						
			3SE6714-3CA 3SE6724-3CA	3SE6714-2CA 3SE6724-2CA	3SE6714-3CA 3SE6724-3CA	
Relay output						
SIRIUS safety relays	3SK1121, 3TK2826		✓	✓	✓	SIL 3/PL e
Solid-state outputs						
SIRIUS safety relays	3SK1112, 3SK1122		--/✓	✓	✓	SIL 3/PL e
	3SK2112, 3SK2122		✓	✓	✓	SIL 3/PL e
ASIsafe compact safety modules	3RK1205, 3RK1405		--	✓	✓	SIL 3/PL e
Modular Safety System (MSS)	3RK3		✓	✓	✓	SIL 3/PL e
SIMATIC S7-1200F	F-DI 16 x 24 V DC		✓	✓	✓	SIL 3/PL e
SIMATIC ET 200SP PROFIsafe	4/8 F-DI, 24 V DC		✓	✓	✓	SIL 3/PL e
SIMATIC ET 200eco	4/8 F-DI, 24 V DC		✓	✓	✓	SIL 3/PL e
SIMATIC ET 200pro	8/16 F-DI, 24 V DC, 4/8 F-DI/4 F-DQ 2 A, 24 V DC, F-Switch		✓	✓	✓	SIL 3/PL e
SIMATIC ET 200SP	8F-DI, 24 V DC F-PM-E 24 V DC		✓	✓	✓	SIL 3/PL e
SIMATIC ET 200MP	16 F-DI, 24 V DC		✓	✓	✓	SIL 3/PL e

✓ Suitable magnetically operated switch

-- Not available

SIRIUS 3SE6 Non-Contact Safety Switches Magnet

3SE66, 3SE67 magnetically operated switches

Selection and ordering data

Version	Size	Contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm		d					
Standard range – Round sensor units								
 3SE6704-1BA	Switching magnet (coded)	M30	--	2	3SE6704-1BA	1	1 unit	41K
 3SE6605-1BA	Contact blocks							
	• With cable 3 m	M30	1 NO + 1 NC	2	3SE6605-1BA	1	1 unit	41K
	• With M12 plug, 4-pole	M30	1 NO + 1 NC	2	3SE6605-1BA02	1	1 unit	41K
Standard range – Rectangular sensor units								
 3SE6704-2BA	Switching magnet (coded)	25 × 88	--	2	3SE6704-2BA	1	1 unit	41K
 3SE660.-2BA	Contact blocks							
	• With cable 3 m	25 × 88	1 NO + 1 NC	2	3SE6605-2BA	1	1 unit	41K
			2 NC	2	3SE6604-2BA	1	1 unit	41K
			1 NO + 2 NC	10	3SE6606-2BA04	1	1 unit	41K
	• With cable 10 m	25 × 88	1 NO + 1 NC	5	3SE6605-2BA10	1	1 unit	41K
			2 NC	2	3SE6604-2BA10	1	1 unit	41K
	• With M8 plug, 4-pole	25 × 88	1 NO + 1 NC	2	3SE6605-2BA01	1	1 unit	41K
			2 NC	2	3SE6604-2BA01	1	1 unit	41K
 3SE660.-3BA	Switching magnet (coded)	25 × 33	--	2	3SE6704-3BA	1	1 unit	41K
 3SE6605-3BA	Contact blocks							
	• With cable 3 m	25 × 33	1 NO + 1 NC	2	3SE6605-3BA	1	1 unit	41K
	• With cable 5 m			2	3SE6605-3BA05	1	1 unit	41K
	• With cable 10 m			2	3SE6605-3BA10	1	1 unit	41K
Supplementary range in new design – Rectangular sensor units for left-hinged door								
 3SE6714-2CA	Switching magnets (coded)	25 × 88	--	5	3SE6714-2CA	1	1 unit	41K
	• Same level			5	3SE6724-2CA	1	1 unit	41K
	• 90° offset			5	3SE6724-2CA	1	1 unit	41K
 3SE6614-4CA01	Contact blocks							
	• With M8 plug, 4-pole, with LED	25 × 88	2 NC	5	3SE6614-4CA01	1	1 unit	41K
	• 8 mm Ø, latching connection, plug, 6-pole		2 NC + 1 NC ¹⁾	5	3SE6617-2CA01	1	1 unit	41K
	• With cable 3 m		2 NC + 1 NC ¹⁾	5	3SE6617-2CA04	1	1 unit	41K
 3SE6714-3CA	Switching magnets (coded)	26 × 36	--	5	3SE6714-3CA	1	1 unit	41K
	• Same level			5	3SE6724-3CA	1	1 unit	41K
	• 90° offset			5	3SE6724-3CA	1	1 unit	41K
 3SE6616-3CA01	Contact blocks							
	• 8 mm Ø, latching connection, plug, 6-pole	26 × 36	1 NO + 1 NC + 1 NC ¹⁾	5	3SE6616-3CA01	1	1 unit	41K
			2 NC + 1 NC ¹⁾	5	3SE6617-3CA01	1	1 unit	41K
	• With cable 3 m		2 NC + 1 NC ¹⁾	5	3SE6617-3CA04	1	1 unit	41K

¹⁾ The NC is a signaling contact, not a safety contact.

SIRIUS 3SE6 Non-Contact Safety Switches

Magnet

3SE66, 3SE67 magnetically operated switches

Version	Size	Contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm		d					
Supplementary range in new design – Rectangular sensor units for right-hinged door								
	Switching magnets (coded)							
	• Same level	25 x 88	--	5	3SE6714-2CA		1	1 unit 41K
	• 90° offset			5	3SE6724-2CA		1	1 unit 41K
3SE6714-2CA								
	Contact blocks							
	• With M8 plug, 4-pole, with LED	25 x 88	2 NC	5	3SE6624-4CA01		1	1 unit 41K
	• 8 mm Ø, latching connection, plug, 6-pole		2 NC + 1 NC ¹⁾	5	3SE6627-2CA01		1	1 unit 41K
	• With cable 3 m		2 NC + 1 NC ¹⁾	5	3SE6627-2CA04		1	1 unit 41K
3SE6624-4CA01								
	Switching magnets (coded)							
	• Same level	26 x 36	--	5	3SE6714-3CA		1	1 unit 41K
	• 90° offset			5	3SE6724-3CA		1	1 unit 41K
3SE6714-3CA								
	Contact blocks							
	• 8 mm Ø, latching connection, plug, 6-pole	26 x 36	1 NO + 1 NC + 1 NC ¹⁾	5	3SE6626-3CA01		1	1 unit 41K
			2 NC + 1 NC ¹⁾	5	3SE6627-3CA01		1	1 unit 41K
	• With cable 3 m		2 NC + 1 NC ¹⁾	5	3SE6627-3CA04		1	1 unit 41K
3SE6626-3CA01								
Accessories for standard range								
	Spacer							
		25 x 88	--	2	3SX3260		1	1 unit 41K
3SX3260								
	Spacer							
		25 x 33	--	5	3SX3261		1	1 unit 41K
3SX3261								
Coupling		With connecting cable, 5 m						
	• With M8 socket, 4-pole		--	5	3SX5601-3GA05		1	1 unit 41K
Accessories for supplementary range in new design								
	Spacer							
		25 x 88	--	5	3SX5600-2GA01		1	1 unit 41K
3SX5600-2GA01								
	Spacer							
		26 x 36	--	5	3SX5600-2GA02		1	1 unit 41K
3SX5600-2GA02								
Coupling		With connecting cable, 5 m						
	• With M8 socket, 4-pole		--	5	3SX5601-3GA05		1	1 unit 41K
	• With 8 mm Ø socket, 8 mm, latching connection, 6-pole		--	5	3SX5601-4GA05		1	1 unit 41K
3SX5601-3GA05								

¹⁾ The second NC is a signaling contact, not a safety contact.

SIRIUS 3SE6 Non-Contact Safety Switches Magnet

3SE66, 3SE67 magnetically operated switches

Version	Rated control voltage	Number of sensors	Enabling/signaling circuits	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Monitoring units

3SK1 safety relays

Standard or Advanced basic units

With relay output	24 V DC	6 ¹⁾	3 NO/1 NC	▶	3SK1121-1AB40		1	1 unit	41L
With semiconductor output	24 V DC	1	2 x F-DQ/ 1 QM	2	3SK1112-1BB40		1	1 unit	41L



3SK1121-1AB40

3SK2 safety relays

Basic units

With semiconductor output	24 V DC	5	2 x F-DQ/ 1 QM	2	3SK2112-1AA10		1	1 unit	41L
		10	4 x F-DQ/ 2 QM	2	3SK2122-1AA10		1	1 unit	41L



3SK2112-1AA10

¹⁾ Only when up to 5 3SK1220 expansion units are used, see page 11/23.

For more monitoring units, see pages 2/1, 8/1, 9/1 and 11/1, as well as Catalog IK PI.

SIRIUS 3SE6 Non-Contact Safety Switches RFID

3SE63 RFID safety switches

Overview



Non-contact RFID safety switches with maximum tamper resistance

RFID 3SE63 non-contact safety switches comply with the highest safety requirements, SIL 3 or Cat. 4, for monitoring the positions of movable protective devices.

An RFID safety switch consists of a coded RFID switch with an 8-pole M12 connection plug and an identical RFID actuator.

The switch is available in several versions:

- Family coded with M12 plug or with additional 18 N magnetic catch as an option
- Individually coded, programmable once, with M12 plug or with additional 18 N magnetic catch as an option
- Individually coded, programmable more than once (an unlimited number of times), with M12 plug or variant with additional 18 N magnetic catch

The actuator is therefore available in two versions:

- Standard
- With 18 N magnetic catch

The magnetic catch keeps doors and hinge switches closed with permanent magnets.

Mounting and maintenance

Various options for mounting save on enclosure variants:

- Mounting of the switch on the right or left side
- The actuator can be mounted on all sides

Quick and easy mounting thanks to universal mounting holes:

- Standard gauge/holes for 3SE6 magnetically operated switches
- Fine adjustment thanks to slotted holes

Little adjustment or maintenance required:

- Threshold indication by LED display on the switch for quick and easy adjustment during mounting and maintenance
- Molded switch allows it to be used as an end stop for small and medium-sized doors

Note:

- Keep metal parts and cuttings away from the vicinity of the switch
- Minimum distance between two switches 100 mm

Optional accessories (mounting)

- Covers for sealing mounting holes, also suitable for tamper-proofing screw fixings
- Spacers (approx. 3 mm high) to facilitate cleaning under the installation surface when using high-pressure cleaners, for example

Coding

Family coded

These safety switches are delivered ready to use, i. e. no programming is necessary.

Individually coded, programmable once

The assignment of safety switch and actuator thus created is irreversible.

The actuator is programmed simply by routine during startup, thus permanently preventing any form of tampering by means of a replacement actuator.

Individually coded, programmable several times

The procedure for programming a new actuator can be repeated an unlimited number of times. When a new actuator is programmed the previous code becomes invalid. A protected coding process allows new actuators to be programmed for service purposes.

After this, a ten-minute lockout provides increased tamper protection. The green LED flashes until the lockout time has ended and the new actuator has been detected. If the operational voltage is interrupted during this time, the ten-minute guard time is restarted.

Programming procedure for individual coding

1. Apply operational voltage to safety sensor
2. Move actuator into detection range: red LED lights up, yellow LED flashes (1 Hz)
3. After 10 s it changes to a shorter flashing frequency (3 Hz). In this state switch off operational voltage.
4. After the next time the operational voltage is switched on, the actuator is detected again to activate the programmed actuator code. The activated code is thus stored permanently.

Diagnostics

The RFID safety switch indicates its operating state including faults by means of the LED indicator on the switch and the short-circuit proof diagnostics output. The signals can then be used for central displays or non-safety-related control tasks.

There are the following diagnostics functions:

- Crossover monitoring
- Open-circuit monitoring
- External voltage monitoring
- Ambient temperature too high
- Wrong or defective actuator
- Switching interval threshold identification with LED display

The signal combination "diagnostics output switched off" and "safety outputs still switched on" can be used to move the machine into a controlled stop position.

Any crossover or a fault that is not currently compromising the safe function of a safety switch results in the disconnection of the safety channels after a 30-minute delay. However, the diagnostics output switches off instantaneously.

Mode of operation of the diagnostics LEDs

The safety switch indicates not only its operating state, but also faults by means of LEDs in three colors at the ends of the RFID switch.

- The green LED indicates readiness for operation when the control supply voltage is connected.
- The yellow LED indicates that there is an actuator in detection range. If the actuator is in the switching interval threshold, this is indicated by flashing. This flashing can be used to identify a change in the distance between sensor and actuator at an early stage (e.g. as a result of the sagging of a protective door). The installation should be tested before the distance increases further, the safety outputs switch off and the machine stops.
- The red LED indicates the individual causes of the fault by means of defined flashing frequencies.

Benefits

- Maximum tamper resistance by means of individual coding of switches and actuators at the highest safety level
- Plastic enclosure with integrated plug
- Two solid-state short-circuit proof safety outputs, each 250 mA
- Integrated crossover, open circuit and external voltage monitoring, with series circuit as far as the control cabinet
- Safety and diagnostics signals can be connected in series
- Series connection of safety circuits in Cat. 4/PL e/SIL 3
- LED status indication including switching interval threshold indication for quick and easy adjustment during installation and maintenance
- Short-circuit proof conventional diagnostics output
- Optional version with magnetic catch for interlocking hinge switches or small doors even when de-energized
- Highly rugged thanks to the use of tested enclosure materials, resistant to aggressive cleaning products, with a degree of protection of up to IP69K
IP69 does not automatically mean that it can be used outdoors. The devices must be installed with corresponding protection for this purpose. UV radiation additionally affects the enclosure
- Fine adjustment thanks to slotted holes
- Little adjustment or maintenance required
- Molded switch allows it to be used as an end stop for small and medium-sized doors

Application

RFID non-contact safety switches are designed for use in safety circuits, and are used to monitor the positions of movable protective devices. They monitor the positions of rotating, laterally sliding or removable protective devices using the coded electronic actuator.

Their high degree of protection (IP69K) and the use of cleaning-product-resistant materials means that these switches are optimized for use under extreme environmental conditions.

Their electronic operating principle makes these switches ideal for metalworking machinery.

The switches have a larger switching interval and switching displacement than mechanical switches, improve the mounting tolerance of the protective door, and offer a wide range of diagnostics options.

The RFID switches can be connected to all standard evaluation units suitable for solid-state inputs and in which the built-in crossover monitoring function can be deactivated, e.g.:

Monitoring units	
Relay output	
SIRIUS safety relays	3SK1111-. AB30, 3SK1121
SIRIUS safety relays	3TK2826-.BB4.
Solid-state outputs	
SIRIUS safety relays	3SK1112, 3SK1122, 3SK2112, 3SK2122
SIRIUS safety relays	3TK2841, 3TK2842, 3TK2845 3TK2853-.BB40
Modular Safety System (MSS)	3RK3 (safe inputs)
SIMATIC ET 200S	6ES7138-4FA0.-0AB0 6ES7138-4FC0.-0AB0
SIMATIC ET 200M	6ES7326-1BK0.-0AB0
SIMATIC ET 200eco	6ES7148-3FA00-0XB0
SIMATIC ET 200pro	6ES7148-4F.00-0AB0
SIMATIC ET 200SP	6ES7136-6BA00-0CA0 6ES7136-6PA00-0BC0
SIMATIC ET 200MP	6ES7526-3BH00-0AB0
SIMATIC S7-1200F	6ES7226-6BA32-0XB0

These safety categories can be achieved in safety circuits:

- Category 4 according to EN ISO 13849-1
- PL e according to EN ISO 13849-1
- SIL 3 according to IEC 61508

Technical specifications

Type	3SE63	
General data		
Standards	IEC 60947-5-3, IEC 61508, EN ISO 13849-1, EN ISO 14119	
Enclosure material	Glass-fiber reinforced thermoplast, self-extinguishing	
Degree of protection	IP65/IP67/IP69K	
Ambient temperature		
• During operation	°C	-25 ... +70
• During storage, transport	°C	-25 ... +85
Shock resistance	30 g / 11 ms	
Vibration resistance	10 ... 55 Hz, amplitude 1 mm	

Type	3SE63	
Electrical specifications		
Rated insulation voltage U_i	V	32
Degree of pollution according to IEC 60664-1		3
Rated impulse withstand voltage U_{imp}	V	800
Rated conditional short-circuit current	A	100
Rated operational voltage U_e (PELV acc. to EN 60204-1)	V DC	24 -15/+10%
Protection class	II	
Overvoltage category	III	
Rated operational current I_e	A	0.6
Lowest operating current I_m	mA	0.5
No-load current I_0	mA	35

SIRIUS 3SE6 Non-Contact Safety Switches RFID

3SE63 RFID safety switches

Type	3SE63	
Inputs/outputs		
Safety inputs X1/X2		
• Input voltage	V DC	24 -15/+10%
• Power consumption per input	mA	5
Safety outputs OSSD1/OSSD2		
		p operation
• Max. rated operating current $I_{e,max}$	A	0.25
• Rated operational current $I_e/DC-12/DC-13$ at U_e	A	0.25
• Voltage drop U_e	V	< 1
• Switching frequency	Hz	1
• Response time, max.	ms	100
• Risk time, max.	ms	200
• Recovery, max.	s	5
Diagnostics output		
		p operation
• Max. rated operating current $I_{e2,max}$	A	0.05
• Rated operational current $I_e/DC-12/DC-13$ at U_e	A	0.05
• Voltage drop U_e	V	< 2
• Operational current	mA	150
• Conductor capacity, max.	nF	50

Pin assignment

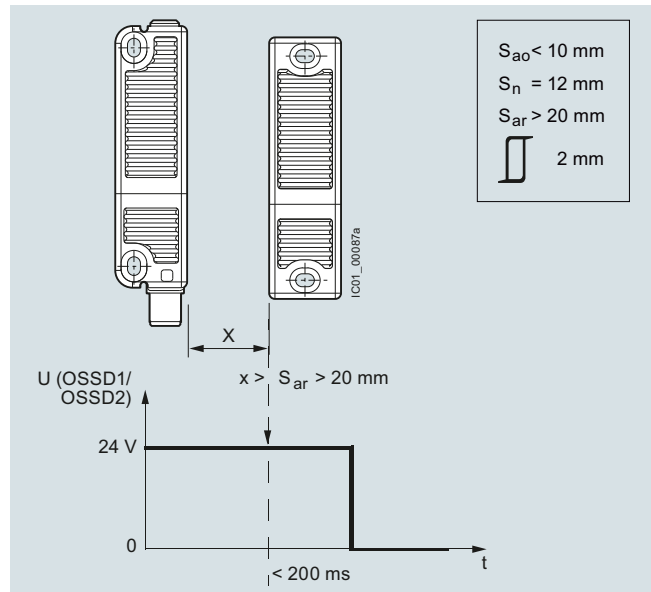
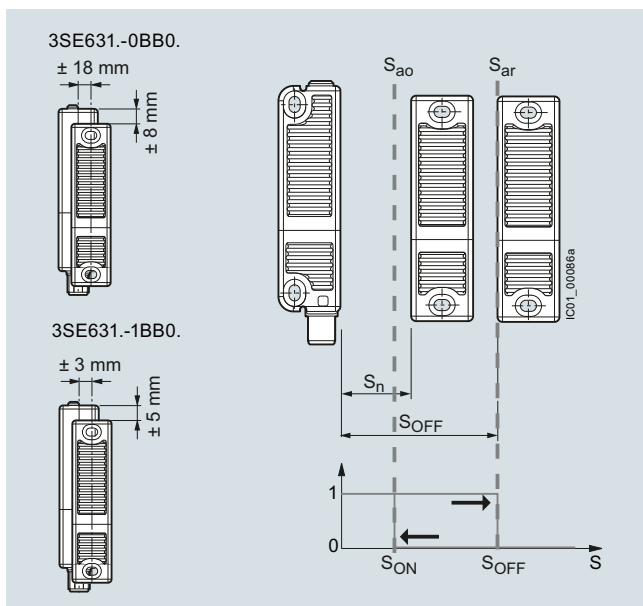
Pin 1: A1 rated operational voltage 24 V DC
 Pin 2: X1 safety input 24 V DC
 Pin 3: A2 grounding
 Pin 4: OSSD1 safety output
 Pin 5: OUT conventional diagnostics output
 Pin 6: X2 safety input 24 V DC
 Pin 7: OSSD2 safety output
 Pin 8: Not used

IC10_00090

Pin assignment

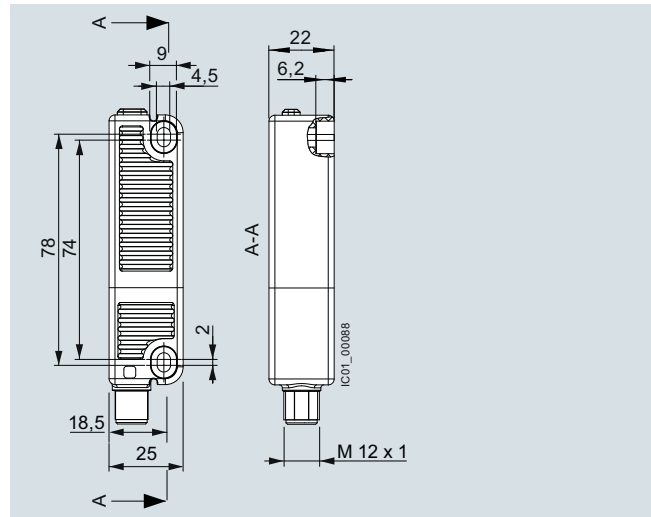
Directions of approach and switching interval

The side area permits a maximum height offset of the switch and actuator of ± 8 mm (e.g. mounting tolerance or due to sagging of the protective door). The transverse offset also equals max. ± 18 mm.

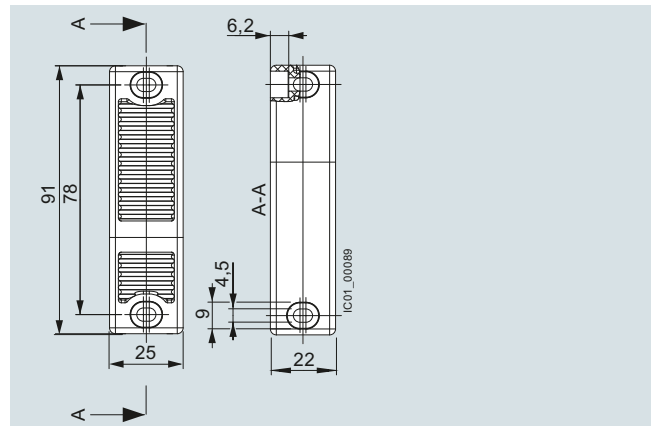


Dimension drawings

RFID switch 3SE6315



RFID actuator 3SE6310





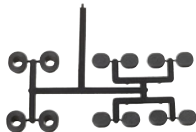

SIRIUS 3SE6 Non-Contact Safety Switches

RFID

3SE63 RFID safety switches

Selection and ordering data

With M12 connection plug, 8-pole

Version/coding	Latching/length	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rectangular safety switches 91 mm x 25 mm¹⁾							
RFID safety switch							
 <p>3SE6315</p>	• Family coded	None	2	3SE6315-0BB01		1	1 unit 41K
		With 18 N magnetic catch	2	3SE6315-1BB01		1	1 unit 41K
	• Individually coded, programmable several times	None	2	3SE6315-0BB02		1	1 unit 41K
		With 18 N magnetic catch	5	3SE6315-1BB02		1	1 unit 41K
	• Individually coded, programmable once	None	2	3SE6315-0BB03		1	1 unit 41K
		With 18 N magnetic catch	5	3SE6315-1BB03		1	1 unit 41K
RFID actuator							
 <p>3SE6310</p>	• Standard	None	2	3SE6310-0BC01		1	1 unit 41K
		With 18 N magnetic catch	2	3SE6310-1BC01		1	1 unit 41K
Optional accessories							
 <p>3SX5600-1G</p>	Covers and spacers		2	3SX5600-1G		1	1 unit 41K
	One pack (1 unit) contains 8 covers and 4 spacers						
 <p>3SX5601-2GA03</p>	Connecting cables, 8-pole, with 1 straight M12 socket	Length 3 m	2	3SX5601-2GA03		1	1 unit 41K
		Length 5 m	2	3SX5601-2GA05		1	1 unit 41K
		Length 10 m	2	3SX5601-2GA10		1	1 unit 41K
Rated voltage 30 V							
Rated current 2 A							

¹⁾ Not connectable via AS-i modules.

For monitoring unit, see pages 8/1, 9/1 and 11/1.

SIRIUS 3SE6 Non-Contact Safety Switches

Notes

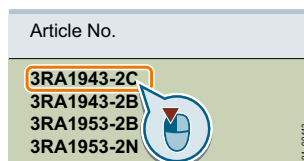
Commanding and Signaling Devices



	Price groups PG 41J, 41K, 42C
13/2	Introduction
	SIRIUS ACT pushbuttons and indicator lights
13/5	General data Actuators and indicators, 22 mm, round, plastic, black NEW
13/20	Complete units
13/27	Compact units
13/30	Actuating and signaling elements Actuators and indicators, 22 mm, plastic with metal front ring, matte NEW
13/42	Complete units
13/48	Compact units
13/51	Actuating and signaling elements Actuators and indicators, 22 mm, metal, shiny NEW
13/63	Complete units
13/69	Compact units
13/72	Actuating and signaling elements Actuators and indicators, flat, 30 mm, metal, matte NEW
13/84	Actuating and signaling elements Actuators and indicators, customized designs
13/87	Special locks
13/88	Laser inscriptions <u> Holders </u>
13/89	Holders without module
13/90	Holders with module <u> Modules for actuators and indicators </u>
13/91	Contact modules NEW
13/95	LED modules
13/97	AS-Interface modules
13/98	Electronic modules for IO-Link
13/98	Support terminals
13/99	Electronic modules for ID key-operated switches
13/100	Interface modules for PROFINET
13/100	Terminal modules

clickable

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.



Or directly on the Internet, e.g.
www.siemens.com/product?3RA1943-2C

	<u> Enclosures </u>
13/101	General data
13/102	Empty enclosures NEW
13/103	Pushbuttons and indicator lights in the enclosure NEW
13/107	Pushbuttons and indicator lights in the enclosure for AS-Interface NEW
13/110	Modules for enclosures
13/114	Two-hand operation consoles <u> Accessories </u>
	<u> Labels </u>
13/115	- Insert labels
13/118	- Label holders for labeling plates NEW
13/120	- Labeling plates
13/127	- Labeling plates for enclosures
13/131	- Labels for laser printers
13/132	- Other labels NEW
13/134	Protection/access protection NEW
13/138	Actuators
13/141	Enclosures
13/143	Miscellaneous accessories
	SIRIUS 3SB2 pushbuttons and indicator lights, 16 mm
13/145	General data
13/148	Complete units
13/150	Actuating and signaling elements
13/152	Contact blocks and lampholders <u> Accessories and spare parts </u>
13/154	Insert labels and insert caps
13/158	Backing plates
13/159	Mounting parts and components
	SIRIUS 3SE7 cable-operated switches
13/161	3SE7 metal enclosures
	SIRIUS 3SE2, 3SE3 foot switches
13/165	Plastic and metal enclosures
	SIRIUS 8WD4 signaling columns
13/167	General data
13/170	8WD42 signaling columns, 50 mm diameter
13/172	8WD44 signaling columns, 70 mm diameter
	SIRIUS 8WD5 integrated signal lamps
13/176	8WD53 integrated signal lamps, 70 mm diameter

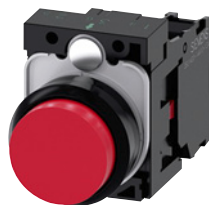
Note:

Conversion tool, e.g. from 3SB3 to 3SU1, see www.siemens.com/sirius/conversion-tool

Commanding and Signaling Devices

Introduction

Overview



3SU1.0



3SU1.3

Pushbuttons and indicator lights

Designs

Nominal diameter
Version

22 mm
Plastic

22 mm
Plastic
with metal front ring, matte

	Complete units	Compact units	Actuating/ signaling elements	Complete units	Compact units	Actuating/ signaling elements
Actuators						
Pushbuttons	✓ see p. 13/20	--	✓ see p. 13/30	✓ see p. 13/42	--	✓ see p. 13/51
Illuminated pushbuttons	✓ see p. 13/20	--	✓ see p. 13/31	✓ see p. 13/42	--	✓ see p. 13/52
Mushroom pushbuttons	✓ see p. 13/22	--	✓ see p. 13/33	✓ see p. 13/44	--	✓ see p. 13/54
EMERGENCY STOP mushroom pushbuttons	✓ see p. 13/22	--	✓ see p. 13/34	✓ see p. 13/44	--	✓ see p. 13/55
Selector switches	✓ see p. 13/23	--	✓ see p. 13/36	✓ see p. 13/45	--	✓ see p. 13/57
Key-operated switches	✓ see p. 13/24	--	✓ see p. 13/38	✓ see p. 13/46	--	✓ see p. 13/59
ID key-operated switches	--	--	✓ see p. 13/40	--	--	✓ see p. 13/61
Twin pushbuttons	--	--	✓ see p. 13/32	--	--	✓ see p. 13/53
Toggle switches	--	--	✓ see p. 13/35	--	--	✓ see p. 13/56
Coordinate switches	✓ see p. 13/25	--	✓ see p. 13/41	✓ see p. 13/46	--	✓ see p. 13/62
Sensor switches	--	✓ see p. 13/28	--	--	✓ see p. 13/49	--
Potentiometers	--	✓ see p. 13/28	--	--	✓ see p. 13/50	--
Pushbuttons with extended stroke	--	✓ see p. 13/29	--	--	✓ see p. 13/50	--
Indicators						
Indicator lights	✓ see p. 13/26	--	✓ see p. 13/41	✓ see p. 13/47	--	✓ see p. 13/62
Indicator lights in illuminated push-button design	--	--	✓ see p. 13/41	--	--	✓ see p. 13/62
Indicator lights with "traffic light" LED	--	✓ see p. 13/27	--	--	✓ see p. 13/48	--
Acoustic signaling devices	--	✓ see p. 13/28	--	--	✓ see p. 13/49	--
Contact modules						
Single-pole	✓ see p. 13/91					
LED modules						
Module with integrated LED	✓ see p. 13/95, 13/96, 13/111, 13/112					
Connections						
Screw terminals	✓	✓	✓	✓	✓	✓
Spring-type terminals	✓	--	✓	✓	--	✓
Solder pins	--	--	✓	--	--	✓
AS-Interface	✓	--	✓	✓	--	✓
IO-Link	--	--	✓	--	--	✓

✓ Available

-- Not available



	3SU1.5			3SU1.6			3SB2
Pushbuttons and indicator lights							
Designs							
Nominal diameter	22 mm			30 mm			16 mm
Version	Metal, shiny			Metal, matte, flat			Plastic, round
	Complete units	Compact units	Actuating/ signaling elements	Complete units	Compact units	Actuating/ signaling elements	
Actuators							
Pushbuttons	✓ see p. 13/63	--	✓ see p. 13/72	--	--	✓ see p. 13/84	✓ see p. 13/150
Illuminated pushbuttons	✓ see p. 13/63	--	✓ see p. 13/73	--	--	✓ see p. 13/84	✓ see p. 13/150
Mushroom pushbuttons	✓ see p. 13/65	--	✓ see p. 13/75	--	--	--	--
EMERGENCY STOP mushroom pushbuttons	✓ see p. 13/65	--	✓ see p. 13/76	--	--	--	✓ see p. 13/150
Selector switches	✓ see p. 13/66	--	✓ see p. 13/78	--	--	✓ see p. 13/85	✓ see p. 13/150
Key-operated switches	✓ see p. 13/67	--	✓ see p. 13/81	--	--	✓ see p. 13/86	✓ see p. 13/151
Twin pushbuttons	--	--	✓ see p. 13/74	--	--	--	--
Toggle switches	--	--	✓ see p. 13/78	--	--	--	--
Coordinate switches	✓ see p. 13/67	--	✓ see p. 13/83	--	--	--	--
Potentiometers	--	✓ see p. 13/70	--	--	--	--	--
Pushbuttons with extended stroke	--	✓ see p. 13/71	--	--	--	--	--
Indicators							
Indicator lights	✓ see p. 13/68	--	✓ see p. 13/83	--	--	✓ see p. 13/86	✓ see p. 13/149
Indicator lights with "traffic light" LED	--	✓ see p. 13/69	--	--	--	--	--
Acoustic signaling devices	--	✓ see p. 13/70	--	--	--	--	--
Contact modules							
Single-pole	✓ see p. 13/91, 13/110						--
LED modules							
Wedge bases	--	--	--	--	--	--	✓ see p. 13/159
Module with integrated LED	✓ see p. 13/95, 13/96, 13/111, 13/112						
Connections							
Plug-in connection	--	--	--	--	--	--	✓
Screw terminals	✓	✓	✓	✓	✓	✓	--
Spring-type terminals	✓	✓	✓	✓	✓	✓	--
Solder pins	✓	✓	✓	✓	✓	✓	✓
AS-Interface	✓	✓	✓	✓	✓	✓	✓
IO-Link	✓	✓	✓	✓	✓	✓	✓

✓ Available

-- Not available

Note:

Safety characteristics, see page 16/6.

AS-Interface solutions

Pushbuttons and indicator lights of the SIRIUS ACT series can be connected to the AS-Interface communication system quickly and easily with the help of various solutions.

For AS-Interface solutions, see Catalog IK PI.

AS-Interface EMERGENCY STOP according to ISO 13850

Using special modules, EMERGENCY STOP devices according to ISO 13850 can be directly connected through the standard AS-Interface with safety-related communication (see page 13/97).

AS-Interface enclosures

Enclosures with standard fittings are listed in this catalog. For customized enclosures, use the SIRIUS ACT Configurator to select the elements for equipping (see page 13/107).

Commanding and Signaling Devices

Introduction



	3SU18	3SU18	3SE7	3SE29, 3SE39
	Enclosures	Two-hand operation consoles	Cable-operated switches	Foot switches
Enclosures				
Plastic	✓	✓	--	✓
Metal	✓	✓	✓	✓
Actuators				
Pushbuttons	✓	--	✓	✓
Illuminated pushbuttons	--	--	--	--
Mushroom pushbuttons	✓	✓	--	--
EMERGENCY STOP mushroom pushbuttons	✓	✓	✓	--
Selector switches	✓	--	--	--
Key-operated switches	✓	--	--	--
Bowden wires	--	--	✓	--
Indicators				
Indicator lights	✓	--	✓	--
Acoustic signaling devices	✓	--	--	--
Contact modules				
Single-pole	✓	✓	--	--
Two-pole	--	✓	✓	✓
Three-pole	--	--	✓	✓
Four-pole	--	--	✓	✓
Connections				
Screw terminals	✓	✓	✓	✓
Pages	see p. 13/101	see p. 13/114	see p. 13/161	see p. 13/165

✓ Available -- Not available



	8WD42, 8WD44	8WD53
	Signaling columns	Integrated signal lamps
Enclosures		
Plastic	✓	✓
Illumination		
Incandescent lamps	✓	✓
LEDs	✓	✓
Flashlights	✓	✓
Connections		
Screw terminals	✓	✓
Spring-type terminals	✓	--
AS-Interface	✓	--
Pages	see p. 13/167	see p. 13/176

✓ Available -- Not available

Overview



SIRIUS ACT pushbuttons and indicator lights

SIRIUS ACT – commanding and signaling

SIRIUS ACT is a modular system of pushbuttons and indicator lights for front plate mounting and rear-mounted electrical modules. Thanks to SIRIUS ACT with PROFINET,

Extensive portfolio

- Customized variants, e.g. special tumbler arrangements, labeling, equipped enclosures
- Communication-enabled thanks to direct interfacing to AS-Interface, IO-Link or PROFINET

Diverse possible applications

- National and international approvals
- Many trade approvals
- Short delivery times thanks to global availability

Standards

- IEC/EN 60947-1
- IEC/EN 60947-5-1
- IEC/EN 60947-5-5 for EMERGENCY STOP devices

More information

Homepage, see www.siemens.com/sirius-act

Industry Mall, see www.siemens.com/product?3SU1

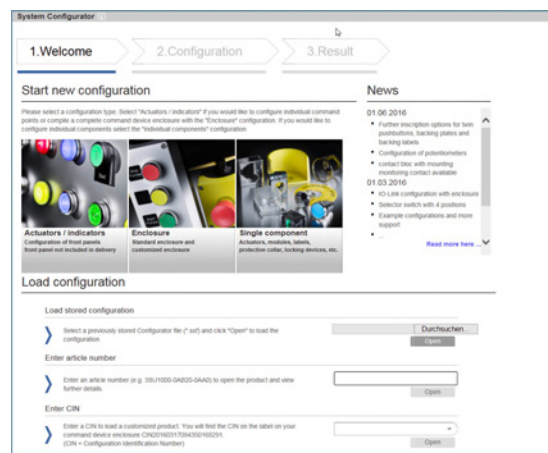
Configurator, see www.siemens.com/sirius-act/configurator

Conversion tool, see www.siemens.com/sirius/conversion-tool

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/107542462>

TIA Portal, see www.siemens.com/TIA

pushbuttons and indicator lights can be connected directly via PROFINET to the controller and HMI devices – including with safety functions. Engineering and commissioning are simplified no end by the TIA Portal.

Configurator

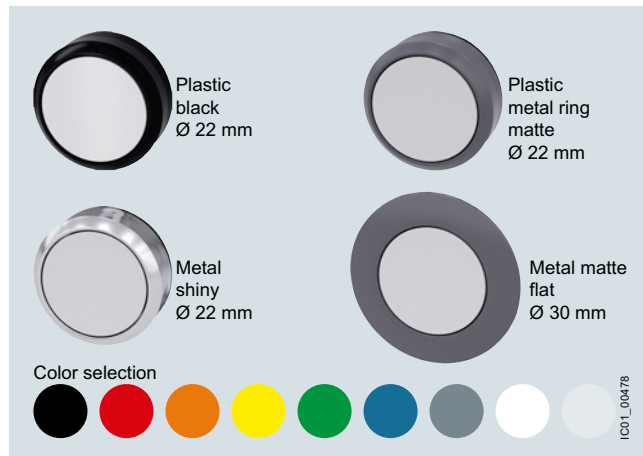
- Fast, simple selection by intuitive navigation through clearly-organized menus using drag & drop
- Image preview of selected components
- Inscription of pushbuttons and labeling plates using the interactive inscription tool
- Once created, a configuration can be ordered as often as required using the customer-specific article number and the CIN (Configuration Identification Number)
- Everything at a glance: Product data sheets, certificates, dimensional drawings, list prices, inscription tool

SIRIUS ACT Pushbuttons and Indicator Lights

General data

Benefits

Design



SIRIUS ACT is available in four design lines.

Ruggedness



- Degree of protection IP66, IP67, IP69 (IP69K)

IP66

6 = Protection against the ingress of dust

6 = Protection against powerful splashwater

IP67

6 = Protection against the ingress of dust

7 = Protection against temporary immersion

IP69 (IP69K)

6 = Protection against the ingress of dust

9/9K = Protection against water in high-pressure cleaning (approx. 80 bar) and high water jet temperatures (approx. 80 °C)

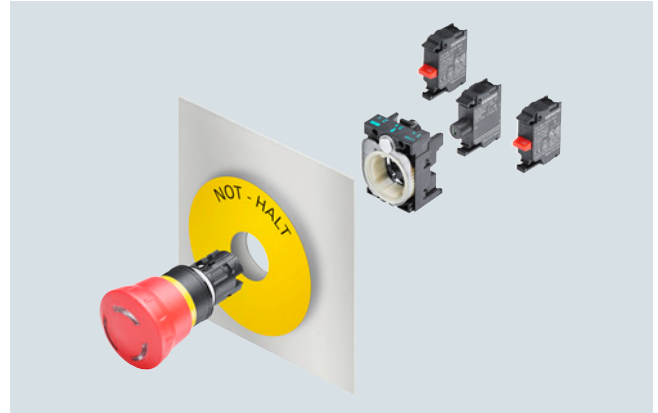
- Service life of 100 000 hours thanks to use of LEDs
- Media resistance (chemicals) thanks to solid stainless steel and high-grade plastics
- Mechanical endurance of 10×10^6 operating cycles
- Suitable for use in extreme environments
- Reliable, friction-locked fixing with just one screw
- Design stability according to use
- Simple geometry for mounting holes

Communication

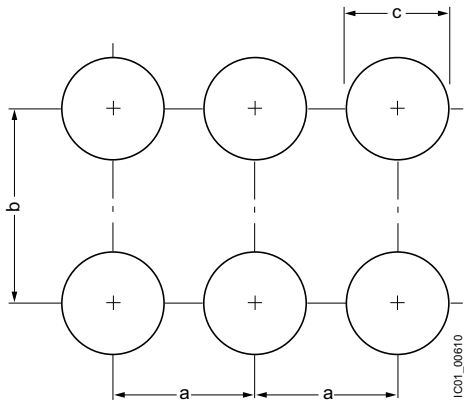


- Direct connection of the enclosure to AS-Interface or IO-Link
- Direct connection in the control cabinet to PROFINET, IO-Link or AS-Interface
- Can be integrated easily via the TIA Portal

Easy handling



- Self-holding function of the actuator when mounting
- Twist prevention integrated into patented holder design
- Stackable contact modules
- Self-explanatory and fast installation using one hand
- Components can be mounted with holder removed
- No special tools required, simple size 2 screwdriver (cross-tip DIN ISO 87641PZD1, flat-head DIN ISO 2380-1 A/B 1x4.5) is sufficient

Mounting dimensions**Versions**

SIRIUS ACT is a modular system of pushbuttons and indicator lights with which customized variants can be configured flexibly.

One command point comprises:

- An actuating or signaling element in front of the control panel
- A holder for securing behind the control panel
- Up to six contact modules and/or one LED module (mounted onto the holder), single-pole contacts can be stacked
- A comprehensive range of accessories for inscription/markings

Complete units

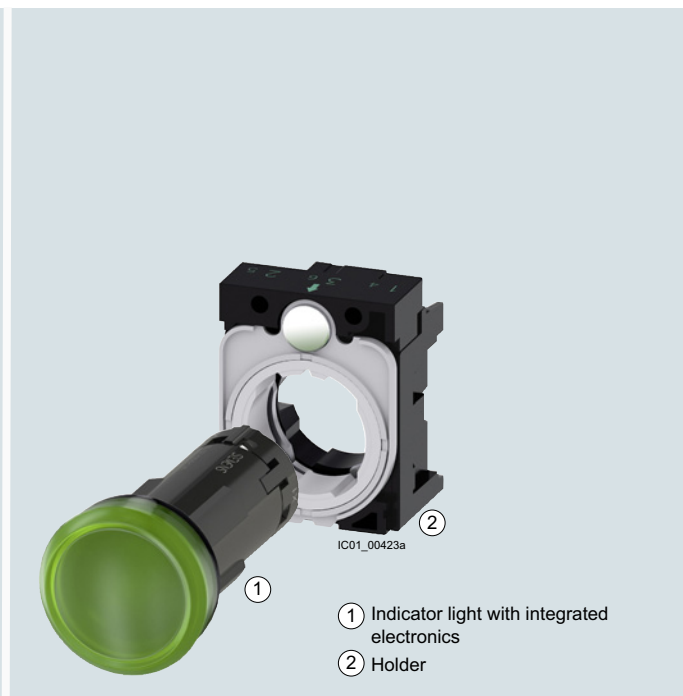
Complete units made up of an actuating or signaling element, holder and contact modules and/or LED modules are offered for the most frequent application cases. The electrical parts are integrated and only have to be wired.

Compact units

Signaling devices, sensor switches, pushbuttons with extended stroke and potentiometers are available as compact units. The electronic circuitry is already integrated in these devices, i.e. it is not necessary to snap on a contact or LED module.



- 1 Actuator
- 2 Holder
- 3 LED module
- 4 NO contact



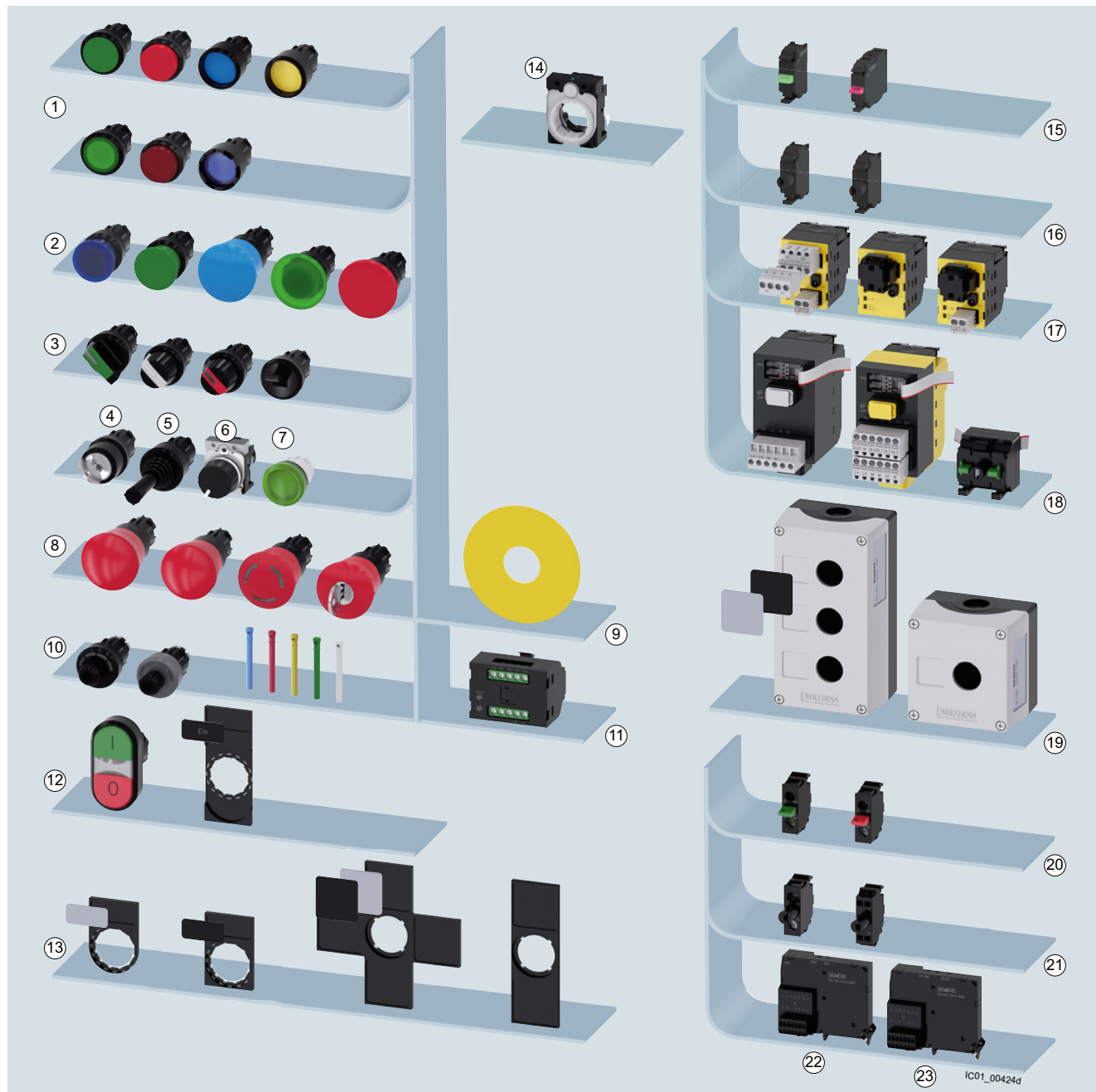
- 1 Indicator light with integrated electronics
- 2 Holder

Complete units	Pages	Compact units	Pages
Plastic, black	13/20	Plastic, black	13/27
Plastic with metal front ring, matte	13/42	Plastic with metal front ring, matte	13/48
Metal, shiny	13/63	Metal, shiny	13/69

SIRIUS ACT Pushbuttons and Indicator Lights

General data

Actuating and signaling elements



System overview of SIRIUS ACT pushbuttons and indicator lights from the plastic design line. Pushbuttons and indicator lights available in four design lines.

Actuating and signaling elements		Pages	Modules for front plate mounting		Pages
①	Pushbuttons, illuminated pushbuttons	13/20	⑮	Contact modules	13/91
②	Mushroom pushbuttons	13/22	⑯	LED modules	13/95
③	Selector switches, toggle switches	13/45	⑰	AS-Interface modules	13/97
④⑤ ⑥⑦	Key-operated switches, coordinate switches, potentiometers, indicator lights	13/46	⑱	Interface modules, fail-safe interface modules terminal modules	13/100
⑧⑨	EMERGENCY STOP mushroom pushbuttons, backing plates	13/22	Enclosures		Pages
⑩⑪	ID key-operated switches with ID key, electronic modules	13/40	⑲	Enclosures	13/101
⑫	Twin pushbuttons, label holders, labeling plates	13/32	Modules for base mounting		Pages
Holders and labels		Pages	⑳	Contact modules	13/110
⑬	Label holders, labeling plates	13/115	㉑	LED modules	13/111
⑭	Holder	13/89	㉒	IO-Link modules	13/113
			㉓	AS-Interface modules	13/113

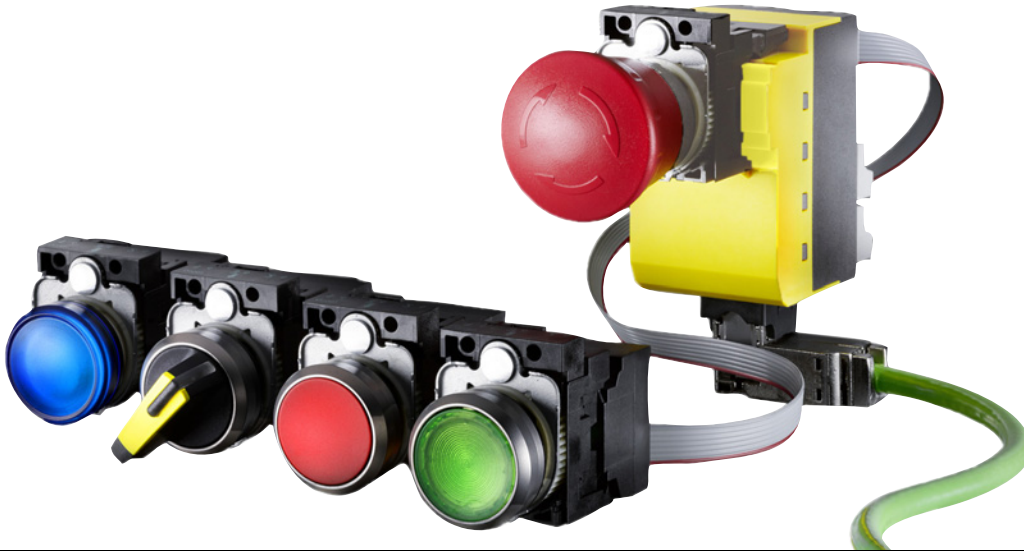
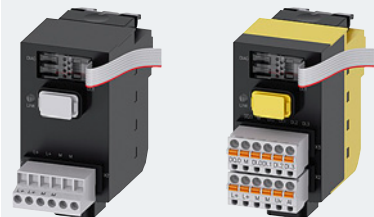
SIRIUS ACT with PROFINET

SIRIUS ACT with PROFINET connects pushbuttons and indicator lights directly via PROFINET to the controller and HMI devices – including with safety functions.

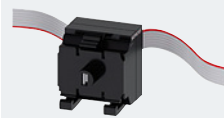
With this solution designed for the control panel, up to 21 SIRIUS ACT devices can be connected to the controller via PROFINET. Integration of the EMERGENCY STOP mushroom pushbutton (SIL 3, PL e) is possible via PROFIsafe. Non SIRIUS ACT devices, e.g. position switches, can additionally be connected via the open, digital/analog interfaces (DI, DQ, AI).

The system is entirely integrated into TIA Portal and does not require any further addressing apart from the IP address for PROFINET.

Quick and easy installation with flat cables without special tools saves significantly on wiring outlay.

**Interface modules/fail-safe interface modules**

Interface module for PROFINET, 24 V DC
1 to 20 terminal modules can be connected

3SU1400-1L□10-□AA1[See page 13/100](#)**Terminal modules**

Terminal modules with 2 contacts
Terminal modules with 2 contacts and integrated LED
Terminal modules with integrated LED

3SU1401-1MA□0-1□A1[See page 13/100](#)**3SU1401-1MC□0-1□A1****3SU1401-1ME□0-1□A1****Accessories**

Memory module
For backing up the complete parameterization of the 3SK2 safety system without a PC/PG through the system interface

3RK3931-0AA00[See page 13/100](#)**LED modules for mounting on printed-circuit boards****3SU1401-3BA□0-5AA0**[See page 13/96](#)

Flat ribbon cable
7 cores, length 10 m
7 cores, length 5 m

3SU1900-0KQ80-0AA0
3SU1900-0KP80-0AA0[See page 13/144](#)

SIRIUS ACT Pushbuttons and Indicator Lights

General data

ID key-operated switches

Groups of employees or individuals can be authenticated by means of the ID key-operated switch. The ID key-operated switch is electronic and has four switch positions that are selected by keys with different codes. Using the four ID keys with different codes, it is possible to select 1 to 4 positions. The ID keys are color-coded (yellow, blue, red, green, white) so that they can be clearly differentiated at a glance and used flexibly thanks to four function levels.

RFID authentication solutions

Groups of employees or individuals can be authenticated by means of the ID key-operated switch. Color-coded keys for easy distinction between users.

Different versions of ID key-operated switches are available depending on the following features:

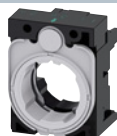
- Front ring material
- Conventional variant: 1 + 4 non-isolated outputs
- Variant with IO-Link: Option of individual coding

Operation:

Insert ID key, turn key to select the position. Standard keys can also be used in conjunction with the electronic module for ID key-operated switches with IO-Link function. The white ID key is supplied without coding.



3SU1000-4WS10-0AA0
Plastic, black



3SU1500-0AA10-0AA0
Holder, plastic



3SU1030-4WS10-0AA0
Plastic with metal front ring, matte



3SU1500-0AA10-0AA0
Holder, plastic

ID key-operated switches

Number of switching positions	4	4
Operating angle	45°	45°
Operating principle	Latching	Latching
Switch position for key removal	Key removal possible in all 4 positions	Key removal possible in all 4 positions
Color	Black	Black
Pages	13/40	13/61



3SU1400-1GC10-1AA0



3SU1400-1GD10-1AA0

Electronic modules for ID key-operated switches

Type of power supply	--	via IO-Link master
Protocol is supported IO-Link protocol	--	IO-Link protocol
Number of NO contacts	5	5
IO-Link transfer rate	--	COM2 (38.4 kBaud)
Pages	13/99	13/99



3SU1900-0FU60-0AA0

ID keys ID group individual



3SU1900-0FV40-0AA0
3SU1900-0FW30-0AA0
3SU1900-0FX20-0AA0
3SU1900-0FY50-0AA0

ID keys

ID keys

Material	Plastic	Plastic
Version of RFID coding	Individually coded, programmable several times	ID group 1 ID group 2 ID group 3 ID group 4
Color	White	Green Yellow Red Blue
Pages	13/140	13/140

SIRIUS ACT Pushbuttons and Indicator Lights

General data

Modules for actuators and indicators

Product versions		Article number														
SIRIUS ACT pushbuttons and indicator lights		3SU1														
Device type	Modules for actuators and indicators	4														
Material (front ring)	Plastic, black	0														
illumination	Non-illuminated Illuminated	0 1														
Fastening method	Front plate mounting Base mounting Printed circuit board				1 2 3											
Module type	Contact module LED module LED test module Support terminal AS-Interface module Electronic module for ID key-operated switches Interface modules for PROFINET Terminal modules				A B C D E G L M											
Function/voltage	e.g. B = 24 V AC/DC															
Color	e.g. 10 = Black, 20 = Red															
Connection type	Screw terminals Screw terminals + insulation piercing method Spring-type terminals Spring-type terminals + insulation piercing method Socket terminals											1 2 3 4 5				
Module equipment including contact material	e.g. A = None B = 1 NO contact, silver C = 1 NC contact, silver															
Marking	None												A			
Ambient condition	Standard ATEX Zone 21-22: Protection from dust ATEX Zone 1-2: Intrinsic safety												0 1 2			
Example		3SU1	4	0	0	-	1	A	A	1	0	-	1	B	A	0

Holders

Product versions		Article number														
SIRIUS ACT pushbuttons and indicator lights		3SU1														
Device type	Holder	5														
Material (front ring)	Plastic, black Metal, shiny	0 5														
illumination	Non-illuminated Illuminated	0 1														
Fastening method	Without Front plate mounting				0 1											
Holder type	3x A 4x B															
Function/voltage	Without 6 ... 24 V AC/DC															
Color	e.g. 10 = Black, 20 = Red															
Connection type	None Screw terminals												1 2			
Module equipment including contact material and slot	e.g. A = None B = 1 NO contact, silver C = 1 NC contact, silver															
Marking	None															
Ambient condition	Standard ATEX Zone 21-22: Protection from dust ATEX Zone 1-2: Intrinsic safety												0 1 2			
Example		3SU1	5	0	0	-	0	A	A	1	0	-	0	A	A	0

Note:

The Article No. schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

SIRIUS ACT Pushbuttons and Indicator Lights

General data

Enclosures

Product versions		Article number																	
SIRIUS ACT pushbuttons and indicator lights		3	S	U	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Device type	Enclosures	8																	
Material (enclosure/front ring)	Plastic, black plastic	0																	
	Metal, shiny metal	5																	
Number of command points	Command point	1																	
	... Command points	6																	
Type of enclosure	Surface-mounting	0																	
	4-position selector switch and coordinate switch	1																	
	Palm pushbutton	2																	
	Two-hand operation console	3																	
Command point	e.g. command point, inscription, module							<input type="checkbox"/>	<input type="checkbox"/>										
Communication capability	Without									0									
	AS-i									1									
Ambient condition	Standard										0								
	ATEX Zone 21-22: Protection from dust										1								
	ATEX Zone 1-2: Intrinsic safety										2								
Mounting/connection of modules	None													0					
	Front plate mounting, screw terminals													1					
	Base mounting, screw terminals													2					
	Front mounting, spring-type terminals													3					
	Base mounting, spring-type terminals													4					
Cable exit from enclosure	None																		
	Direct entry of AS-i flat cable at top/on right															A			
	AS-i insulation piercing method at top/on right															H			
Design of enclosure top	Center command point															A			
	With recess for labeling plate															B			
	With protective collar															C			
	4 additional holes (two-hand operation console)															D			
	8 additional premachined breaking points (two-hand operation console)															E			
Color of enclosure top	Gray															1			
	Yellow															2			
Example		3	S	U	1	8	0	1	-	0	A	A	0	0	-	0	A	A	2

Accessories

Product versions		Article number																	
SIRIUS ACT pushbuttons and indicator lights		3	S	U	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Device type	Accessories	9																	
Material	Plastic, black	0																	
	Metal/plastic	3																	
	Metal, shiny	5																	
	Metal, matte	6																	
Illumination	Non-illuminated	0																	
	Illuminated	1																	
Type of accessory (labels, protection, actuator, enclosure)	e.g. 0AB = Insert label								<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
Color	e.g. 10 = Black, 20 = Red										<input type="checkbox"/>	<input type="checkbox"/>							
Marking	e.g.													<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	0AA = None																		
	0AB = ON																		
	0AT = EMERGENCY STOP																		
Ambient condition	Standard															0			
	ATEX Zone 21-22: Protection from dust															1			
	ATEX Zone 1-2: Intrinsic safety															2			
Example		3	S	U	1	9	0	0	-	0	A	B	2	0	-	0	A	B	0

Note:

The Article No. schemes show an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Application

Environmental conditions

The pushbuttons and indicator lights are climate-proof (KTW 24) and suitable for standard industrial applications and operation in marine applications.

Simple electrical equipment

Non-illuminated actuators, contact modules, enclosures and special accessories can be classified as simple electrical equipment according to IEC 60079-11. This means that they may be used in intrinsically safe circuits in potentially explosive atmospheres. An overview of the devices and atmospheres can be found in Confirmation No. 3287.01.

Safety EMERGENCY STOP pushbuttons according to ISO 13850

For controls according to IEC/EN 60204-1, the SIRIUS ACT mushroom pushbuttons are suitable for use as safety EMERGENCY STOP pushbuttons.

Safety circuits

The IEC/EN 60947-5-1 standard requires positive opening. This means that for the purpose of personal safety, the reliable opening of NC contacts in all safety circuits is expressly prescribed for the electrical equipment of machines and is designated according to IEC 60947-5-1 with the symbol (⊖).

Category 4 according to EN ISO 13849-1 can be attained with the EMERGENCY STOP mushroom pushbuttons if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK11 safety relays or the 3RK3 Modular Safety System (see page 11/1 onwards) or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

The SIRIUS ACT pushbuttons and indicator lights can be connected to the AS-Interface communication system quickly and safely.

The following solutions are available:

- AS-Interface modules
- AS-Interface module in safety-related version for EMERGENCY STOP mushroom pushbutton
- Ready-fitted AS-Interface enclosures with 1 to 6 command points

IO-Link

The SIRIUS ACT pushbuttons and indicator lights can be connected to IO-Link quickly and safely. The connection is made via a special IO-Link module.

SIRIUS ACT Pushbuttons and Indicator Lights

General data

Technical specifications

More information

Industry Mall, see www.siemens.com/product?3SU1

Configurator, see www.siemens.com/sirius-act/configurator

Conversion tool, see www.siemens.com/sirius/conversion-tool

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/107542462>

Type	3SU1..0-AA 3SU1..0-JA	3SU1..1-AA 3SU1..1-JA	3SU1..0-AB 3SU1..0-BB 3SU1..0-CB 3SU1..0-DB 3SU1..0-JB	3SU1..1-AB 3SU1..1-BB 3SU1..1-JB
Product version	Pushbuttons			
Operating principle of the actuating element	Latching		Momentary contact	
Optional expansion of product by light source	No	Yes	No	Yes
Mechanical endurance (operating cycles) typical	500 000		10 000 000	3 000 000
Switching frequency maximum	1/h 1 800		3 600	
Shock resistance according to IEC 60068-2-27	Half-sine wave 50 g / 11 ms			
Vibration resistance according to IEC 60068-2-6	10 ... 500 Hz: 5 g			
Degree of protection	IP66, IP67, IP69 (IP69K)			
Environmental category during operation According to IEC 60721	3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95%)			
Ambient temperature				
• During operation	°C	-25 ... +70		
• During storage	°C	-40 ... +80		

Type	3SU1.00-AA 3SU1.00-BA 3SU1.00-CA 3SU1.30-AA 3SU1.30-BA 3SU1.50-AA 3SU1.50-BA 3SU1.50-CA	3SU1.50-EA	3SU1.01-AA 3SU1.01-BA 3SU1.51-AA 3SU1.51-BA 3SU1.51-CA	3SU1.00-AD 3SU1.00-BD 3SU1.00-CD 3SU1.30-AD 3SU1.30-BD 3SU1.50-AD 3SU1.50-BD 3SU1.50-CD	3SU1.50-ED	3SU1.01-AD 3SU1.01-BD 3SU1.31-AD 3SU1.31-BD
Product version	Mushroom pushbuttons					
Operating principle of the actuating element	Latching			Momentary contact		
Optional expansion of product by light source	No		Yes	No		Yes
Mechanical endurance (operating cycles) typical	500 000	300 000	500 000	10 000 000	300 000	3 000 000
Switching frequency maximum	1/h 1 800			3 600	1 800	3 600
Shock resistance according to IEC 60068-2-27	Half-sine wave 50 g / 11 ms					
Vibration resistance according to IEC 60068-2-6	10 ... 500 Hz: 5 g					
Degree of protection	IP66, IP67, IP69 (IP69K)	IP65, IP67, IP69 (IP69K)	IP66, IP67, IP69 (IP69K)		IP65, IP67, IP69 (IP69K)	IP66, IP67, IP69 (IP69K)
Environmental category during operation According to IEC 60721	3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95%)					
Ambient temperature						
• During operation	°C	-25 ... +70				
• During storage	°C	-40 ... +80				

SIRIUS ACT Pushbuttons and Indicator Lights




General data

Type	3SU1...-J 3SU1...-H 3SU1...-G	
Product version	EMERGENCY STOP mushroom pushbuttons	
Mechanical endurance (operating cycles)	300 000	
Switching frequency maximum	1/h	600
Shock resistance according to IEC 60068-2-27	Half-sine wave 50 g / 11 ms	
Vibration resistance according to IEC 60068-2-6	10 ... 500 Hz: 5 g	
Degree of protection	IP66, IP67, IP69 (IP69K)	
Environmental category during operation According to IEC 60721	3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95%)	
Ambient temperature		
• During operation	°C	-25 ... +70
• During storage	°C	-40 ... +80

Type	3SU1.5.-2A 3SU1.5.-2B 3SU1.5.-2C 3SU1.5.-2D 3SU1.5.-2E	3SU1.0.-2A 3SU1.0.-2B 3SU1.0.-2C 3SU1.3.-2A 3SU1.3.-2B 3SU1.3.-2C	3SU1.0.-3E 3SU1.3.-3E 3SU1.5.-3E	3SU1.0.-4B 3SU1.0.-4C 3SU1.0.-4D 3SU1.0.-4F 3SU1.0.-4G 3SU1.0.-4H 3SU1.0.-4J 3SU1.0.-4L 3SU1.0.-5B 3SU1.0.-5H 3SU1.0.-5P 3SU1.0.-5Q 3SU1.0.-5R 3SU1.0.-5S 3SU1.0.-5T 3SU1.0.-5X	3SU1...-4B 3SU1...-4C 3SU1...-4D 3SU1...-4F 3SU1...-4G 3SU1...-4H 3SU1...-4J 3SU1...-4L 3SU1...-5B 3SU1...-5H 3SU1...-5K 3SU1...-5L 3SU1...-5P 3SU1...-5Q 3SU1...-5R 3SU1...-5S 3SU1...-5T 3SU1...-5X	3SU1.0.-7A 3SU1.0.-7B 3SU1.3.-7A 3SU1.3.-7B 3SU1.5.-7A 3SU1.5.-7B
Product version	Selector switches		Toggle switches	Key-operated switches		Coordinate switches
Mechanical endurance (operating cycles)	300 000	1 000 000		300 000		250 000
Switching frequency maximum	1/h	1 800				3 600
Shock resistance according to IEC 60068-2-27	Half-sine wave 50 g / 11 ms					
Vibration resistance according to IEC 60068-2-6	10 ... 500 Hz: 5 g					
Degree of protection	IP66, IP67, IP69 (IP69K)		IP66, IP67, IP69K	IP66, IP67, IP69 (IP69K)		IP65, IP67
Ambient temperature						
• During operation	°C -25 ... +70					
• During storage	°C -40 ... +80					




SIRIUS ACT Pushbuttons and Indicator Lights

General data

Type		3SU1400- .AA10-1.A0	3SU1400- 1AA10-1GA0, 3SU1400- 1AA10-1RA0	3SU1400- 1AA10-1HA0	3SU1400- .AA10-3.A0	3SU1400- 1AA10-3HA0	3SU1400- 3AA10-5.A0	
Product version		Contact modules						
Rated insulation voltage	V	500						
Pollution degree		3						
Impulse withstand voltage, rated value	kV	6						
Operational voltage type		AC/DC						
Operational voltage, rated value								
• At AC at 50 Hz	V	5 ... 500						
• At DC	V	5 ... 500						
Thermal current	A	10						
Operational current, rated value								
• At AC-12								
- At 24 V	A	10						
- At 230 V	A	8						
• At AC-15								
- At 24 V	A	6						
- At 230 V	A	6						
- At 400 V	A	3						
- At 500 V	A	1.4						
• At DC-12								
- At 24 V	A	10						
- At 48 V	A	5						
- At 110 V	A	2.5						
- At 230 V	A	1						
- At 400 V	A	0.3						
- At 500 V	A	0.3						
• At DC-13								
- At 24 V	A	3						
- At 48 V	A	1.5						
- At 110 V	A	0.7						
- At 230 V	A	0.3						
- At 400 V	A	0.1						
- At 500 V	A	0.1						
Contact reliability		One contact failure per 100 million switching operations (17 V, 5 mA), one contact failure per 10 million switching operations (5 V, 1 mA)						
Mechanical endurance (operating cycles) typical		10 000 000						
Switching frequency maximum	1/s	3 600						
Fuse link version required for short-circuit protection of the auxiliary switch with type of coordination 1		gG / Dz 10 A, quick-response / Dz 10 A						
Continuous current of miniature circuit breaker C characteristic	A	10						
Vibration resistance according to IEC 60068-2-6		10 ... 500 Hz: 5 g						
Shock resistance according to IEC 60068-2-27		Half-sine wave 50 g / 11 ms						
Climate class during operation according to IEC 60721		3M6, 3S2, 3B2, 3C3, 3K6 (with a relative air humidity of 10 ... 95%, no condensation permitted in operation)						
Ambient temperature								
• During operation	°C	-25 ... +70						
• During storage	°C	-40 ... +80						
Degree of protection								
• Of enclosure		IP40						
• Of the terminal		IP20						
Type of electrical connection		Screw terminals 		Spring-type terminals 		Socket terminals (THT) 		
Type of connectable conductor cross-sections								
• Solid with end sleeve	mm ²	2 x (0.5 ... 0.75)		--		--		
• Solid without end sleeve	mm ²	2 x (1.0 ... 1.5)		2 x (0.25 ... 1.5)		--		
• Finely stranded with end sleeve	mm ²	2 x (0.5 ... 1.5)		2 x (0.25 ... 0.75)		--		
• Finely stranded without end sleeve	mm ²	2 x (1.0 ... 1.5)		2 x (0.25 ... 1.5)		--		
• For AWG cables		2 x (18 ... 14)		2 x (24 ... 16)		--		
Tightening torque for screw terminals	Nm	0.8 ... 0.9		--		--		

SIRIUS ACT Pushbuttons and Indicator Lights

General data

Type	3SU1401-.....-1	3SU1401-.....-3	3SU1401-.....-5
Product version	LED module		
Light source integrated in product	Yes		
Type of light source	LED		
Rated insulation voltage	V	320	
Pollution degree	3		
Impulse withstand voltage, rated value	kV	4	
Relative positive tolerance of the operational voltage	%	20	
Relative negative tolerance of the operational voltage	%	20	
Operating time typical	h	100 000	
Vibration resistance according to IEC 60068-2-6	10 ... 500 Hz: 5 g		
Shock resistance according to IEC 60068-2-27	Half-sine wave 50 g / 11 ms		
Environmental category during operation According to IEC 60721	3M6, 3S2, 3B2, 3K6 (with a relative air humidity of 10 ... 95%, no condensation permitted in operation)		
Ambient temperature			
• During operation	°C	-25 ... +70	
• During storage	°C	-40 ... +80	
Degree of protection of the terminal	IP20		
Type of electrical connection	Screw terminals 	Spring-type terminals 	Socket terminals (THT) 

Type	3SU1400-1LK10-1AA1	3SU1400-1LK10-3AA1	3SU1400-1LL10-1BA1	3SU1400-1LL10-3BA1
Product designation	Interface module		Fail-safe interface module	
Operational voltage type	DC			
Supply voltage at DC rated value	V	24		
Current consumed, maximum	mA	150		
Product function at the interface 1 PROFINET IO-Device	Yes			
Type of interface Fast Ethernet interface	Yes			
Type of interface 1 RJ45 (Ethernet) interface	Yes			
Number of ports at the interface 1	1			
Number of modules per rack, maximum	20			
Number of digital outputs	0		1	
Number of digital inputs	0		4	
Software version required for STEP 7 in the TIA Portal	Integrated in the TIA Portal, version 14 SP1 or higher (HSP for V13 and V14)			
SIL response limit (subsystem) according to IEC 62061	--		SIL CL 3	
Performance level (PL) according to EN ISO 13849-1	--		e	
Ambient temperature				
• During operation	°C	60 ... -25		
• During storage	°C	80 ... -40		
Degree of protection	IP20			
Connectable conductor cross-section				
• Solid				
- With end sleeves	mm ²	0.2 ... 2.5		
• Finely stranded				
- With end sleeves	mm ²	0.25 ... 2.5		
- Without end sleeves	mm ²	0.2 ... 2.5		

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black Complete Units

Pushbuttons

Selection and ordering data

Supply voltage for light source at		Color	Number of			SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
AC	DC		Contact modules	NO contacts	NC contacts					
V	V					d	Article No.	Price per PU		

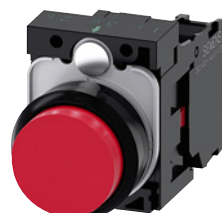
Pushbuttons



3SU1100-0AB40-1BA0

Pushbuttons with flat button, momentary contact

13	--	Black	1	1	0	▶	3SU1100-0AB10-1BA0	1	1 unit	41J
			0	0	1	▶▶	3SU1100-0AB10-1CA0	1	1 unit	41J
			1	1	1	▶▶	3SU1100-0AB10-1FA0	1	1 unit	41J
Red	1	1	0	▶	3SU1100-0AB20-1BA0	1	1 unit	41J		
	0	0	1	▶▶	3SU1100-0AB20-1CA0	1	1 unit	41J		
	1	1	1	▶▶	3SU1100-0AB20-1FA0	1	1 unit	41J		
Yellow	1	1	0	3	3SU1100-0AB30-1BA0	1	1 unit	41J		
	1	1	1	3	3SU1100-0AB30-1FA0	1	1 unit	41J		
Green	1	1	0	▶	3SU1100-0AB40-1BA0	1	1 unit	41J		
	1	1	1	▶▶	3SU1100-0AB40-1FA0	1	1 unit	41J		
Blue	1	1	0	▶	3SU1100-0AB50-1BA0	1	1 unit	41J		
	1	1	1	3	3SU1100-0AB50-1FA0	1	1 unit	41J		
White	1	1	0	▶	3SU1100-0AB60-1BA0	1	1 unit	41J		
	1	1	1	3	3SU1100-0AB60-1FA0	1	1 unit	41J		
Clear	1	1	0	5	3SU1100-0AB70-1BA0	1	1 unit	41J		
	1	1	1	5	3SU1100-0AB70-1FA0	1	1 unit	41J		
Gray	1	1	1	5	3SU1100-0AB80-1FA0	1	1 unit	41J		



3SU1100-0BB20-1CA0

Pushbuttons with raised button, momentary contact

--	--	Black	1	0	1	5	3SU1100-0BB10-1CA0	1	1 unit	41J
			1	1	1	5	3SU1100-0BB10-1FA0	1	1 unit	41J
Red	1	0	1	5	3SU1100-0BB20-1CA0	1	1 unit	41J		
	1	1	1	5	3SU1100-0BB20-1FA0	1	1 unit	41J		
Blue	1	1	0	5	3SU1100-0BB50-1BA0	1	1 unit	41J		



3SU1102-0AB40-1BA0

Illuminated pushbuttons with flat button, momentary contact with integrated LED

24	24	Red	1	1	0	5	3SU1102-0AB20-1BA0	1	1 unit	41J
			0	1	▶	3SU1102-0AB20-1CA0	1	1 unit	41J	
			1	1	▶	3SU1102-0AB20-1FA0	1	1 unit	41J	
Yellow	1	1	0	▶	3SU1102-0AB30-1BA0	1	1 unit	41J		
	1	1	1	3	3SU1102-0AB30-1FA0	1	1 unit	41J		
Green	1	1	0	▶	3SU1102-0AB40-1BA0	1	1 unit	41J		
	1	1	1	▶▶	3SU1102-0AB40-1FA0	1	1 unit	41J		
Blue	1	1	0	▶	3SU1102-0AB50-1BA0	1	1 unit	41J		
	1	1	1	3	3SU1102-0AB50-1FA0	1	1 unit	41J		
White	1	1	0	▶	3SU1102-0AB60-1BA0	1	1 unit	41J		
	1	1	1	▶▶	3SU1102-0AB60-1FA0	1	1 unit	41J		
Clear	1	1	0	▶	3SU1102-0AB70-1BA0	1	1 unit	41J		
	1	1	1	3	3SU1102-0AB70-1FA0	1	1 unit	41J		
110	--	Red	1	0	1	5	3SU1103-0AB20-1CA0	1	1 unit	41J
			1	1	1	3	3SU1103-0AB20-1FA0	1	1 unit	41J
Yellow	1	1	0	5	3SU1103-0AB30-1BA0	1	1 unit	41J		
	1	1	1	5	3SU1103-0AB30-1FA0	1	1 unit	41J		
Green	1	1	0	3	3SU1103-0AB40-1BA0	1	1 unit	41J		
	1	1	1	3	3SU1103-0AB40-1FA0	1	1 unit	41J		
Blue	1	1	0	5	3SU1103-0AB50-1BA0	1	1 unit	41J		
	1	1	1	5	3SU1103-0AB50-1FA0	1	1 unit	41J		
White	1	1	0	5	3SU1103-0AB60-1BA0	1	1 unit	41J		
	1	1	1	5	3SU1103-0AB60-1FA0	1	1 unit	41J		
Clear	1	1	0	5	3SU1103-0AB70-1BA0	1	1 unit	41J		
	1	1	1	5	3SU1103-0AB70-1FA0	1	1 unit	41J		



3SU1103-0AB20-1CA0

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black, Complete Units

Pushbuttons

Supply voltage for light source		Color	Number of			SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
at AC	at DC		Contact modules	NO contacts	NC contacts					
V	V						Article No.	Price per PU		

Pushbuttons



3SU1106-0AB40-1BA0

Illuminated pushbuttons with flat button, momentary contact with integrated LED

230	--	Red	1	0	1	5	3SU1106-0AB20-1CA0	1	1 unit	41J
			1	1	1	3	3SU1106-0AB20-1FA0	1	1 unit	41J
		Yellow	1	1	0	5	3SU1106-0AB30-1BA0	1	1 unit	41J
			1	1	1	5	3SU1106-0AB30-1FA0	1	1 unit	41J
		Green	1	1	0	3	3SU1106-0AB40-1BA0	1	1 unit	41J
			1	1	1	3	3SU1106-0AB40-1FA0	1	1 unit	41J
		Blue	1	1	0	5	3SU1106-0AB50-1BA0	1	1 unit	41J
			1	1	1	5	3SU1106-0AB50-1FA0	1	1 unit	41J
		White	1	1	0	5	3SU1106-0AB60-1BA0	1	1 unit	41J
			1	1	1	5	3SU1106-0AB60-1FA0	1	1 unit	41J
		Clear	1	1	0	5	3SU1106-0AB70-1BA0	1	1 unit	41J
			1	1	1	5	3SU1106-0AB70-1FA0	1	1 unit	41J

Spring-type terminals



3SU1100-0AB30-3BA0

Pushbuttons with flat button, momentary contact

--	--	Black	1	1	0	3	3SU1100-0AB10-3BA0	1	1 unit	41J
			1	0	1	5	3SU1100-0AB10-3CA0	1	1 unit	41J
			1	1	1	5	3SU1100-0AB10-3FA0	1	1 unit	41J
		Red	1	0	1	5	3SU1100-0AB20-3CA0	1	1 unit	41J
			1	1	1	5	3SU1100-0AB20-3FA0	1	1 unit	41J
		Yellow	1	1	0	5	3SU1100-0AB30-3BA0	1	1 unit	41J
			1	1	1	5	3SU1100-0AB30-3FA0	1	1 unit	41J
		Green	1	1	0	5	3SU1100-0AB40-3BA0	1	1 unit	41J
			1	1	1	5	3SU1100-0AB40-3FA0	1	1 unit	41J
		Blue	1	1	0	5	3SU1100-0AB50-3BA0	1	1 unit	41J
			1	1	1	5	3SU1100-0AB50-3FA0	1	1 unit	41J
		White	1	1	0	5	3SU1100-0AB60-3BA0	1	1 unit	41J
			1	1	1	5	3SU1100-0AB60-3FA0	1	1 unit	41J



3SU1102-0AB20-3CA0

Illuminated pushbuttons with flat button, momentary contact with integrated LED

24	24	Red	1	0	1	5	3SU1102-0AB20-3CA0	1	1 unit	41J
			1	1	1	5	3SU1102-0AB20-3FA0	1	1 unit	41J
		Yellow	1	1	0	5	3SU1102-0AB30-3BA0	1	1 unit	41J
			1	1	1	5	3SU1102-0AB30-3FA0	1	1 unit	41J
		Green	1	1	0	3	3SU1102-0AB40-3BA0	1	1 unit	41J
			1	1	1	5	3SU1102-0AB40-3FA0	1	1 unit	41J
		Blue	1	1	0	5	3SU1102-0AB50-3BA0	1	1 unit	41J
			1	1	1	5	3SU1102-0AB50-3FA0	1	1 unit	41J
		White	1	1	0	3	3SU1102-0AB60-3BA0	1	1 unit	41J
			1	1	1	5	3SU1102-0AB60-3FA0	1	1 unit	41J
		Clear	1	1	0	5	3SU1102-0AB70-3BA0	1	1 unit	41J
			1	1	1	5	3SU1102-0AB70-3FA0	1	1 unit	41J
110	--	Red	1	0	1	5	3SU1103-0AB20-3CA0	1	1 unit	41J
			1	1	1	5	3SU1103-0AB20-3FA0	1	1 unit	41J
		Yellow	1	1	1	5	3SU1103-0AB30-3FA0	1	1 unit	41J
			Green	1	1	0	5	3SU1103-0AB40-3BA0	1	1 unit
1	1	1		5	3SU1103-0AB40-3FA0	1	1 unit	41J		
		Blue	1	1	1	5	3SU1103-0AB50-3FA0	1	1 unit	41J
			White	1	1	0	5	3SU1103-0AB60-3BA0	1	1 unit
1	1	1		5	3SU1103-0AB60-3FA0	1	1 unit	41J		
		Clear	1	1	0	5	3SU1103-0AB70-3BA0	1	1 unit	41J
			1	1	1	5	3SU1103-0AB70-3FA0	1	1 unit	41J
230	--	Red	1	0	1	5	3SU1106-0AB20-3CA0	1	1 unit	41J
			1	1	1	5	3SU1106-0AB20-3FA0	1	1 unit	41J
		Yellow	1	1	1	5	3SU1106-0AB30-3FA0	1	1 unit	41J
			Green	1	1	0	5	3SU1106-0AB40-3BA0	1	1 unit
1	1	1		5	3SU1106-0AB40-3FA0	1	1 unit	41J		
		Blue	1	1	1	5	3SU1106-0AB50-3FA0	1	1 unit	41J
			White	1	1	0	5	3SU1106-0AB60-3BA0	1	1 unit
1	1	1		5	3SU1106-0AB60-3FA0	1	1 unit	41J		
		Clear	1	1	0	5	3SU1106-0AB70-3BA0	1	1 unit	41J
			1	1	1	5	3SU1106-0AB70-3FA0	1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black

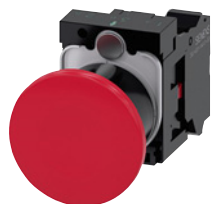
Complete Units

Mushroom pushbuttons/EMERGENCY STOP mushroom pushbuttons

Selection and ordering data

Unlatching method	Number of Contact modules		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	NO contacts	NC contacts					
			d	Article No.	Price per PU		

Mushroom pushbuttons



3SU1100-1BA20-3CA0

With red mushroom, diameter 40 mm, latching

Pull to unlatch	1	0	1	3	3SU1100-1BA20-1CA0	1	1 unit	41J
		1	1	3	3SU1100-1BA20-1FA0	1	1 unit	41J
					Spring-type terminals			
Pull to unlatch	1	0	1	5	3SU1100-1BA20-3CA0	1	1 unit	41J
		1	1	5	3SU1100-1BA20-3FA0	1	1 unit	41J

Selection and ordering data

Unlatching method	Number of Contact modules		Marking	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	NO contacts	NC contacts						
				d	Article No.	Price per PU		

EMERGENCY STOP mushroom pushbuttons, in accordance with ISO 13850 and IEC 60947-5-5



3SU1100-1HA20-1CH0



3SU1100-1HB20-1CH0



3SU1100-1LB20-1PH0

With red mushroom, diameter 40 mm, with positive latching

Pull to unlatch	1	0	1	NOT-HALT	⊖ 5	3SU1100-1HA20-1CH0	1	1 unit	41J
		1	1	EMERGENCY STOP	⊖ 5	3SU1100-1HA20-1FG0	1	1 unit	41J
		1	1	NOT-HALT	⊖ 5	3SU1100-1HA20-1FH0	1	1 unit	41J
Rotate to unlatch	1	0	1	None	⊖ 5	3SU1100-1HB20-1CF0	1	1 unit	41J
		0	1	EMERGENCY STOP	⊖ 5	3SU1100-1HB20-1CG0	1	1 unit	41J
		0	1	NOT-HALT	⊖ ▶	3SU1100-1HB20-1CH0	1	1 unit	41J
		0	2	EMERGENCY STOP	⊖ 5	3SU1100-1HB20-1PG0	1	1 unit	41J
		0	1	ARRET D'URGENCE	⊖ 5	3SU1100-1HB20-1CJ0	1	1 unit	41J
		1	1	EMERGENCY STOP	⊖ 5	3SU1100-1HB20-1FG0	1	1 unit	41J
		1	1	NOT-HALT	⊖ ▶	3SU1100-1HB20-1FH0	1	1 unit	41J
		1	1	ARRET D'URGENCE	⊖ 5	3SU1100-1HB20-1FJ0	1	1 unit	41J
						Spring-type terminals			
Rotate to unlatch	1	0	1	NOT-HALT	⊖ 5	3SU1100-1HB20-3CH0	1	1 unit	41J
		1	1	NOT-HALT	⊖ 5	3SU1100-1HB20-3FH0	1	1 unit	41J

With red mushroom, diameter 40 mm, with latching **NEW**

						Screw terminals			
Rotate to unlatch	2	0	2	NOT-HALT	5	3SU1100-1LB20-1PH0	1	1 unit	41J

⊖ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System,
see page 11/1 onwards.
Certificate:



SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black Complete Units

Selector switches

Selection and ordering data

Operating principle	Color	Number of			SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		Supply voltage for light source	Contact modules	NO contacts					
						Article No.	Price per PU		

Selector switches



3SU1100-2BF60-1BA0

Short black actuator, 2 switch positions, can be illuminated

Latching, 90° 	White	1	1	0	▶	3SU1100-2BF60-1BA0	1	1 unit	41J
		2	1	1	▶	3SU1100-2BF60-1MA0	1	1 unit	41J
	White 110 V	1	1	0	5	3SU1103-2BF60-1BA0	1	1 unit	41J

Short black actuator, 3 switch positions, can be illuminated

Momentary contact, 2x45°, reset from left + right 	White	2	2	2	3	3SU1100-2BM60-1LA0	1	1 unit	41J
		2	2	0	▶	3SU1100-2BM60-1NA0	1	1 unit	41J

Latching, 2x45° 	White	2	2	2	▶	3SU1100-2BL60-1LA0	1	1 unit	41J
			2	0	▶	3SU1100-2BL60-1NA0	1	1 unit	41J

Spring-type terminals

**Short black actuator, 2 switch positions, can be illuminated**

Latching, 90° 	White	1	1	0	5	3SU1100-2BF60-3BA0	1	1 unit	41J
		2	1	1	5	3SU1100-2BF60-3MA0	1	1 unit	41J

Short black actuator, 3 switch positions, can be illuminated

Momentary contact, 2x45°, reset from left + right 	White	2	2	2	5	3SU1100-2BM60-3LA0	1	1 unit	41J
			2	0	5	3SU1100-2BM60-3NA0	1	1 unit	41J

Latching, 2x45° 	White	2	2	2	5	3SU1100-2BL60-3LA0	1	1 unit	41J
			2	0	5	3SU1100-2BL60-3NA0	1	1 unit	41J



3SU1100-2BL60-1NA0

SIRIUS ACT Pushbuttons and Indicator Lights



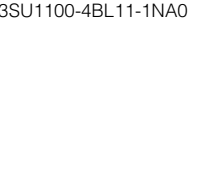

Actuators and Indicators, 22 mm, Round, Plastic, Black Complete Units

Key-operated switches

Selection and ordering data

Operating principle	Switch position for key removal	Number of Contact modules		NC contacts	Number of keys	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
			NO contacts				Article No.	Price per PU			

Key-operated switches


 3SU1100-4BF11-1BA0	With RONIS lock, SB30, 2 switch positions										
	Latching, 90° (10:30/1:30 o'clock)	O+I	1	1 1	0 1	2 2	▶	3SU1100-4BF11-1BA0 3SU1100-4BF11-1FA0	1 1	1 unit 1 unit	41J 41J
 3SU1100-4BL11-1NA0	With RONIS lock, SB30, 3 switch positions										
	Latching, 2x45° (10:30/1:30 o'clock)	I+O+II	2	2	0	2	5	3SU1100-4BL11-1NA0	1	1 unit	41J
 3SU1100-4BF11-3BA0	With RONIS lock, SB30, 2 switch positions										
	Latching, 90° (10:30/1:30 o'clock)	O+I	1	1 1	0 1	2 2	5 5	3SU1100-4BF11-3BA0 3SU1100-4BF11-3FA0	1 1	1 unit 1 unit	41J 41J
 3SU1100-5BF11-3FA0	With CES lock, SSG10, 2 switch positions										
	Latching, 90° (10:30/1:30 o'clock)	O+I	1	1	1	2	5	3SU1100-5BF11-3FA0	1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black Complete Units

Coordinate switches

Selection and ordering data

Number of NO contacts (1 per direction)	Operating principle	Direction of actuation	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
			d	Article No.	Price per PU			

Coordinate switches

Without mechanical interlock, 2 switch positions

3SU1100-7AC10-1NA0

2	Momentary contact	Horizontal	5	3SU1100-7AC10-1NA0	1	1 unit	41J
		Vertical	5	3SU1100-7AD10-1NA0	1	1 unit	41J
	Latching	Horizontal	5	3SU1100-7AA10-1NA0	1	1 unit	41J
		Vertical	5	3SU1100-7AB10-1NA0	1	1 unit	41J

Without mechanical interlock, 4 switch positions

3SU1100-7AF10-1QA0

4	Momentary contact	Horizontal/Vertical	3	3SU1100-7AF10-1QA0	1	1 unit	41J
		Latching	Horizontal/Vertical	5	3SU1100-7AE10-1QA0	1	1 unit

With mechanical interlock, 2 switch positions

3SU1100-7BA10-1NA0

2	Momentary contact	Horizontal	5	3SU1100-7BC10-1NA0	1	1 unit	41J
		Vertical	5	3SU1100-7BD10-1NA0	1	1 unit	41J
	Latching	Horizontal	5	3SU1100-7BA10-1NA0	1	1 unit	41J
		Vertical	5	3SU1100-7BB10-1NA0	1	1 unit	41J

With mechanical interlock, 4 switch positions

3SU1100-7BF10-1QA0







4	Momentary contact	Horizontal/Vertical	5	3SU1100-7BF10-1QA0	1	1 unit	41J
		Latching	Horizontal/Vertical	5	3SU1100-7BE10-1QA0	1	1 unit

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black Complete Units

Indicator lights

Selection and ordering data

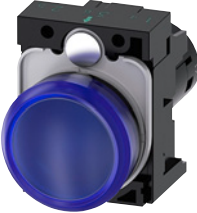
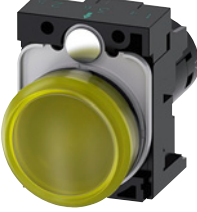

Operational voltage at AC, rated value	Operational voltage at DC, rated value	Color of actuating element		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
			of light source						Article No.
V	V			d					
Indicator lights									
With smooth lens and integrated LED									
	24	24	Red	Red	▶	3SU1102-6AA20-1AA0	1	1 unit	41J
			Yellow	Yellow	▶	3SU1102-6AA30-1AA0	1	1 unit	41J
			Green	Green	▶	3SU1102-6AA40-1AA0	1	1 unit	41J
			Blue	Blue	▶	3SU1102-6AA50-1AA0	1	1 unit	41J
			White	White	▶	3SU1102-6AA60-1AA0	1	1 unit	41J
			Clear	White	▶	3SU1102-6AA70-1AA0	1	1 unit	41J
3SU1102-6AA30-1AA0									
	110	--	Amber	Amber	5	3SU1103-6AA00-1AA0	1	1 unit	41J
			Red	Red	▶	3SU1103-6AA20-1AA0	1	1 unit	41J
			Yellow	Yellow	▶	3SU1103-6AA30-1AA0	1	1 unit	41J
			Green	Green	▶	3SU1103-6AA40-1AA0	1	1 unit	41J
			Blue	Blue	3	3SU1103-6AA50-1AA0	1	1 unit	41J
			White	White	▶	3SU1103-6AA60-1AA0	1	1 unit	41J
Clear	White	3	3SU1103-6AA70-1AA0	1	1 unit	41J			
3SU1106-6AA50-1AA0									
	230	--	Amber	Amber	5	3SU1106-6AA00-1AA0	1	1 unit	41J
			Red	Red	▶	3SU1106-6AA20-1AA0	1	1 unit	41J
			Yellow	Yellow	▶	3SU1106-6AA30-1AA0	1	1 unit	41J
			Green	Green	▶	3SU1106-6AA40-1AA0	1	1 unit	41J
			Blue	Blue	3	3SU1106-6AA50-1AA0	1	1 unit	41J
			White	White	▶	3SU1106-6AA60-1AA0	1	1 unit	41J
Clear	White	3	3SU1106-6AA70-1AA0	1	1 unit	41J			
3SU1106-6AA50-1AA0									
Spring-type terminals									
	24	24	Red	Red	3	3SU1102-6AA20-3AA0	1	1 unit	41J
			Yellow	Yellow	5	3SU1102-6AA30-3AA0	1	1 unit	41J
			Green	Green	3	3SU1102-6AA40-3AA0	1	1 unit	41J
			Blue	Blue	5	3SU1102-6AA50-3AA0	1	1 unit	41J
			White	White	3	3SU1102-6AA60-3AA0	1	1 unit	41J
			Clear	White	5	3SU1102-6AA70-3AA0	1	1 unit	41J
3SU1102-6AA40-3AA0									
	110	--	Red	Red	5	3SU1103-6AA20-3AA0	1	1 unit	41J
			Yellow	Yellow	5	3SU1103-6AA30-3AA0	1	1 unit	41J
			Green	Green	5	3SU1103-6AA40-3AA0	1	1 unit	41J
			Blue	Blue	5	3SU1103-6AA50-3AA0	1	1 unit	41J
			White	White	5	3SU1103-6AA60-3AA0	1	1 unit	41J
			Clear	White	5	3SU1103-6AA70-3AA0	1	1 unit	41J
3SU1106-6AA60-3AA0									
	230	--	Red	Red	5	3SU1106-6AA20-3AA0	1	1 unit	41J
			Yellow	Yellow	5	3SU1106-6AA30-3AA0	1	1 unit	41J
			Green	Green	5	3SU1106-6AA40-3AA0	1	1 unit	41J
			Blue	Blue	5	3SU1106-6AA50-3AA0	1	1 unit	41J
			White	White	5	3SU1106-6AA60-3AA0	1	1 unit	41J
			Clear	White	5	3SU1106-6AA70-3AA0	1	1 unit	41J
3SU1106-6AA60-3AA0									

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black Compact Units

Indicator lights

Selection and ordering data


	Operational voltage		Color		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
	at AC, rated value	at DC, rated value	of actuating element	of light source						
	V	V			d	Article No.	Price per PU			
Indicator lights <i>NEW</i>										
	24	24	Amber	Amber	3	3SU1201-6AB00-1AA0		1	1 unit	41J
			Red	Red	▶	3SU1201-6AB20-1AA0		1	1 unit	41J
			Yellow	Yellow	▶	3SU1201-6AB30-1AA0		1	1 unit	41J
			Green	Green	▶	3SU1201-6AB40-1AA0		1	1 unit	41J
			Blue	Blue	3	3SU1201-6AB50-1AA0		1	1 unit	41J
			White	White	▶	3SU1201-6AB60-1AA0		1	1 unit	41J
			Clear	Clear	▶	3SU1201-6AB70-1AA0		1	1 unit	41J
3SU1201-6AB50-1AA0										
	110	110	Amber	Amber	5	3SU1201-6AC00-1AA0		1	1 unit	41J
			Red	Red	3	3SU1201-6AC20-1AA0		1	1 unit	41J
			Yellow	Yellow	3	3SU1201-6AC30-1AA0		1	1 unit	41J
			Green	Green	3	3SU1201-6AC40-1AA0		1	1 unit	41J
			Blue	Blue	5	3SU1201-6AC50-1AA0		1	1 unit	41J
			White	White	3	3SU1201-6AC60-1AA0		1	1 unit	41J
			Clear	Clear	5	3SU1201-6AC70-1AA0		1	1 unit	41J
			3SU1201-6AC30-1AA0							
	230	230	Amber	Amber	5	3SU1201-6AF00-1AA0		1	1 unit	41J
			Red	Red	3	3SU1201-6AF20-1AA0		1	1 unit	41J
			Yellow	Yellow	3	3SU1201-6AF30-1AA0		1	1 unit	41J
			Green	Green	3	3SU1201-6AF40-1AA0		1	1 unit	41J
			Blue	Blue	5	3SU1201-6AF50-1AA0		1	1 unit	41J
			White	White	3	3SU1201-6AF60-1AA0		1	1 unit	41J
			Clear	Clear	5	3SU1201-6AF70-1AA0		1	1 unit	41J
			3SU1201-6AF30-1AA0							
Indicator lights with "traffic light" LED										
	6 ... 24	6 ... 24	Clear	Red/Yellow/ Green	▶	3SU1201-6AG24-1AA0		1	1 unit	41J
	110	--	Clear	Red/Yellow/ Green	▶	3SU1201-6AC24-1AA0		1	1 unit	41J
	230	--	Clear	Red/Yellow/ Green	▶	3SU1201-6AF24-1AA0		1	1 unit	41J
3SU1201-6AG24-1AA0										

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black Compact Units


Acoustic signaling devices/sensor switches/potentiometers

Selection and ordering data

Operational voltage		Volume level	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
at AC, rated value	at DC, rated value							
V	V	dB	d	Article No.	Price per PU			
Acoustic signaling devices								
	24	24	90	5	3SU1200-6KB10-1AA0	1	1 unit	41J
	110	--	90	5	3SU1200-6KC10-1AA0	1	1 unit	41J
	230	--	90	5	3SU1200-6KF10-1AA0	1	1 unit	41J

3SU1200-6KB10-1AA0

Selection and ordering data


Operating principle	Number of NO contacts	Number of NC contacts	Color	SD	M12 connector, 4-pin	PU (UNIT, SET, M)	PS*	PG				
									Article No.	Price per PU		
Sensor switches												
	Whether integrated in the two-hand operation console or installed as a door opening contact, the capacitive sensor switch is suitable for many different applications in industrial environments. The switch is actuated by simple contact with the hand or other part of the body (i.e. without the application of pressure). As a result, these switches are rugged, extremely durable and have the highest possible degree of protection IP66, IP67, IP69 (IP69K). Without pressure				1	0	Black	▶	3SU1200-1SK10-2SA0	1	1 unit	41J

3SU1200-1SK10-2SA0

Optional accessories

- "Protection for sensor switches", [see page 13/136](#)
- "Connectors for sensor switches, angled socket with screw terminal connection", [see page 13/144](#)

Selection and ordering data

Version of actuating element	Operating principle	Adjustable resistance	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
								Article No.
Potentiometers								
	Rotary knob	Stepless	1	▶	3SU1200-2PQ10-1AA0	1	1 unit	41J
			2.2	5	3SU1200-2PW10-1AA0	1	1 unit	41J
			4.7	▶	3SU1200-2PR10-1AA0	1	1 unit	41J
			10	▶	3SU1200-2PS10-1AA0	1	1 unit	41J
			47	▶	3SU1200-2PT10-1AA0	1	1 unit	41J
			100	▶	3SU1200-2PU10-1AA0	1	1 unit	41J
			470	▶	3SU1200-2PV10-1AA0	1	1 unit	41J

3SU1200-2PQ10-1AA0

Labeling plates for potentiometers, [see page 13/132](#).

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black Compact Units

Pushbuttons with extended stroke

Selection and ordering data

Version	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
---------	-------	----	-------------	--------------	-------------------	-----	----

Pushbuttons with extended stroke

For actuating relays, can only be combined with extension plunger, no contact module or LED module required



3SU1200-0EB20-0AA0

Pushbuttons with flat button

Red
Green

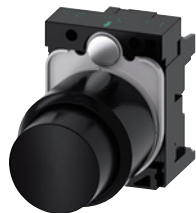
5
5

3SU1200-0EB20-0AA0
3SU1200-0EB40-0AA0

1
1

1 unit
1 unit

41J
41J



3SU1200-0FB10-0AA0

Pushbuttons with raised button

Black
Red

▶
5

3SU1200-0FB10-0AA0
3SU1200-0FB20-0AA0

1
1

1 unit
1 unit

41J
41J



3SU1201-0EB70-0AA0

Pushbuttons with flat transparent button for insertion of insert labels

Red
Clear

▶
▶

3SU1201-0EB20-0AA0
3SU1201-0EB70-0AA0

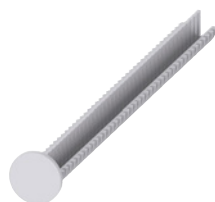
1
1

1 unit
1 unit

41J
41J

Version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Accessories



3SU1900-0KG10-0AA0

Extension plungers

Plastic

Gray

▶

3SU1900-0KG10-0AA0

1

1 unit

41J


For compensation of the distance between the pushbutton and the unlatching button of an overload relay

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black
Actuating and Signaling Elements

Pushbuttons

Selection and ordering data






Version of actuating element Front ring version	Operating principle Unlatching method	Color, marking	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Pushbuttons									
 3SU1000-0AB20-0AD0	Pushbuttons with flat button Standard	Momentary contact	Black	▶	3SU1000-0AB10-0AA0		1	1 unit	41J
			Black, "O"	▶	3SU1000-0AB10-0AD0		1	1 unit	41J
			Red	▶	3SU1000-0AB20-0AA0		1	1 unit	41J
			Red, "O"	▶	3SU1000-0AB20-0AD0		1	1 unit	41J
			Yellow	▶	3SU1000-0AB30-0AA0		1	1 unit	41J
			Green	▶	3SU1000-0AB40-0AA0		1	1 unit	41J
			Green, "I"	▶	3SU1000-0AB40-0AC0		1	1 unit	41J
			Blue	▶	3SU1000-0AB50-0AA0		1	1 unit	41J
			Blue, "R"	5	3SU1000-0AB50-0AR0		1	1 unit	41J
			White	▶	3SU1000-0AB60-0AA0		1	1 unit	41J
			White, "I"	▶	3SU1000-0AB60-0AC0		1	1 unit	41J
			Clear	▶	3SU1000-0AB70-0AA0		1	1 unit	41J
			Gray	▶	3SU1000-0AB80-0AA0		1	1 unit	41J
 3SU1000-0AA30-0AA0	Latching Push to unlatch	Black	▶	3SU1000-0AA10-0AA0		1	1 unit	41J	
		Red	▶	3SU1000-0AA20-0AA0		1	1 unit	41J	
		Yellow	3	3SU1000-0AA30-0AA0		1	1 unit	41J	
		Green	▶	3SU1000-0AA40-0AA0		1	1 unit	41J	
		Blue	▶	3SU1000-0AA50-0AA0		1	1 unit	41J	
		White	▶	3SU1000-0AA60-0AA0		1	1 unit	41J	
 3SU1000-0BB30-0AA0	Pushbuttons with raised button Standard	Momentary contact	Black	▶	3SU1000-0BB10-0AA0		1	1 unit	41J
			Red	▶	3SU1000-0BB20-0AA0		1	1 unit	41J
			Yellow	5	3SU1000-0BB30-0AA0		1	1 unit	41J
			Green	▶	3SU1000-0BB40-0AA0		1	1 unit	41J
			Blue	▶	3SU1000-0BB50-0AA0		1	1 unit	41J
			White	▶	3SU1000-0BB60-0AA0		1	1 unit	41J
 3SU1000-0CB40-0AA0	Pushbuttons with flat button Raised	Momentary contact	Black	3	3SU1000-0CB10-0AA0		1	1 unit	41J
			Red	5	3SU1000-0CB20-0AA0		1	1 unit	41J
			Yellow	5	3SU1000-0CB30-0AA0		1	1 unit	41J
			Green	5	3SU1000-0CB40-0AA0		1	1 unit	41J
			Blue	5	3SU1000-0CB50-0AA0		1	1 unit	41J
			White	5	3SU1000-0CB60-0AA0		1	1 unit	41J
 3SU1000-0DB50-0AA0	Pushbuttons with flat button Raised, castellated	Momentary contact	Black	3	3SU1000-0DB10-0AA0		1	1 unit	41J
			Red	5	3SU1000-0DB20-0AA0		1	1 unit	41J
			Yellow	5	3SU1000-0DB30-0AA0		1	1 unit	41J
			Green	5	3SU1000-0DB40-0AA0		1	1 unit	41J
			Blue	5	3SU1000-0DB50-0AA0		1	1 unit	41J
			White	5	3SU1000-0DB60-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black

Actuating and Signaling Elements

Pushbuttons

Version of actuating element Front ring version	Operating principle Unlatching method	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Pushbuttons									
 3SU1001-0AB40-0AA0	Illuminated pushbuttons with flat button Standard	Momentary contact	Amber	5	3SU1001-0AB00-0AA0		1	1 unit	41J
			Red	▶	3SU1001-0AB20-0AA0		1	1 unit	41J
			Yellow	▶	3SU1001-0AB30-0AA0		1	1 unit	41J
			Green	▶	3SU1001-0AB40-0AA0		1	1 unit	41J
			Blue	▶	3SU1001-0AB50-0AA0		1	1 unit	41J
			White	▶	3SU1001-0AB60-0AA0		1	1 unit	41J
			Clear	▶	3SU1001-0AB70-0AA0		1	1 unit	41J
		 3SU1001-0AA20-0AA0	Illuminated pushbuttons with flat button Standard	Latching	Red	▶	3SU1001-0AA20-0AA0		1
Push to unlatch	Yellow			▶	3SU1001-0AA30-0AA0		1	1 unit	41J
	Green			▶	3SU1001-0AA40-0AA0		1	1 unit	41J
	Blue			▶	3SU1001-0AA50-0AA0		1	1 unit	41J
	White			▶	3SU1001-0AA60-0AA0		1	1 unit	41J
	Clear			▶	3SU1001-0AA70-0AA0		1	1 unit	41J
	 3SU1001-0BB70-0AA0			Illuminated pushbuttons with raised button Standard	Momentary contact	Red	▶	3SU1001-0BB20-0AA0	
		Yellow	▶		3SU1001-0BB30-0AA0		1	1 unit	41J
		Green	▶		3SU1001-0BB40-0AA0		1	1 unit	41J
		Blue	▶		3SU1001-0BB50-0AA0		1	1 unit	41J
		Clear	▶		3SU1001-0BB70-0AA0		1	1 unit	41J
 3SU1001-0DB50-0AA0	Illuminated pushbuttons with flat button Raised, castellated	Momentary contact	Blue	5	3SU1001-0DB50-0AA0		1	1 unit	41J
 3SU1000-0HC10-0AA0	Stop pushbuttons Standard	Momentary contact, latching by pressing in and turning to the right, rotate-to-unlatch to the left	Black	3	3SU1000-0HC10-0AA0		1	1 unit	41J
			Red	3	3SU1000-0HC20-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black
Actuating and Signaling Elements

Twin pushbuttons

Selection and ordering data

Version of actuating element	Operating principle	Color	Marking Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Twin pushbuttons										
 <p>3SU1000-3AB66-0AL0</p>	Twin pushbuttons flat, flat	Momentary contact	Green/Red	--	3	3SU1000-3AB42-0AA0		1	1 unit	41J
				"I"/"O"	▶	3SU1000-3AB42-0AK0		1	1 unit	41J
			White/Black	--	▶	3SU1000-3AB61-0AA0		1	1 unit	41J
				"I"/"O"	▶	3SU1000-3AB61-0AK0		1	1 unit	41J
			White/White	--	3	3SU1000-3AB66-0AA0		1	1 unit	41J
				"-"/"+"	5	3SU1000-3AB66-0AL0		1	1 unit	41J
				Arrows, hor.	5	3SU1000-3AB66-0AM0		1	1 unit	41J
				Arrows, vert.	5	3SU1000-3AB66-0AN0		1	1 unit	41J
			Black/Black	--	3	3SU1000-3AB11-0AA0		1	1 unit	41J
				○	3	3SU1000-3AB11-0AQ0		1	1 unit	41J
5264/5265 (IEC 60417)										
 <p>3SU1000-3BB42-0AK0</p>	Twin pushbuttons flat, raised	Momentary contact	Green/Red	--	3	3SU1000-3BB42-0AA0		1	1 unit	41J
				"I"/"O"	▶	3SU1000-3BB42-0AK0		1	1 unit	41J
			White/Black	--	▶	3SU1000-3BB61-0AA0		1	1 unit	41J
	"I"/"O"	5	3SU1000-3BB61-0AK0		1	1 unit	41J			
 <p>3SU1001-3AB42-0AN0</p>	Twin pushbuttons flat, flat, illuminated	Momentary contact	Green/Red	--	▶	3SU1001-3AB42-0AA0		1	1 unit	41J
				"I"/"O"	▶	3SU1001-3AB42-0AK0		1	1 unit	41J
				Arrows, vert.	3	3SU1001-3AB42-0AN0		1	1 unit	41J
			White/Black	--	▶	3SU1001-3AB61-0AA0		1	1 unit	41J
				"I"/"O"	▶	3SU1001-3AB61-0AK0		1	1 unit	41J
			White/White	--	▶	3SU1001-3AB66-0AA0		1	1 unit	41J
				"-"/"+"	5	3SU1001-3AB66-0AL0		1	1 unit	41J
				Arrows, vert.	5	3SU1001-3AB66-0AN0		1	1 unit	41J
	Symbols "Circular saw blade"/ "Tilt tipper"	5	3SU1001-3AB66-0AP0		1	1 unit	41J			
 <p>3SU1001-3BB61-0AK0</p>	Twin pushbuttons flat, raised, illuminated	Momentary contact	Green/Red	--	3	3SU1001-3BB42-0AA0		1	1 unit	41J
				"I"/"O"	▶	3SU1001-3BB42-0AK0		1	1 unit	41J
			White/Black	--	▶	3SU1001-3BB61-0AA0		1	1 unit	41J
	"I"/"O"	3	3SU1001-3BB61-0AK0		1	1 unit	41J			

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black

Actuating and Signaling Elements

Mushroom pushbuttons

Selection and ordering data

Version of actuating element	Operating principle Unlatching method	Color, marking	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons								
 3SU1000-1AD20-0AA0	Momentary contact	Black	▶	3SU1000-1AD10-0AA0		1	1 unit	41J
		Red	▶	3SU1000-1AD20-0AA0		1	1 unit	41J
		Yellow	▶	3SU1000-1AD30-0AA0		1	1 unit	41J
		Green	▶	3SU1000-1AD40-0AA0		1	1 unit	41J
	Latching	Black	▶	3SU1000-1AA10-0AA0		1	1 unit	41J
Pull to unlatch	Red	▶	3SU1000-1AA20-0AA0		1	1 unit	41J	
		Yellow	5	3SU1000-1AA30-0AA0		1	1 unit	41J
 3SU1000-1BD40-0AA0	Momentary contact	Black	▶	3SU1000-1BD10-0AA0		1	1 unit	41J
		Red	▶	3SU1000-1BD20-0AA0		1	1 unit	41J
		Yellow	▶	3SU1000-1BD30-0AA0		1	1 unit	41J
		Green	▶	3SU1000-1BD40-0AA0		1	1 unit	41J
	Latching	Black	▶	3SU1000-1BA10-0AA0		1	1 unit	41J
Pull to unlatch	Red	▶	3SU1000-1BA20-0AA0		1	1 unit	41J	
	Red "O"	▶	3SU1000-1BA20-0AD0		1	1 unit	41J	
	Yellow	3	3SU1000-1BA30-0AA0		1	1 unit	41J	
	Green	5	3SU1000-1BA40-0AA0		1	1 unit	41J	
 3SU1000-1CD10-0AA0	Momentary contact	Black	3	3SU1000-1CD10-0AA0		1	1 unit	41J
		Red	5	3SU1000-1CD20-0AA0		1	1 unit	41J
		Yellow	5	3SU1000-1CD30-0AA0		1	1 unit	41J
		Green	3	3SU1000-1CD40-0AA0		1	1 unit	41J
	Latching	Black	5	3SU1000-1CA10-0AA0		1	1 unit	41J
Pull to unlatch	Red	5	3SU1000-1CA20-0AA0		1	1 unit	41J	
 3SU1001-1AD30-0AA0	Momentary contact	Red	5	3SU1001-1AD20-0AA0		1	1 unit	41J
		Yellow	3	3SU1001-1AD30-0AA0		1	1 unit	41J
		Green	3	3SU1001-1AD40-0AA0		1	1 unit	41J
		Blue	5	3SU1001-1AD50-0AA0		1	1 unit	41J
		White	3	3SU1001-1AD60-0AA0		1	1 unit	41J
		Clear	5	3SU1001-1AD70-0AA0		1	1 unit	41J
	Latching	Red	▶	3SU1001-1AA20-0AA0		1	1 unit	41J
	Pull to unlatch	Yellow	3	3SU1001-1AA30-0AA0		1	1 unit	41J
		Green	5	3SU1001-1AA40-0AA0		1	1 unit	41J
	Blue	3	3SU1001-1AA50-0AA0		1	1 unit	41J	
	Clear	5	3SU1001-1AA70-0AA0		1	1 unit	41J	
 3SU1001-1BA50-0AA0	Momentary contact	Yellow	3	3SU1001-1BD30-0AA0		1	1 unit	41J
		Green	3	3SU1001-1BD40-0AA0		1	1 unit	41J
		White	3	3SU1001-1BD60-0AA0		1	1 unit	41J
		Clear	3	3SU1001-1BD70-0AA0		1	1 unit	41J
	Latching	Red	▶	3SU1001-1BA20-0AA0		1	1 unit	41J
Pull to unlatch	Yellow	3	3SU1001-1BA30-0AA0		1	1 unit	41J	
	Green	5	3SU1001-1BA40-0AA0		1	1 unit	41J	
	Blue	3	3SU1001-1BA50-0AA0		1	1 unit	41J	
	Clear	5	3SU1001-1BA70-0AA0		1	1 unit	41J	
 3SU1000-1HB10-0AA0	With positive latching	Black	▶	3SU1000-1HB10-0AA0		1	1 unit	41J
	Rotate to unlatch	Blue	3	3SU1000-1HB50-0AA0		1	1 unit	41J
 3SU1000-1HG10-0AA0	With positive latching Key-operated release RONIS SB30	Black	NEW 5	3SU1000-1HG10-0AA0		1	1 unit	41J

* You can order this quantity or a multiple thereof.
Illustrations are approximate







SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black

Actuating and Signaling Elements

EMERGENCY STOP mushroom pushbuttons

Selection and ordering data

Version of actuating element	Outer diameter of mushroom mm	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, in accordance with ISO 13850 and IEC 60947-5-5								
With pull-to-unlatch mechanism								
 3SU1000-1HA20-0AA0	With positive latching, 2 positions 40	Red	▶	3SU1000-1HA20-0AA0		1	1 unit	41J
With rotate-to-unlatch mechanism								
 3SU1000-1GB20-0AA0	With positive latching, 2 positions 33.8	Red	▶	3SU1000-1GB20-0AA0		1	1 unit	41J
 3SU1000-1HB20-0AA0	40	Red	▶	3SU1000-1HB20-0AA0		1	1 unit	41J
 3SU1000-1JB20-0AA0	60	Red	▶	3SU1000-1JB20-0AA0		1	1 unit	41J
 3SU1000-1LB20-0AA0	With latching, 2 positions 40	Red	NEW ▶	3SU1000-1LB20-0AA0		1	1 unit	41J
With rotate-to-unlatch mechanism, can be illuminated								
 3SU1001-1GB20-0AA0	With positive latching, 2 positions 33.8	Red	▶	3SU1001-1GB20-0AA0		1	1 unit	41J
	40	Red	▶	3SU1001-1HB20-0AA0		1	1 unit	41J
	60	Red	▶	3SU1001-1JB20-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black





Actuating and Signaling Elements

EMERGENCY STOP mushroom pushbuttons/Toggle switches

Version of actuating element	Outer diameter of mushroom mm	Make of lock	Color	Number of keys	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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EMERGENCY STOP mushroom pushbuttons, in accordance with ISO 13850 and IEC 60947-5-5


With key-operated release

 3SU1000-1HF20-0AA0	With positive latching, 2 positions	40	RONIS SB30	Red	2	▶	3SU1000-1HF20-0AA0		1	1 unit	41J
			RONIS 455	Red	2	3	3SU1000-1HG20-0AA0		1	1 unit	41J
 3SU1000-1HK20-0AA0			BKS S1	Red	2	▶	3SU1000-1HK20-0AA0		1	1 unit	41J
			BKS E7	Red	0	3	3SU1000-1HM20-0AA0		1	1 unit	41J
			BKS E9	Red	0	3	3SU1000-1HN20-0AA0		1	1 unit	41J
 3SU1000-1HQ20-0AA0			O.M.R. 73037	Red	2	▶	3SU1000-1HQ20-0AA0		1	1 unit	41J
 3SU1000-1HR20-0AA0			CES SSG10	Red	2	▶	3SU1000-1HR20-0AA0		1	1 unit	41J
			CES SSP9	Red	2	▶	3SU1000-1HS20-0AA0		1	1 unit	41J
			CES SMS1	Red	2	3	3SU1000-1HT20-0AA0		1	1 unit	41J

Selection and ordering data

Number of switching positions	Number of command points	Color of actuating element	Operating principle of the actuating element	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Toggle switches

 3SU1000-3EA10-0AA0	2	1	Black	Latching	3	▶	3SU1000-3EA10-0AA0		1	1 unit	41J
				Momentary contact, reset from above	3	▶	3SU1000-3EC10-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black

Actuating and Signaling Elements

Selector switches

Selection and ordering data

Version of actuating element	Operating principle	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches								
 3SU1002-2BC40-0AA0	2 switch positions, can be illuminated Selector, short black actuator Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	Black	▶	3SU1002-2BC10-0AA0		1	1 unit	41J
		Red	▶	3SU1002-2BC20-0AA0		1	1 unit	41J
		Yellow	▶	3SU1002-2BC30-0AA0		1	1 unit	41J
		Green	▶	3SU1002-2BC40-0AA0		1	1 unit	41J
		Blue	▶	3SU1002-2BC50-0AA0		1	1 unit	41J
		White	▶	3SU1002-2BC60-0AA0		1	1 unit	41J
 3SU1002-2BF30-0AA0	Latching, 90° (10:30/1:30 o'clock) 	Black	▶	3SU1002-2BF10-0AA0		1	1 unit	41J
		Red	▶	3SU1002-2BF20-0AA0		1	1 unit	41J
		Yellow	▶	3SU1002-2BF30-0AA0		1	1 unit	41J
		Green	▶	3SU1002-2BF40-0AA0		1	1 unit	41J
		Blue	▶	3SU1002-2BF50-0AA0		1	1 unit	41J
		White	▶	3SU1002-2BF60-0AA0		1	1 unit	41J
 3SU1002-2CF20-0AA0	Selector, long black actuator Latching, 90° (10:30/1:30 o'clock) 	Black	3	3SU1002-2CF10-0AA0		1	1 unit	41J
		Red	3	3SU1002-2CF20-0AA0		1	1 unit	41J
		White	3	3SU1002-2CF60-0AA0		1	1 unit	41J
 3SU1002-2AF20-0AA0	Rotary knob Latching, 90° (10:30/1:30 o'clock) 	Red	3	3SU1002-2AF20-0AA0		1	1 unit	41J
		White	▶	3SU1002-2AF60-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black

Actuating and Signaling Elements

Selector switches

Version of actuating element	Operating principle	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Selector switches

3 switch positions, can be illuminated

3SU1002-2BM20-0AA0

Selector, short black actuator

Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right

Black ▶ 3SU1002-2BM10-0AA0
 Red ▶ 3SU1002-2BM20-0AA0
 Yellow ▶ 3SU1002-2BM30-0AA0
 Green ▶ 3SU1002-2BM40-0AA0
 Blue ▶ 3SU1002-2BM50-0AA0
 White ▶ 3SU1002-2BM60-0AA0

1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J



3SU1002-2BL60-0AA0

Latching, 2x45° (10:30/12/1:30 o'clock)



Black ▶ 3SU1002-2BL10-0AA0
 Red ▶ 3SU1002-2BL20-0AA0
 Yellow ▶ 3SU1002-2BL30-0AA0
 Green ▶ 3SU1002-2BL40-0AA0
 Blue ▶ 3SU1002-2BL50-0AA0
 White ▶ 3SU1002-2BL60-0AA0

1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J



3SU1002-2BP50-0AA0

Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to the right

Black ▶ 3SU1002-2BP10-0AA0
 Red ▶ 3SU1002-2BP20-0AA0
 Yellow ▶ 3SU1002-2BP30-0AA0
 Green ▶ 3SU1002-2BP40-0AA0
 Blue ▶ 3SU1002-2BP50-0AA0
 White ▶ 3SU1002-2BP60-0AA0

1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J



3SU1002-2BN30-0AA0

Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left

Black ▶ 3SU1002-2BN10-0AA0
 Red ▶ 3SU1002-2BN20-0AA0
 Yellow ▶ 3SU1002-2BN30-0AA0
 Green ▶ 3SU1002-2BN40-0AA0
 Blue ▶ 3SU1002-2BN50-0AA0
 White ▶ 3SU1002-2BN60-0AA0

1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J
 1 1 unit 41J



3SU1000-2AS60-0AA0

4 switch positions

Rotary knob

Latching, 4x90° (3/6/9/12 o'clock)



White ▶ 3SU1000-2AS60-0AA0

1 1 unit 41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black

Actuating and Signaling Elements

Key-operated switches

Selection and ordering data

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Key-operated switches

2 switch positions



3SU1000-4JC01-0AA0

Momentary contact, 45° (10:30/12 o'clock), reset from center to left



RONIS, SB30	O	2	▶	3SU1000-4BC01-0AA0	1	1 unit	41J
RONIS, 455	O	2	5	3SU1000-4CC01-0AA0	1	1 unit	41J
O.M.R. 73037, red	O	2	3	3SU1000-4FC01-0AA0	1	1 unit	41J
O.M.R. 73038, light blue	O	2	3	3SU1000-4GC01-0AA0	1	1 unit	41J
O.M.R. 73034, black	O	2	3	3SU1000-4HC01-0AA0	1	1 unit	41J
O.M.R. 73033, yellow	O	2	3	3SU1000-4JC01-0AA0	1	1 unit	41J
CES, SSG10	O	2	▶	3SU1000-5BC01-0AA0	1	1 unit	41J
CES, LSG1		2	3	3SU1000-5HC01-0AA0	1	1 unit	41J
BKS, S1	O	2	▶	3SU1000-5PC01-0AA0	1	1 unit	41J
IKON, 360012K1	O	2	▶	3SU1000-5XC01-0AA0	1	1 unit	41J



3SU1000-4BF11-0AA0

Latching, 90° (10:30/1:30 o'clock)



RONIS, SB30	O	2	▶	3SU1000-4BF01-0AA0	1	1 unit	41J
	O+I	2	▶	3SU1000-4BF11-0AA0	1	1 unit	41J
	I	2	▶	3SU1000-4BF21-0AA0	1	1 unit	41J
RONIS, 455	O	2	3	3SU1000-4CF01-0AA0	1	1 unit	41J
	O+I	2	3	3SU1000-4CF11-0AA0	1	1 unit	41J
RONIS, 421	O+I	2	5	3SU1000-4DF11-0AA0	1	1 unit	41J



3SU1000-4GF11-0AA0

O.M.R. 73037, red	O	2	3	3SU1000-4FF01-0AA0	1	1 unit	41J
	O+I	2	3	3SU1000-4FF11-0AA0	1	1 unit	41J
O.M.R. 73038, light blue	O	2	▶	3SU1000-4GF01-0AA0	1	1 unit	41J
	O+I	2	3	3SU1000-4GF11-0AA0	1	1 unit	41J
O.M.R. 73034, black	O	2	3	3SU1000-4HF01-0AA0	1	1 unit	41J
	O+I	2	3	3SU1000-4HF11-0AA0	1	1 unit	41J
	I	2	5	3SU1000-4HF21-0AA0	1	1 unit	41J
O.M.R. 73033, yellow	O	2	3	3SU1000-4JF01-0AA0	1	1 unit	41J
	O+I	2	3	3SU1000-4JF11-0AA0	1	1 unit	41J



3SU1000-5BF11-0AA0

CES, SSG10	O	2	▶	3SU1000-5BF01-0AA0	1	1 unit	41J
	O+I	2	▶	3SU1000-5BF11-0AA0	1	1 unit	41J
	I	2	▶	3SU1000-5BF21-0AA0	1	1 unit	41J
CES, SSG10 with key monitoring	O	2	NEW ▶	3SU1000-5JF01-0AA0	1	1 unit	41J
CES, LSG1	O	2	▶	3SU1000-5HF01-0AA0	1	1 unit	41J
	O+I	2	▶	3SU1000-5HF11-0AA0	1	1 unit	41J



3SU1000-5PF11-0AA0

BKS, S1	O	2	▶	3SU1000-5PF01-0AA0	1	1 unit	41J
	O+I	2	▶	3SU1000-5PF11-0AA0	1	1 unit	41J
	I	2	3	3SU1000-5PF21-0AA0	1	1 unit	41J
BKS, E1	O	0	3	3SU1000-5QF01-0AA0	1	1 unit	41J
	O+I	0	3	3SU1000-5QF11-0AA0	1	1 unit	41J
BKS, E2	O	0	▶	3SU1000-5RF01-0AA0	1	1 unit	41J
	O+I	0	3	3SU1000-5RF11-0AA0	1	1 unit	41J
BKS, E7	O	0	▶	3SU1000-5SF01-0AA0	1	1 unit	41J
	O+I	0	▶	3SU1000-5SF11-0AA0	1	1 unit	41J
BKS, E9	O	0	▶	3SU1000-5TF01-0AA0	1	1 unit	41J
	O+I	0	3	3SU1000-5TF11-0AA0	1	1 unit	41J
IKON, 360012K1	O	2	▶	3SU1000-5XF01-0AA0	1	1 unit	41J
	O+I	2	▶	3SU1000-5XF11-0AA0	1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black

Actuating and Signaling Elements

Key-operated switches

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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d

Key-operated switches

3 switch positions

3SU1000-4BM01-0AA0

Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right



Latching, 2x45° (10:30/12/1:30 o'clock)



3SU1000-4FL01-0AA0



3SU1000-5BL01-0AA0



3SU1000-5JL01-0AA0

Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right	RONIS, SB30	O	2	▶	3SU1000-4BM01-0AA0	1	1 unit	41J	
	O.M.R. 73037, red	O	2	5	3SU1000-4FM01-0AA0	1	1 unit	41J	
	O.M.R. 73034, black	O	2	5	3SU1000-4HM01-0AA0	1	1 unit	41J	
	CES, SSG10	O	2	▶	3SU1000-5BM01-0AA0	1	1 unit	41J	
	BKS, S1	O	2	3	3SU1000-5PM01-0AA0	1	1 unit	41J	
	IKON, 360012K1	O	2	3	3SU1000-5XM01-0AA0	1	1 unit	41J	
	Latching, 2x45° (10:30/12/1:30 o'clock)	RONIS, SB30	O	2	3	3SU1000-4BL01-0AA0	1	1 unit	41J
		I+O+II	2	▶	3SU1000-4BL11-0AA0	1	1 unit	41J	
		I	2	5	3SU1000-4BL21-0AA0	1	1 unit	41J	
		II	2	3	3SU1000-4BL31-0AA0	1	1 unit	41J	
I+II		2	3	3SU1000-4BL41-0AA0	1	1 unit	41J		
O+I		2	3	3SU1000-4BL51-0AA0	1	1 unit	41J		
RONIS, 455		O	2	5	3SU1000-4CL01-0AA0	1	1 unit	41J	
I+O+II		2	3	3SU1000-4CL11-0AA0	1	1 unit	41J		
O.M.R. 73037, red		O	2	5	3SU1000-4FL01-0AA0	1	1 unit	41J	
O+I		2	5	3SU1000-4FL51-0AA0	1	1 unit	41J		
CES, SSG10	O.M.R. 73038, light blue	O	2	3	3SU1000-4GL01-0AA0	1	1 unit	41J	
	I+O+II	2	3	3SU1000-4GL11-0AA0	1	1 unit	41J		
	O.M.R. 73034, black	O	2	5	3SU1000-4HL01-0AA0	1	1 unit	41J	
	I+O+II	2	3	3SU1000-4HL11-0AA0	1	1 unit	41J		
	O.M.R. 73033, yellow	I+O+II	2	5	3SU1000-4JL11-0AA0	1	1 unit	41J	
	O	2	▶	3SU1000-5BL01-0AA0	1	1 unit	41J		
	I+O+II	2	▶	3SU1000-5BL11-0AA0	1	1 unit	41J		
	I	2	3	3SU1000-5BL21-0AA0	1	1 unit	41J		
	II	2	▶	3SU1000-5BL31-0AA0	1	1 unit	41J		
	I+II	2	3	3SU1000-5BL41-0AA0	1	1 unit	41J		
O+I	2	3	3SU1000-5BL51-0AA0	1	1 unit	41J			
CES, SSG10 with key monitoring	O	2	NEW 3	3SU1000-5JL01-0AA0	1	1 unit	41J		
	BKS, S1	O	2	3	3SU1000-5PL01-0AA0	1	1 unit	41J	
		I+O+II	2	3	3SU1000-5PL11-0AA0	1	1 unit	41J	
		I	2	3	3SU1000-5PL21-0AA0	1	1 unit	41J	
		II	2	3	3SU1000-5PL31-0AA0	1	1 unit	41J	
		I+II	2	3	3SU1000-5PL41-0AA0	1	1 unit	41J	
	BKS, E2	I+O+II	0	5	3SU1000-5RL11-0AA0	1	1 unit	41J	
	BKS, E9	I+O+II	0	3	3SU1000-5TL11-0AA0	1	1 unit	41J	
	IKON, 360012K1	O	2	3	3SU1000-5XL01-0AA0	1	1 unit	41J	
		I+O+II	2	3	3SU1000-5XL11-0AA0	1	1 unit	41J	

SIRIUS ACT Pushbuttons and Indicator Lights







Actuators and Indicators, 22 mm, Round, Plastic, Black

Actuating and Signaling Elements

Key-operated switches/ID key-operated switches

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Key-operated switches

		3 switch positions							
 3SU1000-4BP01-0AA0	Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to the right 	RONIS, SB30	O	2	3	3SU1000-4BP01-0AA0	1	1 unit	41J
			II	2	3	3SU1000-4BP31-0AA0	1	1 unit	41J
			O+II	2	3	3SU1000-4BP61-0AA0	1	1 unit	41J
 3SU1000-5BP01-0AA0		CES, SSG10	O	2	3	3SU1000-5BP01-0AA0	1	1 unit	41J
			II	2	5	3SU1000-5BP31-0AA0	1	1 unit	41J
			O+II	2	3	3SU1000-5BP61-0AA0	1	1 unit	41J
		BKS, S1	O	2	3	3SU1000-5PP01-0AA0	1	1 unit	41J
 3SU1000-4GN01-0AA0	Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left 	RONIS, SB30	O	2	3	3SU1000-4BN01-0AA0	1	1 unit	41J
			I	2	3	3SU1000-4BN21-0AA0	1	1 unit	41J
			O+I	2	3	3SU1000-4BN51-0AA0	1	1 unit	41J
		O.M.R. 73038, light blue	O	2	5	3SU1000-4GN01-0AA0	1	1 unit	41J
		O.M.R. 73034, black	I	2	5	3SU1000-4HN21-0AA0	1	1 unit	41J
		CES, SSG10	O	2	3	3SU1000-5BN01-0AA0	1	1 unit	41J
	I	2	3	3SU1000-5BN21-0AA0	1	1 unit	41J		
	O+I	2	3	3SU1000-5BN51-0AA0	1	1 unit	41J		
		BKS, S1	I	2	5	3SU1000-5PN21-0AA0	1	1 unit	41J
			O+I	2	3	3SU1000-5PN51-0AA0	1	1 unit	41J
		IKON, 360012K1	O+I	2	5	3SU1000-5XN51-0AA0	1	1 unit	41J

Selection and ordering data

Operating angle	Operating principle	Switch position for key removal	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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ID key-operated switches

		4 switch positions							
 3SU1000-4WS10-0AA0	45° Latching	Key removal possible in all 4 positions	Black	▶	3SU1000-4WS10-0AA0	1	1 unit	41J	

For ID keys, see page 13/140.

For electronic modules for ID key-operated switches, see page 13/99.

For plastic holders for ID key-operated switches, see page 13/89.



SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Round, Plastic, Black



Actuating and Signaling Elements

Coordinate switches/indicator lights

Selection and ordering data

Product function Locking in zero position	Number of switching positions	Operating principle	Direction of actuation	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Coordinate switches										
	No	2	Momentary contact	Horizontal Vertical	▶ ▶	3SU1000-7AC10-0AA0 3SU1000-7AD10-0AA0	1 1	1 unit 1 unit	41J 41J	
			Latching	Horizontal Vertical						▶ ▶
	4	Momentary contact	Horizontal/ Vertical	▶	3SU1000-7AF10-0AA0	1	1 unit	41J		
		Latching	Horizontal/ Vertical	▶	3SU1000-7AE10-0AA0	1	1 unit	41J		
		Yes	2	Momentary contact	Horizontal Vertical	▶ ▶	3SU1000-7BC10-0AA0 3SU1000-7BD10-0AA0	1 1	1 unit 1 unit	41J 41J
				Latching	Horizontal Vertical					
4		Momentary contact	Horizontal/ Vertical	▶	3SU1000-7BF10-0AA0	1	1 unit	41J		
		Latching	Horizontal/ Vertical	▶	3SU1000-7BE10-0AA0	1	1 unit	41J		

Selection and ordering data

Type of product	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG			
Indicator lights										
	With smooth lens	3	3SU1001-6AA00-0AA0		1	1 unit	41J			
		▶	3SU1001-6AA20-0AA0					1	1 unit	41J
		▶	3SU1001-6AA30-0AA0					1	1 unit	41J
		▶	3SU1001-6AA40-0AA0					1	1 unit	41J
		▶	3SU1001-6AA50-0AA0					1	1 unit	41J
		▶	3SU1001-6AA60-0AA0					1	1 unit	41J
		▶	3SU1001-6AA70-0AA0					1	1 unit	41J
Indicator lights in illuminated pushbutton design										
	--	3	3SU1001-0AD20-0AA0		1	1 unit	41J			
		3	3SU1001-0AD30-0AA0					1	1 unit	41J
		3	3SU1001-0AD40-0AA0					1	1 unit	41J
		3	3SU1001-0AD50-0AA0					1	1 unit	41J
		▶	3SU1001-0AD70-0AA0					1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Complete Units

Pushbuttons

Selection and ordering data

Supply voltage for light source at AC	Color	Number of Contact modules	NO contacts	NC contacts	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG		
										at DC	Article No.
V	V				d						
Pushbuttons											
Pushbuttons with flat button, momentary contact											
	Black	1	1	0	▶	3SU1130-0AB10-1BA0	1	1 unit	41J		
		0	0	1	3	3SU1130-0AB10-1CA0	1	1 unit	41J		
		1	1	1	▶	3SU1130-0AB10-1FA0	1	1 unit	41J		
	Red	1	1	0	5	3SU1130-0AB20-1BA0	1	1 unit	41J		
		0	0	1	▶	3SU1130-0AB20-1CA0	1	1 unit	41J		
		1	1	1	▶	3SU1130-0AB20-1FA0	1	1 unit	41J		
	Yellow	1	1	0	5	3SU1130-0AB30-1BA0	1	1 unit	41J		
		1	1	1	5	3SU1130-0AB30-1FA0	1	1 unit	41J		
	Green	1	1	0	▶	3SU1130-0AB40-1BA0	1	1 unit	41J		
		1	1	1	▶	3SU1130-0AB40-1FA0	1	1 unit	41J		
	Blue	1	1	0	3	3SU1130-0AB50-1BA0	1	1 unit	41J		
		1	1	1	5	3SU1130-0AB50-1FA0	1	1 unit	41J		
White	1	1	0	3	3SU1130-0AB60-1BA0	1	1 unit	41J			
	1	1	1	5	3SU1130-0AB60-1FA0	1	1 unit	41J			
Pushbuttons with raised button, momentary contact											
	Red	1	0	1	5	3SU1130-0BB20-1CA0	1	1 unit	41J		
Illuminated pushbuttons with flat button, momentary contact with integrated LED											
	24	24	Red	1	1	0	5	3SU1132-0AB20-1BA0	1	1 unit	41J
				0	1	3	3SU1132-0AB20-1CA0	1	1 unit	41J	
				1	1	3	3SU1132-0AB20-1FA0	1	1 unit	41J	
	Yellow	1	1	0	3	3SU1132-0AB30-1BA0	1	1 unit	41J		
		1	1	1	5	3SU1132-0AB30-1FA0	1	1 unit	41J		
	Green	1	1	0	▶	3SU1132-0AB40-1BA0	1	1 unit	41J		
		1	1	1	3	3SU1132-0AB40-1FA0	1	1 unit	41J		
	Blue	1	1	0	3	3SU1132-0AB50-1BA0	1	1 unit	41J		
		1	1	1	5	3SU1132-0AB50-1FA0	1	1 unit	41J		
	White	1	1	0	▶	3SU1132-0AB60-1BA0	1	1 unit	41J		
		1	1	1	3	3SU1132-0AB60-1FA0	1	1 unit	41J		
	Clear	1	1	0	3	3SU1132-0AB70-1BA0	1	1 unit	41J		
1		1	1	5	3SU1132-0AB70-1FA0	1	1 unit	41J			
110	Red	--	1	0	1	5	3SU1133-0AB20-1CA0	1	1 unit	41J	
			1	1	5	3SU1133-0AB20-1FA0	1	1 unit	41J		
	Yellow	1	1	0	5	3SU1133-0AB30-1BA0	1	1 unit	41J		
		1	1	1	5	3SU1133-0AB30-1FA0	1	1 unit	41J		
	Green	1	1	0	5	3SU1133-0AB40-1BA0	1	1 unit	41J		
		1	1	1	5	3SU1133-0AB40-1FA0	1	1 unit	41J		
	Blue	1	1	0	5	3SU1133-0AB50-1BA0	1	1 unit	41J		
		1	1	1	5	3SU1133-0AB50-1FA0	1	1 unit	41J		
	White	1	1	0	5	3SU1133-0AB60-1BA0	1	1 unit	41J		
		1	1	1	5	3SU1133-0AB60-1FA0	1	1 unit	41J		
	Clear	1	1	0	5	3SU1133-0AB70-1BA0	1	1 unit	41J		
		1	1	1	5	3SU1133-0AB70-1FA0	1	1 unit	41J		

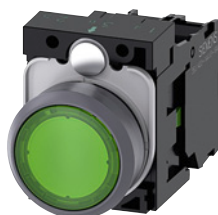
SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Complete Units

Pushbuttons

Supply voltage for light source		Color	Number of			SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
at AC	at DC		Contact modules	NO contacts	NC contacts					
V	V					d	Article No.	Price per PU		

Pushbuttons



3SU1136-0AB40-1BA0

Illuminated pushbuttons with flat button, momentary contact with integrated LED

230	--	Red	1	0	1	5	3SU1136-0AB20-1CA0	1	1 unit	41J
				1	1	5	3SU1136-0AB20-1FA0	1	1 unit	41J
		Yellow	1	1	0	5	3SU1136-0AB30-1BA0	1	1 unit	41J
				1	1	5	3SU1136-0AB30-1FA0	1	1 unit	41J
		Green	1	1	0	5	3SU1136-0AB40-1BA0	1	1 unit	41J
				1	1	5	3SU1136-0AB40-1FA0	1	1 unit	41J
		Blue	1	1	0	5	3SU1136-0AB50-1BA0	1	1 unit	41J
				1	1	5	3SU1136-0AB50-1FA0	1	1 unit	41J
		White	1	1	0	5	3SU1136-0AB60-1BA0	1	1 unit	41J
				1	1	5	3SU1136-0AB60-1FA0	1	1 unit	41J
		Clear	1	1	0	5	3SU1136-0AB70-1BA0	1	1 unit	41J
				1	1	5	3SU1136-0AB70-1FA0	1	1 unit	41J

Spring-type terminals



3SU1130-0AB10-3BA0

Pushbuttons with flat button, momentary contact

--	--	Black	1	1	0	5	3SU1130-0AB10-3BA0	1	1 unit	41J
				1	1	5	3SU1130-0AB10-3FA0	1	1 unit	41J
		Red	1	0	1	5	3SU1130-0AB20-3CA0	1	1 unit	41J
		Green	1	1	0	5	3SU1130-0AB40-3BA0	1	1 unit	41J
		White	1	1	1	5	3SU1130-0AB60-3FA0	1	1 unit	41J



3SU1132-0AB30-3BA0

Illuminated pushbuttons with flat button, momentary contact

24	24	Red	1	0	1	5	3SU1132-0AB20-3CA0	1	1 unit	41J
				1	1	5	3SU1132-0AB20-3FA0	1	1 unit	41J
		Yellow	1	1	0	5	3SU1132-0AB30-3BA0	1	1 unit	41J
				1	1	5	3SU1132-0AB30-3FA0	1	1 unit	41J
		Green	1	1	0	5	3SU1132-0AB40-3BA0	1	1 unit	41J
				1	1	5	3SU1132-0AB40-3FA0	1	1 unit	41J
		Blue	1	1	0	5	3SU1132-0AB50-3BA0	1	1 unit	41J
				1	1	5	3SU1132-0AB50-3FA0	1	1 unit	41J
		White	1	1	0	5	3SU1132-0AB60-3BA0	1	1 unit	41J
				1	1	5	3SU1132-0AB60-3FA0	1	1 unit	41J
		Clear	1	1	0	5	3SU1132-0AB70-3BA0	1	1 unit	41J
				1	1	5	3SU1132-0AB70-3FA0	1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

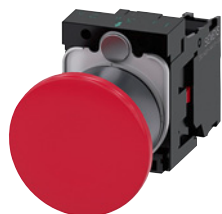
Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Complete Units

Mushroom pushbuttons/EMERGENCY STOP mushroom pushbuttons

Selection and ordering data

Unlatching method	Number of Contact modules		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	NO contacts	NC contacts					
			d	Article No.	Price per PU		

Mushroom pushbuttons



3SU1130-1BA20-1CA0

With red mushroom, diameter 40 mm, latching

Pull to unlatch	1	0	1	5	3SU1130-1BA20-1CA0	1	1 unit	41J
		1	1	5		3SU1130-1BA20-1FA0	1	1 unit

Selection and ordering data

Unlatching method	Number of Contact modules		Marking	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	NO contacts	NC contacts						
				d	Article No.	Price per PU		

EMERGENCY STOP mushroom pushbuttons, in accordance with ISO 13850 and IEC 60947-5-5



3SU1100-1HA20-1CH0

With red mushroom, diameter 40 mm, with positive latching

Pull to unlatch	1	0	1	NOT-HALT	⊕ 5	3SU1100-1HA20-1CH0	1	1 unit	41J
		1	1	EMERGENCY STOP	⊖ 5				

Rotate to unlatch	1	0	1	None	⊕ 5	3SU1100-1HB20-1CF0	1	1 unit	41J
		0	1	EMERGENCY STOP	⊖ 5				

		0	1	NOT-HALT	⊕ ▶ 5	3SU1100-1HB20-1CH0	1	1 unit	41J
		0	2	EMERGENCY STOP	⊖ 5				

		0	1	ARRET D'URGENCE	⊕ 5	3SU1100-1HB20-1CJ0	1	1 unit	41J
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		1	1	EMERGENCY STOP	⊖ 5	3SU1100-1HB20-1FG0	1	1 unit	41J
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		1	1	NOT-HALT	⊕ ▶ 5	3SU1100-1HB20-1FH0	1	1 unit	41J
		1	1	ARRET D'URGENCE	⊖ 5	3SU1100-1HB20-1FJ0	1	1 unit	41J

3SU1100-1HB20-1CH0



3SU1100-1HB20-1CH0

						Spring-type terminals			
Rotate to unlatch	1	0	1	NOT-HALT	⊖ 5	3SU1100-1HB20-3CH0	1	1 unit	41J
		1	1	NOT-HALT	⊖ 5				

With red mushroom, diameter 40 mm, with latching **NEW**

						Screw terminals			
Rotate to unlatch	2	0	2	NOT-HALT	5	3SU1100-1LB20-1PH0	1	1 unit	41J



3SU1100-1LB20-1PH0

⊕ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System, see page siehe Seite 11/1 onwards.
Certificate:



SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Complete Units

Selector switches

Selection and ordering data

Operating principle	Color	Number of			SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		Contact modules	NO contacts	NC contacts					
						Article No.	Price per PU		

Selector switches



3SU1130-2BF60-1BA0

Short black actuator, 2 switch positions, can be illuminated

Latching, 90°	White	1	1	0	▶	3SU1130-2BF60-1BA0	1	1 unit	41J
			1	1	▶	3SU1130-2BF60-1MA0	1	1 unit	41J

Short black actuator, 3 switch positions, can be illuminated

Momentary contact, 2x45°	White	2	2	2	5	3SU1130-2BM60-1LA0	1	1 unit	41J
			2	0	3	3SU1130-2BM60-1NA0	1	1 unit	41J



3SU1130-2BL60-1NA0

Latching, 2x45°	White	2	2	2	3	3SU1130-2BL60-1LA0	1	1 unit	41J
			2	0	▶	3SU1130-2BL60-1NA0	1	1 unit	41J

Spring-type terminals

Short black actuator, 2 switch positions, can be illuminated

Latching, 90°	White	1	1	0	5	3SU1130-2BF60-3BA0	1	1 unit	41J
			1	1	5	3SU1130-2BF60-3MA0	1	1 unit	41J

Short black actuator, 3 switch positions, can be illuminated

Momentary contact, 2x45°	White	2	2	0	5	3SU1130-2BM60-3NA0	1	1 unit	41J
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Latching, 2x45°	White	2	2	2	5	3SU1130-2BL60-3LA0	1	1 unit	41J
			2	0	5	3SU1130-2BL60-3NA0	1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights



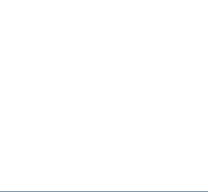
Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Complete Units

Key-operated switches/coordinate switches


Selection and ordering data

Operating principle	Switch position for key removal	Number of Contact modules			Number of keys	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
		NO contacts	NC contacts							
							Article No.	Price per PU		




Key-operated switches

	With RONIS lock, SB30, 2 switch positions						3SU1130-4BF11-1BA0 3SU1130-4BF11-1FA0	1 1	1 unit 1 unit	41J 41J
	Latching, 90° (10:30/ 1:30 o'clock)	O+I	1	1	0	2				
	With RONIS lock, SB30, 3 switch positions						3SU1130-4BL11-1NA0	1	1 unit	41J
	Latching, 2x45° (10:30/12/ 1:30 o'clock)	I+O+II	2	2	0	2				
	With RONIS lock, SB30, 2 switch positions						3SU1130-4BF11-3BA0	1	1 unit	41J
	Latching, 90° (10:30/ 1:30 o'clock)	O+I	1	1	0	2				

Selection and ordering data

Number of NO contacts (1 per direction)	Operating principle	Direction of actuation	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG

Coordinate switches


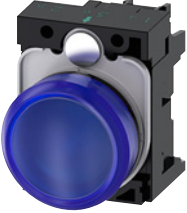


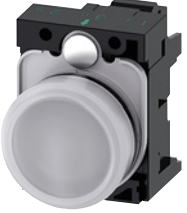

	Without mechanical interlock, 2 switch positions						3SU1130-7AC10-1NA0 3SU1130-7AD10-1NA0 3SU1130-7AA10-1NA0 3SU1130-7AB10-1NA0	1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
	2	Momentary contact	Horizontal	5	5	5				
			Vertical	5						
		Latching	Horizontal	5	5	5				
	Vertical		5							
	Without mechanical interlock, 4 switch positions						3SU1130-7AF10-1QA0 3SU1130-7AE10-1QA0	1 1	1 unit 1 unit	41J 41J
	4	Momentary contact	Horizontal/Vertical	5	5	5				
			Horizontal/Vertical	5						
		Latching	Horizontal/Vertical	5	5	5				
	Horizontal/Vertical		5							
	With mechanical interlock, 2 switch positions						3SU1130-7BC10-1NA0 3SU1130-7BD10-1NA0 3SU1130-7BA10-1NA0 3SU1130-7BB10-1NA0 3SU1130-7BF10-1QA0 3SU1130-7BE10-1QA0	1 1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J 41J 41J
	2	Momentary contact	Horizontal	5	5	5				
			Vertical	5						
		Latching	Horizontal	5	5	5				
			Vertical	5						
	With mechanical interlock, 4 switch positions									
4	Momentary contact	Horizontal/Vertical	5	5	5					
		Horizontal/Vertical	5							
	Latching	Horizontal/Vertical	5	5	5					
		Horizontal/Vertical	5							

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Complete Units

Indicator lights

Selection and ordering data

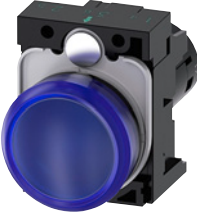
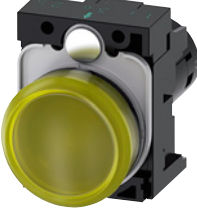


Indicator lights	Operational voltage		Color of actuating element		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
	at AC, rated value	at DC, rated value	of actuating element	of light source						
	V	V			d	Article No.	Price per PU			
With smooth lens and integrated LED										
 3SU1102-6AA30-1AA0	24	24	Red	Red	▶	3SU1102-6AA20-1AA0		1	1 unit	41J
			Yellow	Yellow	▶	3SU1102-6AA30-1AA0				
			Green	Green	▶	3SU1102-6AA40-1AA0				
			Blue	Blue	▶	3SU1102-6AA50-1AA0				
			White	White	▶	3SU1102-6AA60-1AA0				
			Clear	White	▶	3SU1102-6AA70-1AA0				
			 3SU1106-6AA50-1AA0	110	--	Amber				
Red	Red	▶				3SU1103-6AA20-1AA0				
Yellow	Yellow	▶				3SU1103-6AA30-1AA0				
Green	Green	▶				3SU1103-6AA40-1AA0				
Blue	Blue	3				3SU1103-6AA50-1AA0				
White	White	▶				3SU1103-6AA60-1AA0				
Clear	White	3				3SU1103-6AA70-1AA0				
 3SU1106-6AA50-1AA0	230	--	Amber	Amber	5	3SU1106-6AA00-1AA0		1	1 unit	41J
			Red	Red	▶	3SU1106-6AA20-1AA0				
			Yellow	Yellow	▶	3SU1106-6AA30-1AA0				
			Green	Green	▶	3SU1106-6AA40-1AA0				
			Blue	Blue	3	3SU1106-6AA50-1AA0				
			White	White	▶	3SU1106-6AA60-1AA0				
			Clear	White	3	3SU1106-6AA70-1AA0				
Spring-type terminals										
 3SU1102-6AA40-3AA0	24	24	Red	Red	3	3SU1102-6AA20-3AA0		1	1 unit	41J
			Yellow	Yellow	5	3SU1102-6AA30-3AA0				
			Green	Green	3	3SU1102-6AA40-3AA0				
			Blue	Blue	5	3SU1102-6AA50-3AA0				
			White	White	3	3SU1102-6AA60-3AA0				
			Clear	White	5	3SU1102-6AA70-3AA0				
			 3SU1106-6AA60-3AA0	110	--	Red				
Yellow	Yellow	5				3SU1103-6AA30-3AA0				
Green	Green	5				3SU1103-6AA40-3AA0				
Blue	Blue	5				3SU1103-6AA50-3AA0				
White	White	5				3SU1103-6AA60-3AA0				
Clear	White	5				3SU1103-6AA70-3AA0				
 3SU1106-6AA60-3AA0	230	--				Red	Red	5	3SU1106-6AA20-3AA0	
			Yellow	Yellow	5	3SU1106-6AA30-3AA0				

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Compact Units

Indicator lights

Selection and ordering data

	Operational voltage		Color		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG							
	at AC, rated value	at DC, rated value	of actuating element	of light source												
	V	V			d	Article No.	Price per PU									
Indicator lights <i>NEW</i>																
	24	24	Amber	Amber	3	3SU1201-6AB00-1AA0		1	1 unit	41J						
			Red	Red	▶	3SU1201-6AB20-1AA0										
			Yellow	Yellow	▶	3SU1201-6AB30-1AA0										
			Green	Green	▶	3SU1201-6AB40-1AA0										
			Blue	Blue	3	3SU1201-6AB50-1AA0										
			White	White	▶	3SU1201-6AB60-1AA0										
			Clear	Clear	▶	3SU1201-6AB70-1AA0										
3SU1201-6AB50-1AA0																
	110	110	Amber	Amber	5	3SU1201-6AC00-1AA0		1	1 unit	41J						
			Red	Red	3	3SU1201-6AC20-1AA0										
			Yellow	Yellow	3	3SU1201-6AC30-1AA0										
			Green	Green	3	3SU1201-6AC40-1AA0										
			Blue	Blue	5	3SU1201-6AC50-1AA0										
			White	White	3	3SU1201-6AC60-1AA0										
			Clear	Clear	5	3SU1201-6AC70-1AA0										
			3SU1201-6AC30-1AA0													
	230	230	Amber	Amber	5	3SU1201-6AF00-1AA0		1	1 unit	41J						
			Red	Red	3	3SU1201-6AF20-1AA0										
			Yellow	Yellow	3	3SU1201-6AF30-1AA0										
			Green	Green	3	3SU1201-6AF40-1AA0										
			Blue	Blue	5	3SU1201-6AF50-1AA0										
			White	White	3	3SU1201-6AF60-1AA0										
			Clear	Clear	5	3SU1201-6AF70-1AA0										
			3SU1201-6AF30-1AA0													
			Indicator lights with "traffic light" LED													
	6 ... 24	6 ... 24	Clear	Red/Yellow/ Green	▶	3SU1201-6AG24-1AA0		1	1 unit	41J						
	110	--	Clear	Red/Yellow/ Green	▶	3SU1201-6AC24-1AA0										
	230	--	Clear	Red/Yellow/ Green	▶	3SU1201-6AF24-1AA0										
3SU1201-6AG24-1AA0																

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Compact Units

Acoustic signaling devices/sensor switches

Selection and ordering data

Operational voltage		Volume level	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
at AC, rated value	at DC, rated value						
V	V	dB	d	Article No.	Price per PU		

Acoustic signaling devices



3SU1200-6KB10-1AA0

24	24	90	5	3SU1200-6KB10-1AA0		1	1 unit	41J
110	--	90	5	3SU1200-6KC10-1AA0		1	1 unit	41J
230	--	90	5	3SU1200-6KF10-1AA0		1	1 unit	41J

Selection and ordering data

Operating principle	Number of NO contacts	Number of NC contacts	Color	SD	M12 connector, 4-pin	PU (UNIT, SET, M)	PS*	PG
				d	Article No.	Price per PU		

Sensor switches



3SU1200-1SK10-2SA0

Whether integrated in the two-hand operation console or installed as a door opening contact, the capacitive sensor switch is suitable for many different applications in industrial environments.

The switch is actuated by simple contact with the hand or other part of the body (i.e. without the application of pressure). As a result, these switches are rugged, extremely durable and have the highest possible degree of protection IP66, IP67, IP69 (IP69K).

Without pressure	1	0	Black	▶	3SU1200-1SK10-2SA0		1	1 unit	41J
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Optional accessories

- "Protection for sensor switches", [see page 13/136](#)
- "Connectors for sensor switches, angled socket with screw terminal connection", [see page 13/144](#)

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Compact Units

Potentiometers/pushbuttons with extended stroke

Selection and ordering data

Version of actuating element	Operating principle	Adjustable resistance	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		kΩ	d	Article No.	Price per PU		

Potentiometers



3SU1200-2PQ10-1AA0

Labeling plates for potentiometers, [see page 13/132](#).

Version of actuating element	Operating principle	Adjustable resistance	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Rotary knob	Stepless	1	▶	3SU1200-2PQ10-1AA0		1	1 unit	41J
		2.2	▶	3SU1200-2PW10-1AA0		1	1 unit	41J
		4.7	▶	3SU1200-2PR10-1AA0		1	1 unit	41J
		10	▶	3SU1200-2PS10-1AA0		1	1 unit	41J
		47	▶	3SU1200-2PT10-1AA0		1	1 unit	41J
		100	▶	3SU1200-2PU10-1AA0		1	1 unit	41J
		470	▶	3SU1200-2PV10-1AA0		1	1 unit	41J

Selection and ordering data

Version	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					

Pushbuttons with extended stroke

For actuating relays, can only be combined with extension plunger, no contact module or LED module required

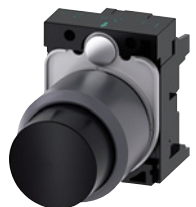
Pushbuttons with flat button



3SU1230-0EB40-0AA0

Version	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Red	5	3SU1230-0EB20-0AA0		1	1 unit	41J
	Green	5	3SU1230-0EB40-0AA0		1	1 unit	41J

Pushbuttons with raised button



3SU1230-0FB10-0AA0

Version	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Black	3	3SU1230-0FB10-0AA0		1	1 unit	41J

Pushbuttons with flat transparent button for insertion of insert labels

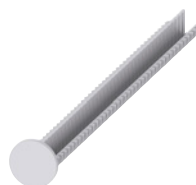


3SU1231-0EB20-0AA0

Version	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Red	3	3SU1231-0EB20-0AA0		1	1 unit	41J
	Clear	3	3SU1231-0EB70-0AA0		1	1 unit	41J

Version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					

Accessories



3SU1900-0KG10-0AA0

Version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Extension plungers	Plastic	Gray	▶	3SU1900-0KG10-0AA0		1	1 unit	41J



For compensation of the distance between the pushbutton and the unlatching button of an overload relay

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Actuating and Signaling Elements

Pushbuttons




Selection and ordering data

Version of actuating element Front ring version	Operating principle Unlatching method	Color, marking	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Pushbuttons									
 3SU1030-0AB50-0AR0	Pushbuttons with flat button Standard	Momentary contact	Black	▶	3SU1030-0AB10-0AA0		1	1 unit	41J
			Black, "O"	▶	3SU1030-0AB10-0AD0		1	1 unit	41J
			Red	▶	3SU1030-0AB20-0AA0		1	1 unit	41J
			Red, "O"	▶	3SU1030-0AB20-0AD0		1	1 unit	41J
			Red, "AUTO"	5	3SU1030-0AB20-0AQ0		1	1 unit	41J
			Yellow	▶	3SU1030-0AB30-0AA0		1	1 unit	41J
			Green	▶	3SU1030-0AB40-0AA0		1	1 unit	41J
			Green, "I"	▶	3SU1030-0AB40-0AC0		1	1 unit	41J
			Blue	▶	3SU1030-0AB50-0AA0		1	1 unit	41J
			Blue, "R"	5	3SU1030-0AB50-0AR0		1	1 unit	41J
			White	▶	3SU1030-0AB60-0AA0		1	1 unit	41J
			White, "I"	▶	3SU1030-0AB60-0AC0		1	1 unit	41J
			Clear	▶	3SU1030-0AB70-0AA0		1	1 unit	41J
			Gray	▶	3SU1030-0AB80-0AA0		1	1 unit	41J
		 3SU1030-0AA40-0AA0	Latching Push to unlatch	Black	▶	3SU1030-0AA10-0AA0		1	1 unit
Red	▶			3SU1030-0AA20-0AA0		1	1 unit	41J	
Yellow	▶			3SU1030-0AA30-0AA0		1	1 unit	41J	
Green	▶			3SU1030-0AA40-0AA0		1	1 unit	41J	
Blue	▶			3SU1030-0AA50-0AA0		1	1 unit	41J	
White	▶			3SU1030-0AA60-0AA0		1	1 unit	41J	
 3SU1030-0BB20-0AA0	Pushbuttons with raised button Standard	Momentary contact	Black	▶	3SU1030-0BB10-0AA0		1	1 unit	41J
			Red	▶	3SU1030-0BB20-0AA0		1	1 unit	41J
			Yellow	▶	3SU1030-0BB30-0AA0		1	1 unit	41J
			Green	▶	3SU1030-0BB40-0AA0		1	1 unit	41J
			Blue	▶	3SU1030-0BB50-0AA0		1	1 unit	41J
			White	▶	3SU1030-0BB60-0AA0		1	1 unit	41J
 3SU1030-0CB30-0AA0	Pushbuttons with flat button Raised	Momentary contact	Black	5	3SU1030-0CB10-0AA0		1	1 unit	41J
			Red	5	3SU1030-0CB20-0AA0		1	1 unit	41J
			Yellow	5	3SU1030-0CB30-0AA0		1	1 unit	41J
			Green	5	3SU1030-0CB40-0AA0		1	1 unit	41J
			Blue	5	3SU1030-0CB50-0AA0		1	1 unit	41J
			White	5	3SU1030-0CB60-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte
Actuating and Signaling Elements

Pushbuttons

Version of actuating element Front ring version	Operating principle Unlatching method	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Pushbuttons									
 3SU1031-0AB20-0AA0	Illuminated pushbuttons with flat button Standard	Momentary contact	Amber	5	3SU1031-0AB00-0AA0		1	1 unit	41J
			Red	▶	3SU1031-0AB20-0AA0		1	1 unit	41J
			Yellow	▶	3SU1031-0AB30-0AA0		1	1 unit	41J
			Green	▶	3SU1031-0AB40-0AA0		1	1 unit	41J
			Blue	▶	3SU1031-0AB50-0AA0		1	1 unit	41J
			White	▶	3SU1031-0AB60-0AA0		1	1 unit	41J
			Clear	▶	3SU1031-0AB70-0AA0		1	1 unit	41J
 3SU1031-0AA50-0AA0	Illuminated pushbuttons with flat button Standard	Latching	Red	▶	3SU1031-0AA20-0AA0		1	1 unit	41J
		Push to unlatch	Yellow	▶	3SU1031-0AA30-0AA0		1	1 unit	41J
			Green	▶	3SU1031-0AA40-0AA0		1	1 unit	41J
			Blue	▶	3SU1031-0AA50-0AA0		1	1 unit	41J
			White	▶	3SU1031-0AA60-0AA0		1	1 unit	41J
			Clear	▶	3SU1031-0AA70-0AA0		1	1 unit	41J
 3SU1031-0BB40-0AA0	Illuminated pushbuttons with raised button Standard	Momentary contact	Red	▶	3SU1031-0BB20-0AA0		1	1 unit	41J
			Yellow	▶	3SU1031-0BB30-0AA0		1	1 unit	41J
			Green	▶	3SU1031-0BB40-0AA0		1	1 unit	41J
			Blue	▶	3SU1031-0BB50-0AA0		1	1 unit	41J
			Clear	▶	3SU1031-0BB70-0AA0		1	1 unit	41J
 3SU1031-0CB20-0AA0	Pushbuttons with flat button NEW Raised	Momentary contact	Red	25	3SU1031-0CB20-0AA0		1	100 units	41J
			Green	25	3SU1031-0CB40-0AA0		1	100 units	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Actuating and Signaling Elements

Twin pushbuttons

Selection and ordering data








Version of actuating element	Operating principle	Color	Marking Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Twin pushbuttons									
	Momentary contact	Green/Red	-- "I"/"O"	3	3SU1030-3AB42-0AA0 3SU1030-3AB42-0AK0		1	1 unit	41J
		White/Black	-- "I"/"O"	3	3SU1030-3AB61-0AA0 3SU1030-3AB61-0AK0		1	1 unit	41J
		White/White	-- Arrows, vert.	3	3SU1030-3AB66-0AA0 3SU1030-3AB66-0AN0		1	1 unit	41J
		Black/Black	-- ⊙ ○ 5264/5265 (IEC 60417)	3 5	3SU1030-3AB11-0AA0 3SU1030-3AB11-0AQ0		1	1 unit	41J
	Momentary contact	Green/Red	-- "I"/"O"	3	3SU1030-3BB42-0AA0 3SU1030-3BB42-0AK0		1	1 unit	41J
	Momentary contact	Green/Red	-- "I"/"O" Arrows, vert.	▶ ▶ 5	3SU1031-3AB42-0AA0 3SU1031-3AB42-0AK0 3SU1031-3AB42-0AN0		1	1 unit	41J
	Momentary contact	White/Black	-- "I"/"O"	3	3SU1031-3AB61-0AA0 3SU1031-3AB61-0AK0		1	1 unit	41J
		White/White	-- Arrows, vert.	3 5	3SU1031-3AB66-0AA0 3SU1031-3AB66-0AN0		1	1 unit	41J
		Green/Red	-- "I"/"O"	▶	3SU1031-3BB42-0AA0 3SU1031-3BB42-0AK0		1	1 unit	41J
		White/Black	-- "I"/"O"	▶	3SU1031-3BB61-0AA0 3SU1031-3BB61-0AK0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte
Actuating and Signaling Elements

Mushroom pushbuttons

Selection and ordering data

Version of actuating element	Operating principle Unlatching method	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Mushroom pushbuttons									
 3SU1030-1AD20-0AA0	Mushroom pushbuttons 30 mm diameter, 2 positions	Momentary contact	Black	▶	3SU1030-1AD10-0AA0		1	1 unit	41J
			Red	▶	3SU1030-1AD20-0AA0		1	1 unit	41J
			Yellow	▶	3SU1030-1AD30-0AA0		1	1 unit	41J
			Green	▶	3SU1030-1AD40-0AA0		1	1 unit	41J
		Latching	Black	▶	3SU1030-1AA10-0AA0		1	1 unit	41J
	Pull to unlatch	Red	▶	3SU1030-1AA20-0AA0		1	1 unit	41J	
 3SU1030-1BD40-0AA0	Mushroom pushbuttons 40 mm diameter, 2 positions	Momentary contact	Black	3	3SU1030-1BD10-0AA0		1	1 unit	41J
			Red	3	3SU1030-1BD20-0AA0		1	1 unit	41J
			Yellow	3	3SU1030-1BD30-0AA0		1	1 unit	41J
			Green	3	3SU1030-1BD40-0AA0		1	1 unit	41J
		Latching	Black	▶	3SU1030-1BA10-0AA0		1	1 unit	41J
	Pull to unlatch	Red	▶	3SU1030-1BA20-0AA0		1	1 unit	41J	
		Red, "O"	5	3SU1030-1BA20-0AD0		1	1 unit	41J	
 3SU1031-1AD30-0AA0	Mushroom pushbuttons 30 mm diameter, 2 positions, illuminated	Momentary contact	Yellow	5	3SU1031-1AD30-0AA0		1	1 unit	41J
			Green	3	3SU1031-1AD40-0AA0		1	1 unit	41J
			Blue	NEW 5	3SU1031-1AD50-0AA0		1	1 unit	41J
			White	3	3SU1031-1AD60-0AA0		1	1 unit	41J
			Clear	5	3SU1031-1AD70-0AA0		1	1 unit	41J
			Latching	Red	3	3SU1031-1AA20-0AA0		1	1 unit
	Pull to unlatch	Yellow	5	3SU1031-1AA30-0AA0		1	1 unit	41J	
 3SU1031-1BD60-0AA0	Mushroom pushbuttons 40 mm diameter, 2 positions, illuminated	Momentary contact	Yellow	5	3SU1031-1BD30-0AA0		1	1 unit	41J
			Green	5	3SU1031-1BD40-0AA0		1	1 unit	41J
			White	3	3SU1031-1BD60-0AA0		1	1 unit	41J
			Clear	5	3SU1031-1BD70-0AA0		1	1 unit	41J
			Latching	Red	3	3SU1031-1BA20-0AA0		1	1 unit
	Pull to unlatch	Yellow	3	3SU1031-1BA30-0AA0		1	1 unit	41J	
 3SU1000-1HB50-0AA0	Mushroom pushbuttons 40 mm diameter, 2 positions	With positive latching	Black	▶	3SU1000-1HB10-0AA0		1	1 unit	41J
		Blue	3	3SU1000-1HB50-0AA0		1	1 unit	41J	
	Rotate to unlatch								
 3SU1000-1HG10-0AA0	Mushroom pushbuttons 40 mm diameter, 2 positions RONIS SB30	With positive latching	Black	NEW 5	3SU1000-1HG10-0AA0		1	1 unit	41J
		Key-operated release							
	RONIS SB30								
 3SU1000-1HB10-0AA0	Mushroom pushbuttons, 60 mm diameter, 2 positions RONIS SB30	With positive latching	Black	NEW X	3SU1000-1JB10-0AA0		1	1 unit	41J
		Rotate to unlatch							

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Actuating and Signaling Elements


EMERGENCY STOP mushroom pushbuttons

Selection and ordering data

Version of actuating element	Outer diameter of mushroom mm	Make of lock	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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EMERGENCY STOP mushroom pushbuttons


With pull-to-unlatch mechanism


 3SU1000-1HA20-0AA0	With positive latching, 2 positions	40	--	Red	▶	3SU1000-1HA20-0AA0	1	1 unit	41J
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With rotate-to-unlatch mechanism


 3SU1000-1GB20-0AA0	With positive latching, 2 positions	33.8	--	Red	▶	3SU1000-1GB20-0AA0	1	1 unit	41J
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 3SU1000-1HB20-0AA0		40	--	Red	▶	3SU1000-1HB20-0AA0	1	1 unit	41J
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 3SU1000-1JB20-0AA0		60	--	Red	▶	3SU1000-1JB20-0AA0	1	1 unit	41J
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 3SU1000-1LB20-0AA0	With latching, 2 positions	40	--	Red NEW	▶	3SU1000-1LB20-0AA0	1	1 unit	41J
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With rotate-to-unlatch mechanism, can be illuminated

 3SU1001-1HB20-0AA0	With positive latching, 2 positions	33.8	--	Red	▶	3SU1001-1GB20-0AA0 3SU1001-1HB20-0AA0 3SU1001-1JB20-0AA0	1	1 unit	41J
		40	--	Red	▶		1	1 unit	41J
		60	--	Red	▶		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator LightsActuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte
Actuating and Signaling Elements**EMERGENCY STOP mushroom pushbuttons/Toggle switches**

Version of actuating element	Outer diameter of mushroom mm	Make of lock	Color	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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EMERGENCY STOP mushroom pushbuttons**With key-operated release**

3SU1000-1HF20-0AA0

With positive latching, 2 positions

40

RONIS
SB30

Red

2

▶

3SU1000-1HF20-0AA0

1

1 unit

41J

RONIS 455

Red

2

3

3SU1000-1HG20-0AA0

1

1 unit

41J



3SU1000-1HK20-0AA0

BKS S1

Red

2

▶

3SU1000-1HK20-0AA0

1

1 unit

41J

BKS E7

Red

0

3

3SU1000-1HM20-0AA0

1

1 unit

41J

BKS E9

Red

0

3

3SU1000-1HN20-0AA0

1

1 unit

41J



3SU1000-1HQ20-0AA0

O.M.R.
73037

Red

2

▶

3SU1000-1HQ20-0AA0

1

1 unit

41J



3SU1000-1HR20-0AA0

CES SSG10

Red

2

▶

3SU1000-1HR20-0AA0

1

1 unit

41J

CES SSP9

Red

2

▶

3SU1000-1HS20-0AA0

1

1 unit

41J

CES SMS1

Red

2

3

3SU1000-1HT20-0AA0

1

1 unit

41J

Selection and ordering data

Number of switching positions	Number of command points	Color of actuating element	Operating principle of the actuating element	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Toggle switches

3SU1030-3EA10-0AA0

2

1

Black

Latching

3

3SU1030-3EA10-0AA0

1

1 unit

41J

Momentary contact, reset from above

5

3SU1030-3EC10-0AA0

1

1 unit

41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Actuating and Signaling Elements

Selector switches

Selection and ordering data

Version of actuating element	Operating principle	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches								
 3SU1032-2BC40-0AA0	2 switch positions, can be illuminated Selector, short black actuator Momentary contact, 45° (10:30/12 o'clock), reset from center to left 	Black	3	3SU1032-2BC10-0AA0		1	1 unit	41J
		Red	▶	3SU1032-2BC20-0AA0		1	1 unit	41J
		Yellow	▶	3SU1032-2BC30-0AA0		1	1 unit	41J
		Green	▶	3SU1032-2BC40-0AA0		1	1 unit	41J
		Blue	▶	3SU1032-2BC50-0AA0		1	1 unit	41J
		White	▶	3SU1032-2BC60-0AA0		1	1 unit	41J
 3SU1032-2BF30-0AA0	Latching, 90° (10:30/1:30 o'clock) 	Black	▶	3SU1032-2BF10-0AA0		1	1 unit	41J
		Red	▶	3SU1032-2BF20-0AA0		1	1 unit	41J
		Yellow	▶	3SU1032-2BF30-0AA0		1	1 unit	41J
		Green	▶	3SU1032-2BF40-0AA0		1	1 unit	41J
		Blue	▶	3SU1032-2BF50-0AA0		1	1 unit	41J
		White	▶	3SU1032-2BF60-0AA0		1	1 unit	41J
 3SU1032-2CF60-0AA0	Selector, long black actuator Latching, 90° (10:30/1:30 o'clock) 	Black	3	3SU1032-2CF10-0AA0		1	1 unit	41J
		Red	3	3SU1032-2CF20-0AA0		1	1 unit	41J
		White	3	3SU1032-2CF60-0AA0		1	1 unit	41J
 3SU1032-2AF20-0AA0	Rotary knob Latching, 90° (10:30/1:30 o'clock) 	Red	3	3SU1032-2AF20-0AA0		1	1 unit	41J
		White	▶	3SU1032-2AF60-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte
Actuating and Signaling Elements

Selector switches

Version of actuating element	Operating principle	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Selector switches

3 switch positions, can be illuminated



3SU1032-2BM60-0AA0

Selector, short black actuator

Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right



Black	▶	3SU1032-2BM10-0AA0
Red	▶	3SU1032-2BM20-0AA0
Yellow	▶	3SU1032-2BM30-0AA0
Green	▶	3SU1032-2BM40-0AA0
Blue	▶	3SU1032-2BM50-0AA0
White	▶	3SU1032-2BM60-0AA0

1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J



3SU1032-2BL20-0AA0

Latching, 2x45° (10:30/12/1:30 o'clock)



Black	▶	3SU1032-2BL10-0AA0
Red	▶	3SU1032-2BL20-0AA0
Yellow	▶	3SU1032-2BL30-0AA0
Green	▶	3SU1032-2BL40-0AA0
Blue	▶	3SU1032-2BL50-0AA0
White	▶	3SU1032-2BL60-0AA0

1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J



3SU1032-2BP40-0AA0

Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to the right



Black	▶	3SU1032-2BP10-0AA0
Red	5	3SU1032-2BP20-0AA0
Yellow	▶	3SU1032-2BP30-0AA0
Green	▶	3SU1032-2BP40-0AA0
Blue	5	3SU1032-2BP50-0AA0
White	▶	3SU1032-2BP60-0AA0

1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J



3SU1032-2BN30-0AA0

Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left



Black	3	3SU1032-2BN10-0AA0
Red	▶	3SU1032-2BN20-0AA0
Yellow	▶	3SU1032-2BN30-0AA0
Green	▶	3SU1032-2BN40-0AA0
Blue	▶	3SU1032-2BN50-0AA0
White	▶	3SU1032-2BN60-0AA0

1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J
1	1 unit	41J

4 switch positions



3SU1030-2AS60-0AA0

Rotary knob

Latching, 4x90° (3/6/9/12 o'clock)



White	3	3SU1030-2AS60-0AA0
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1	1 unit	41J
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SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Actuating and Signaling Elements

Key-operated switches

Selection and ordering data

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Key-operated switches

2 switch positions



Momentary contact, 45° (10:30/12 o'clock), reset from center to left



3SU1030-4BC01-0AA0

RONIS, SB30	O	2	▶	3SU1030-4BC01-0AA0	1	1 unit	41J
RONIS, 455	O	2	5	3SU1030-4CC01-0AA0	1	1 unit	41J
O.M.R. 73037, red	O	2	3	3SU1030-4FC01-0AA0	1	1 unit	41J
O.M.R. 73038, light blue	O	2	5	3SU1030-4GC01-0AA0	1	1 unit	41J
O.M.R. 73034, black	O	2	5	3SU1030-4HC01-0AA0	1	1 unit	41J
O.M.R. 73033, yellow	O	2	3	3SU1030-4JC01-0AA0	1	1 unit	41J
CES, SSG10	O	2	▶	3SU1030-5BC01-0AA0	1	1 unit	41J
CES, LSG1	O	2	3	3SU1030-5HC01-0AA0	1	1 unit	41J
BKS, S1	O	2	▶	3SU1030-5PC01-0AA0	1	1 unit	41J
IKON, 360012K1	O	2	3	3SU1030-5XC01-0AA0	1	1 unit	41J



Latching, 90° (10:30/1:30 o'clock)



3SU1030-4BF01-0AA0

RONIS, SB30	O	2	▶	3SU1030-4BF01-0AA0	1	1 unit	41J
	O+l	2	▶	3SU1030-4BF11-0AA0	1	1 unit	41J
	l	2	3	3SU1030-4BF21-0AA0	1	1 unit	41J
RONIS, 455	O	2	3	3SU1030-4CF01-0AA0	1	1 unit	41J
	O+l	2	5	3SU1030-4CF11-0AA0	1	1 unit	41J



O.M.R. 73037, red	O	2	3	3SU1030-4FF01-0AA0	1	1 unit	41J
	O+l	2	3	3SU1030-4FF11-0AA0	1	1 unit	41J
O.M.R. 73038, light blue	O	2	3	3SU1030-4GF01-0AA0	1	1 unit	41J
	O+l	2	3	3SU1030-4GF11-0AA0	1	1 unit	41J
O.M.R. 73034, black	O	2	3	3SU1030-4HF01-0AA0	1	1 unit	41J
	O+l	2	3	3SU1030-4HF11-0AA0	1	1 unit	41J
	l	2	5	3SU1030-4HF21-0AA0	1	1 unit	41J
O.M.R. 73033, yellow	O	2	3	3SU1030-4JF01-0AA0	1	1 unit	41J
	O+l	2	5	3SU1030-4JF11-0AA0	1	1 unit	41J

3SU1030-4FF01-0AA0



CES, SSG10	O	2	▶	3SU1030-5BF01-0AA0	1	1 unit	41J
	O+l	2	▶	3SU1030-5BF11-0AA0	1	1 unit	41J
	l	2	3	3SU1030-5BF21-0AA0	1	1 unit	41J
CES, LSG1	O	2	3	3SU1030-5HF01-0AA0	1	1 unit	41J
	O+l	2	3	3SU1030-5HF11-0AA0	1	1 unit	41J

3SU1030-5BF01-0AA0



BKS, S1	O	2	3	3SU1030-5PF01-0AA0	1	1 unit	41J
	O+l	2	3	3SU1030-5PF11-0AA0	1	1 unit	41J
	l	2	5	3SU1030-5PF21-0AA0	1	1 unit	41J
BKS, E1	O	0	3	3SU1030-5QF01-0AA0	1	1 unit	41J
	O+l	0	5	3SU1030-5QF11-0AA0	1	1 unit	41J
BKS, E2	O	0	▶	3SU1030-5RF01-0AA0	1	1 unit	41J
	O+l	0	3	3SU1030-5RF11-0AA0	1	1 unit	41J
BKS, E7	O	0	▶	3SU1030-5SF01-0AA0	1	1 unit	41J
	O+l	0	▶	3SU1030-5SF11-0AA0	1	1 unit	41J
BKS, E9	O	0	3	3SU1030-5TF01-0AA0	1	1 unit	41J
	O+l	0	3	3SU1030-5TF11-0AA0	1	1 unit	41J
IKON, 360012K1	O	2	▶	3SU1030-5XF01-0AA0	1	1 unit	41J
	O+l	2	3	3SU1030-5XF11-0AA0	1	1 unit	41J

3SU1030-5PF01-0AA0

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte
Actuating and Signaling Elements

Key-operated switches

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Key-operated switches



3SU1030-4BM01-0AA0

3 switch positions

Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right



Latching, 2x45° (10:30/12/1:30 o'clock)



3SU1030-4JL11-0AA0



3SU1030-5BL41-0AA0



3SU1030-5PL01-0AA0

	RONIS, SB30	O	2	3	3SU1030-4BM01-0AA0		1	1 unit	41J
	O.M.R. 73037, red	O	2	5	3SU1030-4FM01-0AA0		1	1 unit	41J
	O.M.R. 73034, black	O	2	5	3SU1030-4HM01-0AA0		1	1 unit	41J
	CES, SSG10	O	2	▶	3SU1030-5BM01-0AA0		1	1 unit	41J
	BKS, S1	O	2	3	3SU1030-5PM01-0AA0		1	1 unit	41J
	IKON, 360012K1	O	2	5	3SU1030-5XM01-0AA0		1	1 unit	41J
	RONIS, SB30	O	2	3	3SU1030-4BL01-0AA0		1	1 unit	41J
	I+O+II	2	▶	3	3SU1030-4BL11-0AA0		1	1 unit	41J
	I	2	5	▶	3SU1030-4BL21-0AA0		1	1 unit	41J
	II	2	3	▶	3SU1030-4BL31-0AA0		1	1 unit	41J
	I+II	2	5	▶	3SU1030-4BL41-0AA0		1	1 unit	41J
	O+I	2	3	▶	3SU1030-4BL51-0AA0		1	1 unit	41J
	RONIS, 455	O	2	5	3SU1030-4CL01-0AA0		1	1 unit	41J
	I+O+II	2	5	▶	3SU1030-4CL11-0AA0		1	1 unit	41J
	O.M.R. 73037, red	O	2	5	3SU1030-4FL01-0AA0		1	1 unit	41J
	O+I	2	5	▶	3SU1030-4FL51-0AA0		1	1 unit	41J
	O.M.R. 73038, light blue	O	2	5	3SU1030-4GL01-0AA0		1	1 unit	41J
	I+O+II	2	3	▶	3SU1030-4GL11-0AA0		1	1 unit	41J
	O.M.R. 73034, black	O	2	5	3SU1030-4HL01-0AA0		1	1 unit	41J
	I+O+II	2	3	▶	3SU1030-4HL11-0AA0		1	1 unit	41J
	O.M.R. 73033, yellow	I+O+II	2	5	3SU1030-4JL11-0AA0		1	1 unit	41J
	CES, SSG10	O	2	3	3SU1030-5BL01-0AA0		1	1 unit	41J
	I+O+II	2	▶	3	3SU1030-5BL11-0AA0		1	1 unit	41J
	I	2	3	▶	3SU1030-5BL21-0AA0		1	1 unit	41J
	II	2	3	▶	3SU1030-5BL31-0AA0		1	1 unit	41J
	I+II	2	3	▶	3SU1030-5BL41-0AA0		1	1 unit	41J
	O+I	2	5	▶	3SU1030-5BL51-0AA0		1	1 unit	41J
	BKS, S1	O	2	5	3SU1030-5PL01-0AA0		1	1 unit	41J
	I+O+II	2	3	▶	3SU1030-5PL11-0AA0		1	1 unit	41J
	I	2	3	▶	3SU1030-5PL21-0AA0		1	1 unit	41J
	II	2	5	▶	3SU1030-5PL31-0AA0		1	1 unit	41J
	I+II	2	5	▶	3SU1030-5PL41-0AA0		1	1 unit	41J
	BKS, E2	I+O+II	0	5	3SU1030-5RL11-0AA0		1	1 unit	41J
	BKS, E9	I+O+II	0	5	3SU1030-5TL11-0AA0		1	1 unit	41J
	IKON, 360012K1	O	2	5	3SU1030-5XL01-0AA0		1	1 unit	41J
	I+O+II	2	5	▶	3SU1030-5XL11-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte Actuating and Signaling Elements

Key-operated switches/ID key-operated switches

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Key-operated switches



3SU1030-4BP01-0AA0

3 switch positions

Momentary contact/
latching, 2x45°
(10:30/12/
1:30 o'clock),
reset from left,
latching to the right



RONIS, SB30	O	2	5	3SU1030-4BP01-0AA0	1	1 unit	41J	
	II	2	5	3SU1030-4BP31-0AA0	1	1 unit	41J	
	O+II	2	5	3SU1030-4BP61-0AA0	1	1 unit	41J	
CES, SSG10	O	2	3	3SU1030-5BP01-0AA0	1	1 unit	41J	
	II	2	5	3SU1030-5BP31-0AA0	1	1 unit	41J	
	O+II	2	3	3SU1030-5BP61-0AA0	1	1 unit	41J	
BKS, S1	O	2	3	3SU1030-5PP01-0AA0	1	1 unit	41J	
Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left	RONIS, SB30	O	2	5	3SU1030-4BN01-0AA0	1	1 unit	41J
		I	2	5	3SU1030-4BN21-0AA0	1	1 unit	41J
		O+I	2	5	3SU1030-4BN51-0AA0	1	1 unit	41J
O.M.R. 73038, light blue O.M.R. 73034, black	O	2	5	3SU1030-4GN01-0AA0	1	1 unit	41J	
	I	2	5	3SU1030-4HN21-0AA0	1	1 unit	41J	
CES, SSG10	O	2	3	3SU1030-5BN01-0AA0	1	1 unit	41J	
	I	2	3	3SU1030-5BN21-0AA0	1	1 unit	41J	
	O+I	2	3	3SU1030-5BN51-0AA0	1	1 unit	41J	
BKS, S1	I	2	5	3SU1030-5PN21-0AA0	1	1 unit	41J	
	O+I	2	5	3SU1030-5PN51-0AA0	1	1 unit	41J	
IKON, 360012K1	O+I	2	5	3SU1030-5XN51-0AA0	1	1 unit	41J	



3SU1030-5BN01-0AA0

Selection and ordering data

Operating angle	Operating principle	Switch position for key removal	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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ID key-operated switches



3SU1030-4WS10-0AA0

4 switch positions

45° Latching Key removal possible in all 4 positions

Black ▶

3SU1030-4WS10-0AA0 1 1 unit 41J

For ID keys, see [page 13/140](#).

For electronic modules for ID key-operated switches, see [page 13/99](#).



For plastic holders for ID key-operated switches, see [page 13/89](#).

SIRIUS ACT Pushbuttons and Indicator Lights



Actuators and Indicators, 22 mm, Plastic with Metal Front Ring, Matte
Actuating and Signaling Elements

Coordinate switches/indicator lights

Selection and ordering data

Product function Locking in zero position	Number of switching positions	Operating principle	Direction of actuation	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Coordinate switches										
 3SU1030-7AA10-0AA0	No	2	Momentary contact	Horizontal Vertical	▶ ▶	3SU1030-7AC10-0AA0 3SU1030-7AD10-0AA0	1 1	1 unit 1 unit	41J 41J	
			Latching	Horizontal Vertical	▶ ▶	3SU1030-7AA10-0AA0 3SU1030-7AB10-0AA0	1 1	1 unit 1 unit	41J 41J	
	4	Momentary contact	Horizontal/ Vertical	▶	3SU1030-7AF10-0AA0	1	1 unit	41J		
		Latching	Horizontal/ Vertical	▶	3SU1030-7AE10-0AA0	1	1 unit	41J		
	 3SU1030-7BA10-0AA0	Yes	2	Momentary contact	Horizontal Vertical	▶ ▶	3SU1030-7BC10-0AA0 3SU1030-7BD10-0AA0	1 1	1 unit 1 unit	41J 41J
				Latching	Horizontal Vertical	▶ ▶	3SU1030-7BA10-0AA0 3SU1030-7BB10-0AA0	1 1	1 unit 1 unit	41J 41J
4		Momentary contact	Horizontal/ Vertical	▶	3SU1030-7BF10-0AA0	1	1 unit	41J		
		Latching	Horizontal/ Vertical	▶	3SU1030-7BE10-0AA0	1	1 unit	41J		

Selection and ordering data

Type of product	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Indicator lights							
 3SU1001-6AA20-0AA0	With smooth lens	Amber	3	3SU1001-6AA00-0AA0	1	1 unit	41J
		Red	▶	3SU1001-6AA20-0AA0	1	1 unit	41J
		Yellow	▶	3SU1001-6AA30-0AA0	1	1 unit	41J
		Green	▶	3SU1001-6AA40-0AA0	1	1 unit	41J
		Blue	▶	3SU1001-6AA50-0AA0	1	1 unit	41J
		White	▶	3SU1001-6AA60-0AA0	1	1 unit	41J
		Clear	▶	3SU1001-6AA70-0AA0	1	1 unit	41J
	Indicator lights in illuminated pushbutton design						
 3SU1031-0AD50-0AA0	--	Red	3	3SU1031-0AD20-0AA0	1	1 unit	41J
		Yellow	5	3SU1031-0AD30-0AA0	1	1 unit	41J
		Green	3	3SU1031-0AD40-0AA0	1	1 unit	41J
		Blue	5	3SU1031-0AD50-0AA0	1	1 unit	41J
		Clear	3	3SU1031-0AD70-0AA0	1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

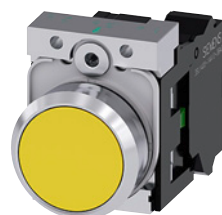
Actuators and Indicators, 22 mm, Metal, Shiny Complete Units

Pushbuttons

Selection and ordering data

Supply voltage for light source		Color	Number of			SD	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
at AC	at DC		Contact modules	NO contacts	NC contacts						
V	V					d	Article No.	Price per PU			

Pushbuttons

Pushbuttons with flat button, momentary contact

3SU1150-0AB30-1BA0

--	--	Black	1	1	0	▶	3SU1150-0AB10-1BA0	1	1 unit	41J
				0	1	▶	3SU1150-0AB10-1CA0	1	1 unit	41J
				1	1	▶	3SU1150-0AB10-1FA0	1	1 unit	41J
		Red	1	1	0	▶	3SU1150-0AB20-1BA0	1	1 unit	41J
				0	1	▶	3SU1150-0AB20-1CA0	1	1 unit	41J
				1	1	▶	3SU1150-0AB20-1FA0	1	1 unit	41J
		Yellow	1	1	0	▶	3SU1150-0AB30-1BA0	1	1 unit	41J
				1	1	▶	3SU1150-0AB30-1FA0	1	1 unit	41J
		Green	1	1	0	▶	3SU1150-0AB40-1BA0	1	1 unit	41J
				1	1	▶	3SU1150-0AB40-1FA0	1	1 unit	41J
		Blue	1	1	0	▶	3SU1150-0AB50-1BA0	1	1 unit	41J
				1	1	▶	3SU1150-0AB50-1FA0	1	1 unit	41J
		White	1	1	0	▶	3SU1150-0AB60-1BA0	1	1 unit	41J
				1	1	▶	3SU1150-0AB60-1FA0	1	1 unit	41J
		Clear	1	1	0	▶	3SU1150-0AB70-1BA0	1	1 unit	41J
				1	1	▶	3SU1150-0AB70-1FA0	1	1 unit	41J

Pushbuttons with raised button, momentary contact

3SU1150-0BB20-1CA0

--	--	Black	1	1	0	5	3SU1150-0BB10-1BA0	1	1 unit	41J
				0	1	5	3SU1150-0BB10-1CA0	1	1 unit	41J
				1	1	5	3SU1150-0BB10-1FA0	1	1 unit	41J
		Red	1	0	1	3	3SU1150-0BB20-1CA0	1	1 unit	41J
				1	1	5	3SU1150-0BB20-1FA0	1	1 unit	41J
		Green	1	1	1	5	3SU1150-0BB40-1FA0	1	1 unit	41J
		Blue	1	1	0	5	3SU1150-0BB50-1BA0	1	1 unit	41J
				1	1	5	3SU1150-0BB50-1FA0	1	1 unit	41J

Illuminated pushbuttons with flat button, momentary contact, with integrated LED

3SU1152-0AB50-1BA0

24	24	Amber	1	1	0	5	3SU1152-0AB00-1BA0	1	1 unit	41J
				1	1	5	3SU1152-0AB00-1FA0	1	1 unit	41J
		Red	1	0	1	▶	3SU1152-0AB20-1CA0	1	1 unit	41J
				1	1	▶	3SU1152-0AB20-1FA0	1	1 unit	41J
		Yellow	1	1	0	▶	3SU1152-0AB30-1BA0	1	1 unit	41J
				1	1	▶	3SU1152-0AB30-1FA0	1	1 unit	41J
		Green	1	1	0	▶	3SU1152-0AB40-1BA0	1	1 unit	41J
				1	1	▶	3SU1152-0AB40-1FA0	1	1 unit	41J
		Blue	1	1	0	▶	3SU1152-0AB50-1BA0	1	1 unit	41J
				1	1	▶	3SU1152-0AB50-1FA0	1	1 unit	41J
		White	1	1	0	▶	3SU1152-0AB60-1BA0	1	1 unit	41J
				1	1	▶	3SU1152-0AB60-1FA0	1	1 unit	41J
		Clear	1	1	0	▶	3SU1152-0AB70-1BA0	1	1 unit	41J
				1	1	▶	3SU1152-0AB70-1FA0	1	1 unit	41J



3SU1153-0AB60-1BA0

110	--	Amber	1	1	0	5	3SU1153-0AB00-1BA0	1	1 unit	41J
				1	1	5	3SU1153-0AB00-1FA0	1	1 unit	41J
		Red	1	0	1	5	3SU1153-0AB20-1CA0	1	1 unit	41J
				1	1	5	3SU1153-0AB20-1FA0	1	1 unit	41J
		Yellow	1	1	0	5	3SU1153-0AB30-1BA0	1	1 unit	41J
				1	1	5	3SU1153-0AB30-1FA0	1	1 unit	41J
		Green	1	1	0	3	3SU1153-0AB40-1BA0	1	1 unit	41J
				1	1	5	3SU1153-0AB40-1FA0	1	1 unit	41J
		Blue	1	1	0	5	3SU1153-0AB50-1BA0	1	1 unit	41J
				1	1	5	3SU1153-0AB50-1FA0	1	1 unit	41J
		White	1	1	0	5	3SU1153-0AB60-1BA0	1	1 unit	41J
				1	1	5	3SU1153-0AB60-1FA0	1	1 unit	41J
		Clear	1	1	0	5	3SU1153-0AB70-1BA0	1	1 unit	41J
				1	1	5	3SU1153-0AB70-1FA0	1	1 unit	41J


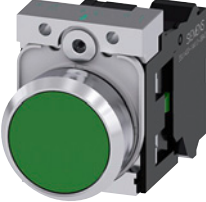
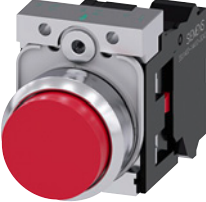


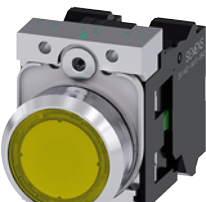
230	--	Amber	1	1	0	5	3SU1156-0AB00-1BA0	1	1 unit	41J
				1	1	5	3SU1156-0AB00-1FA0	1	1 unit	41J
		Red	1	0	1	5	3SU1156-0AB20-1CA0	1	1 unit	41J
				1	1	5	3SU1156-0AB20-1FA0	1	1 unit	41J
		Yellow	1	1	0	5	3SU1156-0AB30-1BA0	1	1 unit	41J
				1	1	5	3SU1156-0AB30-1FA0	1	1 unit	41J
		Green	1	1	0	3	3SU1156-0AB40-1BA0	1	1 unit	41J
				1	1	5	3SU1156-0AB40-1FA0	1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny

Complete Units

Pushbuttons

	Supply voltage for light source		Color	Number of			SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
	at AC	at DC		Contact modules	NO contacts	NC contacts						
	V	V					Article No.	Price per PU				
Pushbuttons												
	230	--	Blue	1	1	0	5	3SU1156-0AB50-1BA0		1	1 unit	41J
				1	1	1	5					
			White	1	1	0	5	3SU1156-0AB60-1BA0		1	1 unit	41J
				1	1	1	5					
			Clear	1	1	0	5	3SU1156-0AB70-1BA0		1	1 unit	41J
				1	1	1	5					
								Spring-type terminals				
Pushbuttons with flat button, momentary contact												
	--	--	Black	1	1	0	5	3SU1150-0AB10-3BA0		1	1 unit	41J
				0	1	1	5					
				1	1	1	5					
			Red	1	1	0	5	3SU1150-0AB20-3CA0		1	1 unit	41J
				0	1	1	5					
			Yellow	1	1	0	5	3SU1150-0AB30-3BA0		1	1 unit	41J
				1	1	1	5					
			Green	1	1	0	5	3SU1150-0AB40-3BA0		1	1 unit	41J
				1	1	1	5					
			Blue	1	1	0	5	3SU1150-0AB50-3BA0		1	1 unit	41J
				1	1	1	5					
			White	1	1	0	5	3SU1150-0AB60-3BA0		1	1 unit	41J
1	1	1		5								
Pushbuttons with raised button, momentary contact												
	--	--	Red	1	0	1	5	3SU1150-0BB20-3CA0		1	1 unit	41J
				1	1	1	5					
Illuminated pushbuttons with flat button, momentary contact, with integrated LED												
	24	24	Red	1	0	1	5	3SU1152-0AB20-3CA0		1	1 unit	41J
				1	1	1	5					
			Yellow	1	1	0	5	3SU1152-0AB30-3BA0		1	1 unit	41J
				1	1	1	5					
			Green	1	1	0	5	3SU1152-0AB40-3BA0		1	1 unit	41J
				1	1	1	3					
			Blue	1	1	0	5	3SU1152-0AB50-3BA0		1	1 unit	41J
				1	1	1	5					
			White	1	1	0	3	3SU1152-0AB60-3BA0		1	1 unit	41J
				1	1	1	5					
			Clear	1	1	0	5	3SU1152-0AB70-3BA0		1	1 unit	41J
				1	1	1	5					
	110	--	Red	1	0	1	5	3SU1153-0AB20-3CA0		1	1 unit	41J
				1	1	1	5					
			Yellow	1	1	0	5	3SU1153-0AB30-3BA0		1	1 unit	41J
				1	1	1	5					
			Green	1	1	0	5	3SU1153-0AB40-3BA0		1	1 unit	41J
				1	1	1	5					
			Blue	1	1	0	5	3SU1153-0AB50-3BA0		1	1 unit	41J
				1	1	1	5					
			White	1	1	0	5	3SU1153-0AB60-3BA0		1	1 unit	41J
				1	1	1	5					
			Clear	1	1	0	5	3SU1153-0AB70-3BA0		1	1 unit	41J
				1	1	1	5					
	230	--	Red	1	0	1	5	3SU1156-0AB20-3CA0		1	1 unit	41J
				1	1	1	5					
			Yellow	1	1	0	5	3SU1156-0AB30-3BA0		1	1 unit	41J
				1	1	1	5					
			Green	1	1	0	5	3SU1156-0AB40-3BA0		1	1 unit	41J
				1	1	1	5					
			Blue	1	1	0	5	3SU1156-0AB50-3BA0		1	1 unit	41J
				1	1	1	5					
			White	1	1	0	5	3SU1156-0AB60-3BA0		1	1 unit	41J
				1	1	1	5					
			Clear	1	1	0	5	3SU1156-0AB70-3BA0		1	1 unit	41J
				1	1	1	5					

SIRIUS ACT Pushbuttons and Indicator Lights

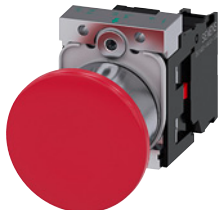
Actuators and Indicators, 22 mm, Metal, Shiny Complete Units

Mushroom pushbuttons/EMERGENCY STOP mushroom pushbuttons

Selection and ordering data

Unlatching method	Number of Contact modules	NO contacts	NC contacts	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG

Mushroom pushbuttons



3SU1150-1BA20-1CA0

With red mushroom, diameter 40 mm, latching

Pull to unlatch	1	0	1	▶	3SU1150-1BA20-1CA0 3SU1150-1BA20-1FA0	1	1 unit	41J
		1	1	3		1	1 unit	41J
						Spring-type terminals		
Pull to unlatch	1	0	1	5	3SU1150-1BA20-3CA0 3SU1150-1BA20-3FA0	1	1 unit	41J
		1	1	5		1	1 unit	41J

Selection and ordering data

Unlatching method	Number of Contact modules	NO contacts	NC contacts	Marking	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG

EMERGENCY STOP mushroom pushbuttons, in accordance with ISO 13850 and IEC 60947-5-5



3SU1150-1HB20-1CH0

With red mushroom, diameter 40 mm, with positive latching

Pull to unlatch	1	0	1	EMERGENCY STOP	⊕ 5	3SU1150-1HA20-1CG0	1	1 unit	41J				
		1	0	1	NOT-HALT		⊕ 5	1	1 unit	41J			
			1	1	EMERGENCY STOP		⊕ 5	1	1 unit	41J			
			1	1	NOT-HALT		⊕ 5	1	1 unit	41J			
			1	1	ARRET D'URGENCE		⊕ 5	1	1 unit	41J			
			1	1	ARRET D'URGENCE		⊕ 5	1	1 unit	41J			
Rotate to unlatch	1	0	1	EMERGENCY STOP	⊕ 3	3SU1150-1HB20-1CG0	1	1 unit	41J				
		1	0	1	NOT-HALT		⊕ ▶	1	1 unit	41J			
		1	0	1	ARRET D'URGENCE		⊕ 5	1	1 unit	41J			
			1	1	EMERGENCY STOP		⊕ 5	1	1 unit	41J			
			1	1	NOT-HALT		⊕ ▶	1	1 unit	41J			
			1	1	ARRET D'URGENCE		⊕ 5	1	1 unit	41J			
	Pull to unlatch	1	0	1	NOT-HALT		⊕ 5	3SU1150-1HA20-3CH0	1	1 unit	41J		
		2	0	2	NOT-HALT		⊕ 5		1	1 unit	41J		
		2	0	2	NOT-HALT		⊕ 5		1	1 unit	41J		
		Rotate to unlatch	1	0	1		NOT-HALT		⊕ 5	3SU1150-1HB20-3CH0	1	1 unit	41J
			2	0	2		NOT-HALT		⊕ 5		1	1 unit	41J
			2	0	2		NOT-HALT		⊕ 5		1	1 unit	41J

⊕ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK 11 safety relays or the 3RK3 Modular Safety System,
see page 11/1 onwards.
Certificate:



SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny
Complete Units

EMERGENCY STOP mushroom pushbuttons/selector switches

Un-latching method	Supply voltage for light source		Number of			Marking	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	at AC	at DC	Contact modules	NO contacts	NC contacts						
	V	V				d	Article No.	Price per PU			

EMERGENCY STOP mushroom pushbuttons, can be illuminated, in accordance with ISO 13850 and IEC 60947-5-5 **NEW**

With red mushroom, diameter 40 mm, with positive latching



3SU1158-1HB20-1PT0

Rotate to unlatch	24 ... 240	24 ... 240	1	0	2	EMERGENCY STOP	⊕ 5	3SU1158-1HB20-1PT0	1	1 unit	41J
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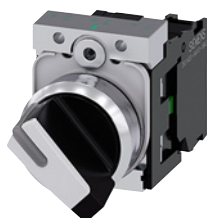
⊕ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System, see page 11/1 onwards.
Certificate:



Selection and ordering data

Operating principle	Color	Number of			SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		Contact modules	NO contacts	NC contacts					
					d	Article No.	Price per PU		

Selector switches



3SU1150-2BF60-1BA0

Short black actuator, 2 switch positions

Latching, 90°	White	1	1	0	▶	3SU1150-2BF60-1BA0	1	1 unit	41J
			1	1	3	3SU1150-2BF60-1FA0	1	1 unit	41J
		2	1	1	▶	3SU1150-2BF60-1MA0	1	1 unit	41J

Short black actuator, 3 switch positions (I - O - II)

Momentary contact, 2x45°, reset from left + right	White	2	2	2	▶	3SU1150-2BM60-1LA0	1	1 unit	41J
			2	0	▶	3SU1150-2BM60-1NA0	1	1 unit	41J

Latching, 2x45°	White	2	2	2	▶▶	3SU1150-2BL60-1LA0	1	1 unit	41J
			2	0	▶▶	3SU1150-2BL60-1NA0	1	1 unit	41J

Spring-type terminals



3SU1150-2BL60-3NA0

Short black actuator, 2 switch positions

Latching, 90°	White	1	1	0	5	3SU1150-2BF60-3BA0	1	1 unit	41J
		2	1	1	5	3SU1150-2BF60-3MA0	1	1 unit	41J

Short black actuator, 3 switch positions

Momentary contact, 2x45°, reset from left + right	White	2	2	2	5	3SU1150-2BM60-3LA0	1	1 unit	41J
			2	0	5	3SU1150-2BM60-3NA0	1	1 unit	41J


Latching, 2x45°	White	2	2	2	5	3SU1150-2BL60-3LA0	1	1 unit	41J
			2	0	5	3SU1150-2BL60-3NA0	1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny Complete Units

Key-operated switches/coordinate switches

Selection and ordering data




Operating principle	Switch position for key removal	Number of Contact modules			Number of keys	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
		NO contacts	NC contacts							
Article No.							Price per PU			

Key-operated switches




3SU1150-4BF11-1BA0

With RONIS lock, SB30, 2 switch positions

Latching, 90° (10:30/ 1:30 o'clock)	All	1	1	0	2	3	Screw terminals 	1	1 unit	41J
	All	1	1	1	2	3				
	All	1	1	0	2	5	Spring-type terminals 	1	1 unit	41J
	All	1	1	1	2	5				
	O	2	0	2	2	5				
	O	2	0	2	2	5				

Selection and ordering data



Number of NO contacts (1 per direction)	Operating principle	Direction of actuation	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
d							

Coordinate switches




3SU1150-7AF88-1QA0



Without mechanical interlock, 2 switch positions

2	Momentary contact	Horizontal	5	Screw terminals 	1	1 unit	41J
		Vertical	5				
Latching	Momentary contact	Horizontal	5	Screw terminals 	1	1 unit	41J
		Vertical	5				


Without mechanical interlock, 4 switch positions

4	Momentary contact	Horizontal/Vertical	3	Screw terminals 	1	1 unit	41J
		Latching	5				

With mechanical interlock, 2 switch positions

2	Momentary contact	Horizontal	5	Screw terminals 	1	1 unit	41J
		Vertical	5				
Latching	Momentary contact	Horizontal	5	Screw terminals 	1	1 unit	41J
		Vertical	5				

With mechanical interlock, 4 switch positions

4	Momentary contact	Horizontal/Vertical	5	Screw terminals 	1	1 unit	41J
		Latching	5				


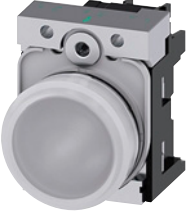


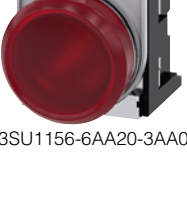

3SU1150-7BF88-1QA0

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny
Complete Units

Indicator lights

Selection and ordering data




Indicator lights	Operational voltage		Color		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG								
	at AC, rated value	at DC, rated value	of actuating element	of light source													
	V	V			d	Article No.	Price per PU										
With smooth lens and integrated LED																	
 3SU1152-6AA50-1AA0	24	24	Amber	Amber	5	3SU1152-6AA00-1AA0		1	1 unit	41J							
			Red	Red	▶	3SU1152-6AA20-1AA0											
			Yellow	Yellow	▶	3SU1152-6AA30-1AA0											
			Green	Green	▶	3SU1152-6AA40-1AA0											
			Blue	Blue	3	3SU1152-6AA50-1AA0											
			White	White	▶	3SU1152-6AA60-1AA0											
			Clear	White	5	3SU1152-6AA70-1AA0											
			 3SU1156-6AA60-1AA0	110	--	Amber					Amber	5	3SU1153-6AA00-1AA0		1	1 unit	41J
Red	Red	▶				3SU1153-6AA20-1AA0											
Yellow	Yellow	3				3SU1153-6AA30-1AA0											
Green	Green	▶				3SU1153-6AA40-1AA0											
Blue	Blue	5				3SU1153-6AA50-1AA0											
White	White	3				3SU1153-6AA60-1AA0											
Clear	White	5				3SU1153-6AA70-1AA0											
 3SU1156-6AA60-1AA0	230	--				Red	Red	▶	3SU1156-6AA20-1AA0		1	1 unit	41J				
			Yellow	Yellow	3	3SU1156-6AA30-1AA0											
			Green	Green	▶	3SU1156-6AA40-1AA0											
			Blue	Blue	5	3SU1156-6AA50-1AA0											
			White	White	3	3SU1156-6AA60-1AA0											
			Clear	White	5	3SU1156-6AA70-1AA0											
			Spring-type terminals														
			 3SU1152-6AA40-3AA0	24	24	Red	Red	3	3SU1152-6AA20-3AA0						1	1 unit	41J
Yellow	Yellow	5				3SU1152-6AA30-3AA0											
Green	Green	3				3SU1152-6AA40-3AA0											
Blue	Blue	3				3SU1152-6AA50-3AA0											
White	White	5				3SU1152-6AA60-3AA0											
Clear	White	5				3SU1152-6AA70-3AA0											
 3SU1156-6AA20-3AA0	110	--				Red	Red	5	3SU1153-6AA20-3AA0		1	1 unit	41J				
						Yellow	Yellow	5	3SU1153-6AA30-3AA0								
			Green	Green	5	3SU1153-6AA40-3AA0											
			Blue	Blue	5	3SU1153-6AA50-3AA0											
			White	White	5	3SU1153-6AA60-3AA0											
			Clear	White	5	3SU1153-6AA70-3AA0											
			 3SU1156-6AA20-3AA0	230	--	Red	Red	5	3SU1156-6AA20-3AA0						1	1 unit	41J
						Yellow	Yellow	5	3SU1156-6AA30-3AA0								
Green	Green	5				3SU1156-6AA40-3AA0											
Blue	Blue	5				3SU1156-6AA50-3AA0											
White	White	5				3SU1156-6AA60-3AA0											
Clear	White	5				3SU1156-6AA70-3AA0											

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny Compact Units

Indicator lights

Selection and ordering data


	Operational voltage		Color		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
	at AC, rated value	at DC, rated value	of actuating element	of light source						
	V	V			d	Article No.	Price per PU			
Indicator lights <i>NEW</i>										
	24	24	Amber	Amber	5	3SU1251-6AB00-1AA0		1	1 unit	41J
			Red	Red	▶	3SU1251-6AB20-1AA0				
			Yellow	Yellow	▶	3SU1251-6AB30-1AA0				
			Green	Green	▶	3SU1251-6AB40-1AA0				
			Blue	Blue	5	3SU1251-6AB50-1AA0				
			White	White	▶	3SU1251-6AB60-1AA0				
			Clear	Clear	3	3SU1251-6AB70-1AA0				
3SU1251-6AB50-1AA0										
	110	110	Amber	Amber	5	3SU1251-6AC00-1AA0		1	1 unit	41J
			Red	Red	3	3SU1251-6AC20-1AA0				
			Yellow	Yellow	5	3SU1251-6AC30-1AA0				
			Green	Green	5	3SU1251-6AC40-1AA0				
			Blue	Blue	5	3SU1251-6AC50-1AA0				
			White	White	5	3SU1251-6AC60-1AA0				
			Clear	Clear	5	3SU1251-6AC70-1AA0				
			3SU1251-6AC30-1AA0							
	230	230	Amber	Amber	5	3SU1251-6AF00-1AA0		1	1 unit	41J
			Red	Red	3	3SU1251-6AF20-1AA0				
			Yellow	Yellow	5	3SU1251-6AF30-1AA0				
			Green	Green	5	3SU1251-6AF40-1AA0				
			Blue	Blue	5	3SU1251-6AF50-1AA0				
			White	White	5	3SU1251-6AF60-1AA0				
			Clear	Clear	5	3SU1251-6AF70-1AA0				
			3SU1251-6AF30-1AA0							
Indicator lights with "traffic light" LED										
	6 ... 24	6 ... 24	Clear	Red/Yellow/ Green	▶	3SU1251-6AG24-1AA0		1	1 unit	41J
	110	--	Clear	Red/Yellow/ Green	▶	3SU1251-6AC24-1AA0				
	230	--	Clear	Red/Yellow/ Green	▶	3SU1251-6AF24-1AA0				
3SU1251-6AG24-1AA0										

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny
Compact Units

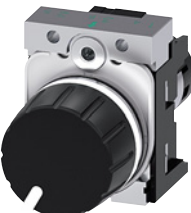
Acoustic signaling devices/potentiometers

Selection and ordering data

Operational voltage		Volume level	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
at AC, rated value	at DC, rated value							
V	V	dB	d	Article No.	Price per PU			
Acoustic signaling devices								
	24	24	90	5	3SU1250-6KB10-1AA0	1	1 unit	41J
	110	--	90	5	3SU1250-6KC10-1AA0	1	1 unit	41J
	230	--	90	5	3SU1250-6KF10-1AA0	1	1 unit	41J

3SU1250-6KB10-1AA0

Selection and ordering data

Version of actuating element	Operating principle	Adjustable resistance	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
								kΩ
Potentiometers								
	Rotary knob	Stepless	1	▶	3SU1250-2PQ10-1AA0	1	1 unit	41J
			4.7	▶	3SU1250-2PR10-1AA0	1	1 unit	41J
			10	▶	3SU1250-2PS10-1AA0	1	1 unit	41J
			47	▶	3SU1250-2PT10-1AA0	1	1 unit	41J
			100	▶	3SU1250-2PU10-1AA0	1	1 unit	41J
			470	▶	3SU1250-2PV10-1AA0	1	1 unit	41J

3SU1250-2PQ10-1AA0

Labeling plates for potentiometers, [see page 13/132](#).

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny Compact Units

Pushbuttons with extended stroke

Selection and ordering data

Version	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Pushbuttons with extended stroke

For actuating relays, can only be combined with extension plunger, no contact module or LED module required



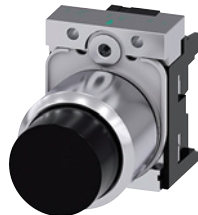
3SU1250-0EB40-0AA0

Pushbuttons with flat button

Red 5
Green 5
Blue 7

3SU1250-0EB20-0AA0
3SU1250-0EB40-0AA0
3SU1250-0EB50-0AA0

1 1 unit 41J
1 1 unit 41J
1 1 unit 41J



3SU1250-0FB10-0AA0

Pushbuttons with raised button

Black ▶

3SU1250-0FB10-0AA0

1 1 unit 41J



3SU1251-0EB20-0AA0

Pushbuttons with flat transparent button for insertion of insert labels

Red 3
Clear 3

3SU1251-0EB20-0AA0
3SU1251-0EB70-0AA0

1 1 unit 41J
1 1 unit 41J

Version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Accessories



3SU1900-0KG10-0AA0

Extension plungers

Plastic

Gray ▶

3SU1900-0KG10-0AA0

1 1 unit 41J

For compensation of the distance between the pushbutton and the unlatching button of an overload relay






SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny

Actuating and Signaling Elements

Pushbuttons

Selection and ordering data




Version of actuating element	Operating principle	Color, marking	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Front ring version	Unlatching method		d						
Pushbuttons									
 3SU1050-0AB40-0AC0	Pushbuttons with flat button Standard	Momentary contact	Black	▶	3SU1050-0AB10-0AA0		1	1 unit	41J
			Black, "O"	▶	3SU1050-0AB10-0AD0		1	1 unit	41J
			Red	▶	3SU1050-0AB20-0AA0		1	1 unit	41J
			Red, "O"	▶	3SU1050-0AB20-0AD0		1	1 unit	41J
			Yellow	3	3SU1050-0AB30-0AA0		1	1 unit	41J
			Green	▶	3SU1050-0AB40-0AA0		1	1 unit	41J
			Green, "I"	▶	3SU1050-0AB40-0AC0		1	1 unit	41J
			Blue	3	3SU1050-0AB50-0AA0		1	1 unit	41J
			Blue, "R"	5	3SU1050-0AB50-0AR0		1	1 unit	41J
			White	3	3SU1050-0AB60-0AA0		1	1 unit	41J
			White, "I"	5	3SU1050-0AB60-0AB0		1	1 unit	41J
			White, "I"	▶	3SU1050-0AB60-0AC0		1	1 unit	41J
			Clear	3	3SU1050-0AB70-0AA0		1	1 unit	41J
			Gray	▶	3SU1050-0AB80-0AA0		1	1 unit	41J
 3SU1050-0AA30-0AA0	Latching Push to unlatch		Black	▶	3SU1050-0AA10-0AA0		1	1 unit	41J
			Red	▶	3SU1050-0AA20-0AA0		1	1 unit	41J
			Yellow	▶	3SU1050-0AA30-0AA0		1	1 unit	41J
			Green	▶	3SU1050-0AA40-0AA0		1	1 unit	41J
			Blue	▶	3SU1050-0AA50-0AA0		1	1 unit	41J
			White	▶	3SU1050-0AA60-0AA0		1	1 unit	41J
 3SU1050-0BB20-0AA0	Pushbuttons with raised button Standard	Momentary contact	Black	3	3SU1050-0BB10-0AA0		1	1 unit	41J
			Red	▶	3SU1050-0BB20-0AA0		1	1 unit	41J
			Yellow	▶	3SU1050-0BB30-0AA0		1	1 unit	41J
			Green	▶	3SU1050-0BB40-0AA0		1	1 unit	41J
			Blue	▶	3SU1050-0BB50-0AA0		1	1 unit	41J
			White	▶	3SU1050-0BB60-0AA0		1	1 unit	41J
			Latching Push to unlatch	Red	5	3SU1050-0BA20-0AA0		1	1 unit
 3SU1050-0CB50-0AA0	Pushbuttons with flat button Raised	Momentary contact	Black	5	3SU1050-0CB10-0AA0		1	1 unit	41J
			Red	5	3SU1050-0CB20-0AA0		1	1 unit	41J
			Yellow	5	3SU1050-0CB30-0AA0		1	1 unit	41J
			Green	5	3SU1050-0CB40-0AA0		1	1 unit	41J
			Blue	5	3SU1050-0CB50-0AA0		1	1 unit	41J
			White	5	3SU1050-0CB60-0AA0		1	1 unit	41J
 3SU1051-0CB40-0AA0	Illuminated pushbuttons with flat button Raised	Momentary contact	Green	X	3SU1051-0CB40-0AA0		1	20 units	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny

Actuating and Signaling Elements

Pushbuttons

Version of actuating element	Operating principle	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Front ring version	Unlatching method		d					
Pushbuttons								
 <p>Illuminated pushbuttons with flat button Standard</p> <p>3SU1051-0AB30-0AA0</p>	Momentary contact	Amber	5	3SU1051-0AB00-0AA0		1	1 unit	41J
		Red	▶	3SU1051-0AB20-0AA0		1	1 unit	41J
		Yellow	▶	3SU1051-0AB30-0AA0		1	1 unit	41J
		Green	▶	3SU1051-0AB40-0AA0		1	1 unit	41J
		Blue	▶	3SU1051-0AB50-0AA0		1	1 unit	41J
		White	▶	3SU1051-0AB60-0AA0		1	1 unit	41J
		Clear	▶	3SU1051-0AB70-0AA0		1	1 unit	41J
 <p>3SU1051-0AA20-0AA0</p>	Latching	Red	▶	3SU1051-0AA20-0AA0		1	1 unit	41J
	Push to unlatch	Yellow	▶	3SU1051-0AA30-0AA0		1	1 unit	41J
		Green	▶	3SU1051-0AA40-0AA0		1	1 unit	41J
		Blue	▶	3SU1051-0AA50-0AA0		1	1 unit	41J
		White	▶	3SU1051-0AA60-0AA0		1	1 unit	41J
		Clear	▶	3SU1051-0AA70-0AA0		1	1 unit	41J
		 <p>Illuminated pushbuttons with raised button Standard</p> <p>3SU1051-0BB20-0AA0</p>	Momentary contact	Amber	5	3SU1051-0BB00-0AA0		1
Red	▶			3SU1051-0BB20-0AA0		1	1 unit	41J
Yellow	▶			3SU1051-0BB30-0AA0		1	1 unit	41J
Green	▶			3SU1051-0BB40-0AA0		1	1 unit	41J
Blue	▶			3SU1051-0BB50-0AA0		1	1 unit	41J
White	5			3SU1051-0BB60-0AA0		1	1 unit	41J
Clear	3			3SU1051-0BB70-0AA0		1	1 unit	41J





SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny

Actuating and Signaling Elements

Twin pushbuttons

Selection and ordering data

Version of actuating element	Operating principle	Color	Marking Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Twin pushbuttons										
 <p>3SU1050-3AB66-0AL0</p>	Twin pushbuttons flat, flat	Momentary contact	Green/Red	-- "I"/"O"	3 3	3SU1050-3AB42-0AA0 3SU1050-3AB42-0AK0		1 1	1 unit 1 unit	41J 41J
			White/Black	-- "I"/"O"	3 3	3SU1050-3AB61-0AA0 3SU1050-3AB61-0AK0		1 1	1 unit 1 unit	41J 41J
			White/White	-- "-"/"+"	3 5	3SU1050-3AB66-0AA0 3SU1050-3AB66-0AL0		1 1	1 unit 1 unit	41J 41J
				Arrows, hor.	5	3SU1050-3AB66-0AM0		1	1 unit	41J
			Black/Black	-- ○ ○	3 5	3SU1050-3AB11-0AA0 3SU1050-3AB11-0AQ0		1 1	1 unit 1 unit	41J 41J
				5264/5265 (IEC 60417)						
 <p>3SU1050-3BB42-0AK0</p>	Twin pushbuttons flat, raised	Momentary contact	Green/Red	-- "I"/"O"	3 3	3SU1050-3BB42-0AA0 3SU1050-3BB42-0AK0		1 1	1 unit 1 unit	41J 41J
			White/Black	-- "I"/"O"	3 5	3SU1050-3BB61-0AA0 3SU1050-3BB61-0AK0		1 1	1 unit 1 unit	41J 41J
 <p>3SU1051-3AB42-0AN0</p>	Twin pushbuttons flat, flat, illuminated	Momentary contact	Green/Red	-- "I"/"O"	▶ 5	3SU1051-3AB42-0AA0 3SU1051-3AB42-0AK0		1 1	1 unit 1 unit	41J 41J
				Arrows, vert.	5	3SU1051-3AB42-0AN0		1	1 unit	41J
			White/Black	-- "I"/"O"	▶ 3	3SU1051-3AB61-0AA0 3SU1051-3AB61-0AK0		1 1	1 unit 1 unit	41J 41J
 <p>3SU1051-3BB61-0AA0</p>	Twin pushbuttons flat, raised, illuminated	Momentary contact	Green/Red	-- "I"/"O"	▶ 3	3SU1051-3BB42-0AA0 3SU1051-3BB42-0AK0		1 1	1 unit 1 unit	41J 41J
			White/Black	-- "I"/"O"	3 5	3SU1051-3BB61-0AA0 3SU1051-3BB61-0AK0		1 1	1 unit 1 unit	41J 41J


SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny

Actuating and Signaling Elements

Mushroom pushbuttons

Selection and ordering data








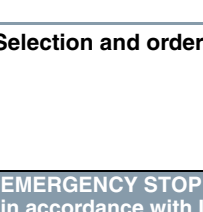

Version of actuating element	Operating principle Unlatching method	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Mushroom pushbuttons									
 30 mm diameter, 2 positions 3SU1050-1AD20-0AA0	2 switch positions								
	Momentary contact	Black	▶	3SU1050-1AD10-0AA0		1	1 unit	41J	
		Red	▶	3SU1050-1AD20-0AA0		1	1 unit	41J	
		Yellow	▶	3SU1050-1AD30-0AA0		1	1 unit	41J	
		Green	▶	3SU1050-1AD40-0AA0		1	1 unit	41J	
	Latching	Black	▶	3SU1050-1AA10-0AA0		1	1 unit	41J	
	Pull to unlatch	Red	▶	3SU1050-1AA20-0AA0		1	1 unit	41J	
 40 mm diameter, 2 positions 3SU1050-1BD30-0AA0	Momentary contact	Black	3	3SU1050-1BD10-0AA0		1	1 unit	41J	
		Red	5	3SU1050-1BD20-0AA0		1	1 unit	41J	
		Yellow	5	3SU1050-1BD30-0AA0		1	1 unit	41J	
		Green	5	3SU1050-1BD40-0AA0		1	1 unit	41J	
	Latching	Black	3	3SU1050-1BA10-0AA0		1	1 unit	41J	
Pull to unlatch	Red	3	3SU1050-1BA20-0AA0		1	1 unit	41J		
		Yellow	5	3SU1050-1BA30-0AA0		1	1 unit	41J	
 60 mm diameter, 2 positions 3SU1050-1CD40-0AA0	Momentary contact	Black	5	3SU1050-1CD10-0AA0		1	1 unit	41J	
		Red	5	3SU1050-1CD20-0AA0		1	1 unit	41J	
		Yellow	5	3SU1050-1CD30-0AA0		1	1 unit	41J	
		Green	5	3SU1050-1CD40-0AA0		1	1 unit	41J	
	Latching	Black	5	3SU1050-1CA10-0AA0		1	1 unit	41J	
Pull to unlatch	Red	5	3SU1050-1CA20-0AA0		1	1 unit	41J		
 30 mm diameter, 2 positions, illuminated 3SU1051-1AD60-0AA0	Momentary contact	Yellow	5	3SU1051-1AD30-0AA0		1	1 unit	41J	
		Green	5	3SU1051-1AD40-0AA0		1	1 unit	41J	
		Blue	NEW	5	3SU1051-1AD50-0AA0		1	1 unit	41J
		White	5	3SU1051-1AD60-0AA0		1	1 unit	41J	
	Latching	Amber	5	3SU1051-1AA00-0AA0		1	1 unit	41J	
	Pull to unlatch	Red	5	3SU1051-1AA20-0AA0		1	1 unit	41J	
		Yellow	5	3SU1051-1AA30-0AA0		1	1 unit	41J	
		Green	5	3SU1051-1AA40-0AA0		1	1 unit	41J	
		Blue	5	3SU1051-1AA50-0AA0		1	1 unit	41J	
	Clear	5	3SU1051-1AA70-0AA0		1	1 unit	41J		
 40 mm diameter, 2 positions, illuminated 3SU1051-1BD40-0AA0	Momentary contact	Amber	5	3SU1051-1BD00-0AA0		1	1 unit	41J	
		Yellow	5	3SU1051-1BD30-0AA0		1	1 unit	41J	
		Green	5	3SU1051-1BD40-0AA0		1	1 unit	41J	
		White	5	3SU1051-1BD60-0AA0		1	1 unit	41J	
	Latching	Amber	5	3SU1051-1BA00-0AA0		1	1 unit	41J	
	Pull to unlatch	Red	3	3SU1051-1BA20-0AA0		1	1 unit	41J	
		Yellow	5	3SU1051-1BA30-0AA0		1	1 unit	41J	
		Green	5	3SU1051-1BA40-0AA0		1	1 unit	41J	
		Blue	5	3SU1051-1BA50-0AA0		1	1 unit	41J	
	Clear	5	3SU1051-1BA70-0AA0		1	1 unit	41J		
 60 mm diameter, 2 positions, illuminated 3SU1051-1CA50-0AA0	Momentary contact	Amber	5	3SU1051-1CD00-0AA0		1	1 unit	41J	
	None	Yellow	5	3SU1051-1CD30-0AA0		1	1 unit	41J	
		Green	5	3SU1051-1CD40-0AA0		1	1 unit	41J	
		White	5	3SU1051-1CD60-0AA0		1	1 unit	41J	
	Latching	Red	5	3SU1051-1CA20-0AA0		1	1 unit	41J	
	Pull to unlatch	Yellow	5	3SU1051-1CA30-0AA0		1	1 unit	41J	
		Green	5	3SU1051-1CA40-0AA0		1	1 unit	41J	
		Blue	5	3SU1051-1CA50-0AA0		1	1 unit	41J	
		Clear	5	3SU1051-1CA70-0AA0		1	1 unit	41J	

SIRIUS ACT Pushbuttons and Indicator Lights



Actuators and Indicators, 22 mm, Metal, Shiny

Actuating and Signaling Elements

Mushroom pushbuttons/EMERGENCY STOP mushroom pushbuttons

Version of actuating element	Operating principle Unlatching method	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mushroom pushbuttons								
2 switch positions								
 3SU1050-1HB10-0AA0	With positive latching Rotate to unlatch	Black	5	3SU1050-1HB10-0AA0		1	1 unit	41J
		Yellow	5	3SU1050-1HB30-0AA0		1	1 unit	41J
3 switch positions								
 3SU1050-1EA20-0AA0	Momentary contact 	Black	5	3SU1050-1ED10-0AA0		1	1 unit	41J
		Red	5	3SU1050-1ED20-0AA0		1	1 unit	41J
 3SU1050-1EA20-0AA0	Latching 	Black	5	3SU1050-1EA10-0AA0		1	1 unit	41J
		Red	5	3SU1050-1EA20-0AA0		1	1 unit	41J
 3SU1051-1EA40-0AA0	Pull to unlatch 	Red	5	3SU1051-1ED20-0AA0		1	1 unit	41J
		White	5	3SU1051-1ED60-0AA0		1	1 unit	41J
 3SU1051-1EA40-0AA0	Latching 	Red	5	3SU1051-1EA20-0AA0		1	1 unit	41J
		Green	5	3SU1051-1EA40-0AA0		1	1 unit	41J

Selection and ordering data

Version of actuating element	Outer diameter of mushroom	Make of lock	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMERGENCY STOP mushroom pushbuttons, in accordance with ISO 13850 and IEC 60947-5-5									
With pull-to-unlatch mechanism									
 3SU1050-1HA20-0AA0	40	--	Red	3	3SU1050-1HA20-0AA0		1	1 unit	41J
			Red	3	3SU1050-1HA20-0AA0		1	1 unit	41J
With rotate-to-unlatch mechanism									
 3SU1050-1GB20-0AA0	33.8	--	Red	3	3SU1050-1GB20-0AA0		1	1 unit	41J
			Red	3	3SU1050-1GB20-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny

Actuating and Signaling Elements

EMERGENCY STOP mushroom pushbuttons

Version of actuating element	Outer diameter of mushroom	Make of lock	Color	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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EMERGENCY STOP mushroom pushbuttons, in accordance with ISO 13850 and IEC 60947-5-5

With rotate-to-unlatch mechanism



3SU1050-1HB20-0AA0



3SU1050-1JB20-0AA0

With positive latching, 2 positions	40	--	Red	--	▶	3SU1050-1HB20-0AA0		1	1 unit	41J
	60	--	Red	--	5	3SU1050-1JB20-0AA0		1	1 unit	41J
With latching, 2 positions	40	--	Red	--	NEW 3	3SU1050-1LB20-0AA0		1	1 unit	41J

With rotate-to-unlatch mechanism, can be illuminated



3SU1051-1HB20-0AA0

With positive latching, 2 positions	33.8	--	Red	--	▶	3SU1051-1GB20-0AA0		1	1 unit	41J
	40				▶	3SU1051-1HB20-0AA0		1	1 unit	41J
	60				▶	3SU1051-1JB20-0AA0		1	1 unit	41J

With key-operated release



3SU1050-1HF20-0AA0



3SU1050-1HQ20-0AA0



3SU1050-1HR20-0AA0

With positive latching, 2 positions	40	RONIS SB30	Red	2	3	3SU1050-1HF20-0AA0		1	1 unit	41J
		RONIS 455		2	5	3SU1050-1HG20-0AA0		1	1 unit	41J
		RONIS 421		2	5	3SU1050-1HH20-0AA0		1	1 unit	41J
		BKS S1	Red	2	5	3SU1050-1HK20-0AA0		1	1 unit	41J
		BKS E7		0	5	3SU1050-1HM20-0AA0		1	1 unit	41J
		BKS E9		0	5	3SU1050-1HN20-0AA0		1	1 unit	41J
		O.M.R. 73037	Red	2	5	3SU1050-1HQ20-0AA0		1	1 unit	41J
		CES SSG10	Red	2	3	3SU1050-1HR20-0AA0		1	1 unit	41J
		CES SSP9		2	5	3SU1050-1HS20-0AA0		1	1 unit	41J
		CES VL5	Black	2	5	3SU1050-1HU10-0AA0		1	1 unit	41J
			Red	2	5	3SU1050-1HU20-0AA0		1	1 unit	41J
		CES VL1		2	5	3SU1050-1HV20-0AA0		1	1 unit	41J
		IKON 360012K1	Red	2	5	3SU1050-1HX20-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny
Actuating and Signaling Elements

Toggle switches/selector switches

Selection and ordering data

Number of switching positions	Number of command points	Color of actuating element	Operating principle of the actuating element	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Toggle switches



3SU1050-3EA10-0AA0

2	1	Black	Latching	5	3SU1050-3EA10-0AA0		1	1 unit	41J
			Momentary contact, reset from above	5	3SU1050-3EC10-0AA0		1	1 unit	41J

Selection and ordering data

Version of actuating element	Operating principle	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Selector switches

2 switch positions, can be illuminated



3SU1052-2BC20-0AA0

Selector, short black actuator	Momentary contact, 45° (10:30/12 o'clock), reset from center to left	Black	▶	3SU1052-2BC10-0AA0		1	1 unit	41J
		Red	▶	3SU1052-2BC20-0AA0		1	1 unit	41J
		Yellow	▶	3SU1052-2BC30-0AA0		1	1 unit	41J
		Green	▶	3SU1052-2BC40-0AA0		1	1 unit	41J
		Blue	▶	3SU1052-2BC50-0AA0		1	1 unit	41J
		White	▶	3SU1052-2BC60-0AA0		1	1 unit	41J



3SU1052-2BF40-0AA0

Latching, 90° (10:30/1:30 o'clock)	Amber	5	▶	3SU1052-2BF00-0AA0		1	1 unit	41J
		Black	▶	3SU1052-2BF10-0AA0		1	1 unit	41J
		Red	▶	3SU1052-2BF20-0AA0		1	1 unit	41J
		Yellow	▶	3SU1052-2BF30-0AA0		1	1 unit	41J
		Green	▶	3SU1052-2BF40-0AA0		1	1 unit	41J
		Blue	▶	3SU1052-2BF50-0AA0		1	1 unit	41J
		White	▶	3SU1052-2BF60-0AA0		1	1 unit	41J



3SU1052-2CF60-0AA0

Selector, long black actuator	Momentary contact, 45° (10:30/12 o'clock), reset from center to left	Black	5	3SU1052-2CC10-0AA0		1	1 unit	41J
		Yellow	5	3SU1052-2CC30-0AA0		1	1 unit	41J
		Green	5	3SU1052-2CC40-0AA0		1	1 unit	41J
		Blue	5	3SU1052-2CC50-0AA0		1	1 unit	41J
		White	5	3SU1052-2CC60-0AA0		1	1 unit	41J



Latching, 90° (10:30/1:30 o'clock)	Black	5	▶	3SU1052-2CF10-0AA0		1	1 unit	41J
		Red	5	3SU1052-2CF20-0AA0		1	1 unit	41J
		Yellow	5	3SU1052-2CF30-0AA0		1	1 unit	41J
		Green	5	3SU1052-2CF40-0AA0		1	1 unit	41J
		Blue	5	3SU1052-2CF50-0AA0		1	1 unit	41J
		White	5	3SU1052-2CF60-0AA0		1	1 unit	41J



SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny

Actuating and Signaling Elements

Selector switches

Version of actuating element	Operating principle	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Selector switches

3 switch positions, can be illuminated

 <p>3SU1052-2BM50-0AA0</p>	Selector, short black actuator 	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right	Amber Black Red Yellow Green Blue White	5 ▶ 5 5 ▶ ▶ ▶	3SU1052-2BM00-0AA0 3SU1052-2BM10-0AA0 3SU1052-2BM20-0AA0 3SU1052-2BM30-0AA0 3SU1052-2BM40-0AA0 3SU1052-2BM50-0AA0 3SU1052-2BM60-0AA0	1 1 1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J 41J 41J 41J								
		 <p>3SU1052-2BL30-0AA0</p>	Latching, 2x45° (10:30/12/1:30 o'clock) 	Latching, 2x45° (10:30/12/1:30 o'clock)	Amber Black Red Yellow Green White	5 ▶ ▶ ▶ ▶ 3 ▶	3SU1052-2BL00-0AA0 3SU1052-2BL10-0AA0 3SU1052-2BL20-0AA0 3SU1052-2BL30-0AA0 3SU1052-2BL40-0AA0 3SU1052-2BL60-0AA0	1 1 1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J 41J 41J 41J						
				 <p>3SU1052-2BP60-0AA0</p>	Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to the right 	Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to the right	Black Red Green White	5 5 5 5	3SU1052-2BP10-0AA0 3SU1052-2BP20-0AA0 3SU1052-2BP40-0AA0 3SU1052-2BP60-0AA0	1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J				
						 <p>3SU1052-2BN60-0AA0</p>	Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left 	Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left	Black Red Green White	3 5 ▶ 3	3SU1052-2BN10-0AA0 3SU1052-2BN20-0AA0 3SU1052-2BN40-0AA0 3SU1052-2BN60-0AA0	1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J		
								 <p>3SU1052-2CL40-0AA0</p>	Selector, long black actuator 	Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right	Black Red Green White	3 5 5 3	3SU1052-2CM10-0AA0 3SU1052-2CM20-0AA0 3SU1052-2CM40-0AA0 3SU1052-2CM60-0AA0	1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
										 <p>3SU1052-2CL60-0AA0</p>	Latching, 2x45° (10:30/12/1:30 o'clock) 	Latching, 2x45° (10:30/12/1:30 o'clock)	Black Red Green White	5 5 5 5	3SU1052-2CL10-0AA0 3SU1052-2CL20-0AA0 3SU1052-2CL40-0AA0 3SU1052-2CL60-0AA0	1 1 1 1
 <p>3SU1052-2CP60-0AA0</p>	Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to the right 			Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to the right	Black Red White							5 5 5	3SU1052-2CP10-0AA0 3SU1052-2CP20-0AA0 3SU1052-2CP60-0AA0	1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
		 <p>3SU1052-2CN60-0AA0</p>	Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left 	Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left	Black Red White Black	5 5 5 NEW 5	3SU1052-2CN10-0AA0 3SU1052-2CN20-0AA0 3SU1052-2CN60-0AA0 3SU1042-2GL10-0AA0					1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J		
				Lockable with 2 padlocks or carabiner hooks												

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny

Actuating and Signaling Elements

Selector switches

Version of actuating element	Operating principle	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			d					

Selector switches**4 switch positions**

3SU1050-2AS60-0AA0

Rotary knob

Latching, 4x90°
(3/6/9/12 o'clock)

White

3

3SU1050-2AS60-0AA0

1

1 unit

41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny

Actuating and Signaling Elements

Key-operated switches

Selection and ordering data

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Key-operated switches

2 switch positions



3SU1050-4BC01-0AA0

Momentary contact, 45° (10:30/12 o'clock), reset from center to left



RONIS, SB30	O	2	3		3SU1050-4BC01-0AA0		1	1 unit	41J
RONIS, 455	O	2	5		3SU1050-4CC01-0AA0		1	1 unit	41J
O.M.R. 73037, red	O	2	5		3SU1050-4FC01-0AA0		1	1 unit	41J
O.M.R. 73038, light blue	O	2	5		3SU1050-4GC01-0AA0		1	1 unit	41J
O.M.R. 73034, black	O	2	5		3SU1050-4HC01-0AA0		1	1 unit	41J
O.M.R. 73033, yellow	O	2	5		3SU1050-4JC01-0AA0		1	1 unit	41J
CES, SSG10	O	2	3		3SU1050-5BC01-0AA0		1	1 unit	41J
CES, LSG1	O	2	5		3SU1050-5HC01-0AA0		1	1 unit	41J
CES, VL5	O	2	5		3SU1050-5KC01-0AA0		1	1 unit	41J
CES, STGH10	O	2	5		3SU1050-5LC01-0AA0		1	1 unit	41J
BKS, S1	O	2	5		3SU1050-5PC01-0AA0		1	1 unit	41J
IKON, 360012K1	O	2	5		3SU1050-5XC01-0AA0		1	1 unit	41J



3SU1050-4BF01-0AA0

Latching, 90° (10:30/1:30 o'clock)



RONIS, SB30	O	2	3		3SU1050-4BF01-0AA0		1	1 unit	41J
	O+I	2	3		3SU1050-4BF11-0AA0		1	1 unit	41J
	I	2	5		3SU1050-4BF21-0AA0		1	1 unit	41J
RONIS, 455	O	2	5		3SU1050-4CF01-0AA0		1	1 unit	41J
	O+I	2	5		3SU1050-4CF11-0AA0		1	1 unit	41J
	I	2	5		3SU1050-4CF21-0AA0		1	1 unit	41J
RONIS, 421	O+I	2	5		3SU1050-4DF11-0AA0		1	1 unit	41J



3SU1050-4GF11-0AA0

O.M.R. 73037, red	O	2	5		3SU1050-4FF01-0AA0		1	1 unit	41J
	O+I	2	5		3SU1050-4FF11-0AA0		1	1 unit	41J
	I	2	5		3SU1050-4FF21-0AA0		1	1 unit	41J
O.M.R. 73038, light blue	O	2	5		3SU1050-4GF01-0AA0		1	1 unit	41J
	O+I	2	5		3SU1050-4GF11-0AA0		1	1 unit	41J
	I	2	5		3SU1050-4GF21-0AA0		1	1 unit	41J
O.M.R. 73034, black	O	2	5		3SU1050-4HF01-0AA0		1	1 unit	41J
	O+I	2	5		3SU1050-4HF11-0AA0		1	1 unit	41J
	I	2	5		3SU1050-4HF21-0AA0		1	1 unit	41J
O.M.R. 73033, yellow	O	2	5		3SU1050-4JF01-0AA0		1	1 unit	41J
	O+I	2	5		3SU1050-4JF11-0AA0		1	1 unit	41J
	I	2	5		3SU1050-4JF21-0AA0		1	1 unit	41J



3SU1050-5BF01-0AA0

CES, SSG10	O	2	3		3SU1050-5BF01-0AA0		1	1 unit	41J
	O+I	2	3		3SU1050-5BF11-0AA0		1	1 unit	41J
	I	2	5		3SU1050-5BF21-0AA0		1	1 unit	41J
CES, SSG10 with key monitoring	O	2	NEW 5		3SU1050-5JF01-0AA0		1	1 unit	41J
CES, LSG1	O	2	5		3SU1050-5HF01-0AA0		1	1 unit	41J
	O+I	2	5		3SU1050-5HF11-0AA0		1	1 unit	41J
CES, VL5	O	2	5		3SU1050-5KF01-0AA0		1	1 unit	41J
CES, STGH10	O+I	2	5		3SU1050-5LF11-0AA0		1	1 unit	41J



3SU1050-5PF01-0AA0

BKS, S1	O	2	5		3SU1050-5PF01-0AA0		1	1 unit	41J
	O+I	2	5		3SU1050-5PF11-0AA0		1	1 unit	41J
	I	2	5		3SU1050-5PF21-0AA0		1	1 unit	41J
BKS, E1	O	0	5		3SU1050-5QF01-0AA0		1	1 unit	41J
	O+I	0	5		3SU1050-5QF11-0AA0		1	1 unit	41J
BKS, E2	O	0	3		3SU1050-5RF01-0AA0		1	1 unit	41J
	O+I	0	5		3SU1050-5RF11-0AA0		1	1 unit	41J
BKS, E7	O	0	5		3SU1050-5SF01-0AA0		1	1 unit	41J
	O+I	0	5		3SU1050-5SF11-0AA0		1	1 unit	41J
BKS, E9	O	0	5		3SU1050-5TF01-0AA0		1	1 unit	41J
	O+I	0	5		3SU1050-5TF11-0AA0		1	1 unit	41J
IKON, 360012K1	O	2	5		3SU1050-5XF01-0AA0		1	1 unit	41J
	O+I	2	5		3SU1050-5XF11-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny
Actuating and Signaling Elements

Key-operated switches

Operating principle	Make of lock	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Key-operated switches

3 switch positions



3SU1050-4BM01-0AA0

Momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from left + right



RONIS, SB30	O	2	5		3SU1050-4BM01-0AA0		1	1 unit	41J
RONIS, 455	O	2	5		3SU1050-4CM01-0AA0		1	1 unit	41J
O.M.R. 73034, black	O	2	5		3SU1050-4HM01-0AA0		1	1 unit	41J
CES, SSG10	O	2	5		3SU1050-5BM01-0AA0		1	1 unit	41J
CES, STGH10	O	2	5		3SU1050-5LM01-0AA0		1	1 unit	41J
BKS, S1	O	2	5		3SU1050-5PM01-0AA0		1	1 unit	41J
IKON, 360012K1	O	2	5		3SU1050-5XM01-0AA0		1	1 unit	41J

Latching, 2x45° (10:30/12/1:30 o'clock)



RONIS, SB30	O	2	5		3SU1050-4BL01-0AA0		1	1 unit	41J
	I+O+II	2	3		3SU1050-4BL11-0AA0		1	1 unit	41J
	I	2	5		3SU1050-4BL21-0AA0		1	1 unit	41J
	II	2	5		3SU1050-4BL31-0AA0		1	1 unit	41J
	I+II	2	5		3SU1050-4BL41-0AA0		1	1 unit	41J
	O+I	2	5		3SU1050-4BL51-0AA0		1	1 unit	41J
RONIS, 455	O	2	5		3SU1050-4CL01-0AA0		1	1 unit	41J
	I+O+II	2	5		3SU1050-4CL11-0AA0		1	1 unit	41J
RONIS, 421		2	5		3SU1050-4DL11-0AA0		1	1 unit	41J
O.M.R. 73037, red	I+O+II	2	5		3SU1050-4FL11-0AA0		1	1 unit	41J
O.M.R. 73038, light blue	O	2	5		3SU1050-4GL01-0AA0		1	1 unit	41J
	I+O+III	2	5		3SU1050-4GL11-0AA0		1	1 unit	41J
O.M.R. 73034, black	O	2	5		3SU1050-4HL01-0AA0		1	1 unit	41J
	I+O+II	2	5		3SU1050-4HL11-0AA0		1	1 unit	41J



3SU1050-4FL11-0AA0



3SU1050-5BL01-0AA0

CES, SSG10	O	2	5		3SU1050-5BL01-0AA0		1	1 unit	41J
	I+O+II	2	3		3SU1050-5BL11-0AA0		1	1 unit	41J
	I	2	5		3SU1050-5BL21-0AA0		1	1 unit	41J
	II	2	5		3SU1050-5BL31-0AA0		1	1 unit	41J
	I+II	2	5		3SU1050-5BL41-0AA0		1	1 unit	41J
CES, SSG10 with key monitoring	O	2	NEW 5		3SU1050-5JL01-0AA0		1	1 unit	41J

BKS, S1	O	2	5		3SU1050-5PL01-0AA0		1	1 unit	41J
	I+O+II	2	5		3SU1050-5PL11-0AA0		1	1 unit	41J
	I	2	5		3SU1050-5PL21-0AA0		1	1 unit	41J
	I+II	2	5		3SU1050-5PL41-0AA0		1	1 unit	41J

IKON, 360012K1	O	2	5		3SU1050-5XL01-0AA0		1	1 unit	41J
	I+O+II	2	5		3SU1050-5XL11-0AA0		1	1 unit	41J

Momentary contact/latching, 2x45° (10:30/12/1:30 o'clock), reset from left, latching to the right	RONIS, SB30	O	2	5	3SU1050-4BP01-0AA0		1	1 unit	41J
		O+II	2	5	3SU1050-4BP61-0AA0		1	1 unit	41J

O.M.R. 73034, black	II	2	5		3SU1050-4HP31-0AA0		1	1 unit	41J
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O.M.R. 73033, yellow	II	2	5		3SU1050-4JP31-0AA0		1	1 unit	41J
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CES, SSG10	O	2	5		3SU1050-5BP01-0AA0		1	1 unit	41J
	II	2	5		3SU1050-5BP31-0AA0		1	1 unit	41J
	O+II	2	5		3SU1050-5BP61-0AA0		1	1 unit	41J

BKS, S1	O	2	5		3SU1050-5PP01-0AA0		1	1 unit	41J
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Latching/momentary contact, 2x45° (10:30/12/1:30 o'clock), reset from right, latching to the left	RONIS, SB30	O	2	5	3SU1050-4BN01-0AA0		1	1 unit	41J
	I	2	5		3SU1050-4BN21-0AA0		1	1 unit	41J
	O+IO+I	2	5		3SU1050-4BN51-0AA0		1	1 unit	41J

CES, SSG10	O	2	5		3SU1050-5BN01-0AA0		1	1 unit	41J
	I	2	5		3SU1050-5BN21-0AA0		1	1 unit	41J
	O+I	2	5		3SU1050-5BN51-0AA0		1	1 unit	41J

CES, STGH10	O+I	2	5		3SU1050-5LN51-0AA0		1	1 unit	41J
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BKS, S1	O	2	5		3SU1050-5PN01-0AA0		1	1 unit	41J
	I	2	5		3SU1050-5PN21-0AA0		1	1 unit	41J
	O+I	2	5		3SU1050-5PN51-0AA0		1	1 unit	41J



3SU1050-4BP01-0AA0




SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, 22 mm, Metal, Shiny

Actuating and Signaling Elements

Coordinate switches/indicator lights

Selection and ordering data

Number of NO contacts (1 per direction)	Operating principle	Direction of actuation	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU			

Coordinate switches



3SU1050-7AC88-0AA0

Without mechanical interlock, 2 switch positions

2	Momentary contact	Horizontal	▶	3SU1050-7AC88-0AA0	1	1 unit	41J
		Vertical	▶	3SU1050-7AD88-0AA0	1	1 unit	41J
	Latching	Horizontal	▶	3SU1050-7AA88-0AA0	1	1 unit	41J
		Vertical	▶	3SU1050-7AB88-0AA0	1	1 unit	41J

Without mechanical interlock, 4 switch positions

4	Momentary contact	Horizontal/Vertical	▶	3SU1050-7AF88-0AA0	1	1 unit	41J
	Latching	Horizontal/Vertical	▶	3SU1050-7AE88-0AA0	1	1 unit	41J

With mechanical interlock, 2 switch positions

2	Momentary contact	Horizontal	▶	3SU1050-7BC88-0AA0	1	1 unit	41J
		Vertical	▶	3SU1050-7BD88-0AA0	1	1 unit	41J
	Latching	Horizontal	▶	3SU1050-7BA88-0AA0	1	1 unit	41J
		Vertical	▶	3SU1050-7BB88-0AA0	1	1 unit	41J

With mechanical interlock, 4 switch positions

4	Momentary contact	Horizontal/Vertical	▶	3SU1050-7BF88-0AA0	1	1 unit	41J
	Latching	Horizontal/Vertical	▶	3SU1050-7BE88-0AA0	1	1 unit	41J



3SU1050-7BC88-0AA0

Selection and ordering data

Type of product	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Indicator lights



3SU1051-6AA40-0AA0

With smooth lens

3	Amber	▶	3SU1051-6AA00-0AA0	1	1 unit	41J
	Red	▶	3SU1051-6AA20-0AA0	1	1 unit	41J
	Yellow	▶	3SU1051-6AA30-0AA0	1	1 unit	41J
	Green	▶	3SU1051-6AA40-0AA0	1	1 unit	41J
	Blue	▶	3SU1051-6AA50-0AA0	1	1 unit	41J
	White	▶	3SU1051-6AA60-0AA0	1	1 unit	41J
	Clear	▶	3SU1051-6AA70-0AA0	1	1 unit	41J

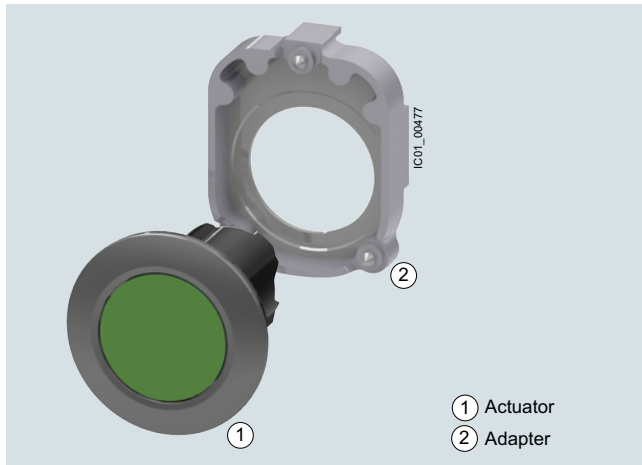
SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, Flat, 30 mm, Metal, Matte

Actuating and Signaling Elements


Pushbuttons

Overview



Actuators and indicators, flat, 30 mm, metal, matte, including adapter (adapter included in scope of supply)

Selection and ordering data

Version	Operating principle	Unlatching method	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG		
Pushbuttons											
 3SU1060-OJB50-0AA0	Pushbuttons with flat button Momentary contact --	--	Black	3	3SU1060-OJB10-0AA0			1	1 unit	41J	
			Red	3	3SU1060-OJB20-0AA0						
			Yellow	3	3SU1060-OJB30-0AA0						
			Green	3	3SU1060-OJB40-0AA0						
			Blue	3	3SU1060-OJB50-0AA0						
			White	3	3SU1060-OJB60-0AA0						
			Gray	X	3SU1060-OJB80-0AA0						
	 3SU1060-OJA20-0AA0	Latching Push to unlatch	--	Black	5	3SU1060-OJA10-0AA0			1	1 unit	41J
				Red	5	3SU1060-OJA20-0AA0					
				Yellow	5	3SU1060-OJA30-0AA0					
Green				5	3SU1060-OJA40-0AA0						
Blue				5	3SU1060-OJA50-0AA0						
White	5	3SU1060-OJA60-0AA0									
 3SU1061-OJB40-0AA0	Illuminated pushbuttons with flat button Momentary contact --	--	Red	3	3SU1061-OJB20-0AA0			1	1 unit	41J	
			Yellow	3	3SU1061-OJB30-0AA0						
			Green	3	3SU1061-OJB40-0AA0						
			Blue	3	3SU1061-OJB50-0AA0						
			Clear	3	3SU1061-OJB70-0AA0						
			 3SU1061-OJA30-0AA0	Latching Push to unlatch	--						Red
Yellow	5	3SU1061-OJA30-0AA0									
Green	5	3SU1061-OJA40-0AA0									
Blue	5	3SU1061-OJA50-0AA0									
Clear	5	3SU1061-OJA70-0AA0									



















SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, Flat, 30 mm, Metal, Matte

Actuating and Signaling Elements

Selector switches

Selection and ordering data

Version	Operating principle	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Selector switches								
2 switch positions, can be illuminated								
	Selector, short black actuator and front ring for flat mounting	Black	5	3SU1062-2DC10-0AA0		1	1 unit	41J
		Red	5	3SU1062-2DC20-0AA0		1	1 unit	41J
		Green	5	3SU1062-2DC40-0AA0		1	1 unit	41J
		White	5	3SU1062-2DC60-0AA0		1	1 unit	41J
								
	Selector, long black actuator and front ring for flat mounting	Black	3	3SU1062-2DF10-0AA0		1	1 unit	41J
		Red	5	3SU1062-2DF20-0AA0		1	1 unit	41J
		Green	5	3SU1062-2DF40-0AA0		1	1 unit	41J
		Blue	5	3SU1062-2DF50-0AA0		1	1 unit	41J
		White	3	3SU1062-2DF60-0AA0		1	1 unit	41J
								
	Selector, long black actuator and front ring for flat mounting	Black	5	3SU1062-2EC10-0AA0		1	1 unit	41J
		Red	5	3SU1062-2EC20-0AA0		1	1 unit	41J
		Green	5	3SU1062-2EC40-0AA0		1	1 unit	41J
		White	5	3SU1062-2EC60-0AA0		1	1 unit	41J
								
	Selector, long black actuator and front ring for flat mounting	Black	3	3SU1062-2EF10-0AA0		1	1 unit	41J
		Red	5	3SU1062-2EF20-0AA0		1	1 unit	41J
		Green	5	3SU1062-2EF40-0AA0		1	1 unit	41J
		White	3	3SU1062-2EF60-0AA0		1	1 unit	41J
								
3 switch positions (I+O+II), can be illuminated								
	Selector, short black actuator and front ring for flat mounting	Black	3	3SU1062-2DM10-0AA0		1	1 unit	41J
		Red	5	3SU1062-2DM20-0AA0		1	1 unit	41J
		Green	5	3SU1062-2DM40-0AA0		1	1 unit	41J
		White	3	3SU1062-2DM60-0AA0		1	1 unit	41J
								
	Selector, short black actuator and front ring for flat mounting	Black	3	3SU1062-2DL10-0AA0		1	1 unit	41J
		Red	5	3SU1062-2DL20-0AA0		1	1 unit	41J
		Yellow	5	3SU1062-2DL30-0AA0		1	1 unit	41J
		Green	5	3SU1062-2DL40-0AA0		1	1 unit	41J
		White	3	3SU1062-2DL60-0AA0		1	1 unit	41J
								
	Selector, short black actuator and front ring for flat mounting	Black	NEW 5	3SU1062-2DN60-0AA0		1	1 unit	41J
								
	Selector, long black actuator and front ring for flat mounting	Black	3	3SU1062-2EM10-0AA0		1	1 unit	41J
		Red	5	3SU1062-2EM20-0AA0		1	1 unit	41J
		Green	5	3SU1062-2EM40-0AA0		1	1 unit	41J
		White	3	3SU1062-2EM60-0AA0		1	1 unit	41J
								
	Selector, long black actuator and front ring for flat mounting	Black	3	3SU1062-2EL10-0AA0		1	1 unit	41J
		Red	5	3SU1062-2EL20-0AA0		1	1 unit	41J
		Green	5	3SU1062-2EL40-0AA0		1	1 unit	41J
		White	3	3SU1062-2EL60-0AA0		1	1 unit	41J
								

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, Flat, 30 mm, Metal, Matte










Actuating and Signaling Elements

Key-operated switches/indicator lights

Selection and ordering data

Make of lock	Operating principle	Switch position for key removal	Number of keys	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Key-operated switches

2 switch positions										
	RONIS, SB30 and front ring for flat installation	Momentary contact, 45° (10:30/12 o'clock), reset from center to left	O	2	5	3SU1060-4LC01-0AA0		1	1 unit	41J
										
3SU1060-4LF11-0AA0		Latching, 90° (10:30/1:30 o'clock)	O+I	2	3	3SU1060-4LF11-0AA0 3SU1060-4LF21-0AA0		1	1 unit	41J
			I	2	3					
3 switch positions										
	RONIS, SB30 and front ring for flat installation	Latching, 2x45° (10:30/12/1:30 o'clock)	I+O+II	2	5	3SU1060-4LL11-0AA0		1	1 unit	41J
										
3SU1060-4LL11-0AA0		Latching, 2x45° (10:30/12/1:30 o'clock)	I+O+II	2	5	3SU1060-4LL11-0AA0		1	1 unit	41J
										
	RONIS, SB30 and front ring for flat installation	Latching, 2x45° (10:30/12/1:30 o'clock)	I+O+II	2	5	3SU1060-4LL11-0AA0		1	1 unit	41J
										
3SU1060-4LL11-0AA0		Momentary contact, 2x45° (10:30/12/1:30 o'clock)	O	2	NEW 5	3SU1060-4LM01-0AA0		1	1 unit	41J
										

Selection and ordering data

Version	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Indicator lights

	With flat lens	Red	3	3SU1061-0JD20-0AA0 3SU1061-0JD30-0AA0 3SU1061-0JD40-0AA0 3SU1061-0JD50-0AA0 3SU1061-0JD70-0AA0		1	1 unit	41J
		Yellow	3					
		Green	3					
		Blue	3					
		Clear	3					
		3SU1061-0JD40-0AA0						

Options

Special locks for key-operated switches

The plastic and metal key-operated switches of type RONIS, BKS, CES and IKON can be optionally ordered with additional locks.

In this case **"-Z"**, the order code **"Y01"** and the required lock number must be added to the article number of the relevant key-operated switch for standard locking.

Order code	Y01
Standard delivery time	25 working days
Additional price per unit	On request
Ordering example	3SU1000-5BF01-0AA0-Z Y01 Z = SSG18

Ordering notes

- For all special locks, an additional price applies.
- The order code **"Y01"** must be quoted in accordance with the above table. Automated processing of the order with a defined delivery time can be guaranteed only for correctly submitted orders.
- For applications in which access security is important and several lock numbers are used, we recommend the use of BKS or CES key-operated switches.
- Special locks for VW (E1, E2, ...) will be delivered without keys, all others with 2 keys.
- With RONIS, the special locks SB31, 421 and 455 are possible.

Master and master-pass key systems

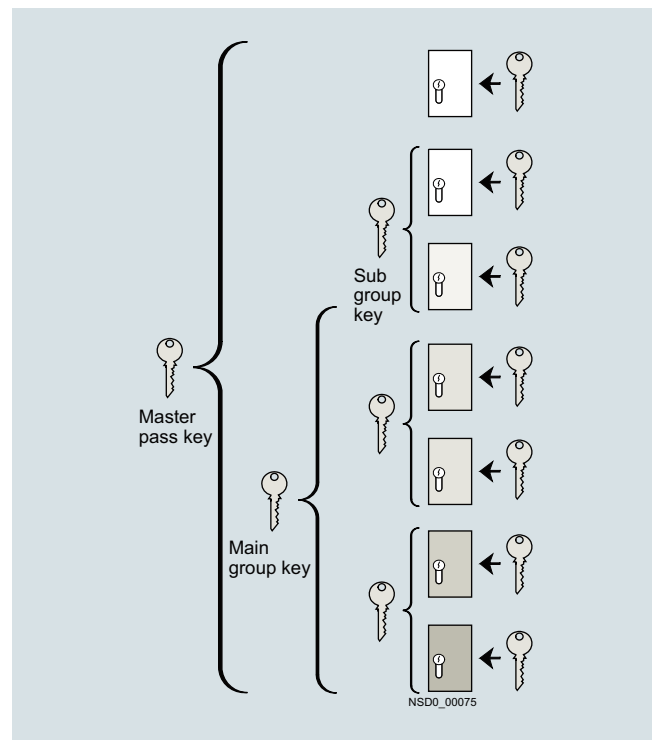
The following key systems can be supplied with BKS, CES or IKON key-operated switches:

- Central lock systems
- Master key systems
- Central master key systems
- Master-pass key systems

When placing an order you must supplement the article number of the matching key-operated switches with **"-Z"** and quote the order code **"Y03"**.

Price and delivery time on request.

Email: sirius-attach.aud@siemens.com



Example of master-pass key system

SIRIUS ACT Pushbuttons and Indicator Lights

Actuators and Indicators, Customized Designs

Laser inscriptions

Options

Inscription of actuating and signaling elements

Actuators and indicators of plastic as well as metal version can be optionally inscribed with a laser.



Example of laser inscription

The actuators of the pushbuttons, illuminated pushbuttons, twin pushbuttons, mushroom pushbuttons, illuminated mushroom pushbuttons, EMERGENCY STOP mushroom pushbuttons (without lock), the lenses of the indicator lights, and the acoustic signaling devices can all be inscribed.

Version

The default typeface used for inscriptions with text is Arial and the text is centered.

The font size for illuminated actuators is 2.5 mm, for non illuminated actuators 3 mm.

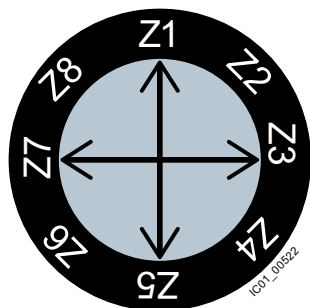
Up to 8 characters per line are possible.

Note:

Selected pushbuttons and twin pushbuttons can be supplied as standard with inscribed letters or symbols.

Selector switches, key-operated switches and toggle switches can only be inscribed on the front ring in the plastic version and in the flat, 30 mm, metal, matte version (only one text line and the supplement Y19).

Assignment of the positions on the actuator



Ordering notes

To order, the inscribed actuating and signaling elements can be selected via the SIRIUS ACT Configurator. An electronic order form is then generated.

For configurator, see

- www.siemens.com/sirius-act/configurator
- Electronic Catalog CA 01 on DVD or
- Industry Mall: www.siemens.com/industrymall

When ordering, add "-Z" and an order code to the article number of the actuator element or the indicator light:

- **Y10:** Text in upper/lower case, always upper case for beginning of line, e.g. Z1=Lift Z2=Lower
- **Y11:** Text in upper case, e.g. Z1=LIFT Z2=LOWER
- **Y12:** Text line(s) in lower case, e.g. Z1=lift off Z2=lower off
- **Y15:** Text in upper/lower case, all words begin with upper case letters, e.g. Z1=Lift Off Z2=Lower Off
- **Y13:** Symbol with number according to ISO 7000 or IEC 60417
- **Y19:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT Configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription in plain text without spaces, in addition to the article number and order code.

In the case of symbols, specify the symbol No. and the standard (ordering example 2)

In the case of multi-line inscriptions, the text must be assigned to the respective line, e.g. Z1=Lift, Z2=Lower. (see ordering examples 1 and 3)

The SIRIUS ACT Configurator must be used to select special inscriptions and symbols (order code Y19). In this case a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly using the CIN and the SIRIUS ACT Configurator (shopping cart in the Industry Mall) or via the standard ordering channels.

Ordering example 1

A round pushbutton with the inscription Reset is required:

3SU1030-0AB20-0AA0-Z

Y10

Z1=Lift
Z2=Lower

Ordering example 2

A pushbutton inscribed with symbol No. 5389 according to IEC 60417 is required:

3SU1030-0AB20-0AA0-Z

Y13

Z=5389 IEC

Ordering example 3

A selector switch with 2 switch positions and multi-line inscription on the front ring is required:

3SF1002-2BF10-0AA0-Z

Y11

Z8=0
Z2=1

Overview

Holders made of plastic can only be attached to actuators and indicators made of plastic (3SU100) or plastic with metal front ring (3SU103).

Metal holders can be attached to all versions of actuators and indicators, with the exception of ID key-operated switches.

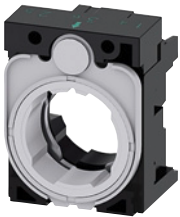
Metal holders are automatically grounded by their fastening screw, but a grounding stud can also be fitted.

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Holders without module, plastic

3x without module

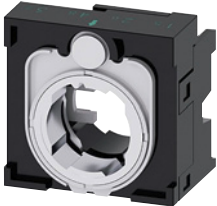


3SU1500-0AA10-0AA0

▶	3SU1500-0AA10-0AA0	1	1 unit	41J
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4x without module

For selector switch with 4 switch positions and for coordinate switches



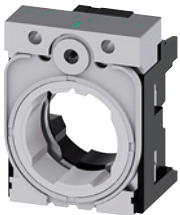
3SU1500-0BA10-0AA0

▶	3SU1500-0BA10-0AA0	1	1 unit	41J
---	---------------------------	---	--------	-----

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Holders without module, metal

3x without module

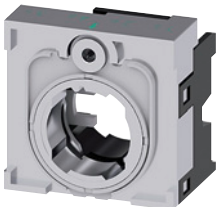


3SU1550-0AA10-0AA0

▶	3SU1550-0AA10-0AA0	1	1 unit	41J
---	---------------------------	---	--------	-----

4x without module

For selector switch with 4 switch positions and for coordinate switches



3SU1550-0BA10-0AA0

▶	3SU1550-0BA10-0AA0	1	1 unit	41J
---	---------------------------	---	--------	-----

SIRIUS ACT Pushbuttons and Indicator Lights Holders

Holders with module

Selection and ordering data

Number of Contact modules		LED modules	NO contacts	NC contacts	Color of light source	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
							Article No.	Price per PU		

Holders with module, plastic

Number of Contact modules		LED modules	NO contacts	NC contacts	Color of light source	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG						
							Article No.	Price per PU								
3x with module																
1	0		1	0	--	▶	3SU1500-1AA10-1BA0	1	1 unit	41J						
			0	1	⊖	▶	3SU1500-1AA10-1CA0	1	1 unit	41J						
			1	1	⊖	▶	3SU1500-1AA10-1FA0	1	1 unit	41J						
2	0		2	0	--	⊖	3SU1500-1AA10-1NA0	1	1 unit	41J						
			0	2	⊖	⊖	3SU1500-1AA10-1PA0	1	1 unit	41J						
			2	2	⊖	⊖	3SU1500-1AA10-1LA0	1	1 unit	41J						
3x with contact and LED module¹⁾ (6 ... 24 V AC/DC)																
1	1				Amber	3	3SU1501-1AG00-1BA0	1	1 unit	41J						
					Red	3	3SU1501-1AG20-1BA0	1	1 unit	41J						
					Yellow	3	3SU1501-1AG30-1BA0	1	1 unit	41J						
					Green	3	3SU1501-1AG40-1BA0	1	1 unit	41J						
					Blue	3	3SU1501-1AG50-1BA0	1	1 unit	41J						
					White	3	3SU1501-1AG60-1BA0	1	1 unit	41J						
					0	1	Amber	⊖	3	3SU1501-1AG00-1CA0	1	1 unit	41J			
					Red	⊖	3	3SU1501-1AG20-1CA0	1	1 unit	41J					
					Yellow	⊖	3	3SU1501-1AG30-1CA0	1	1 unit	41J					
					Green	⊖	3	3SU1501-1AG40-1CA0	1	1 unit	41J					
1					Blue	⊖	3	3SU1501-1AG50-1CA0	1	1 unit	41J					
					White	⊖	3	3SU1501-1AG60-1CA0	1	1 unit	41J					
					Amber	⊖	3	3SU1501-1AG00-1FA0	1	1 unit	41J					
					Red	⊖	3	3SU1501-1AG20-1FA0	1	1 unit	41J					
					Yellow	⊖	3	3SU1501-1AG30-1FA0	1	1 unit	41J					
					Green	⊖	3	3SU1501-1AG40-1FA0	1	1 unit	41J					
					Blue	⊖	3	3SU1501-1AG50-1FA0	1	1 unit	41J					
					White	⊖	3	3SU1501-1AG60-1FA0	1	1 unit	41J					
					2	1				Amber	⊖	3	3SU1501-1AG00-1NA0	1	1 unit	41J
										Red	⊖	3	3SU1501-1AG20-1NA0	1	1 unit	41J
Yellow	⊖	3	3SU1501-1AG30-1NA0	1						1 unit	41J					
Green	⊖	3	3SU1501-1AG40-1NA0	1						1 unit	41J					
Blue	⊖	3	3SU1501-1AG50-1NA0	1						1 unit	41J					
White	⊖	3	3SU1501-1AG60-1NA0	1						1 unit	41J					
2	2	Amber	⊖	3						3SU1501-1AG00-1LA0	1	1 unit	41J			
Red	⊖	3	3SU1501-1AG20-1LA0	1						1 unit	41J					
Yellow	⊖	3	3SU1501-1AG30-1LA0	1						1 unit	41J					
Green	⊖	3	3SU1501-1AG40-1LA0	1						1 unit	41J					
Blue	⊖	3	3SU1501-1AG50-1LA0	1	1 unit	41J										
White	⊖	3	3SU1501-1AG60-1LA0	1	1 unit	41J										

¹⁾ Only for use with SIRIUS commanding and signaling devices.

Number of Contact modules		NO contacts	NC contacts	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
					Article No.	Price per PU		

Holders with module, metal

Number of Contact modules		NO contacts	NC contacts	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
					Article No.	Price per PU			
3x with module									
1	1		0			3SU1550-1AA10-1BA0	1	1 unit	41J
			0	1	⊕	3SU1550-1AA10-1CA0	1	1 unit	41J
			1	1	⊕	3SU1550-1AA10-1FA0	1	1 unit	41J
2	2		0		⊖	3SU1550-1AA10-1NA0	1	1 unit	41J
			0	2	⊖	3SU1550-1AA10-1PA0	1	1 unit	41J
			2	2	⊖	3SU1550-1AA10-1LA0	1	1 unit	41J

3SU1550-1AA10-1BA0

⊕ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System, see page 11/1 onwards.

Certificate:



SIRIUS ACT Pushbuttons and Indicator Lights Modules for Actuators and Indicators

Contact modules

Overview

Contact modules and LED modules

The contact modules are fitted with slow-action contacts (NO contacts or NC contacts). These ensure a high switching reliability even with small voltages and currents, such as 5 V/1 mA. They are suitable for use in electronic systems as well as conventional controls. The contact pieces of the NC contacts are positively driven.

Only LED modules with permanently integrated LEDs are available for illumination.

Contact modules and LED modules bear terminal designations according to EN 50013.

Mounting the modules


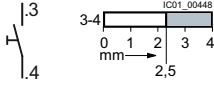
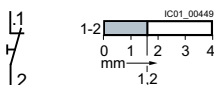

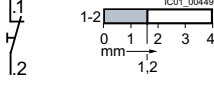
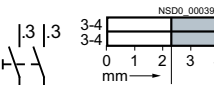

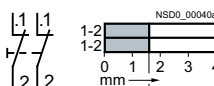
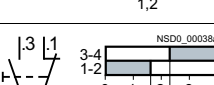
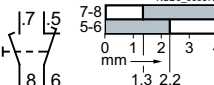
With SIRIUS ACT, the modules are mounted on the holder without any further accessories. Holders in plastic or metal versions are available for mounting three modules.

Connection methods

The modules are available with:

- Screw terminals
- Spring-type terminals or
- Solder pin connections (0.8 mm × 0.8 mm solder pins) for assembly on printed circuit boards

Selection and ordering data

Contact version	Number of		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
	NO contacts	NC contacts						
Contact modules for front plate mounting				Article No.	Price per PU			
	Silver alloy	1	0		3SU1400-1AA10-1BA0	1	1 unit	41J
		0	1			3SU1400-1AA10-1CA0	1	1 unit
		0	1 with installation monitoring ¹⁾		3SU1400-1AA10-1HA0	1	1 unit	41J
		2	0			3SU1400-1AA10-1DA0	1	1 unit
		0	2		3SU1400-1AA10-1EA0	1	1 unit	41J
		1	1			3SU1400-1AA10-1FA0	1	1 unit
		1	1 leading switching		3SU1400-1AA10-1GA0	1	1 unit	41J
		1	1 lagging switching			5		

¹⁾ The contact module has 1 NO internal contact + 1 NC internal contact. The NO contact is connected in series with the NC contact and brought out at terminal 1-2. When the module is snapped onto the holder, the NO contact closes. It opens when the module is detached from the holder again (the NC contact remains closed). The NC contact opens when the EMERGENCY STOP device is actuated (the NO contact remains closed). The contact is closed only when both the NC and NO contacts are closed. Unsuitable for mounting in 3SU18 enclosure.


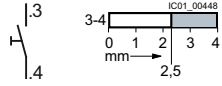

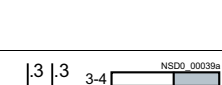
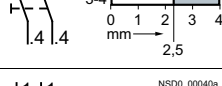
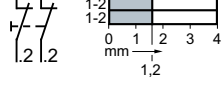
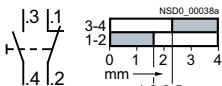
⊕ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System, see page 11/1 onwards.
Certificate:



SIRIUS ACT Pushbuttons and Indicator Lights

Modules for Actuators and Indicators

Contact modules



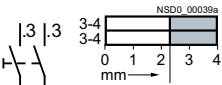
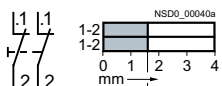
Contact version	Number of		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG		
	NO contacts	NC contacts							
			d	Article No.	Price per PU				
Contact modules for front plate mounting									
 3SU1400-1AA10-1LA0	Gold-plated	1	0		3	3SU1400-1AA10-1LA0	1	1 unit	41J
		0	1		5	3SU1400-1AA10-1MA0	1	1 unit	41J
		2	0		5	3SU1400-1AA10-1NA0	1	1 unit	41J
		0	2		5	3SU1400-1AA10-1PA0	1	1 unit	41J
		1	1		5	3SU1400-1AA10-1QA0	1	1 unit	41J
		1 leading	1 lagging		5	3SU1400-1AA10-1RA0	1	1 unit	41J

⊕ Positive opening according to IEC 60947-5-1, Annex K.
 Can be used with 3SK 11 safety relays or the 3RK3 Modular Safety System,
 see page 11/1 onwards.
 Certificate:



SIRIUS ACT Pushbuttons and Indicator Lights Modules for Actuators and Indicators

Contact modules

Contact version	Number of		SD	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
	NO contacts	NC contacts					
				Article No.	Price per PU		
Contact modules for front plate mounting							
	Silver alloy	1	0		3SU1400-1AA10-3BA0	1	1 unit 41J
		0	1		3SU1400-1AA10-3CA0	1	1 unit 41J
		0	1 with installation monitoring ¹⁾		3SU1400-1AA10-3HA0	1	1 unit 41J
		2	0		3SU1400-1AA10-3DA0	1	1 unit 41J
		0	2		3SU1400-1AA10-3EA0	1	1 unit 41J
		1	1		3SU1400-1AA10-3FA0	1	1 unit 41J
		1 leading	1 lagging		3SU1400-1AA10-3GA0	1	1 unit 41J

¹⁾ The contact module has 1 NO internal contact + 1 NC internal contact. The NO contact is connected in series with the NC contact and brought out at terminal 1-2. When the module is snapped onto the holder, the NO contact closes. It opens when the module is detached from the holder again (the NC contact remains closed). The NC contact opens when the EMERGENCY STOP device is actuated (the NO contact remains closed). The contact is closed only when both the NC and NO contacts are closed. Not suitable for installation in 3SU18 enclosure.


⊕ Positive opening according to IEC 60947-5-1, Annex K. Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System, see page 11/1 onwards.
Certificate:



SIRIUS ACT Pushbuttons and Indicator Lights


Modules for Actuators and Indicators

Contact modules

Contact version	Number of		SD	Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
	NO contacts	NC contacts					
				Article No.	Price per PU		
Contact modules for front plate mounting							
	Gold-plated	1	0	5	3SU1400-1AA10-3LA0	1	1 unit 41J
		0	1	5	3SU1400-1AA10-3MA0	1	1 unit 41J
		2	0	5	3SU1400-1AA10-3NA0	1	1 unit 41J
		0	2	5	3SU1400-1AA10-3PA0	1	1 unit 41J
		1	1	5	3SU1400-1AA10-3QA0	1	1 unit 41J
		1 leading	1 lagging	5	3SU1400-1AA10-3RA0	1	1 unit 41J

⊕ Positive opening according to IEC 60947-5-1, Annex K.
 Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System,
 see page 11/1 onwards.
 Certificate:



Contact version	Number of		SD	Socket terminals (THT)	PU (UNIT, SET, M)	PS*	PG
	NO contacts	NC contacts					
				Article No.	Price per PU		
Contact modules for mounting on printed-circuit boards NEW							
	Silver alloy	1	0	▶	3SU1400-3AA10-5BA0	1	1 unit 41J
	Gold-plated	0	1	3	3SU1400-3AA10-5CA0	1	1 unit 41J

⊕ Positive opening according to IEC 60947-5-1, Annex K.
 Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System,
 see page 11/1 onwards.
 Certificate:





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SIRIUS ACT Pushbuttons and Indicator Lights

Modules for Actuators and Indicators

LED modules

Selection and ordering data


	Operational voltage at AC	Operational voltage at DC	Color	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	V	V		d	Article No.			
LED modules¹⁾ for front plate mounting								
 3SU1401-1BB30-1AA0	24	24	Amber	▶	3SU1401-1BB00-1AA0	1	1 unit	41J
			Red	▶	3SU1401-1BB20-1AA0	1	1 unit	41J
			Yellow	▶	3SU1401-1BB30-1AA0	1	1 unit	41J
			Green	▶	3SU1401-1BB40-1AA0	1	1 unit	41J
			Blue	▶	3SU1401-1BB50-1AA0	1	1 unit	41J
			White	▶	3SU1401-1BB60-1AA0	1	1 unit	41J
	110	--	Amber	▶	3SU1401-1BC00-1AA0	1	1 unit	41J
			Red	▶	3SU1401-1BC20-1AA0	1	1 unit	41J
			Yellow	▶	3SU1401-1BC30-1AA0	1	1 unit	41J
			Green	▶	3SU1401-1BC40-1AA0	1	1 unit	41J
			Blue	▶	3SU1401-1BC50-1AA0	1	1 unit	41J
	230	--	Amber	▶	3SU1401-1BF00-1AA0	1	1 unit	41J
			Red	▶	3SU1401-1BF20-1AA0	1	1 unit	41J
			Yellow	▶	3SU1401-1BF30-1AA0	1	1 unit	41J
			Green	▶	3SU1401-1BF40-1AA0	1	1 unit	41J
Blue			▶	3SU1401-1BF50-1AA0	1	1 unit	41J	
 3SU1401-1BB30-3AA0	24	24	Amber	▶	3SU1401-1BB00-3AA0	1	1 unit	41J
			Red	▶	3SU1401-1BB20-3AA0	1	1 unit	41J
			Yellow	▶	3SU1401-1BB30-3AA0	1	1 unit	41J
			Green	▶	3SU1401-1BB40-3AA0	1	1 unit	41J
			Blue	▶	3SU1401-1BB50-3AA0	1	1 unit	41J
			White	▶	3SU1401-1BB60-3AA0	1	1 unit	41J
	110	--	Amber	▶	3SU1401-1BC00-3AA0	1	1 unit	41J
			Red	▶	3SU1401-1BC20-3AA0	1	1 unit	41J
			Yellow	▶	3SU1401-1BC30-3AA0	1	1 unit	41J
			Green	▶	3SU1401-1BC40-3AA0	1	1 unit	41J
			Blue	▶	3SU1401-1BC50-3AA0	1	1 unit	41J
	230	--	Amber	▶	3SU1401-1BF00-3AA0	1	1 unit	41J
			Red	▶	3SU1401-1BF20-3AA0	1	1 unit	41J
			Yellow	▶	3SU1401-1BF30-3AA0	1	1 unit	41J
			Green	▶	3SU1401-1BF40-3AA0	1	1 unit	41J
Blue			▶	3SU1401-1BF50-3AA0	1	1 unit	41J	
					Spring-type terminals			

¹⁾ Only for use with SIRIUS commanding and signaling devices.


SIRIUS ACT Pushbuttons and Indicator Lights

Modules for Actuators and Indicators


LED modules

	Operational voltage at AC	Operational voltage at DC	Color	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG							
	V	V			Article No.	Price per PU										
LED modules¹⁾ for front plate mounting																
	6 ... 24	6 ... 24	Amber	▶	3	3SU1401-1BG00-1AA0		1	1 unit	41J						
			Red	▶		3SU1401-1BG20-1AA0										
			Yellow	▶		3SU1401-1BG30-1AA0										
			Green	▶		3SU1401-1BG40-1AA0										
			Blue	▶		3SU1401-1BG50-1AA0										
			White	▶		3SU1401-1BG60-1AA0										
	24 ... 240	24 ... 240	Amber	▶	5	3SU1401-1BH00-1AA0		1	1 unit	41J						
			Red	▶		3SU1401-1BH20-1AA0										
			Yellow	▶		3SU1401-1BH30-1AA0										
			Green	▶		3SU1401-1BH40-1AA0										
		Blue	▶		3SU1401-1BH50-1AA0		1	1 unit	41J							
		White	▶		3SU1401-1BH60-1AA0											
					Spring-type terminals											
		6 ... 24	6 ... 24		Amber					▶	3	3SU1401-1BG00-3AA0		1	1 unit	41J
Red	▶			3SU1401-1BG20-3AA0												
Yellow	▶			3SU1401-1BG30-3AA0												
Green	▶			3SU1401-1BG40-3AA0												
Blue	▶			3SU1401-1BG50-3AA0												
White	▶			3SU1401-1BG60-3AA0												
24 ... 240	24 ... 240	Amber	▶	5	3SU1401-1BH00-3AA0		1	1 unit	41J							
		Red	▶		3SU1401-1BH20-3AA0											
		Yellow	▶		3SU1401-1BH30-3AA0											
		Green	▶		3SU1401-1BH40-3AA0											
		Blue	▶		3SU1401-1BH50-3AA0											
		White	▶		3SU1401-1BH60-3AA0											

¹⁾ Only for use with SIRIUS commanding and signaling devices.

	Operational voltage at AC	Operational voltage at DC	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	V	V		Article No.	Price per PU			
LED test modules¹⁾ for front plate mounting								
	6 ... 240	6 ... 240	3	3SU1400-1CK10-1AA0		1	1 unit	41J

¹⁾ Only to be used for SIRIUS ACT LED modules (6 ... 24 V AC/DC, 24 V AC/DC, 24 ... 240 V AC/DC).

	Operational voltage at AC	Operational voltage at DC	Color	SD	Socket terminals (THT)		PU (UNIT, SET, M)	PS*	PG
	V	V			Article No.	Price per PU			
LED modules¹⁾ for mounting on printed-circuit boards									
	--	5	Amber	5	3SU1401-3BA00-5AA0		1	1 unit	41J
			Red	5	3SU1401-3BA20-5AA0				
			Yellow	5	3SU1401-3BA30-5AA0				
			Green	3	3SU1401-3BA40-5AA0				
			Blue	5	3SU1401-3BA50-5AA0				
			White	3	3SU1401-3BA60-5AA0				

¹⁾ Only for use with SIRIUS commanding and signaling devices.

SIRIUS ACT Pushbuttons and Indicator Lights

Modules for Actuators and Indicators

AS-Interface modules

Selection and ordering data

Operational voltage	Slave type	Number of digital inputs		Number of digital outputs	SD	Screw terminals + Spring-type terminals	PU (UNIT, SET, M)	PS*	PG
		Standard	Safety-related						
V					d	Article No.	Price per PU		
AS-Interface modules for front plate mounting									
30	2 F-DI	--	2	--	5	3SU1400-1EA10-2AA0	1	1 unit	41J
	2 F-DI + 1 LED	--	2	1	5	3SU1401-1EE20-2AA0	1	1 unit	41J
									
3SU1400-1EA10-2AA0									
30	2 F-DI + 1 DQ	--	2	1	5	3SU1400-1EC10-2AA0	1	1 unit	41J
									
3SU1400-1EC10-2AA0									
30	2 F-DI	--	2	--	5	3SU1400-1EA10-4AA0	1	1 unit	41J
	2 F-DI + 1 LED	--	2	1	▶	3SU1401-1EE20-4AA0	1	1 unit	41J
									
3SU1400-1EA10-4AA0									
30	2 F-DI + 1 DQ	--	2	1	5	3SU1400-1EC10-4AA0	1	1 unit	41J
									
3SU1400-1EC10-4AA0									
30	4 DI/3 DQ AB	4	--	3	5	3SU1400-1EJ10-6AA0	1	1 unit	41J
	4 DI/4 DQ	4	--	4	5	3SU1400-1EK10-6AA0	1	1 unit	41J
									
3SU1400-1EJ10-6AA0									

SIRIUS ACT Pushbuttons and Indicator Lights

Modules for Actuators and Indicators

Electronic modules for IO-Link/support terminals

Selection and ordering data

Operational voltage	Slave type	Number of digital inputs	Number of digital outputs	SD	Spring-type terminals (push-in)	PU (UNIT, SET, M)	PS*	PG
V				d	Article No.	Price per PU		
Electronic modules for IO-Link, front panel mounting								
24	Freely programmable (default (6 DI/2 DQ))	0 ... 8	0 ... 8	5	3SU1400-1HL10-6AA0		1	1 unit 41J



3SU1400-1HL10-6AA0

Selection and ordering data

Color	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	d	Article No.	Price per PU		
Support terminals					
Black	3	3SU1400-1DA10-1AA0	1	1 unit	41J
Blue	5	3SU1400-1DA50-1AA0	1	1 unit	41J
Green/Yellow	3	3SU1400-1DA43-1AA0	1	1 unit	41J
Spring-type terminals					
Black	5	3SU1400-1DA10-3AA0	1	1 unit	41J
Blue	5	3SU1400-1DA50-3AA0	1	1 unit	41J
Green/Yellow	5	3SU1400-1DA43-3AA0	1	1 unit	41J



3SU1400-1DA10-1AA0




3SU1400-1DA50-3AA0




SIRIUS ACT Pushbuttons and Indicator Lights Modules for Actuators and Indicators

Electronic modules for ID key-operated switches

Technical specifications

		3SU1400-1GC10-1AA0	3SU1400-1GD10-1AA0
Communication/protocol			
Protocol is supported by IO-Link protocol		No	Yes
Product function		Group ID 24 V DC	IO-Link 24 V DC
IO-Link transfer rate		--	COM2 (38.4 kBaud)
Point-to-point cycle time between the master and the IO-Link device, minimum	ms	--	10
Type of power supply via IO-Link master		--	Yes
Data volume			
• Of the address area of the inputs with cyclic transfer total	bytes	--	2
• Of the address area of the outputs with cyclic transfer total	bytes	--	0
Number of NO contacts		5	
General data			
Impulse withstand voltage, rated value	kV	0.8	
Rated insulation voltage	V	30	
Pollution degree		3	
Type of voltage			
• Of operational voltage		DC	
• Of input voltage		DC	
Operational voltage			
• At DC, rated value	V	24	
• Rated value	V	18 ... 30	
Current consumed, maximum	mA	49	
Ambient temperature			
• During operation	°C	-25 ... +70	
• During storage	°C	-40 ... +80	
Degree of protection		IP20	
Touch protection against electric shock		Finger-safe	
Connections			
Type of electrical connection		Screw terminals 	
Connectable conductor cross-section for auxiliary contacts			
• Solid			
- With end sleeves	mm ²	1 x (0.2 ... 2.5), 2 x (0.2 ... 0.75)	
- Without end sleeves	mm ²	1 x (0.2 ... 2.5), 2 x (0.2 ... 0.75)	
• Finely stranded			
- With end sleeves	mm ²	1 x (0.2 ... 2.5), 2 x (0.25 ... 0.75)	
- Without end sleeves	mm ²	1 x (0.2 ... 2.5), 2 x (0.2 ... 0.75)	
AWG number as coded connectable conductor cross-section		26 ... 14	
Tightening torque for screw terminals	Nm	0.35 ... 0.4	

Selection and ordering data

	Type of power supply via IO-Link master	Protocol is supported IO-Link protocol	Number of NO contacts	IO-Link transfer rate	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
					d	Article No.	Price per PU		
 3SU1400-1GC10-1AA0	--	No	5	--	▶	3SU1400-1GC10-1AA0	1	1 unit	41J
 3SU1400-1GD10-1AA0	Yes	Yes	5	COM2 (38.4 kBaud)	▶	3SU1400-1GD10-1AA0	1	1 unit	41J

¹⁾ Only use in conjunction with plastic holder 3SU1500-0AA10-0AA0.

SIRIUS ACT Pushbuttons and Indicator Lights

Modules for Actuators and Indicators

Interface modules for PROFINET/terminal modules

Selection and ordering data

Supply voltage at DC	Number of interfaces according to PROFINET SIL claim limit acc. to EN 62061	Number of digital inputs		Number of digital outputs	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		Standard	Safety-related							
V					d					

Interface modules for PROFINET



3SU1400-1LK10-1AA1



3SU1400-1LL10-3BA1

Interface modules for PROFINET						Screw terminals				
Interface modules										
24	1	0	0	0	5	3SU1400-1LK10-1AA1		1	1 unit	41J
	--									
						Spring-type terminals				
24	1	0	0	0	5	3SU1400-1LK10-3AA1		1	1 unit	41J
	--									
						Screw terminals				
Fail-safe interface modules										
24	1	4	0	1	5	3SU1400-1LL10-1BA1		1	1 unit	41J
	SIL CL 3									
						Spring-type terminals				
24	1	4	0	1	5	3SU1400-1LL10-3BA1		1	1 unit	41J
	SIL CL 3									

Selection and ordering data

Type of product	Color of light source	SD	Insulation displacement connection		PU (UNIT, SET, M)	PS*	PG
			Article No.	Price per PU			
		d					

Terminal modules



3SU1401-1ME60-1DA1

Terminal modules		Insulation displacement connection					
With 2 contacts	--	5	3SU1400-1MA10-1BA1		1	1 unit	41J
With 2 contacts and integrated LED	Amber	5	3SU1401-1MC00-1CA1		1	1 unit	41J
	Red	5	3SU1401-1MC20-1CA1		1	1 unit	41J
	Yellow	5	3SU1401-1MC30-1CA1		1	1 unit	41J
	Green	5	3SU1401-1MC40-1CA1		1	1 unit	41J
	Blue	5	3SU1401-1MC50-1CA1		1	1 unit	41J
	White	5	3SU1401-1MC60-1CA1		1	1 unit	41J
With integrated LED	Amber	5	3SU1401-1ME00-1DA1		1	1 unit	41J
	Red	5	3SU1401-1ME20-1DA1		1	1 unit	41J
	Yellow	5	3SU1401-1ME30-1DA1		1	1 unit	41J
	Green	5	3SU1401-1ME40-1DA1		1	1 unit	41J
	Blue	5	3SU1401-1ME50-1DA1		1	1 unit	41J
	White	5	3SU1401-1ME60-1DA1		1	1 unit	41J

Type of product	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Memory modules for 3SK2



3RK3931-0AA00

For backing up the complete parameterization of the 3SK2 safety system without a PC/PG through the system interface	2	3RK3931-0AA00		1	1 unit	42C
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Flat ribbon cable, see page 13/144 onwards.

LED modules for mounting on printed-circuit boards, see page 13/96 onwards.

Overview

Design



Enclosures with standard fittings

Enclosed SIRIUS ACT pushbuttons and indicator lights are used as hand-operated control devices for separately allocated control units and cabinets. The devices are suitable for use in any climate and all have IP66, IP67, IP69 (IP69K) degree of protection, including those with cable glands.

Standards

IEC/EN 60947-5-1

Versions

The enclosed pushbuttons and indicator lights are available with conventional controls as well as for connection to AS-Interface. The following versions are available:

- Empty enclosures with between 1 and 6 command points (the installed components must be ordered separately; modules for base mounting or 1-pole contact and LED modules can be used)
- Enclosures with standard fittings with 1 to 3 command points, e.g. EMERGENCY STOP enclosure with EMERGENCY STOP mushroom pushbutton
- Enclosures with customized fittings with 1 to 6 command points
- Special enclosure for 4-position selector switches, coordinate switches, ID key-operated switches and sensor switches

Color of the enclosures

Top:

- Gray, RAL 7035
- Yellow, RAL 1004 for EMERGENCY STOP

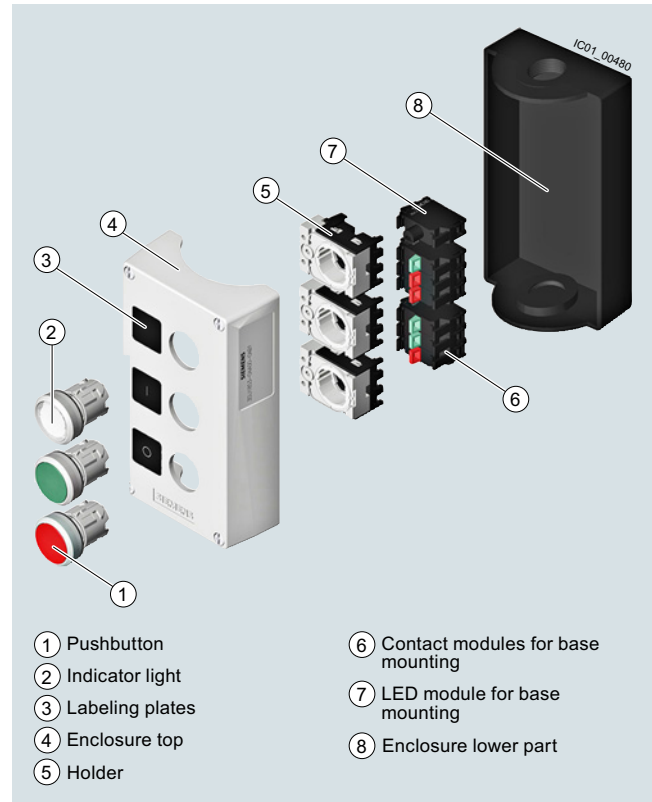
Base:

- Black, RAL 9005

Application

The enclosures are climate-proof (KTW 24) according to EN ISO 6270-2 and suitable for stationary use, and for use in marine applications.

Enclosures with standard fittings



Pushbuttons and indicator lights in the enclosure

Customized enclosures

The fittings and labeling of the command point can be chosen using the Configurator on the Internet. The prices depend on the equipment selected, see www.siemens.com/sirius-act/configurator.

SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

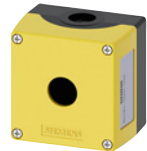
Empty enclosures

Selection and ordering data

Color of enclosure top	Number of command points	Enclosure version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Enclosures for surface mounting

Plastic



3SU1801-0AA00-0AA2

Yellow	1	Center command point	▶	3SU1801-0AA00-0AA2		1	1 unit	41J
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		With protective collar	▶	3SU1801-0AA00-0AC2		1	1 unit	41J
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		With recess for labeling plate	▶	3SU1801-0AA00-0AB2		1	1 unit	41J
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	2	With recess for labeling plate	▶	3SU1802-0AA00-0AB2		1	1 unit	41J
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3SU1802-0AA00-0AB1

Gray	1	With recess for labeling plate	▶	3SU1801-0AA00-0AB1		1	1 unit	41J
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	2	With recess for labeling plate	▶	3SU1802-0AA00-0AB1		1	1 unit	41J
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	3	With recess for labeling plate	▶	3SU1803-0AA00-0AB1		1	1 unit	41J
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	4	With recess for labeling plate	▶	3SU1804-0AA00-0AB1		1	1 unit	41J
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	6	With recess for labeling plate	▶	3SU1806-0AA00-0AB1		1	1 unit	41J
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	1	With protective collar for 5 padlocks, mushroom 60 mm	NEW 5	3SU1851-0AA00-0AJ2		1	1 unit	41J
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Gray	1	With protective collar for 5 padlocks, mushroom 60 mm	3	3SU1851-0AA00-0AH1		1	1 unit	41J
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	1	With protective collar for 5 padlocks, mushroom 60 mm	NEW 5	3SU1851-0AA00-0AJ1		1	1 unit	41J
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Enclosure for 4-position selector switches, coordinate switches, ID key-operated switches and sensor switches

Plastic, front plate mounting



3SU1801-1AA00-1AA1

Gray	1	Center command point	3	3SU1801-1AA00-1AA1		1	1 unit	41J
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Metal, front plate mounting

Gray	1	Center command point	5	3SU1851-1AA00-1AA1		1	1 unit	41J
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SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

Pushbuttons and indicator lights in the enclosure

Overview

Pushbuttons and indicator lights in the enclosure (standard fittings) are available with:

- 1 to 3 command points (equipped, for example, with A, B, C, in each case from bottom to top)
- Operational voltage up to 400 V
- Vertical mounting type
- Plastic enclosures are equipped with plastic actuators and indicators, metal enclosures are equipped with metal actuators and indicators

- Contact modules and LED modules for base mounting (are snapped into the enclosure base); screw terminals as standard; some versions also with spring-type terminals

Palm pushbuttons

Palm pushbuttons have a particularly large button surface. This means that they can be actuated quickly and easily with the hand, arm or foot.

Selection and ordering data

Color of enclosure top	Number of command points	Enclosure version Pushbutton and signaling device equipment	Color of actuating element Marking	Number of NC contacts	Number of NO contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Enclosures with standard fittings

Screw terminals



Plastic

Yellow 1

3SU1801-0NA00-2AA2

Center command point
A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching acc. to ISO 13850, rotate to unlatch

Red

1

0



3SU1801-0NA00-2AA2

1

1 unit

41J

Center command point
A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching acc. to ISO 13850, with RONIS SB30 lock with key-operated release

Red

1

1



3SU1801-0NN00-2AA2

1

1 unit

41J

With protective collar
A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching acc. to ISO 13850, rotate to unlatch

Red

1

0



3SU1801-0NA00-2AC2

1

1 unit

41J

A = I

2

0



3SU1801-0NB00-2AC2

1

1 unit

41J



3SU1801-0NA00-2AC2



3SU1802-0NA00-2AB2

2

With recess for labeling plate
A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching acc. to ISO 13850, rotate to unlatch
B = Indicator light 24 V AC/DC

A = Red
B = Red

1

1



3SU1802-0NA00-2AB2

1

1 unit

41J

A = Emergency Stop
B = "without inscription"

A = Red
B = Red

2

1



3SU1802-0NB00-2AB2

1

1 unit

41J

A = "Without inscription"
B = "Without inscription"



3SU1801-2NG00-2AA2

1

Center command point
A = EMERGENCY STOP palm pushbuttons with positive latching acc. to ISO 13850, pull to unlatch

Red

1

1

3

3SU1801-2NG00-2AA2

1

1 unit

41J

Spring-type terminals



With recess for labeling plate
A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching acc. to ISO 13850, rotate to unlatch

Red

2

1

5

3SU1801-0NE00-4AB2

1

1 unit

41J

SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

Pushbuttons and indicator lights in the enclosure

Color of enclosure top	Number of command points	Enclosure version Pushbutton and signaling device equipment	Color of actuating element Marking	Number of NC contacts	Number of NO contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Enclosures with standard fittings



3SU1801-0AB00-2AB1

Plastic

Gray 1

With recess for labeling plate	Green	A = I	0	1	3	3SU1801-0AB00-2AB1	1	1 unit	41J
	Red	A = O	1	0	▶	3SU1801-0AC00-2AB1	1	1 unit	41J
A = Pushbutton	White	A = I	0	1	5	3SU1801-0AD00-2AB1	1	1 unit	41J
	Black	A = O	1	0	5	3SU1801-0AE00-2AB1	1	1 unit	41J

Screw terminals

Spring-type terminals

With recess for labeling plate	Black		0	2	NEW 5	3SU1801-0BA00-4AB1	1	1 unit	41J
A = Selector switch			0	1	NEW 5	3SU1801-0BE00-4AB1	1	1 unit	41J

With recess for labeling plate	Green	A = I	1	0	NEW 5	3SU1801-0BC00-4AB1	1	1 unit	41J
A = Pushbutton			0	1	NEW 5	3SU1801-0BD00-4AB1	1	1 unit	41J

Screw terminals



3SU1802-0AB00-2AB1

With recess for labeling plate	A = Red/ B = Green		1	1	3	3SU1802-0AB00-2AB1	1	1 unit	41J
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A = Pushbutton/ B = Pushbutton	A = O/ B = I								
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	A = Black/ B = Black		1	1	5	3SU1802-0AC00-2AB1	1	1 unit	41J
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	A = O/ B = I								
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3SU1803-0AB00-2AB1

With recess for labeling plate	A = Red/ B = Green/ C = Clear		1	1	▶	3SU1803-0AB00-2AB1	1	1 unit	41J
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A = Pushbutton/ B = Pushbutton/ C = Indicator light	A = O/ B = I/ C = "Without inscription"								
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	A = Black/ B = White/ C = Clear		1	1	5	3SU1803-0AC00-2AB1	1	1 unit	41J
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	A = O/ B = I/ C = "Without inscription"								
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With recess for labeling plate	A = Red/ B = Black/ C = Black		1	2	5	3SU1803-0AD00-2AB1	1	1 unit	41J
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A = Pushbutton/ B = Pushbutton/ C = Pushbutton	A = O/ B = I/ C = II								
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3SU1801-2GA00-2AA1

Center command point	Black		0	1	3	3SU1801-2GA00-2AA1	1	1 unit	41J
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A = Palm pushbutton, momentary-contact type									
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SIRIUS ACT Pushbuttons and Indicator Lights Enclosures









Pushbuttons and indicator lights in the enclosure

Color of enclosure top	Number of command points	Enclosure version Pushbutton and signaling device equipment	Color of actuating element Marking	Number of		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
				NC contacts	NO contacts						

Enclosures with standard fittings

Screw terminals



Enclosures with standard fittings													
 3SU1851-0NA00-2AA2	Metal Yellow 1	Center command point A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching acc. to ISO 13850, rotate to unlatch	Red	1	0	3	3SU1851-0NA00-2AA2 3SU1851-0NB00-2AA2		1	1 unit	41J		
				2	0	5			1	1 unit	41J		
 3SU1851-0NA00-2AC2		With protective collar A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching acc. to ISO 13850, rotate to unlatch	Red	1	0	▶ 3	3SU1851-0NA00-2AC2 3SU1851-0NB00-2AC2 3SU1851-0NC00-2AC2 3SU1851-0ND00-2AC2		1	1 unit	41J		
				2	0	NEW 5			1	1 unit	41J		
				2	1	5			1	1 unit	41J		
				2	1	5			1	1 unit	41J		
 3SU1851-2NG00-2AA2	1	Center command point A = EMERGENCY STOP palm pushbuttons with positive latching acc. to ISO 13850 Pull to unlatch	Red	1	1	3	3SU1851-2NG00-2AA2		1	1 unit	41J		
 3SU1851-0AC00-2AB1	Gray 1	With recess for labeling plate A = Pushbutton	Green	A = I	0	1	5	3SU1851-0AB00-2AB1 3SU1851-0AC00-2AB1 3SU1851-0AD00-2AB1 3SU1851-0AE00-2AB1		1	1 unit	41J	
				Red	A = O	1	0			5	1	1 unit	41J
				White	A = I	0	1			5	1	1 unit	41J
				Black	A = O	1	0			5	1	1 unit	41J
 3SU1852-0AB00-2AB1	2	With recess for labeling plate A = Pushbutton/ B = Pushbutton	A = Red/ B = Green	A = I	1	1	5	3SU1852-0AB00-2AB1		1	1 unit	41J	
				A = O/ B = I	1	1	5			1	1 unit	41J	
 3SU1853-0AB00-2AB1	3	With recess for labeling plate A = Pushbutton/ B = Pushbutton/ C = Indicator light	A = Red/ B = Green/ C = Clear	A = I	1	1	5	3SU1853-0AB00-2AB1		1	1 unit	41J	
				A = O/ B = I/ C = "Without inscription"	1	2	5			1	1 unit	41J	
 3SU1853-0AD00-2AB1		With recess for labeling plate A = Pushbutton/ B = Pushbutton/ C = Pushbutton	A = Red/ B = Black/ C = Black	A = I	1	2	5	3SU1853-0AD00-2AB1		1	1 unit	41J	
				A = O/ B = I/ C = II	1	2	5			1	1 unit	41J	
 3SU1851-2GA00-2AA1	1	Center command point A = Palm pushbutton, momentary-contact type	Black	0	1	3	3SU1851-2GA00-2AA1		1	1 unit	41J		

SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

Pushbuttons and indicator lights in the enclosure

Number of command points	Product function/ EMERGENCY STOP function	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Customized enclosures¹⁾



3SU1801-0AZ00 KOY

Plastic

1	No		3SU1801-0AZ00 KOY		1	1 unit	41J
	Yes		3SU1801-0NZ00 KOY		1	1 unit	41J
2	No		3SU1802-0AZ00 KOY		1	1 unit	41J
	Yes		3SU1802-0NZ00 KOY		1	1 unit	41J
3	No		3SU1803-0AZ00 KOY		1	1 unit	41J
	Yes		3SU1803-0NZ00 KOY		1	1 unit	41J
4	No		3SU1804-0AZ00 KOY		1	1 unit	41J
	Yes		3SU1804-0NZ00 KOY		1	1 unit	41J
6	No		3SU1806-0AZ00 KOY		1	1 unit	41J
	Yes		3SU1806-0NZ00 KOY		1	1 unit	41J



3SU1851-0AZ00 KOY

Metal

1	No		3SU1851-0AZ00 KOY		1	1 unit	41J
	Yes		3SU1851-0NZ00 KOY		1	1 unit	41J
2	No		3SU1852-0AZ00 KOY		1	1 unit	41J
	Yes		3SU1852-0NZ00 KOY		1	1 unit	41J
3	No		3SU1853-0AZ00 KOY		1	1 unit	41J
	Yes		3SU1853-0NZ00 KOY		1	1 unit	41J
4	No		3SU1854-0AZ00 KOY		1	1 unit	41J
	Yes		3SU1854-0NZ00 KOY		1	1 unit	41J
6	No		3SU1856-0AZ00 KOY		1	1 unit	41J
	Yes		3SU1856-0NZ00 KOY		1	1 unit	41J

¹⁾ The fittings and labeling of the command point can be chosen using the Configurator on the Internet. The prices depend on the equipment selected. When ordering, always add the article number and the code KOY and the CIN number from the Configurator.
Ordering example:
3SU1801-0AZ00 KOY, CIN20150609140858154554,
[see www.siemens.com/sirius-act/configurator](http://www.siemens.com/sirius-act/configurator).

SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

Pushbuttons and indicator lights in the enclosure for AS-Interface

Overview

With AS-Interface enclosures, distributed SIRIUS ACT pushbuttons and indicator lights can be quickly connected to the AS-Interface communication system. Using suitable components you can make your own enclosures with integrated AS-Interface or flexibly modify existing enclosures.



Enclosures for AS-Interface

Enclosures

Color of enclosure top:

- Gray, RAL 7035
- Yellow, RAL 1004 for EMERGENCY STOP

Color of enclosure base:

- Black, RAL 9005

Equipping with AS-Interface slaves

The following slaves are available for connecting the command points:

- Slave in A/B technology with 4 digital inputs and 3 digital outputs (4 DI/3 DQ)
- Slave with 4 digital inputs and 4 digital outputs (4 DI/4 DQ)
- F slave with 2 safe inputs for EMERGENCY STOP mushroom pushbutton (2 F-DI), also with integrated red LED for the illuminated EMERGENCY STOP mushroom pushbutton.

The following table shows the maximum number of slaves possible:

Number of command points	Number of slaves for enclosures without EMERGENCY STOP	Number of slaves for enclosures with EMERGENCY STOP
1	--	1 x F slave 2 F-DI
2	1 x slave 4 DI/4 DQ or 4 DI/3 DQ	--
3	1 x slave 4 DI/4 DQ or 4 DI/3 DQ	1 x slave 4 DI/4 DQ or 4 DI/3 DQ + 1 x F slave
4	2 x slave 4 DI/4 DQ or 4 DI/3 DQ	2 x slave 4 DI/4 DQ or 4 DI/3 DQ + 1 x F slave
6	2 x slave 4 DI/4 DQ or 4 DI/3 DQ	2 x slave 4 DI/4 DQ or 4 DI/3 DQ + 1 x F slave

Connection

One set of links is required in each case to connect a slave to contact modules, LED modules, and the connection element.

The connection elements are mounted in the front-end cable glands and are used to connect the AS-Interface or bring unused inputs or outputs out of the enclosure.

For connection to AS-Interface, the following options are available:

- Terminal for shaped AS-Interface cable. The cable is contacted by the insulation piercing method and routed past the enclosure on the outside (possible only with plastic enclosure).
- Cable gland for the shaped AS-Interface cable or round cable. The cable is routed into the enclosure (preferable for metal enclosure).
- Connection using M12 plug.

If less than all inputs/outputs of the installed slaves in an enclosure are used for connecting the command devices, free inputs and outputs can be routed on request to the outside through an M12 socket on the top or bottom side of the enclosure.

To supply inputs with power, the S+ connection of the slave must be assigned to the socket, for outputs the OUT- connection must be assigned. Addressing is performed using the AS-Interface connections or the integrated addressing socket. An external power supply is not required.

Enclosures with standard fittings

Enclosures with standard fittings are available with:

- 1 to 3 command points
- Operational voltage through AS-Interface (approx. 30 V)
- Vertical mounting type
- Plastic enclosures are equipped with plastic actuators and indicators, metal enclosures are equipped with metal actuators and indicators

The enclosures without EMERGENCY STOP each have one module with 4I/3O; the enclosures with EMERGENCY STOP mushroom pushbuttons have a safe AS-Interface slave integrated in the enclosure. Enclosures with EMERGENCY STOP mushroom pushbuttons are fitted with two NC contact modules, which are wired to the safe F slave.

The contact modules and LED modules (with spring-type terminals) of the command devices and the AS-Interface slaves are mounted in the base of the enclosure and connected using cables. The plastic enclosures are designed with a connection for the AS-Interface flat cable (the cable is run along the outside of the enclosure). For metal enclosures, the AS-Interface cable is run inside the enclosure.

The enclosures with EMERGENCY STOP mushroom pushbuttons are also available with an M12 connector.

Customized enclosures (selection by configurator)

To order customized 3SU18 AS-Interface enclosures with pushbuttons and indicator lights, the configurator must be used to select the fittings.


An electronic order form will be generated for the options.

For the Configurator, see www.siemens.com/sirius-act/configurator.

SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

Pushbuttons and indicator lights in the enclosure for AS-Interface

Selection and ordering data

Color of enclosure top	Number of command points	Enclosure version Command point fittings	Color Marking	SD	Insulation piercing method		PU (UNIT, SET, M)	PS*	PG
Enclosures with standard fittings									
Plastic									
	Yellow	1	With recess for labeling plate A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching acc. to ISO 13850, rotate to unlatch	Red	5	3SU1801-0NB10-4HB2	1	1 unit	41J
			With protective collar A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching acc. to ISO 13850, rotate to unlatch	Red A = I	NEW 3	3SU1801-0NB10-4HC2	1	1 unit	41J
	Gray	2	With recess for labeling plate A = Pushbutton/ B = Pushbutton	A = Red/ B = Green A = O/ B = I	5	3SU1802-0AB10-4HB1	1	1 unit	41J
				A = Black/ B = White A = O/ B = I	5	3SU1802-0AC10-4HB1	1	1 unit	41J
		3	With recess for labeling plate A = Pushbutton/ B = Pushbutton/ C = Indicator light	A = Red/ B = Green/ C = Clear A = O/ B = I/ C = "Without inscription"	5	3SU1803-0AB10-4HB1	1	1 unit	41J
Metal									
	Yellow	1	With recess for labeling plate A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching acc. to ISO 13850, rotate to unlatch	Red A = I	NEW 5	3SU1851-0NB10-4GB2	1	1 unit	41J
			With protective collar A = EMERGENCY STOP mushroom pushbuttons, 40 mm, with positive latching acc. to ISO 13850, rotate to unlatch	Red A = I	NEW 5	3SU1851-0NB10-4GC2	1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

Pushbuttons and indicator lights in the enclosure for AS-Interface

Number of command points	Product function/ EMERGENCY STOP function	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
--------------------------	--	----	-------------	--------------	-------------------	-----	----

Customized enclosures for AS-Interface¹⁾



3SU1801-0NZ10 K0Y

Plastic

1	Yes		3SU1801-0NZ10 K0Y		1	1 unit	41J
2	No		3SU1802-0AZ10 K0Y		1	1 unit	41J
	Yes		3SU1802-0NZ10 K0Y		1	1 unit	41J
3	No		3SU1803-0AZ10 K0Y		1	1 unit	41J
	Yes		3SU1803-0NZ10 K0Y		1	1 unit	41J
4	No		3SU1804-0AZ10 K0Y		1	1 unit	41J
	Yes		3SU1804-0NZ10 K0Y		1	1 unit	41J
6	No		3SU1806-0AZ10 K0Y		1	1 unit	41J
	Yes		3SU1806-0NZ10 K0Y		1	1 unit	41J



3SU1851-0NZ10 K0Y

Metal

1	Yes		3SU1851-0NZ10 K0Y		1	1 unit	41J
2	No		3SU1852-0AZ10 K0Y		1	1 unit	41J
	Yes		3SU1852-0NZ10 K0Y		1	1 unit	41J
3	No		3SU1853-0AZ10 K0Y		1	1 unit	41J
	Yes		3SU1853-0NZ10 K0Y		1	1 unit	41J
4	No		3SU1854-0AZ10 K0Y		1	1 unit	41J
	Yes		3SU1854-0NZ10 K0Y		1	1 unit	41J
6	No		3SU1856-0AZ10 K0Y		1	1 unit	41J
	Yes		3SU1856-0NZ10 K0Y		1	1 unit	41J

¹⁾ The fittings and labeling of the command point can be chosen using the Configurator on the Internet. The prices depend on the equipment selected, see www.siemens.com/sirius-act/configurator.

SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

Modules for enclosures

Selection and ordering data


Contact version	Number of contacts		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
	NO	NC						
			d	Article No.	Price per PU			
Contact modules for base mounting								
	Silver alloy	1	0		3SU1400-2AA10-1BA0	1	1 unit	41J
		0	1			3SU1400-2AA10-1CA0	1	1 unit
	Gold-plated	1	0		3SU1400-2AA10-1LA0	1	1 unit	41J
		0	1			3SU1400-2AA10-1MA0	1	1 unit
Spring-type terminals								
	Silver alloy	1	0		3SU1400-2AA10-3BA0	1	1 unit	41J
		0	1			3SU1400-2AA10-3CA0	1	1 unit
	Gold-plated	1	0		3SU1400-2AA10-3LA0	1	1 unit	41J

⊖ Positive opening according to IEC 60947-5-1, Annex K.
 Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System,
 see page 11/1 onwards.
 Certificate:




SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

Modules for enclosures

	Operational voltage at AC	Operational voltage at DC	Color	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG
					Article No.	Price per PU			
LED modules¹⁾ for base mounting									
 3SU1401-2BB60-1AA0	24	24	Amber	3	3SU1401-2BB00-1AA0		1	1 unit	41J
			Red	3	3SU1401-2BB20-1AA0				
			Yellow	3	3SU1401-2BB30-1AA0				
			Green	3	3SU1401-2BB40-1AA0				
			Blue	▶	3SU1401-2BB50-1AA0				
			White	3	3SU1401-2BB60-1AA0				
	110	--	Amber	5	3SU1401-2BC00-1AA0		1	1 unit	41J
			Red	▶	3SU1401-2BC20-1AA0				
			Yellow	5	3SU1401-2BC30-1AA0				
			Green	▶	3SU1401-2BC40-1AA0				
			Blue	▶	3SU1401-2BC50-1AA0				
			White	▶	3SU1401-2BC60-1AA0				
	230	--	Amber	5	3SU1401-2BF00-1AA0		1	1 unit	41J
			Red	▶	3SU1401-2BF20-1AA0				
			Yellow	5	3SU1401-2BF30-1AA0				
			Green	▶	3SU1401-2BF40-1AA0				
			Blue	▶	3SU1401-2BF50-1AA0				
			White	▶	3SU1401-2BF60-1AA0				



¹⁾ Only for use with SIRIUS commanding and signaling devices.

	Operational voltage at AC	Operational voltage at DC	Color	SD	Spring-type terminals		PU (UNIT, SET, M)	PS*	PG
					Article No.	Price per PU			
LED modules¹⁾ for base mounting									
 3SU1401-2BB20-3AA0	24	24	Amber	5	3SU1401-2BB00-3AA0		1	1 unit	41J
			Red	▶	3SU1401-2BB20-3AA0				
			Yellow	5	3SU1401-2BB30-3AA0				
			Green	▶	3SU1401-2BB40-3AA0				
			Blue	▶	3SU1401-2BB50-3AA0				
			White	▶	3SU1401-2BB60-3AA0				
	110	--	Amber	5	3SU1401-2BC00-3AA0		1	1 unit	41J
			Red	▶	3SU1401-2BC20-3AA0				
			Yellow	5	3SU1401-2BC30-3AA0				
			Green	▶	3SU1401-2BC40-3AA0				
			Blue	▶	3SU1401-2BC50-3AA0				
			White	▶	3SU1401-2BC60-3AA0				
	230	--	Amber	5	3SU1401-2BF00-3AA0		1	1 unit	41J
			Red	▶	3SU1401-2BF20-3AA0				
			Yellow	5	3SU1401-2BF30-3AA0				
			Green	▶	3SU1401-2BF40-3AA0				
			Blue	▶	3SU1401-2BF50-3AA0				
			White	▶	3SU1401-2BF60-3AA0				


¹⁾ Only for use with SIRIUS commanding and signaling devices.

SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

Modules for enclosures

	Operational voltage at AC	Operational voltage at DC	Color	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	V	V			d			
LED modules¹⁾ for base mounting - wide voltage range								
 3SU1401-2BG60-1AA0	6 ... 24	6 ... 24	Amber	3	3SU1401-2BG00-1AA0	1	1 unit	41J
			Red	▶	3SU1401-2BG20-1AA0			
			Yellow	5	3SU1401-2BG30-1AA0			
			Green	▶	3SU1401-2BG40-1AA0			
			Blue	▶	3SU1401-2BG50-1AA0			
			White	▶	3SU1401-2BG60-1AA0			
	24 ... 240	24 ... 240	Amber	5	3SU1401-2BH00-1AA0	1	1 unit	41J
			Red	▶	3SU1401-2BH20-1AA0			
			Yellow	5	3SU1401-2BH30-1AA0			
			Green	▶	3SU1401-2BH40-1AA0			
			Blue	▶	3SU1401-2BH50-1AA0			
			White	▶	3SU1401-2BH60-1AA0			
Spring-type terminals								
 3SU1401-2BG20-3AA0	6 ... 24	6 ... 24	Amber	5	3SU1401-2BG00-3AA0	1	1 unit	41J
			Red	▶	3SU1401-2BG20-3AA0			
			Yellow	5	3SU1401-2BG30-3AA0			
			Green	▶	3SU1401-2BG40-3AA0			
			Blue	▶	3SU1401-2BG50-3AA0			
			White	▶	3SU1401-2BG60-3AA0			
	24 ... 240	24 ... 240	Amber	5	3SU1401-2BH00-3AA0	1	1 unit	41J
			Red	▶	3SU1401-2BH20-3AA0			
			Yellow	5	3SU1401-2BH30-3AA0			
			Green	▶	3SU1401-2BH40-3AA0			
			Blue	▶	3SU1401-2BH50-3AA0			
			White	▶	3SU1401-2BH60-3AA0			

¹⁾ Only for use with SIRIUS commanding and signaling devices.

	Operational voltage at AC	Operational voltage at DC	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
	V	V		d				Article No.
LED test modules¹⁾ for base mounting								
 3SU1400-2CK10-1AA0	6 ... 240	6 ... 240	▶	3SU1400-2CK10-1AA0	1	1 unit	41J	

¹⁾ Only to be used for SIRIUS ACT LED modules (6 ... 24 V AC/DC, 24 V AC/DC, 24 ... 240 V AC/DC).

SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

Modules for enclosures

Operational voltage	Slave type	Number of digital inputs		Number of digital outputs	SD	Spring-type terminals (push-in)	PU (UNIT, SET, M)	PS*	PG	
		Standard	Safety-related							
V					d	Article No.	Price per PU			
AS-Interface modules, base mounting										
	30	4 DI/3 DQ AB	4	0	3	5	3SU1400-2EJ10-6AA0	1	1 unit	41J
		4 DI/4 DQ	4	0	4	▶ 5	3SU1400-2EK10-6AA0	1	1 unit	41J
		2 F-DI	0	2	0	5	3SU1400-2EA10-6AA0	1	1 unit	41J
		2 F-DI + 1 LED	0	2	1	5	3SU1401-2EE20-6AA0	1	1 unit	41J
3SU1400-2EJ10-6AA0										
Electronic module for IO-Link, base mounting										
	24	Freely programmable (default 6 DI/2 DQ)	0-8	0	0-8	5	3SU1400-2HL10-6AA0	1	1 unit	41J
3SU1400-2HL10-6AA0										
Support terminals										
		Black				3	3SU1400-2DA10-1AA0	1	1 unit	41J
		Blue				5	3SU1400-2DA50-1AA0	1	1 unit	41J
		Green/Yellow				3	3SU1400-2DA43-1AA0	1	1 unit	41J
3SU1400-2DA10-1AA0										
		Black				5	3SU1400-2DA10-3AA0	1	1 unit	41J
		Blue				5	3SU1400-2DA50-3AA0	1	1 unit	41J
		Green/Yellow				5	3SU1400-2DA43-3AA0	1	1 unit	41J
3SU1400-2DA50-3AA0										

SIRIUS ACT Pushbuttons and Indicator Lights Enclosures

Two-hand operation consoles

Overview

Equipment

The two-hand operation consoles are pre-equipped with commanding devices. In the case of plastic enclosures the command points are equipped as standard with actuators and indicators made of plastic and in the case of metal enclosures they are equipped with actuators and indicators made of metal.

The standard equipment comprises:

- 2 black mushroom pushbuttons, diameter 40 mm, 1 NO + 1 NC
- 1 red EMERGENCY STOP mushroom pushbutton according to ISO 13850, diameter 40 mm, with positive latching, 2 NC

The plastic version can be retrofitted with up to 8 customized command points. The surface of the console has premachined breaking points for this purpose.

Application

The two-hand operation consoles are required for use with machines and systems that have hazardous areas, in order to direct both hands of the operator to one position.

The operation consoles are primarily used on presses, stamping machines, printing presses and paper converting machines, in the chemical industry and in the rubber and plastics industries.

The control command is given by pressing the two mushroom pushbuttons on the sides simultaneously (within 0.5 s of each other) and must be maintained for as long as a hazard exists.

For the further processing of control commands, evaluation units are used, e.g. 3SK11 safety relays or the 3RK3, 3SK2 Modular Safety System.

Standards

The two-hand operation consoles comply with the requirements of EN 574.

Selection and ordering data

Version of actuating element/ unlatching method/ operating principle	Color of actuating element	Number of NO contacts	NC contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
--	----------------------------------	-----------------------------	----------------	----	-------------	-----------------	-------------------------	-----	----

Two-hand operation consoles

Plastic



3SU1803-3NB00-1AE1

None	--	0	0	5	3SU1803-3AA00-0AA1		1	1 unit	41J
A = Mushroom pushbutton/ momentary contact B = EMERGENCY STOP mushroom pushbutton/ rotate to unlatch C = Mushroom pushbutton/ momentary contact	A = Black/ B = Red/ C = Black	2	4	5	3SU1803-3NB00-1AE1		1	1 unit	41J

Metal



3SU1853-3AA00-0AA1

None	--	0	0	5	3SU1853-3AA00-0AA1		1	1 unit	41J
------	----	---	---	---	---------------------------	--	---	--------	-----



3SU1853-3NB00-1AA1

A = Mushroom pushbutton/ momentary contact B = EMERGENCY STOP mushroom pushbutton/ rotate to unlatch C = Mushroom pushbutton/ momentary contact	A = Black/ B = Red/ C = Black	2	4	5	3SU1853-3NB00-1AA1		1	1 unit	41J
---	-------------------------------------	---	---	---	---------------------------	--	---	--------	-----



3SU1853-3NB00-1AD1

		2	4	5	3SU1853-3NB00-1AD1		1	1 unit	41J
--	--	---	---	---	---------------------------	--	---	--------	-----

Version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
---------	----------	-------	----	-------------	-----------------	-------------------------	-----	----

Accessories

Stands for two-hand operation consoles



3SU1950-0HN10-0AA0

	Metal	Black	5	3SU1950-0HN10-0AA0		1	1 unit	41J
--	-------	-------	---	---------------------------	--	---	--------	-----

Overview

Labels can be inserted for identification purposes in pushbuttons (clear) and in illuminated pushbuttons with a flat button. These insert labels are made of transparent plastic with black inscription; they can be fitted in any 90° angle.

Inscription

The inscription is in upper/lower case, all words begin with upper case letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

The insert labels without inscription are suitable for user marking with permanent pen.

For customized inscriptions, see "Options", page 13/117.

Selection and ordering data

Color	Marking	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
-------	---------	----	-------------	--------------	-------------------	-----	----

Insert labels

For self-inscription

Milky white/black (label/lettering)	None	▶	3SU1900-0AB71-0AA0		100	10 units	41J
-------------------------------------	------	---	---------------------------	--	-----	----------	-----

With customized inscription

Milky white/black (label/lettering)	For inscriptions or symbols, see "Options", page 13/117.		3SU1900-0AB71-0AZ0		1	1 unit	41J
-------------------------------------	--	--	---------------------------	--	---	--------	-----



3SU1900-0AB71-0AA0



3SU1900-0AB71-0AB0



3SU1900-0AB71-0DN0

Inscription in German

Milky white/black (label/lettering)	Ein	5	3SU1900-0AB71-0AB0		100	10 units	41J
	Aus	5	3SU1900-0AB71-0AC0		100	10 units	41J
	Auf	5	3SU1900-0AB71-0AD0		100	10 units	41J
	Ab	5	3SU1900-0AB71-0AE0		100	10 units	41J
	Vor	5	3SU1900-0AB71-0AF0		100	10 units	41J
	Zurück	5	3SU1900-0AB71-0AG0		100	10 units	41J
	Rechts	5	3SU1900-0AB71-0AH0		100	10 units	41J
	Links	5	3SU1900-0AB71-0AJ0		100	10 units	41J
	Halt	5	3SU1900-0AB71-0AK0		100	10 units	41J
	Zu	5	3SU1900-0AB71-0AL0		100	10 units	41J
	Schnell	5	3SU1900-0AB71-0AM0		100	10 units	41J
	Langsam	5	3SU1900-0AB71-0AN0		100	10 units	41J
	Betrieb	5	3SU1900-0AB71-0AP0		100	10 units	41J
	Störung	5	3SU1900-0AB71-0AQ0		100	10 units	41J
	Einrichten	5	3SU1900-0AB71-0AR0		100	10 units	41J

Inscription in English

Milky white/black (label/lettering)	On	5	3SU1900-0AB71-0DJ0		100	10 units	41J
	Off	5	3SU1900-0AB71-0DK0		100	10 units	41J
	Up	5	3SU1900-0AB71-0DL0		100	10 units	41J
	Down	5	3SU1900-0AB71-0DM0		100	10 units	41J
	Forward	5	3SU1900-0AB71-0DN0		100	10 units	41J
	Right	5	3SU1900-0AB71-0DQ0		100	10 units	41J
	Left	5	3SU1900-0AB71-0DR0		100	10 units	41J
	Stop	5	3SU1900-0AB71-0DS0		100	10 units	41J
	Start	5	3SU1900-0AB71-0DT0		100	10 units	41J
	Reset	5	3SU1900-0AB71-0DU0		100	10 units	41J
	Test	5	3SU1900-0AB71-0DV0		100	10 units	41J
	Open	5	3SU1900-0AB71-0DW0		100	10 units	41J
	Close	5	3SU1900-0AB71-0DX0		100	10 units	41J
	Running	5	3SU1900-0AB71-0EB0		100	10 units	41J
	Fast	5	3SU1900-0AB71-0EE0		100	10 units	41J
	Slow	5	3SU1900-0AB71-0EF0		100	10 units	41J

Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data.

The default typeface used for inscriptions with text is Arial and the text is centered.

The font height is 2.5 mm.

Up to 6 characters per line are possible.

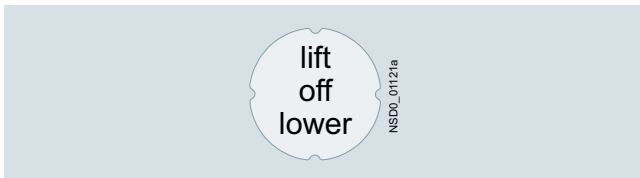
Examples for customized inscription



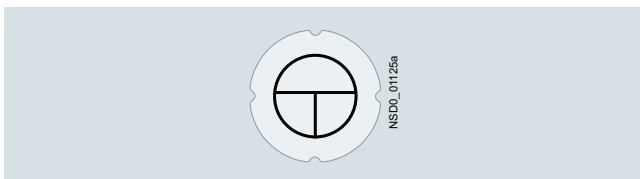
Two-line inscription in upper/lower case lettering (Q0Y)



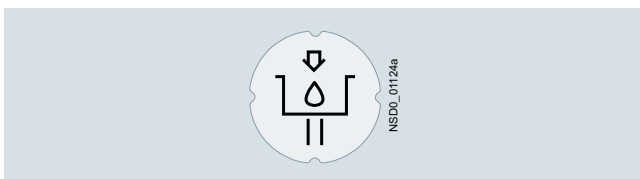
Single-line inscription in upper case lettering (Q1Y)



Three-line inscription in lower case letters (Q2Y)



Symbol number 5011 according to IEC 60417 (Q3Y)



Any symbol according to order form supplement (Q9Y)

Ordering notes

Append the following order codes to the article number:

- **Q0Y:** Text line(s) in upper/lower case, always upper case for beginning of line, e.g. Z1=Lift Z2=Lower
- **Q1Y:** Text line(s) in upper case, e.g. Z1=LIFT Z2=LOWER
- **Q2Y:** Text line(s) in lower case, e.g. Z1=lift off Z2=lower off
- **Q5Y:** Text line(s) in upper/lower case, all words begin with upper case letters, e.g. Z1=Lift Off Z2=Lower Off
- **Q3Y:** Symbol with number according to ISO 7000 or IEC 60417
- **Q9Y:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT Configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription in plain text without spaces, in addition to the article number and order code.

In the case of multi-line inscriptions, the text must be assigned to the respective line, e.g. Z1=LIFT Z2=LOWER, see [ordering example 1](#).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417, see [ordering examples 2 and 3](#).

The SIRIUS ACT Configurator must be used to select special inscriptions and symbols (order code Q9Y). In this case a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly using the CIN and the SIRIUS ACT Configurator (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:

- Configurator: www.siemens.com/sirius-act/configurator
- [Electronic Catalog CA 01 on DVD](#)
- Industry Mall: www.siemens.com/industrymall

Ordering example 1

A label with 2 lines of text is required:

3SU1900-0AB71-0AZ0

Q1Y

Z1=LIFT

Z2=LOWER

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

3SU1900-0AB71-0AZ0

Q3Y

Z=5011 IEC

Ordering example 3

A label inscribed with symbol No. 1118 according to ISO 7000 is required:

3SU1900-0AB71-0AZ0

Q3Y

Z=1118 ISO







SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Labels

Label holders for labeling plates

Selection and ordering data



Material	Label holder shape	Label holder color	Label fastening method	Labeling plate size		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
				Height	Width							
				mm	mm	d						
Label holders for labeling plates												
	Plastic With rounded bottom	Black	Self-adhesive	12.5	27	▶	3SU1900-0AG10-0AA0		100	10 units	41J	
				17.5	27	▶	3SU1900-0AH10-0AA0		100	10 units	41J	
				27	27	▶	3SU1900-0AJ10-0AA0		100	10 units	41J	
		Snap-on			12.5	27	▶	3SU1900-0AR10-0AA0		100	10 units	41J
					17.5	27	▶	3SU1900-0AS10-0AA0		100	10 units	41J
					27	27	▶	3SU1900-0AT10-0AA0		100	10 units	41J
	Plastic, with square bottom	Black	Self-adhesive	12.5	27	3	3SU1900-0AN10-0AA0		100	10 units	41J	
				17.5	27	▶	3SU1900-0AP10-0AA0		100	10 units	41J	
				27	27	5	3SU1900-0AQ10-0AA0		100	10 units	41J	
For 2 labeling plates												
	Plastic, with rounded bottom	Black	Self-adhesive	17.5	27	▶	3SU1900-0BQ10-0AA0		1	1 unit	41J	
				Snap-on	17.5	27	▶	3SU1900-0BR10-0AA0		1	1 unit	41J
For 4 labeling plates												
	Plastic, with rounded bottom	Black	Self-adhesive	17.5	27	▶	3SU1900-0BS10-0AA0		1	1 unit	41J	
				Snap-on	17.5	27	▶	3SU1900-0BT10-0AA0		1	1 unit	41J
For actuators and indicators, 30 mm NEW												
	Metal, matte With rounded bottom	Black	Self-adhesive	17.5	27	▶	3SU1960-0AH10-0AA0		1	10 units	41J	
				Snap-on	17.5	27	▶	3SU1960-0AS10-0AA0		1	10 units	41J
Label holders for labeling plates, coordinate switches												
	Plastic, with square bottom	Black	Self-adhesive	27	27	▶	3SU1900-0AL10-0AA0		1	1 unit	41J	
					Plastic, cross	Black	Self-adhesive	27	27	▶	3SU1900-0AM10-0AA0	

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Labels

Label holders for labeling plates

Material Label holder shape	Label holder color	Label fastening method	Labeling plate size		SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
			Height mm	Width mm							
Label holders for labeling plates, twin pushbuttons											
	Plastic, rectangular	Black	Self- adhesive	12.5	27	▶	3SU1900-0AK10-0AA0		100	10 units	41J
3SU1900-0AK10-0AA0											
Single frames											
	Plastic, square	Black	--	29.8	29.8	▶	3SU1900-0AX10-0AA0		1	10 units	41J
3SU1900-0AX10-0AA0											

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Labels

Labeling plates

Overview

Label holders of black plastic, and labeling plates (black with white print or silver-colored with black print) for sticking or snapping in place, are available for labeling. They are not suitable for EMERGENCY STOP buttons. Note mounting dimensions!

The label holders cannot be used in conjunction with sealing plugs, protective caps, protective collars and locking devices.

Inscription

The inscription is in upper/lower case, all words begin with upper case letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

For customized inscriptions, see "Options", page 13/126.





Labeling plates for sticking/snapping in place

The labels are available in three sizes:

- 12.5 mm × 27 mm
- 17.5 mm × 27 mm
- 27 mm × 27 mm

For mounting the labeling plates, you can choose between label holders for stick-on or snap-on mounting.

Selection and ordering data

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates 12.5 mm x 27 mm								
For self-inscription								
	Black/white (label/lettering)	None	--	3SU1900-0AC16-0AA0		100	10 units	41J
With customized inscription								
	Black/white (label/lettering)	For inscriptions or symbols, see "Options", page 13/126.		3SU1900-0AC16-0AZ0		1	1 unit	41J
Inscription in German								
	Black/white (label/lettering)	Ein	--	3SU1900-0AC16-0AB0		100	10 units	41J
		Aus	--	3SU1900-0AC16-0AC0		100	10 units	41J
		Auf	--	3SU1900-0AC16-0AD0		100	10 units	41J
		Ab	--	3SU1900-0AC16-0AE0		100	10 units	41J
		Vor	--	3SU1900-0AC16-0AF0		100	10 units	41J
		Zurück	--	3SU1900-0AC16-0AG0		100	10 units	41J
		Rechts	--	3SU1900-0AC16-0AH0		100	10 units	41J
		Links	--	3SU1900-0AC16-0AJ0		100	10 units	41J
		Halt	--	3SU1900-0AC16-0AK0		100	10 units	41J
		Zu	--	3SU1900-0AC16-0AL0		100	10 units	41J
		Betrieb	--	3SU1900-0AC16-0AP0		100	10 units	41J
		Störung	--	3SU1900-0AC16-0AQ0		100	10 units	41J
		Hand Auto	--	3SU1900-0AC16-0DB0		100	10 units	41J
		Hand O Auto	--	3SU1900-0AC16-0DD0		100	10 units	41J
Inscription in English								
	Black/white (label/lettering)	On	--	3SU1900-0AC16-0DJ0		100	10 units	41J
		Off	--	3SU1900-0AC16-0DK0		100	10 units	41J
		Up	--	3SU1900-0AC16-0DL0		100	10 units	41J
		Down	--	3SU1900-0AC16-0DM0		100	10 units	41J
		Forward	--	3SU1900-0AC16-0DN0		100	10 units	41J
		Reverse	--	3SU1900-0AC16-0DP0		100	10 units	41J
		Right	--	3SU1900-0AC16-0DQ0		100	10 units	41J
		Left	--	3SU1900-0AC16-0DR0		100	10 units	41J
		Stop	--	3SU1900-0AC16-0DS0		100	10 units	41J
		Start	--	3SU1900-0AC16-0DT0		100	10 units	41J
		Reset	--	3SU1900-0AC16-0DU0		100	10 units	41J
		Test	--	3SU1900-0AC16-0DV0		100	10 units	41J
		Open	--	3SU1900-0AC16-0DW0		100	10 units	41J
		Close	--	3SU1900-0AC16-0DX0		100	10 units	41J
		Jog	--	3SU1900-0AC16-0DE0		100	10 units	41J
		Running	--	3SU1900-0AC16-0EB0		100	10 units	41J
		Fault	--	3SU1900-0AC16-0EC0		100	10 units	41J
		Run	--	3SU1900-0AC16-0ED0		100	10 units	41J
		Stop Start	--	3SU1900-0AC16-0DC0		100	10 units	41J
		Off On	--	3SU1900-0AC16-0DH0		100	10 units	41J
		Power off	--	3SU1900-0AC16-0DF0		100	10 units	41J
		Power on	--	3SU1900-0AC16-0DG0		100	10 units	41J
		Man O Auto	--	3SU1900-0AC16-0DY0		100	10 units	41J
		Man Auto	--	3SU1900-0AC16-0EA0		100	10 units	41J

SIRIUS ACT Pushbuttons and Indicator Lights



Accessories

Labels

Labeling plates

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Labeling plates 12.5 mm x 27 mm

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Inscription in French								
 3SU1900-0AC16-0GA0	Black/white (label/lettering)	Marche	--	5	3SU1900-0AC16-0GA0	100	10 units	41J
		Arrêt	--	5	3SU1900-0AC16-0GB0	100	10 units	41J
		Montée	--	5	3SU1900-0AC16-0GC0	100	10 units	41J
		Descente	--	5	3SU1900-0AC16-0GD0	100	10 units	41J
		Avant	--	5	3SU1900-0AC16-0GE0	100	10 units	41J
		Retour	--	5	3SU1900-0AC16-0GF0	100	10 units	41J
		Droite	--	5	3SU1900-0AC16-0GG0	100	10 units	41J
		Gauche	--	5	3SU1900-0AC16-0GH0	100	10 units	41J
		Ouvert	--	5	3SU1900-0AC16-0GJ0	100	10 units	41J
		Fermé	--	5	3SU1900-0AC16-0GK0	100	10 units	41J
		Rapide	--	5	3SU1900-0AC16-0GL0	100	10 units	41J
		En Service	--	5	3SU1900-0AC16-0GM0	100	10 units	41J
		Défaut	--	5	3SU1900-0AC16-0GN0	100	10 units	41J
		Réglage	--	5	3SU1900-0AC16-0GP0	100	10 units	41J
		Arrêt d'urgence	--	5	3SU1900-0AC16-0GQ0	100	10 units	41J
		Hors Service	--	5	3SU1900-0AC16-0GR0	100	10 units	41J
		Sous tension	--	5	3SU1900-0AC16-0GS0	100	10 units	41J
		Manu Auto	--	5	3SU1900-0AC16-0GT0	100	10 units	41J
		Marche Arrêt	--	5	3SU1900-0AC16-0GU0	100	10 units	41J
	Réarmement	--	5	3SU1900-0AC16-0GV0	100	10 units	41J	
With symbol								
 3SU1900-0AC16-0QG0	Black/white (label/lettering)	O	--	5	3SU1900-0AC16-0QA0	100	10 units	41J
		I	--	5	3SU1900-0AC16-0QB0	100	10 units	41J
		O I	--	3	3SU1900-0AC16-0QG0	100	10 units	41J
		1 2	--	5	3SU1900-0AC16-0QJ0	100	10 units	41J
		↑ ARROW DIRECTION UP	--	5	3SU1900-0AC16-0QS0	100	10 units	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Labels

Labeling plates

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Labeling plates 12.5 mm x 27 mm

For self-inscription

Silver/black (label/lettering)	None			3SU1900-0AC81-0AA0		100	10 units	41J
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With customized inscription

Silver/black (label/lettering)	For inscriptions or symbols, see "Options", page 13/126.			3SU1900-0AC81-0AZ0		1	1 unit	41J
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Inscription in German

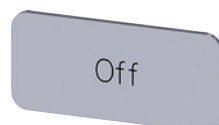
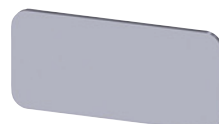
Silver/black (label/lettering)	Ein	--	5	3SU1900-0AC81-0AB0		100	10 units	41J
	Aus	--	5	3SU1900-0AC81-0AC0		100	10 units	41J
	Auf	--	5	3SU1900-0AC81-0AD0		100	10 units	41J
	Ab	--	5	3SU1900-0AC81-0AE0		100	10 units	41J
	Vor	--	5	3SU1900-0AC81-0AF0		100	10 units	41J
	Zurück	--	5	3SU1900-0AC81-0AG0		100	10 units	41J
	Rechts	--	5	3SU1900-0AC81-0AH0		100	10 units	41J
	Links	--	5	3SU1900-0AC81-0AJ0		100	10 units	41J
	Halt	--	5	3SU1900-0AC81-0AK0		100	10 units	41J
	Zu	--	5	3SU1900-0AC81-0AL0		100	10 units	41J
	Schnell	--	5	3SU1900-0AC81-0AM0		100	10 units	41J
	Langsam	--	5	3SU1900-0AC81-0AN0		100	10 units	41J
	Betrieb	--	5	3SU1900-0AC81-0AP0		100	10 units	41J
	Störung	--	5	3SU1900-0AC81-0AQ0		100	10 units	41J
	Einrichten	--	5	3SU1900-0AC81-0AR0		100	10 units	41J
	Hand Auto	--	5	3SU1900-0AC81-0DB0		100	10 units	41J
	Stop Start	--	5	3SU1900-0AC81-0DC0		100	10 units	41J
	Hand O Auto	--	5	3SU1900-0AC81-0DD0		100	10 units	41J

Inscription in English

Silver/black (label/lettering)	On	--	5	3SU1900-0AC81-0DJ0		100	10 units	41J
	Off	--	5	3SU1900-0AC81-0DK0		100	10 units	41J
	Up	--	5	3SU1900-0AC81-0DL0		100	10 units	41J
	Down	--	5	3SU1900-0AC81-0DM0		100	10 units	41J
	Stop	--	3	3SU1900-0AC81-0DS0		100	10 units	41J
	Start	--	5	3SU1900-0AC81-0DT0		100	10 units	41J
	Reset	--	5	3SU1900-0AC81-0DU0		100	10 units	41J
	Test	--	5	3SU1900-0AC81-0DV0		100	10 units	41J
	Open	--	5	3SU1900-0AC81-0DW0		100	10 units	41J
	Close	--	5	3SU1900-0AC81-0DX0		100	10 units	41J
	Man O Auto	--	5	3SU1900-0AC81-0DY0		100	10 units	41J
	Man Auto	--	5	3SU1900-0AC81-0EA0		100	10 units	41J
	Running	--	5	3SU1900-0AC81-0EB0		100	10 units	41J
	Fault	--	5	3SU1900-0AC81-0EC0		100	10 units	41J
	Fast	--	5	3SU1900-0AC81-0EE0		100	10 units	41J
	Slow	--	5	3SU1900-0AC81-0EF0		100	10 units	41J

With symbol

Silver/black (label/lettering)	O	5008 IEC	5	3SU1900-0AC81-0QA0		100	10 units	41J	
	I	5007 IEC	5	3SU1900-0AC81-0QB0		100	10 units	41J	
	II	--	5	3SU1900-0AC81-0QC0		100	10 units	41J	
	III	--	5	3SU1900-0AC81-0QD0		100	10 units	41J	
	O I	--	5	3SU1900-0AC81-0QG0		100	10 units	41J	
	I O II	--	5	3SU1900-0AC81-0QK0		100	10 units	41J	
	1 O 2	--	5	3SU1900-0AC81-0QL0		100	10 units	41J	
	→	ARROW DIRECTION TO RIGHT	5022 IEC	5	3SU1900-0AC81-0QR0		100	10 units	41J
	↑	ARROW DIRECTION UP	--	5	3SU1900-0AC81-0QS0		100	10 units	41J



SIRIUS ACT Pushbuttons and Indicator Lights






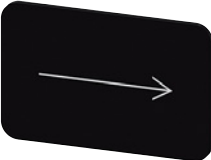
Accessories

Labels

Labeling plates

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Labeling plates 17.5 mm x 27 mm

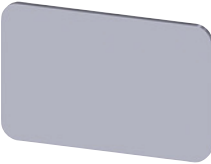
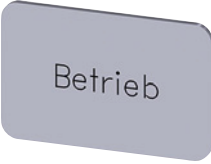



	For self-inscription							
	Black/white (label/lettering)	None	--	▶	3SU1900-0AD16-0AA0	100	10 units	41J
	With customized inscription							
	Black/white (label/lettering)	For inscriptions or symbols, see "Options", page 13/126.			3SU1900-0AD16-0AZ0	1	1 unit	41J
3SU1900-0AD16-0AA0								
	Inscription in German							
	Black/white (label/lettering)	Ein	--	▶	3SU1900-0AD16-0AB0	100	10 units	41J
		Aus	--	▶	3SU1900-0AD16-0AC0	100	10 units	41J
		Auf	--	▶	3SU1900-0AD16-0AD0	100	10 units	41J
		Ab	--	▶	3SU1900-0AD16-0AE0	100	10 units	41J
		Vor	--	▶	3SU1900-0AD16-0AF0	100	10 units	41J
		Zurück	--	▶	3SU1900-0AD16-0AG0	100	10 units	41J
		Halt	--	▶	3SU1900-0AD16-0AK0	100	10 units	41J
		Zu	--	▶	3SU1900-0AD16-0AL0	100	10 units	41J
		Betrieb	--	▶	3SU1900-0AD16-0AP0	100	10 units	41J
	Störung	--	▶	3SU1900-0AD16-0AQ0	100	10 units	41J	
	Hand Auto	--	▶	3SU1900-0AD16-0DB0	100	10 units	41J	
3SU1900-0AD16-0AC0								
	Inscription in English							
	Black/white (label/lettering)	Stop Start	--	▶	3SU1900-0AD16-0DC0	100	10 units	41J
		On	--	▶	3SU1900-0AD16-0DJ0	100	10 units	41J
		Off	--	▶	3SU1900-0AD16-0DK0	100	10 units	41J
		Up	--	▶	3SU1900-0AD16-0DL0	100	10 units	41J
		Down	--	▶	3SU1900-0AD16-0DM0	100	10 units	41J
		Forward	--	▶	3SU1900-0AD16-0DN0	100	10 units	41J
		Reverse	--	▶	3SU1900-0AD16-0DP0	100	10 units	41J
		Right	--	▶	3SU1900-0AD16-0DQ0	100	10 units	41J
		Stop	--	▶	3SU1900-0AD16-0DS0	100	10 units	41J
		Start	--	▶	3SU1900-0AD16-0DT0	100	10 units	41J
		Open	--	▶	3SU1900-0AD16-0DW0	100	10 units	41J
		Close	--	▶	3SU1900-0AD16-0DX0	100	10 units	41J
		Man Auto	--	▶	3SU1900-0AD16-0EA0	100	10 units	41J
		Running	--	▶	3SU1900-0AD16-0EB0	100	10 units	41J
		Fault	--	▶	3SU1900-0AD16-0EC0	100	10 units	41J
	3SU1900-0AD16-0DK0							
	Inscription in French							
	Black/white (label/lettering)	Marche	--	▶	3SU1900-0AD16-0GA0	100	10 units	41J
		Arrêt	--	▶	3SU1900-0AD16-0GB0	100	10 units	41J
		Droite	--	▶	3SU1900-0AD16-0GG0	100	10 units	41J
		Gauche	--	▶	3SU1900-0AD16-0GH0	100	10 units	41J
		En Service	--	▶	3SU1900-0AD16-0GM0	100	10 units	41J
		Défaut	--	▶	3SU1900-0AD16-0GN0	100	10 units	41J
		Sous tension	--	▶	3SU1900-0AD16-0GS0	100	10 units	41J
		Manu Auto	--	▶	3SU1900-0AD16-0GT0	100	10 units	41J
		Marche Arrêt	--	▶	3SU1900-0AD16-0GU0	100	10 units	41J
	Réarmement	--	▶	3SU1900-0AD16-0GV0	100	10 units	41J	
3SU1900-0AD16-0DK0								
	With symbol							
	Black/white (label/lettering)	O	5008 IEC	▶	3SU1900-0AD16-0QA0	100	10 units	41J
		I	5007 IEC	▶	3SU1900-0AD16-0QB0	100	10 units	41J
		O I	--	▶	3SU1900-0AD16-0QG0	100	10 units	41J
		→ ARROW DIRECTION TO RIGHT	5022 IEC	▶	3SU1900-0AD16-0QR0	100	10 units	41J
	↑ ARROW DIRECTION UP	--	▶	3SU1900-0AD16-0QS0	100	10 units	41J	
3SU1900-0AD16-0QR0								

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Labels

Labeling plates

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Labeling plates 17.5 mm x 27 mm									
For self-inscription									
	Silver/black (label/lettering)	None	--	▶ 3SU1900-0AD81-0AA0		100	10 units	41J	
With customized inscription									
	Silver/black (label/lettering)	For inscriptions or symbols, see "Options", page 13/126.		3SU1900-0AD81-0AZ0		1	1 unit	41J	
3SU1900-0AD81-0AA0									
Inscription in German									
	Silver/black (label/lettering)	Ein	--	5	3SU1900-0AD81-0AB0	100	10 units	41J	
		Aus	--	5	3SU1900-0AD81-0AC0	100	10 units	41J	
		Auf	--	5	3SU1900-0AD81-0AD0	100	10 units	41J	
		Ab	--	5	3SU1900-0AD81-0AE0	100	10 units	41J	
		Vor	--	5	3SU1900-0AD81-0AF0	100	10 units	41J	
		Zurück	--	5	3SU1900-0AD81-0AG0	100	10 units	41J	
		Rechts	--	5	3SU1900-0AD81-0AH0	100	10 units	41J	
		Halt	--	5	3SU1900-0AD81-0AK0	100	10 units	41J	
		Zu	--	5	3SU1900-0AD81-0AL0	100	10 units	41J	
		Betrieb	--	▶	3SU1900-0AD81-0AP0	100	10 units	41J	
		Störung	--	5	3SU1900-0AD81-0AQ0	100	10 units	41J	
		Hand Auto	--	5	3SU1900-0AD81-0DB0	100	10 units	41J	
		Hand	--	5	3SU1900-0AD81-0DD0	100	10 units	41J	
		○							
		Auto							
3SU1900-0AD81-0AP0									
Inscription in English									
	Silver/black (label/lettering)	On	--	5	3SU1900-0AD81-0DJ0	100	10 units	41J	
		Off	--	5	3SU1900-0AD81-0DK0	100	10 units	41J	
		Stop	--	5	3SU1900-0AD81-0DS0	100	10 units	41J	
		Start	--	5	3SU1900-0AD81-0DT0	100	10 units	41J	
		Reset	--	5	3SU1900-0AD81-0DU0	100	10 units	41J	
		Man	--	5	3SU1900-0AD81-0DY0	100	10 units	41J	
		○							
		Auto							
		Fault	--	5	3SU1900-0AD81-0EC0	100	10 units	41J	
3SU1900-0AD81-0EC0									
With symbol									
	Silver/black (label/lettering)	O	5008 IEC	5	3SU1900-0AD81-0QA0	100	10 units	41J	
		I	5007 IEC	5	3SU1900-0AD81-0QB0	100	10 units	41J	
		O I	--	5	3SU1900-0AD81-0QG0	100	10 units	41J	
		I O II	--	▶	3SU1900-0AD81-0QK0	100	10 units	41J	
		I O 2	--	5	3SU1900-0AD81-0QL0	100	10 units	41J	
		→	ARROW DIRECTION TO RIGHT	5022 IEC	5	3SU1900-0AD81-0QR0	100	10 units	41J
		↑	ARROW DIRECTION UP	--	5	3SU1900-0AD81-0QS0	100	10 units	41J
3SU1900-0AD81-0QG0									

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Labels

Labeling plates

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Labeling plates 27 mm x 27 mm

For self-inscription

Black/white (label/lettering)	None	--	▶	3SU1900-0AE16-0AA0		100	10 units	41J
Silver/black (label/lettering)	None	--	▶	3SU1900-0AE81-0AA0		100	10 units	41J

With customized inscription

Black/white (label/lettering)	For inscriptions or symbols, see "Options", page 13/126.			3SU1900-0AE16-0AZ0		1	1 unit	41J
Silver/black (label/lettering)				3SU1900-0AE81-0AZ0		1	1 unit	41J

3SU1900-0AE16-0AA0

3SU1900-0AE81-0AA0

Inscription in German

Black/white (label/lettering)	Ein	--	5	3SU1900-0AE16-0AB0		100	10 units	41J
	Aus	--	5	3SU1900-0AE16-0AC0		100	10 units	41J
	Auf	--	5	3SU1900-0AE16-0AD0		100	10 units	41J
	Ab	--	5	3SU1900-0AE16-0AE0		100	10 units	41J
	Vor	--	5	3SU1900-0AE16-0AF0		100	10 units	41J
	Zurück	--	5	3SU1900-0AE16-0AG0		100	10 units	41J
	Rechts	--	5	3SU1900-0AE16-0AH0		100	10 units	41J
	Links	--	5	3SU1900-0AE16-0AJ0		100	10 units	41J
	Halt	--	5	3SU1900-0AE16-0AK0		100	10 units	41J
	Zu	--	5	3SU1900-0AE16-0AL0		100	10 units	41J
	Betrieb	--	5	3SU1900-0AE16-0AP0		100	10 units	41J
	Störung	--	5	3SU1900-0AE16-0AQ0		100	10 units	41J
	Hand Auto	--	5	3SU1900-0AE16-0DB0		100	10 units	41J

3SU1900-0AE16-0AD0

Inscription in English

Black/white (label/lettering)	On	--	5	3SU1900-0AE16-0DJ0		100	10 units	41J
	Off	--	5	3SU1900-0AE16-0DK0		100	10 units	41J
	Up	--	5	3SU1900-0AE16-0DL0		100	10 units	41J
	Down	--	5	3SU1900-0AE16-0DM0		100	10 units	41J
	Forward	--	5	3SU1900-0AE16-0DN0		100	10 units	41J
	Reverse	--	5	3SU1900-0AE16-0DP0		100	10 units	41J
	Stop	--	5	3SU1900-0AE16-0DS0		100	10 units	41J
	Start	--	5	3SU1900-0AE16-0DT0		100	10 units	41J
	EMERGENCY STOP	--	5	3SU1900-0AE16-0DA0		100	10 units	41J
	Stop Start	--	5	3SU1900-0AE16-0DC0		100	10 units	41J

3SU1900-0AE16-0DK0

Inscription in French

Black/white (label/lettering)	Marche	--	5	3SU1900-0AE16-0GA0		100	10 units	41J
	Arrêt	--	5	3SU1900-0AE16-0GB0		100	10 units	41J
	Montée	--	5	3SU1900-0AE16-0GC0		100	10 units	41J
	Descente	--	5	3SU1900-0AE16-0GD0		100	10 units	41J
	En Service	--	5	3SU1900-0AE16-0GM0		100	10 units	41J
	Défaut	--	5	3SU1900-0AE16-0GN0		100	10 units	41J
	Sous tension	--	5	3SU1900-0AE16-0GS0		100	10 units	41J
	Manu Auto	--	5	3SU1900-0AE16-0GT0		100	10 units	41J
	Marche Arrêt	--	5	3SU1900-0AE16-0GU0		100	10 units	41J

3SU1900-0AE16-0GB0

With symbol

Black/white (label/lettering)	O I	--	5	3SU1900-0AE16-0QG0		100	10 units	41J
	→ ARROW DIRECTION TO RIGHT	5022 IEC	5	3SU1900-0AE16-0QR0		100	10 units	41J

3SU1900-0AE16-0QG0

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Labels

Labeling plates

Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data.

The default typeface used for inscriptions with text is Arial and the text is centered.

Up to 11 characters per line are possible.

Font height

Label size 12.5 mm × 27 mm, max. 3 lines:

Font height	1-line	4 mm
	2-line	3 mm
	3-line	1.75 mm

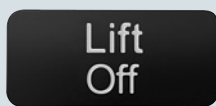
Label size 17.5 mm × 27 mm, max. 3 lines:

Font height	1- to 2-line	4 mm
	3-line	3 mm

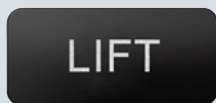
Label size 27 mm × 27 mm, max. 5 lines:

Font height	1- to 3-line	4 mm
	4-line	3.5 mm
	5-line	3 mm

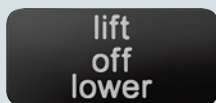
Examples for customized inscription



Two-line inscription in upper/lower case lettering (Q0Y)



Single-line inscription in upper case lettering (Q1Y)



Three-line inscription in lower case letters (Q2Y)



Symbol number 5011 according to IEC 60417 (Q3Y)



Any symbol according to order form supplement (Q9Y)

Ordering notes

Append the following order codes to the article number:

- **Q0Y:** Text line(s) in upper/lower case, always upper case for beginning of line, e.g. Z1=Lift Z2=Lower
- **Q1Y:** Text line(s) in upper case, e.g. Z1=LIFT Z2=LOWER
- **Q2Y:** Text line(s) in lower case, e.g. Z1=lift off Z2=lower off
- **Q5Y:** Text line(s) in upper/lower case, all words begin with upper case letters, e.g. Z1=Lift Off Z2=Lower Off
- **Q3Y:** Symbol with number according to ISO 7000 or IEC 60417
- **Q9Y:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT Configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription in plain text without spaces, in addition to the article number and order code.

In the case of multi-line inscriptions, the text must be assigned to the respective line, e.g. Z1=LIFT Z2=LOWER, see [ordering example 1](#).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417, see [ordering examples 2 and 3](#).

The SIRIUS ACT Configurator must be used to select special inscriptions and symbols (order code Q9Y). In this case a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly using the CIN and the SIRIUS ACT Configurator (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:

- Configurator: www.siemens.com/sirius-act/configurator
- Electronic Catalog CA 01 on DVD
- Industry Mall: www.siemens.com/industrymall

Ordering example 1

A label with 2 lines of text is required:

3SU1900-0AC16-0AZ0

Q1Y

Z1=LIFT

Z2=LOWER

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

3SU1900-0AC16-0AZ0

Q3Y

Z=5011 IEC

Ordering example 3

A label inscribed with symbol No. 1118 according to ISO 7000 is required:

3SU1900-0AC16-0AZ0

Q3Y

Z=1118 ISO

Overview

The labeling plates in size 22 mm x 22 mm can be attached to enclosures with cutouts for labels. There are versions in black with white print or silver-colored with black print.

Inscription

The inscription is in upper/lower case, all words begin with upper case letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

For customized inscriptions, see "Options", page 13/130.

Selection and ordering data

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Labeling plates 22 mm x 22 mm

For self-inscription

Black/white (label/lettering)	None	--	▶	3SU1900-0AF16-0AA0		100	10 units	41J
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With customized inscription

Black/white (label/lettering)	For inscriptions or symbols, see "Options", page 13/130.			3SU1900-0AF16-0AZ0		1	1 unit	41J
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3SU1900-0AF16-0AA0

Inscription in German

Black/white (label/lettering)	Ein	--	5	3SU1900-0AF16-0AB0		1	10 units	41J
	Aus	--	5	3SU1900-0AF16-0AC0		1	10 units	41J
	Auf	--	5	3SU1900-0AF16-0AD0		1	10 units	41J
	Ab	--	5	3SU1900-0AF16-0AE0		1	10 units	41J
	Vor	--	5	3SU1900-0AF16-0AF0		1	10 units	41J
	Zurück	--	5	3SU1900-0AF16-0AG0		1	10 units	41J
	Rechts	--	5	3SU1900-0AF16-0AH0		1	10 units	41J
	Links	--	5	3SU1900-0AF16-0AJ0		1	10 units	41J
	Halt	--	5	3SU1900-0AF16-0AK0		1	10 units	41J
	Zu	--	5	3SU1900-0AF16-0AL0		1	10 units	41J
	Schnell	--	5	3SU1900-0AF16-0AM0		1	10 units	41J
	Langsam	--	5	3SU1900-0AF16-0AN0		1	10 units	41J
	Betrieb	--	5	3SU1900-0AF16-0AP0		1	10 units	41J
	Störung	--	5	3SU1900-0AF16-0AQ0		1	10 units	41J
	Einrichten	--	5	3SU1900-0AF16-0AR0		1	10 units	41J
	NOT AUS	--	5	3SU1900-0AF16-0AS0		1	10 units	41J



3SU1900-0AF16-0AB0



3SU1900-0AF16-0AP0

Inscription in English

Black/white (label/lettering)	On	--	5	3SU1900-0AF16-0DJ0		1	10 units	41J
	Off	--	5	3SU1900-0AF16-0DK0		1	10 units	41J
	Up	--	5	3SU1900-0AF16-0DL0		1	10 units	41J
	Down	--	5	3SU1900-0AF16-0DM0		1	10 units	41J
	Forward	--	5	3SU1900-0AF16-0DN0		1	10 units	41J
	Right	--	5	3SU1900-0AF16-0DQ0		1	10 units	41J
	Left	--	5	3SU1900-0AF16-0DR0		1	10 units	41J
	Stop	--	5	3SU1900-0AF16-0DS0		1	10 units	41J
	Start	--	5	3SU1900-0AF16-0DT0		1	10 units	41J
	Reset	--	5	3SU1900-0AF16-0DU0		1	10 units	41J
	Test	--	5	3SU1900-0AF16-0DV0		1	10 units	41J
	Open	--	5	3SU1900-0AF16-0DW0		1	10 units	41J
	Close	--	5	3SU1900-0AF16-0DX0		1	10 units	41J
	Running	--	5	3SU1900-0AF16-0EB0		1	10 units	41J
	Fault	--	5	3SU1900-0AF16-0EC0		1	10 units	41J
	Fast	--	5	3SU1900-0AF16-0EE0		1	10 units	41J
	Slow	--	5	3SU1900-0AF16-0EF0		1	10 units	41J
	EMERGENCY STOP	--	5	3SU1900-0AF16-0DA0		1	10 units	41J



3SU1900-0AF16-0DM0



3SU1900-0AF16-0EC0

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Labels

Labeling plates for enclosures

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Labeling plates 22 mm x 22 mm

Inscription in French



3SU1900-0AF16-0GA0

Black/white (label/lettering)	Marche	--	5	3SU1900-0AF16-0GA0		1	10 units	41J
	Arrêt	--	5	3SU1900-0AF16-0GB0		1	10 units	41J
	Montée	--	5	3SU1900-0AF16-0GC0		1	10 units	41J
	Descente	--	5	3SU1900-0AF16-0GD0		1	10 units	41J
	Retour	--	5	3SU1900-0AF16-0GF0		1	10 units	41J
	Droite	--	5	3SU1900-0AF16-0GG0		1	10 units	41J
	Gauche	--	5	3SU1900-0AF16-0GH0		1	10 units	41J
	Ouvert	--	5	3SU1900-0AF16-0GJ0		1	10 units	41J
	Fermé	--	5	3SU1900-0AF16-0GK0		1	10 units	41J
	Rapide	--	5	3SU1900-0AF16-0GL0		1	10 units	41J
	En Service	--	5	3SU1900-0AF16-0GM0		1	10 units	41J
	Défaut	--	5	3SU1900-0AF16-0GN0		1	10 units	41J
	Sous tension	--	5	3SU1900-0AF16-0GS0		1	10 units	41J
	Manu Auto	--	5	3SU1900-0AF16-0GT0		1	10 units	41J
	Marche Arrêt	--	5	3SU1900-0AF16-0GU0		1	10 units	41J
	Réarmement	--	5	3SU1900-0AF16-0GV0		1	10 units	41J
	Lent	--	5	3SU1900-0AF16-0GW0		1	10 units	41J
	Arrêt d'urgence	--	5	3SU1900-0AF16-0GQ0		1	10 units	41J



3SU1900-0AF16-0GB0



3SU1900-0AF16-0QQ0

With symbol (ON/OFF)

Black/white (label/lettering)	O	5008 IEC	5	3SU1900-0AF16-0QA0		1	10 units	41J
	I	5007 IEC	5	3SU1900-0AF16-0QB0		1	10 units	41J
	II	--	5	3SU1900-0AF16-0QC0		1	10 units	41J
	III	--	5	3SU1900-0AF16-0QD0		1	10 units	41J
	O I	--	5	3SU1900-0AF16-0QG0		1	10 units	41J
	I O II	--	5	3SU1900-0AF16-0QK0		1	10 units	41J
	I	--	5	3SU1900-0AF16-0QP0		1	10 units	41J
	O	--	5	3SU1900-0AF16-0QR0		1	10 units	41J
	(below each other)	--	5	3SU1900-0AF16-0QQ0		1	10 units	41J
	II	--	5	3SU1900-0AF16-0QR0		1	10 units	41J
	O	--	5	3SU1900-0AF16-0QR0		1	10 units	41J
	I	--	5	3SU1900-0AF16-0QR0		1	10 units	41J
	(below each other)	--	5	3SU1900-0AF16-0QR0		1	10 units	41J



3SU1900-0AF16-0RW0

With symbol (graphic)

Black/white (label/lettering)	→	ARROW DIRECTION TO RIGHT	5022 IEC	5	3SU1900-0AF16-0QR0		1	10 units	41J
		PUMP	0134 ISO	5	3SU1900-0AF16-0RD0		1	10 units	41J
		FAN	--	5	3SU1900-0AF16-0RV0		1	10 units	41J
		COOLING	--	5	3SU1900-0AF16-0RW0		1	10 units	41J
		ILLUMINATION	--	5	3SU1900-0AF16-0RX0		1	10 units	41J
		MOTOR	--	5	3SU1900-0AF16-0RY0		1	10 units	41J

SIRIUS ACT Pushbuttons and Indicator Lights

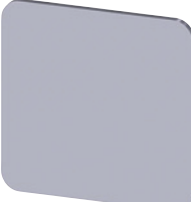


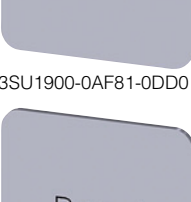


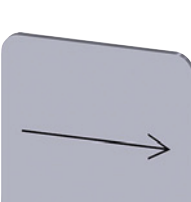
Accessories

Labels

Labeling plates for enclosures

Color	Marking	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Labeling plates 22 mm x 22 mm

	For self-inscription								
	Silver/black (label/lettering)	None	--	▶	3SU1900-0AF81-0AA0	100	10 units	41J	
	With customized inscription								
	Silver/black (label/lettering)	For inscriptions or symbols, see "Options", page 13/130.			3SU1900-0AF81-0AZ0	1	1 unit	41J	
Inscription in German									
	Silver/black (label/lettering)	Ein	--	5	3SU1900-0AF81-0AB0	1	10 units	41J	
		Aus	--	5	3SU1900-0AF81-0AC0	1	10 units	41J	
		Auf	--	5	3SU1900-0AF81-0AD0	1	10 units	41J	
		Ab	--	5	3SU1900-0AF81-0AE0	1	10 units	41J	
		Vor	--	5	3SU1900-0AF81-0AF0	1	10 units	41J	
		Zurück	--	5	3SU1900-0AF81-0AG0	1	10 units	41J	
		Rechts	--	5	3SU1900-0AF81-0AH0	1	10 units	41J	
		Links	--	5	3SU1900-0AF81-0AJ0	1	10 units	41J	
		Halt	--	5	3SU1900-0AF81-0AK0	1	10 units	41J	
		Zu	--	5	3SU1900-0AF81-0AL0	1	10 units	41J	
		Schnell	--	5	3SU1900-0AF81-0AM0	1	10 units	41J	
		Langsam	--	5	3SU1900-0AF81-0AN0	1	10 units	41J	
			Betrieb	--	5	3SU1900-0AF81-0AP0	1	10 units	41J
		Störung	--	5	3SU1900-0AF81-0AQ0	1	10 units	41J	
		Einrichten	--	5	3SU1900-0AF81-0AR0	1	10 units	41J	
		NOT AUS	--	5	3SU1900-0AF81-0AS0	1	10 units	41J	
		NOT-HALT	--	5	3SU1900-0AF81-0AT0	1	10 units	41J	
		Hand O Auto	--	5	3SU1900-0AF81-0DD0	1	10 units	41J	
Inscription in English									
		Silver/black (label/lettering)	Stop	--	5	3SU1900-0AF81-0DS0	1	10 units	41J
			Start	--	5	3SU1900-0AF81-0DT0	1	10 units	41J
			Reset	--	5	3SU1900-0AF81-0DU0	1	10 units	41J
		Test	--	5	3SU1900-0AF81-0DV0	1	10 units	41J	
		Open	--	5	3SU1900-0AF81-0DW0	1	10 units	41J	
With symbol (ON/OFF)									
	Silver/black (label/lettering)	O	5008 IEC	5	3SU1900-0AF81-0QA0	1	10 units	41J	
		I	5007 IEC	5	3SU1900-0AF81-0QB0	1	10 units	41J	
		II	--	5	3SU1900-0AF81-0QC0	1	10 units	41J	
		III	--	5	3SU1900-0AF81-0QD0	1	10 units	41J	
		O I	--	5	3SU1900-0AF81-0QG0	1	10 units	41J	
		I O II	--	5	3SU1900-0AF81-0QK0	1	10 units	41J	
		I O	--	5	3SU1900-0AF81-0QP0	1	10 units	41J	
		(below each other)							
		II O	--	5	3SU1900-0AF81-0QQ0	1	10 units	41J	
		I (below each other)							
With symbol (graphic)									
	Silver/black (label/lettering)	→	ARROW DIRECTION TO RIGHT	5022 IEC	5	3SU1900-0AF81-0QR0	1	10 units	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Labels

Labeling plates for enclosures

Options

Customized inscriptions

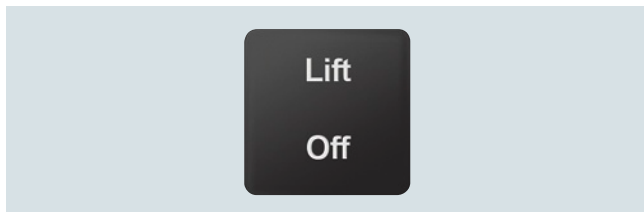
The labels can be inscribed with texts and symbols not listed in the ordering data.

The default typeface used for inscriptions with text is Arial and the text is centered.

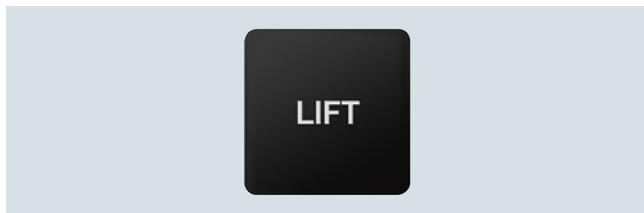
The font height is 4 mm (1- and 2-line) and 3.5 mm (3-line).

Up to 8 characters per line are possible.

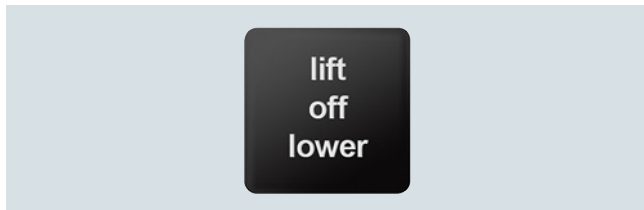
Examples for customized inscription



Two-line inscription in upper/lower case lettering (Q0Y)



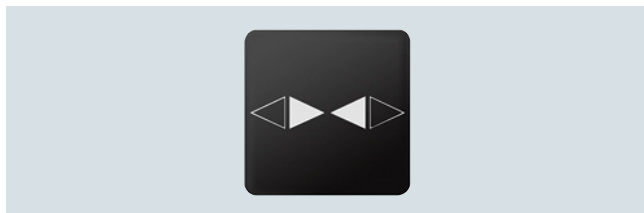
Single-line inscription in upper case lettering (Q1Y)



Backing plate for enclosures, customized inscription (Q2Y)



Symbol number 5011 according to IEC 60417 (Q3Y)



Any symbol according to order form supplement (Q9Y)

Ordering notes

Append the following order codes to the article number:

- **Q0Y:** Text line(s) in upper/lower case, always upper case for beginning of line, e.g. Z1=Lift Z2=Lower
- **Q1Y:** Text line(s) in upper case, e.g. Z1=LIFT Z2=LOWER
- **Q2Y:** Text line(s) in lower case, e.g. Z1=lift off Z2=lower off
- **Q5Y:** Text line(s) in upper/lower case, all words begin with upper case letters, e.g. Z1=Lift Off Z2=Lower Off
- **Q3Y:** Symbol with number according to ISO 7000 or IEC 60417
- **Q9Y:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT Configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription in plain text without spaces, in addition to the article number and order code.

In the case of multi-line inscriptions, the text must be assigned to the respective line, e.g. Z1=LIFT Z2=LOWER, [see ordering example 1](#).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 ([see ordering example 2 and 3](#)).

The SIRIUS ACT Configurator must be used to select special inscriptions and symbols (order code Q9Y). In this case a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly using the CIN and the SIRIUS ACT Configurator (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:

- Configurator: www.siemens.com/sirius-act/configurator
- Electronic Catalog CA 01 on DVD
- Industry Mall: www.siemens.com/industrymall

Ordering example 1

A label with 2 lines of text is required:

3SU1900-0AF16-0AZ0

Q1Y

Z1=LIFT

Z2=LOWER

Ordering example 2

A label inscribed with symbol No. 5011 according to IEC 60417 is required:

3SU1900-0AF16-0AZ0

Q3Y

Z=5011 IEC

Ordering example 3

A label inscribed with symbol No. 1118 according to ISO 7000 is required:

3SU1900-0AF16-0AZ0

Q3Y

Z=1118 ISO

Overview

Label inscriptions

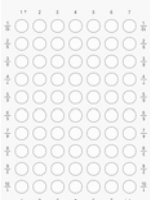

Using the *Label Designer* software, which can be downloaded from the Internet, and the labeling plates for laser inscription you can create your own customized labels with a standard laser printer. The self-adhesive or snap-on labels can be stuck or snapped onto the corresponding label holders. Round labels are provided for inserting in illuminated pushbuttons and switches.

The labels are suitable for inscription with one to three lines of text or symbols.

For applications with more exacting requirements we recommend factory-printed labeling plates and insert labels (laser-printed or engraved depending on the type).

For the *Label Designer* software, see www.siemens.com/sirius-label-designer.

Selection and ordering data








Type of mounting	Height mm	Width mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labels for printing – insert labels								
 Insert	--	--	3	3SU1900-0BH60-0AA0		100	490 units	41J
3SU1900-0BH60-0AA0								
Labels for printing – labeling plates								
	Self-adhesive	12.5	27.5	▶	3SU1900-0BJ61-0AA0	100	480 units	41J
		17.5	27	▶	3SU1900-0BK61-0AA0	100	720 units	41J
		27	27	▶	3SU1900-0BL61-0AA0	100	480 units	41J
		22	22	▶	3SU1900-0BM61-0AA0	100	700 units	41J
3SU1900-0BJ61-0AA0								

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories
Labels

Other labels

Selection and ordering data

	Color	Fastening method	Outer diameter	Marking	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG																						
			mm		d																											
EMERGENCY STOP backing plates																																
	Yellow/black (label/lettering)	None	45	None	▶	3SU1900-0BA31-0AA0		1	10 units	41J																						
			45	EMERGENCY STOP (pl) NEW	5	3SU1900-0BA31-0ND0		1	10 units	41J																						
			60	NOT-HALT, EMERGENCY STOP, ARRÊT D'URGENCE, EMERGENZA (de, en, fr, it)	5	3SU1900-0BN31-0NCO		1	10 units	41J																						
	3SU1900-0BB31-0ATO	None	75	None	▶	3SU1900-0BB31-0AA0		1	10 units	41J																						
				NOT-AUS	3	3SU1900-0BB31-0AS0		1	10 units	41J																						
				NOT-HALT	3	3SU1900-0BB31-0ATO		1	10 units	41J																						
				EMERGENCY STOP	5	3SU1900-0BB31-0DA0		1	10 units	41J																						
				EMERGENCY STOP (pl) NEW	5	3SU1900-0BB31-0ND0		1	10 units	41J																						
			With customized inscription																													
			Yellow/black (label/lettering)	None	45	For inscriptions or symbols, see "Options", page 13/133.			3SU1900-0BA31-0AZ0		1	1 unit	41J																			
		75				3SU1900-0BB31-0AZ0		1	1 unit	41J																						
EMERGENCY STOP backing plates, illuminated (24 V AC/DC) NEW																																
	Yellow/black (label/lettering)	Self-adhesive	60	None	5	3SU1901-0BD31-0AA0		1	1 unit	41J																						
				NOT-AUS	5	3SU1901-0BD31-0AS0		1	1 unit	41J																						
				NOT-HALT	5	3SU1901-0BD31-0ATO		1	1 unit	41J																						
				EMERGENCY STOP	5	3SU1901-0BD31-0DA0		1	1 unit	41J																						
				NOT-HALT, EMERGENCY STOP, EMERGENZA, EMERGENCIA (de, en, it, sp)	5	3SU1901-0BD31-0NB0		1	1 unit	41J																						
				With customized inscription																												
				Yellow/black (label/lettering)	None	60	For inscriptions or symbols, see "Options", page 13/133.			3SU1901-0BD31-0AZ0		1	1 unit	41J																		
EMERGENCY STOP backing plates																																
	Yellow/black (label/lettering)	Self-adhesive	75	None	▶	3SU1900-0BC31-0AA0		1	10 units	41J																						
				NOT-AUS	3	3SU1900-0BC31-0AS0		1	10 units	41J																						
				NOT-HALT	▶	3SU1900-0BC31-0ATO		1	10 units	41J																						
				EMERGENCY STOP	▶	3SU1900-0BC31-0DA0		1	10 units	41J																						
				ARRÊT D'URGENCE	3	3SU1900-0BC31-0GQ0		1	10 units	41J																						
				EMERGENZA	3	3SU1900-0BC31-0JAO		1	10 units	41J																						
				Nodstop	5	3SU1900-0BC31-0LA0		1	10 units	41J																						
				EMERGENCY STOP in Chinese	5	3SU1900-0BC31-0MA0		1	10 units	41J																						
				NOT-HALT, EMERGENCY STOP, EMERGENZA, EMERGENCIA (de, en, it, sp)	▶	3SU1900-0BC31-0NB0		1	10 units	41J																						
				With customized inscription																												
Yellow/black (label/lettering)	Self-adhesive	75	For inscriptions or symbols, see "Options", page 13/133.			3SU1900-0BC31-0AZ0		1	1 unit	41J																						
Labeling plates for potentiometers																																
	Black/white (label/lettering)	None	40	--	▶	3SU1900-0BG16-0AA0		1	10 units	41J																						
				SYMBOL: 0 ...9	3	3SU1900-0BG16-0RT0		1	10 units	41J																						
				SYMBOL: 0 ... 10	3	3SU1900-0BG16-0SA0		1	10 units	41J																						
				SYMBOL: Power up	▶	3SU1900-0BG16-0RU0		1	10 units	41J																						
				3SU1900-0BG16-0RU0																												
<table border="1"> <thead> <tr> <th>Color</th> <th>Label fastening method</th> <th>Height</th> <th>Width</th> <th>Marking</th> <th>SD</th> <th>Article No.</th> <th>Price per PU</th> <th>PU (UNIT, SET, M)</th> <th>PS*</th> <th>PG</th> </tr> <tr> <th></th> <th></th> <th>mm</th> <th>mm</th> <th></th> <th>d</th> <th></th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> </table>											Color	Label fastening method	Height	Width	Marking	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG			mm	mm		d					
Color	Label fastening method	Height	Width	Marking	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG																						
		mm	mm		d																											
Labeling plates for enclosures with EMERGENCY STOP																																
	Yellow/black (label/lettering)	Self-adhesive	38	150	None	▶	3SU1900-0BE31-0AA0		1	10 units	41J																					
					NOT-AUS	3	3SU1900-0BE31-0AS0		1	10 units	41J																					
					NOT-HALT NEW	3	3SU1900-0BE31-0ATO		1	10 units	41J																					
3SU1900-0BE31-0AA0																																
Labeling plates for enclosures with EMERGENCY STOP with recess																																
	Yellow/black (label/lettering)	Self-adhesive	38	150	None	3	3SU1900-0BF31-0AA0		1	10 units	41J																					
3SU1900-0BF31-0AA0																																
Device labeling plates for modules with front-plate mounting																																
	White/black (label/lettering)	Insert	9.5	10.5	None	5	3SU1900-0AY61-0AA0		100	10 units	41J																					
3SU1900-0AY61-0AA0																																

Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data.

The EMERGENCY STOP backing plates can be divided into as many as four radial segments. Each segment can be custom-labeled.

The default typeface used for inscriptions with text is Arial and the text is centered.

EMERGENCY STOP backing plate 75 mm:

The font height is 5 mm.

With two radial segments up to 20 characters are permissible.
With four radial segments up to 10 characters are permissible.

EMERGENCY STOP backing plate 60 mm:

The font height is 4 mm.

With two radial segments up to 16 characters are permissible.
With four radial segments up to 8 characters are permissible.

EMERGENCY STOP backing plate 45 mm:

The font height is 4 mm.

With two radial segments up to 10 characters are permissible.

Ordering notes

Append the following order codes to the article number:

- **Q0Y:** Segment(s) in upper/lower case, always upper case for beginning of segment, e.g. Z1=Not halt Z2=Emergency stop
- **Q1Y:** Segment(s) in upper case, e.g. Z1=NOT HALT Z2=EMERGENCY STOP
- **Q2Y:** Segment(s) in lower case, e.g. Z1=not halt Z2=emergency stop
- **Q5Y:** Segment(s) in upper/lower case, all words begin with upper case letters, e.g. Z1=Not Halt Z2=Emergency Stop
- **Q3Y:** Symbol with number according to ISO 7000 or IEC 60417
- **Q9Y:** Inscription of choice, text or symbol, can only be ordered via SIRIUS ACT Configurator with a Configuration Identification Number (CIN)

When ordering, specify the required inscription in plain text without spaces, in addition to the article number and order code.

The SIRIUS ACT Configurator must be used to select special inscriptions and symbols (order code Q9Y). In this case a CIN (Configuration Identification Number) is generated for placement of future orders. It is then possible to place an order directly using the CIN and the SIRIUS ACT Configurator (Mall shopping cart) or via the standard ordering channels.

Standard ordering channels:

- Configurator: www.siemens.com/sirius-act/configurator
- Electronic Catalog CA 01 on DVD
- Industry Mall: www.siemens.com/industrymall

With ordering options Q0Y, Q1Y, Q2Y, Q3Y and Q5Y a single-line inscription of two or four radial segments can be implemented. The text or symbol must be assigned to the respective radial segments as follows:

Ordering example 1, two radial segments

An EMERGENCY STOP backing plate, diameter 75 mm, with two radial segments is required



3SU1900-0BB31-0AZ0

Q1Y

Z1=EMERGENCY

Z2=STOP

Ordering example 2, four radial segments

An EMERGENCY STOP backing plate, diameter 75 mm, with four radial segments is required



3SU1900-0BB31-0AZ0

Q1Y

Z1=E-STOP

Z2=EMERGENCIA

Z3=NOT-HALT

Z4=EMERGENZA




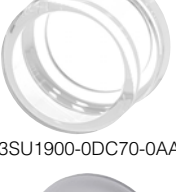


SIRIUS ACT Pushbuttons and Indicator Lights Accessories

Protection/access protection

Overview

- Protection and access protection are for actuators and indicators with diameter 22 mm.
- The protective collars cannot be used in conjunction with label holders or single frames.

Selection and ordering data

Product designation Product version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Protective caps								
	Plastic	Black Clear	3	3SU1900-0DA10-0AA0		1	1 unit	41J
			3	3SU1900-0DA70-0AA0		1	1 unit	41J
	Plastic	Black Clear	3	3SU1900-0EL10-0AA0		1	1 unit	41J
			3	3SU1900-0EL70-0AA0		1	1 unit	41J
	Plastic	Clear	▶	3SU1900-0DB70-0AA0		1	1 unit	41J
			▶	3SU1900-0ED70-0AA0		1	1 unit	41J
	Plastic	Clear	▶	3SU1900-0DC70-0AA0		1	1 unit	41J
			▶	3SU1900-0EE70-0AA0		1	1 unit	41J
	Plastic	Clear	3	3SU1900-0DD70-0AA0		1	1 unit	41J
			▶	3SU1900-0EF70-0AA0		1	1 unit	41J
	Plastic	Clear	5	3SU1900-0DE70-0AA0		1	1 unit	41J
			▶	3SU1900-0EG70-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights Accessories

Protection/access protection

Product designation Product version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Protective caps								
 3SU1900-0DF70-0AA0	Plastic	Clear	5	3SU1900-0DF70-0AA0		1	1 unit	41J
 3SU1900-0DG70-0AA0	Plastic	Clear	▶	3SU1900-0DG70-0AA0		1	1 unit	41J
 3SU1900-0DH70-0AA0	Plastic	Clear	▶	3SU1900-0DH70-0AA0		1	1 unit	41J
 3SU1900-0EK70-0AA0	Plastic	Clear	▶	3SU1900-0EK70-0AA0		1	1 unit	41J
 3SU1900-0EB10-0AA0	Plastic	Clear	▶	3SU1900-0EB10-0AA0		1	1 unit	41J
 3SU1900-0EM70-0AA0	Plastic	Clear	NEW 5	3SU1900-0EM70-0AA0		1	1 unit	41J
Covers for modules	Plastic	Clear	NEW 5	3SU1900-0EW70-0AA0		1	1 unit	41J
Protective collars								
 3SU1900-0DJ10-0AA0	Plastic	Black	5	3SU1900-0DJ10-0AA0		1	1 unit	41J
 3SU1900-0DW10-0AA0	Plastic	Black	3	3SU1900-0DW10-0AA0		1	1 unit	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Protection/access protection

Product designation Product version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Protective collars								
 3SU1950-0DK80-0AA0	Metal	Silver	5	3SU1950-0DK80-0AA0		1	1 unit	41J
360° protective collars for pushbuttons, visibility from the side								
 3SU1950-0DL80-0AA0	Metal	Silver	5	3SU1950-0DL80-0AA0		1	1 unit	41J
360° protective collars for mushroom pushbuttons 40 mm, visibility from the side								
 3SU1900-0DY30-0AA0	Plastic	Yellow Gray	▶ ▶	3SU1900-0DY30-0AA0 3SU1900-0DY80-0AA0		1 1	1 unit 1 unit	41J 41J
Protective collars for EMERGENCY STOP mushroom pushbuttons without lock or with RONIS lock								
 3SU1900-0JH30-0AA0	Plastic	Yellow	NEW 5	3SU1900-0JH30-0AA0		1	1 unit	41J
Protective collars for EMERGENCY STOP mushroom pushbuttons for mounting on enclosures								
 3SU1950-0DX30-0AA0	Metal	Yellow Gray	3 5	3SU1950-0DX30-0AA0 3SU1950-0DX80-0AA0		1 1	1 unit 1 unit	41J 41J
Protective collars for EMERGENCY STOP mushroom pushbuttons 40 mm for 5 padlocks								
 3SU1950-0DX30-0AA0	Plastic	Yellow	NEW 5	3SU1900-0EX30-0AA0		1	1 unit	41J
60 mm for 3 padlocks								
 3SU1900-0EA30-0AA0	Plastic	Yellow	5	3SU1900-0EA30-0AA0		1	1 unit	41J
360° protective collars								
 3SU1900-0EC10-0AA0	Plastic	Black	▶	3SU1900-0EC10-0AA0		1	1 unit	41J
Protection for sensor switches								

SIRIUS ACT Pushbuttons and Indicator Lights Accessories

Protection/access protection



Product version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Locking devices								
 3SU1950-0DM80-0AA0	Metal	Silver	5	3SU1950-0DM80-0AA0		1	1 unit	41J
Locking devices for pushbuttons Flat, for raised front ring and raised, castellated front ring								
 3SU1950-0DN80-0AA0	Metal	Silver	5	3SU1950-0DN80-0AA0		1	1 unit	41J
Locking devices for pushbuttons Raised								
 3SU1950-0DP80-0AA0	Metal	Silver	5	3SU1950-0DP80-0AA0		1	1 unit	41J
Locking devices for mushroom pushbuttons D30, D40								
 3SU1950-0DQ80-0AA0	Metal	Silver	5	3SU1950-0DQ80-0AA0		1	1 unit	41J
Locking devices for selectors Short/long actuator, in the left position								
 3SU1950-0DR80-0AA0	Metal	Silver	5	3SU1950-0DR80-0AA0		1	1 unit	41J
Locking devices for selectors Short/long actuator, in the center position								
 3SU1950-0DS80-0AA0	Metal	Silver	5	3SU1950-0DS80-0AA0		1	1 unit	41J
Locking devices for selectors Short/long actuator, in the right position								
 3SU1950-0DT80-0AA0	Metal	Silver	5	3SU1950-0DT80-0AA0		1	1 unit	41J
Locking devices for selectors Short/long actuator, window from center to right, blocked on left								
 3SU1950-0DU80-0AA0	Metal	Silver	5	3SU1950-0DU80-0AA0		1	1 unit	41J
Locking devices for selectors Short/long actuator, window from center to left, blocked on right								
 3SU1950-0DV80-0AA0	Metal	Silver	5	3SU1950-0DV80-0AA0		1	1 unit	41J
Locking device with cover								

SIRIUS ACT Pushbuttons and Indicator Lights





Accessories





Actuators

Selection and ordering data

Material	Mounting diameter	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	mm		d					
Sealing plugs¹⁾, 22 mm								
	Plastic	22	Black	▶ 3SU1900-0FA10-0AA0		1	1 unit	41J
3SU1900-0FA10-0AA0								
	Metal, matte	22	Sand gray	▶ 3SU1930-0FA80-0AA0		1	1 unit	41J
	Metal, shiny	22	Silver	▶ 3SU1950-0FA80-0AA0		1	1 unit	41J
	Metal, matte	30	Sand gray	▶ 3SU1960-0FA80-0AA0		1	1 unit	41J
3SU1950-0FA80-0AA0								

¹⁾ The sealing plug is mounted with a holder.
Modules might already be mounted on the holder.





Type of product	Mounting diameter	Accessory color	Accessory material	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
	mm			d	Article No.	Price per PU			
USB port									
	USB 3.0	22	Black	Plastic	3	3SU1900-0GA10-0AA0	1	1 unit	41J
			Sand gray	Metal/plastic	3	3SU1930-0GA80-0AA0	1	1 unit	41J
			Silver	Metal, shiny	3	3SU1950-0GA80-0AA0	1	1 unit	41J
		30	Sand gray	Metal, matte	3	3SU1960-0GA80-0AA0	1	1 unit	41J
									
3SU1930-0GA80-0AA0									
									
									
3SU1960-0GA80-0AA0									

Type of product	Mounting diameter	Accessory color	Accessory material	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG	
	mm			d	Article No.	Price per PU			
RJ45 connection									
	RJ-45 Cat. 6	22	Black	Plastic	3	3SU1900-0GB10-0AA0	1	1 unit	41J
			Sand gray	Metal/plastic	3	3SU1930-0GB80-0AA0	1	1 unit	41J
			Silver	Metal, shiny	3	3SU1950-0GB80-0AA0	1	1 unit	41J
		30	Sand gray	Metal, matte	3	3SU1960-0GB80-0AA0	1	1 unit	41J
									
3SU1900-0GB10-0AA0									
									
									
3SU1950-0GB80-0AA0									

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Actuators








Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Buttons, flat¹⁾							
For pushbuttons							
 3SU1900-0FT20-0AA0	Plastic	Black	▶	3SU1900-0FT10-0AA0	100	10 units	41J
		Red	▶	3SU1900-0FT20-0AA0	100	10 units	41J
		Yellow	▶	3SU1900-0FT30-0AA0	100	10 units	41J
		Green	▶	3SU1900-0FT40-0AA0	100	10 units	41J
		Blue	▶	3SU1900-0FT50-0AA0	100	10 units	41J
		White	▶	3SU1900-0FT60-0AA0	100	10 units	41J
For illuminated pushbuttons							
 3SU1901-0FT30-0AA0	Plastic	Amber	▶	3SU1901-0FT00-0AA0	100	10 units	41J
		Red	▶	3SU1901-0FT20-0AA0	100	10 units	41J
		Yellow	▶	3SU1901-0FT30-0AA0	100	10 units	41J
		Green	▶	3SU1901-0FT40-0AA0	100	10 units	41J
		Blue	▶	3SU1901-0FT50-0AA0	100	10 units	41J
		White	▶	3SU1901-0FT60-0AA0	100	10 units	41J
		Clear	▶	3SU1901-0FT70-0AA0	100	10 units	41J
Buttons, raised¹⁾							
For pushbuttons							
 3SU1900-0FS30-0AA0	Plastic	Black	5	3SU1900-0FS10-0AA0	1	10 units	41J
		Red	5	3SU1900-0FS20-0AA0	1	10 units	41J
		Yellow	5	3SU1900-0FS30-0AA0	1	10 units	41J
		Green	5	3SU1900-0FS40-0AA0	1	10 units	41J
For illuminated pushbuttons							
 3SU1901-0FS40-0AA0	Plastic	Red	▶	3SU1901-0FS20-0AA0	1	10 units	41J
		Yellow	5	3SU1901-0FS30-0AA0	1	10 units	41J
		Green	5	3SU1901-0FS40-0AA0	1	10 units	41J
		Blue	5	3SU1901-0FS50-0AA0	1	10 units	41J
		Clear	5	3SU1901-0FS70-0AA0	1	10 units	41J

¹⁾ Buttons are not interchangeable between pushbuttons and illuminated pushbuttons with a raised front ring and with a raised front ring, castellated.

SIRIUS ACT Pushbuttons and Indicator Lights




Accessories

Actuators

	Material	Key number	Version of RFID coding	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
RONIS keys										
	Metal	SB30 ¹⁾ 455	--	Silver	▶ 5	3SU1950-0FB80-0AA0 3SU1950-0FC80-0AA0		1 1	1 unit 1 unit	41J 41J
3SU1950-0FB80-0AA0										
BKS keys										
	Metal	S1 ¹⁾	--	Silver	5	3SU1950-0FD80-0AA0		1	1 unit	41J
3SU1950-0FD80-0AA0										
O.M.R. keys										
	Metal	73038 73037 73034 73033	--	Blue Red Black Yellow	3 5 5 5	3SU1950-0FJ50-0AA0 3SU1950-0FK20-0AA0 3SU1950-0FL10-0AA0 3SU1950-0FM30-0AA0		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
3SU1950-0FJ50-0AA0										
CES keys										
	Metal	LSG1 SSG10 ¹⁾ VL5	--	Silver	▶ 5 5	3SU1950-0FN80-0AA0 3SU1950-0FP80-0AA0 3SU1950-0FQ80-0AA0		1 1 1	1 unit 1 unit 1 unit	41J 41J 41J
3SU1950-0FP80-0AA0										
IKON keys										
	Metal	360012K1 ¹⁾	--	Silver	5	3SU1950-0FR80-0AA0		1	1 unit	41J
3SU1950-0FR80-0AA0										
ID keys ID group individual										
	Plastic	--	Individually coded, programmable several times	White	▶	3SU1900-0FU60-0AA0		1	1 unit	41J
3SU1900-0FU60-0AA0										
ID keys										
	Plastic	--	ID group 1 ID group 2 ID group 3 ID group 4	Green Yellow Red Blue	▶ ▶ ▶ ▶	3SU1900-0FV40-0AA0 3SU1900-0FW30-0AA0 3SU1900-0FX20-0AA0 3SU1900-0FY50-0AA0		1 1 1 1	1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J
3SU1900-0FV40-0AA0										

¹⁾ Also available with special lock. Supplement the Article No. with "-Z" and the order code "Y04" and specify the required lock in plain text. Additional price on request.

Selection and ordering data

Product version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Metric cable glands								
 3SU1900-0HG10-0AA0	M20 for round cable and enclosures With 1 to 3 command points	Plastic	Black	▶	3SU1900-0HG10-0AA0		1	1 unit 41J
	M25 for round cable and enclosure With 4 and 6 command points	Plastic	Black	5	3SU1900-0HH10-0AA0		1	1 unit 41J
	M20 for round cable and AS-i enclosure With 1 to 3 command points with 2-pin connector plug for AS-i module	Plastic	Black	3	3SU1900-0JA10-0AA0		1	1 unit 41J
	M25 for round cable and AS-i enclosure With 4 and 6 command points with 2-pin connector plug for AS-i module	Plastic	Black	3	3SU1900-0JB10-0AA0		1	1 unit 41J
	M20 for round cable and IO-Link enclosure With 1 to 3 command points with 10-pin connector plug for IO-Link	Plastic	Black	▶	3SU1900-0JC10-0AA0		1	1 unit 41J
	M25 for round cable and IO-Link enclosure With 4 and 6 command points with 10-pin connector plug for IO-Link	Plastic	Black	▶	3SU1900-0JD10-0AA0		1	1 unit 41J
	M20 for AS-i profile cable and AS-i enclosure With 1 to 3 command points with 2-pin connector plug for AS-i module	Plastic	Black	5	3SU1900-0HE10-0AA0		1	1 unit 41J
	M25 for AS-i profile cable and AS-i enclosure With 4 and 6 command points with 2-pin connector plug for AS-i module	Plastic	Black	5	3SU1900-0HF10-0AA0		1	1 unit 41J
Connection pieces								
 3SU1900-0HJ10-0AA0	For plastic enclosures							
	M20/M20 connection piece For connecting 2 enclosures	Plastic	Black	▶	3SU1900-0HJ10-0AA0		1	1 unit 41J
	M20/M25 connection piece For connecting 2 enclosures	Plastic	Black	5	3SU1900-0HK10-0AA0		1	1 unit 41J
	M25/M25 connection piece For connecting 2 enclosures	Plastic	Black	5	3SU1900-0HL10-0AA0		1	1 unit 41J
 3SU1950-0HJ10-0AA0	For metal enclosures							
	M20/M20 connection piece For connecting 2 enclosures	Metal	Silver	5	3SU1950-0HJ10-0AA0		1	1 unit 41J
	M20/M25 connection piece For connecting 2 enclosures	Plastic	Silver	5	3SU1950-0HK10-0AA0		1	1 unit 41J
	M25/M25 connection piece For connecting 2 enclosures	Plastic	Silver	5	3SU1950-0HL10-0AA0		1	1 unit 41J

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Enclosures





Product version	Material	Color	SD	Insulation piercing method	PU (UNIT, SET, M)	PS*	PG	
				Article No.				Price per PU
Adapters for AS-i shaped cable								
 3SU1900-0HX10-0AA0	M20	Plastic	Black	3	3SU1900-0HX10-0AA0 3SU1900-0HY10-0AA0	1	1 unit	41J
	M25			3		1	1 unit	41J
Adapters for tab connection								
For plastic enclosures								
 3SU1930-0HS10-0AA0	Adapter, M12 socket, 4-pin	Plastic	Black	5	3SU1930-0HA10-0AA0 3SU1930-0HB10-0AA0	1	1 unit	41J
	M20 cable entry			5		1	1 unit	41J
	M25 cable entry	5	1	1 unit	41J			
	Adapter, M12 connector, 4-pin	Plastic	Black	5	3SU1930-0HC10-0AA0 3SU1930-0HD10-0AA0	1	1 unit	41J
	M20 cable entry			5		1	1 unit	41J
	M25 cable entry	5	1	1 unit	41J			
	Adapter, M12 socket, 5-pin	Plastic	Black	5	3SU1930-0HP10-0AA0 3SU1930-0HQ10-0AA0	1	1 unit	41J
	M20 cable entry			5		1	1 unit	41J
	M25 cable entry	5	1	1 unit	41J			
	Adapter, M12 connector, 5-pin	Plastic	Black	5	3SU1930-0HR10-0AA0 3SU1930-0HS10-0AA0	1	1 unit	41J
	M20 cable entry			5		1	1 unit	41J
	M25 cable entry	5	1	1 unit	41J			
	Adapter, M12 socket, 8-pin	Plastic	Black	5	3SU1930-0HT10-0AA0 3SU1930-0HU10-0AA0	1	1 unit	41J
	M20 cable entry			5		1	1 unit	41J
M25 cable entry	5	1	1 unit	41J				
Adapter, M12 connector, 8-pin	Plastic	Black	5	3SU1930-0HV10-0AA0 3SU1930-0HW10-0AA0	1	1 unit	41J	
M20 cable entry			5		1	1 unit	41J	
M25 cable entry	5	1	1 unit	41J				
For metal enclosures								
 3SU1950-0HA10-0AA0	Adapter, M12 socket, 4-pin	Plastic	Black	5	3SU1950-0HA10-0AA0 3SU1950-0HB10-0AA0	1	1 unit	41J
	M20 cable entry			5		1	1 unit	41J
	M25 cable entry	5	1	1 unit	41J			
	Adapter, M12 connector, 4-pin	Plastic	Black	5	3SU1950-0HC10-0AA0 3SU1950-0HD10-0AA0	1	1 unit	41J
	M20 cable entry			5		1	1 unit	41J
	M25 cable entry	5	1	1 unit	41J			
	Adapter, M12 socket, 5-pin	Plastic	Black	5	3SU1950-0HP10-0AA0 3SU1950-0HQ10-0AA0	1	1 unit	41J
	M20 cable entry			5		1	1 unit	41J
	M25 cable entry	5	1	1 unit	41J			
	Adapter, M12 connector, 5-pin	Plastic	Black	5	3SU1950-0HR10-0AA0 3SU1950-0HS10-0AA0	1	1 unit	41J
	M20 cable entry			5		1	1 unit	41J
	M25 cable entry	5	1	1 unit	41J			
	Adapter, M12 socket, 8-pin	Plastic	Black	5	3SU1950-0HT10-0AA0 3SU1950-0HU10-0AA0	1	1 unit	41J
	M20 cable entry			5		1	1 unit	41J
M25 cable entry	5	1	1 unit	41J				
Adapter, M12 connector, 8-pin	Plastic	Black	5	3SU1950-0HV10-0AA0 3SU1950-0HW10-0AA0	1	1 unit	41J	
M20 cable entry			5		1	1 unit	41J	
M25 cable entry	5	1	1 unit	41J				
Enclosure cover monitoring¹⁾								
 3SU1900-0HM10-0AA0	Module with extension plunger	Plastic	Black	3	3SU1900-0HM10-0AA0	1	1 unit	41J

¹⁾ In addition, a 3SU1400-2AA10-.BA0 contact module is required.

SIRIUS ACT Pushbuttons and Indicator Lights Accessories

Miscellaneous accessories



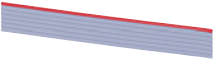
Selection and ordering data

Product designation Product version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Miscellaneous accessories								
 3SU1900-0KA10-0AA0	Plastic	Black	5	3SU1900-0KA10-0AA0		100	10 units	41J
 3SU1900-0CK10-0AA0	Plastic	White	▶	3SU1900-0CK10-0AA0		100	10 units	41J
 3SU1900-0KF10-0AA0	Plastic	Black	5	3SU1900-0KF10-0AA0 30 x 40, horizontal		1	1 unit	41J
 3SU1900-0KG10-0AA0	Plastic	Gray	▶	3SU1900-0KG10-0AA0 For compensation of the distance between the pushbutton and the unlatching button of an overload relay		1	1 unit	41J
 3SU1950-0JE80-0AA0	Metal	Sand gray	3	3SU1950-0JE80-0AA0		1	1 unit	41J
 3SU1900-0JF10-0AA0	Plastic	Black	5	3SU1900-0JF10-0AA0 Between enclosure top and bottom, for installation of 2-pole or two 1-pole contact modules with front plate mounting. Not suitable for 3SU1801-1AA00-1AA1.		1	1 unit	41J
 3SU1900-0JG10-0AA0	Plastic	Black	30	3SU1900-0JG10-0AA0		1	100 units	41J

SIRIUS ACT Pushbuttons and Indicator Lights

Accessories

Miscellaneous accessories

Product designation Product version	Material	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Miscellaneous accessories								
 3SU1900-0KH80-0AA0	Plastic	Black	▶	3SU1900-0KH80-0AA0		1	1 unit	41J
Covers for modules Degree of protection IP54	Plastic	Clear	5	3SU1900-0EW70-0AA0		1	1 unit	41J
 3SU1950-0KJ80-0AA0	Metal	Silver	▶	3SU1950-0KJ80-0AA0		1	1 unit	41J
Adapters for 30.5 mm to 22.5 mm mounting hole	Metal, shiny	Silver	▶	3SU1950-0KB10-0AA0		1	1 unit	41J
 3SU1950-0KB10-0AA0	Metal, matte	Sand gray	▶	3SU1960-0KB10-0AA0		1	1 unit	41J
 3SU1950-0KK80-0AA0	Metal	Silver	5	3SU1950-0KK80-0AA0		100	50 units	41J
 3SU1900-0KL10-0AA0	Plastic	Black	▶	3SU1900-0KL10-0AA0		1	1 unit	41J
Flat ribbon cable 7 cores								
 3SU1900-0KP80-0AA0	Plastic	Gray	5	3SU1900-0KQ80-0AA0		1	1 unit	41J
• Length 5 m	Plastic	Gray	5	3SU1900-0KP80-0AA0		1	1 unit	41J
• Length 10 m								

Overview

More information

Homepage, see www.siemens.com/sirius-commanding

Industry Mall, see www.siemens.com/product?3SB2

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/107194954>

The 3SB2 pushbuttons and indicator lights are provided for front plate mounting and rear connection with flat connectors. For use on printed circuit boards, contact blocks and lampholders for soldering into the printed circuit board are available. For this purpose, the contact blocks and lampholders with solder pins are also available.

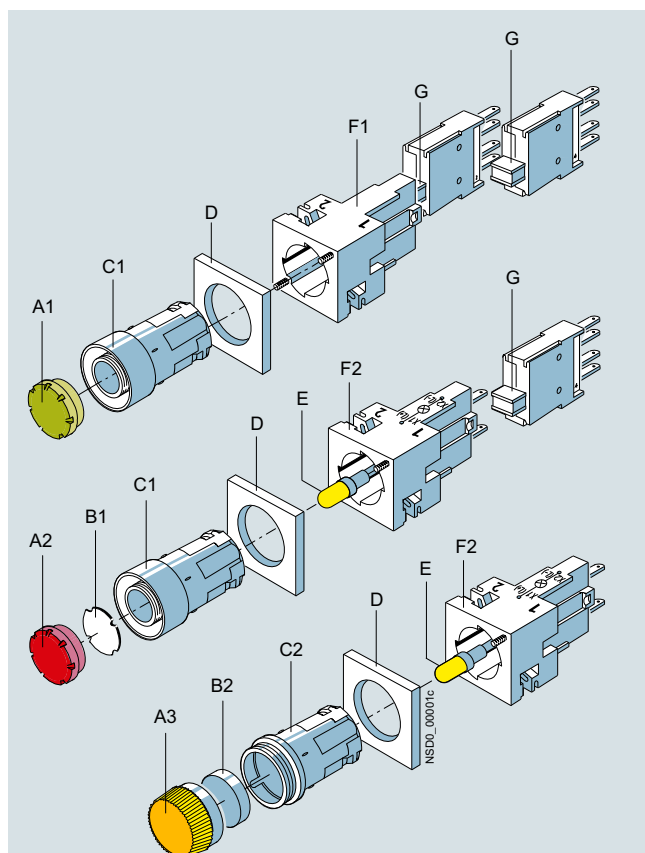
Standards

IEC/EN 60947-1

IEC/EN 60947-5-1

IEC/EN 60947-5-5 for EMERGENCY STOP mushroom pushbuttons

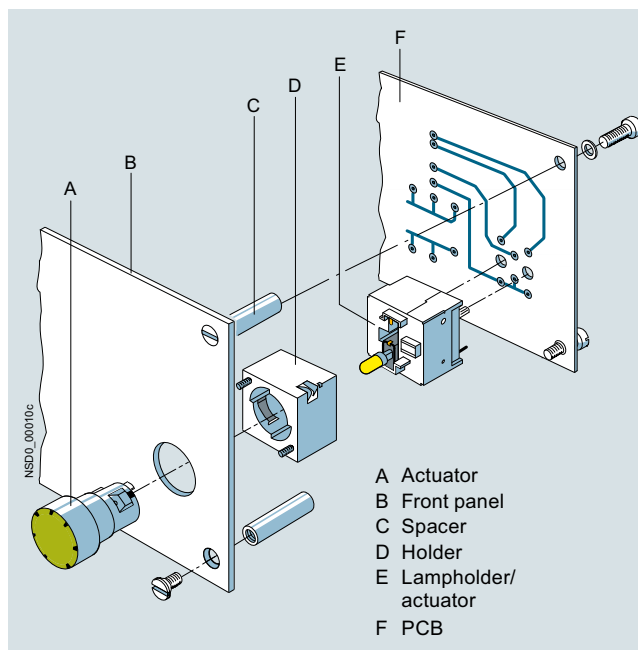
Version with flat connector



- A1 Button, flat
- A2 Illuminated button, flat
- A3 Screw lens for indicator light
- B1 Insert label, for labeling
- B2 Insert cap, for labeling
- C1 Collar with extruded front ring
- C2 Collar for indicator light
- D Frame for rectangular design
- E Wedge base lamp, W2 x 4.6 d
- F1 Holders
- F2 Lampholder with holder
- G Contact blocks (1 NO or 1 NC) for snapping onto the holder or onto the lampholder

PCB mounting

For use on printed circuit boards, special contact blocks and lampholders for soldering into the printed circuit board are available. For this purpose, the contact blocks and lampholders are fitted with 0.8 mm x 0.8 mm solder pins of length 3.5 mm.



- A Actuator
- B Front panel
- C Spacer
- D Holder
- E Lampholder/actuator
- F PCB

Connection methods



Flat connectors



Solder pin connections

The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Application

The devices are climate-proof and suitable for marine applications.

Safety EMERGENCY STOP pushbuttons according to ISO 13850

For controls according to IEC/EN 60204-1, the mushroom pushbuttons of the 3SB2 series are suitable for use as safety EMERGENCY STOP pushbuttons.

Safety circuits

The IEC/EN 60947-5-1 standard requires positive opening. This means that for the purpose of personal safety, the reliable opening of NC contacts in all safety circuits is expressly prescribed for the electrical equipment of machines and is designated according to IEC 60947-5-1 with the symbol

Category 4 according to EN ISO 13849-1 can be attained with the EMERGENCY STOP mushroom pushbuttons if the corresponding fail-safe evaluation units are selected and correctly installed, e.g. the 3SK11 safety relays, the 3RK3 Modular Safety System (see "Safety Technology", page 11/1 onwards) or matching units from the ASIsafe, SIMATIC or SINUMERIK product ranges.

SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm

General data

Technical specifications

Type	3SB2	
Contact blocks and lampholders		
Standards	IEC/EN 60947-5-1 IEC/EN 60947-5-5	
Rated insulation voltage U_i	V	250
Conventional thermal current I_{th}	A	10
Rated operational currents I_e at rated operational voltage U_e		
• Alternating current AC-12 - At $U_e = 24 \dots 230$ V	A	10
• Alternating current AC-15 - At $U_e = 24 \dots 230$ V	A	4
• Direct current DC-12 - At $U_e = 24$ V	A	6
- At $U_e = 60$ V	A	5
- At $U_e = 110$ V	A	2.5
- At $U_e = 230$ V	A	1
• Direct current DC-13 - At $U_e = 24$ V	A	3
- At $U_e = 60$ V	A	1.5
- At $U_e = 110$ V	A	0.7
- At $U_e = 230$ V	A	0.3
Contact stability		
• Test voltage/test current	5 V/1 mA	
Lamps		
• Bases	Wedge base W2 x 4.6 d	
• Rated voltage	V	6, 12, 24, 30, 48, 60
• Rated power, max.	W	1
Short-circuit protection weld-free according to IEC 60947-5-1		
• DIAZED fuse links, utilization category gG	10 A TDz, 16 A Dz	
• Miniature circuit breaker with C characteristic according to IEC 60898	10 A	
Electrical endurance		
• For utilization category AC-15 with 3RT10 15 to 3RT10 26 contactors	10 x 10 ⁶ operating cycles	
Mechanical endurance		
	10 x 10 ⁶ operating cycles	
Degree of protection acc. to IEC 60529		
• Connection of contact blocks and lampholders behind the front plate	IP00	
• Contact chambers of the contact blocks behind the front plate	IP40	
Finger safe acc. to IEC 60529 and DGUV Regulation 3		
	With voltages > 50 V AC or 120 V DC, insulating sleeves must be fitted to the unassigned tab connections.	
Data according to UL and CSA		
Rated voltage		
• Contact blocks	V	250 AC
• Indicator lights (lamp with wedge base W2 x 4.6 d)	V	60; 1 W
Uninterrupted current	A	5
Switching capacity	B 300, R 300	
Actuating and signaling elements		
Mechanical endurance		
• Pushbuttons	10 x 10 ⁶ operating cycles	
• Actuators, rotary or latching	3 x 10 ⁵ operating cycles	
• Illuminated pushbuttons	3 x 10 ⁶ operating cycles	
Climatic withstand capability		
	Climate-proof; suitable for marine applications	
Ambient temperature		
• During operation, non-illuminated devices and complete with LED	°C	-25 ... +70
• During operation, devices with incandescent lamp	°C	-25 ... +60
• During storage, transport	°C	-40 ... +80
Degree of protection acc. to IEC 60529		
• Actuators and indicators	IP65	
• Actuators and indicators with protective cap	IP67	
Protective measures		
• For mounting in metal front plates and enclosures	The actuators and lens assemblies must not be included in the protective measures.	
• For fitting into enclosures with total insulation	The protective measure "Total insulation" is retained.	
Shock resistance acc. to IEC 60068-2-27		
• Shock amplitude	≤ 50 g	
• Shock duration	ms	11
• Shock form	Half-sine	

Configuration

Design

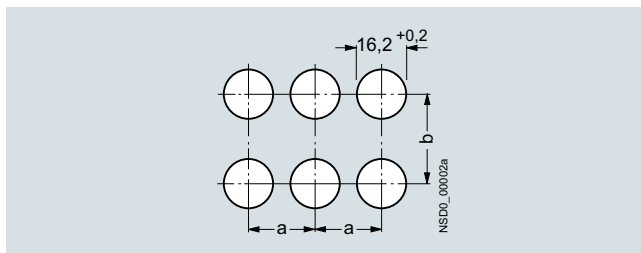
Two design versions can be mounted:

- Round design: The 3SB2 pushbuttons and indicator lights are assembled with the modules – actuator, holder, contact block and lampholder. Depending on the specific application, various versions can be assembled. Complete units are offered for the most commonly used applications.
- Square design: With square, black frames the round units can be given a square look. The frames are inserted underneath the round actuators. Further mounting is the same as for the round version.

Mounting and fixing:

Mounting dimensions according to EN 50007

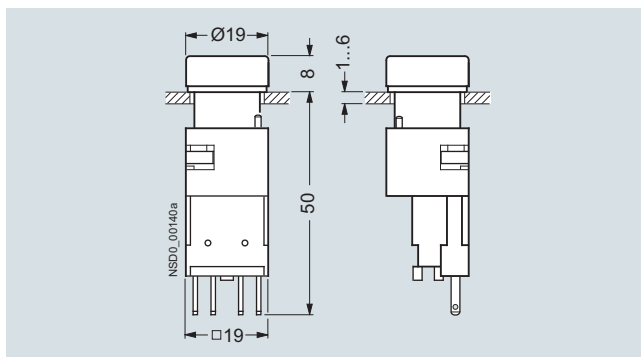
(does not apply to EMERGENCY STOP mushroom pushbuttons)



Minimum clearance	a	b
Round design	19	19
Square design without labeling plate	21	21
Round and square design with labeling plate	21	32
For 2 selector switches with 3 switch positions, latching, side by side	21	21

For mounting, the actuator or the lens assembly is inserted from the front into the hole in the front plate. Four small nubs ensure a secure fitting in the hole. The holder is plugged on from the back and snaps automatically into place. The module is fixed to the holder with two screws so that it is immune to vibrations.

One or two contact blocks can be mounted on the holder. They are inserted into the holder with slide slots and held down with two snap brackets.



Pushbutton (flat) with holder and contact block

If a command point is fitted with an indicator light or illuminated pushbutton, a lamp socket with lampholder must be used instead of a holder. It is suitable for incandescent lamps or LEDs with bases of type W2 x 4.6d.

PCB mounting

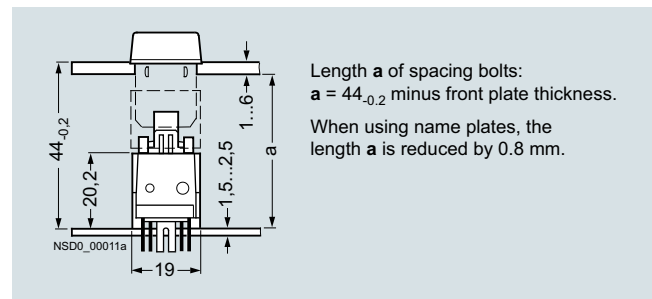
The command point comprises the actuator – e.g. 3SB2 pushbutton, illuminated pushbutton or indicator light –, which is mounted in the front plate, and a contact block and a lampholder which are soldered to the PCB. For this purpose, the contact blocks and lampholders are fitted with 0.8 mm x 0.8 mm solder pins of length 3.5 mm.

Mounting and fixing:

Mounting dimensions according to EN 50007

The actuators are mounted in the same way as 3SB2 front plate mounting devices.

The contact blocks and lampholders are plugged into the printed circuit board by means of their solder pins and can be flow-soldered. After soldering, the devices must be flush with the board and perpendicular to it. The printed circuit board must be supported on spacing bolts so that it cannot sag or bend more than 0.1 mm.



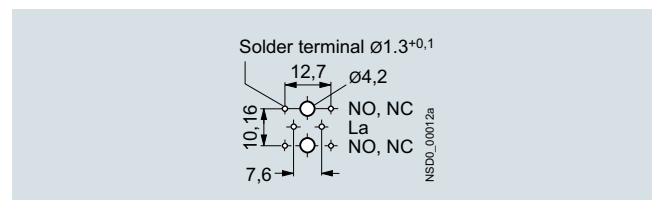
Illuminated pushbutton with solder pin connection

To avoid bending the PCB when the control device is operated, sufficient spacing bolts must be provided as shown in the table below:

PCB thickness	Max. distance between spacing bolts
1.5 mm	80 mm
2.5 mm	150 mm

When using EMERGENCY STOP pushbuttons Always 50 mm

These details are based on epoxy resin glass fiber mat.





Solder pin spacing

SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm

Complete units


Selection and ordering data

Version	Contact blocks	Color of actuator	SD	Flat connectors		PU (UNIT, SET, M)	PS*	PG																												
				Article No.	Price per PU																															
 3SB2202-0AE01	Pushbuttons with flat button 1 NO 1 NC 1 NC 1 NO 1 NO 1 NO 1 NO 1 NO 1 NO	Black Black Red Yellow Green Blue White Clear ¹⁾	2 10 2 10 2 10 2 10	3SB2202-0AB01 3SB2203-0AB01 3SB2203-0AC01 3SB2202-0AD01 3SB2202-0AE01 3SB2202-0AF01 3SB2202-0AG01 3SB2202-0AH01		1 1 1 1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J 41J 41J 41J 41J																												
									Illuminated pushbuttons with flat button Lampholders W2 x 4.6 d without lamp ²⁾	Red Yellow ¹⁾ Green Blue Clear ¹⁾	2 10 2 10 2	3SB2207-0AC01 3SB2206-0AD01 3SB2206-0AE01 3SB2206-0AF01 3SB2206-0AH01	1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J 41J																					
																Illuminated pushbuttons with flat button Lampholders W2 x 4.6 d with 24 V incandescent lamp	Red Yellow ¹⁾ Green Blue Clear ¹⁾	2 10 2 10 2	3SB2227-0AC01 3SB2226-0AD01 3SB2226-0AE01 3SB2226-0AF01 3SB2226-0AH01	1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J 41J														
																							Pushbuttons with raised button 1 NO 1 NC 1 NO 1 NO 1 NO	Black Red Yellow Blue Clear ¹⁾	10 10 10 10 10	3SB2202-0LB01 3SB2203-0LC01 3SB2202-0LD01 3SB2202-0LF01 3SB2202-0LH01	1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J 41J							
																														Illuminated pushbuttons with raised button Lampholders W2 x 4.6 d without lamp ²⁾	Red Yellow ¹⁾ Green Blue Clear ¹⁾	10 10 10 10 10	3SB2207-0LC01 3SB2206-0LD01 3SB2206-0LE01 3SB2206-0LF01 3SB2206-0LH01	1 1 1 1 1	1 unit 1 unit 1 unit 1 unit 1 unit	41J 41J 41J 41J 41J
									EMERGENCY STOP mushroom pushbuttons acc. to ISO 13850, latching³⁾ Latches automatically when pressed; unlatches by turning the mushroom head counterclockwise, with yellow backing plate with inscription "NOT-HALT"	1 NC  Red	2	3SB2203-1AC01	1	1 unit	41J																					

¹⁾ Inscription is possible by inserting a label.

²⁾ Wedge base lamps, see [Accessories, page 13/159](#).

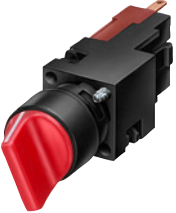





³⁾ The mushroom pushbutton cannot be combined with 3SB2902-0AB backing plate or 3SB2902-0AA single frame.




 Positive opening according to IEC 60947-5-1, Annex K.
 Can be used with 3SK 11 safety relays or the 3RK3 Modular Safety System,
 see [page 11/1 onwards](#).
 Certificate:




SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm

Complete units

Version	Contact blocks	Color of actuator	SD	Flat connectors		PU (UNIT, SET, M)	PS*	PG
				Article No.	Price per PU			
 3SB2202-2AC01	Selector switches, 2 switch positions	1 NO	Black	2	3SB2202-2AB01	1	1 unit	41J
		1 NO	Red	10	3SB2202-2AC01	1	1 unit	41J
	Switching sequence O-I, operating angle 62°, latching	1 NO	Green	10	3SB2202-2AE01	1	1 unit	41J
		1 NO	White	10	3SB2202-2AG01	1	1 unit	41J
								
 3SB2210-2DC01	Selector switches, 3 switch positions	1 NO, 1 NO	Black	2	3SB2210-2DB01	1	1 unit	41J
		1 NO, 1 NO	Red	10	3SB2210-2DC01	1	1 unit	41J
	Switching sequence I-O-II, 2 x operating angle 62°, latching	1 NO, 1 NO	Green	10	3SB2210-2DE01	1	1 unit	41J
		1 NO, 1 NO	White	10	3SB2210-2DG01	1	1 unit	41J
								
 3SB2210-2EG01	Selector switches, 3 switch positions	1 NO, 1 NO	Black	2	3SB2210-2EB01	1	1 unit	41J
		1 NO, 1 NO	Red	10	3SB2210-2EC01	1	1 unit	41J
	Switching sequence I-O-II, 2 x operating angle 50°, momentary contact	1 NO, 1 NO	Green	10	3SB2210-2EE01	1	1 unit	41J
		1 NO, 1 NO	White	10	3SB2210-2EG01	1	1 unit	41J
								

Version	Contact blocks	Lock No.	Key removal position	SD	Flat connectors		PU (UNIT, SET, M)	PS*	PG	
					Article No.	Price per PU				
 3SB2202-4LB01	CES key-operated switches¹⁾, 2 switch positions	1 NO	SB2	O	2	3SB2202-4LA01	1	1 unit	41J	
		1 NO	SB2	O + I	10	3SB2202-4LB01	1	1 unit	41J	
	Switching sequence O-I, operating angle 62°, latching									
 3SB2210-4PB01	CES key-operated switches¹⁾, 3 switch positions	1 NO, 1 NO	SB2	O	10	3SB2210-4PA01	1	1 unit	41J	
		1 NO, 1 NO	SB2	I + O + II	10	3SB2210-4PB01	1	1 unit	41J	
	Switching sequence I-O-II, 2 x operating angle 62°, latching									
 3SB2210-4QA01	CES key-operated switches¹⁾, 3 switch positions	1 NO, 1 NO	SB2	O	10	3SB2210-4QA01	1	1 unit	41J	
	Switching sequence I-O-II, 2 x operating angle 50°, momentary contact									

¹⁾ Also available with additional locking systems. The article number must be supplemented with "-Z", the order code "Y01" and the required lock number.





Version	Color of screw lens	SD	Flat connectors		PU (UNIT, SET, M)	PS*	PG
			Article No.	Price per PU			
 3SB2224-6BE06	Indicator lights Lampholders W2 x 4.6 d without lamp ¹⁾	Red	2	3SB2204-6BC06	1	1 unit	41J
		Yellow	10	3SB2204-6BD06	1	1 unit	41J
		Green	2	3SB2204-6BE06	1	1 unit	41J
		White	2	3SB2204-6BG06	1	1 unit	41J
		Clear	10	3SB2204-6BH06	1	1 unit	41J
	Indicator lights Lampholders W2 x 4.6 d with 24 V incandescent lamp	Red	2	3SB2224-6BC06	1	1 unit	41J
		Yellow	10	3SB2224-6BD06	1	1 unit	41J
		Green	2	3SB2224-6BE06	1	1 unit	41J
		White	2	3SB2224-6BG06	1	1 unit	41J
		Clear	10	3SB2224-6BH06	1	1 unit	41J

¹⁾ For wedge base lamps, see [Accessories](#), page 13/159.

SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm

Actuating and signaling elements








Selection and ordering data

Version	Color of actuator	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Pushbuttons							
 3SB2000-0AF01	Pushbuttons with flat button	Black	2	3SB2000-0AB01	1	1 unit	41J
		Red	2	3SB2000-0AC01	1	1 unit	41J
		Yellow	10	3SB2000-0AD01	1	1 unit	41J
		Green	2	3SB2000-0AE01	1	1 unit	41J
		Blue	2	3SB2000-0AF01	1	1 unit	41J
		White, Clear ¹⁾	2	3SB2000-0AG01	1	1 unit	41J
			10	3SB2000-0AH01	1	1 unit	41J
 3SB2000-0LF01	Illuminated pushbuttons with flat button	Red	2	3SB2001-0AC01	1	1 unit	41J
		Yellow ¹⁾	10	3SB2001-0AD01	1	1 unit	41J
		Green	2	3SB2001-0AE01	1	1 unit	41J
		Blue	10	3SB2001-0AF01	1	1 unit	41J
		White, Clear ¹⁾	2	3SB2000-0AG01	1	1 unit	41J
		10	3SB2000-0AH01	1	1 unit	41J	
 3SB2000-0LB01	Pushbuttons with raised button	Black	10	3SB2000-0LB01	1	1 unit	41J
		Red	10	3SB2000-0LC01	1	1 unit	41J
		Yellow	10	3SB2000-0LD01	1	1 unit	41J
		Blue	10	3SB2000-0LF01	1	1 unit	41J
		White, Clear ¹⁾	10	3SB2000-0LG01	1	1 unit	41J
			10	3SB2000-0LH01	1	1 unit	41J
 3SB2000-1AC01	Illuminated pushbuttons with raised button	Red	10	3SB2001-0LC01	1	1 unit	41J
		Yellow ¹⁾	10	3SB2001-0LD01	1	1 unit	41J
		Green	2	3SB2001-0LE01	1	1 unit	41J
		Blue	10	3SB2001-0LF01	1	1 unit	41J
		Clear ¹⁾	10	3SB2000-0LH01	1	1 unit	41J
	EMERGENCY STOP mushroom pushbuttons acc. to ISO 13850, latching²⁾	Red	2	3SB2000-1AC01	1	1 unit	41J
Latches automatically when pressed; unlatches by turning the mushroom head counterclockwise							

¹⁾ Inscription is possible by inserting a label.






²⁾ The mushroom pushbutton cannot be combined with 3SB2902-0AB backing plate or 3SB2902-0AA single frame.

Version	Color of actuator	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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Selector switches								
 3SB2000-2AC01	Selector switches with 2 switch positions		Black	2	3SB2000-2AB01	1	1 unit	41J
			Red	10	3SB2000-2AC01	1	1 unit	41J
			Green	10	3SB2000-2AE01	1	1 unit	41J
			White	10	3SB2000-2AG01	1	1 unit	41J
	Selector switches with 2 switch positions		Black	10	3SB2000-2BB01	1	1 unit	41J
			Red	10	3SB2000-2BC01	1	1 unit	41J
			Green	10	3SB2000-2BE01	1	1 unit	41J
	Selector switches with 2 switch positions		Black	10	3SB2000-2HB01	1	1 unit	41J
			Red	10	3SB2000-2HC01	1	1 unit	41J
			Green	10	3SB2000-2HE01	1	1 unit	41J
			White	10	3SB2000-2HG01	1	1 unit	41J
	Selector switches with 3 switch positions		Black	2	3SB2000-2DB01	1	1 unit	41J
			Red	10	3SB2000-2DC01	1	1 unit	41J
			Green	10	3SB2000-2DE01	1	1 unit	41J
			White	10	3SB2000-2DG01	1	1 unit	41J
	Selector switches with 3 switch positions		Black	2	3SB2000-2EB01	1	1 unit	41J
			Red	10	3SB2000-2EC01	1	1 unit	41J
			Green	10	3SB2000-2EE01	1	1 unit	41J
			White	10	3SB2000-2EG01	1	1 unit	41J
	Selector switches with 3 switch positions		Black	10	3SB2000-2JB01	1	1 unit	41J
Switching sequence I-O-II, operating angle 2 x 90°, latching								

SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm

Actuating and signaling elements

Version	Lock No.	Key removal position	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Key-operated switches									
 3SB2000-4LB01			d						
	CES key-operated switches¹⁾ with 2 keys, 2 switch positions		SB2	O+I O	10 2	3SB2000-4LB01 3SB2000-4LA01	1 1	1 unit 1 unit	41J 41J
	Switching sequence O-I, operating angle 62°, latching								
	CES key-operated switches¹⁾ with 2 keys, 2 switch positions		SB2	O	2	3SB2000-4MA01	1	1 unit	41J
Switching sequence O-I, operating angle 50°, momentary contact									
CES key-operated switches¹⁾ with 2 keys, 3 switch positions		SB2	I+O+II O	10 10	3SB2000-4PB01 3SB2000-4PA01	1 1	1 unit 1 unit	41J 41J	
Switching sequence I-O-II, operating angle 2 x 62°, latching									
CES key-operated switches¹⁾ with 2 keys, 3 switch positions		SB2	O	10	3SB2000-4QA01	1	1 unit	41J	
Switching sequence I-O-II, operating angle 2 x 50°, momentary contact									

¹⁾ Also available with additional locking systems. The article number must be supplemented with "-Z", the order code "Y01" and the required lock number.




Version	Color of screw lens	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Indicator lights								
 3SB2001-6BD06	Indicator lights with concentric rings	Red	2	3SB2001-6BC06		1	1 unit	41J
	(Inscription with insert caps is not possible)	Yellow	10	3SB2001-6BD06		1	1 unit	41J
		Green	2	3SB2001-6BE06		1	1 unit	41J
		Blue	10	3SB2001-6BF06		1	1 unit	41J
		White	2	3SB2001-6BG06		1	1 unit	41J
		Clear	10	3SB2001-6BH06		1	1 unit	41J
		Indicator lights, smooth	Red	10	3SB2001-6CC06		1	1 unit
	For inscription with insert caps ¹⁾	Yellow	10	3SB2001-6CD06		1	1 unit	41J
		Green	10	3SB2001-6CE06		1	1 unit	41J
		Blue	10	3SB2001-6CF06		1	1 unit	41J
Clear		10	3SB2001-6CH06		1	1 unit	41J	

¹⁾ For insert caps, see [Accessories](#), page 13/156.

SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm

Contact blocks and lampholders

Selection and ordering data

Version	Graphic symbols	Operating travel	SD	Flat connectors	PU (UNIT, SET, M)	PS*	PG
		 Contact closed  Contact open					
			d	Article No.	Price per PU		

Contact blocks and lampholders with flat connectors 2 × 2.8-0.8 mm according to IEC 60760

Holders for fixing the actuator and the contact blocks



3SB2908-0AA

Holders for 2 contact blocks
Inscription with identification number 1-2

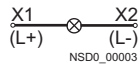
2 **3SB2908-0AA** 1 5 units 41J

Lampholders with holder for fixing the actuator and the contact blocks



3SB2304-2A

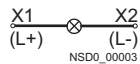
Lampholders
W2 x 4.6 d
without lamp



2 **3SB2304-2A** 1 1 unit 41J

Lampholders
W2 x 4.6 d

- With 6 V incandescent lamp



10 **3SB2304-2F** 1 1 unit 41J

- With 24 V incandescent lamp

10 **3SB2304-2H** 1 1 unit 41J

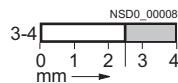
Contact blocks for fixing in the holder or lampholder

Contact blocks with one contact¹⁾



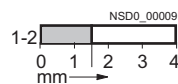
3SB2404-0B

1 NO



2 **3SB2404-0B** 1 1 unit 41J

1 NC ⊕



2 **3SB2404-0C** 1 1 unit 41J




¹⁾ For plug-in and insulating sleeves, see [Accessories, page 13/160](#).

⊕ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System, see [page 11/1 onwards](#).
Certificate:



SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm

Contact blocks and lampholders

Version	Graphic symbols	Operating travel	SD	Solder pin connections	PU (UNIT, SET, M)	PS*	PG
		 Contact closed  Contact open					
			d	Article No.	Price per PU		

Contact blocks and lampholders with solder pins



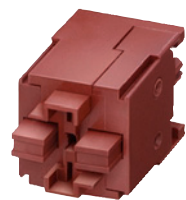
3SB2908-0AB

Holders for contact block with solder pins
For mounting the actuators in the front panel


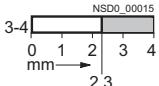

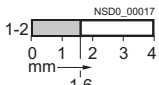

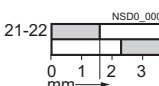

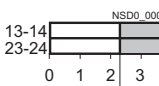

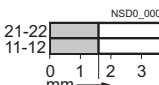
Lampholders
Wedge base W2 x 4.6 d¹⁾



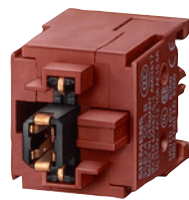
Contact blocks




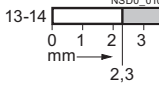

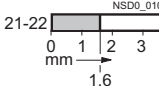
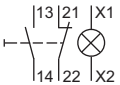
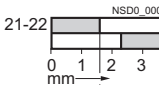
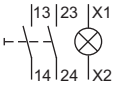
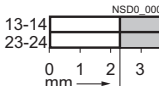

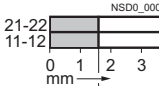
3SB2455-0B

1 NO			10	3SB2455-0B	1	1 unit	41J
1 NC			10	3SB2455-0C	1	1 unit	41J
1 NO + 1 NC			10	3SB2455-0J	1	1 unit	41J
1 NO + 1 NO			10	3SB2455-0E	1	1 unit	41J
1 NC + 1 NC			10	3SB2455-0F	1	1 unit	41J

Contact blocks and lampholders, wedge base W2 x 4.6 d¹⁾



3SB2455-1B

1 NO			10	3SB2455-1B	1	1 unit	41J
1 NC			10	3SB2455-1C	1	1 unit	41J
1 NO + 1 NC			10	3SB2455-1J	1	1 unit	41J
1 NO + 1 NO			10	3SB2455-1E	1	1 unit	41J
1 NC + 1 NC			10	3SB2455-1F	1	1 unit	41J

¹⁾ The lamp is not included in the scope of supply.

⊕ Positive opening according to IEC 60947-5-1, Annex K.
Can be used with 3SK11 safety relays or the 3RK3 Modular Safety System, see page 11/1 onwards. Certificate:



SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm

Accessories and Spare Parts

Insert labels and insert caps

Overview

Clear pushbuttons, illuminated pushbuttons and indicator lights can be fitted with insert labels and caps for identification purposes.










The insert labels and insert caps are made of a milky-transparent plastic with black lettering; they can be fitted in any 90° angle.

Inscription

The inscriptions have upper case initial letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.
























For customized inscriptions, see "Options", page 13/157.

Selection and ordering data

Inscription/symbol	Symbol No.	SD	Insert labels For pushbuttons and illuminated pushbuttons, flat		PU (UNIT, SET, M)	PS*	PG
			Article No.	Price per PU			
For self-inscription							
 Blank	--	10	3SB2901-4AA		100	10 units	41J
With inscription							
 Ein 3SB2901-4AB	Ein	--	10	3SB2901-4AB	100	10 units	41J
	Aus	--	10	3SB2901-4AC	100	10 units	41J
	Auf	--	10	3SB2901-4AD	100	10 units	41J
	Ab	--	10	3SB2901-4AE	100	10 units	41J
 On 3SB2901-4EB	Vor	--	10	3SB2901-4AF	100	10 units	41J
	Zurück	--	10	3SB2901-4AG	100	10 units	41J
	Rechts	--	10	3SB2901-4AH	100	10 units	41J
	Links	--	10	3SB2901-4AJ	100	10 units	41J
	Halt	--	10	3SB2901-4AK	100	10 units	41J
 On 3SB2901-4EB	Zu	--	10	3SB2901-4AL	100	10 units	41J
	Langsam	--	10	3SB2901-4AN	100	10 units	41J
	Störung	--	10	3SB2901-4AQ	100	10 units	41J
	On	--	10	3SB2901-4EB	100	10 units	41J
	Start	--	10	3SB2901-4EK	100	10 units	41J
	Stop	--	10	3SB2901-4EL	100	10 units	41J
	Reset	--	10	3SB2901-4EM	100	10 units	41J
	Test	--	10	3SB2901-4EN	100	10 units	41J
	0	--	10	3SB2901-4RA	100	10 units	41J
	1	--	10	3SB2901-4RB	100	10 units	41J
 On 3SB2901-4EB	2	--	10	3SB2901-4RC	100	10 units	41J
	3	--	10	3SB2901-4RD	100	10 units	41J
	4	--	10	3SB2901-4RE	100	10 units	41J
	5	--	10	3SB2901-4RF	100	10 units	41J
	6	--	10	3SB2901-4RG	100	10 units	41J
	7	--	10	3SB2901-4RH	100	10 units	41J
	8	--	10	3SB2901-4RJ	100	10 units	41J
	9	--	10	3SB2901-4RK	100	10 units	41J
	Graphic ON/OFF symbols						
 O (Off)		5008 IEC	10	3SB2901-4MB	100	10 units	41J
I (On)		5007 IEC	10	3SB2901-4MC	100	10 units	41J
II (On)		--	10	3SB2901-4MD	100	10 units	41J

SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm Accessories and Spare Parts






Insert labels and insert caps

Inscription/symbol	Symbol No.	SD	Insert labels For pushbuttons and illuminated pushbuttons, flat Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Graphic equipment symbols							
 3SB2901-4PA	Electric motor		0011 ISO	10	3SB2901-4PA	100	10 units 41J
	Horn		5014 IEC	10	3SB2901-4PB	100	10 units 41J
	Pump		0134 ISO	10	3SB2901-4PD	100	10 units 41J
	Coolant pump		0355 ISO	10	3SB2901-4PE	100	10 units 41J
Graphic motion symbols							
 3SB2901-4NA	Motion in direction of arrow (straight)		5022 IEC	10	3SB2901-4NA	100	10 units 41J
	Motion in direction of arrow (diagonal)		--	10	3SB2901-4NB	100	10 units 41J
	Clockwise rotation		0004 ISO	10	3SB2901-4NC	100	10 units 41J
	Counterclockwise rotation		--	10	3SB2901-4ND	100	10 units 41J
	Fast motion		0266 ISO	10	3SB2901-4NE	100	10 units 41J
	Increase (plus)		5005 IEC	10	3SB2901-4NG	100	10 units 41J
	Decrease (minus)		5006 IEC	10	3SB2901-4MC	100	10 units 41J
Graphic control symbols							
 3SB2901-4QK	Clamp		--	10	3SB2901-4QB	100	10 units 41J
	Release		--	10	3SB2901-4QC	100	10 units 41J
	Brake off		0021 ISO	10	3SB2901-4QE	100	10 units 41J
	Lock		0022 ISO	10	3SB2901-4QF	100	10 units 41J
	Unlock		0023 ISO	10	3SB2901-4QG	100	10 units 41J
	On/Off, momentary contact type		5011 IEC	10	3SB2901-4QJ	100	10 units 41J
	Manual operation		0096 ISO	10	3SB2901-4QK	100	10 units 41J
	Automatic sequence		0017 ISO	10	3SB2901-4QL	100	10 units 41J
Customized inscriptions							
	Any inscription 1 line of text with up to 6 characters with 3 mm font height. Please add the appropriate order code to the article number and specify the line of text required.				3SB2901-4AZ K0Y K1Y or K2Y K5Y		
	Other graphic symbols Please add the order code "K3Y" to the article number and specify the serial number and the applied standard (ISO 7000 or IEC 60417).				3SB2901-4AZ K3Y		
	Any inscription or symbol Please add the order code "K9Y" to the article number and specify the inscription or the symbol required.				3SB2901-4AZ K9Y		

SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm






Accessories and Spare Parts

Insert labels and insert caps

Inscription/symbol	Symbol No.	SD	Insert caps For pushbuttons and illuminated pushbuttons, raised Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
For self-inscription							
 Blank	--	10	3SB2901-5AA		100	10 units	41J
3SB2901-5AA							
With inscription							
 On	On	--	3SB2901-5EB		100	10 units	41J
	Aus	--	3SB2901-5AC		100	10 units	41J
	Auf	--	3SB2901-5AD		100	10 units	41J
	Zu	--	3SB2901-5AL		100	10 units	41J
3SB2901-5EB	0	--	3SB2901-5RA		100	10 units	41J
	1	--	3SB2901-5RB		100	10 units	41J
	2	--	3SB2901-5RC		100	10 units	41J
	3	--	3SB2901-5RD		100	10 units	41J
	4	--	3SB2901-5RE		100	10 units	41J
3SB2901-5AC	5	--	3SB2901-5RF		100	10 units	41J
	6	--	3SB2901-5RG		100	10 units	41J
	7	--	3SB2901-5RH		100	10 units	41J
	8	--	3SB2901-5RJ		100	10 units	41J
	9	--	3SB2901-5RK		100	10 units	41J
Graphic ON/OFF symbols							
 O (Off)		5008 IEC	3SB2901-5MB		100	10 units	41J
	I (On)	5007 IEC	3SB2901-5MC		100	10 units	41J
Graphic motion symbols							
 Motion in direction of arrow		5022 IEC	3SB2901-5NA		100	10 units	41J
	Motion in direction of arrow	--	3SB2901-5NB		100	10 units	41J
3SB2901-5NA	Increase (plus)	5005 IEC	3SB2901-5NG		100	10 units	41J
	Decrease (minus)	5006 IEC	3SB2901-5MC		100	10 units	41J
Graphic control symbols							
	Clamp	→←	3SB2901-5QB		100	10 units	41J
	Release	⇌	3SB2901-5QC		100	10 units	41J
Customized inscriptions							
	Any inscription 1 line of text with up to 6 characters with 3 mm font height. Please add the appropriate order code to the article number and specify the line of text required.		3SB2901-5AZ K0Y K1Y or K2Y K5Y				
	Other graphic symbols Please add the order code " K3Y " to the article number and specify the serial number and the applied standard (ISO 7000 or IEC 60417).		3SB2901-5AZ K3Y				
	Any inscription or symbol Please add the order code " K9Y " to the article number and specify the inscription or the symbol required.		3SB2901-5AZ K9Y				

SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm Accessories and Spare Parts

Insert labels and insert caps

Inscription/symbol	Symbol No.	SD	Insert caps For indicator lights		PU (UNIT, SET, M)	PS*	PG
			Article No.	Price per PU			
For self-inscription							
 Blank	--	10	3SB2901-7AA		100	10 units	41J
With inscription							
 Betrieb	--	10	3SB2901-7AP		100	1 unit	41J
 Störung	--	10	3SB2901-7AQ		100	10 units	41J
Graphic symbols							
 Pump	0134 ISO	10	3SB2901-7PD		100	10 units	41J
 Manual operation	0096 ISO	10	3SB2901-7QK		100	10 units	41J
Customized inscriptions							
Any inscription 1 line of text with up to 6 characters with 3 mm font height. Please add the appropriate order code to the article number and specify the line of text required.			3SB2901-7AZ K0Y K1Y or K2Y K5Y				
Other graphic symbols Please add the order code " K3Y " to the article number and specify the serial number and the applied standard (ISO 7000 or IEC 60417).			3SB2901-7AZ K3Y				
Any inscription or symbol Please add the order code " K9Y " to the article number and specify the inscription or the symbol required.			3SB2901-7AZ K9Y				

Options

Customized inscriptions

Labels and caps can be inscribed with text and symbols not listed in the ordering data. Append the following order codes to the article number:

- Text line in upper/lower case, always upper case for beginning of line (e.g. "Lift"): **K0Y**
- Text line in upper case (e.g. "LIFT"): **K1Y**
- Text line in lower case (e.g. "lift"): **K2Y**
- Text line in upper/lower case, all words begin with upper case letters (e.g. "Lift Out"): **K5Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbols according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the article number and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

One line with up to 6 characters with 3 mm font height is possible for the inscription (see ordering example 1).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering example 2 and 3).

For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example 1

3SB2901-4AZ
K1Y
Z1=Pump

Ordering example 2

3SB2901-4AZ
K3Y
Z=5008 IEC

Ordering example 3

3SB2901-4AZ
K3Y
Z=1118 ISO

SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm

Accessories and Spare Parts

Backing plates

Overview




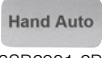





The backing plates consist of a black plastic label holder and a labeling plate (silver with black print) for sticking in place.

Note mounting dimensions!

Inscription

The inscriptions (also special inscriptions) are lower case with upper case initial letters. Graphic symbols, including those not listed in the catalog, are according to ISO 7000 or IEC 60417.

Selection and ordering data

Inscription/symbol	Symbol No.	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Labeling plates, self-adhesive, 9.5 mm x 18.5 mm							
 3SB2901-2AA	Blank	2	3SB2901-2AA		100	10 units	41J
 3SB2901-2AB	Ein	10	3SB2901-2AB		100	10 units	41J
	Aus	10	3SB2901-2AC		100	10 units	41J
	Auf	10	3SB2901-2AD		100	10 units	41J
	Zu	10	3SB2901-2AL		100	10 units	41J
	Vor	10	3SB2901-2AF		100	10 units	41J
 3SB2901-2EB	Zurück	10	3SB2901-2AG		100	10 units	41J
	Schnell	10	3SB2901-2AM		100	10 units	41J
	Langsam	10	3SB2901-2AN		100	10 units	41J
	Betrieb	10	3SB2901-2AP		100	10 units	41J
 3SB2901-2BA	Störung	10	3SB2901-2AQ		100	10 units	41J
	Einrichten	10	3SB2901-2AR		100	10 units	41J
	On	10	3SB2901-2EB		100	10 units	41J
	Off	10	3SB2901-2EC		100	10 units	41J
	Start	10	3SB2901-2EL		100	10 units	41J
	Reset	10	3SB2901-2EM		100	10 units	41J
 3SB2901-2NA	Fault	10	3SB2901-2EW		100	10 units	41J
	Hand Auto	10	3SB2901-2BA		100	10 units	41J
	Manual 0 Auto	10	3SB2901-2BE		100	10 units	41J
	Man 0 Auto	10	3SB2901-2ET		100	10 units	41J
Graphic symbols							
	O (Off)	5008 IEC	10	3SB2901-2MB	100	10 units	41J
	I (On)	5007 IEC	10	3SB2901-2MC	100	10 units	41J
	O I (horizontal)	--	10	3SB2901-2MF	100	10 units	41J
	Motion in direction of arrow	5002 IEC	10	3SB2901-2NA	100	10 units	41J
Customized inscriptions or symbols (see Options)				3SB2901-2XZ			
				K0Y			
				K1Y, K2Y or K3Y			
				K5Y			
				K9Y			
Label holders							
 3SB2902-0AB	Label holders for labeling plates	10	3SB2902-0AB		100	10 units	41J
	The label holders must not be used with the 3SB2...-1AC01 EMERGENCY STOP mushroom pushbutton.						

Options

Customized inscriptions

The labels can be inscribed with text and symbols not listed in the ordering data. Append the following order codes to the article number:

- Text line(s) in upper/lower case, all lines begin with upper case (e.g. "Lift out"): **K0Y**
- Text line(s) in upper case (e.g. "LIFT OUT"): **K1Y**
- Text line(s) in lower case (e.g. "lift out"): **K2Y**
- Text line(s) in upper/lower case, all words begin with upper case letters (e.g. "Lift Out"): **K5Y**
- Symbol with number according to ISO 7000 or IEC 60417: **K3Y**
- Any inscription or symbols according to order form supplement: **K9Y**

When ordering, specify the required inscription in plain text in addition to the article number and order code. In the case of special inscriptions with words in languages other than German, give the exact spelling and specify the language.

Two lines of 11 characters per line are permitted with 4 mm font height (1 line) or 3 mm (2 lines).

Symbols can also be ordered with numbers according to ISO 7000 or IEC 60417 (see ordering example).

For special symbols (order code K9Y), a CAD drawing in DXF format can be submitted.

Ordering example












3SB2901-2XZ
K3Y
Z=1118 ISO

SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm

Accessories and Spare Parts

Mounting parts and components

Selection and ordering data

Version	Lamp voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
	V		d						
Buttons and lenses¹⁾									
 3SB2910-0AF	Buttons, flat For pushbuttons	Black	10	3SB2910-0AB		100	10 units	41J	
		Red	10	3SB2910-0AC		100	10 units	41J	
		Yellow	10	3SB2910-0AD		100	10 units	41J	
		Green	10	3SB2910-0AE		100	10 units	41J	
		Blue	10	3SB2910-0AF		100	10 units	41J	
		White	10	3SB2910-0AG		100	10 units	41J	
		Clear	10	3SB2910-0AH		100	10 units	41J	
 3SB2910-0CF	Buttons, flat For illuminated pushbuttons	Red	10	3SB2910-0CC		100	10 units	41J	
		Yellow	10	3SB2910-0CD		100	10 units	41J	
		Green	10	3SB2910-0CE		100	10 units	41J	
		Blue	10	3SB2910-0CF		100	10 units	41J	
		White	10	3SB2910-0AG		100	10 units	41J	
		Clear	10	3SB2910-0AH		100	10 units	41J	
 3SB2910-0BD	Buttons, raised For pushbuttons	Black	10	3SB2910-0BB		1	10 units	41J	
		Red	10	3SB2910-0BC		1	10 units	41J	
		Yellow	10	3SB2910-0BD		1	10 units	41J	
		Clear	10	3SB2910-0BH		1	10 units	41J	
 3SB2910-0DD	Buttons, raised For illuminated pushbuttons	Red	10	3SB2910-0DC		1	10 units	41J	
		Yellow	10	3SB2910-0DD		1	10 units	41J	
		Clear	10	3SB2910-0BH		1	10 units	41J	
 3SB2910-1AD	Screw lenses With concentric rings	Red	10	3SB2910-1AC		100	10 units	41J	
		Yellow	10	3SB2910-1AD		100	10 units	41J	
		Green	10	3SB2910-1AE		100	10 units	41J	
		Blue	10	3SB2910-1AF		100	10 units	41J	
		White	10	3SB2910-1AG		100	10 units	41J	
		Clear	10	3SB2910-1AH		100	10 units	41J	
 3SB2910-1BE	Screw lenses Smooth, for inscription with insert cap	Red	10	3SB2910-1BC		100	10 units	41J	
		Yellow	10	3SB2910-1BD		100	10 units	41J	
		Green	10	3SB2910-1BE		100	10 units	41J	
		Blue	10	3SB2910-1BF		100	10 units	41J	
		Clear	10	3SB2910-1BH		100	10 units	41J	
Keys for actuators									
 3SB2908-2AJ	Keys For CES key-operated switch, Lock No. SB2		10	3SB2908-2AJ		1	1 unit	41J	
Lamps, wedge bases²⁾									
 3SB2908-1AE	Incandescent lamps Wedge base W2 x 4.6 d, 1.0 W	AC/DC	Clear						
		6	20	3SB2908-1AA		100	10 units	41J	
		12	10	3SB2908-1AB		100	10 units	41J	
		24	10	3SB2908-1AC		100	10 units	41J	
		30	5	3SB2908-1AD		100	10 units	41J	
		48	10	3SB2908-1AE		1	10 units	41J	
		60	10	3SB2908-1AF		1	10 units	41J	
 3SB3901-1SB	LED lamps, super-bright Wedge base W2 x 4.6 d	24 AC/DC	Red	10	3SB3901-1SB		1	10 units	41J
			Yellow	10	3SB3901-1RB		1	10 units	41J
			Green	10	3SB3901-1TB		1	10 units	41J
			White	10	3SB3901-1UB		1	10 units	41J
			Blue	10	3SB2908-1BD		1	10 units	41J
		 3SB2908-1BD		28 AC/DC	Red	10	3SB3901-1SE		1
	Yellow			10	3SB3901-1RE		1	10 units	41J
	Green			10	3SB3901-1TE		1	10 units	41J
	White			10	3SB3901-1UE		1	10 units	41J
	Blue			20	3SB3901-1VE		1	10 units	41J
 3SB2908-2AB	Lamp extractors For lamps with bases W2 x 4.6 d		5	3SB2908-2AB		1	1 unit	41J	

¹⁾ Included in the scope of supply of actuators or indicator lights.

²⁾ Included in the scope of supply of some complete units.

SIRIUS 3SB2 Pushbuttons and Indicator Lights, 16 mm

Accessories and Spare Parts

Mounting parts and components

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories for command points						
	2	3SB2902-0AA		100	10 units	41J
3SB2902-0AA						
	2	3SB2908-2AF		1	1 unit	41J
3SB2908-2AG		As high-contrast background for EMERGENCY STOP, self-adhesive				
	2	3SB2908-2AG		1	1 unit	41J
	2	3SB2908-2AK		1	1 unit	41J
	10	3SB2908-3AA		1	1 unit	41J
3SB2908-3AA						
	10	3SB2908-3AB		1	1 unit	41J
3SB2908-1						
Flat connectors						
	5	3SB2908-8AA		100	250 units	41J
3SB2908-8AA						
	20	3SB2908-8AB		100	250 units	41J
3SB2908-8AB						
	10	3SB2908-8AD		1	1 unit	41J
3SB2908-8AD						
	10	3SB2908-8AE		100	10 units	41J
3SB2908-8AE						
Tools						
	5	3SB2908-2AA		1	1 unit	41J
3SB2908-2AA						
	5	3SB2908-2AC		1	1 unit	41J
3SB2908-2AC						
		6179 0950				
6179 0950						

¹⁾ Not suitable for EMERGENCY STOP mushroom pushbuttons.

²⁾ Required 3SB2908-8AE plug-in sleeves for flat connectors 2.8 × 0.8 mm are not included in the scope of supply.

Overview



3SE7 cable-operated switches

More information

Homepage, see www.siemens.com/sirius-commanding

Industry Mall see www.siemens.com/product?3SE7

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/107194954>

The cable-operated switches are used for monitoring or as EMERGENCY STOP devices on particularly endangered system components.

As the effective range of a cable-operated switch is only limited by the length of the trip-wire, large systems can also be protected. Cable-operated switches (requiring pulling at both ends) and conveyor belt unbalance trackers are used primarily for monitoring very long belt systems.

Contact blocks

The switches for wire lengths up to 50 m are supplied with 1 NO + 1 NC or 2 NC contacts and those up to 75 m with 1 NO + 3 NC contacts. The switches for wire lengths of 2 x 75 m and the conveyor belt unbalance tracker are supplied with 2 NO + 2 NC contacts.

The NC contacts of the cable-break or cable-pull signaling are positive opening. The NO contact can be used, for example, for signaling purposes.

Free position and display

Cable-operated switches with one-side operation are held in free position by the pre-tension on the turnbuckle.

On switches with interlocking, with a pre-tensioned cable, the locking must be deactivated beforehand in order to return the cable-operated switch to its original position.

The cable-operated switch and the conveyor belt unbalance tracker can be supplied optionally with a factory-fitted LED (red, 24 V DC). This light in innovative chip-on-board technology allows the operating state of the switch to be visible at a distance of at least 50 m.

Application

Standards

The switches are equipped with latching mechanism and positive NC contacts and are thus suitable for operation in EMERGENCY STOP devices according to EN ISO 13850.

Technical specifications

Type	3SE7120	3SE7150	3SE7140	3SE7141	3SE7160	3SE7310
General data						
Standards	IEC/EN 60947-5-1 IEC/EN 60204-1, EN ISO 13850					
Approvals	UL/CSA					
Electrical design	Contacts electrically isolated from each other					
Electrical load	<ul style="list-style-type: none"> • 2-pole, at AC-15 • 3-pole, at AC-15 • 4-pole, at AC-15 • Minimum 					
	400 V AC, 6 A		400 V AC, 6 A	240 V AC, 2 A	400 V AC, 6 A	--
	240 V AC, 2 A		--	--	--	--
	--		--	--	400 V AC, 6 A	400 V AC, 6 A
	24 V AC/DC, 10 mA					
Short-circuit protection	A	6 (slow)				
Mechanical endurance	> 100 000 operating cycles					
Contact material	Fine silver					
Operation	By pulling or breaking of wire					
Wire length, maximum	m	10	25	50	75	2 x 100
Distance between wire supports, max.	m	3		5		4
Enclosures						
Enclosure material	GD Al alloy, coated (color), dark black RAL 9005					
Cover	Shock-resistant thermoplast					
Degree of protection acc. to IEC 60529 ¹⁾	IP65			IP67	IP65	
Ambient temperature	°C	-25 ... +70				
Mounting	Designed for M5					
Fixing spacing	mm	30 and 40				
Cable entry	2 x (M20 x 1.5)		1 x (M20 x 1.5)	3 x (M20 x 1.5)	2 x (M25 x 1.5)	
Connection type	Screw terminals M3.5, self-lifting clamp terminal					

¹⁾ IP54 for versions with key-operated release

SIRIUS 3SE7 Cable-Operated Switches

3SE7 metal enclosures

Selection and ordering data

Version	Wire length	Contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG			
	m		d								
Cable-operated switches											
 3SE7120-1BH00	10	Metal enclosures, IP65 (cover made of molded plastic)									
		• Without latching, only cable pull monitoring	1 NO + 1 NC	⊕	2	3SE7120-2DD01	1	1 unit	41K		
		• With latching and button reset	2 NC	⊕	2	3SE7120-1BF00	1	1 unit	41K		
		- With yellow cover	1 NO + 2 NC	⊕	2	3SE7120-1BH00	1	1 unit	41K		
 3SE7150-1BD00	25	Metal enclosures, IP65 (cover made of molded plastic), with alignment window									
		• Without latching	1 NO + 1 NC	⊕	2	3SE7150-2DD00	1	1 unit	41K		
		• With latching and button reset	1 NO + 1 NC	⊕	2	3SE7150-1BD00	1	1 unit	41K		
			2 NC	⊕	2	3SE7150-1BF00	1	1 unit	41K		
		- With yellow cover	1 NO + 2 NC	⊕	5	3SE7150-1BH00	1	1 unit	41K		
		• With latching and key unlatching	1 NO + 1 NC	⊕	5	3SE7150-1CD00	1	1 unit	41K		
 3SE7150-1BD04 3SE7150-1BH04	25	Metal enclosures, IP65 (cover made of molded plastic), with alignment window, with LED, red, 24 V DC									
		• Without latching	1 NO + 1 NC	⊕	5	3SE7150-2DD04	1	1 unit	41K		
		• With latching and button reset	1 NO + 1 NC	⊕	5	3SE7150-1BD04	1	1 unit	41K		
		• With yellow cover	1 NO + 2 NC	⊕	5	3SE7150-1BH04	1	1 unit	41K		
 3SE7140-1B.00	50	Metal enclosures, IP65 (cover made of molded plastic)									
		• With latching and button reset	1 NO + 1 NC	⊕	2	3SE7140-1BD00	1	1 unit	41K		
			2 NC	⊕	5	3SE7140-1BF00	1	1 unit	41K		
		• In addition with LED, red, 24 V DC	1 NO + 1 NC	⊕	5	3SE7140-1BD04	1	1 unit	41K		
		• With latching and key unlatching	1 NO + 1 NC	⊕	5	3SE7140-1CD00	1	1 unit	41K		
 3SE7141-1EG10	75	Metal enclosures, IP67 (cover made of molded plastic), with EMERGENCY STOP mushroom, with rotate-to-unlatch mechanism		1 NO + 3 NC	⊕	2		3SE7141-1EG10	1	1 unit	41K
 3SE7160-1AE00	2 x 100	Metal enclosures, IP65 With actuation on both sides									
		• With latching and button reset	2 NO + 2 NC	⊕	2	3SE7160-1AE00	1	1 unit	41K		
			1 NO + 1 NC	⊕	5	3SE7160-1BD00	1	1 unit	41K		
		• In addition with LED, red, 24 V DC	2 NO + 2 NC	⊕	5	3SE7160-1AE04	1	1 unit	41K		

⊕ Positive opening according to IEC 60947-5-1, Annex K.

SIRIUS 3SE7 Cable-Operated Switches

3SE7 metal enclosures

Version	Contacts	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		d					

Conveyor belt unbalance trackers



3SE7310-1AE00

Metal enclosures, IP65

- With latching and button reset
- In addition with LED, red, 24 V DC

2 NO + 2 NC	⊕	5
2 NO + 2 NC	⊕	5

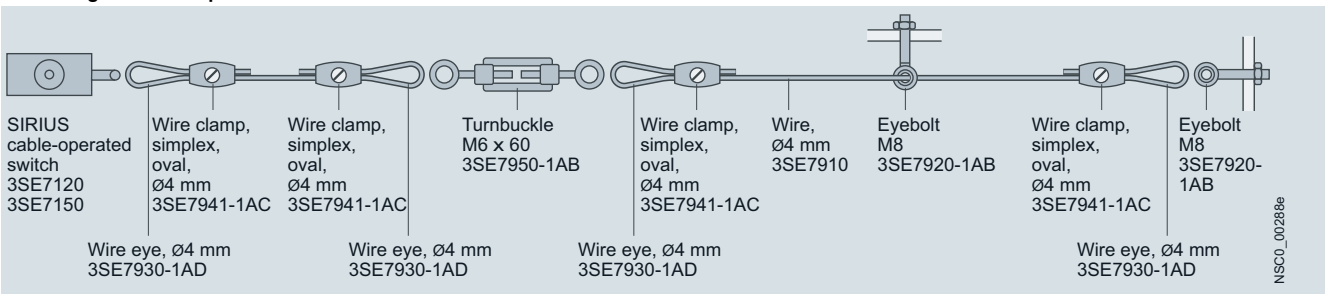
			3SE7310-1AE00		1	1 unit	41K
			3SE7310-1AE04		1	1 unit	41K

⊕ Positive opening according to IEC 60947-5-1, Annex K.

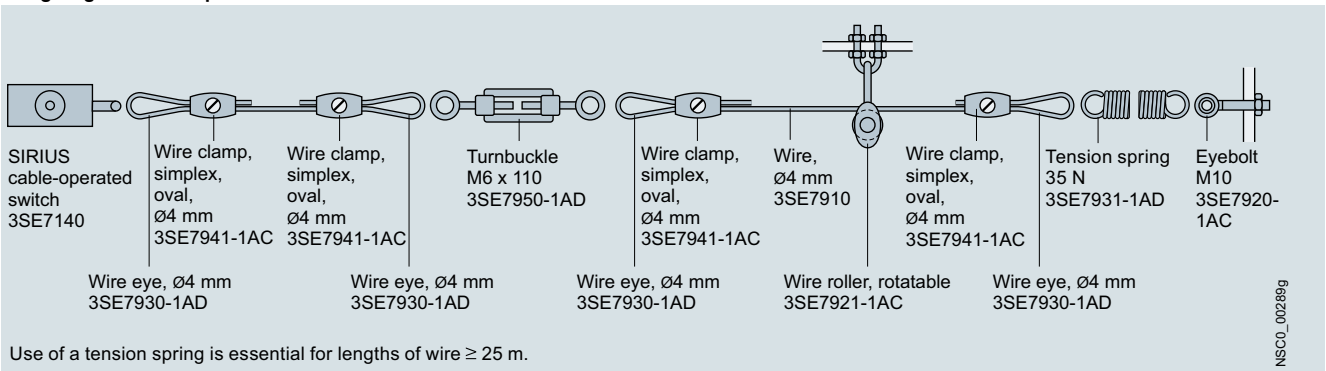
Accessories

Configuration of the cable-operated switches

Short lengths of wire up to 25 m

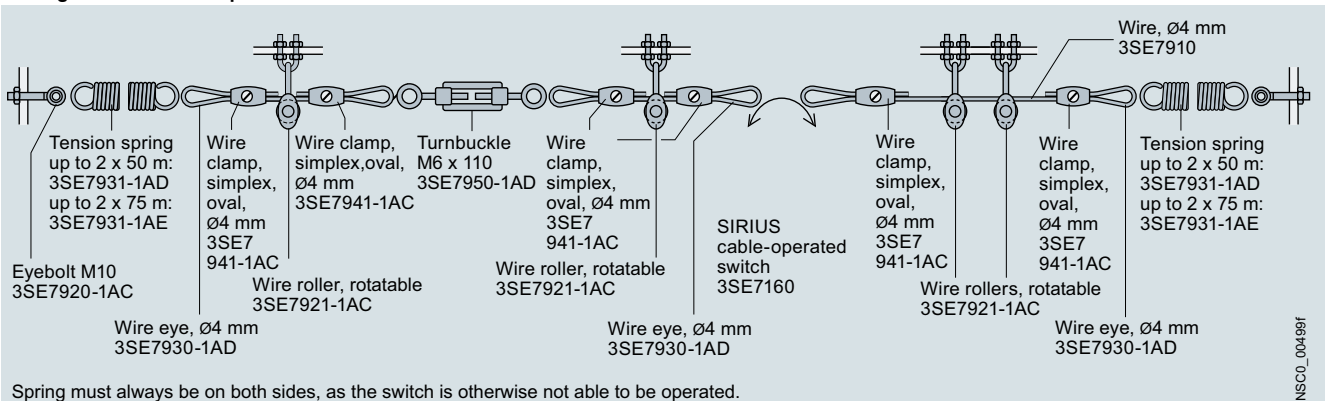


Long lengths of wire up to 50 m



Use of a tension spring is essential for lengths of wire ≥ 25 m.

Pulling from both sides up to 2 x 100 m



Spring must always be on both sides, as the switch is otherwise not able to be operated.

Note:

Large temperature fluctuations require corresponding compensation springs. For reliable connection the PVC sheath must be removed from the clamping area of the

steel bowden wire. Bowden wire supports must be used at the recommended intervals.

* You can order this quantity or a multiple thereof. Illustrations are approximate

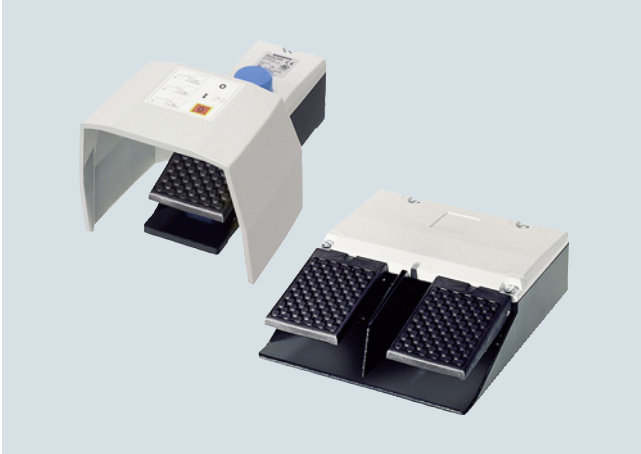
SIRIUS 3SE7 Cable-Operated Switches

3SE7 metal enclosures

Version	Length/ diameter	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Trip-wire with fixing							
 3SE7910-3AA	Steel wires , with red plastic sheath, diameter 4 mm ¹⁾	10 m	2	3SE7910-3AA	1	1 unit	41K
		15 m	2	3SE7910-3AB	1	1 unit	41K
		20 m	2	3SE7910-3AC	1	1 unit	41K
		50 m	2	3SE7910-3AH	1	1 unit	41K
Wire clamps , galvanized white, zinc-plated							
 3SE7941-1AC	• Oval	2 x Ø 4 mm	2	3SE7941-1AC	1	1 unit	41K
	• Single (1 set = 4 units)	2 x Ø 4 mm	2	3SE7942-1AA	1	4 units	41K
 3SE7942-1AA	• Simplex (1 set = 4 units)	2 x Ø 4 mm	2	3SE7943-1AC	1	4 units	41K
	• Duplex (1 set = 4 units)	2 x Ø 4 mm	2	3SE7944-1AC	1	4 units	41K
 3SE7943-1AC							
 3SE7944-1AC							
Tension springs (zinc-plated) to maintain the counter tension							
 3SE7931-1AB	• 13 N		2	3SE7931-1AB	1	1 unit	41K
	• 35 N, for cable-operated switches up to 50 m		2	3SE7931-1AD	1	1 unit	41K
	• > 35 N, for cable-operated switches up to 2 x 75 m		5	3SE7931-1AE	1	1 unit	41K
Wire rollers for changing the direction of the wire, rotatable							
 3SE7921-1AC		Ø 4 mm	2	3SE7921-1AC	1	1 unit	41K
 3SE7921-1AA	Fixtures for the wire rollers (incl. fixing nuts)		2	3SE7921-1AA	1	1 unit	41K
 3SE7930-1AD	Wire eyes for changes in wire direction and improved power transmission at the fixing points (1 set = 4 units)	Ø 4 mm	2	3SE7930-1AD	1	4 units	41K
Eyebolts for fixing the wire							
 3SE7920-1AB	• Including M8 nut		2	3SE7920-1AB	1	1 unit	41K
	• Including M10 nut		2	3SE7920-1AC	1	1 unit	41K
Turnbuckles for precise adjustment of the pre-tension							
 3SE7950-1AB	• M6 x 60		2	3SE7950-1AB	1	1 unit	41K
	• M6 x 110		2	3SE7950-1AD	1	1 unit	41K
Spare parts							
 3SX3235	LED lamps , red 24 V DC diameter 25 mm; for M20 x 1.5 connection		10	3SX3235	1	1 unit	41K

¹⁾ Diameter including casing; the diameter of the steel wire is 3.2 mm.

Overview



3SE29 foot switch with metal enclosure

More information

Homepage, see www.siemens.com/sirius-commanding

Industry Mall, see www.siemens.com/product?3SE2

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/107194954>

Standard switches

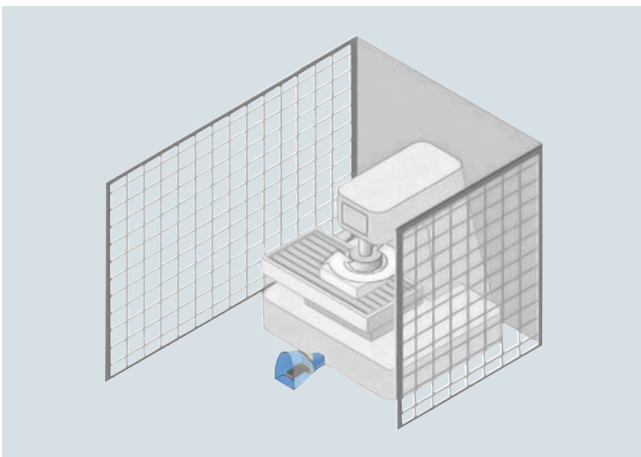
The 3SE29 and 3SE39 foot switch range encompasses versions in a metal enclosure for rugged applications as well as versions with plastic enclosure for less harsh environments. The devices can be supplied with or without a cover and have fixing holes for them to be screwed to the floor.

Depending on the particular application, the metal enclosures can be ordered with contact blocks in latching or momentary-contact versions. The momentary-contact pedal switch in the plastic enclosure has one microswitch (changeover contact) per actuating pedal.

Safety foot switches

The 3SE2924-3AA20 single-pedal safety foot switches are used on machines and plants as OK switches when operation by hand is not possible. The switches have an interlocking function.

The safety foot switches are protected by a guard hood against accidental operation.



Application example

The switches have two contact blocks, each with one NO contact and one NC contact. The NO contacts and NC contacts of the two contact blocks are connected for easy connection of a single-phase motor. The normal workflow is initiated by pressing down the pedal as far as the pressure point so that the two NO contacts close and the motor starts to run.

If in the event of danger the pedal is pressed beyond the resistance of the pressure point, the positively driven NC contacts will open and the motor is stopped. At the same time the independent latching takes effect and holds the NC contacts in open position. This prevents the machine parts from continuing to run out of control or from being restarted.

After the hazard is eliminated, the machine can only be restarted after manually releasing the switch using a pushbutton on the top of the enclosure. The contacts are then released again and return to their initial position (the NO contacts are open and the NC contacts are closed).

Technical specifications

Type	3SE29	3SE39
Metal and plastic enclosures		
Standards	IEC 60947-5-1	
Electrical load		
• At AC-15, 400 V		
- 1 NO + 1 NC	A 10	--
- 2 NO + 2 NC	A 6	--
- 3SE2924-3AA20 (2 NO + 2 NC)	A 10	--
• At 250 V AC	A --	5
Short-circuit protection		
- 1 NO + 1 NC	A 10 (slow)	--
- 2 NO + 2 NC	A 6 (slow)	--
- 3SE2924-3AA20 (2 NO + 2 NC)	A 10 (slow)	--
- 1 CO contact	A --	5 (slow)
Mechanical endurance	> 10 ⁶ operating cycles	
Material		
• Enclosures	Aluminum casting	Impact-resistant thermoplast, self-extinguishing according to UL 94 VO
• Covers	Thermoplast	--
• Guard hoods	Aluminum casting	Metal
Degree of protection	IP65	IP65
Ambient temperature	°C -25 ... +80	-10 ... +75
Connection	Cable entry, metric	Cable AWG20, UL Style 2464, length 3 m

SIRIUS 3SE2, 3SE3 Foot Switches

Plastic and metal enclosures

Selection and ordering data

Version	Slow-action contacts for each pedal	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Metal enclosures, degree of protection IP65							
 3SE290.-.AA20 3SE291.-.AA20	Momentary-contact foot switches, single pedal, non-latching M20 x 1.5 cable entry						
	• Without hood	1 NO + 1 NC 	2	3SE2902-0AB20		1	1 unit 41K
		2 NO + 2 NC 	10	3SE2903-1AB20		1	1 unit 41K
	• With hood	1 NO + 1 NC 	2	3SE2902-0AA20		1	1 unit 41K
		2 NO + 2 NC 	2	3SE2903-1AA20		1	1 unit 41K
	Momentary-contact foot switches, single pedal, latching M20 x 1.5 cable entry						
	• Without hood	1 NO + 1 NC 	15	3SE2912-2AB20		1	1 unit 41K
	• With hood	1 NO + 1 NC 	15	3SE2912-2AA20		1	1 unit 41K
 3SE2932-.AB20  3SE2932-.AA20	Momentary-contact foot switches, two pedals, non-latching M25 x 1.5 cable entry						
	• Without hood	1 NO + 1 NC 	15	3SE2932-0AB20		1	1 unit 41K
		2 NO + 2 NC 	15	3SE2932-1AB20		1	1 unit 41K
	• With hood	1 NO + 1 NC 	5	3SE2932-0AA20		1	1 unit 41K
		2 NO + 2 NC 	5	3SE2932-1AA20		1	1 unit 41K
 3SE2924-3AA20	Safety momentary-contact foot switches, non-latching, single pedal With hood M20 x 1.5 cable entry with interlocking function NO closes as momentary contact type NC opens with automatic latching (safety function)		2 NO + 2 NC 	15	3SE2924-3AA20	1	1 unit 41K
Plastic enclosures, degree of protection IP65							
 3SE3902-4CA20  3SE3934-5CB20	Momentary-contact pedal switches, 3 m cable		Microswitch				
	• Single pedal	- Without hood	1 CO contact	5	3SE3902-4CB20	1	1 unit 41K
		- With hood	1 CO contact	10	3SE3902-4CA20	1	1 unit 41K
	• Two pedals, without hood		2 x 1 CO	10	3SE3934-5CB20	1	1 unit 41K
Accessories							
	Protection cover Single pedal foot switch for 3SE2912-2AA20, 3SE2902-0AA20 and 3SE2903-1AA20	--	20	3SE3980-8M	1	1 unit 41K	
	Contact block, Supersedes momentary-contact foot switch 3SE2903-1A.20 ¹⁾ and 3SE2932-1A.20 ³⁾	1 NO + 1 NC	X	3SE3982-0K	1	1 unit 41K	
	Contact block, Supersedes momentary-contact foot switch 3SE2902-0A.20 and 3SE2932-0A.20 ²⁾	1 NO + 1 NC	X	3SE3982-0L	1	1 unit 41K	
	Contact block, 16 A, Supersedes momentary-contact foot switch 3SE2924-3AA20 ¹⁾	1 NO + 1 NC	X	3SE3982-7J	1	1 unit 41K	
	Contact block, 16 A, Supersedes momentary-contact foot switch 3SE2912-2A.20	1 NO + 1 NC	30	3SE3982-7L	1	1 unit 41K	

 Positive opening according to IEC 60947-5-1, Annex K.

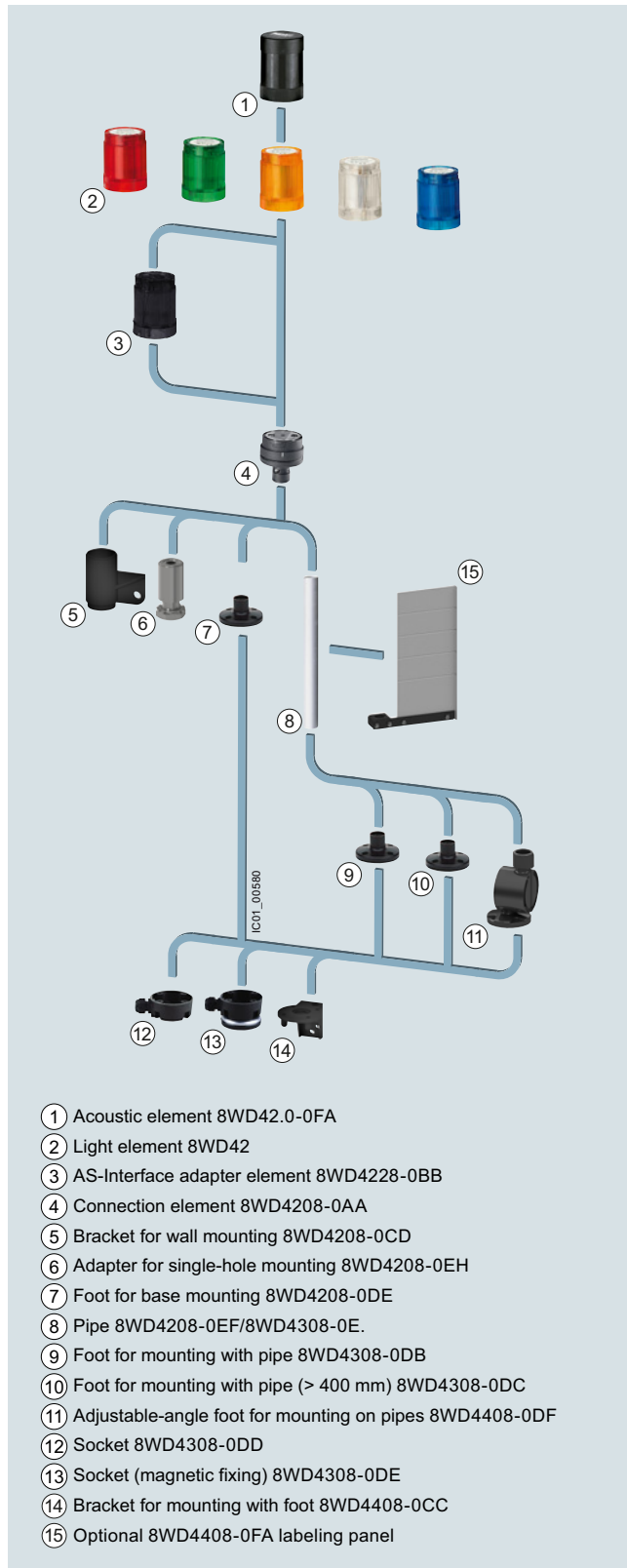
¹⁾ Number of contact blocks required for the foot switch = 2.

²⁾ Number of contact blocks required per pedal = 1.

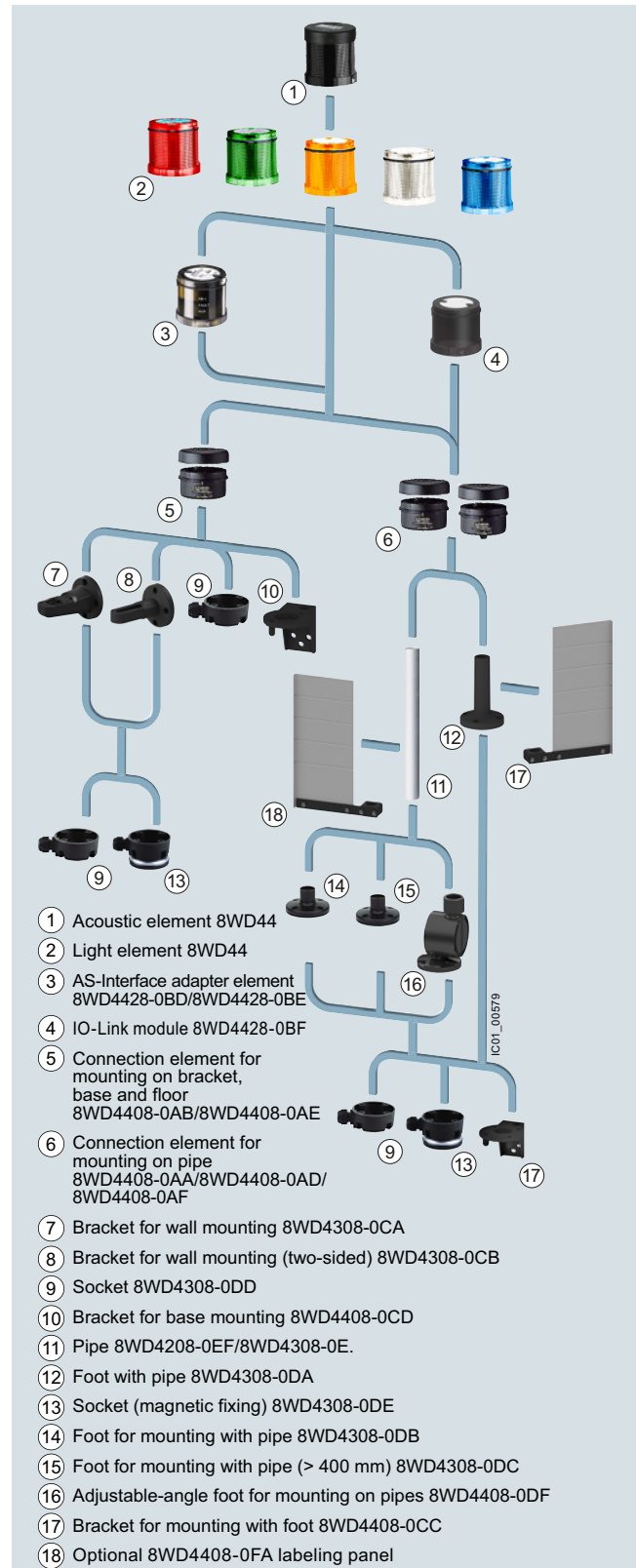
³⁾ Number of contact blocks required per pedal = 2.

Overview

The 8WD4 signaling columns are flexible in design and versatile in use.



8WD42 signaling column (width 50 mm) with up to 4 elements



8WD44 signaling column (width 70 mm) with up to 5 elements

SIRIUS 8WD4 Signaling Columns

General data

More information

Homepage, see www.siemens.com/sirius-commanding
 Industry Mall, see www.siemens.com/product?8WD4
 Manual, see <https://support.industry.siemens.com/cs/ww/en/view/107194954>

Two product series are available:

- 8WD42
 - Thermoplast enclosure, diameter 50 mm
 - Degree of protection IP54
 - Up to 4 elements can be mounted between the connection element and the cover
- 8WD44
 - Thermoplast enclosure, diameter 70 mm
 - Advanced design and significantly improved illumination
 - Fast and flexible connection using spring-type terminals
 - Integrated degree of protection IP65
 - Up to 5 elements can be mounted between the connection element and the cover



Signaling columns, mounting examples

The illustrated examples are from the left:

- 8WD42: Cover (without No.), four light elements ②, connection element ④, pipe ⑧, foot ⑨
- 8WD44: Acoustic element with cover ①, two light elements ②, connection element ⑤, foot with pipe ⑪
- 8WD44: Cover (without No.), four light elements ②, AS-Interface adapter element ③, connection element ④, bracket for wall mounting ⑥
- 8WD44: Cover (without No.), three light elements ②, AS-Interface adapter element ③, connection element ⑤, foot with pipe ⑪

Note:

The cover is supplied with the connection element.

Benefits

- Choice of various light and acoustic elements with different functions: Continuous light, blinklight, flashlight and rotating light; buzzer and siren
- Light elements with particularly long-lasting LEDs
- Variety of colors: red, yellow, green, white or blue
- Optimized illumination through improved prism technology with the 8WD44
- Acoustic elements can be adjusted in tone and volume
- Extremely resistant to shock and vibrations
- Easy connection and quick lamp change with secure bayonet mechanism
- Communication capability through connection to AS-Interface

Application

8WD4 signaling columns are used in machines or in automatic processes for monitoring complex procedures or as visual or acoustic warning devices in emergency situations, e.g. for displaying individual assembly stages.

Communication capability

Connection to AS-Interface

The 8WD4 signaling columns can be directly connected to the AS-Interface bus system through an adapter element that can be integrated in the column. Wiring outlay is reduced as the result. The two-wire bus cable is fixed to the terminals in the connection element. Up to four signaling elements can be mounted on it using an adapter element.

A/B technology enables the connection of up to 62 slaves on one AS-Interface system.

Connection

The signaling elements are wired up using terminals in the connection element, screw terminals on the 8WD42 and screw or spring-type terminals on the 8WD44.

Cable outlet

The connecting cables can be guided either downwards or sideways through the cable gland using an adapter that can be screwed under the foot. This makes wiring easier if there is no access from below.

Connection to AS-Interface

8WD42

The two-wire bus cable is fixed to the screw terminals in the connection element. The adapter element must be the first module to be mounted on the connection element. A maximum of four signaling elements can then be mounted on it.

The 8WD4228-0BB adapter element is a standard slave.

8WD44

The two-wire bus cable is fixed to the screw or spring-type terminals in the connection element. The adapter element must be the first module to be mounted on the connection element. The signaling elements can then be mounted on it.

The 8WD4428-0BE adapter element is a standard slave. A maximum of four signaling elements can be mounted on it.

The 8WD4428-0BD adapter element with A/B technology enables the connection of up to 62 slaves on one AS-Interface system. The addressing socket provides user-friendly parameterization of the AS-Interface elements. A maximum of three signaling elements can be mounted on it.

Technical specifications

Type	8WD42	8WD44
General data		
Approvals	UL, CSA	UL, CSA
Light and acoustic elements		
Rated voltage, power consumption		
Light elements with incandescent lamp	(AC values for 50/60 Hz)	(AC values for 50/60 Hz)
• Continuous lights	12 V, 24 V, 115 V, 230 V AC/DC	12 V, 24 V, 115 V, 230 V AC/DC
• Blinklights	24 V AC/DC/125 mA; 115 V AC/20 mA; 230 V AC/15 mA	24 V AC/DC/125 mA; 115 V AC/20 mA; 230 V AC/15 mA
• Flashlights	--	24 V DC/125 mA; 115 V AC/20 mA; 230 V AC/35 mA
• Max. inrush current, blinklights/flashlights	--	500 mA
Light elements with integrated LED		
• Continuous lights	24 V AC/DC, 60 mA	24 V AC/DC/25 mA; 115 V AC/25 mA; 230 V AC/25 mA
• Blinklights	24 V AC/DC/60 mA; 115 V AC, 60 mA; 230 V AC, 60 mA	24 V AC/DC, 40 mA
• Rotating lights	--	24 V AC/DC/70 mA
Acoustic elements		
• Buzzer element (tone: pulsating or continuous tone)	85 dB: 24 V AC/DC/30 mA; 115 V AC/DC/35 mA; 230 V AC/35 mA	85 dB: 24 V AC/DC/25 mA; 115 V AC/25 mA; 230 V AC/25 mA
• Siren element (8 tones + amplification can be set, 102 dB)	--	24 V AC/DC/80 mA; 115 V AC/30 mA; 230 V AC/16 mA
• Siren element (95 ... 105 dB)	--	24 V DC/100 mA
Power consumption		
• Incandescent lamps, base BA 15d	W Max. 5	7
• Flashlights, flash energy	Ws --	2
Service life		
• Flashlights	--	4 × 10 ⁶ flashes
AS-Interface adapter elements		
IO code/ID code	8/F	8/E
Power supply		
• Operational voltage	V 18.5 ... 31.6	Through bus cable 18.5 ... 31.6
• Power consumption I_{max}	mA 50	100
Protective measures		
• Watchdog	✓	✓
• Short-circuit/overload protection	External back-up fuse M 1.6 A	✓
• Reverse polarity protection	✓	✓
• Induction protection	N/A	✓
Outputs		
	4 relay outputs	3 electronic outputs
• Load voltage	External auxiliary voltage 0 ... 30 DC 0 ... 230 AC	Through bus cable or external auxiliary voltage, selectable
• Current carrying capacity ΣI_{max}		
- With external auxiliary voltage	A 1.5	0.3
- Without external auxiliary voltage	A --	0.2
Operating temperature	°C -20 ... +50	-20 ... +50
Enclosures		
Enclosure material		
	Thermoplast (polyamide), impact-resistant, black	Thermoplast (polyamide), impact-resistant, black
Light elements		
	Thermoplast (polycarbonate)	Thermoplast (polycarbonate)
Mounting		
• Horizontal (base mounting, foot with 25 mm diameter pipe)	✓	✓
• Horizontal (single-hole mounting)	✓	--
• Vertical with bracket	✓	✓
Degree of protection		
• Light elements	IP54	IP65 (seal premounted with every module)
• Acoustic elements, AS-i adapter elements	IP54	IP65
Operating temperature	°C -20 ... +50	-20 ... +50
Connection		
• Conductor cross-sections	mm ² M3 screw terminal Max. 2.5	Spring-type terminals/M3 screw terminals Max. 2.5
• Tightening torque	Nm Max. 0.4	--/ Max. 0.4

SIRIUS 8WD4 Signaling Columns

8WD42 signaling columns, 50 mm diameter

Overview

Features:

- Thermoplast enclosure, diameter 50 mm
- Degree of protection IP54
- Up to four elements can be mounted between the connection element and the cover

Selection and ordering data

Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		d					
Acoustic elements¹⁾								
	Buzzer elements 85 dB, tone frequency approx. 2 300 Hz, pulsating or continuous tone, adjustable by means of a wire jumper	24 AC/DC	Black	2	8WD4220-0FA	1	1 unit	41J
		115 AC/DC	Black	2	8WD4240-0FA	1	1 unit	41J
		230 AC	Black	2	8WD4250-0FA	1	1 unit	41J
Light elements for incandescent lamps/LEDs, BA 15d bases²⁾								
	Continuous light elements	24 ... 230 AC/DC	Red	2	8WD4200-1AB	1	1 unit	41J
			Green	2	8WD4200-1AC	1	1 unit	41J
			Yellow	2	8WD4200-1AD	1	1 unit	41J
			Clear	2	8WD4200-1AE	1	1 unit	41J
			Blue	2	8WD4200-1AF	1	1 unit	41J
Light elements with integrated LED								
	Continuous light elements	24 AC/DC	Red	2	8WD4220-5AB	1	1 unit	41J
			Green	2	8WD4220-5AC	1	1 unit	41J
			Yellow	2	8WD4220-5AD	1	1 unit	41J
			Clear	2	8WD4220-5AE	1	1 unit	41J
			Blue	2	8WD4220-5AF	1	1 unit	41J
	Continuous light elements	115 AC	Red	2	8WD4240-5AB	1	1 unit	41J
			Green	2	8WD4240-5AC	1	1 unit	41J
			Yellow	2	8WD4240-5AD	1	1 unit	41J
			Clear	2	8WD4240-5AE	1	1 unit	41J
			Blue	2	8WD4240-5AF	1	1 unit	41J
	Continuous light elements	230 AC	Red	2	8WD4250-5AB	1	1 unit	41J
			Green	2	8WD4250-5AC	1	1 unit	41J
			Yellow	2	8WD4250-5AD	1	1 unit	41J
			Clear	2	8WD4250-5AE	1	1 unit	41J
			Blue	2	8WD4250-5AF	1	1 unit	41J
	Blinklight elements	24 AC/DC	Red	2	8WD4220-5BB	1	1 unit	41J
			Green	2	8WD4220-5BC	1	1 unit	41J
			Yellow	2	8WD4220-5BD	1	1 unit	41J
			Clear	2	8WD4220-5BE	1	1 unit	41J
			Blue	2	8WD4220-5BF	1	1 unit	41J
		115 AC	Red	2	8WD4240-5BB	1	1 unit	41J
			Green	2	8WD4240-5BC	1	1 unit	41J
			Yellow	2	8WD4240-5BD	1	1 unit	41J
			Clear	2	8WD4240-5BE	1	1 unit	41J
			Blue	2	8WD4240-5BF	1	1 unit	41J
	Blinklight elements	230 AC	Red	2	8WD4250-5BB	1	1 unit	41J
			Green	2	8WD4250-5BC	1	1 unit	41J
			Yellow	2	8WD4250-5BD	1	1 unit	41J
			Clear	2	8WD4250-5BE	1	1 unit	41J
			Blue	2	8WD4250-5BF	1	1 unit	41J
	Flashlight elements	24 AC/DC	Red	2	8WD4220-0CB	1	1 unit	41J
			Green	2	8WD4220-0CC	1	1 unit	41J
			Yellow	2	8WD4220-0CD	1	1 unit	41J
			Clear	2	8WD4220-0CE	1	1 unit	41J
			Blue	2	8WD4220-0CF	1	1 unit	41J
Adapter elements for AS-Interface								
	AS-Interface adapter elements With external auxiliary voltage	For 4 signaling elements 24 V DC	Black	2	8WD4228-0BB	1	1 unit	41J

¹⁾ One acoustic element can be mounted per signaling column. The cover is included in the scope of supply of the acoustic elements and fixed in place.

²⁾ The lamp is not included in the scope of supply. Please order separately.

SIRIUS 8WD4 Signaling Columns

8WD42 signaling columns, 50 mm diameter

Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	V		d					
Connection elements								
	Connection elements with cover For mounting on pipes, floors and brackets Essential part for assembling the signaling columns		Black	2	8WD4208-0AA		1	1 unit 41J
Mounting								
	Feet, single	Plastic, for mounting on pipes	2	8WD4308-0DB		1	1 unit	41J
		Metal, for pipe lengths > 400 mm	2	8WD4308-0DC		1	1 unit	41J
		Plastic, for floor mounting (without pipe)	2	8WD4208-0DE		1	1 unit	41J
	Adjustable-angle feet For positioning in 7.5° increments ¹⁾	Plastic, for mounting on pipes, incl. rubber seal	2	8WD4408-0DF		1	1 unit	41J
	Pipes, single	Length 100 mm	2	8WD4208-0EF		1	1 unit	41J
		Length 150 mm	2	8WD4308-0EE		1	1 unit	41J
		Length 250 mm	2	8WD4308-0EA		1	1 unit	41J
		Length 400 mm	2	8WD4308-0EB		1	1 unit	41J
		Length 1 000 mm	2	8WD4308-0ED		1	1 unit	41J
	Sockets for feet	Side cable outlet	2	8WD4308-0DD		1	1 unit	41J
		Side cable outlet, with magnetic fixing ²⁾	2	8WD4308-0DE		1	1 unit	41J
	Brackets for mounting with foot		2	8WD4408-0CC		1	1 unit	41J
	Brackets for wall mounting (plastic)	Mounting without feet or pipe	2	8WD4208-0CD		1	1 unit	41J
	Adapters for single-hole mounting	Mounting without feet and pipe, with M18 thread and fixing nut	2	8WD4208-0EH		1	1 unit	41J
Lamps								
	Incandescent lamps, 5 W	Base BA 15d	24 AC/DC	Clear	2	8WD4328-1XX	1	10 units 41J
			115 AC	Clear	2	8WD4348-1XX	1	10 units 41J
			230 AC	Clear	2	8WD4358-1XX	1	10 units 41J
	LEDs	BA 15d bases	24 AC/DC	Red	2	8WD4428-6XB	1	1 unit 41J
				Green	2	8WD4428-6XC	1	1 unit 41J
				Yellow	2	8WD4428-6XD	1	1 unit 41J
				Clear	2	8WD4428-6XE	1	1 unit 41J
				Blue	2	8WD4428-6XF	1	1 unit 41J
			115 AC	Red	2	8WD4448-6XB	1	1 unit 41J
				Green	2	8WD4448-6XC	1	1 unit 41J
				Yellow	2	8WD4448-6XD	1	1 unit 41J
				Clear	2	8WD4448-6XE	1	1 unit 41J
				Blue	2	8WD4448-6XF	1	1 unit 41J
			230 AC	Red	2	8WD4458-6XB	1	1 unit 41J
				Green	2	8WD4458-6XC	1	1 unit 41J
				Yellow	2	8WD4458-6XD	1	1 unit 41J
				Clear	2	8WD4458-6XE	1	1 unit 41J
				Blue	2	8WD4458-6XF	1	1 unit 41J

For labeling panels, see 8WD44, page 13/175.

¹⁾ Markings for 30°, 45°, 60° and 90°.²⁾ For horizontal mounting, only 1 element is recommended.

SIRIUS 8WD4 Signaling Columns




8WD44 signaling columns, 70 mm diameter

Overview

Features:

- Thermoplast enclosure, diameter 70 mm
- Advanced design and significantly improved illumination
- Fast and flexible connection using spring-type terminals
- Integrated degree of protection IP65
- Up to five elements can be mounted

Selection and ordering data

Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
	V		d						
Acoustic elements¹⁾									
	Buzzer elements 85 dB, pulsating or continuous tone, adjustable by means of a wire jumper	24 AC/DC	Black	2	8WD4420-0FA		1	1 unit	41J
		115 AC	Black	2	8WD4440-0FA		1	1 unit	41J
		230 AC	Black	2	8WD4450-0FA		1	1 unit	41J
	Siren elements , multi-tone, 102 dB, 8 tones and volume are adjustable	24 AC/DC	Black	2	8WD4420-0EA2		1	1 unit	41J
		115 AC	Black	2	8WD4440-0EA2		1	1 unit	41J
		230 AC	Black	2	8WD4450-0EA2		1	1 unit	41J
	Siren elements 95 ... 105 dB, IP40, alternating continuous tone	24 DC	Black	2	8WD4420-0EA		1	1 unit	41J
Light elements for incandescent lamps/LEDs, BA 15d bases²⁾									
	Continuous light elements	12 ... 230 AC/DC	Red	2	8WD4400-1AB		1	1 unit	41J
			Green	2	8WD4400-1AC		1	1 unit	41J
			Yellow	2	8WD4400-1AD		1	1 unit	41J
			Clear	2	8WD4400-1AE		1	1 unit	41J
			Blue	2	8WD4400-1AF		1	1 unit	41J
		Light elements with integrated flash lamps³⁾							
	Flashlight elements with integrated electronic flash	24 DC	Red	2	8WD4420-0CB		1	1 unit	41J
			Green	2	8WD4420-0CC		1	1 unit	41J
			Yellow	2	8WD4420-0CD		1	1 unit	41J
			Clear	2	8WD4420-0CE		1	1 unit	41J
			Blue	2	8WD4420-0CF		1	1 unit	41J
		115 AC	Red	2	8WD4440-0CB		1	1 unit	41J
			Green	20	8WD4440-0CC		1	1 unit	41J
			Yellow	2	8WD4440-0CD		1	1 unit	41J
			Clear	20	8WD4440-0CE		1	1 unit	41J
			Blue	20	8WD4440-0CF		1	1 unit	41J
		230 AC	Red	2	8WD4450-0CB		1	1 unit	41J
			Green	2	8WD4450-0CC		1	1 unit	41J
Yellow	2		8WD4450-0CD		1	1 unit	41J		
Clear	2		8WD4450-0CE		1	1 unit	41J		
Blue	2		8WD4450-0CF		1	1 unit	41J		

¹⁾ One acoustic element can be mounted per signaling column. The cover is included in the scope of supply of the acoustic elements and fixed in place.

²⁾ The lamp is not included in the scope of supply. Please order separately.

³⁾ The lamp is included in the scope of supply.

SIRIUS 8WD4 Signaling Columns

8WD44 signaling columns, 70 mm diameter

Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG							
	V		d												
Light elements with integrated LED															
	Continuous light elements	24 AC/DC	Red	2	8WD4420-5AB		1	1 unit	41J						
		Green	2	8WD4420-5AC		1	1 unit	41J							
		Yellow	2	8WD4420-5AD		1	1 unit	41J							
		Clear	2	8WD4420-5AE		1	1 unit	41J							
		Blue	2	8WD4420-5AF		1	1 unit	41J							
	115 AC	Red	2	8WD4440-5AB		1	1 unit	41J							
	Green	2	8WD4440-5AC		1	1 unit	41J								
	Yellow	2	8WD4440-5AD		1	1 unit	41J								
	Clear	2	8WD4440-5AE		1	1 unit	41J								
	Blue	2	8WD4440-5AF		1	1 unit	41J								
	230 AC	Red	2	8WD4450-5AB		1	1 unit	41J							
	Green	2	8WD4450-5AC		1	1 unit	41J								
	Yellow	2	8WD4450-5AD		1	1 unit	41J								
	Clear	2	8WD4450-5AE		1	1 unit	41J								
	Blue	2	8WD4450-5AF		1	1 unit	41J								
		Blinklight elements	24 AC/DC	Red	2	8WD4420-5BB		1	1 unit	41J					
Green			2	8WD4420-5BC		1	1 unit	41J							
Yellow			2	8WD4420-5BD		1	1 unit	41J							
Clear			2	8WD4420-5BE		1	1 unit	41J							
Blue			2	8WD4420-5BF		1	1 unit	41J							
115 AC		Red	2	8WD4440-5BB		1	1 unit	41J							
Green		2	8WD4440-5BC		1	1 unit	41J								
Yellow		2	8WD4440-5BD		1	1 unit	41J								
Clear		2	8WD4440-5BE		1	1 unit	41J								
Blue		2	8WD4440-5BF		1	1 unit	41J								
230 AC		Red	2	8WD4450-5BB		1	1 unit	41J							
Green		2	8WD4450-5BC		1	1 unit	41J								
Yellow		2	8WD4450-5BD		1	1 unit	41J								
Clear		2	8WD4450-5BE		1	1 unit	41J								
Blue		2	8WD4450-5BF		1	1 unit	41J								
	Rotating light elements	24 AC/DC	Red	2	8WD4420-5DB		1	1 unit	41J						
		Green	2	8WD4420-5DC		1	1 unit	41J							
		Yellow	2	8WD4420-5DD		1	1 unit	41J							
		Clear	2	8WD4420-5DE		1	1 unit	41J							
		Blue	2	8WD4420-5DF		1	1 unit	41J							
Adapter elements for AS-Interface															
	AS-Interface adapter elements With/without external auxiliary voltage, switchable														
	• A/B technology	For 3 signaling elements 24 V DC	Black	2	8WD4428-0BD		1	1 unit	41J						
	• Standard AS-i	For 4 signaling elements 24 V DC	Black	2	8WD4428-0BE		1	1 unit	41J						
Connection elements¹⁾															
	Connection elements with cover		Black												
									Screw terminals						
									• For mounting on pipes	2	8WD4408-0AA		1	1 unit	41J
									• For mounting on brackets and floors	2	8WD4408-0AB		1	1 unit	41J
									Spring-type terminals						
									• For mounting on pipes	2	8WD4408-0AD		1	1 unit	41J
• For mounting on brackets and floors	2	8WD4408-0AE		1	1 unit	41J									
	Cover (replacement)			2	8WD4408-0XA		1	1 unit	41J						

¹⁾ The connection element with cover is an essential part for assembling the signaling columns.

SIRIUS 8WD4 Signaling Columns

8WD44 signaling columns, 70 mm diameter




Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mounting						
	Feet with pipe	Pipe length 100 mm	2	8WD4308-0DA	1	1 unit 41J
	Feet, single	Plastic, for mounting on pipes	2	8WD4308-0DB	1	1 unit 41J
		Metal, for pipe lengths > 400 mm	2	8WD4308-0DC	1	1 unit 41J
	Adjustable-angle feet For positioning in 7.5° increments ¹⁾	Plastic, for mounting on pipes, incl. rubber seal	2	8WD4408-0DF	1	1 unit 41J
	Pipes, single	Length 100 mm	2	8WD4208-0EF	1	1 unit 41J
		Length 150 mm	2	8WD4308-0EE	1	1 unit 41J
		Length 250 mm	2	8WD4308-0EA	1	1 unit 41J
		Length 400 mm	2	8WD4308-0EB	1	1 unit 41J
		Length 1 000 mm	2	8WD4308-0ED	1	1 unit 41J
	Sockets for feet	Side cable outlet (can also be used without feet)	2	8WD4308-0DD	1	1 unit 41J
		Side cable outlet, with magnetic fixing ²⁾	2	8WD4308-0DE	1	1 unit 41J
	Brackets for wall mounting (mounting without feet and pipe)	For single-sided mounting	2	8WD4308-0CA	1	1 unit 41J
		For double-sided mounting	2	8WD4308-0CB	1	1 unit 41J
	Brackets for mounting with foot		2	8WD4408-0CC	1	1 unit 41J
	Brackets for base mounting	Mounting without feet or pipe	2	8WD4408-0CD	1	1 unit 41J
	Adapter for mounting on pipes according to NPT	Mounting on pipes, Ø 25 mm, with NPT 1/2" thread	2	8WD4308-0DF	1	1 unit 41J

¹⁾ Markings for 30°, 45°, 60° and 90°.

²⁾ For horizontal mounting, only 1 element is recommended.

SIRIUS 8WD4 Signaling Columns

8WD44 signaling columns, 70 mm diameter

Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
	V		d						
Lamps									
	Incandescent lamps, 5 W								
	Base BA 15d	24 AC/DC	Clear	2	8WD4328-1XX		1	10 units	41J
		115 AC	Clear	2	8WD4348-1XX		1	10 units	41J
		230 AC	Clear	2	8WD4358-1XX		1	10 units	41J
	LEDs¹⁾								
	BA 15d bases	24 AC/DC	Red	2	8WD4428-6XB		1	1 unit	41J
			Green	2	8WD4428-6XC		1	1 unit	41J
			Yellow	2	8WD4428-6XD		1	1 unit	41J
			Clear	2	8WD4428-6XE		1	1 unit	41J
			Blue	2	8WD4428-6XF		1	1 unit	41J
		115 AC	Red	2	8WD4448-6XB		1	1 unit	41J
			Green	2	8WD4448-6XC		1	1 unit	41J
			Yellow	2	8WD4448-6XD		1	1 unit	41J
			Clear	2	8WD4448-6XE		1	1 unit	41J
			Blue	2	8WD4448-6XF		1	1 unit	41J
		230 AC	Red	2	8WD4458-6XB		1	1 unit	41J
			Green	2	8WD4458-6XC		1	1 unit	41J
			Yellow	2	8WD4458-6XD		1	1 unit	41J
			Clear	2	8WD4458-6XE		1	1 unit	41J
		Blue	2	8WD4458-6XF		1	1 unit	41J	
Inscriptions for 8WD42 and 8WD44									
	Labeling panels			2	8WD4408-0FA		1	1 unit	41J
		With fixing accessories for mounting on pipe Ø 25 mm Inscription area/step 50 mm x 140 mm Suitable for standard labels, e.g. • Zweckform 3425 • Herma 4457							

¹⁾ Only for use with SIRIUS commanding and signaling devices.

SIRIUS 8WD5 Integrated Signal Lamps

8WD53 integrated signal lamps, 70 mm diameter

Overview



8WD53 integrated signal lamps

More information

Homepage, see www.siemens.com/sirius-commanding

Industry Mall, see www.siemens.com/product?8WD5

Manual, see <https://support.industry.siemens.com/cs/ww/en/view/107194954>

Design

Features:

- Thermoplast enclosures, diameter 70 mm
- Degree of protection IP65
- Rated voltage 24 V, 115 V, 230 V AC/DC
- Ambient temperature -20 to +50 °C, incandescent lamp up to 60 °C

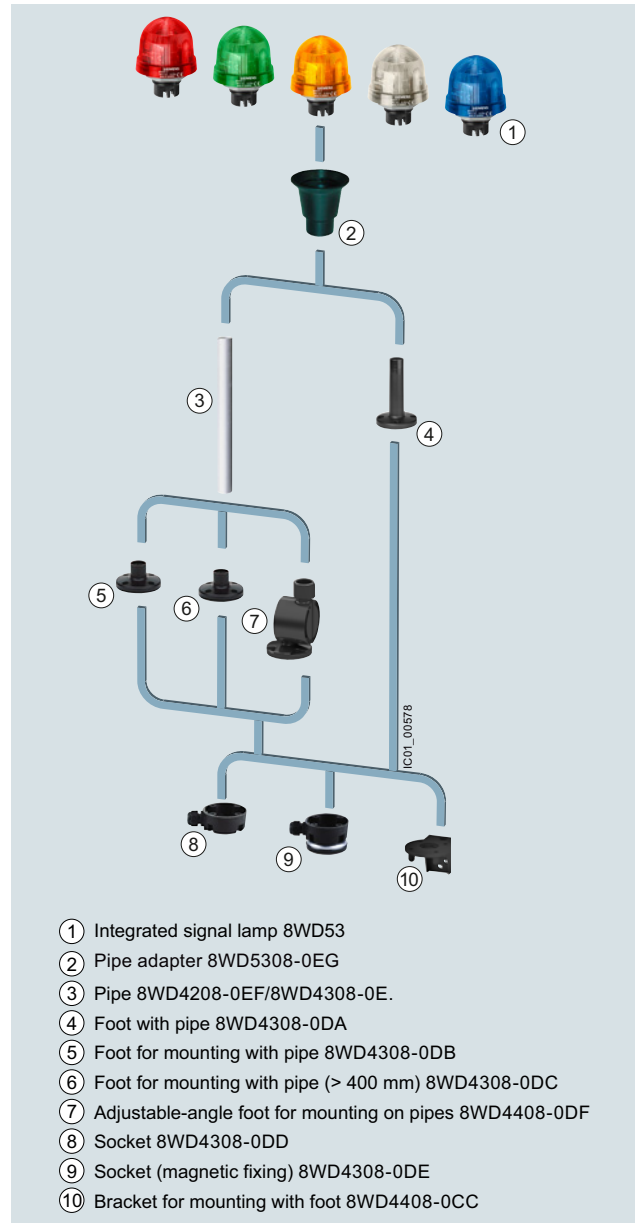
The special shape of the integrated signal lamps means that the light is emitted optimally in every direction (to the sides and upwards). Continuous lights (with incandescent lamp or LED) and single-flash lights are available in five colors. As well as the continuous-light version, a flashing-light or all-round light version is also available.

The LED versions of the integrated signal lamps offer a considerably longer endurance than the incandescent lamp versions.

They all have the high degree of protection IP65 and are made of a material highly resistant to impact.

Mounting

8WD53 integrated signal lamps can be mounted at any point of the machine for the purpose of giving visual signals. They are mounted by means of a PG-29 screw base with nut.



- ① Integrated signal lamp 8WD53
- ② Pipe adapter 8WD5308-0EG
- ③ Pipe 8WD4208-0EF/8WD4308-0E.
- ④ Foot with pipe 8WD4308-0DA
- ⑤ Foot for mounting with pipe 8WD4308-0DB
- ⑥ Foot for mounting with pipe (> 400 mm) 8WD4308-0DC
- ⑦ Adjustable-angle foot for mounting on pipes 8WD4408-0DF
- ⑧ Socket 8WD4308-0DD
- ⑨ Socket (magnetic fixing) 8WD4308-0DE
- ⑩ Bracket for mounting with foot 8WD4408-0CC

Application

SIRIUS 8WD53 integrated signal lamps can be used as visual signaling devices in harsh ambient conditions and in outdoor installations.







Visual signaling devices for indicating operating conditions can be used for the following applications:

- Manufacturing plants
- Injection molding machines
- Conveyors
- Assembly systems for electronic components

SIRIUS 8WD5 Integrated Signal Lamps

8WD53 integrated signal lamps, 70 mm diameter

Selection and ordering data

Version	Rated voltage	Color	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
	V		d						
Luminaires for incandescent lamps/LED¹⁾, BA 15d base									
	Continuous lights²⁾								
		12 ... 230 AC/DC	Red	2	8WD5300-1AB		1	1 unit	41J
			Green	2	8WD5300-1AC		1	1 unit	41J
			Yellow	2	8WD5300-1AD		1	1 unit	41J
			Clear	2	8WD5300-1AE		1	1 unit	41J
		Blue	2	8WD5300-1AF		1	1 unit	41J	
Luminaires with integrated flash lamp									
 	Single-flash lights with integrated electronic flash								
		24 AC/DC	Red	2	8WD5320-0CB		1	1 unit	41J
			Green	2	8WD5320-0CC		1	1 unit	41J
			Yellow	2	8WD5320-0CD		1	1 unit	41J
			Clear	2	8WD5320-0CE		1	1 unit	41J
			Blue	2	8WD5320-0CF		1	1 unit	41J
		115 AC	Red	2	8WD5340-0CB		1	1 unit	41J
			Green	2	8WD5340-0CC		1	1 unit	41J
			Yellow	2	8WD5340-0CD		1	1 unit	41J
			Clear	2	8WD5340-0CE		1	1 unit	41J
			Blue	20	8WD5340-0CF		1	1 unit	41J
		230 AC	Red	2	8WD5350-0CB		1	1 unit	41J
	Green	20	8WD5350-0CC		1	1 unit	41J		
	Yellow	2	8WD5350-0CD		1	1 unit	41J		
	Clear	2	8WD5350-0CE		1	1 unit	41J		
	Blue	20	8WD5350-0CF		1	1 unit	41J		
Luminaires with integrated LED¹⁾									
 	Continuous lights								
		24 AC/DC	Red	2	8WD5320-5AB		1	1 unit	41J
			Green	2	8WD5320-5AC		1	1 unit	41J
			Yellow	2	8WD5320-5AD		1	1 unit	41J
			Clear	2	8WD5320-5AE		1	1 unit	41J
		Blue	2	8WD5320-5AF		1	1 unit	41J	
	Blinklight lamps	24 AC/DC	Red	2	8WD5320-5BB		1	1 unit	41J
			Green	2	8WD5320-5BC		1	1 unit	41J
			Yellow	2	8WD5320-5BD		1	1 unit	41J
			Clear	2	8WD5320-5BE		1	1 unit	41J
		Blue	2	8WD5320-5BF		1	1 unit	41J	
Rotating lights	24 AC/DC	Red	2	8WD5320-5DB		1	1 unit	41J	
		Green	2	8WD5320-5DC		1	1 unit	41J	
		Yellow	2	8WD5320-5DD		1	1 unit	41J	
		Clear	2	8WD5320-5DE		1	1 unit	41J	
		Blue	2	8WD5320-5DF		1	1 unit	41J	
Accessories for mounting (optional)									
	Pipe adapters For mounting on pipes ³⁾								
				2	8WD5308-0EG		1	1 unit	41J

¹⁾ Only for use with SIRIUS commanding and signaling devices.

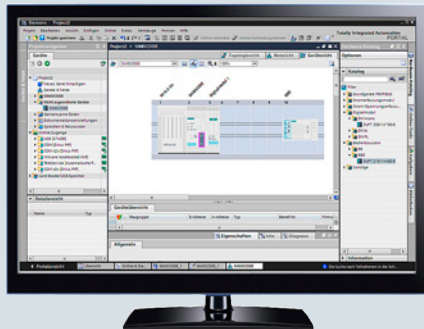
²⁾ Lamp not included in scope of supply, see [Signaling Columns, page 13/175](#).

³⁾ For pipes and feet, see [Signaling Columns, page 13/174](#).

SIRIUS 8WD5 Integrated Signal Lamps

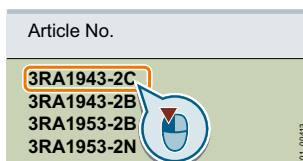
Notes

Parameterization, Configuration and Visualization with SIRIUS



clickable

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.



Or directly on the Internet, e.g.

[www.siemens.com/
product?3RA1943-2C](http://www.siemens.com/product?3RA1943-2C)

Price groups

PG 346, 42B, 42C, 42D, 42H, 42J, 42S

14/2	Introduction
14/4	Simulation Tool for Soft Starters (STS)
14/5	SIRIUS Soft Starter ES (TIA Portal) NEW
14/8	SIRIUS 3RW44 Soft Starter block library for SIMATIC PCS 7
14/10	Motor Starter ES
14/12	SIMOCODE ES (TIA Portal) NEW
14/16	SIMOCODE pro block library for SIMATIC PCS 7
14/19	AS-Interface block library for SIMATIC PCS 7
14/22	SIRIUS Safety ES

Parameterization, Configuration and Visualization with SIRIUS

Introduction

Overview

More information

Homepage, see www.siemens.com/sirius-engineering
 Industry Mall, see www.siemens.com/product?3ZS1

Engineering software



SIRIUS ES engineering software (E-SW)

Intuitive, efficient and future-oriented – the engineering programs in the SIRIUS ES software family

The programs of the SIRIUS ES software family enable:

- **Intuitive engineering from the word go**
 The SIRIUS ES programs enable you to focus on your engineering task. Thanks to the intuitive layout and simple navigation, a clearly arranged configuring of device functions and their parameters is possible – online and offline. The task- and user-oriented portal views as well as the flexible screen layout, the uniform look and feel for all program editors and finally the graphic network and device configuration all provide support.
- **Efficient parameterization for fast success**
 Faster startup is achieved by using local and global libraries. The joint hardware configuration for all components in the application also assists in the efficient parameterization and simple networking of system components. Not least, integrated system diagnostics offers fast troubleshooting and efficient fault analysis, thus making it possible to shorten startup times even further and to minimize production downtimes.
- **Future-oriented basis for innovative results**
 All future product developments are seamlessly integrated into the TIA Portal. Investments made up to now are still safe tomorrow. To harmonize engineering in all performance classes, the SIRIUS ES programs in TIA Portal are scalable and upwardly compatible. In the event of an upgrade, existing projects can easily be transferred and integrated into the next product level. Even existing SIRIUS ES projects in version 2007 can easily be migrated to the TIA Portal software version.

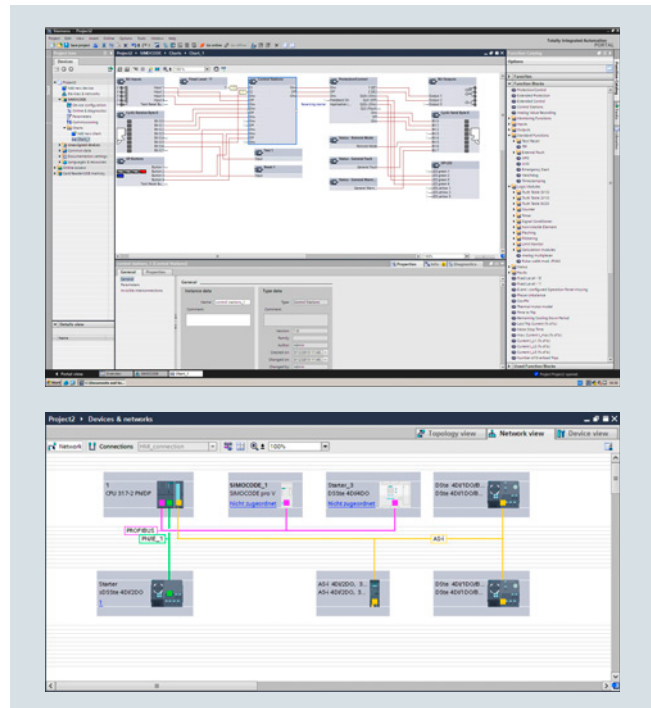
The next generation of SIRIUS ES programs, such as SIMOCODE ES V15 or SIRIUS Soft Starter ES V15, is based on the central engineering framework Totally Integrated Automation Portal (TIA Portal), which provides users with a consistent, efficient and intuitive solution for all automation tasks. Thus, the TIA Portal is also the integrated working environment for the programs in the SIRIUS software family. The same operator control concept, the elimination of interfaces and a high degree of user-friendliness make it possible to quickly integrate SIRIUS devices into an automation process and start them up with the TIA Portal.

The SIRIUS ES programs such as Motor Starter ES, Soft Starter ES, Safety ES and SIMOCODE ES are available in three versions, which differ in terms of user-friendliness, scope of functions and price:

- **Basic**
 The basic variant contains all basic functions that are needed to parameterize devices. These include both parameterization functions and also operator control, diagnostics and test functions.
 New from version V15, the basic variant is available for downloading free of charge in the Siemens Industry Online Support.
- **Standard**
 The standard variant contains the basic functionality plus standard functions. The standard functions include parameterization with the aid of integrated graphic editors, creation of typicals, parameter export, analog value recording and parameter comparison.
- **Premium**
 The premium variants contain the complete functionality of the software packages. Besides the standard functionality, this includes communication functions such as access via PROFIBUS/PROFINET and S7 routing.

Note:

The scope of functions depends on the SIRIUS ES program, see the [individual product description for details](#).



Efficient engineering and startup with graphic user interfaces and simple network and device configuration

Types of delivery and licenses

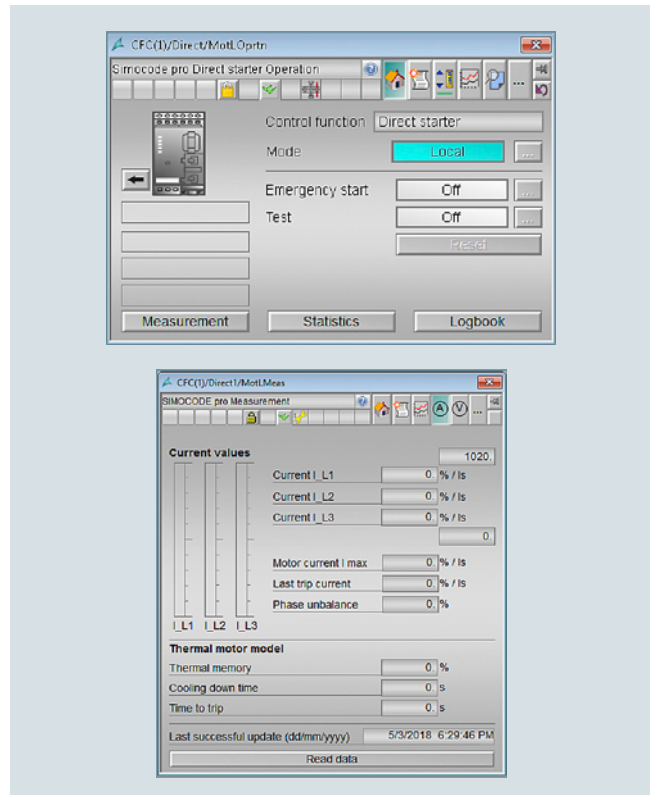
The programs of the SIRIUS ES software family are available in the following delivery types:

- Floating license – the license for any one user at any one time
 - Authorizes any one user
 - Independent of the number of installations (unlike the single license which is allowed to be installed once only)
 - Only the actual use of the program has to be licensed
- Combo license – license for parallel use
 - Licensed parallel use of the TIA Portal version and SIRIUS ES version 2007
 - For all other properties such as floating license
- Trial License (free use of all program functions for 14/21 days for testing and evaluation purposes, included on every product CD/DVD, available in the download file of the SIRIUS ES program in the Service&Support portal).

The following delivery versions are also available for a number of programs of the SIRIUS ES software family:

- Upgrade
Switching from an old to a new version with expanded functions, e.g. upgrade from SIMOCODE ES 2007 to SIMOCODE ES V15.
- Software Update Service
To keep you up to date at all times we offer a special service which automatically supplies you with all the service packs and upgrades within the SIRIUS ES (TIA Portal) range of programs.
- License/software download
Simply download your new software and license key from the Internet via the Online Software Delivery (OSD) platform. After you have placed your order in our mall, you will receive your access data by email, which will allow you to immediately download the license or software you have ordered.
More information, see www.siemens.com/tia-online-software-delivery.

Block libraries for SIMATIC PCS 7



Advanced Process Library (APL) – faceplates and blocks for control and measured data of the SIMOCODE pro block library for PCS 7

The corresponding devices can be easily and conveniently installed into the SIMATIC PCS 7 process control system with the PCS 7 block library for SIMOCODE and AS-Interface. PCS 7 block libraries contain the diagnostics and driver blocks corresponding with the diagnostics and driver concept of SIMATIC PCS 7 as well as the elements (symbols and faceplate) required for operator control and process monitoring.

Types of delivery and licenses

The PCS 7 block libraries supplied on CD-ROM allow users to run the required engineering software on the engineering station (single license) including the runtime software for executing the AS blocks in an automation system (single license). If the AS blocks are to be used in additional automation systems, the corresponding number of runtime licenses are required which are supplied without a data carrier.

Notes on security

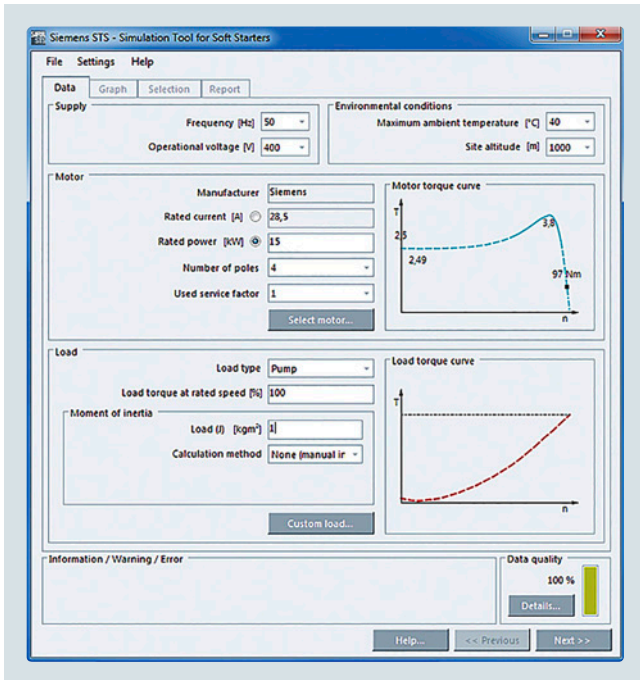
In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions represent only one component of such a concept.

For more information about the subject of Industrial Security, see www.siemens.com/industrialsecurity.

Parameterization, Configuration and Visualization with SIRIUS

Simulation Tool for Soft Starters (STS)

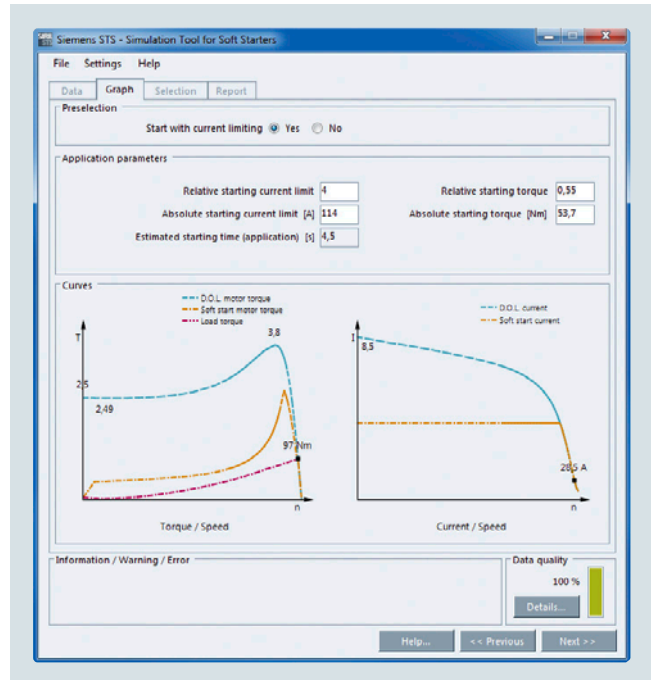
Overview



Easy input of motor and load data

More information

Simulation Tool for Soft Starters (STS), see <https://support.industry.siemens.com/cs/ww/en/view/101494917>



Graphic display of start operations

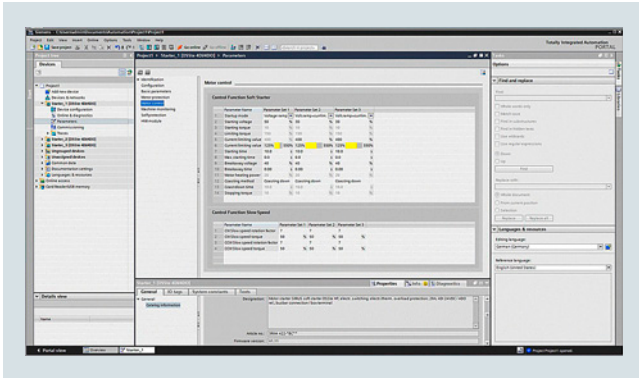
The Simulation Tool for Soft Starters (STS) provides a convenient means of designing soft starters using a simple, quick and easy-to-use interface. Entering the motor and load data will simulate the application and prompt suggestions for suitable soft starters.

The Simulation Tool for Soft Starters (STS) is available free of charge as a download.

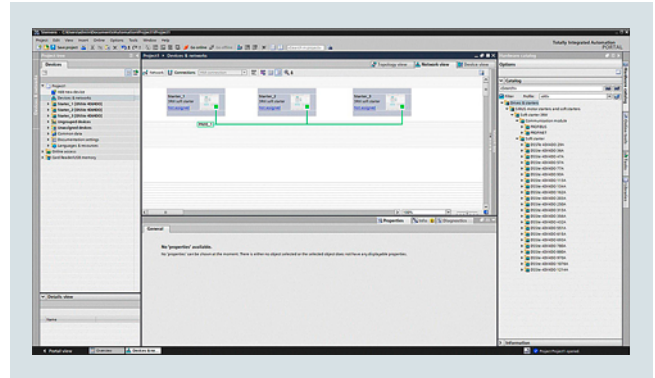
Benefits

- Simple, quick and user-friendly operator interface
- Detailed and up-to-date Siemens motor database, including IE3 and IE4 motors
- Simulation of heavy starting up to CLASS 30
- Update-capable (e.g. motors, load types, functions)
- Fast simulations with minimum input data
- Immediate, graphical curve charts of start operations with limit values
- View in table form of suitable soft starters for the application

Overview



Easy and clearly arranged parameter setting of the 3RW44 and 3RW55 soft starters with SIRIUS Soft Starter ES (TIA Portal)



Graphic presentation of measured values with the trace function (oscilloscope function) of SIRIUS Soft Starter ES (TIA Portal) Standard and Premium

More information

To download the Basic version, see <https://support.industry.siemens.com/cs/ww/en/view/109753470>

The SIRIUS Soft Starter ES (TIA Portal) software permits quick and easy parameterization, monitoring and diagnostics of SIRIUS 3RW44 and 3RW5 soft starters for service purposes. The device parameters can be configured directly on the PC and transferred to the soft starter through a serial cable or an optional PROFIBUS/PROFINET interface.

New: From V15, the powerful SIRIUS Soft Starter ES Basic tool for startup or maintenance personnel is available for downloading free of charge in the Siemens Industry Online Support (see "More information").

SIRIUS Soft Starter ES V15 is integrated seamlessly when further TIA Portal-based software such as STEP 7 or WinCC is available, thus enabling users to achieve a consistent, efficient and intuitive solution for all automation tasks.

However, use of SIRIUS Soft Starter ES V15 as stand-alone software also provides these advantages.

Efficient engineering with three program versions

The SIRIUS Soft Starter ES (TIA Portal) software program is available in three versions, which differ in their user-friendliness, scope of functions and price.

SIRIUS Soft Starter ES V15	Basic	Standard	Premium
Access via the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	✓	✓	✓
Creation of typicals	--	✓ ¹⁾	✓
Parameter export	--	✓	✓
Comparison functions	--	✓	✓
Service data (slave pointer, statistics data)	--	✓	✓
Access via PROFIBUS/PROFINET	--	--	✓
Parameter comparison	--	--	✓
Teleservice via MPI	--	--	✓
Routing	--	--	✓

✓ Function available
 -- Function not available

¹⁾ Typicals with Service Pack 1 and higher.

Additional functions

SIRIUS Soft Starter ES V15 offers numerous advantages of the TIA Portal that can be used in an integrated working environment.

Seamless integration

When using other TIA Portal-based software such as STEP 7 or WinCC, for example, the configuration for devices and networks for all components used is created in a standardized environment.

Working with libraries

Users can create copy templates for 3RW44 and 3RW55 soft starter device configuration and can manage them in global or project libraries. This way, individual modules, diagrams and complete device configurations can be saved as reusable elements for frequently occurring tasks.

Teleservice via MPI

The SIRIUS Soft Starter ES (TIA Portal) Premium version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

Parameterization, Configuration and Visualization with SIRIUS

SIRIUS Soft Starter ES (TIA Portal) **NEW**

Benefits

- Transparent setting of the device functions and their parameters – online and offline
- Effective diagnostics functions on the soft starter and display of the most important measured values
- Trace function (oscilloscope function) for recording measured values and events (in the SIRIUS Soft Starter ES (TIA Portal) Standard and Premium versions).
- Complete transparency thanks to printout, logbook and event memory
- High degree of user-friendliness – convenient user interface, with English, German, French, Italian, Spanish and Chinese as possible operating languages
- Time savings thanks to shorter startup times
- Fast, low-cost licensing using a simple licensing procedure (available online too)

Selection and ordering data

SIRIUS Soft Starter ES (TIA Portal) parameterization and service software for SIRIUS 3RW44 and 3RW5 soft starters

- Delivered without PC cable

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

SIRIUS Soft Starter ES V15 Basic

Basic functional scope including Premium Trial License

Engineering software, software download, 6 languages (German/English/French/Italian/Spanish/Chinese), online functions via system interface
Available free of charge as a download, see <https://support.industry.siemens.com/cs/ww/en/view/109753470>

SIRIUS Soft Starter ES V15 Standard



3ZS1320-5CC11-0YA5

Floating license for one user

Engineering software, software and documentation on DVD, 6 languages (German/English/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V15 of SIRIUS ES, communication via system interface

- License key on USB flash drive, Class A, including DVD 5 **3ZS1320-5CC11-0YA5** 1 1 unit 42H
- License key download, Class A, without DVD ▶ **3ZS1320-5CE11-0YB5** 1 1 unit 42H

Software Update Service

For 1 year with automatic extension, requires the current software version of Soft Starter ES (TIA Portal), engineering software, software and documentation on DVD, 6 languages (German/English/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V15 of SIRIUS ES, communication via system interface

- 5 **3ZS1320-5CC00-0YL5** 1 1 unit 42H

Upgrade for Soft Starter ES 2007 Standard

Floating license for one user, engineering software, software and documentation on DVD, license key on USB flash drive, Class A, 6 languages (German/English/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V15 of SIRIUS ES, online functions via system interface

- 5 **3ZS1320-5CC11-0YE5** 1 1 unit 42H

Notes:

Soft Starter ES V14 licenses can also be used for Soft Starter ES V15.

Please order PC cable for 3RW44 separately, see page 14/7.

For a description of the software versions, see page 14/5.

Parameterization, Configuration and Visualization with SIRIUS

NEW SIRIUS Soft Starter ES (TIA Portal)

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

SIRIUS Soft Starter ES V15 Premium

3ZS1320-6CC11-0YA5

Floating license for one user

Engineering software, software and documentation on DVD, 6 languages (German/English/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V15 of SIRIUS ES, communication via system interface or PROFIBUS/PROFINET

- License key on USB flash drive, Class A, including DVD
- License key download, Class A, without DVD

Software Update Service

For 1 year with automatic extension, requires the current software version of Soft Starter ES (TIA Portal), engineering software, software and documentation on DVD, Combo license for parallel use of versions 2007 and V15 of SIRIUS ES, communication via system interface or PROFIBUS/PROFINET

Upgrade for Soft Starter ES 2007 Premium

Floating license for one user, engineering software, software and documentation on DVD, license key on USB flash drive, Class A, 6 languages (German/English/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V15 of SIRIUS ES, online functions via system interface or PROFIBUS/PROFINET

5		3ZS1320-6CC11-0YA5		1	1 unit	42H
		3ZS1320-6CE11-0YB5		1	1 unit	42H
5		3ZS1320-6CC00-0YL5		1	1 unit	42H
5		3ZS1320-6CC11-0YE5		1	1 unit	42H

Notes:

Soft Starter ES V14 licenses can also be used for Soft Starter ES V15.

Please order PC cable for 3RW44 separately, [see Accessories](#).

For a description of the software versions, [see page 14/5](#).

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

Optional accessories

3RW5980-0CP00

Optional communication modules for SIRIUS 3RW5

- PROFIBUS
- PROFINET
- Modbus TCP

1		3RW5980-0CP00		1	1 unit	42S
1		3RW5980-0CS00		1	1 unit	42S
1		3RW5980-0CT00		1	1 unit	42S



3UF7941-0AA00-0

USB PC cables for SIRIUS 3RW44

For connecting to the USB interface of a PC/PG, for communication with Soft Starter ES via the 3RW44 system interface

		3UF7941-0AA00-0		1	1 unit	42J
--	--	------------------------	--	---	--------	-----



3RW4900-0KC00

Optional communication module for SIRIUS 3RW44

- PROFIBUS
- PROFINET

		3RW4900-0KC00		1	1 unit	42H
		3RW4900-0NC00		1	1 unit	42H

Parameterization, Configuration and Visualization with SIRIUS

SIRIUS 3RW44 Soft Starter block library for SIMATIC PCS 7

Overview

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16710/td>
 Programming and Operating Manual for "3RW44 Soft Starter PCS 7 Library V8.2" block libraries, see <https://support.industry.siemens.com/cs/ww/en/view/109474959>
 Getting started for "SIRIUS Soft Starter 3RW44 PCS 7 Library V8.2" see <https://support.industry.siemens.com/cs/ww/en/view/109482393>

The SIRIUS 3RW44 Soft Starter PCS 7 block library can be used for simple and easy integration of SIRIUS 3RW44 soft starters into the SIMATIC PCS 7 process control system. The SIRIUS 3RW44 Soft Starter PCS 7 block library contains the diagnostics and driver blocks corresponding with the SIMATIC PCS 7 diagnostics and driver concept as well as the elements (symbols and faceplates) required for operator control and process monitoring.

Integrated functionality for optimal process control for all process control systems

In addition to the general sensor technology, the motor feeder data is increasingly being integrated into the process control system. By integrating the SIRIUS 3RW44 soft starters into the process control system it becomes possible to prevent errors in the motor feeder simply and reliably, or to detect these errors quickly and rectify them. Downtimes are reduced to a minimum or can be prevented before they happen.

For example, the output and display of the key measured values calculated by the 3RW44 is also a good aid for being able to assess and monitor the current system status.

Easy integration with the PCS 7 block library

The PCS 7 block library can be used for simple and easy integration of SIRIUS 3RW44 soft starters into the SIMATIC PCS 7 process control system. The focus here is simple configuration. Functioning of the blocks is based on the PCS 7 standard libraries and is optimally harmonized with the functions of the SIRIUS 3RW44.

Users who have previously integrated motor feeders into conventional technology via signal blocks and motor or valve blocks or, for example, already have experience with SIMOCODE blocks, are easily able to switch to SIRIUS 3RW44.

All blocks required for the automation systems are provided by the PCS 7 block library – as are the block symbols and faceplates for the operator station required for monitoring and control.

With the integration of the SIRIUS 3RW44 into SIMATIC PDM, the system-wide device parameterization and diagnostics of the SIRIUS 3RW44 soft starters are possible from a central point.

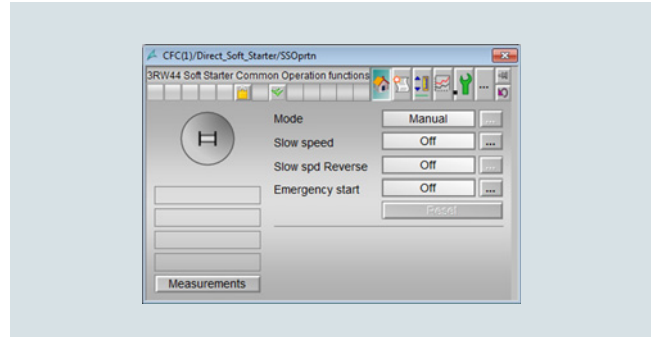
Motor block for direct control of the drive

The low-voltage motors started and protected by SIRIUS 3RW44 soft starters can be integrated into the process automation via the motor blocks. This means that they form the interface between the process control system and the motors controlled by the SIRIUS 3RW44.

To reduce the amount of configuring work required, functions for signal processing and technological functions are integrated into one motor block.

The important measured value – the current in the motor feeder – is recorded via the 3RW44 and monitored for motor protection. The motor current is accessible from the I&C system via the motor blocks.

The block symbols and faceplates for the motor blocks display the motor feeders on the operator station and provide all the required information for monitoring and control as well as detailed diagnostics.



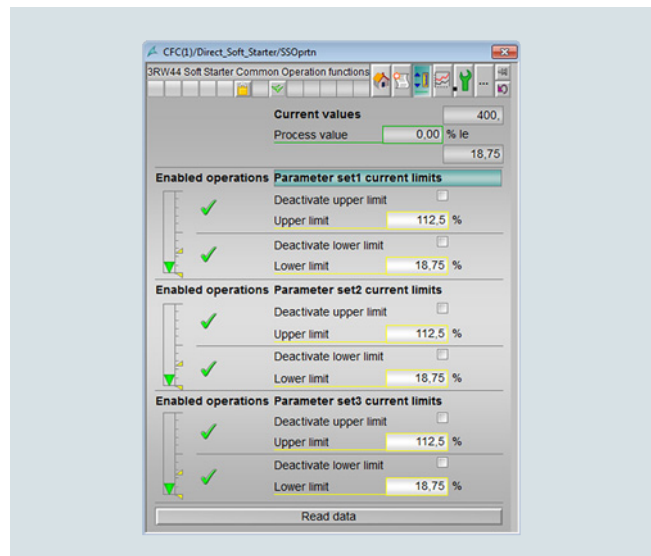
Faceplate of the motor block

Evaluation of additional motor feeder measurements

All measured values calculated by the soft starter, such as current, voltage and output of the feeder, are displayed and output via the measured value blocks. A key advantage here is that where required, a wide range of information on important motor feeder measurements is available, e.g. for load monitoring.

The 3RW44 is not only able to detect measured values here, but also to react if these values are exceeded or undershot, for example, via custom settings – e.g. with a motor shut-down or with a warning.

The faceplate for the measured values is accessed from the motor block faceplate.



Faceplate for measured values

Evaluation of maintenance-related motor feeder data

The 3RW44 has powerful functions to detect and monitor maintenance-related motor feeder data. For example, the operating and downtimes of the motor, operating cycles and overload tripping events are detected and stored directly on the device. If required, the information already on the device is available via the statistics block in the I&C system. The display is provided on a separate faceplate for the statistics block on the operator station.

Parameterization, Configuration and Visualization with SIRIUS

SIRIUS 3RW44 Soft Starter block library for SIMATIC PCS 7

Benefits

- Uniform and continuous integration into SIMATIC PCS 7
- Standardized blocks for simple integration and optimal operation
- Including Advanced Process Library (APL) in Version V8
- Greater process transparency due to greater information density in the process control system
- System-wide device parameterization and diagnostics with SIMATIC PDM

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

SIRIUS 3RW44 Soft Starter block library for SIMATIC PCS 7 Version V8 with Advanced Process Library (APL)



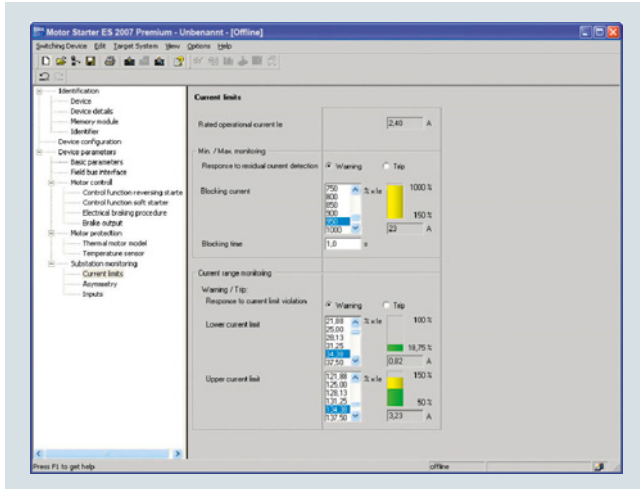
3ZS1633-1XX02-0YA0

Engineering software V8 For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating SIRIUS 3RW44 into the PCS 7 process control system with Advanced Process Library, for PCS 7 version V8.0+SP1/V8.1/V8.2/V8.3 Type of delivery: Software and documentation on CD, one license for one engineering station, one license for one automation system	5	3ZS1633-1XX02-0YA0		1	1 unit	42H
Runtime license V8 For execution of the AS blocks in an automation system (single license) Required for using the AS blocks of the engineering software V8.0+SP1/V8.1 on an additional automation system within a plant Type of delivery: One license for one automation system, without software and documentation	5	3ZS1633-2XX02-0YB0		1	1 unit	42H
Engineering software migration V7-V8 For upgrading (migrating) an existing engineering software V6.1/V7.0/V7.1 of the SIRIUS 3RW44 Soft Starter block library for PCS 7 Conditions of use: Availability of the engineering software V7 (license) of the SIRIUS 3RW44 Soft Starter block library for PCS 7 for the PCS 7 version V6.1, V7.0 or V7.1 The V7-V8 engineering software migration can be installed directly onto a system with PCS 7 version V8; installation of the previous version is unnecessary. For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating SIRIUS 3RW44 soft starters into the PCS 7 process control system, for PCS 7 version V8.0 and higher Type of delivery: Software and documentation on CD, license for upgrading an existing license for one engineering station and a plant's assigned runtime licenses	5	3ZS1633-1XX10-0YE0		1	1 unit	42H

Parameterization, Configuration and Visualization with SIRIUS

Motor Starter ES

Overview



Motor Starter ES for parameterization, monitoring, diagnostics and testing of motor starters

More information

Technical specifications and system requirements, see <https://support.industry.siemens.com/cs/ww/en/ps/16713/td>

Motor Starter ES is used for the startup, parameterization, diagnostics, documentation and preventive maintenance of SIMATIC ET 200S, ET 200pro, ECOFAST and M200D motor starters.

Interfacing is performed

- Via the local interface on the device
- With PROFIBUS DP-V1-capable motor starters from any point in PROFIBUS (applies to ET 200S DP V1/ET 200pro/ECOFAST/M200D)
- With PROFINET-capable motor starters from any point in PROFINET (applies to ET 200S DP V1/ET 200pro/M200D).

Using Motor Starter ES, the communication-capable motor starters are easily parameterized during startup, monitored during normal operation and successfully diagnosed for service purposes. Preventative maintenance is supported by a function for reading out diverse statistical data (e.g. operating hours, operating cycles, cut-off currents, etc.). The user is supported during these procedures with comprehensive Help functions and plain text displays.

Motor Starter ES can either be used as a stand-alone program or it can be integrated into STEP 7 via an Object Manager.

Efficient engineering with three program versions

The Motor Starter ES software program is available in three versions which differ in their user-friendliness, scope of functions and price.

Motor Starter ES	Basic	Standard	Premium
ET 200S High Feature PROFIBUS IM	✓	✓	✓
ET 200S High Feature PROFINET IM	✓	✓	✓
ECOFAST AS-Interface High Feature	✓	✓	--
ECOFAST PROFIBUS	✓	✓	✓
ET 200pro PROFIBUS IM	✓	✓	✓
ET 200pro PROFINET IM	✓	✓	✓
M200D AS-Interface Standard	✓	✓	(✓)
M200D PROFIBUS	✓	✓	✓
M200D PROFINET	✓	✓	✓

✓ Function available, (✓) Available with restricted functionality

-- Function not available

Motor Starter ES	Basic	Standard	Premium
Access via the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	--	✓	✓
Creation of typicals	--	✓	✓
Comparison functions	--	✓	✓
Standard-compliant printout according to EN ISO 7200	--	✓	✓
Service data (slave pointer, statistics data)	--	✓	✓
Access via PROFIBUS	--	--	✓
Access via PROFINET	--	--	✓
S7 routing	--	--	✓
Teleservice via MPI	--	--	✓
STEP 7 object manager ¹⁾	--	--	✓
Trace function	--	✓	✓

✓ Function available

-- Function not available

¹⁾ Only for STEP 7 V5.x

Additional functions

Standard-compliant printouts

The software tool greatly simplifies machine documentation. It enables parameterization printouts according to EN ISO 7200. The elements to be printed are easy to select and group as required.

Easy creation of typicals

Typicals can be created for devices and applications with only minimum differences in their parameters. These typicals contain all the parameters which are needed for the parameterization. In addition it is possible to specify which of these parameters are fixed and which can be adapted, e.g. by the startup engineer.

Teleservice via MPI

The Motor Starter ES Premium version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.




Benefits

- Fast, error-free configuration and startup of motor starters even without extensive previous knowledge
- Transparent setting of the device functions and their parameters – online and offline
- Effective diagnostics functions on the soft starter and display of the most important measured values
- Trace function (oscilloscope function) for recording measured values and events (included in the Motor Starter ES Standard and Premium software version for M200D PROFIBUS and PROFINET).

Selection and ordering data**Parameterization, startup and diagnostics software
Motor Starter ES 2007**

For ECOFAST Motor Starter, SIMATIC ET 200S High-Feature Starter, SIMATIC ET 200pro Starter and M200D (AS-I Standard, PROFIBUS, PROFINET)

- Delivered without PC cable

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Motor Starter ES 2007 Basic						
	Floating license for one user Engineering software in limited-function version for diagnostics purposes, software and documentation on CD, 3 languages (German/English/French), communication via system interface					
	• License key on USB flash drive, Class A, including CD	5	3ZS1310-4CC10-0YA5	1	1 unit	42D
	• License key download, Class A, without CD	▶	3ZS1310-4CE10-0YB5	1	1 unit	42D
3ZS1310-4CC10-0YA5						
Motor Starter ES 2007 Standard						
	Floating license for one user Engineering software, software and documentation on CD, 3 languages (German/English/French), communication via system interface					
	• License key on USB flash drive, Class A, including CD	5	3ZS1310-5CC10-0YA5	1	1 unit	42D
	• License key download, Class A, without CD	▶	3ZS1310-5CE10-0YB5	1	1 unit	42D
3ZS1310-5CC10-0YA5						
Motor Starter ES 2007 Premium						
	Floating license for one user Engineering software, software and documentation on CD, 3 languages (German/English/French), communication via system interface or PROFIBUS/PROFINET, STEP 7 Object Manager					
	• License key on USB flash drive, Class A, including CD	5	3ZS1310-6CC10-0YA5	1	1 unit	42D
	• License key download, Class A, without CD	▶	3ZS1310-6CE10-0YB5	1	1 unit	42D
3ZS1310-6CC10-0YA5						

Notes:

Please order PC cable separately, see [Accessories](#).

For a description of the software versions, see [page 14/10](#).

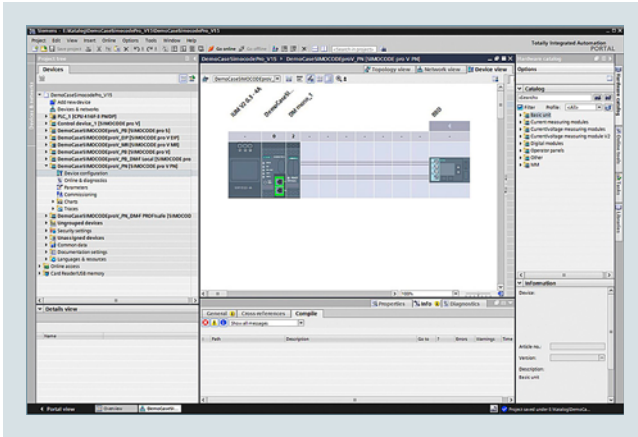
Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
		RS 232 interface cable Serial data connection between ET 200pro MS/FC, M200D and laptop/PC/PG or MS		1	1 unit	42D
		USB interface cable Serial data connection between ET 200pro MS/FC, M200D and laptop/PC/PG or MS		1	1 unit	34E
		USB/serial adapters For connecting an RS 232 PC cable to the USB interface of a PC, recommended for use in conjunction with ET 200S/ECOFAST/ET 200pro motor starters		1	1 unit	42J

Parameterization, Configuration and Visualization with SIRIUS

SIMOCODE ES (TIA Portal) **NEW**

Overview



Selection of SIMOCODE pro device configuration in SIMOCODE ES (TIA Portal)

More information

Homepage, see www.siemens.com/sirius-engineering

Industry Mall, see www.siemens.com/product?3ZS1

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16716/tid>

Software download

- SIMOCODE ES (TIA Portal), see <https://support.industry.siemens.com/cs/ww/en/view/109752321>
- SIMOCODE ES 2007, see <https://support.industry.siemens.com/cs/ww/en/view/109480470>

SIMOCODE ES is the central software for configuration, startup, operation and diagnostics of SIMOCODE pro.

SIMOCODE ES Version 15 is available as a powerful successor to Version 2007, which is based on the central engineering framework Totally Integrated Automation Portal (TIA Portal).

SIMOCODE ES V15 is integrated seamlessly when further TIA Portal-based software such as STEP 7 or WinCC is available, thus enabling users to achieve a consistent, efficient and intuitive solution for all automation tasks.

However, use of SIMOCODE ES V15 as stand-alone software also provides these advantages.

Three program versions

The user can choose between three different versions of SIMOCODE ES:

- SIMOCODE ES Basic
- SIMOCODE ES Standard
- SIMOCODE ES Premium

New: From V15, the powerful SIMOCODE ES Basic tool for startup or maintenance personnel is available for downloading free of charge in the Siemens Industry Online Support (see "More information").

SIMOCODE ES Standard and Premium are the perfect tools for engineers or configuration engineers on account of their larger scope of functions and integrated graphics editor. Unlike the Standard version, SIMOCODE ES Premium also permits parameterization and diagnostics via PROFIBUS/PROFINET/Ethernet. Indication of all operating, service and diagnostics data supplies important information about the current state of the motor and plant at all times – everywhere on PROFIBUS/PROFINET/Ethernet.

SIMOCODE ES V15	Basic	Standard	Premium
Access via the local interface on the device	✓	✓	✓
Parameter assignment in list form	✓	✓	✓
Parameter printing in list form	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	✓	✓	✓
Test	✓	✓	✓
Service data	✓	✓	✓
Analog value recording ¹⁾	✓	✓	✓
Trend display of measured values	--	✓	✓
Parameterizing with convenient graphical display	--	✓	✓
Parameterizing with the integrated graphics editor (CFC-based)	--	✓	✓
Printing of diagrams	--	✓	✓
Parameter comparison	--	✓	✓
Access via PROFIBUS/PROFINET/Ethernet ²⁾	--	--	✓
Teleservice via MPI	--	--	✓
Routing ³⁾	--	--	✓

✓ Function available

-- Function not available

¹⁾ For SIMOCODE pro V.

²⁾ In combination with Modbus devices, SIMOCODE ES Premium does not offer any additional functions compared with SIMOCODE ES Standard.

³⁾ See <http://support.automation.siemens.com/WW/view/en/109738745>.

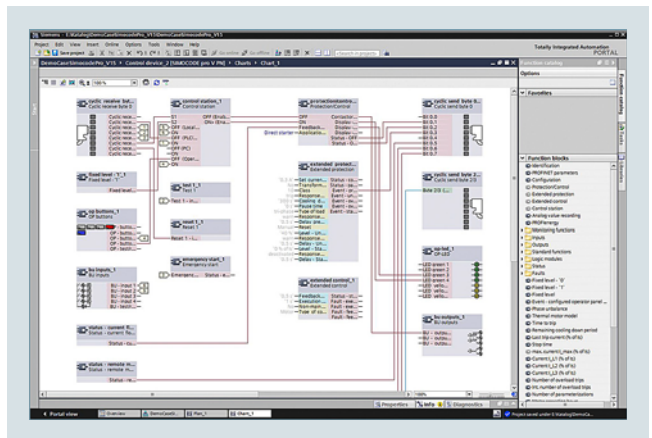
Working with libraries

Users can create copy templates for SIMOCODE pro device configuration and can manage them in global or project libraries.

This way, individual modules, diagrams and complete device configurations can be saved as reusable elements for frequently occurring tasks.

Integrated graphics editor

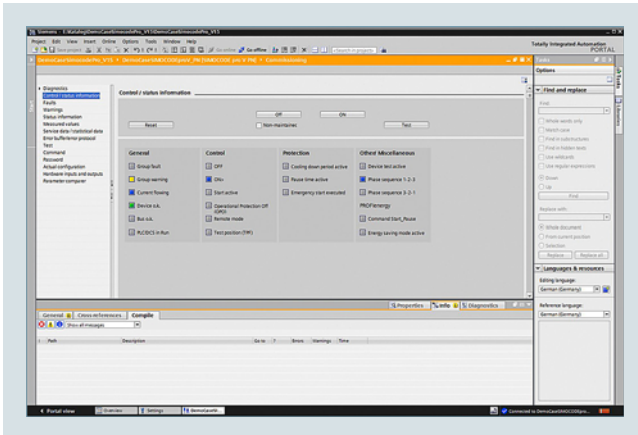
The graphics editor is a part of SIMOCODE ES Standard and SIMOCODE ES Premium. It is based on the Continuous Function Chart (CFC) and adds a powerful tool to the parameterizing interface that enables easy parameterization of devices by drag & drop. What is more, all the parameters can also be edited directly in the graphics editor. Extremely compact documentation of all configured parameters is possible, as is the graphic online presentation of the configured device functions including all signal states during operation.



Parameterize easily and ergonomically with the CFC-based graphics editor of SIMOCODE ES V15

Online functions for startup and diagnostics

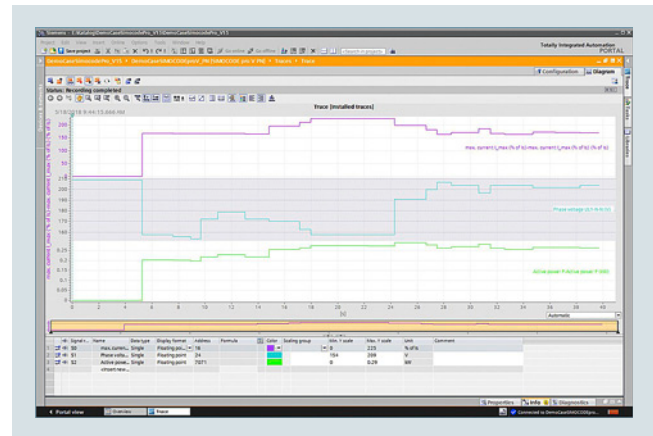
To this end, SIMOCODE ES provides powerful functions for startup and diagnostics of motor feeders. Besides a detailed display of status information and the causes of faults, all available measurement and statistics data can be retrieved online. Access to the fault and event memory and also to analog values recorded on the device, e.g. current or voltage, is also possible.



Commissioning functions of SIMOCODE ES V15

Trend display of measured values

With this online function, SIMOCODE ES Standard or Premium can present the trends of different measured values. It is thus possible for example to record and evaluate the start-up characteristic of a motor or its behavior under different load conditions.



Live trend display of SIMOCODE ES V15

Additional functions

SIMOCODE ES V15 offers numerous advantages of the TIA Portal that can be used in an integrated working environment.

Seamless integration

When using other TIA Portal-based software such as STEP 7 or WinCC, for example, the configuration for devices and networks for all components used is created in a standardized environment.

Teleservice via MPI

The SIMOCODE ES (TIA Portal) Premium version supports the use of MPI Teleservice (comprising the Teleservice software and various Teleservice adapters) for remote diagnostics of the devices. This facilitates diagnostics and maintenance, and it shortens response times for service purposes.

Benefits

- Easy parameterization with the graphics editor based on the Continuous Function Chart (CFC) reduces engineering work and shortens startup times
- Clear plant documentation by means of graphic presentation
- Detailed information, also when there are faults, is a help for maintenance personnel and shortens downtimes
- Universally applicable through stand-alone version or seamless integration into the central engineering framework when other TIA Portal-based software such as STEP 7 or WinCC are available
- Parameter changes are also possible during normal operation
- Users can create copy templates for device configurations and can manage them in global libraries


Parameterization, Configuration and Visualization with SIRIUS

SIMOCODE ES (TIA Portal) **NEW**

Selection and ordering data

Parameterization and service software for SIMOCODE pro 3UF7

- Delivered without PC cable

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
SIMOCODE ES V15 Basic						
Basic functional scope including Premium Trial License		▶ 3ZS1322-6CE13-0YG8		1	1 unit	42J
Engineering software, software download, Class A, 6 languages (German/English/French/Italian/Spanish/Chinese), for all SIMOCODE pro, online functions via system interface						
SIMOCODE ES V15 Standard						
Floating license for one user						
Engineering software, software and documentation on DVD, 6 languages (German/English/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V15 of SIRIUS ES, for all SIMOCODE pro, online functions via system interface, parameterizing with the integrated graphics editor (CFC-based)						
	• License key on USB flash drive, Class A	▶ 3ZS1322-5CC13-0YA5		1	1 unit	42J
	• License key and software download, Class A	▶ 3ZS1322-5CE13-0YB5		1	1 unit	42J
3ZS1322-5CC13-0YA5						
Upgrade for SIMOCODE ES 2007 Standard		2 3ZS1322-5CC13-0YE5		1	1 unit	42J
Floating license for one user, engineering software, software and documentation on DVD, license key on USB flash drive, Class A, 6 languages (German/English/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V15 of SIRIUS ES, for all SIMOCODE pro, online functions via system interface, parameterizing with integrated graphics editor (CFC-based)						
Software Update Service		▶ 3ZS1322-5CC00-0YL5		1	1 unit	42J
For 1 year with automatic extension, requires software version of SIMOCODE ES (TIA Portal), engineering software, software and documentation on DVD, online functions via system interface, parameterizing with integrated graphics editor (CFC-based)						

Notes:


SIMOCODE ES V12/V13/V14 licenses can also be used for SIMOCODE ES V15.

Please order PC cable separately, [see page 14/15](#).


For a description of the software versions, [see page 14/12](#).

Parameterization, Configuration and Visualization with SIRIUS

NEW SIMOCODE ES (TIA Portal)

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
SIMOCODE ES V15 Premium						
		Floating license for one user				
		Engineering software, software and documentation on DVD, 6 languages (German/English/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V15 of SIRIUS ES, for all SIMOCODE pro, online functions via system interface and PROFIBUS/PROFINET/Ethernet, parameterizing with the integrated graphics editor (CFC-based)				
3ZS1322-6CC13-0YA5		<ul style="list-style-type: none"> ▶ License key on USB flash drive, Class A 3ZS1322-6CC13-0YA5 ▶ License key and software download, Class A 3ZS1322-6CE13-0YB5 		1	1 unit	42J
		Upgrade for SIMOCODE ES 2007 Premium				
	2	Floating license for one user, engineering software, software and documentation on DVD, license key on USB flash drive, Class A, 6 languages (German/English/French/Italian/Spanish/Chinese), Combo license for parallel use of versions 2007 and V15 of SIRIUS ES, for all SIMOCODE pro, online functions via system interface and PROFIBUS/PROFINET/Ethernet, parameterizing with the integrated graphics editor (CFC-based)		1	1 unit	42J
		Software Update Service				
		For 1 year with automatic extension, requires software version of SIMOCODE ES (TIA Portal), engineering software, software and documentation on DVD, online functions via system interface and PROFIBUS/PROFINET/Ethernet, parameterizing with integrated graphics editor (CFC-based)		1	1 unit	42J

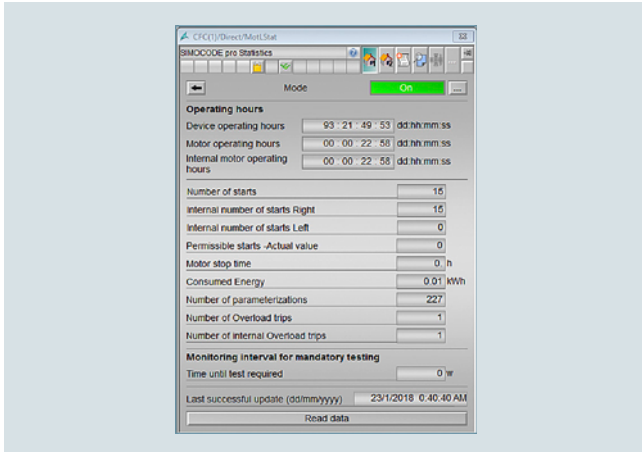
Notes:Please order PC cable separately, see [Accessories](#).For a description of the software versions, see [page 14/12](#).**Accessories**

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					
Optional accessories						
		USB PC cables				
		For connecting to the USB interface of a PC/PG, for communication with SIMOCODE ES via the system interface		1	1 unit	42J
3UF7941-0AA00-0		USB/serial adapters				
	5	For connecting an RS 232 PC cable to the USB interface of a PC, recommended for use in conjunction with SIMOCODE ES		1	1 unit	42J

Parameterization, Configuration and Visualization with SIRIUS

SIMOCODE pro block library for SIMATIC PCS 7

Overview



Advanced Process Library (APL) – faceplates and blocks for statistical data of the SIMOCODE pro library for PCS 7

More information

Homepage, see www.siemens.com/sirius-engineering

Industry Mall, see www.siemens.com/product?3ZS1

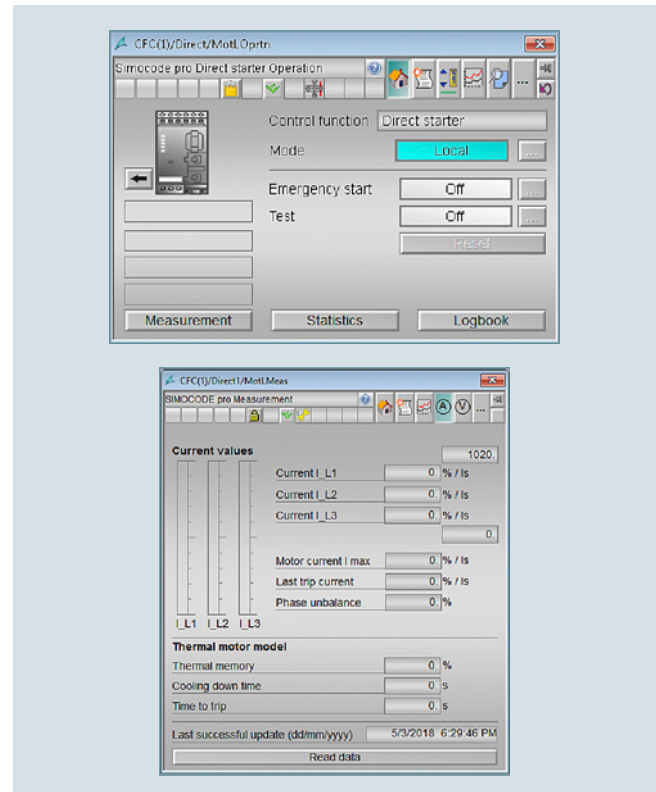
Technical specifications, see

<https://support.industry.siemens.com/cs/ww/en/ps/16718/td>

Programming and Operating Manual:

- Version V9.0 SP1 with Advanced Process Library (APL), see <https://support.industry.siemens.com/cs/ww/en/view/109759318>
- Version V9.0 with Advanced Process Library (APL), see <https://support.industry.siemens.com/cs/ww/en/view/109748465>
- Version V8.3 with Advanced Process Library (APL), see <https://support.industry.siemens.com/cs/ww/en/view/109758847>
- Version V8.2 with Advanced Process Library (APL), see <https://support.industry.siemens.com/cs/ww/en/view/103954289>
- Version V7-V9 migration, see <https://support.industry.siemens.com/cs/ww/en/view/109749358>

The PCS 7 block library can be used for simple and easy integration of SIMOCODE pro into the SIMATIC PCS 7 process control system. One focus here is on easy configuration, because the number of required configuration steps is reduced crucially. The configuration of the modules is based on the PCS 7 standard configuration processes and is optimally harmonized with the functions of SIMOCODE pro. Users who have previously integrated conventional motor feeders into PCS 7 will therefore find it easy to switch to SIMOCODE pro.



Advanced Process Library (APL) – faceplates and blocks for control and measured data of the SIMOCODE pro library for PCS 7



Benefits

- Uniform and continuous integration into SIMATIC PCS 7
- Standardized blocks for simple integration and optimal operation
- Greater process transparency due to greater information density in the process control system

Parameterization, Configuration and Visualization with SIRIUS

SIMOCODE pro block library for SIMATIC PCS 7

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIMOCODE pro block library for SIMATIC PCS 7 version V9 with Advanced Process Library (APL)						
 3ZS1632-1XX03-0YAO	▶	3ZS1632-1XX03-0YAO		1	1 unit	42J
	Engineering software V9 For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system with Advanced Process Library, for PCS 7 version V9.0 Type of delivery: Software and documentation on CD, one license for one engineering station, one license for one automation system					
	▶	3ZS1632-2XX03-0YB0		1	1 unit	42J
Runtime license V9 For execution of the AS blocks in an automation system (single license) Required for using the AS blocks of the engineering software V9 within a plant Type of delivery: One license for one automation system, without software and documentation						
SIMOCODE pro block library for SIMATIC PCS 7 version V8 with Advanced Process Library (APL)						
 3ZS1632-1XX02-0YAO	▶	3ZS1632-1XX02-0YAO		1	1 unit	42J
	Engineering software V8 For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English Scope of supply: AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system with Advanced Process Library, for PCS 7 versions V8.1 and V8.2 Type of delivery: Software and documentation on CD, one license for one engineering station, one license for one automation system					
	▶	3ZS1632-2XX02-0YB0		1	1 unit	42J
Runtime license V8 For execution of the AS blocks in an automation system (single license) Required for using the AS blocks of the engineering software V8 within a plant Type of delivery: One license for one automation system, without software and documentation						

Parameterization, Configuration and Visualization with SIRIUS

SIMOCODE pro block library for SIMATIC PCS 7

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

SIMOCODE pro block library for SIMATIC PCS 7 version V7 without Advanced Process Library (APL)



3UF7982-0AA10-0

Engineering software V7

For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English/French

Scope of supply:
AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system, for PCS 7 versions V7.0/V7.1

Type of delivery:
Software and documentation on CD,
one license for one engineering station,
one license for one automation system

▶ 3UF7982-0AA10-0 1 1 unit 42J

Runtime license V7

For execution of the AS blocks in an automation system (single license)

Required for using the AS blocks of the engineering software V7 or the engineering software migration V7-V9 on an additional automation system within a plant

Type of delivery:
One license for one automation system,
without software and documentation

▶ 3UF7982-0AA11-0 1 1 unit 42J

Engineering software migration V7-V9

For upgrading (migrating) an existing engineering software V7 of the SIMOCODE pro block library for PCS 7

Conditions of use:
Availability of the engineering software V7 (license) of the SIMOCODE pro block library for PCS 7 for the PCS 7 version V7.0 or V7.1

The engineering software migration V7-V9 can be installed directly onto a system with PCS 7 versions V8 or V9; installation of the previous version is unnecessary.

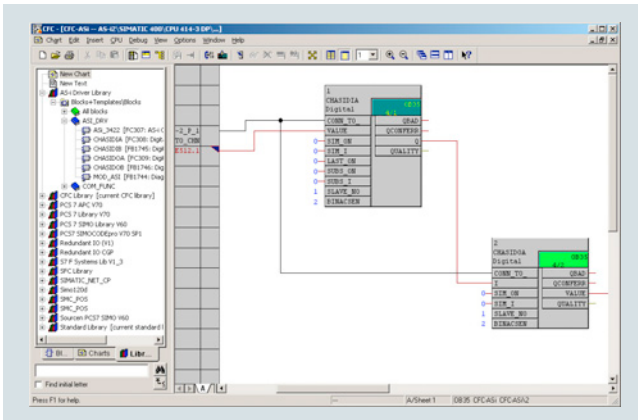
For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English/French

Scope of supply:
AS blocks and faceplates for integrating SIMOCODE pro into the PCS 7 process control system, for PCS 7 versions V8.0/V8.1/V8.2/V9.0

Type of delivery:
Software and documentation on CD,
license for upgrading an existing license
for one engineering station and a plant's assigned runtime licenses

▶ 3UF7982-0AA20-0 1 1 unit 42J

Overview



AS-Interface block library for SIMATIC PCS 7 in the CFC chart

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/16719/td>
Programming Manual:

- Version V9 with Advanced Process Library (APL), see <https://support.industry.siemens.com/cs/ww/en/view/109760970>
- Version V8 with Advanced Process Library (APL), see <https://support.industry.siemens.com/cs/ww/en/view/90690873>
- Version V7-V9 migration without Advanced Process Library, see <https://support.industry.siemens.com/cs/ww/en/view/109750134>
- Version V7 without Advanced Process Library, see <https://support.industry.siemens.com/cs/ww/en/view/46504691>

The AS-Interface block library for PCS 7 is integrated in the SIMATIC PCS 7 process control system and expands it for integration of the AS-Interface system.

As the result, the advantages of AS-Interface such as the considerable reduction of wiring outlay for distributed actuators/sensors and very simple installation can also be used in a system based on PCS 7.

The library contains blocks for accessing the I/O data of AS-i slaves, blocks for diagnostics of the AS-i system, and faceplates for the PCS 7 Maintenance Station.

Supported AS-Interface modules

The AS-Interface block library for PCS 7 can be used with the following AS-i master and link modules, see also page 2/1:

- CM AS-i Master ST (in ET 200SP station)
3RK7137-6SA00-0BC1
(engineering software V9 and V8.1 only)
- CP 343-2 (in ET 200M station) 6GK7343-2AH01-0XA0
- CP 343-2P (in ET 200M station) 6GK7343-2AH11-0XA0
- DP/AS-i Link Advanced single master 6GK1415-2BA10
- DP/AS-i Link Advanced double master 6GK1415-2BA20
- IE/AS-i Link PN IO single master 6GK1411-2AB10
(engineering software V9 or V8.1 and V8 only)
- IE/AS-i Link PN IO double master 6GK1411-2AB20
(engineering software V9 or V8.1 and V8 only)

The CM AS-i Master ST module is supported with IM 155-6 PN High Feature within an ET 200SP station interfaced via PROFINET.

The AS-i Master CP 343-2 and CP 343-2P are supported within an ET 200M station interfaced via PROFINET or PROFIBUS.

With the CM AS-i Master ST, CP 343-2 or CP 343-2P modules, digital AS-i slaves with standard addressing and extended addressing (A/B slaves, see also note under "Application") can be operated via the library.

In combination with the IE/AS-i Link PN IO and the DP/AS-i Link Advanced, it is possible to integrate digital and analog AS-i slaves with standard and extended addressing (A/B slaves).

Hardware and software requirements

The libraries require the following PCS 7 versions:

- Engineering software V9: PCS 7 version from V9
- Engineering software V8.1: PCS 7 version V8.0 SP1 update 3 and higher, can also be used for PCS 7 versions V8.1 and V8.2
- Engineering software migration V7-V9: PCS 7 version V8.0 SP1 and higher, can also be used for PCS 7 versions V8.1, V8.2 and V9
- Engineering software V7: PCS 7 versions V6.1, V7.0 or V7.1

The engineering software migration V7-V9 comprises the same interconnection logic of the CFC blocks as the engineering software V7 and is recommended for the switch to PCS 7 V8 or PCS 7 V9 with only a few adjustments required in the PCS 7 project.

The engineering software V9 and engineering software V8.1 use APL interconnection logic and are recommended for new PCS 7 projects.

Benefits

- Easy connection of AS-Interface to PCS 7
- Engineering work reduced to positioning and connecting the blocks in the CFC

- With no additional configuring steps required for connection to the PCS 7 Maintenance Station, diagnostics for the AS-i system are optimally guaranteed.

Application

The AS-Interface block library for PCS 7 is used in systems based on PCS 7 where the actuators and sensors are connected using AS-Interface.



Note:

The AS-i masters CP 343-2 and CP 343-2P do not transmit I/O data from AS-i slaves with a B address via the cyclic process image (partition), but via data records. To prevent delays in the communication of driver blocks for B slaves, we recommend avoiding the use of AS-i slaves with B addresses for PCS 7 configurations with CP 343-2 or CP 343-2P.

Parameterization, Configuration and Visualization with SIRIUS

AS-Interface block library for SIMATIC PCS 7

Selection and ordering data

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
AS-Interface block library for SIMATIC PCS 7 version V9 with Advanced Process Library (APL)						
 3ZS1635-1XX03-0YA0	2	3ZS1635-1XX03-0YA0		1	1 unit	42C
	<p>Engineering software V9</p> <p>For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English</p> <p>Scope of supply: AS blocks and faceplates for integrating AS-Interface into the PCS 7 process control system with Advanced Process Library (APL), for PCS 7 version V9 and higher</p> <p>Type of delivery: Software and documentation on CD, one license for one engineering station, one license for one automation system</p>					
	2	3ZS1635-2XX03-0YB0		1	1 unit	42C
<p>Runtime license V9</p> <p>For execution of the AS blocks in an automation system (single license)</p> <p>Required for using the AS blocks of the engineering software V9 on an additional automation system within a plant</p> <p>Type of delivery: One license for one automation system, without software and documentation</p>						
AS-Interface block library for SIMATIC PCS 7 version V8 with Advanced Process Library (APL)						
 3ZS1635-1XX02-0YA0	2	3ZS1635-1XX02-0YA0		1	1 unit	42C
	<p>Engineering software V8.1</p> <p>For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English</p> <p>Scope of supply: AS blocks and faceplates for integrating AS-Interface into the PCS 7 process control system with Advanced Process Library (APL), for PCS 7 version V8.0 SP1 and higher, also able to be used for PCS 7 versions V8.1 and V8.2</p> <p>Type of delivery: Software and documentation on CD, one license for one engineering station, one license for one automation system</p>					
	2	3ZS1635-2XX02-0YB0		1	1 unit	42C
<p>Runtime license V8</p> <p>For execution of the AS blocks in an automation system (single license)</p> <p>Required for using the AS blocks of the engineering software V8 or V8.1 on an additional automation system within a plant</p> <p>Type of delivery: One license for one automation system, without software and documentation</p>						

Parameterization, Configuration and Visualization with SIRIUS

AS-Interface block library for SIMATIC PCS 7

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	d					

AS-Interface block library for SIMATIC PCS 7 version V9 or V8 without Advanced Process Library (APL)


3ZS1635-1XX11-0YE0

Engineering software migration V7-V9

For upgrading (migrating) an existing engineering software V7 of the AS-Interface block library for PCS 7 or for upgrading (migrating) an existing engineering software V8 or V8.1 of the AS-Interface block library for PCS 7 without APL

For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English

Conditions of use:

Availability of the engineering software V7 (license) of the AS-Interface block library for PCS 7 for the PCS 7 versions V6.1, V7.0 or V7.1, or availability of the engineering software V8 or V8.1 (license) of the AS-Interface block library for PCS 7 for the PCS 7 version V8

The engineering software migration V7-V9 can be installed directly onto a system with PCS 7 versions V9 or V8; installation of the previous version is unnecessary.

Scope of supply:

AS blocks and faceplates for integrating AS-Interface into the PCS 7 process control system, for PCS 7 versions V9 or V8.0 SP1, V8.1 and V8.2, including block library service pack SP3

Type of delivery:

Software and documentation on CD, license for upgrading an existing license for one engineering station and a plant's assigned runtime licenses

2

3ZS1635-1XX11-0YE0

1

1 unit

42C

AS-Interface block library for SIMATIC PCS 7 version V7 without Advanced Process Library (APL)


3ZS1635-1XX01-0YA0

Engineering software V7

For one engineering station (single license) including runtime software for execution of the AS blocks in an automation system (single license), German/English

Scope of supply:

AS blocks and faceplates for integrating AS-Interface into the PCS 7 process control system, for PCS 7 versions V6.1, V7.0 or V7.1 including block library service pack SP1

Type of delivery:

Software and documentation on CD, one license for one engineering station, one license for one automation system

5

3ZS1635-1XX01-0YA0

1

1 unit

42C

Runtime license V7

For execution of the AS blocks in an automation system (single license)

Required for using the AS blocks of the engineering software V7 or the engineering software migration V7-V8 on an additional automation system within a plant

Type of delivery:

One license for one automation system, without software and documentation

5

3ZS1635-2XX01-0YB0

1

1 unit

42C

More information
Notes:

For information about updates and downloads, see <https://support.industry.siemens.com/cs/ww/en/view/109759605>.

For additional information on the use of analog AS-i slaves in a configuration with PCS 7 version V8.1, see

- <https://support.industry.siemens.com/cs/ww/en/view/90880814>
- <https://support.industry.siemens.com/cs/ww/en/view/65710726>

Parameterization, Configuration and Visualization with SIRIUS

SIRIUS Safety ES

Overview

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/21192/td>
 Programming and Operating Manual, see <https://support.industry.siemens.com/cs/ww/en/view/109444445>.

SIRIUS Safety ES is the engineering software for the configuration, startup and diagnostics of the 3RK3 Modular Safety System and 3SK2 safety relays. The software combines the configuring of the hardware, the parameterization of the safety functions, and the testing and diagnostics of the safety system.

Efficient engineering with three program versions

The SIRIUS Safety ES software program is available in three versions which differ in their user-friendliness, scope of functions and price.

SIRIUS Safety ES	Basic	Standard	Premium
Access via the local interface on the device	✓	✓	✓
Parameter assignment	✓	✓	✓
Operating	✓	✓	✓
Diagnostics	✓	✓	✓
Test	--	✓	✓
Integrated graphics editor	✓	✓	✓
Importing/exporting parameters	--	✓	✓
Comparison functions	--	✓	✓
Comfort functions	--	✓	✓
Terminal designator	--	✓	✓
Work on sub-diagrams	--	✓	✓
Standard-compliant printout according to EN ISO 7200	✓	✓	✓
Downloading parameterization via PROFIBUS	--	--	✓
Online diagnostics using PROFIBUS	--	--	✓
Creating, importing and exporting macros	--	--	✓

✓ Function available

-- Function not available

Additional functions

Language selection

The program interface language can be switched during use between German, English and French

Help function

A context-sensitive help function provides useful assistance with questions concerning the use of the program

Consistency check

A consistency check provides clear information about function assignment errors and users are taken directly to errors when the corresponding message is clicked on. Checks are carried out automatically when a project is saved and during the configuration test, but they can also be initiated manually.

Lists

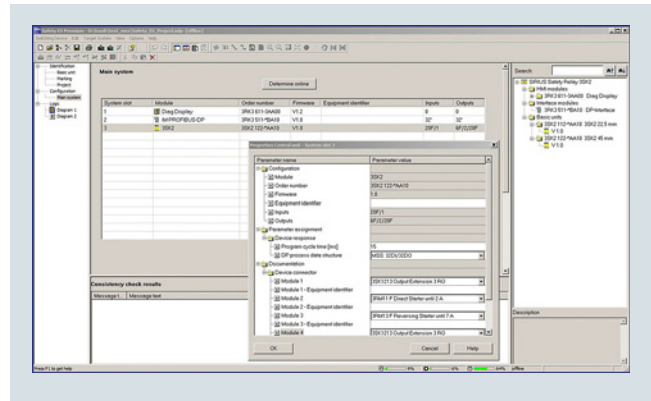
Lists of symbols and cross-references can be issued for effective processing of the project file

Standard-compliant printouts

The programs of the SIRIUS ES software family make machine documentation far easier. They enable parameterization printouts according to EN ISO 7200. The elements to be printed are easy to select and group as required.

Hardware configuration

The device configuration of the 3RK3 or 3SK2 systems is defined in the configuration dialog. The available modules are simply selected from the clearly laid out hardware catalog and positioned in the workspace. Depending on the device system used (3RK3 or 3SK2), only the permitted devices are shown in the hardware catalog in each case. In addition, in the case of the 3RK3, the quantity framework on the AS-i bus can be determined online or configured manually from the AS-i library. For each module, it is optionally possible to issue an equipment ID which is shown in the logic diagram for identification of the inputs and outputs.



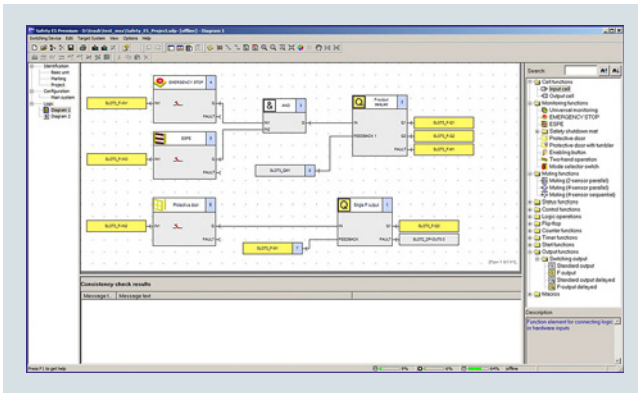
Definition of the hardware layout

Graphic parameterizing of the safety logic via drag & drop

The functionality of the safety logic is laid down with a graphics editor designed for intuitive operation. Safe monitoring functions (EMERGENCY STOP, non-contact protective devices/light arrays, protective doors, etc.), output functions and logic functions (AND/OR operations, counting function, time functions, etc.), non-safety-related input/output functions, device status functions and control functions can be dragged from the extensive functions catalog onto the work interface by drag & drop. Depending on the version, each function has several input and output connecting points through which the functions can be interconnected by simple mouse clicks. Double-clicking on a function symbol opens the related features dialog window in which all the parameters can be displayed and configured: Scope of the function's inputs and outputs, configuring the channel type (single-/two-channel, NC contact/NO contact), activating crossover detection, defining start options, assigning the hardware inputs and outputs, etc. Of course each function can be issued with an individual name so that e.g. the position of a safety switch in the plant can be documented.

The safety logic can be divided into several diagrams in order to enable structured processing of the entire plant. The user can freely position the functions on a quasi infinitely large drawing board, whereby the connecting lines are drawn automatically. If there is not enough space, more pages are automatically added to the diagram in horizontal or vertical direction. Connecting lines extending over several pages are automatically issued with cross-references during print-out. If required in the interest of clarity, the user can divide a connecting line manually into two segments, whereby the mutual reference is marked by reference arrows. For further documentation, freely compilable comment texts can be placed at any point in the diagram. Every point in the logic diagram can be processed with ease by dragging and zooming.

Every project can be saved as a file and be password-protected from unauthorized access.



Processing the safety functions in the graphics editor

AS-Interface

Evaluation of the AS-i slaves connected to the AS-i bus is also parameterized using the tried and tested method described above.

In order to be able to use the AS-i functionalities, a 3RK3 Advanced central unit or 3RK3 ASIsafe central unit (basic/extended) must be used.

User prompting during startup and maintenance

To start up the relevant safety system, the created project file is uploaded to the device. There are two ways of doing this:

- Connect the USB interface of the PC to the device using an appropriate connection cable.
- Use the DP interface to download the parameterization via any PROFIBUS node.

Access to the device can be restricted using a password concept that includes different protection levels.

After the project is loaded, the user switches the device by means of the software from configuring mode to test mode in which the safety functions can be tested.

Activating the diagnostics shows the status of the individual functions in the graphic logic diagram by means of different colors and symbols. In addition, more detailed information about each function element can be displayed in the logic diagram. For the purpose of testing the logic diagram, it is also possible to manually overwrite the signal state of each function element ("forcing").

If the test is completed successfully, the user releases the configuration and switches the device to protection mode, in which case "forcing" is automatically deactivated.

Service personnel can activate the graphic diagnostics in protection mode as well. The I&M (Identification & Maintenance) data saved in the device facilitate maintenance.

Benefits

- Convenient parameterization, operation, monitoring and testing by means of a user-friendly and clear-cut user interface
- Reliable diagnostic tool
- All functions, such as safety and logic functions, are available as modules, and are easy to link to one another
- Automatic creation of comprehensive documentation of safety functions




Parameterization, Configuration and Visualization with SIRIUS

SIRIUS Safety ES

Selection and ordering data

SIRIUS Safety ES parameterization, start-up and diagnostics software

- Delivered without PC cable


Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SIRIUS Safety ES Basic						
 <p>Floating license for one user Engineering software in limited-function version for diagnostics purposes, software and documentation on CD, 3 languages (German/English/French), communication via system interface</p> <ul style="list-style-type: none"> License key on USB flash drive, Class A License key download, Class A 	2	3ZS1316-4CC10-0YA5 3ZS1316-4CE10-0YB5		1	1 unit	42B
	▶			1	1 unit	42B
3ZS1316-4CC10-0YA5						
SIRIUS Safety ES Standard						
 <p>Floating license for one user Engineering software, software and documentation on CD, 3 languages (German/English/French), communication via system interface</p> <ul style="list-style-type: none"> License key on USB flash drive, Class A License key download, Class A 	5	3ZS1316-5CC10-0YA5 3ZS1316-5CE10-0YB5		1	1 unit	42B
	▶			1	1 unit	42B
3ZS1316-5CC10-0YA5						
SIRIUS Safety ES Premium						
 <p>Floating license for one user Engineering software, software and documentation on CD, 3 languages (German/English/French), communication via PROFIBUS or system interface, online diagnostics via PROFIBUS, creating, importing and exporting macros</p> <ul style="list-style-type: none"> License key on USB flash drive, Class A License key download, Class A 	5	3ZS1316-6CC10-0YA5 3ZS1316-6CE10-0YB5		1	1 unit	42B
	▶			1	1 unit	42B
3ZS1316-6CC10-0YA5						

Notes:

Please order PC cable separately, [see Accessories](#).

For a description of the software versions, [see page 14/22](#).

Accessories

Version	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Optional accessories						
 <p>USB PC cables</p> <p>For connecting to the USB interface of a PC/PG, for communication with 3RK3 and 3SK2 via the system interface, recommended for use in connection with 3RK3 and 3SK2</p>	▶	3UF7941-0AA00-0		1	1 unit	42J
3UF7941-0AA00-0						

Power Supply

**clickable**

Click on an article number in the catalog PDF to call it up in the Industry Mall and you will have access to all the required information.

Article No.
3RA1943-2C
3RA1943-2B
3RA1953-2B
3RA1953-2N

Or directly on the Internet, e.g.
www.siemens.com/product?3RA1943-2C

Price groups

PG 581, 582, 583, 584, 585, 586, 588, 58P, 591, 593

15/2 **Introduction****SITOP power supply**

- 15/3 SITOP compact
- 15/4 LOGO!Power
- 15/5 SITOP lite
- 15/6 SITOP smart
- 15/7 **SITOP modular NEW**
- 15/9 **SITOP PSU8600 power supply system NEW**
- 15/11 Special design, special use
Add-on modules
- 15/12 - Redundancy modules
- 15/13 - Selectivity modules
- 15/13 - Buffer modules
- SITOP DC-UPS
Uninterruptible Power Supply
- 15/14 - DC-UPS with capacitors
- 15/16 - DC-UPS with battery modules

SITOP Power Supply

Introduction

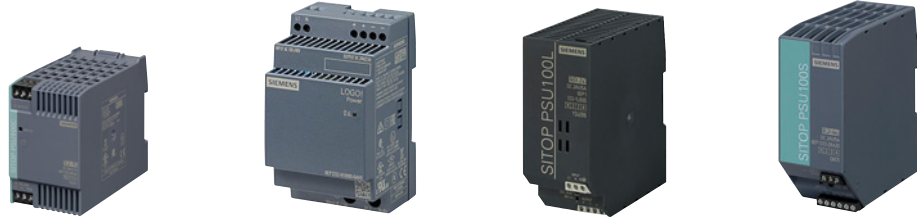
Overview

More information

Homepage, see www.siemens.com/sitop

Industry Mall, see www.siemens.com/product?SITOP

Further products, see Catalog KT 10.1



6EP1 SITOP compact **6EP3 LOGO!Power** **6EP1 SITOP lite** **6EP1 SITOP smart**

SITOP power supplies

Phase		1	1	1	1, 3
Rated input voltage	V	100 ... 230 AC, 110 ... 330 DC	100 ... 240 AC, 110 ... 330 DC	120/230 AC	120/230 AC, 400 ... 500 3 AC
Rated output voltage	V DC	24, 12	5, 12, 15, 24	24	12, 24
Rated output current	A	0.6 ... 6.5	0.6 ... 6.3	2.5 ... 20	2.5 ... 40
Connection		Screw terminal connection	Screw terminal connection	Screw terminal connection	Screw terminal connection
Mounting		Standard rail mounting	Standard rail mounting	Standard rail mounting	Standard rail mounting
Approval		NEC Class 2, UL , cUL , ATEX, GL	UL , cUL , ABS, GL, FM, ATEX	UL , cUL	UL , cUL , CSA, ATEX, GL
Page		15/3	15/4	15/5	15/6



6EP3
• SITOP modular
• PSU8600 power supply system

6EP1
Special design,
special use

6EP1
Expansion modules

6EP1
SITOP DC-UPS
uninterruptible
power supplies

SITOP power supplies

Phase		1, 2, 3	1	1	1
Rated input voltage	V	120 ... 230/230 ... 500 AC, 120 ... 230 AC, 400 ... 500 3 AC;	120/230 AC	24 DC	24 DC
Rated output voltage	V DC	24, 36, 48	3 ... 52	U_o – approx. 0.5, U_o – approx. 1	24
Rated output current	A	5 ... 40	10	3.5 ... 20, 40, 4 x 3, 4 x 10	6 ... 40
Connection		Screw terminal connection	Screw terminal connection	Screw terminal connection	Screw terminal connection
Mounting		Standard rail mounting	Standard rail mounting	Standard rail mounting	Standard rail mounting (except: wall mounting with SITOP UPS500P)
Approval		UL , cUL , CSA, ATEX, GL, ABS	UL , cUL	NEC Class 2, UL , cUL , ATEX, GL	UL , cUL , ATEX, GL, ABS
Pages		15/7, 15/9	15/11	15/12	15/14

Overview

SITOP compact is a series of power supplies for the low performance range. Thanks to the extremely space-saving slim design, they are especially suited to distributed applications in switchboxes or in small control cabinets.






The switching power supply units are characterized by their low power loss over the entire load range. With losses being extremely small even in no-load operation, these units are predestined for supplying machines and plants which are often in stand-by mode, for example. The switching power supply units have a wide range input for AC and DC networks, with plug-in terminals that facilitate easy electrical connection.

To further increase 24 V availability, the SITOP compact power supply units can be combined with DC-UPS, redundancy and selectivity modules, see pages 15/12 and 15/13.

- Small mounting area thanks to narrow design
- Single-phase wide range input for 85 V to 264 V AC and 110 V to 300 V DC
- High degree of efficiency over the entire load range, up to 28% energy savings compared to comparable units
- Low energy consumption in no-load operation and stand-by, possible energy savings of up to 53%
- Adjustable output voltage
- Green LED for "Output voltage OK"
- Plug-in terminals
- Temperature range from -20 °C to +70 °C

Extensive certification, such as UL, ATEX, GL and NEC Class 2 (24 V/3.7 A)

Selection and ordering data

Version	Inputs Rated voltage $U_{e \text{ rated}}$	Outputs Rated voltage $U_{a \text{ rated}}$	Rated current $I_{a \text{ rated}}$	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24 V power supplies										
 6EP1331-5BA00	0.6 A	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3%	0.6 A	22.5 x 80 x 100	1	6EP1331-5BA00	1	1 unit	584
 6EP1331-5BA10	1.3 A	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3%	1.3 A	30 x 80 x 100	1	6EP1331-5BA10	1	1 unit	584
 6EP1332-5BA00	2.5 A	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3%	2.5 A	45 x 80 x 100	1	6EP1332-5BA00	1	1 unit	584
 6EP1332-5BA10	4 A	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3%	4 A	52.5 x 80 x 100	1	6EP1332-5BA10	1	1 unit	584
 6EP1332-5BA20	3.7 A NEC Class 2	120 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3%	3.7 A	52.5 x 80 x 100	1	6EP1332-5BA20	1	1 unit	584
12 V power supplies										
 6EP1321-5BA00	2 A	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	12 V DC ± 3%	2 A	30 x 80 x 100	1	6EP1321-5BA00	1	1 unit	584
 6EP1322-5BA10	6.5 A	100 ... 230 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	12 V DC ± 3%	6.5 A	52.5 x 80 x 100	1	6EP1322-5BA10	1	1 unit	584

SITOP Power Supply

LOGO!Power

Single-phase

Overview

Our new miniature power supply units in the same design as the logic modules offer great performance in the smallest of spaces: Efficiency has been improved across the entire load range, and the low power losses in no-load operation ensure efficient operation.





The wide-range input for single-phase networks as well as operation with direct voltage, the wide operating temperature range, comprehensive certifications as well as the power reserve when switching on capacitive loads makes them suitable for universal use.

These reliable power supplies with their flat, stepped profile can be used extremely flexibly in numerous applications such as in distribution boards, for example.

To further increase 24 V availability, the LOGO!Power power supply units can be combined with DC-UPS, redundancy and selectivity modules, see pages 15/12 and 15/13.

- Single-phase wide range input from 85 V to 264 V AC and 110 V to 300 V DC
- Low width from a minimum of 18 mm to a maximum of 72 mm saves space in the control cabinet
- Higher efficiency level up to 90% over the entire power range and ERP-compliant no-load losses of < 0.3 W
- Flexible mounting with standard rail or wall mounting in different installation positions
- Load monitoring due to real-time measurement of the output current without disconnecting the cable, i.e. without interrupting the DC supply
- Reliable thanks to assured connection of heavy loads when starting up as well as constant current in the event of overload
- Wide temperature range from -25 °C to +70 °C
- Extensive certification such as cULus, CB, FM, ATEX, cCSAus Class I Div. 2, GL and ABS

Selection and ordering data

Version	Inputs Rated voltage U_e rated	Outputs Rated voltage U_a rated	Rated current I_a rated	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
5 V power supplies										
	3 A 100 ... 240 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	5 V DC ± 3%	3 A	36 x 90 x 53	1	6EP3310-6SB00-0AY0		1	1 unit	583
	6.3 A 100 ... 240 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	5 V DC ± 3%	6.3 A	54 x 90 x 53	1	6EP3311-6SB00-0AY0		1	1 unit	583
12 V power supplies										
	0.9 A 100 ... 240 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	12 V DC ± 3%	0.9 A	18 x 90 x 53	1	6EP3320-6SB00-0AY0		1	1 unit	583
	1.9 A 100 ... 240 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	12 V DC ± 3%	1.9 A	36 x 90 x 53	1	6EP3321-6SB00-0AY0		1	1 unit	583
	4.5 A 100 ... 240 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	12 V DC ± 3%	4.5 A	54 x 90 x 53	1	6EP3322-6SB00-0AY0		1	1 unit	583
15 V power supplies										
	1.9 A 100 ... 240 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	15 V DC ± 3%	1.9 A	36 x 90 x 53	1	6EP3321-6SB10-0AY0		1	1 unit	583
	4 A 100 ... 240 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	15 V DC ± 3%	4 A	54 x 90 x 53	1	6EP3322-6SB10-0AY0		1	1 unit	583
24 V power supplies										
	0.6 A 100 ... 240 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3%	0.6 A	18 x 90 x 53	1	6EP3330-6SB00-0AY0		1	1 unit	583
	1.3 A 100 ... 240 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3%	1.3 A	36 x 90 x 53	1	6EP3331-6SB00-0AY0		1	1 unit	583
	2.5 A 100 ... 240 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3%	2.5 A	54 x 90 x 53	1	6EP3332-6SB00-0AY0		1	1 unit	583
	4 A 100 ... 240 V AC (85 ... 264 V AC/ 110 ... 300 V DC)	24 V DC ± 3%	4 A	72 x 90 x 53	1	6EP3333-6SB00-0AY0		1	1 unit	583

Overview

The SITOP lite power supplies are designed for standard requirements in industrial environments and offer all important functions at a favorable price.





The wide range input with manual switchover supports connection to a variety of single-phase supply systems.

Thanks to the slim design, the power supplies have a low space requirement on the standard mounting rail, and their excellent degree of efficiency ensures low thermal losses in the control cabinet.

To further increase 24 V availability, the SITOP lite power supplies can be combined with DC UPS, redundancy and selectivity modules, [see pages 15/12 and 15/13](#).

- 24 V/2.5 A, 5 A, 10 A and 20 A for industrial applications with standard requirements
- Single-phase wide range input with manual switchover
- Narrow width
- Excellent degree of efficiency
- Green LED for "24 V OK"
- Can be switched in parallel
- No lateral installation clearances required
- Ambient temperature range from 0 °C to 60 °C (from 45 °C with derating)
- Cooling through natural convection
- Short-circuit and overload protection
- Certification in accordance with CE, cULus and CD

Selection and ordering data

Version	Inputs Rated voltage $U_{e \text{ rated}}$	Outputs Rated voltage $U_{a \text{ rated}}$	Rated current $I_{a \text{ rated}}$ A	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24 V power supplies										
 6EP1332-1LB00	2.5 A	120/230 V AC (93 ... 132 V AC/ 187 ... 264 V AC)	24 V DC ± 3%	2.5 A	32.5 x 125 x 120	1	6EP1332-1LB00	1	1 unit	593
 6EP1333-1LB00	5 A	120/230 V AC (93 ... 132 V AC/ 187 ... 264 V AC)	24 V DC ± 3%	5 A	50 x 125 x 120	1	6EP1333-1LB00	1	1 unit	593
 6EP1334-1LB00	10 A	120/230 V AC (93 ... 132 V AC/ 187 ... 264 V AC)	24 V DC ± 3%	10 A	70 x 125 x 120	1	6EP1334-1LB00	1	1 unit	593
 6EP1336-1LB00	20 A	100/230 V AC (85...264 V AC/ 88...370 V DC)	24 V DC ± 3%	20 A	110 x 125 x 125	1	6EP1336-1LB00	1	1 unit	593

SITOP Power Supply

SITOP smart

Single-phase and three-phase

Overview

SITOP smart are the universal and powerful standard power supplies for mechanical and plant engineering.

Despite their compact design, they offer excellent overload behavior: Thanks to a power boost of 150%, loads with high power consumption can be connected without any problems and the permanent overload capability of 120% offers power reserves in case of expansions.

The high degree of efficiency results in low energy consumption and minimal heat generation inside the control cabinet.

To further increase 24 V availability, the SITOP smart power supplies can be combined with buffer, DC-UPS, redundancy and selectivity modules, [see pages 15/12 and 15/13](#).

- Single-phase and three-phase standard applications up to 40 A
- Compact design, no lateral clearances required
- Extra power with 1.5 times the rated current (5 s/min) for brief operational overloads
- Permanent overload capability with 1.2 times the rated current up to 45 °C ambient temperature
- Adjustable output voltage for compensating voltage drops
- Parallel switching option to increase performance
- High degree of efficiency up to 91.5%
- Wide temperature range from -25 °C or 0 °C to +70 °C
- Comprehensive certification such as cULus, cCSAus, ATEX, IECEx and GL

Selection and ordering data

	Rated current $I_{a \text{ rated}}$	Inputs Rated voltage $U_{e \text{ rated}}$	Outputs Rated voltage $U_{a \text{ rated}}$	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24 V power supplies										
 6EP1332-2BA20	2.5 A	120/230 V AC (85 ... 132 V AC/ 170 ... 264 V AC)	24 V DC ± 3%	32.5 x 125 x 120	1	6EP1332-2BA20		1	1 unit	582
Limitation of input current harmonics according to IEC 61000-3-2										
 6EP1333-2BA20	5 A	120/230 V AC (85 ... 132 V AC/ 170 ... 264 V AC)	24 V DC ± 3%	50 x 125 x 120	1	6EP1333-2BA20		1	1 unit	582
Limitation of input current harmonics according to IEC 61000-3-2										
 6EP1334-2BA20	10 A	120/230 V AC (85 ... 132 V AC/ 170 ... 264 V AC)	24 V DC ± 3%	70 x 125 x 120	1	6EP1334-2BA20		1	1 unit	582
 6EP1336-2BA10	20 A	120/230 V AC (85 ... 132 V AC/ 176 ... 264 V AC)	24 V DC ± 3%	115 x 145 x 150	1	6EP1336-2BA10		1	1 unit	582
 6EP1433-2BA20	5 A	400 ... 500 V 3 AC (340 ... 550 V 3 AC)	24 V DC ± 3%	50 x 125 x 120	1	6EP1433-2BA20		1	1 unit	582
 6EP1434-2BA20	10 A	400 ... 500 V 3 AC (340 ... 550 V 3 AC)	24 V DC ± 3%	70 x 125 x 120	1	6EP1434-2BA20		1	1 unit	582
 6EP1436-2BA10	20 A	400 ... 500 V 3 AC (340 ... 550 V 3 AC)	24 V DC ± 3%	90 x 145 x 150	1	6EP1436-2BA10		1	1 unit	582
 6EP1437-2BA20	40 A	400 ... 500 V 3 AC (360 ... 550 V 3 AC)	24 V DC ± 3%	150 x 145 x 150	1	6EP1437-2BA20		1	1 unit	582

Overview

SITOP modular are the technology power supplies for demanding solutions and provide maximum functionality for use in complex systems and machines.

The wide-range input enables connection to any power system in the world and ensures high safety even in the event of extreme voltage fluctuations. The power boost provides up to three times the rated current for brief periods, and with the extra power of 150%, loads with high power consumption can be connected without problems. And in the event of an overload there is a choice between constant current or automatic restart. The very high degree of efficiency keeps energy consumption and heating in the control cabinet low, and the compact metal housing also saves space.

To further increase 24 V availability, the SITOP modular power supply units can be combined with buffer, UPS, redundancy and selectivity modules, [see pages 15/12 and 15/13](#).

For demanding applications from 5 A to 40 A







- 48 V/10 A and 20 A enable small conductor cross-sections
- Extremely slim design – no lateral clearances required
- Extra power function for brief operational overloads
- Power boost for tripping protective devices
- Selectable short-circuit behavior
- Optional symmetrical load distribution for parallel operation
- Very high degree of efficiency up to 95%
- Operating status indicated by 3 LEDs
- Wide temperature range from -25 °C to +70 °C
- Extensive certification such as cULus, ATEX, IECEx or GL

Selection and ordering data

Rated current $I_{a \text{ rated}}$	Inputs Rated voltage $U_{e \text{ rated}}$	Outputs Rated voltage $U_{a \text{ rated}}$	Dimensions (W x H x D)	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			mm	d					

24 V power supplies






SITOP modular, single-phase and single- and two-phase

	5 A	120/230 V AC (85 ... 132 V AC/ 170 ... 264 V AC)	24 V DC ± 3%	45 x 125 x 125	1	6EP3333-8SB00-0AY0	1	1 unit	581
6EP3333-8SB00-0AY0									
	10 A	120/230 V AC (85 ... 132 V AC/ 170 ... 264 V AC)	24 V DC ± 3%	55 x 125 x 125	1	6EP3334-8SB00-0AY0	1	1 unit	581
6EP3334-8SB00-0AY0									
	5 A	120 ... 230 V AC/ 230 ... 500 V AC (85 ... 264 V AC/ 176 ... 550 V AC)	24 V DC ± 3%	70 x 125 x 125	1	6EP1333-3BA10	1	1 unit	581
6EP1333-3BA10									
	10 A	120 ... 230 V AC/ 230 ... 500 V AC (85 ... 264 V AC/ 176 ... 550 V AC)	24 V DC ± 3%	90 x 125 x 125	1	6EP1334-3BA10	1	1 unit	581
6EP1334-3BA10									
	20 A	120 ... 230 V AC (85 ... 275 V AC or 88 ... 350 V DC)	24 V DC ± 3%	90 x 125 x 125	1	6EP1336-3BA10	1	1 unit	581
6EP1336-3BA10									
	40 A	120/230 V AC (85 ... 132 V AC/ 170 ... 264 V AC)	24 V DC ± 3%	145 x 145 x 150	1	6EP3337-8SB00-0AY0	1	1 unit	581
6EP3337-8SB00-0AY0									

SITOP Power Supply

SITOP modular

Single-, two- and three-phase

Rated current I_a rated	Inputs Rated voltage U_e rated	Outputs Rated voltage U_a rated	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
24 V power supplies (continued)									
<i>SITOP modular, three-phase</i>									
 6EP3436-8SB00-0AY0	20 A	400 ... 500 V 3 AC (320 ... 575 V 3 AC) ± 3%	24 V DC	70 x 125 x 125	1	6EP3436-8SB00-0AY0	1	1 unit	581
 6EP3437-8SB00-0AY0	40 A NEW	400 ... 500 V 3 AC (320 ... 575 V 3 AC) ± 3%	24 V DC	135 x 145 x 150	1	6EP3437-8SB00-0AY0	1	1 unit	581
36 V power supplies									
<i>SITOP modular, three-phase</i>									
 6EP3446-8SB10-0AY0	13 A	400 ... 500 V 3 AC (320 ... 575 V 3 AC) ± 3%	13 V DC	70 x 125 x 125	1	6EP3446-8SB10-0AY0	1	1 unit	581
48 V power supplies									
<i>SITOP modular, three-phase</i>									
 6EP3446-8SB00-0AY0	10 A	400 ... 500 V 3 AC (320 ... 575 V 3 AC) ± 3%	48 V DC	70 x 125 x 125	1	6EP3446-8SB00-0AY0	1	1 unit	581
 6EP3447-8SB00-0AY0	20 A NEW	400 ... 500 V 3 AC (320 ... 550 V 3 AC) ± 3%	48 V DC	135 x 145 x 150	1	6EP3447-8SB00-0AY0	1	1 unit	581

Overview

The three-phase basic units of the SITOP PSU8600 power supply system accommodate within their extremely compact width an Ethernet/PROFINET interface as well as four individually parameterizable outputs (voltage and current threshold) with selective monitoring.

Without wiring overhead, further modules from the modular system can be added to expand the number of outputs (CNX8600), to increase the mains buffering time (BUF8600), or to buffer longer power failures (UPS8600 with BAT8600) according to requirements.

Comprehensive diagnostic and maintenance information is available via PROFINET. It can be evaluated directly in SIMATIC S7 and visualized in SIMATIC WinCC.

Energy management is also optimally supported by collecting the energy data for each output as well as individual activation and deactivation of the outputs via PROFlenergy.

The integrated OPC UA server also allows direct integration into automation applications with OPC UA clients made by different manufacturers, e.g. of controllers or PCs. Not only the parameter assignment but also the diagnostics of the power supply system are possible via the open interface.

- Three-phase wide-range input 400 to 500 V 3 AC for global use
- Extremely slim design with very high efficiency of up to 94%
- Versions with a configurable output with up to 20 A or 40 A and selective monitoring.
- Versions with four integrated, individually configured outputs with up to 5 A or 10 A each and selective monitoring
- Voltage and response threshold can be set separately and are infinitely adjustable for each output
- Extra power with 1.5 times the rated current (5 s/min) for brief functional overload
- Integrated Ethernet/PROFINET interface (2 ports)
- Easy configuration in the TIA Portal
- Comprehensive diagnostic information during operation
- Outputs can be deactivated and activated selectively via PROFlenergy
- Individual expansion options from the modular system (CNX8600 expansion modules, BUF8600 buffer modules, or UPS8600 with BAT8600 for buffering longer power failures) without wiring overhead

Selection and ordering data

Rated current I_a rated	Inputs Rated voltage U_e rated	Outputs Rated voltage U_a rated	Dimensions (W x H x D)	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			mm	d					

24 V power supplies



6EP3437-8MB00-2CY0

SITOP PSU8600 power supply with Ethernet/PROFINET interface

20 A	400 ... 500 V	4 ... 28 V DC	80 x 125 x 150	1	6EP3436-8SB00-2AY0		1	1 unit	58P
40 A	3 AC		125 x 125 x 150	1	6EP3437-8SB00-2AY0		1	1 unit	58P
20 A (4 x 5 A)			100 x 125 x 150	1	6EP3436-8MB00-2CY0		1	1 unit	58P
40 A (4 x 10 A)			125 x 125 x 150	1	6EP3437-8MB00-2CY0		1	1 unit	58P



6EP4436-8XB00-0CY0

Modular system, expansion of outputs (CNX8600)

4 x 5 A	Infeed from	4 ... 28 V DC	60 x 125 x 150	1	6EP4436-8XB00-0CY0		1	1 unit	58P
4 x 10 A	PSU8600		60 x 125 x 150	1	6EP4437-8XB00-0CY0		1	1 unit	58P
8 x 2.5 A NEW	basic unit via connector plug		100 x 125 x 150	1	6EP4436-8XB00-0DY0		1	1 unit	58P



6EP4297-8HB00-0XY0

Modular system, buffering (BUF8600)

100 ms/40 A	Infeed from	--	60 x 125 x 150	1	6EP4297-8HB00-0XY0		1	1 unit	58P
300 ms/40 A	PSU8600		125 x 125 x 150	1	6EP4297-8HB10-0XY0		1	1 unit	58P
4 s/40 A	basic unit via connector		60 x 125 x 150	1	6EP4293-8HB00-0XY0		1	1 unit	58P
10 s/40 A	plug		125 x 125 x 150	1	6EP4295-8HB00-0XY0		1	1 unit	58P



6EP4293-8HB00-0XY0

SITOP Power Supply

SITOP PSU8600 Power Supply System

Three-phase

Rated current I_a rated	Inputs Rated voltage U_e rated	Outputs Rated voltage U_a rated	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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24 V power supplies (continued)

Modular system, buffering of longer power failures (UPS8600 with BAT8600) **NEW**



6EP4197-8AB00-0XY0

UPS8600 UPS module 40 A

Infeed from
PSU8600
basic unit
via connector
plug

48 V DC

60 x 125 x 150 X

6EP4197-8AB00-0XY0

1 1 unit

58P



6EP4143-8JB00-0XY0

BAT8600 LiFePo4 battery module 14 min/40 A

Energy
exchange
with
UPS8600

48 V DC

322 x 187 x 110 X

6EP4143-8JB00-0XY0

1 1 unit

58P

BAT8600 Pb battery module 10 min/40 A

48 V DC

322 x 187 x 110 X

6EP4145-8GB00-0XY0


1 1 unit

58P

Overview

SITOP flexi with steplessly adjustable output voltage:
One standard unit for various special voltages.

Selection and ordering data

Rated current $I_{a \text{ rated}}$	Inputs Rated voltage $U_e \text{ rated}$	Outputs Rated voltage $U_a \text{ rated}$	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3 ... 52 V power supplies									
	Limitation of input current harmonics according to IEC 61000-3-2; adjustable output voltage 3 V to 52 V, output max. 10 A or 120 W								
max. 10 A or 120 W	120/230 V AC (85 ... 132 V AC/ 170 ... 264 V AC)	3 ... 52 V DC $\pm 1\%$	75 x 125 x 125 ▶		6EP1353-2BA00		1	1 unit	582

6EP1353-2BA00

SITOP Power Supply

Add-on Modules

Redundancy modules

Overview

A power supply unit on its own cannot guarantee fault-free 24 V supply. Power failures, extreme variations in the mains voltage, or a faulty load can bring plant operation to a standstill and cause high costs. The expansion modules offer extensive protection against malfunctions on the primary and secondary sides, right through to complete all-round protection.

The **redundancy module** disconnects two 24 V power supply units of the same type, enabling the configuration of a redundant 24 V power supply. If a power supply fails, the 24 V supply is reliably maintained. Signaling takes place via LED as well as signaling contacts whereby the switching threshold for LED and signaling contacts can be adjusted.

For the redundant configuration, power supplies up to:

- 5 A → one redundancy module with 10 A summation current
- 10 A → two redundancy modules with 10 A summation current
- 20 A → one redundancy module with 40 A summation current
- 40 A → two redundancy modules with 40 A summation current




The **buffer module** bridges brief mains failures for up to several seconds for SITOP smart or SITOP modular 24 V power supply units. Maintenance-free capacitors are used as energy stores.

Buffering times:

- 200 ms at 40 A,
- 400 ms at 20 A,
- 800 ms at 10 A

To increase the buffer time (max. 10 s), up to 8 buffer modules can be connected in parallel. To bridge longer mains failures we recommend using uninterruptible power supplies with capacitors (up into the minutes range) or with battery modules (up into the hours range).

Selection and ordering data

	Inputs	Outputs		Dimensions (W × H × D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Rated voltage $U_{e \text{ rated}}$	Rated voltage $U_{a \text{ rated}}$	Rated current $I_{a \text{ rated}}$							
SITOP PSE202U redundancy module										
 6EP1964-2BA00	24 V DC (19 ... 29 V DC)	U_e – approx. 0.5 V	10 A (Summation current)	30 x 80 x 100	1	6EP1964-2BA00		1	1 unit	588
 6EP1962-2BA00	24 V DC (19 ... 29 V DC)	U_e – approx. 0.5 V	3.5 A (NEC Class 2)	30 x 80 x 100	1	6EP1962-2BA00		1	1 unit	588
 6EP1961-3BA21	24 V DC (24 ... 28.8 V DC)	U_e – approx. 0.5 V	40 A (Summation current)	70 x 125 x 125	1	6EP1961-3BA21		1	1 unit	588

Overview





The SITOP PSE200U selectivity modules and the SITOP select diagnostics module are used in combination with 24 V power supplies for distributing the load current among several current branches and for monitoring the individual partial currents.

Faults caused by overload or short circuits in individual branches are detected and selectively switched off so that the remaining load current paths remain unaffected. Rapid fault diagnosis is achieved and downtimes are minimized.

Signaling is performed via a group alarm contact or single-channel signaling. The selectivity modules with single-channel signaling output the status of the four channels cyclically by means of a serial code which can be read in by a digital PLC input.

Function blocks for SIMATIC S7-1500/1200/300/400 and for SIMOTION CPUs are available free of charge for the evaluation, see <https://support.industry.siemens.com/cs/ww/en/view/61450284>.

Selection and ordering data

	Inputs	Outputs	Rated current I_a rated	Dimensions (W × H × D)	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Rated voltage U_e rated	Rated voltage U_a rated		mm						
SITOP PSE200U selectivity modules with summation signal										
 6EP1961-2BA.1	24 V DC (22 ... 30 V DC)	$U_e - 0.2$ V	4 x 3 A (0.5 ... 3 A)	72 x 80 x 72	1	6EP1961-2BA11		1	1 unit	586
	24 V DC (22 ... 30 V DC)	$U_e - 0.2$ V	4 x 3 A (0.5 ... 3 A NEC Class 2)	72 x 80 x 72	1	6EP1961-2BA51		1	1 unit	586
	24 V DC (22 ... 30 V DC)	$U_e - 0.2$ V	4 x 10 A (3 ... 10 A)	72 x 80 x 72	1	6EP1961-2BA21		1	1 unit	586
SITOP PSE200U selectivity modules with single-channel signaling										
 6EP1961-2BA.1	24 V DC (22 ... 30 V DC)	$U_e - 0.2$ V	4 x 3 A (0.5 ... 3 A)	72 x 80 x 72	1	6EP1961-2BA31		1	1 unit	586
	24 V DC (22 ... 30 V DC)	$U_e - 0.2$ V	4 x 3 A (0.5 ... 3 A NEC Class 2)	72 x 80 x 72	1	6EP1961-2BA61		1	1 unit	586
	24 V DC (22 ... 30 V DC)	$U_e - 0.2$ V	4 x 10 A (3 ... 10 A)	72 x 80 x 72	1	6EP1961-2BA41		1	1 unit	586
SITOP select diagnostics modules										
 6EP1961-2BA00	24 V DC (22 ... 30 V DC)	$U_e - 0.3$ V	4 x 10 A (2 ... 10 A)	72 x 90 x 90	▶	6EP1961-2BA00		1	1 unit	586
Buffer modules										
 6EP1961-3BA01	24 V DC (24 .. 28.8 V DC)	$U_e -$ approx. 1 V	40 A	70 x 125 x 125	1	6EP1961-3BA01		1	1 unit	588

SITOP Power Supply

SITOP DC-UPS Uninterruptible Power Supply

DC-UPS with capacitors

Overview

To combat prolonged power failures, the 24 V SITOP power supply units can be upgraded into a 24 V DC uninterruptible power supply.

SITOP offers two systems with different energy stores for this purpose:

- Capacitors for 24 V buffering in the minute range
- Battery modules which provide a buffer in the hours range

The DC UPS systems are used, for example, in machine tool manufacturing, in the textile industry, on all types of production lines and filling plants, and in conjunction with 24 V industrial PCs. They prevent the negative consequences which often result from mains failures.

To bridge brief power failures, 24 V SITOP power supply units can be expanded with a SITOP UPS500 uninterruptible DC power supply (DC-UPS).

In PC-based automation solutions, the highly capacitive double-layer capacitors of the SITOP UPS500 supply enough energy to safeguard operating and application data and close software applications in a defined manner.

- Buffering into the minutes range depending on the load current and DC-UPS configuration
- SITOP UPS500S basic units for standard mounting rails can be combined with up to three UPS501S expansion modules
- SITOP UPS500P in degree of protection IP65 for distributed applications
- Absolutely maintenance-free double-layer capacitors
- Short charging times
- Long service life even at high ambient temperatures
- No ventilation of the installation location required
- USB interface for PC communication
- Easy PC integration thanks to free software tool





	SITOP UPS500S/UPS501S configurations								UPS500P	
Basic unit	2.5 kW	5 kW	2.5 kW	5 kW	2.5 kW	5 kW	2.5 kW	5 kW	5 kW	10 kW
Expansion modules	--	--	1 x 5 kW	1 x 5 kW	2 x 5 kW	2 x 5 kW	3 x 5 kW	3 x 5 kW	--	--
Total energy	2.5 kW	5 kW	7.5 kW	10 kW	12.5 kW	15 kW	17.5 kW	20 kW	5 kW	10 kW
Load current	Buffer times									
0.5 A	134 s	236 s	390 s	478 s	632 s	748 s	851 s	1 007 s	284 s	647 s
0.8 A	90 s	167 s	266 s	346 s	440 s	527 s	580 s	706 s	190 s	435 s
1 A	75 s	138 s	219 s	296 s	365 s	414 s	490 s	572 s	153 s	351 s
2 A	38 s	76 s	122 s	156 s	203 s	230 s	265 s	306 s	80 s	152 s
3 A	26 s	52 s	82 s	106 s	136 s	159 s	186 s	213 s	53 s	108 s
4 A	19 s	39 s	61 s	81 s	101 s	120 s	139 s	160 s	40 s	84 s
5 A	15 s	31 s	49 s	65 s	81 s	95 s	111 s	130 s	30 s	68 s
6 A	12 s	26 s	40 s	55 s	67 s	80 s	94 s	106 s	25 s	57 s
7 A	10 s	21 s	34 s	47 s	58 s	69 s	81 s	82 s	21 s	49 s
8 A	8 s	18 s	29 s	40 s	50 s	59 s	69 s	79 s	--	--
10 A	6 s	15 s	23 s	32 s	39 s	47 s	54 s	62 s	--	--
12 A	4 s	12 s	19 s	26 s	32 s	38 s	44 s	52 s	--	--
15 A	3 s	9 s	14 s	20 s	25 s	30 s	35 s	40 s	--	--

SITOP Power Supply

SITOP DC-UPS Uninterruptible Power Supply

DC-UPS with capacitors

Selection and ordering data

Version	Inputs Rated voltage $U_{e \text{ rated}}$	Outputs Rated voltage $U_{a \text{ rated}}$	Rated current $I_{a \text{ rated}}$	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SITOP UPS500S										
Basic units 15 A										
	2.5 kW	24 V DC	24 V DC	15.2 A +	120 x 125 x 125	1	6EP1933-2EC41		1	1 unit 585
	5 kW	(22 ... 29 V DC) Infeed through SITOP 24 V DC	$\pm 3\%$	approx. 2.3 A (charging mode)	120 x 125 x 125	1	6EP1933-2EC51		1	1 unit 585
SITOP UPS501 expansion modules										
6EP1933-2EC.1, 6EP1935-5PG01	5 kW	Infeed through basic unit	--	--	70 x 125 x 125	1	6EP1935-5PG01		1	1 unit 585
SITOP UPS500P										
Basic units 7 A, degree of protection IP65										
	5 kW	24 V DC (22.5 ... 29 V DC) Infeed through SITOP 24 V DC	24 V DC $\pm 3\%$	7 A + approx. 2 A (charging mode)	400 (without plug) X x 80 x 80	X	6EP1933-2NC01		1	1 unit 585
6EP1933-2NC01	10 kW				470 (without plug) X x 80 x 80	X	6EP1933-2NC11		1	1 unit 585
6EP1933-2NC11										
Accessories										
	Connector set for SITOP UPS500P With input and output connector and assembled USB cable 2 m in length					1	6EP1975-2ES00		1	1 unit 591

Note:

For DC-UPS with battery modules, [see from page 15/16](#).

SITOP Power Supply

SITOP DC-UPS Uninterruptible Power Supply

DC-UPS with Battery Modules

SITOP UPS1600 DC-UPS modules

Overview

To bridge longer power failures, 24 V SITOP power supply units can be expanded with a SITOP UPS1600 uninterruptible DC power supply (DC-UPS) and SITOP UPS1100 battery modules.

Intelligent battery management using Energy Storage Link automatically detects the UPS1100 energy storage device, and ensures optimum temperature-controlled charging and continuous monitoring. The compact DC-UPS modules have overload capability, for example, to supply the inrush current of industrial PCs. They enable starting from the battery for stand-alone operation.




The DC-UPS communicates openly through USB or Ethernet/PROFINET and can be easily integrated into the PC or PLC world. Complete integration in TIA offers user-friendly engineering in the TIA Portal and is supported by ready-to-use function blocks for S7 user programs and WinCC faceplates for rapid visualization.

Use of the SITOP UPS manager also enables easy monitoring and configuration in PC systems, e.g. the shutting down of several PCs in accordance with the master-slave principle.

- 24 V buffering for a few hours for continuing processes
- Open communication via USB or two Ethernet/PROFINET ports
- High overload capability for mains and buffering operation

- Intelligent battery management using Energy Storage Link: Automatic detection of the battery modules and selection of the optimum, temperature-controlled charging curve, monitoring of readiness, incoming cable, -aging and charge status
- All diagnostic data and alarm messages are available via USB and Ethernet/PROFINET
- Integrated OPC UA server facilitates flexible, multi-vendor communication with other systems (versions with Ethernet/PROFINET)
- Remote monitoring via integrated web server
- SITOP UPS Manager (free software download) supports configuration and monitoring on PC-based systems, [see https://support.industry.siemens.com/cs/ww/en/view/75854607](https://support.industry.siemens.com/cs/ww/en/view/75854607)
- Complete integration in TIA:
 - User-friendly engineering in the TIA Portal, [see https://support.automation.siemens.com/WWW/view/en/75854606](https://support.automation.siemens.com/WWW/view/en/75854606)
 - SIMATIC S7 function blocks for integration in user programs (free download), [see https://support.industry.siemens.com/cs/ww/en/view/78817848](https://support.industry.siemens.com/cs/ww/en/view/78817848)
 - Ready-to-use "faceplates" for SIMATIC Panels and SIMATIC WinCC (free download), [see https://support.industry.siemens.com/cs/ww/en/view/78817848](https://support.industry.siemens.com/cs/ww/en/view/78817848)

Selection and ordering data

	Rated current $I_{a \text{ rated}}$	Inputs Rated voltage $U_{e \text{ rated}}$	Outputs Rated voltage $U_{a \text{ rated}}$	Dimensions (W x H x D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SITOP UPS1600										
	10 A	24 V DC (21 ... 29 V DC)	24 V DC	50 x 125 x 125						
	• SITOP UPS1600				3	6EP4134-3AB00-0AY0		1	1 unit	585
	- With USB interface				3	6EP4134-3AB00-1AY0		1	1 unit	585
	- With Ethernet/PROFINET				3	6EP4134-3AB00-2AY0		1	1 unit	585
6EP4134-3AB00-.AY0										
	20 A	24 V DC (21 ... 29 V DC)	24 V DC	50 x 125 x 125						
	• SITOP UPS1600				3	6EP4136-3AB00-0AY0		1	1 unit	585
	- With USB interface				3	6EP4136-3AB00-1AY0		1	1 unit	585
	- With Ethernet/PROFINET				3	6EP4136-3AB00-2AY0		1	1 unit	585
6EP4136-3AB00-.AY0										
	40 A	24 V DC (21 ... 29 V DC)	24 V DC	70 x 125 x 150						
	• SITOP UPS1600				3	6EP4137-3AB00-0AY0		1	1 unit	585
	- With USB interface				3	6EP4137-3AB00-1AY0		1	1 unit	585
	- With Ethernet/PROFINET				3	6EP4137-3AB00-2AY0		1	1 unit	585
6EP4137-3AB00-.AY0										

SITOP Power Supply

SITOP DC-UPS Uninterruptible Power Supply

DC-UPS with Battery Modules

SITOP UPS1100 battery modules

Overview

SITOP UPS1100 maintenance-free battery modules with 1.2 Ah to 12 Ah for SITOP UPS1600 DC-UPS modules. The intelligent UPS1600 battery management charges the UPS1100 with the optimal, temperature-controlled charging characteristics and monitors the status (operating data and diagnostics information) via the energy storage link of the connected battery modules.

For longer buffer times, up to six battery modules can be connected in parallel. Mounting is on a standard mounting rail or directly on a wall.









Battery modules	SITOP UPS1100 24 V/1.2 Ah	SITOP UPS1100 24 V/2.5 Ah high temperature	SITOP UPS1100 24 V/3.2 Ah	SITOP UPS1100 24 V/5 Ah LiFePo	SITOP UPS1100 24 V/7 Ah	SITOP UPS1100 24 V/12 Ah
	6EP4131-0GB00-0AY0	6EP4132-GB00-0AY0	6EP4133-0GB00-0AY0	6EP4133-0JB00-0AY0	6EP4134-0GB00-0AY0	6EP4135-0GB00-0AY0
Load current	Buffering times ¹⁾					
1 A	27 min	1 h 30 min	2 h	4 h	5 h	8 h 30 min
2 A	14 min	50 min	1 h	2 h 10 min	2 h 40 min	4 h 30 min
3 A	10 min	36 min	45 min	1 h 30 min	1 h 50 min	3 h 10 min
4 A	7 min 50 s	26 min	34 min	1 h 10 min	1 h 20 min	2 h 30 min
6 A	4 min 40 s	15 min	21 min	48 min	48 min	1 h 30 min
8 A	3 min	11 min	15 min	37 min	34 min	1 h
10 A	1 min 30 s	6 min 40 s	9 min 30 s	26 min	21 min	42 min
12 A	--	5 min 40 s	8 min 10 s	23 min	19 min	37 min
14 A	--	4 min 40 s	6 min 50 s	21 min	16 min	32 min
16 A	--	3 min 40 s	5 min 30 s	18 min	13 min	27 min
20 A	--	1 min 40 s	2 min 50 s	13 min	7 min 50 s	17 min
30 A	--	--	--	--	3 min 50 s	10 min
40 A	--	--	--	--	1 min 40 s	5 min 30 s

¹⁾ The determination of the buffer times is based on the discharge period of new and completely charged battery modules with a battery temperature of not less than +25 °C until shutdown of the DC UPS (19 V).

Buffer times for additional values can be determined using the SITOP Selection Tool, see siemens.com/sitop-selection-tool.

Selection and ordering data

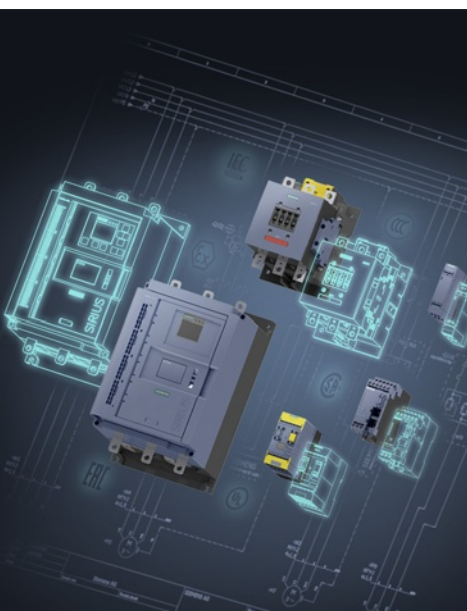
	Rated current $I_{a \text{ rated}}$	Dimensions (W × H × D) mm	SD d	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
SITOP UPS1100 battery modules								
For UPS1600 10 A								
	1.2 Ah	89 × 130 × 107	3	6EP4131-0GB00-0AY0		1	1 unit	585
6EP4131-0GB00-0AY0								
For UPS1600 10 A and 20 A								
	3.2 Ah	190 × 169 × 79	3	6EP4133-0GB00-0AY0		1	1 unit	585
	5 Ah LiFePo	189 × 186 × 113	1	6EP4133-0JB00-0AY0		1	1 unit	585
	7 Ah	186 × 186 × 110	3	6EP4134-0GB00-0AY0		1	1 unit	585
6EP4133-0JB00-0AY0								
For UPS1600 20 A and 40 A								
	12 Ah	253 × 186 × 110	3	6EP4135-0GB00-0AY0		1	1 unit	585
6EP4135-0GB00-0AY0								
SITOP UPS1100 battery modules, high-temperature								
For UPS1600 10 A and 20 A								
	2.5 Ah	265 × 115 × 76	3	6EP4132-0GB00-0AY0		1	1 unit	585
6EP4132-0GB00-0AY0								

* You can order this quantity or a multiple thereof.
Illustrations are approximate

SITOP Power Supply

Notes

Appendix



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Appendix

SITRAIN – Training for Industry



Your benefit from practical training directly from the manufacturer

SITRAIN – Training for Industry – provides you with comprehensive support in solving your tasks.

Training directly from the manufacturer enables you to make correct decisions with confidence.

Increased profits and lower costs:

- Shorter times for commissioning, maintenance and servicing
- Optimized production operations
- Reliable configuration and commissioning
- Shortened startup times, reduced downtimes, and faster troubleshooting
- Exclude expensive faulty planning right from the start
- Flexible plant adaptation to market requirements
- Compliance with quality standards in production
- Increased employee satisfaction and motivation
- Shorter familiarization times following changes in technology and staff

Contact

Visit our site on the Internet at:
www.siemens.com/sitrain

or let us advise you personally:

SITRAIN – Training for Industry
SITRAIN Customer Support Germany

Tel.: +49 911 895-7575

Fax: +49 911 895-7576

Email: info@sitrain.com

Your benefits with SITRAIN – Training for Industry

Certified top trainers

Our trainers are skilled specialists with practical experience. Course developers have close contact with product development, and pass on their knowledge to the trainers and then to you.

Practical application with practice

Practice, practice, practice! We have designed the trainings with an emphasis on practical exercises. They take up to half of the course time in our trainings. You can therefore implement your new knowledge in practice even faster.

300 courses in more than 60 countries

We offer a total of about 300 classroom-based courses. You can find us at more than 50 locations in Germany, and in 62 countries worldwide. You can find which course is offered at which location at:

www.siemens.com/sitrain

Skills development

Do you want to develop skills and fill in gaps in your knowledge? Our solution: We will provide a program tailored exactly to your personal requirements. After an individual requirements analysis, we will train you in our training centers near you or directly at your offices. You will practice on the most modern training equipment with special exercise units. The individual training courses are optimally matched to each other and help with the continuous development of knowledge and skills. After finishing a training module, the follow-up measures make success certain, as well as the refreshment and deepening of the knowledge gained.

Overview

General

With regard to delivery service, communications and environmental protection, our logistics service ensures "quality from the moment of ordering right through to delivery". By designing our infrastructure according to customer requirements and implementing electronic order processing, we have successfully optimized our logistics processes.

Our delivery processes are designed such that, as a rule, a confirmed deadline is not generally exceeded. In fact, wherever possible, we aim to deliver up to three working days ahead of schedule to optimize the overall delivery situation (e.g. in anticipation of holidays and peak order periods).

We are proud of our personal consulting service, on-time deliveries and one-day delivery within Germany.

To achieve this, we supply the preferred types marked with ► ex warehouse.

We regard the ISO 9001 certification and consistent quality checks as an integral part of our services.

Electronic order processing is fast, cost-efficient and error-free. Please contact us if you want to benefit from these advantages.

Packaging, packing units

The packaging in which our equipment is dispatched provides protection against dust and mechanical damage during transport, thus ensuring that you receive our products in a perfect state.

We select our packaging for maximum environmental compatibility and reusability (e.g. crumpled paper for protection during transport in packages up to 32 kg) and, in particular, with a view to reducing waste.

With our multi-unit packaging and reusable packaging, we offer you specific types of packaging that are both kind to the environment and tailored to your requirements.

Your advantages at a glance:

- Lower order costs
- Cost savings through uniform-type packaging: low/no disposal costs
- Reduced time and cost thanks to short unpacking times
- "Just-in-time" delivery directly to the production line helps reduce stock: cost savings through reduction of storage area
- Fast assembly thanks to supply in sets
- Standard Euro boxes – corresponding to the Euro pallet modular system – suitable for most conveyor systems
- Active contribution to environmental protection

Unless stated otherwise in the "Selection and ordering data" of this catalog, our products are supplied individually packed.

For small parts/accessories, we offer you economical packaging units as standard packs containing more than one item, e.g. 5, 10, 50 or 100 units. It is essential that whole number multiples of these quantities be ordered to ensure satisfactory quality of the products and problem-free order processing.

The products are delivered in a neutral carton. The label includes warning notices, the CE mark and product description information in English and German.

In addition to the Article No. (MLFB) and the packed number of items in the packaging the Instr. Order No. is also specified for the operating instructions. It can be obtained from your local Siemens representative (you will find a list of your local Siemens contacts at www.siemens.com/automation-contact).

The device Article No. of most devices can also be acquired through the EAN barcode to simplify ordering and storage logistics.

The related master data are available from your local Siemens representative.

Appendix

Logistics

Multi-unit and reusable packagings

The devices listed in the table on page 16/5 can be ordered in multi-unit or reusable packagings (further versions on request).

If ordering multi-unit or reusable packagings for the first time, please first consult your local Siemens representative with regard to pack type, quantity, delivery time and the precise order designation. Use of the reusable packaging is reserved solely for customers that have signed a packaging return agreement with their Siemens representative in advance.

Multi-unit and reusable packagings are not available as a pack type for all products. Some products are unsuited for this pack type and would only involve an increased risk of damage in transit.

For both pack types, the quantity of devices ordered (per Article No.) must be divisible by the pack quantity. If this is not the case, the electronic order processing system rounds up to the next integer multiple of packagings.

Multi-unit packaging



Products in a quantity sufficient to fill a multi-unit packaging: 1/2 (W96) and 1/4 (W97) ENK

As standard, multi-unit packs contain uniform-type, unpacked individual products (one device type) in an appropriately sized carton made of recyclable cardboard. The products of the SIRIUS range can be ordered in units of 1/1, 1/2, 1/4 and 1/8 standard Euro boxes (ENK).

Reusable packaging (uniform type)



Standard Euro box (ENK) made of durable molded plastic with foam inserts

Standard reusable packagings contain uniform-type, non-packed individual products (one device type) in a reusable standard Euro box (ENK) made of durable molded plastic with foam inserts for protection during transport.

The standard Euro box (ENK) also serves as transport packaging. The reusable packagings (ENK) plus foam inserts are returned by the customer (free of charge) to the supply base.

Please contact your Siemens representative to clarify the delivery details or conditions for set supply or delivery in reusable packaging (ENK) (to find Siemens representatives, see www.siemens.com/automation-contact). Suitable arrangements will then be agreed with you.

Set deliveries (reusable, different devices)

On request, we also deliver order-related packs of larger quantities of devices in a standard Euro box (ENK).

Please contact your Siemens representative to clarify the delivery details or conditions for set supply or delivery in reusable packagings. Suitable arrangements will then be agreed with you.

Packaging dimensions

Packing material	Length mm	Height mm	Width mm
ENK	596	219	396
W95	575	190	375
W96	375	190	290
W97	290	190	195
W98	290	100	195

Multi-unit and reusable packaging, quantity in units, supplied in indivisible pack quantities with delivery time on request

Devices SIRIUS	Size	Reusable	Multi-unit			
		X95 (1/1 ENK)	W95 (1/1 ENK)	W96 (1/2 ENK)	W97 (1/4 ENK)	W98 (1/8 ENK)
Contactors						
3RT201..-1A..1/2	S00	144	--	72	40	--
3RT201..-1B..1/2	S00	72	--	72	40	--
3RT201..-2A/B...	S00	120	--	60	32	--
3RT202..-1A/B..0	S0	48	--	24	12	--
3RT202..-2A/B..0	S0	40	--	18	8	--
3RT203..-....0	S2	30	--	15	6	--
3RT203..-....4	S2	30	--	15	--	--
Snap-on auxiliary switch blocks						
3RH2911-1F/GA/HA..	--	351	--	240	120	60
3RH2911-2F/G/H/N/X...	--	321	--	196	100	50
Contactor relays						
3RH21..-1A..0	S00	144	--	72	40	--
3RH21..-1B..0	S00	72	--	72	40	--
3RH21..-2A/B..0	S00	120	--	60	32	--
Motor starter protectors						
3RV2011-...1/0/5	S00	43	--	24	12	--
3RV2011-...2/0/5	S00	40	--	16	8	--
3RV2021-...1/0/5	S0	43	--	24	12	--
3RV2021-...2/0/5	S0	35	--	16	8	--
3RV2031-...0/5	S2	24	--	12	5	--
Thermally delayed overload relays						
3RU2116-..B0	S00	64	--	32	16	--
3RU2116-..C0	S00	56	--	24	12	--
3RU2126-..B0	S0	56	--	32	16	--
3RU2126-..C0	S0	48	--	24	12	--
3RU2136-..B0	S2	36	--	18	9	--
3RP25 electronic timing relays	On request					

Devices SIRIUS ACT	Multi-unit X90
3SU1 pushbuttons and indicator lights	
Complete units (3SU11)	20
Compact units (3SU12)	
• Acoustic signaling devices, pushbuttons with extended stroke, potentiometers	50
Actuating and signaling elements (3SU10)	
• Pushbuttons, illuminated pushbuttons, indicator lights	100
• Stop switches, twin pushbuttons, mushroom pushbuttons 30/40 mm, EMERGENCY STOP mushroom pushbuttons 30/40 mm, toggle switches, selector switches, key-operated switches, ID key-operated switches, coordinate switches	50
• Mushroom pushbuttons 60 mm, EMERGENCY STOP mushroom pushbuttons 60 mm	40
Holders (3SU15)	100
Modules for actuators and indicators (3SU14)	
• Contact modules	150
• LED modules	50
Accessories (3SU19)	
• Sealing plugs, label holders, EMERGENCY STOP backing plates, labeling plates for potentiometers, EMERGENCY STOP labeling plates for enclosures without cutouts and without inscription	100

When ordering products in multi-unit packagings, the Article No. of the product concerned must be supplemented with "-Z" and, in addition, the order code **X90**, or for products from the SIRIUS range, the order code **W9**.

Ordering example:
3RT2024-1AB00-Z W96
+ quantity: 24

For products packed in reusable packaging, the Article No. must be supplemented with "-Z" and the order code **X95**.

Ordering example:
3RT2024-1AB00-Z X95
+ quantity: 48

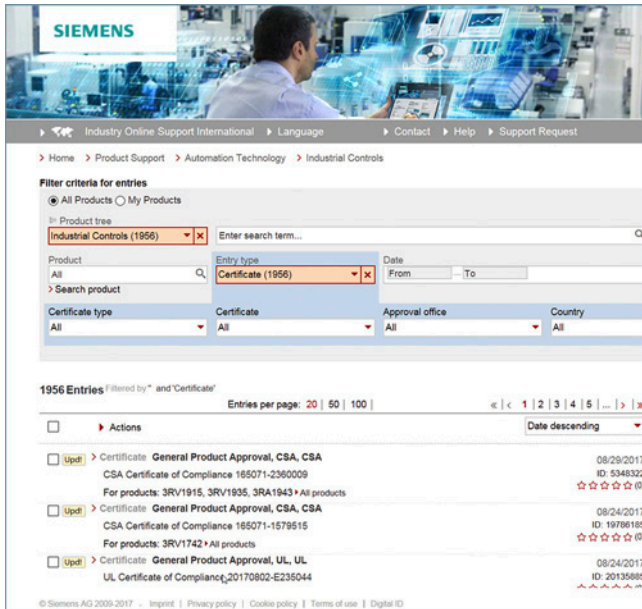
Appendix

Standards and approvals

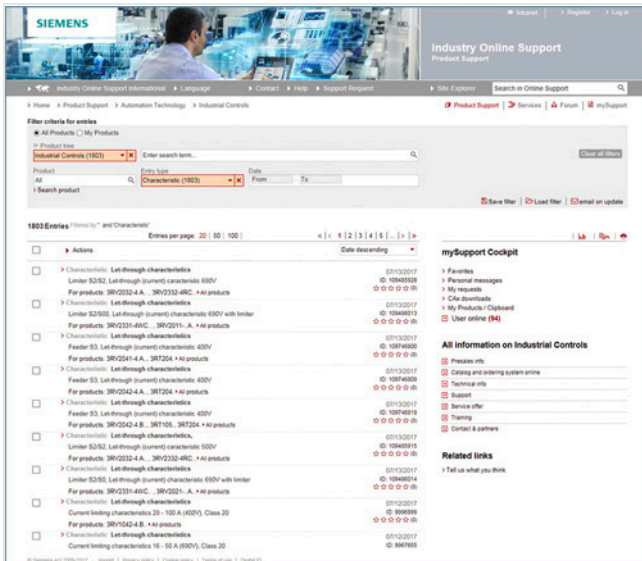
Approvals, test certificates, characteristic curves

An overview of the certificates available for Industrial Control products along with more technical documentation can be consulted daily on the Internet at:

www.siemens.com/sirius/approvals



Product support: Approvals/certificates



Product support: Characteristics

Safety characteristics

In the following standards, the so-called B10 values for calculating the safety integrity or safety integrity level (SIL) in functional safety at a high or continuous demand rate are required also for electromechanical switchgear:

- IEC 62061 "Safety of machines – Functional safety of safety-related electrical, electronic and programmable electronic control systems",
- ISO 13849-1 "Safety of machines – Safety-related components of controls – Part 1: General principles".

Failure rates of electromechanical components are required for calculating the safety integrity or safety integrity level (SIL) in functional safety:

- in the manufacturing industry at a high demand rate
- in the process industry at a low demand rate

Further requirements are laid down in IEC 61511-1 "Functional safety – Safety instrumented systems for the process industry sector – Part 1: Framework, definitions, system, hardware and software requirements".

The German versions of the above standards are:

- EN 62061
- EN ISO 13849
- EN 61511-1

The TÜV-tested Safety Evaluation Tool assists in calculating the safety function as verification for the machine documentation. It is available as a free download on the Internet at www.siemens.com/safety-evaluation-tool.

At www.siemens.com/safety-integrated you will also find examples of functions with calculations according to the current standards.

Definitions

$\lambda(t) dt$ is the probability that a unit which has not failed by a certain time t will fail in the following interval $(t; t + dt)$. Failure rates have the dimension 1/time unit, e.g. 1/h. Failure rates for components are often specified in FIT (failures in time unit): 1 FIT equals 10^{-9} /h.

From the failure rate it is possible to derive a (mathematical) distribution function of the failure probability:

$F(t) = 1 - \exp(-\lambda t)$, with λ as constant failure rate

- The mean value of this exponential distribution is also referred to as:
 - Mean Time To Failure (MTTF) in the case of irreparable components; 63.2% of components fail by the MTTF.
 - Mean Operating Time Between Failures (MTBF) in the case of repairable components.
- $MTTF = 1/\lambda$
(MTTF is a statistical mean value but no guarantee for endurance).

Electromechanical components are often irreparable components. In general, the failure rate of monitored units changes with age.

The B10 value for devices subject to wear is expressed in number of operating cycles:

- It is the number of operating cycles after which 10% of the test specimens fail in the course of an endurance test (or: The number of operating cycles after which 10% of the devices have failed).

For low demand rates (mainly in the process industry), the failure rate and not the B10 value is used to determine the failure probability.

The safety characteristics of electromechanical SIRIUS products can be found at <https://support.industry.siemens.com/cs/ww/en/view/109739348> or in the SIEMENS Industry Online Support Portal (<http://support.industry.siemens.com>) under the Entry ID: 109739348.

Standards

IEC	EN	Title
60947-1 60947-2 60947-3	60947-1 60947-2 60947-3	Low-voltage switchgear and controlgear: General rules • Circuit-breakers • Switches, disconnectors, switch-disconnectors and fuse-combination units
60947-4-1 60947-4-2 60947-4-3	60947-4-1 60947-4-2 60947-4-3	• Contactors and motor starters: Electromechanical contactors and motor starters • Contactors and motor starters: AC semiconductor motor controllers and starters, soft starters • AC semiconductor controllers and contactors for non-motor loads
60947-5-1 60947-5-2 60947-5-3 60947-5-5 60947-5-6 60947-5-7 60947-5-8 60947-5-9	60947-5-1 60947-5-2 60947-5-3 60947-5-5 60947-5-6 60947-5-7 60947-5-8 60947-5-9	• Control circuit devices and switching elements - Electromechanical control circuit devices • Control circuit devices and switching elements - Proximity switches • Requirements for proximity devices with defined behaviour under fault conditions • Electrical emergency stop device with mechanical latching function • Control devices and switching elements - DC interface for proximity sensors and switching amplifier (NAMUR) • Requirements for proximity devices with analogue output • Three-position enabling switches • Flow rate switches
60947-6-1 60947-6-2	60947-6-1 60947-6-2	• Multiple function equipment - Transfer switching equipment • Multiple function equipment - Control and protective switching devices (or equipment) (CPS)
60947-7-1 60947-7-2 60947-7-3 60947-7-4	60947-7-1 60947-7-2 60947-7-3 60947-7-4	• Ancillary equipment - Terminal blocks for copper conductors • Ancillary equipment - Protective conductor terminal blocks for copper conductors • Ancillary equipment - Safety requirements for fuse terminal blocks • Ancillary equipment - PCB terminal blocks for copper conductors
60947-8	60947-8	• Control units for built-in thermal protection (PTC) for rotating electrical machines
62026-2	62026-2	• Actuator sensor interface (AS-i)
60269-1 60269-4	60269-1 60269-4	Low-voltage fuses: General requirements Low-voltage fuses: Supplementary requirements for fuse-links for the protection of semiconductor devices
60050-441	--	International Electrotechnical Vocabulary. Switchgear, controlgear and fuses
61439-1 61439-2 61439-3	61439-1 61439-2 61439-3	Low-voltage switchgear and controlgear assemblies: General rules Low-voltage switchgear and controlgear assemblies: Power switchgear and controlgear assemblies Low-voltage switchgear and controlgear assemblies: Distribution boards intended to be operated by ordinary persons (DBO)
61439-4	61439-4	Low-voltage switchgear and controlgear assemblies: Particular requirements for assemblies for construction sites (ACS)
61439-5 61439-6 --	61439-5 61439-6 50274	Low-voltage switchgear and controlgear assemblies: Assemblies for power distribution in public networks Low-voltage switchgear and controlgear assemblies - Part 6: Busbar trunking systems (busways) Low-voltage switchgear and controlgear assemblies - Protection against electric shock - Protection against unintentional direct contact with hazardous live parts
61140	61140	Protection against electric shock - Common aspects for installation and equipment
60664-1	60664-1	Insulation coordination for electrical equipment in low-voltage systems; Principles, requirements and tests
60204-1 -- 60079-14 60079-2	60204-1 50178 60079-14 60079-2	Electrical equipment of machines: General requirements Electronic equipment for use in power installations Electrical apparatus for explosive gas atmospheres Electrical installations in hazardous areas (other than mines) Electrical apparatus for explosive gas atmospheres - Part 2: Pressurized Enclosures M "p"
61810-1 61812-1	61810-1 61812-1	Electromechanical elementary relays; General requirements Time relays for industrial and residential use - Part 1: Requirements and tests
60999-1 60999-2	60999-1 60999-2	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors from 0.2 mm ² up to 35 mm ² (included) Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units: Particular requirements for clamping units for conductors above 35 mm ² up to 300 mm ² (included)
IEC/TR 61000-4-1	61000-4-1	Electromagnetic compatibility (EMC) - Part 4-1: Testing and measuring techniques - Overview of IEC 61000-4 series
61000-6-2 61000-6-3	61000-6-2 61000-6-3	Electromagnetic compatibility (EMC); Generic standards - Immunity for industrial environments Electromagnetic compatibility (EMC); Generic standards - Emission standard for residential, commercial and light-industrial environments
61000-6-4	61000-6-4	Electromagnetic compatibility (EMC); Generic standards - Emission standard for industrial environments
61869-1	61869-1	Instrument transformers: General requirements
61869-2	61869-2	Instrument transformers: Additional requirements for current transformers

Appendix

Standards and approvals

UL	CSA C22.2	ASME	JIS	Title
508	--	--	--	Industrial control equipment
60947-1	No. 60947-1	--	--	Low-voltage switchgear and controlgear – Part 1: General rules
60947-4-1	No. 60947-4-1	--	--	Low-voltage switchgear and controlgear – Part 4-1: Contactor and motor starters – Electromechanical contactors and motor starters
60947-4-2	No. 60947-4-2	--	--	Low-voltage switchgear and controlgear - Part 4-2: Contactors and motor-starters – AC semiconductor motor controllers and starters
60947-5-1	No. 60947-5-1	--	--	Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices
60947-5-5	--	--	--	Low-voltage switchgear and controlgear – Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function
489	No. 5	--	--	Molded case circuit breakers, molded case switches, and circuit breaker enclosures
1012	--	--	--	Power units other than CLASS 2
1059	--	--	--	Terminal blocks
486A-486B	--	--	--	Wire connectors
486E	--	--	--	Equipment wiring terminals for use with aluminum and/or copper conductors
50	--	--	--	Enclosures for electrical equipment – Non-environmental considerations
50E	--	--	--	Enclosures for electrical equipment – Environmental considerations
--	No. 14	--	--	Industrial control equipment
--	No. 107.1	--	--	General use power supplies
--	--	A17.5 / CSA B 44.1	--	Elevator and escalator electrical equipment
--	--	--	C 8201-4-1	Low-voltage switchgear and controlgear; Contactors and motor-starters

Approval requirements valid in different countries

Siemens low-voltage switchgear and controlgear are designed, manufactured and tested according to the relevant German standards (DIN and VDE), IEC publications and European standards (EN) as well as CSA and UL standards. The standards assigned to the single devices are stated in the relevant parts of this catalog.

As far as is economically viable, the requirements of the various standards valid in other countries are also taken into account in the design of the equipment.

In some countries an approval is required for certain low-voltage switchgear and controlgear components (see table below).

























Depending on the market requirements, these components have been submitted for approval to the authorized testing institutes.

In some cases, CSA for Canada and UL for the USA only approve special switchgear versions. Such special versions are listed separately from the standard versions in the individual parts of this catalog.

For this equipment, partial limitations of the maximum permissible voltages, currents and ratings can be imposed, or special approval and, in some cases, special identification is required.

For use on board ship, the specifications of the marine classification societies must be observed (see table below). In some cases, they require type tests of the components to be approved.

Testing bodies, approval identification and approval requirements

Country	Canada	USA	China	Russia / Belarus / Kazakhstan /...
Government-appointed or private, officially recognized testing bodies	CSA UL (USA)	UL	CQC	Official national regulation / TR
Mark of conformity	 c    c     c    	  c     c    		
Approval requirement	+	+	+	+
Remarks	UL and CSA are authorized to grant approval certificates in accordance with Canadian and North American regulations. Please note: These approvals are not recognized in many cases and must be covered by additional approvals issued by the national testing agency.		CCC	Eurasian customs union

For more information about the approval marks, see page 16/11.

Marine classification societies

Country	Germany Norway	United Kingdom	France	CIS	Italy	Poland	USA
Name	DNV-GL	Lloyds Register of Shipping	Bureau Veritas	Russian Maritime Register of Shipping	Registro Italiano Navale	Polski Rejestr Statków	American Bureau of Shipping
Codes	DNV-GL	LR	BV	RS	RINA	PRS	ABS

CE marking

Manufacturers of products which fall within the subject area to which EU directives apply must identify their products, operating instructions or packaging with a CE mark of conformity.

By attaching the CE marking, the manufacturer confirms that the product conforms to the relevant basic requirements of all directives applicable to the product. The mark of conformity is a mandatory requirement for putting products into circulation throughout the EC.

All the products in this catalog are in conformance with the relevant specific EU directives and bear the CE mark of conformity **CE**.

- Low-voltage directive
- EMC directive
- Machinery directive
- ATEX directive
- RED directive
- RoHS directive

Accident prevention

Test certificates and approvals from IFA (institute for occupational safety and health of the German social accident insurance), SUVA (Swiss institute for accident prevention), BG ETEM (German trade association for energy, textiles, electrical goods and media products) TÜV or VDE are available for some devices in safety control systems. For details, [see the respective product descriptions](#).

Appendix

Standards and approvals

Ex protection certificates for SIRIUS controls

Controls that are installed in a potentially explosive atmosphere or motor protection devices that protect a motor installed in a potentially explosive atmosphere against overloading must comply with certain special requirements. These requirements are laid down in the following standards:

- EN 50495
- EN 60079-0
- EN 60079-1
- EN 60079-7
- EN 60079-14
- EN 60079-17
- EN 60079-31
- EN 60947-1
- EN 60947-4-1
- EN 60947-4-2
- EN 60947-5-1
- EN 60947-8
- EN ISO/IEC 80079-34

Certification

Controls and motor protection devices that are brought into circulation within the member states of the EU in accordance with EU directive 2014/34/EU must have been constructed and tested according to the above-mentioned standards and must have a declaration of conformity from the manufacturer based on a prototype test certificate.

The quality management (QM) system of the manufacturer is subject to certain requirements and a "QM certificate" must be obtained for the manufacturer from a recognized authority.

Certification of the QM system

A certificate of approval for quality assurance production has been issued by DEKRA EXAM GmbH¹⁾ with the number BVS 11 ATEX ZQS/E111-01 of DEKRA EXAM GmbH¹⁾ according to Directive 2014/34/EU.

This certificate is valid for equipment groups I and II and categories M2 and 2: Safety and control devices for electrical equipment.

Certificates

For the 3RV, 3RU, 3RB, 3UF, 3RN and 3RW motor protection devices, the corresponding declarations of conformity and prototype test certificates for Category 2D, 2G, and in some cases M2, are available and can be supplied on request.

Declarations of conformity and prototype test certificates are available at <http://support.industry.siemens.com> for viewing and downloading.

You can find more information about industrial controls for applications in explosion-protected areas at www.siemens.com/sirius/atex.

¹⁾ DEKRA EXAM GmbH
The certification authority of "DEKRA EXAM GmbH" with authority number 0158 according to Article 13 of Directive 2014/34/EU of the European Parliament and Council, certifies that Siemens Amberg, Cham, Suzhou and Trutnov maintains a quality assurance system for production that satisfies Appendices IV and VII of this Directive.

The screenshot shows the Siemens Industry Online Support International website. The search criteria are set to 'Certificate (1956)'. The results show 1956 entries, with the first three entries displayed:

Actions	Entry type	Date	Country
<input type="checkbox"/>	Certificate	08/29/2017	All
<input type="checkbox"/>	Certificate	09/24/2017	All
<input type="checkbox"/>	Certificate	08/24/2017	All

Selection box

The screenshot shows a detailed view of a certificate. The certificate is for 'Explosive Atmospheres/ATEX-EC-Type-MLFB Examination No. BVS 06 ATEX F 001'. The certificate number is 2698. The certificate type is 'For use in hazardous locations'. The certificate is issued by DEKRA EXAM, DMT. The certificate is valid for use in hazardous locations.

Description of certificate with view and download option

Identifying markings

All equipment must be marked according to the ATEX guideline. The ATEX identification code contains the equipment group, the approved environment, the number of the certification authority and other technical data that was determined from the type test.

Certificate of the AS-International Association for AS-Interface products

AS-Interface products are tested and certified by the AS-International Association. The products have been tested in an accredited test laboratory according to testing guidelines.

Special standards for the USA and Canada

In the USA and Canada, for machine tools and processing machines in particular, supply lines are laid using rubber insulated cable enclosed in heavy-duty steel piping similar to that used for gas or water pipe systems.







The tubing system must be completely watertight and electrically conductive (especially sleeving and elbows). Since the tubing system can also be grounded, the cable entries of enclosed units equipped with heavy-gauge or metric threads must be fitted with metal adapters between these threads and the tube thread. The necessary adapters are specified for the switchgear as accessories; they should be ordered separately unless otherwise specified.





Low-voltage switchgear and controlgear for auxiliary circuits (e.g. contactor relays, commanding and signaling devices and auxiliary switches/auxiliary contacts in general) are generally only approved by CSA and UL for "**Heavy Duty**" or "**Standard Duty**" and are identified either with these specifications in addition to the maximum permissible voltage or by using an abbreviation.

The abbreviations are harmonized with IEC 60947-5-1 Appendix 1 Table A.1 and correspond to the stated utilization categories.

For various switching devices detailed in the catalog, a note has been included to the effect that, above a certain voltage, the auxiliary switches/auxiliary contacts can only be used if they have the same polarity. This means that the input terminals can only be connected to the same pole of the actuating voltage, e.g. "600 V AC above 300 V AC same polarity".

Differentiating features of UL approvals (for USA and Canada)

Recognized Component	Listed Product
Devices are identified on the rating plate using the "UL recognition mark": USA:   Canada:  	Devices are identified using the "UL listing mark" on the rating plate e.g. USA:  LISTED XXX Canada:  LISTED XXX IND. CONT. EQ. IND. CONT. EQ. (XXX stands for: UL Code Classification Number)
Devices are approved as modules for "factory wiring", i.e.: As devices for installation in control systems, which are selected, installed, wired and tested entirely by trained personnel in factories, workshops or elsewhere, according to the operating conditions .	Devices are approved for "field wiring", i.e.: <ul style="list-style-type: none"> As devices for installation in control systems, which are completely wired by trained personnel in factories, workshops or elsewhere. As single devices for sale in retail outlets in the USA/Canada.

If devices are  or  approved as "listed products", they are also approved as  or  "recognized components".

For more information about UL and CSA, [see page 16/8](#).

Special standards for Russia, Australia and China

EAC approval for Russia/Belarus/Kazakhstan/...



EAC mark

Since February 15, 2013, Russia, Kazakhstan, Belarus and other countries have been united in the Eurasian EAC customs union. An EAC approval as replacement for the GOST mark is required for all products that are to be sold in Russia.

All devices delivered to the customs union must have these customs certifications.

RCM approval for Australia



RCM mark

The RCM mark is required for marketing Siemens electronic devices in Australia. Electronic devices must provide proof of EMC clearance in Australia, similar to the CE mark of conformity laid down by the EMC directive applicable in the EC and bear the "RCM" mark. These requirements have been in force since October 1, 1999.

Appendix

Quality management

Quality management

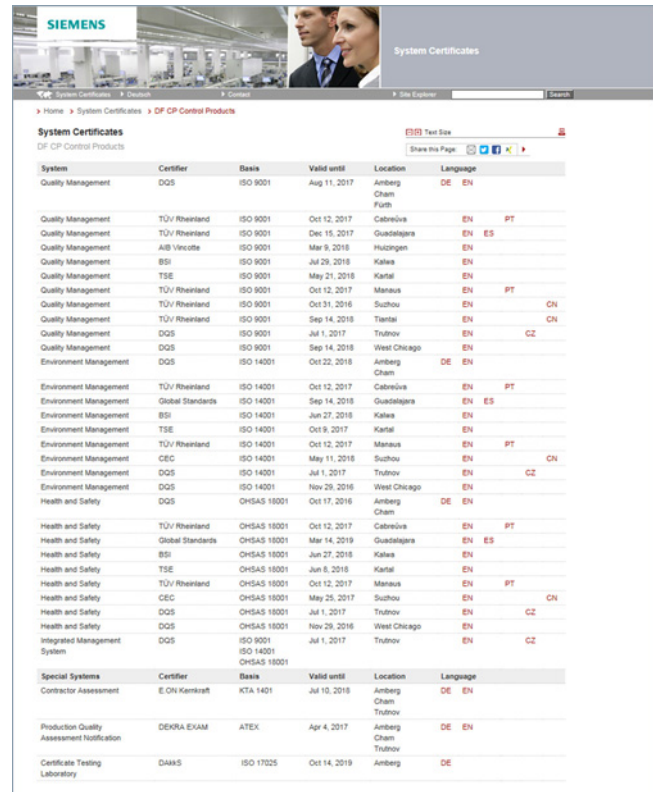
The quality management system of our "Control Products" Business Unit of the "Digital Factory" Division complies with the international standard EN ISO 9001.

The products and systems described in this catalog are developed, manufactured and sold under application of a certified quality management system according to ISO 9001.

Certificates

For information about available certifications of the quality management system for Industrial Controls products, please visit website address:

www.siemens.com/system-certificates/cp

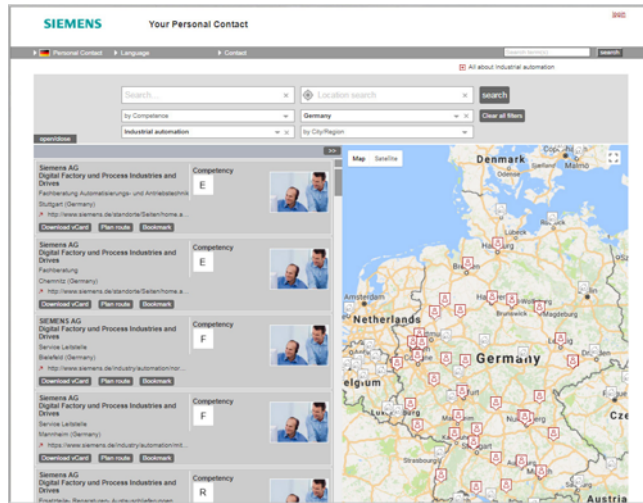


The screenshot displays the 'System Certificates' page for 'CP Control Products'. It features a navigation bar with 'Home', 'System Certificates', and 'CP Control Products'. Below the navigation is a search bar and a 'Text Size' selector. The main content is a table listing various certifications, including Quality Management, Environment Management, Health and Safety, and Special Systems. Each row includes details such as the System, Certifier, Basis, Valid until date, Location, and Language options.

System	Certifier	Basis	Valid until	Location	Language
Quality Management	DQS	ISO 9001	Aug 11, 2017	Amberg Cham Furtth	DE EN
Quality Management	TUV Rheinland	ISO 9001	Oct 12, 2017	Cabreúva	EN PT
Quality Management	TUV Rheinland	ISO 9001	Dec 15, 2017	Guadalajara	EN ES
Quality Management	AIB Vincotte	ISO 9001	Mar 9, 2018	Hulzingen	EN
Quality Management	BSI	ISO 9001	Jul 29, 2018	Kalesa	EN
Quality Management	TSE	ISO 9001	May 21, 2018	Karlsruhe	EN
Quality Management	TUV Rheinland	ISO 9001	Oct 12, 2017	Manaus	EN PT
Quality Management	TUV Rheinland	ISO 9001	Oct 31, 2016	Suzhou	EN CN
Quality Management	TUV Rheinland	ISO 9001	Sep 14, 2018	Taipei	EN CN
Quality Management	DQS	ISO 9001	Jul 1, 2017	Trnava	EN CZ
Quality Management	DQS	ISO 9001	Sep 14, 2018	West Chicago	EN
Environment Management	DQS	ISO 14001	Oct 22, 2018	Amberg Cham	DE EN
Environment Management	TUV Rheinland	ISO 14001	Oct 12, 2017	Cabreúva	EN PT
Environment Management	Global Standards	ISO 14001	Sep 14, 2018	Guadalajara	EN ES
Environment Management	BSI	ISO 14001	Jun 27, 2018	Kalesa	EN
Environment Management	TSE	ISO 14001	Oct 9, 2017	Karlsruhe	EN
Environment Management	TUV Rheinland	ISO 14001	Oct 12, 2017	Manaus	EN PT
Environment Management	CEC	ISO 14001	May 11, 2018	Suzhou	EN CN
Environment Management	DQS	ISO 14001	Jul 1, 2017	Trnava	EN CZ
Environment Management	DQS	ISO 14001	Nov 29, 2016	West Chicago	EN
Health and Safety	DQS	OHSAS 18001	Oct 17, 2016	Amberg Cham	DE EN
Health and Safety	TUV Rheinland	OHSAS 18001	Oct 12, 2017	Cabreúva	EN PT
Health and Safety	Global Standards	OHSAS 18001	Mar 14, 2019	Guadalajara	EN ES
Health and Safety	BSI	OHSAS 18001	Jun 27, 2018	Kalesa	EN
Health and Safety	TSE	OHSAS 18001	Jun 8, 2018	Karlsruhe	EN
Health and Safety	TUV Rheinland	OHSAS 18001	Oct 12, 2017	Manaus	EN PT
Health and Safety	CEC	OHSAS 18001	May 25, 2017	Suzhou	EN CN
Health and Safety	DQS	OHSAS 18001	Jul 1, 2017	Trnava	EN CZ
Health and Safety	DQS	OHSAS 18001	Nov 29, 2016	West Chicago	EN
Integrated Management System	DQS	ISO 9001 ISO 14001 OHSAS 18001	Jul 1, 2017	Trnava	EN CZ
Special Systems		Basis	Valid until	Location	Language
Contractor Assessment	E.ON Kemkraft	KTA 1401	Jul 10, 2018	Amberg Cham Trnava	DE EN
Production Quality Assessment Notification	DEXRA EXAM	ATEX	Apr 4, 2017	Amberg Cham Trnava	DE EN
Certificate Testing Laboratory	DAKS	ISO 17025	Oct 14, 2019	Amberg	DE

Overview

Partner at Siemens



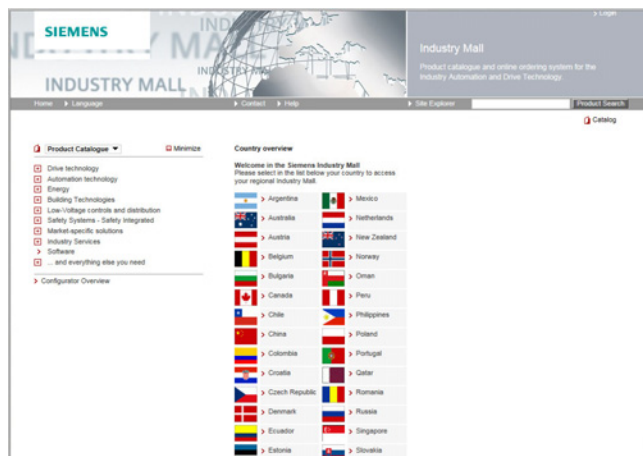
At your service locally, around the globe for consulting, sales, training, service, support, spare parts on the entire portfolio of Digital Factory and Process Industries and Drives.

Your partner can be found in our Personal Contacts Database at: www.siemens.com/automation-contact

You start by selecting

- the required competence,
 - products and branches,
 - a country and a city
- or by a
- location search or free text search.

Easy product selection and ordering in the Industry Mall and with the Interactive Catalog CA 01



Industry Mall

The Industry Mall is a Siemens Internet ordering platform. Here you have a clear and informative online access to a huge range of products.

Powerful search functions make it easy to select the required products. Configurators enable you to configure complex product and system components quickly and easily. CAX data types are also provided here.

Data transfer allows the whole procedure, from selection through ordering to tracking and tracing, to be carried out online. Availability checks, customer-specific discounts and bid creation are also possible.

www.siemens.com/industrymall



Interactive Catalog CA 01 - Products for Automation and Drives

The Interactive Catalog CA 01 combined with the Siemens Industry Mall unites the benefits of offline and online media in one application – the performance of an offline catalog with the availability of manifold and up-to-date information on the Internet.

Select products and assemble orders with the CA 01, determine the availability of the selected products and track & trace via the Industry Mall.

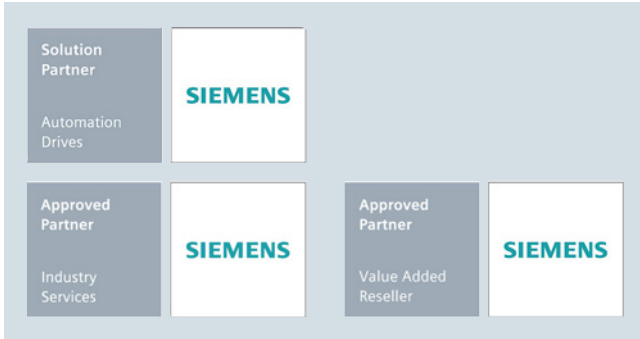
More information and download:
www.siemens.com/automation/ca01

Appendix

Siemens Partner Program

Overview

Siemens Solution and Approved Partner – Partners for your success



Highest competence in automation and drive technology

Siemens works closely together with selected partner companies around the world in order to ensure that customer requirements for all aspects of automation and drives are fulfilled as best as possible – wherever you are, and whatever the time.

We place great value on our customers acting in accordance with the same ideals which characterize Siemens as a whole: Competence, professionalism and quality. That is why continuous development through qualification and certification measures in line with global standards is a central aspect of our Partner Program. This means that with our partners, you benefit from the same high quality standards all over the world. The partner emblem is the symbol for tried and tested quality.

The partner network for industry

The Siemens Partner Program offers you expertise and experience close at hand.

Within our global network, we distinguish between Solution Partners and Approved Partners. We currently work with more than 1,500 Solution Partners around the world. Our network of over 150 Approved Partners continues to grow. In more than 80 countries worldwide

Siemens Solution Partner – Automation Drives



At present we are working with more than 1,500 **Solution Partners** worldwide. They are characterized by extensive application, system and sector knowledge, as well as proven project experience, and are able to implement future-proof tailored solutions of the highest quality, based on our product and system portfolio.

Siemens Approved Partner – Value Added Reseller



With their detailed technical knowledge, **Siemens Approved Partners – Value Added Resellers** offer a combination of products and services that range from specialist technologies and customized modifications to the provision of high-quality system and product packages. They also provide qualified technical support and assistance.

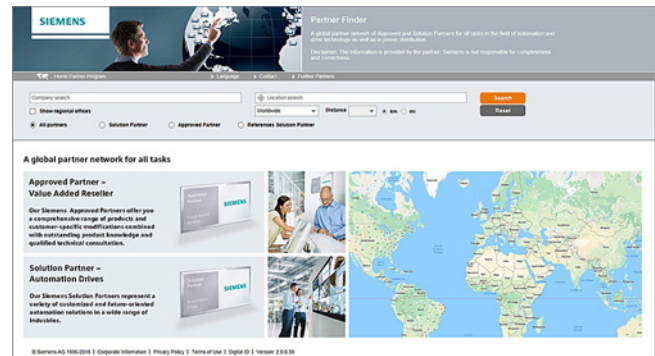
Siemens Approved Partner – Industry Services



Siemens Approved Partner – Industry Services put their unique expertise entirely at the service of enhancing your productivity and can be instrumental in ensuring the availability of your plants.

Partner Finder

The ideal partner for your task is just a mouse click away!



In the Siemens global Solution Partner program, customers are certain to find the optimum partner for their specific requirements – with no great effort. The Partner Finder is basically a comprehensive database that showcases the profiles of all our partners.

Easy selection:

Set filters in the search screen form according to the criteria that are relevant to you. You can also directly enter the name of an existing partner.

Skills at a glance:

Gain a quick insight into the specific competencies of any particular partner with the reference reports.

Direct contact option:

Use our electronic query form:

www.siemens.com/partnerfinder

Additional information of the Siemens Partners for industry is available online at:

www.siemens.com/partnerprogram

Electrical wholesale partners

Electrical wholesalers – our partners – your partners

You can purchase the products of Building Technologies, Drive Technologies and Industry Automation from your qualified electrical wholesale partners. Just go and ask them!

You can find up-to-date information on wholesale partners in your vicinity on our Internet site at

<http://www.siemens.com/electrical-wholesale>

--> Your local wholesale partners

Technical Support

Competent advice for technical questions with a broad spectrum of carefully tailored services for all our products and systems can be found on the Internet at:

<http://www.siemens.com/automation/support-request>

Your sales and marketing questions for Siemens!

Our sales managers for electrical wholesale will be pleased to help you:

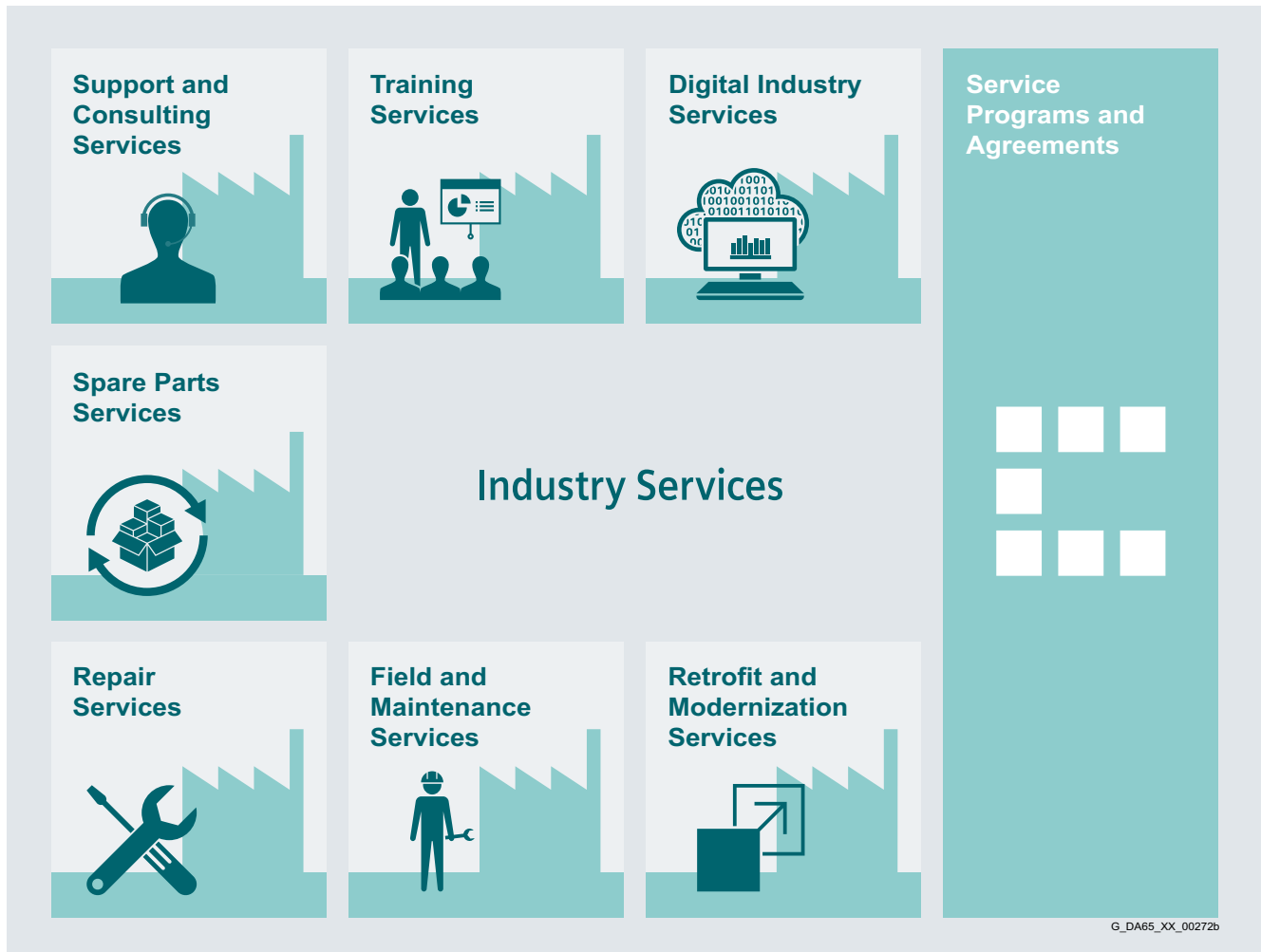
Subsidiary	Name
AREA 7 North	Dirk Seemann Tel.: +49 (172)4009399 Email: dirk.seemann@siemens.com
AREA 7 East	Rene Wellnitz Tel.: +49 (173) 6046676 Email: rene.wellnitz@siemens.com
AREA 7 West	Torsten Reil Tel.: +49 (173)7075981 Email: torsten.reil@siemens.com
AREA 7 South	Jens-Uwe Hohler Tel.: +49 (173) 9921965 Email: jens-uwe.hohler@siemens.com

Appendix

External partners

Our partner companies – your partners

- **AXELEN T GmbH**
 Tränkestr. 11
 D-70597 Stuttgart
 Tel.: +49 (711) 252 509-0
 Fax.: +49 (711) 252 509-49
 Email: sales@axelent.de
 Internet: www.axelent.de
- **Brühl Safety GmbH**
 Waldstr. 63 b
 D-57250 Netphen
 Tel.: +49 (2737) 5934-0
 Fax: +49 (2737) 5919-46
 Email: info@bruehl-safety.com
 Internet: www.bruehl-safety.com
- **Conta-Clip Verbindungstechnik GmbH**
 Otto-Hahn-Str. 7
 D-33161 Hövelhof
 Tel.: +49 (5257) 9833-0
 Fax: +49 (5257) 9833-33
 Email: info@conta-clip.de
 Internet: www.conta-clip.de
- **EPCOS AG**
 A TDK Group Company
 St.-Martin-Str. 53
 D-81669 München
 Tel.: +49 (89) 54 020-0
 Fax.: +49 (89) 54 020-2913
 Email: sales.germany@eu.tdk.com
 Internet: www.epcos.de
- **EPHY-Mess Gesellschaft für Elektro-Physikalische Messgeräte mbH**
 Berta-Cramer-Ring 1
 D-65205 Wiesbaden-Delkenheim
 Tel.: +49 (6122) 9228-0
 Fax: +49 (6122) 9228-99
 Email: info@ephy-mess.de
 Internet: www.ephy-mess.de
- **FESTO AG & Co. KG**
 Rüterstr. 82
 D-73734 Esslingen
 Tel.: +49 (711) 347-0
 Fax: +49 (711) 347-2144
 Email: info@festo.de
 Internet: www.festo.de
- **GMC-I Messtechnik GmbH**
 Südwestpark 15
 D-90449 Nürnberg
 Tel.: +49 (911) 8602-0
 Fax: +49 (911) 8602-669
 Email: info@gossenmetrawatt.com
 Internet: www.gossenmetrawatt.com
- **Harting Customised Solutions GmbH & Co. KG**
 Simeonscarré 1
 D-32427 Minden
 Tel.: +49 (571) 8896-467
 Fax: +49 (571) 8896-282
 Email: solution-partner@harting.com
 Internet: www.Harting.com/solution-partner
- **Jacob GmbH**
 Elektrotechnische Fabrik
 Gottlieb-Daimler-Strasse 11
 D-71394 Kernen
 Tel.: +49 (7151) 40 11-0
 Fax: +49 (7151) 40 11-49
 Email: jacob@jacob-gmbh.de
- **KnorrTec**
 Kapellenbergstr. 34
 D-93176 Beratzhausen
 Tel.: +49 (9493) 951 96 90
 Fax: +49 (9493) 951 96 79
 Email: solution-partner@knorrtec.de
 Internet: www.knorrtec.de
- **Murrplastik Systemtechnik GmbH**
 Dieselstr. 10
 D-71570 Oppenweiler
 Tel.: +49 (7191) 482-0
 Fax: +49 (7191) 482-92280
 Email: info@murrplastik.de
 Internet: www.murrplastik.de
- **Wieland Electric GmbH**
 Brennerstr. 10-14
 D-96052 Bamberg
 Tel.: +49 (951) 9324-0
 Fax.: +49 (951) 9324-198
 Email: info@wieland-electric.com

Overview

Keep your business running and shaping your digital future – with Industry Services

Optimizing the productivity of your equipment and operations can be a challenge, especially with constantly changing market conditions. Working with our service experts makes it easier. We understand your industry's unique processes and provide the services needed so that you can better achieve your business goals.

You can count on us to maximize your uptime and minimize your downtime, increasing your operations' productivity and reliability. When your operations have to be changed quickly to meet a new demand or business opportunity, our services give you the flexibility to adapt. Of course, we take care that your production is protected against cyber threats. We assist in keeping your operations as energy and resource efficient as possible and reducing your total cost of ownership. As a trendsetter, we ensure that you can capitalize on the opportunities of digitalization and by applying data analytics to enhance decision making: You can be sure that your plant reaches its full potential and retains this over the longer lifespan.

You can rely on our highly dedicated team of engineers, technicians and specialists to deliver the services you need – safely, professionally and in compliance with all regulations. We are there for you, where you need us, when you need us.

www.siemens.com/industriyservices

Appendix

Industry Services

Industry Services – Portfolio overview

Overview (continued)

Digital Industry Services



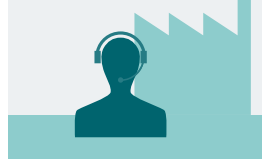
Digital Industry Services make your industrial processes transparent to gain improvements in productivity, asset availability, and energy efficiency.

Production data is generated, filtered and translated with intelligent analytics to enhance decision-making.

This is done whilst taking data security into consideration and with continuous protection against cyber-attack threats.

<https://www.siemens.com/global/en/home/products/services/industry/digital-services.html>

Support and Consulting Services



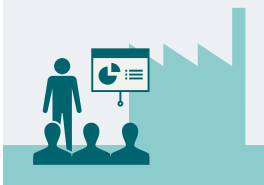
Industry Online Support site for comprehensive information, application examples, FAQs and support requests.

Technical and Engineering Support for advice and answers for all inquiries about functionality, handling, and fault clearance. The Service Card as prepaid support for value added services such as Priority Call Back or Extended Support offers the clear advantage of quick and easy purchasing.

Information & Consulting Services, e.g. SIMATIC System Audit; clarity about the state and service capability of your automation system or Lifecycle Information Services; transparency on the lifecycle of the products in your plants.

<https://support.industry.siemens.com/cs/ww/en/sc/2235>

Training Services



From the basics and advanced to specialist skills, SITRAIN courses provide expertise right from the manufacturer – and encompass the entire spectrum of Siemens products and systems for the industry.

Worldwide, SITRAIN courses are available wherever you need a training course in more than 170 locations in over 60 countries.

<https://support.industry.siemens.com/cs/ww/en/sc/2226>

Spare Parts Services



Spare Parts Services are available worldwide for smooth and fast supply of spare parts – and thus optimal plant availability. Genuine spare parts are available for up to ten years. Logistic experts take care of procurement, transport, custom clearance, storage and order management. Reliable logistics processes ensure that components reach their destination as needed.

Since not all spare parts can be kept in stock at all times, Siemens offers a preventive measure for spare parts provisioning on the customer's premises with optimized **Spare Parts Packages** for individual products, custom-assembled drive components and entire integrated drive trains – including risk consulting.

Asset Optimization Services help you design a strategy for parts supply where your investment and carrying costs are reduced and the risk of obsolescence is avoided.

<https://support.industry.siemens.com/cs/ww/en/sc/2110>

Overview (continued)

Repair Services



Repair Services are offered on-site and in regional repair centers for fast restoration of faulty devices' functionality.

Also available are extended repair services, which include additional diagnostic and repair measures, as well as emergency services.

<https://support.industry.siemens.com/cs/ww/en/sc/2154>

Retrofit and Modernization Services

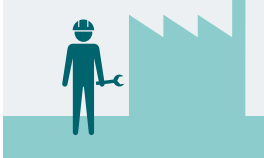


Provide a cost-effective solution for the expansion of entire plants, optimization of systems or upgrading existing products to the latest technology and software, e.g. migration services for automation systems.

Service experts support projects from planning through commissioning and, if desired over the entire extended lifespan, e.g. Retrofit for Integrated Drive Systems for an extended lifetime of your machines and plants.

<https://support.industry.siemens.com/cs/ww/en/sc/2286>

Field and Maintenance Services



Siemens specialists are available globally to provide expert field and maintenance services, including commissioning, functional testing, preventive maintenance and fault clearance. All services can be included in customized service agreements with defined reaction times or fixed maintenance intervals.

<https://support.industry.siemens.com/cs/ww/en/sc/2265>

Service Programs and Agreements



A technical Service Program or Agreement enables you to easily bundle a wide range of services into a single annual or multi-year agreement.

You pick the services you need to match your unique requirements or fill gaps in your organization's maintenance capabilities.

Programs and agreements can be customized as KPI-based and/or performance-based contracts.

<https://support.industry.siemens.com/cs/ww/en/sc/2275>

Appendix Industry Services

Online Support

Overview

Online Support – fast, intuitive, whenever you want, wherever you need

Web

support.industry.siemens.com

App

Scan the QR code for information on our Online Support app.

- FAQ / Application examples**
Information about industrial products, programming and configuration as well as application examples
- Technical Information**
Videos, documentation, manuals, updates, product notes, compatibility tool, certificates, planning data such as dimensional drawings, product data, 3D models
- Forum**
Exchange information and experience with other users and experts

Online Support for Siemens Products for Industry

Siemens Industry and Online Support with some 1.7 million visitors per month is one of the most popular web services provided by Siemens. It is the central access point for comprehensive technical know-how about products, systems and services for automation and drives applications as well as for process industries.

In connection with the challenges and opportunities related to digitalization you can look forward to continued support with innovative offerings.

Overview

Software types

Software requiring a license is categorized into types. The following software types have been defined:

- Engineering software
- Runtime software

Engineering software

This includes all software products for creating (engineering) user software, e.g. for configuring, programming, parameterizing, testing, commissioning or servicing.

Data generated with engineering software and executable programs can be duplicated for your own use or for use by third parties free-of-charge.

Runtime software

This includes all software products required for plant/machine operation, e.g. operating system, basic system, system expansions, drivers, etc.

The duplication of the runtime software and executable programs created with the runtime software for your own use or for use by third-parties is subject to a charge.

You can find information about license fees according to use in the ordering data (e.g. in the catalog). Examples of categories of use include per CPU, per installation, per channel, per instance, per axis, per control loop, per variable, etc.

Information about extended rights of use for parameterization/configuration tools supplied as integral components of the scope of delivery can be found in the readme file supplied with the relevant product(s).

License types

Siemens Industry Automation & Drive Technologies offers various types of software license:

- Floating license
- Single license
- Rental license
- Rental floating license
- Trial license
- Demo license
- Demo floating license

Floating license

The software may be installed for internal use on any number of devices by the licensee. Only the concurrent user is licensed. The concurrent user is the person using the program. Use begins when the software is started. A license is required for each concurrent user.

Single license

Unlike the floating license, a single license permits only one installation of the software per license.

The type of use licensed is specified in the ordering data and in the Certificate of License (CoL). Types of use include for example per instance, per axis, per channel, etc.

One single license is required for each type of use defined.

Rental license

A rental license supports the "sporadic use" of engineering software. Once the license key has been installed, the software can be used for a specific period of time (the operating hours do not have to be consecutive).

One license is required for each installation of the software.

Rental floating license

The rental floating license corresponds to the rental license, except that a license is not required for each installation of the software. Rather, one license is required per object (for example, user or device).

Trial license

A trial license supports "short-term use" of the software in a non-productive context, e.g. for testing and evaluation purposes. It can be transferred to another license.

Demo license

The demo license support the "sporadic use" of engineering software in a non-productive context, for example, use for testing and evaluation purposes. It can be transferred to another license. After the installation of the license key, the software can be operated for a specific period of time, whereby usage can be interrupted as often as required.

One license is required per installation of the software.

Demo floating license

The demo floating license corresponds to the demo license, except that a license is not required for each installation of the software. Rather, one license is required per object (for example, user or device).

Certificate of License (CoL)

The CoL is the licensee's proof that the use of the software has been licensed by Siemens. A CoL is required for every type of use and must be kept in a safe place.

Downgrading

The licensee is permitted to use the software or an earlier version/release of the software, provided that the licensee owns such a version/release and its use is technically feasible.

Delivery versions

Software is constantly being updated. The following delivery versions

- PowerPack
- Upgrade

can be used to access updates.

Existing bug fixes are supplied with the ServicePack version.

PowerPack

PowerPacks can be used to upgrade to more powerful software. The licensee receives a new license agreement and CoL (Certificate of License) with the PowerPack. This CoL, together with the CoL for the original product, proves that the new software is licensed.

A separate PowerPack must be purchased for each original license of the software to be replaced.

Upgrade

An upgrade permits the use of a new version of the software on the condition that a license for a previous version of the product is already held.

The licensee receives a new license agreement and CoL with the upgrade. This CoL, together with the CoL for the previous product, proves that the new version is licensed.

A separate upgrade must be purchased for each original license of the software to be upgraded.

Appendix

Software licenses

Overview

ServicePack

ServicePacks are used to debug existing products. ServicePacks may be duplicated for use as prescribed according to the number of existing original licenses.

License key

Siemens Industry Automation & Drive Technologies supplies software products with and without license keys.

The license key serves as an electronic license stamp and is also the "switch" for activating the software (floating license, rental license, etc.).

The complete installation of software products requiring license keys includes the program to be licensed (the software) and the license key (which represents the license).

Software Update Service (SUS)

As part of the SUS contract, all software updates for the respective product are made available to you free of charge for a period of one year from the invoice date. The contract will automatically be extended for one year if it is not canceled three months before it expires.

The possession of the current version of the respective software is a basic condition for entering into an SUS contract.

You can download explanations concerning license conditions from www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

1. General Provisions

By using this catalog you can acquire hardware and software products described therein from Siemens AG subject to the following Terms and Conditions of Sale and Delivery (hereinafter referred to as "T&C"). Please note that the scope, the quality and the conditions for supplies and services, including software products, by any Siemens entity having a registered office outside Germany, shall be subject exclusively to the General Terms and Conditions of the respective Siemens entity. The following T&C apply exclusively for orders placed with Siemens Aktiengesellschaft, Germany.

1.1 For customers with a seat or registered office in Germany

For customers with a seat or registered office in Germany, the following applies subordinate to the T&C:

- for installation work the "General Conditions for Erection Works – Germany"¹⁾ ("Allgemeine Montagebedingungen – Deutschland" (only available in German at the moment)) and/or
- for Plant Analytics Services the "Standard Terms and Conditions for Plant Analytics Services – for Customers in Germany"¹⁾ ("Allgemeine Geschäftsbedingungen für das Plant Analytics Services – für Kunden in Deutschland" (only available in German at the moment)) and/or
- for stand-alone software products and software products forming a part of a product or project, the "General License Conditions for Software Products for Automation and Drives for Customers with a Seat or registered Office in Germany"¹⁾ and/or
- for other supplies and/or services the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"¹⁾.
In case such supplies and/or services should contain Open Source Software, the conditions of which shall prevail over the "General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry"¹⁾, a notice will be contained in the scope of delivery in which the applicable conditions for Open Source Software are specified. This shall apply mutatis mutandis for notices referring to other third party software components.

1.2 For customers with a seat or registered office outside Germany

For customers with a seat or registered office outside Germany, the following applies subordinate to the T&C:

- for Plant Analytics Services the "Standard Terms and Conditions for Plant Analytics Services"¹⁾ and/or
- for services the "International Terms & Conditions for Services"¹⁾ supplemented by "Software Licensing Conditions"¹⁾ and/or
- for other supplies of hard- and software the "International Terms & Conditions for Products"¹⁾ supplemented by "Software Licensing Conditions"¹⁾

1.3 For customers with master or framework agreement

To the extent our supplies and/or services offered are covered by an existing master or framework agreement, the terms and conditions of that agreement shall apply instead of T&C.

2. Prices

The prices are in € (Euro) ex point of delivery, exclusive of packaging.

The sales tax (value added tax) is not included in the prices. It shall be charged separately at the respective rate according to the applicable statutory legal regulations.

Prices are subject to change without prior notice. We will charge the prices valid at the time of delivery.

To compensate for variations in the price of raw materials (e.g. silver, copper, aluminum, lead, gold, dysprosium and neodym), surcharges are calculated on a daily basis using the so-called metal factor for products containing these raw materials. A surcharge for the respective raw material is calculated as a supplement to the price of a product if the basic official price of the raw material in question is exceeded.

The metal factor of a product indicates the basic official price (for those raw materials concerned) as of which the surcharges on the price of the product are applied, and with what method of calculation.

An exact explanation of the metal factor can be downloaded at: www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

To calculate the surcharge (except in the cases of dysprosium and neodym), the official price from the day prior to that on which the order was received or the release order was effected is used.

To calculate the surcharge applicable to dysprosium and neodym ("rare earths"), the corresponding three-month basic average price in the quarter prior to that in which the order was received or the release order was effected is used with a one-month buffer (details on the calculation can be found in the explanation of the metal factor).

3. Additional Terms and Conditions

The dimensions are in mm. In Germany, according to the German law on units in measuring technology, data in inches apply only to devices for export.

Illustrations are not binding.

Insofar as there are no remarks on the individual pages of this catalog – especially with regard to data, dimensions and weights given – these are subject to change without prior notice.

¹⁾ The text of the Terms and Conditions of Siemens AG can be downloaded at www.siemens.com/automation/salesmaterial-as/catalog/en/terms_of_trade_en.pdf

Appendix

Conditions of sale and delivery

4. Export Regulations

We shall not be obligated to fulfill any agreement if such fulfillment is prevented by any impediments arising out of national or international foreign trade or customs requirements or any embargoes and/or other sanctions.

Export may be subject to license. We shall indicate in the delivery details whether licenses are required under German, European and US export lists.

Our products are controlled by the U.S. Government (when labeled with "ECCN" unequal "N") and authorized for export only to the country of ultimate destination for use by the ultimate consignee or end-user(s) herein identified. They may not be resold, transferred, or otherwise disposed of, to any other country or to any person other than the authorized ultimate consignee or end-user(s), either in their original form or after being incorporated into other items, without first obtaining approval from the U.S. Government or as otherwise authorized by U.S. law and regulations.

The export indications can be viewed in advance in the description of the respective goods on the Industry Mall, our online catalog system. Only the export labels "AL" and "ECCN" indicated on order confirmations, delivery notes and invoices are authoritative.

Products labeled with "AL" unequal "N" are subject to European / national export authorization. Products without label, with label "AL:N" / "ECCN:N", or label "AL:9X9999" / "ECCN: 9X9999" may require authorization from responsible authorities depending on the final end-use, or the destination.

If you transfer goods (hardware and/or software and/or technology as well as corresponding documentation, regardless of the mode of provision) delivered by us or works and services (including all kinds of technical support) performed by us to a third party worldwide, you must comply with all applicable national and international (re-)export control regulations.

If required for the purpose of conducting export control checks, you (upon request by us) shall promptly provide us with all information pertaining to the particular end customer, final disposition and intended use of goods delivered by us respectively works and services provided by us, as well as to any export control restrictions existing in this relation.

The products listed in this catalog may be subject to European/German and/or US export regulations. Any export requiring approval is therefore subject to authorization by the relevant authorities.

Errors excepted and subject to change without prior notice.

Further information can be obtained from our branch offices listed at www.siemens.com/automation-contact

Interactive Catalog	<i>Catalog</i>	Process Instrumentation and Analytics	<i>Catalog</i>
Products for Automation and Drives	CA 01	<i>Digital: Field Instruments for Process Automation</i>	FI 01
Building Control		<i>Digital: Display Recorders SIREC D</i>	MP 20
GAMMA Building Control	ET G1	<i>Digital: SIPART Controllers and Software</i>	MP 31
Drive Systems		Products for Weighing Technology	WT 10
SINAMICS G130 Drive Converter Chassis Units	D 11	<i>Digital: Process Analytical Instruments</i>	AP 01
SINAMICS G150 Drive Converter Cabinet Units		<i>Digital: Process Analytics, Components for Continuous Emission Monitoring</i>	AP 11
<i>Digital: SINAMICS PERFECT HARMONY GH180 Medium-Voltage Air-Cooled Drives (Germany Edition)</i>	D 15.1	Low-Voltage Power Distribution and Electrical Installation Technology	
SINAMICS G180 Converters – Compact Units, Cabinet Systems, Cabinet Units Air-Cooled and Liquid-Cooled	D 18.1	SENTRON · SIVACON · ALPHA Protection, Switching, Measuring and Monitoring Devices, Switchboards and Distribution Systems	LV 10
SINAMICS S120 Chassis Format Converter Units	D 21.3	Electrical Components for the Railway Industry	LV 12
SINAMICS S120 Cabinet Modules		Power Monitoring Made Simple	LV 14
SINAMICS S150 Converter Cabinet Units		Components for Industrial Control Panels according to UL Standards	LV 16
SINAMICS S120 and SIMOTICS	D 21.4	<i>Digital: Air circuit breakers and molded case circuit breakers with UL certification</i>	LV 18
SINAMICS DCM DC Converter, Control Module	D 23.1	3WT Air Circuit Breakers up to 4000 A	LV 35
SINAMICS Inverters for Single-Axis Drives · Built-In Units	D 31.1	3VT Molded Case Circuit Breakers up to 1600 A	LV 36
SINAMICS Inverters for Single-Axis Drives · Distributed Inverters	D 31.2	<i>Digital: SIVACON System Cubicles, System Lighting and System Air-Conditioning</i>	LV 50
<i>Digital: SINAMICS Converters for Single-Axis Drives · SINAMICS G120X</i>	D 31.5	<i>Digital: ALPHA Distribution Systems</i>	LV 51
<i>Digital: SINAMICS S210 Servo Drive System</i>	D 32	ALPHA FIX Terminal Blocks	LV 52
<i>Digital: SINAMICS V90 Basic Servo Drive System</i>	D 33	SIVACON S4 Power Distribution Boards	LV 56
<i>Digital: SINAMICS G120P and SINAMICS G120P Cabinet pump, fan, compressor converters</i>	D 35	SIVACON 8PS Busbar Trunking Systems	LV 70
LOHER VARIO High Voltage Motors	D 83.2	<i>Digital: DELTA Switches and Socket Outlets</i>	ET D1
Flameproof, Type Series 1PS4, 1PS5, 1MV4 and 1MV5 Frame Size 355 to 1000, Power Range 80 to 7100 kW		Vacuum Switching Technology and Components for Medium Voltage	HG 11.01
<i>Digital: Three-Phase Induction Motors SIMOTICS HV, SIMOTICS TN</i>	D 84.1	Power Supply	
<i>Digital: Three-Phase Induction Motors SIMOTICS HV</i>	D 84.3	SITOP Power supply	KT 10.1
High Voltage Three-phase Induction Motors	D 84.9	Safety Integrated	
SIMOTICS HV Series A-compact PLUS		Safety Technology for Factory Automation	SI 10
<i>Digital: Modular Industrial Generators SIGENTICS M</i>	D 85.1	SIMATIC HMI / PC-based Automation	
Synchronous Motors with Permanent-Magnet Technology, HT-direct	D 86.2	Human Machine Interface Systems/ PC-based Automation	ST 80/ ST PC
DC Motors	DA 12	SIMATIC Ident	
SIMOVERT PM Modular Converter Systems	DA 45	Industrial Identification Systems	ID 10
MICROMASTER 420/430/440 Inverters	DA 51.2	SIMATIC Industrial Automation Systems	
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