

SIEMENS



SIRIUS

Industrial Controls

Catalog
IC 10

Edition
2021

[siemens.com/sirius](https://www.siemens.com/sirius)

Related catalogs

Industrial Controls SIRIUS

IC 10



PDF (E86060-K1010-A101-B2-7600)

SIMATIC

Products for
Totally Integrated Automation

ST 70



PDF (E86060-K4670-A101-B7-7600)

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-B2-7600)

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

Type series 1FP1, 1LE1, 1LE5, 1MB1, 1MB5, 1PC1
Frame sizes 63 to 450
Power range 0.09 to 1000 kW
PDF (E86060-K5581-A111-B4-7600)

D 81.1



SITOP

Power supply
SITOP

KT 10.1



E86060-D4001-A510-D8

SITRAIN

Digital Industry Academy

www.siemens.com/sitrain

Miscellaneous

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 deviceswww.siemens.com/tst

Contact

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

Trademarks

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

Technical Support

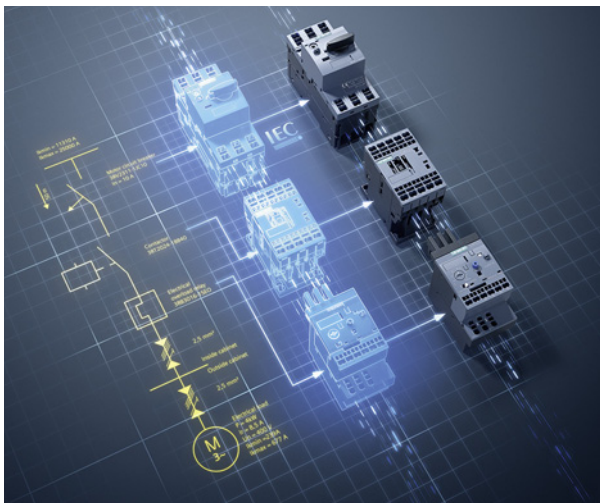
Expert technical support
for Industrial controls:



Support Request:
www.siemens.com/support-request

Industrial Controls

SIRIUS



Catalog IC 10 · 2021

Invalid:
 Catalog IC 10 · 2020
 Catalog Abridged IC 10 A · 02/2020
 SIRIUS 3RS2 Temperature Monitoring Relays

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

www.siemens.com/industrymall

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1 Introduction

2 Industrial communication



3 Switching devices – Contactors and contactor assemblies – for switching motors



4 Switching devices – Contactors and contactor assemblies – Special applications



5 Switching devices – Contactors and contactor assemblies – Contactor relays and relays



6 Switching devices – Soft starters and solid-state switching devices



7 Protection equipment



8 Load feeders and motor starters for use in the control cabinet



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



10 Monitoring and control devices



11 Safety technology



12 Position and safety switches



13 Commanding and signaling devices



14 Parameterization, configuration and visualization with SIRIUS



15 Power supply



16 Appendix



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.

Ordering notes

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 €.

Price units (PU)

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

Price groups (PG)

Each product is assigned to a price group.

Dimensions

All dimensions in mm.

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 standard delivery times specified here are only examples. They are continuously optimized. For more up-to-the-minute information, please visit www.siemens.com/sirius/mall.

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.

Example

3RA2110-0FA15-1AP0

SD: 2 working days

PG: 41D

Order quantity 1 unit or a multiple thereof

3RA1921-1D

SD: Preferred type

PG: 41B

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 |
| ► | 3RA1921-1D | | 1 | 10 units | 41B |
| 5 | 3SU1900-0AB71-0AB0 | | 100 | 10 units | 41J |



SIRIUS in the World Wide Web

The most important online services at a glance.



Industrial controls
Homepage
www.siemens.com/sirius



Siemens Industry Online Support – SIOS
Product Support
www.siemens.com/online-support



Industry Mall
Catalog and Ordering System
www.siemens.com/industrymall



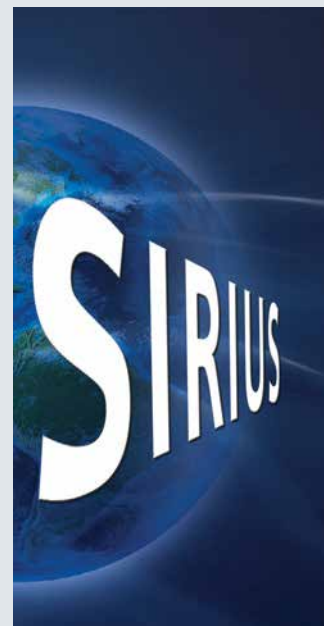
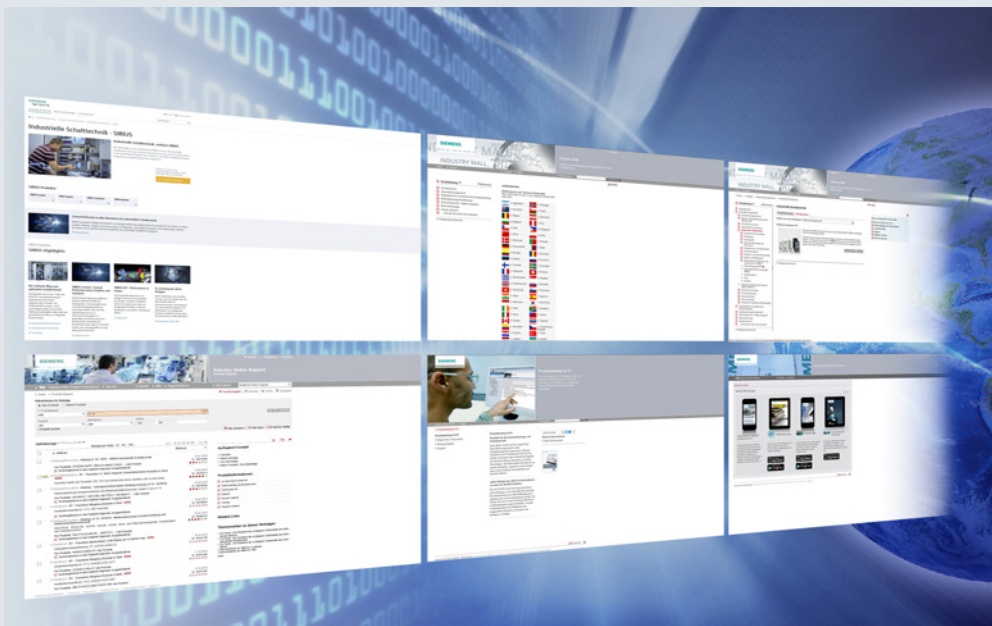
Siemens Industry Online Support App
More information on the Online Support App
www.siemens.com/support-app



Configuring products and systems
Configurators
www.siemens.com/sirius/configurators



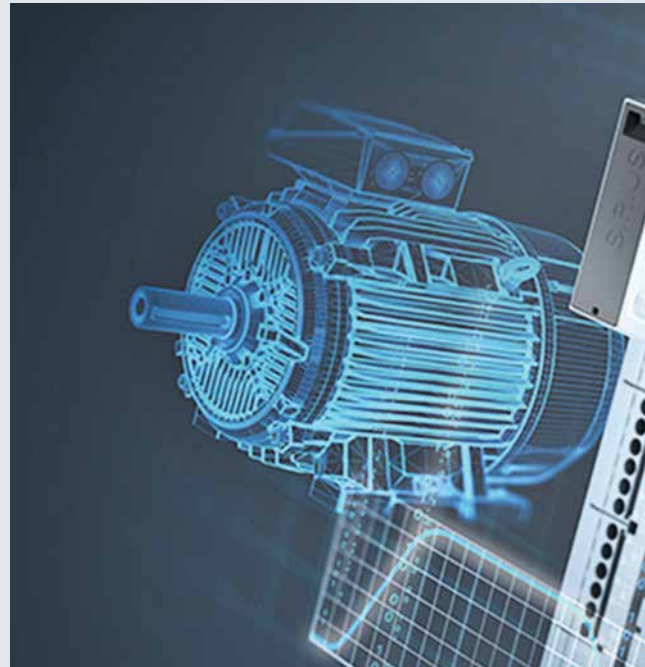
Device selection and configuration
TIA Selection Tool
www.siemens.com/tst



SIRIUS 3RW soft starters

As diverse as your tasks

The strong, harmonized portfolio of soft starters is suited to a wide range of standard – and also fail-safe and ATEX – 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 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 and therefore increases 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.



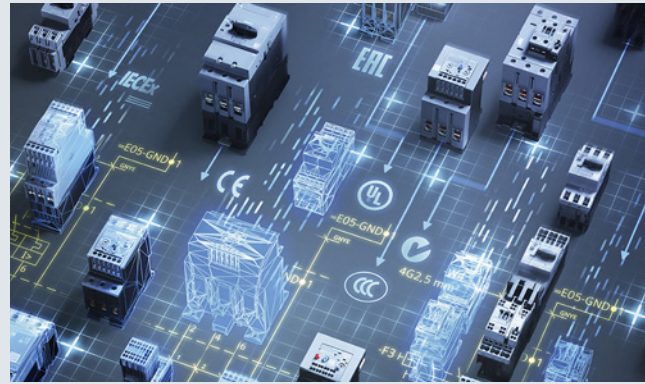
IC01_00559

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.



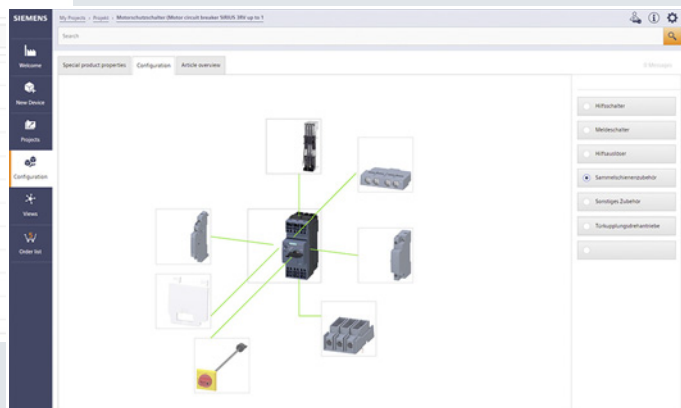
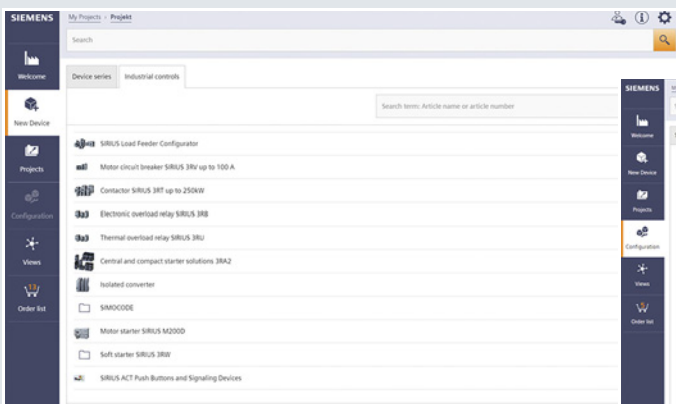
Clear

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



Smart Control Panel Design

The new standard in electrical engineering

With Control Panel Design, Siemens offers for the first time a function in the TIA Selection Tool that can be used to design and dimension the main electrical system of a machine in accordance with standards. And this for the IEC standardization area and for the important North American market.

At the push of a button you receive the appropriate switching and protection devices for your motor, including standard-compliant cable cross-sections and short-circuit values for fuseless and fused load feeders.

Never before has the dimensioning of your load feeders been so quick and reliable!

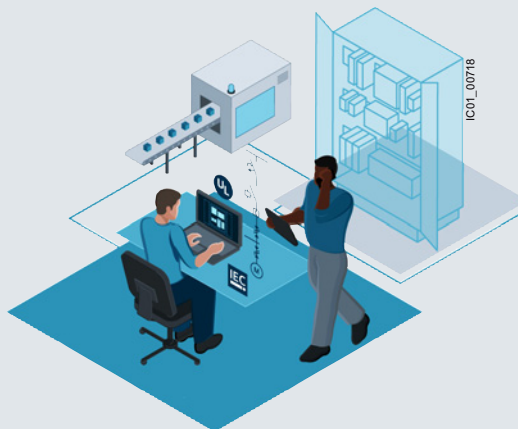
Electrical engineering in ONE tool. This makes configuring more enjoyable!

1.

Digital expertise on standards
**Standard conformity
with no worries**

3.

Consistent workflow
**Electrical engineering
with unlimited creativity**



2.

Easy dimensioning
**A new dimension
of dimensioning**

4.

Supported portfolio
**Intelligent devices for
versatile solutions**

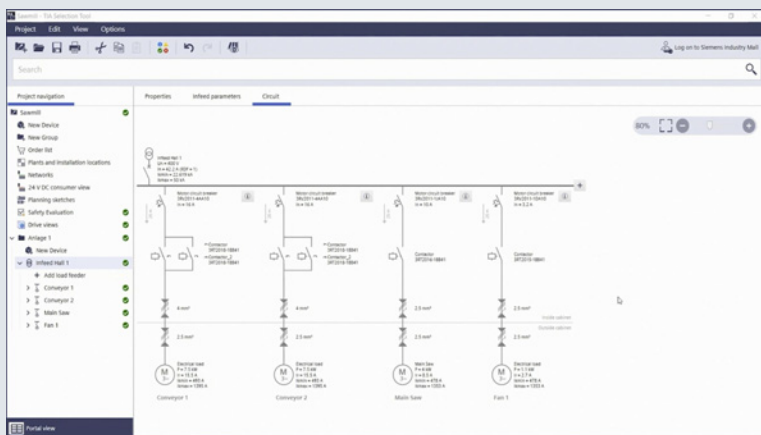
Highlights

- Automatic short-circuit calculation and cable dimensioning for fuseless and fused load feeders according to IEC up to 250 kW as well as fuseless load feeders according to UL up to 250 hp
- Generation of complete EPLAN projects
- Selection of the appropriate switching and protection devices for the motor
- Visual planning of the main circuit in the single-line diagram
- Simple accessory selection
- Complete PDF documentation of technical specifications and calculation results (e.g. for the short-circuit verification)

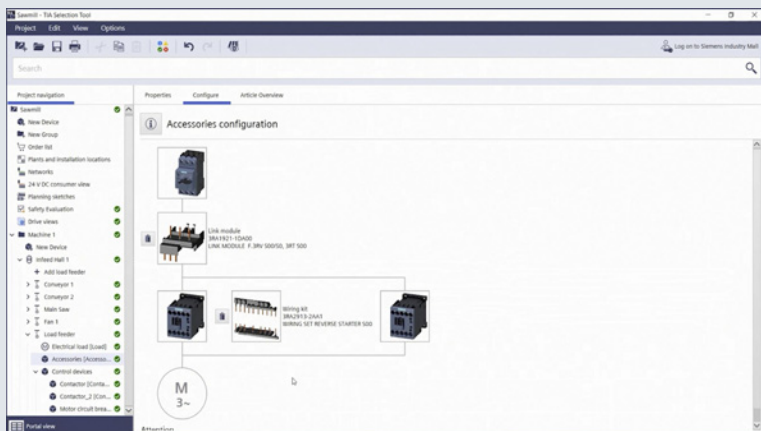


More information and tool download, see: www.siemens.com/cpd

Are you looking for a clear and easy way to dimension your circuits?



Or do you need suitable accessories for your switching devices?



The main circuit view with single-line display and the automatic display of accessories are two of the many new functions in the TIA Selection Tool.

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.

- Webinars, online trainings and individual consulting on product and application topics
- Literature with practical tips and tricks, including: guidelines, product manuals, white papers

www.siemens.com/controlpanel/infocenter



More information,
see
[www.siemens.com/
panelbuilding](http://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/controlpanel/cpd
www.siemens.com/controlpanel/tools
- Control panel engineering
www.siemens.com/controlpanel/engineering

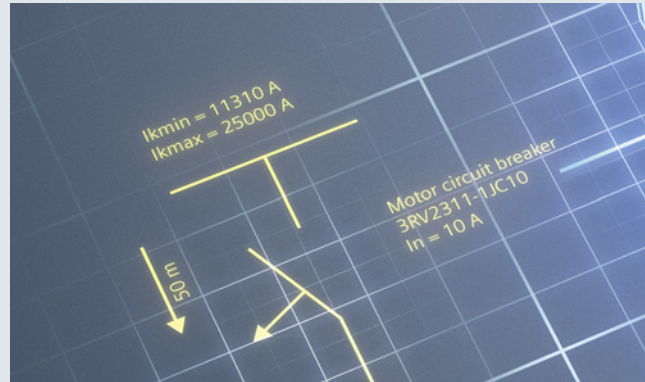


Harmonized product and system portfolio

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. Benefit also from our expert tips concerning control panels.
www.siemens.com/controlpanel/tips

Product highlights



SIRIUS 3RW55, 3RW55 Failsafe, 3RW52 and 3RW50 soft starters
Can be flexibly deployed in many applications

Type: 3RW55...-HA..., 3RW55...-HF.4, 3RW52 and 3RW50
Pages 6/14, 6/38, 6/54 and 6/72 onwards



SIRIUS 3RT203 and 3RT204 contactors
with fail-safe control input for safety-related applications to SIL CL 3, 3-pole, up to 55 kW

Type: 3RT203, 3RT204
Page 3/70



SIRIUS 3RF20 to 3RF22 solid-state relays

Type: 3RF20, 3RF21, 3RF22
Page 6/119 onwards



SIRIUS 3RF23 and 3RF24 solid-state contactors
more compact dimensions thanks to improved cooling and simplified grounding

Type: 3RF23, 3RF24
Page 6/133 onwards



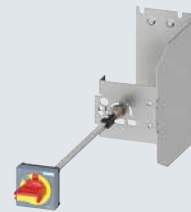
SIRIUS 3RV2 motor starter protector/circuit breakers
For special operating conditions up to -50 °C

Type: 3RV2..1-...-0BA0
Page 7/28 onwards



SIRIUS 3RV2 motor starter protector/circuit breakers
For system protection

Type: 3RV20.1-...A10-0DA0
Page 7/44



SIRIUS 3RV2 motor starter protector/circuit breakers 3RV29.6 door-coupling rotary operating mechanisms

Type: 3RV2926, 3RV2936, 3RV2946
Page 7/55 onwards



More information,
see
www.siemens.com/sirius



SIRIUS 3UG5 DC load monitoring relays for PROFINET, low DC voltages up to 60 V

Type: 3UG546.-1AA41
Page 10/70



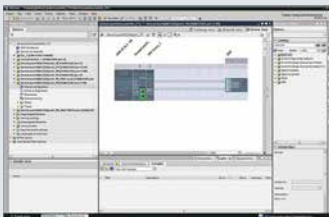
SIRIUS 3RS2 temperature monitoring relays

Type: 3RS25, 3RS26, 3RS28, 3RS29
Page 10/126 onwards



Soft Starter ES (TIA Portal) V16

Type: 3ZS1320-...
Page 14/5 onwards



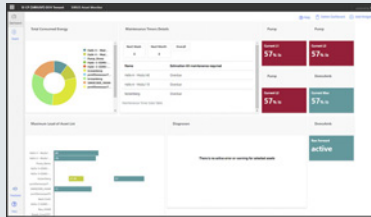
SIMOCODE ES (TIA Portal) V16

Type: 3ZS1322-...
Page 14/12 onwards



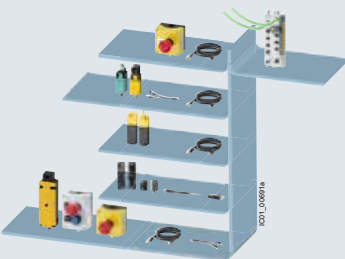
SIRIUS Sim
For 3SK2 and 3RW55

Free download
Page 14/23



SIRIUS Asset Monitor
For SIMOCODE 3UF7

App available in Mindsphere Store
Page 14/24



Safety cabling in the field with IP67

System comprising SIRIUS sensors and SIMATIC ET 200eco provides a safe M12 connection method for industry and enables PROFINET/PROFIsafe connection

Type: 3SE, 3SU
Pages 12/86 and 13/126 onwards

Technical Support

One click – and you have all the information you need.



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

www.siemens.com/online-support

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



Support Request – the fast track to the experts

www.siemens.com/support-request

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/conversion-tool

Any more questions?

Our experts are there to help you with competent technical advice.

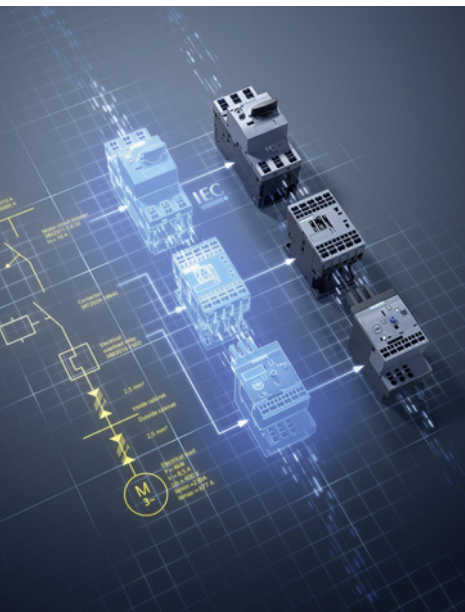


Competent and fast technical advice regarding:

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

Support Request:
www.siemens.com/support-request

Introduction



| | |
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| 1/2 | Energy-efficient controls SIRIUS brings down energy costs |
| 1/3 | Energy management with SIRIUS Integration into energy management software |
| 1/4 | Systematic industrial safety technology SIRIUS Safety Integrated |
| 1/8 | IE3/IE4 ready SIRIUS controls for reliable switching and protection of IE3/IE4 motors |
| 1/9 | Innovative technology for saving energy Electronic starting with hybrid switching technology |

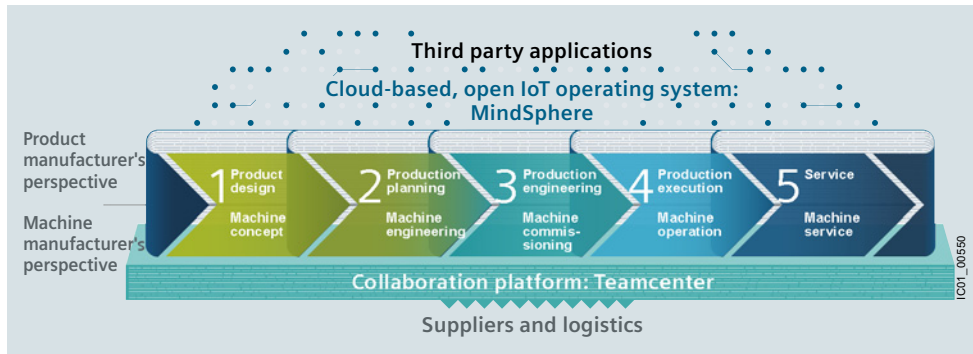
Introduction

Energy-efficient controls

SIRIUS brings down energy costs

Overview

Energy management in industry



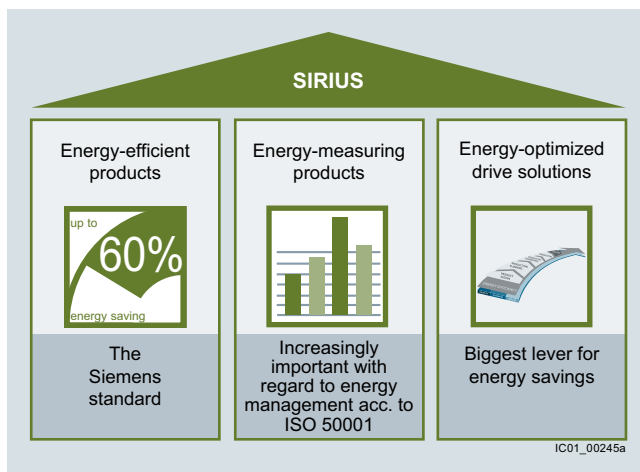
Overview of the energy management process

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 (identify) and assess (evaluate) opportunities for optimization through precise analysis. Finally, appropriate measures must be implemented (realized).

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 contactors, 3RW soft starter and 3RV2 motor starter protector/circuit breaker) 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.

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

Energy data acquisition represents an important component 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.

SinaSave energy efficiency tool



Amortization calculator for energy-efficient drive systems

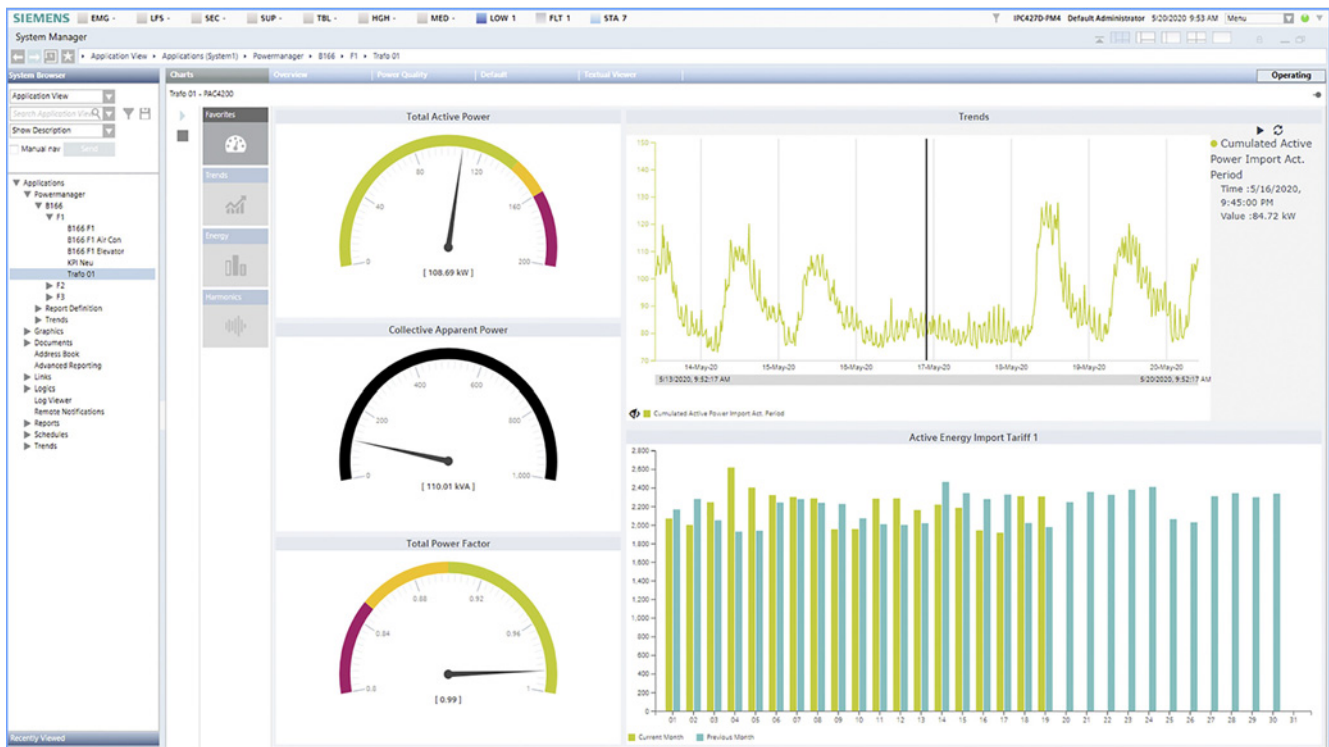
The SinaSave energy efficiency tool determines energy saving potential and amortization times based on your individual conditions of use and therefore offers practical assistance in making decisions about investments in energy-efficient technologies.

From SinaSave version 6 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.

SinaSave, the free amortization calculator for energy-efficient drives, see www.siemens.com/sinasave.

Overview

**SIMATIC Energy Suite**

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

If you want to keep your energy costs under control in the long term and you are already focusing on the digital future, it's a good idea to equip your plant with integrated energy measuring technology, thus anchoring energy management into the automation of your production processes – which is where most energy is consumed.

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 end-to-end connection to SIMATIC Energy Manager PRO¹⁾ or cloud-based Service Energy Analytics, you can seamlessly expand the recorded energy data to create 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 TIA Portal and automation
- Simple configuration

¹⁾ SIMATIC Energy Manager PRO is the innovative 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.

Highlights

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

SETRON powermanager

The SETRON powermanager energy monitoring software displays important characteristic quantities for individual devices and the entire system on a clearly organized dashboard and thus analyzes the energy consumption.

The advantages at a glance:

- Analyzing energy flows: Cost-saving measures can be derived directly and faults can be localized rapidly – for greater awareness regarding energy consumption and lower costs.
- Easy to get started: Can be added to existing hardware and available infrastructure.
- Fast savings: Analyzes power curve and detects load peaks.
- High plant availability: Continuous monitoring of energy distribution ensures that critical system states are detected at an early stage.

The SIRIUS 3RW55 soft starter is integrated into SETRON powermanager by simple installation of an XML file: <https://support.industry.siemens.com/cs/ww/en/view/109779688>

For more information on SETRON powermanager, see www.siemens.com/powermanager.

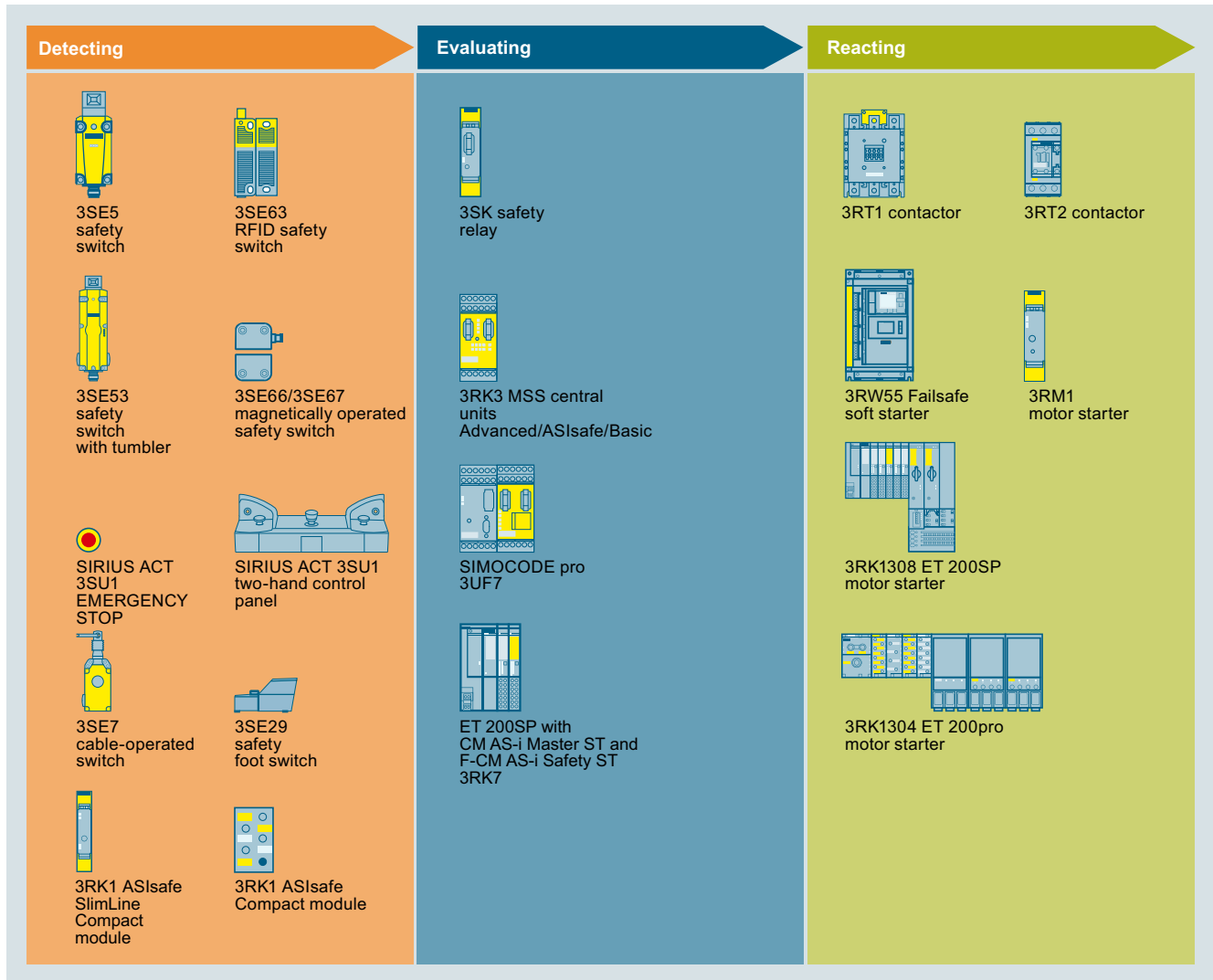
For more information on SIMATIC Energy Suite, see www.siemens.com/energysuite.

Introduction

Systematic industrial safety technology

SIRIUS Safety Integrated

Overview



SIRIUS Safety Integrated

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. Similar requirements apply in many other countries and markets.

To guarantee conformity with these requirements, it is recommended that the correspondingly harmonized standards IEC 62061 or EN ISO 13849-1 are applied. This gives manufacturers and operators legal certainty regarding compliance with both national regulations and directives, which are confirmed by the manufacturer of a machine.

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 ([page 1/6 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 contactors of sizes S2 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 ET 200SP ([page 8/95 onwards](#)) and the 3RW55 fail-safe soft starters ([page 6/38 onwards](#)). 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.

The Safety Selector (www.siemens.com/safety-selector) thus guides the user to the appropriate application example based on selection criteria to be assigned.

The free TÜV-approved Safety Evaluation Tool for evaluating safety functions in accordance with IEC 62061 and EN ISO 13849-1 is integrated in the TIA Selection Tool.

Thus, the selection of components and their safety-related assessment are implemented in a coherent workflow.

Requirements-based training on CE marking, functional safety, risk assessment, and on our Safety Integrated products rounds off our portfolio.

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

Introduction

Systematic industrial safety technology

SIRIUS Safety Integrated

Devices with safety functions

Detecting

Product Page

3SE position and safety switches 12/2



Flexible thanks to modular design, suitable for offshore applications

3SE6 non-contact safety switches 12/4



RFID and magnetically-operated switches, non-contact, vibration-resistant, wear-free, IP69 (IP69K)/IP67

3SU11 EMERGENCY STOP mushroom pushbuttons, 3SU18 two-hand operation console 13/24, 13/71, 13/123



- 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)

3SE7 cable-operated switches, 3SE29, 3SE39 foot switches 13/178, 13/182



- 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

Evaluating

Product Page

SIMOCODE pro 3UF7 10/5



Fail-safe expansion modules DM-F Local and DM-F PROFIsafe, safe shutdown of motors up to SIL 3/PL e

3SK safety relays 11/13



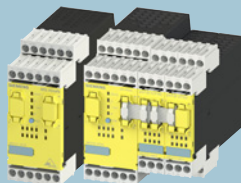
Key modules of a consistent and cost-effective safety chain. Flexible thanks to input and output expansion units

3TK2810 safety relays 11/33



Further modules of a consistent and cost-effective safety chain for fail-safe detection of standstill or speed

3RK3 Modular Safety System (MSS) 11/36



Freely parameterizable safety relay, high flexibility with up to nine additional expansion modules and fail-safe connection to AS-Interface

Reacting

Product Page

3RW55 Failsafe soft starters 6/38



3RW55 Failsafe High Performance soft starters with STO

SIRIUS 3RM1 motor starters 8/85



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

ET 200SP fail-safe motor starters 8/95










Compact, fail-safe hybrid motor starters for the ET 200SP system

ET 200pro Safety motor starters Solution PROFIsafe 9/3



Communication-capable motor starters in high degree of protection IP65
Special safety modules enable the highest safety levels

Devices with safety functions for AS-Interface

| Detecting | | Evaluating | | Reacting | |
|--|--------|--|---|--|------------------------|
| Product | Page | Product | Page | Product | Page |
| <p>Safety modules/EMERGENCY STOP mushroom pushbuttons</p> <ul style="list-style-type: none"> K45F and K20F compact safety modules for use in the field  | 2/25 | <p>CM AS-i Master ST, F-CM AS-i Safety ST for SIMATIC ET 200SP</p> <p>Evaluation and processing of signals via a fail-safe SIMATIC or SINUMERIK control.</p> <ul style="list-style-type: none"> 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.  | 2/32, 2/36 | <p>3RT contactors from 18.5 kW (F-PLC input)</p> <p>Optimum connection to the fail-safe controller as actuator in the safety chain</p> <ul style="list-style-type: none"> Considerable simplification of the application in large power ranges thanks to F-PLC input on the 3RT203 and 3RT204, 3RT105 to 3RT107, 3RT145 to 3RT147 contactors  | 3/70, 3/74, 4/20 |
| <ul style="list-style-type: none"> SC17.5F SlimLine Compact safety modules for use in the control cabinet  | 2/25 | | <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>S45F SlimLine safety modules with safety outputs for the safe distributed disconnection of actuators</p>  | 2/25 |
| <ul style="list-style-type: none"> 3SU1 EMERGENCY STOP mushroom pushbuttons in the enclosure for AS-Interface  | 13/122 | | | <p>Reaction by safe output modules on the AS-Interface bus or other SIMATIC F-DQ modules</p> | |
| <p>3SF1 mechanical safety switches</p>  | 12/90 | <p>Flexible thanks to modular design, degree of protection up to IP69 (IP69K), suitable for offshore applications</p> | | | |

Introduction

IE3/IE4 ready

SIRIUS controls for reliable switching and protection of IE3/IE4 motors

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?

IC01_004R2c

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

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**.

Overview

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

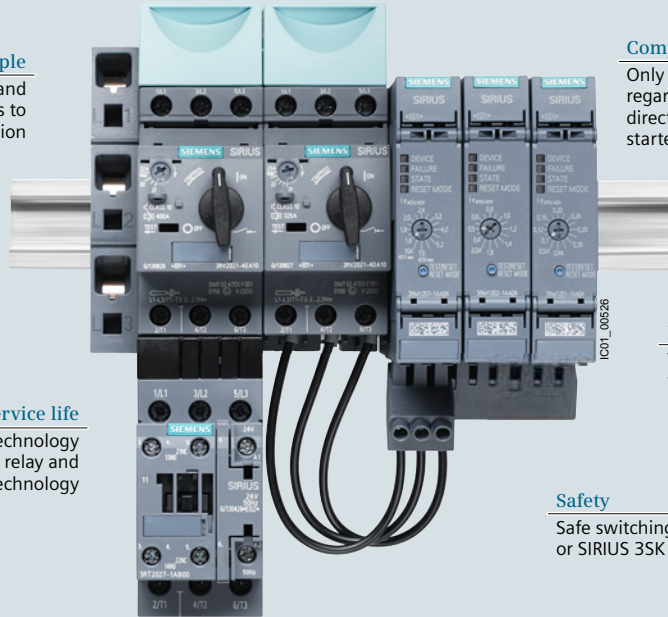
Simple
Minimum wiring in the main and control circuits thanks to assembly option

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 soft starters 3RW30, 3RW40, 3RW50, 3RW52, 3RW55 and 3RW55 Failsafe

Long service life
Reduced mechanical and electrical load

Safe
SIL 1 STO without additional safety relay or contactor

Energy saving
Reduced temperature rise in the control cabinet thanks to bypass contacts

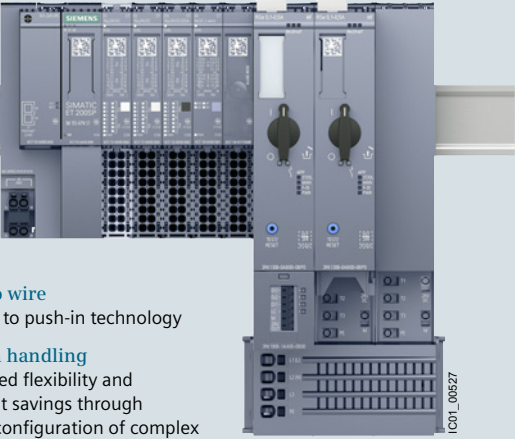
Simple
Fast and easy commissioning



Introduction

Innovative technology for saving energy

Electronic starting with hybrid switching technology



- + 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:

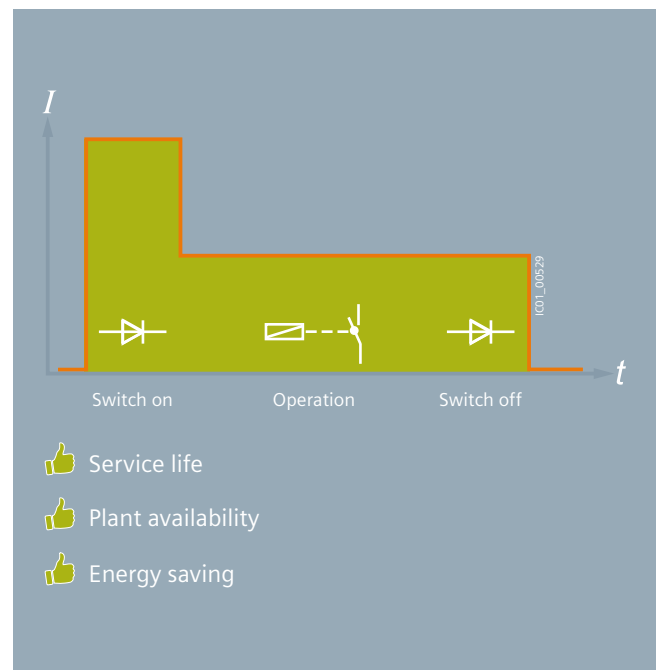
- SIRIUS 3RM1 motor starters
- ET 200SP motor starters
- SIRIUS soft starters

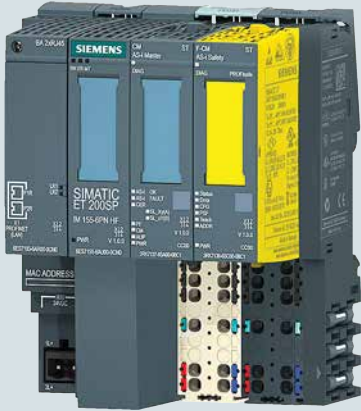
Fail-safe functionality for SIRIUS 3RW55 soft starters, SIRIUS 3RM1 motor starters and ET 200SP:

- 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





| | | |
|----------------------|---|--|
| | Price groups | PG 212, 219, 230, 250, 254, 255, 256, 257, 41B, 41H, 41L, 42C, 42D, 5K1, 5K2 |
| | Introduction | |
| 2/3 | AS-Interface | |
| 2/13 | IO-Link | |
| | AS-Interface | |
| | <u>Introduction</u> | |
| 2/18 | Communication overview | |
| 2/19 | System components | |
| | AS-Interface specification | |
| 2/20 | - Specification V3.0 | |
| 2/21 | - AS-i Power24V | |
| | <u>ASIsafe</u> | |
| 2/22 | Introduction | |
| 2/36 | F-CM AS-i Safety ST for SIMATIC ET 200SP | |
| 11/36 | SIRIUS 3RK3 Modular Safety System | |
| 2/24 | AS-Interface safety monitors | |
| 2/25 | AS-Interface safety modules | |
| 12/90 | SIRIUS 3SF1 mechanical safety switches for AS-Interface | |
| | SIRIUS ACT pushbuttons and indicator lights | |
| 13/110 | - Modules: AS-Interface modules | |
| 13/122 | - Pushbuttons and indicator lights in the enclosure for AS-Interface | |
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| 2/30 | - CP 343-2P/CP 343-2 | |
| | Masters for SIMATIC ET 200 | |
| 2/32 | - CM AS-i Master ST for SIMATIC ET 200SP | |
| 2/36 | - F-CM AS-i Safety ST for SIMATIC ET 200SP | |
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| | <u>Slaves</u> | |
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| 2/43 | - Digital I/O modules, IP67 - K60 | |
| 2/45 | - Digital I/O modules, IP68/IP69 - K60R | |
| 2/48 | - Digital I/O modules, IP67 - K45 | |
| 2/50 | - Digital I/O modules, IP67 - K20 | |
| 2/52 | - Analog I/O modules, IP67 - K60 | |
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| 2/56 | - SlimLine Compact | |
| 2/60 | - F90 module | |
| 2/61 | - Flat module | |
| | Modules with special functions | |
| 2/62 | - Counter modules | |
| 2/63 | - Ground-fault detection modules | |
| 2/64 | - Overvoltage protection modules | |
| | Contactors and contactor assemblies | |
| 3/17 | - SIRIUS 3RT contactors, 3-pole up to 250 kW | |
| 3/147 | - SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW | |
| 3/162 | - SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW | |
| 3/108 | - 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 | |
| 9/23 | Motor starters for use in the field, high degree of protection | |
| | - SIRIUS M200D motor starters for AS-Interface | |
| D 31.2 ¹⁾ | SINAMICS G110M, SINAMICS G110D distributed converters | |
| | SIRIUS ACT pushbuttons and indicator lights | |
| 13/110 | - Modules: AS-Interface modules | |
| 13/122 | - Pushbuttons and indicator lights in the enclosure for AS-Interface | |
| 13/184 | SIRIUS 8WD4 signaling columns | |
| 1) | See Catalog D 31.2. | |

| | | | |
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| | <u>Power supply units and data decoupling modules</u> | | <u>Input modules</u> |
| 2/65 | AS-Interface power supply units | 2/99 | General data |
| 2/67 | 30 V power supply units | 2/100 | K20 IO-Link modules |
| 15/1 ¹⁾ | 24 V power supply units | 3/17 | <u>Contactors and contactor assemblies</u> |
| 2/69 | S22.5 data decoupling modules | | - SIRIUS 3RT contactors, 3-pole up to 250 kW |
| | Data decoupling modules for S7-1200 | 3/147 | - SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW |
| 2/71 | - DCM 1271 data decoupling module | 3/162 | - SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW |
| | <u>Transmission media</u> | 3/108 | - SIRIUS 3RA27 function modules |
| 2/74 | AS-Interface shaped cable | | <u>Overload relays</u> |
| | <u>System components and accessories</u> | 7/136 | SIRIUS 3RB24 electronic overload relays for IO-Link for high-feature applications |
| 2/75 | Repeaters | | <u>Motor starters for use in the control cabinet</u> |
| 2/76 | Extension plugs | | SIRIUS 3RA6 compact starters for IO-Link |
| 2/77 | Addressing units | 8/68 | - 3RA64 direct-on-line starters |
| 2/79 | Analyzer | 8/69 | - 3RA65 reversing starters |
| 2/83 | Miscellaneous accessories | | <u>Monitoring relays</u> |
| 2/12 | <u>Diagnostics</u> | 10/59 | SIRIUS 3RR24 monitoring relays for mounting onto 3RT2 contactors for IO-Link |
| | <u>Software</u> | 10/103 | SIRIUS 3UG48 monitoring relays for stand-alone installation for IO-Link |
| 14/18 | AS-Interface block library for SIMATIC PCS 7 | 10/126 | SIRIUS 3RS28 temperature monitoring relay for IO-Link <i>NEW</i> |
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| 2/85 | Communication overview | 13/111 | 3SU1 electronic modules for IO-Link |
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| | <u>Masters</u> | ID 10 ²⁾ | <u>RFID systems</u> |
| | IO-Link master module for S7-1500 | 2/91 | <u>IO-Link Device Description (IODD)</u> |
| 2/93 | - CM 8xIO-Link | 2/91 | <u>IO-Link Software</u> |
| | IO-Link master module for S7-1200 | | |
| 2/94 | - SM 1278 4xIO-Link master | 1) | See also Catalog KT 10.1. |
| | IO-Link master module for ET 200SP | 2) | See Catalog ID 10. |
| 2/95 | - CM 4xIO-Link | | |
| | IO-Link master module for ET 200pro | | |
| 2/96 | - IO-Link master modules | | |
| | IO-Link master module for ET 200eco PN <i>NEW</i> | | |
| 2/97 | - IO-Link master | | |
| | IO-Link master module for ET 200AL | | |
| 2/98 | - CM IO-Link | | |

Overview

More information

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

TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=AsInterface>
System Manual for AS-Interface, see <https://support.industry.siemens.com/cs/ww/en/view/26250840>



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 twisted pair – 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!

- Only one cable for data and energy
- Time-saving assembly/installation
- Engineering in the TIA Portal
- User-friendly maintenance

AS-i = flexible!

- Flexible topologies
- Open standard
- Expandability
- Safety engineering

AS-i = efficient!

- 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 |
|--|-------------|-----------|
| ASIsafe | | |
| ASIsafe enables integration of safety-related components in an AS-Interface network, for example: | | |
| <ul style="list-style-type: none"> • EMERGENCY STOP pushbuttons • Protective door switches • Cable-operated switches • Other AS-i safety sensors | | |
| Your advantage: The simple wiring of AS-Interface is maintained. | | |
| AS-i Master and AS-i Safety module for ET 200SP | 6ES7 | From 2/32 |
| 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. | | |
| <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 | | |
| Your advantage: Modular connection of fail-safe AS-i networks with system-wide programming in SIMATIC and SINUMERIK controllers. | | |

ASIsafe

ASIsafe enables integration of safety-related components in an AS-Interface network, for example:

- EMERGENCY STOP pushbuttons
- Protective door switches
- Cable-operated switches
- Other AS-i safety sensors

Your advantage: The simple wiring of AS-Interface is maintained.

AS-i Master and AS-i Safety module for ET 200SP

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.

- 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
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AS-i Master and AS-i Safety module

Industrial communication

Introduction

AS-Interface

ASIsafe (continued)



3RK3
Modular Safety System

SIRIUS 3RK3 Modular Safety System

Supplementing the service-proven concept of safety monitors, the 3RK3 Modular Safety System (MSS) 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 11/36](#)



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-loaded 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

[2/24](#)



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 2/25](#)



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 12/90](#)



Safety switch

SIRIUS ACT EMERGENCY STOP mushroom pushbuttons for AS-Interface

- Degree of protection IP66/IP67/IP69 (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

[13/110](#)
[From 13/122](#)



EMERGENCY STOP
mushroom pushbutton
in enclosure

| Masters | Article No. | Page |
|--|---------------------------------------|-----------------------------------|
| <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 diagnostic 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>CM 1243-2 for SIMATIC S7-1200</p>  <p>CP 343-2, CP 343-2P for SIMATIC S7-300</p> | <p>3RK7 6GK7</p> | <p>From 2/28 From 2/30</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>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 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>F-CM AS-i Safety ST for SIMATIC ET 200SP</p> | <p>3RK7</p> <p>3RK7</p> | <p>From 2/32</p> <p>From 2/36</p> |
| <p>Routers</p> <ul style="list-style-type: none"> • Degree of protection IP20 • PROFIBUS slave and AS-Interface master • Connection of up to 62 AS-Interface slaves per AS-Interface network • Connection of up to 496 inputs and 496 outputs per AS-i network, • Integrated analog value transmission • Configuring and uploading of AS-Interface configuration in STEP 7 possible • User-friendly selection of AS-Interface slaves <p>Your advantage: Compact transition to PROFIBUS 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 2/34 and 2/38.</p>  <p>DP/AS-Interface Link 20E</p> | <p>6GK1</p> | <p>From 2/36</p> |

Industrial communication

Introduction

AS-Interface

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/IP69 (IP69K)
- Modules available with up to degree of protection IP68/IP69 (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%.

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 current measurement, voltage measurement or resistance/thermal resistance modules
- Output modules for current or voltage
- Fast analog modules available for higher access speeds

Your advantage: Easy integration of analog values.

Article No.

Page



K20 digital module



K45 digital module



K60 digital module



K60 analog module

3RK1, 3RK2

[From 2/42](#)

3RK1

[From 2/52](#)

| 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 when using the SlimLine Compact modules • Flat design of the flat modules for small control cabinets and confined conditions • Connection with screw terminals or spring-loaded 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> | 3RG9, 3RK1, 3RK2 | From 2/55 |
|  <p>F90 module</p> | | | |
|  <p>Flat module</p> | <p>Modules with special functions</p> | | |
|  <p>Counter module</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-loaded terminals <p>Your advantage: Evaluation of pulses which exceed even the clock frequency of AS-Interface.</p> | 3RK1 | 2/62 |
|  <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> | 3RK1 | 2/63 |
|  <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> | 3RK1 | 2/64 |

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

Article No.

Page

3RT20
3RA23
3RA24

From 3/17
From 3/147
From 3/162

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-loaded terminals
- Small number of variants through use of identical modules for size S00 to S3 contactors

Your advantage: Shortening of mounting and startup times.

3RA2712

From 3/108

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.

3RA6

3RA61, 3RA62

From 8/56
From 8/66



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.

3RK1

From 9/23

| Slaves (continued) | | Article No. | Page |
|---|---|--|-------------------------------|
|  <p>SINAMICS G110M frequency converter</p> | <p>SINAMICS G110M distributed converters Wide power range from 0.37 to 4 kW</p> <ul style="list-style-type: none"> • Preconfigured with SIMOGEAR • Rugged, with degree of protection IP65/IP66, 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 converter</p> | <p>SINAMICS G110D distributed converters 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/IP69 (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>13/110 From 13/123</p> |
|  <p>Signaling column</p>  <p>AS-Interface adapter element</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 four signaling elements can be connected using an AS-Interface adapter element • With integrated LEDs or with BA 15d base for LEDs/incandescent lamps • For fastening to connection elements (screw or spring-loaded terminals) • 24 V DC, diameters 50 mm and 70 mm • Connection with bayonet mechanism <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 13/184</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 1- and 2-phase applications (8 A version)

Your advantage: Optimum performance for each application.



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

Article No.

Page

3RX9

2/65

30 V power supply units

Standard 30 V power supply units without data decoupling

- Power spectrum 3 A, 4 A and 8 A
 - Overload and short-circuit-proof in every performance class
 - Diagnostics: With output voltage > 26.5 V DC LED and signaling contact for output voltage 30 V O.K.
 - Primary-side connection to 120/230 V AC (1-phase) with automatic range selection
- Your advantage: Economical alternatives in conjunction with data decoupling modules while making full use of the maximum AS-Interface cable length.

3RX9

From 2/67

24 V power supply units

Standard 24 V power supply units (SITOP), without data decoupling

- Power spectrum 2.5 to 40 A
 - Overload and short-circuit-proof in every performance class
 - Add-on modules for signaling, redundancy, buffering and UPS
 - 1-phase, 2-phase and 3-phase versions
- Your advantage: Economical alternatives in conjunction with data decoupling modules.

6EP

15/1 or
Catalog KT 10.1

S22.5 data decoupling modules

- Degree of protection IP20, narrow design 22.5 mm
- Supply of several AS-i networks with a single power supply unit
- Single and double data decoupling
- Operation with 24 V DC or 30 V DC

Your advantage: Cost-effective installation of AS-i networks in conjunction with standard power supply units.

3RK1

From 2/69

DCM 1271 data decoupling module for SIMATIC S7-1200

- Simple data decoupling in IP20 design
- Supply of several AS-i networks with a single power supply unit
- Operation with 24 V DC or 30 V DC

Your advantage: Cost-effective installation of AS-i networks in conjunction with standard power supply units in the design of a SIMATIC S7-1200 module.

3RK7

From 2/71

Transmission media

AS-Interface shaped cable for connection of network stations

AS-Interface shaped cable

- 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.

3RX9

2/74



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>2/75</p> <p>2/76</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 2/77 |
|  <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 2/79 |
|  <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 2/83 |

Industrial communication

Introduction

AS-Interface

Diagnostics



Diagnostics for AS-Interface via HMI panels

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.

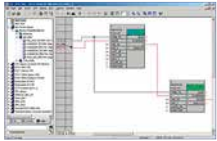
Article No.

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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 14/18

Connection methods



Screw terminals



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

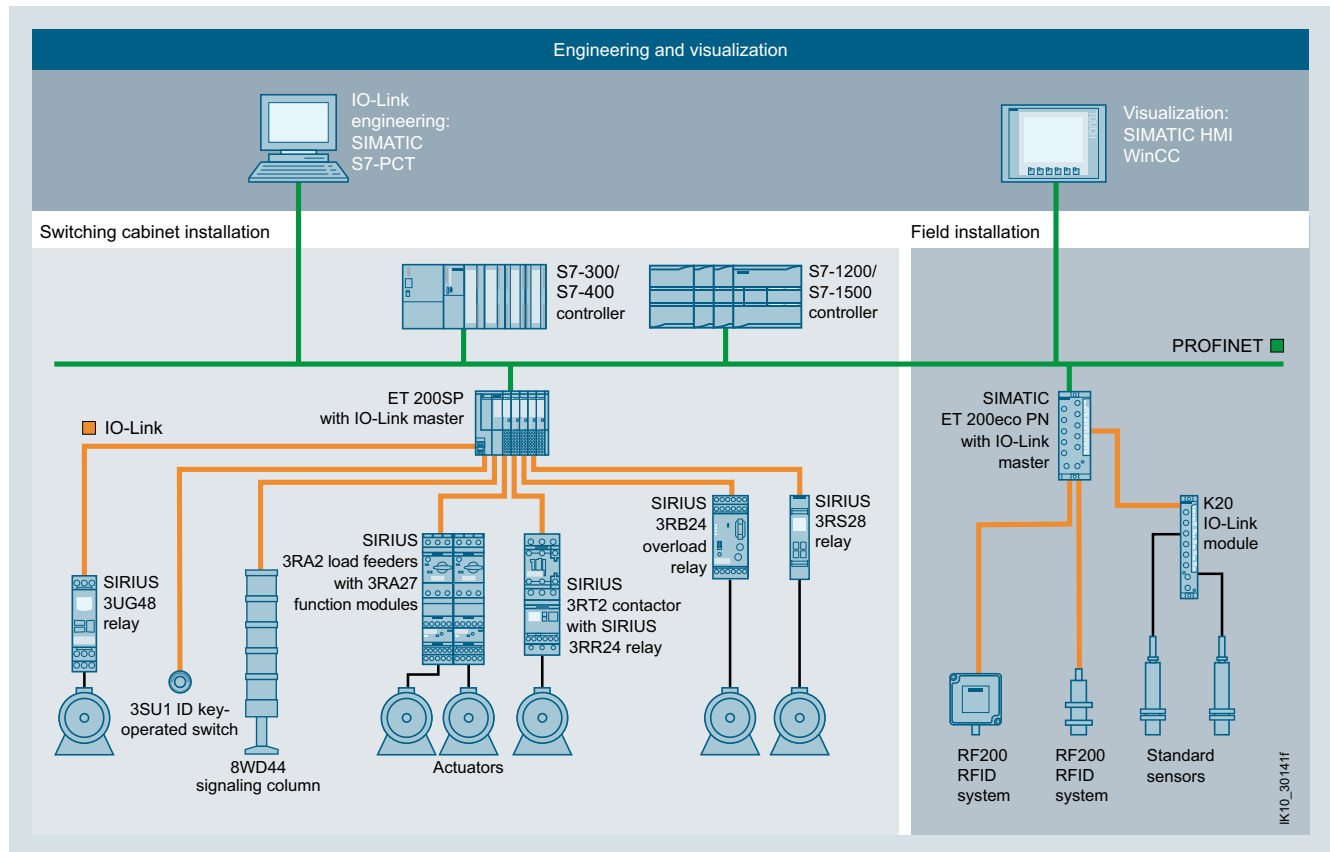


COMBICON connectors (plug-in screw terminals)

The connection method is indicated in the corresponding tables by the respective symbol shown on an orange background.

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 startup 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 downtimes.







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. | | | Catalog ST 70 |
|  <p>CM 8xIO-Link for SIMATIC S7-1500</p> | IO-Link master module for SIMATIC S7-1500 CM 8xIO-Link communication module | 6ES7 | 2/93 |
| | <ul style="list-style-type: none"> • Communication module for connecting up to 8 IO-Link devices (three-wire connections) or 8 standard sensors according to IO-Link specification V1.1 • Can be used directly downstream of an S7-1500 CPU or distributed in ET 200MP via PROFINET or PROFIBUS • Simple replacement of sensors/actuators without time-consuming parameterization • Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd) Your advantage: Easy connection of IO-Link connections to the SIMATIC S7-1500. | | |
|  <p>SM 1278 4xIO-Link for SIMATIC S7-1200</p> | IO-Link master module for SIMATIC S7-1200 SM 1278 4xIO-Link master | 6ES7 | 2/94 |
| | <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 (three-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 Your advantage: Easy connection of IO-Link connections to the SIMATIC S7-1200. | | |
|  <p>CM 4xIO-Link for ET 200SP</p> | IO-Link master modules for ET 200SP CM 4xIO-Link communication module | 6ES7 | 2/95 |
| | <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 (three-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 Your advantage: Easy connection of IO-Link connections to distributed I/Os. | | |
|  <p>IO-Link master module for ET 200pro</p> | IO-Link master module for ET 200pro 4 IO-Link HF electronic module | 6ES7 | 2/96 |
| | <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 Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area. | | |
|  <p>6ES7148-6J.00-0.B0</p> | IO-Link master module for ET 200eco PN IO-Link master | 6ES7 | 2/97 |
| | <ul style="list-style-type: none"> • 4 IO-L + 8 DI + 4 DO 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 DO) 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 • 8 IO-L + 4 DI 24 V DC <ul style="list-style-type: none"> - Up to eight IO-Link devices (4 x Port Class A + 4 x Port Class B) can be connected - Additionally four digital inputs - Enclosure width 45 mm Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area. | | |
|  <p>CM IO-Link for ET 200AL</p> | IO-Link master module for ET 200AL CM IO-Link communication module | 6ES7 | 2/98 |
| | <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 Your advantage: Easy connection of sensors and actuators to the I/Os directly in the machine's field area. | | |

| | 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 2/99 |
| | | <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 3/147 From 3/162 |
| | | 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 3/108 |
| | | 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-loaded terminals • 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 7/136 |
| | | 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 to 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 From 8/68 |
| | | Motor starters for use in the control cabinet SIRIUS 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 three-phase motor 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)



SIRIUS 3RR24 monitoring relay



SIRIUS 3UG48 monitoring relay



SIRIUS 3RS28 temperature monitoring relay



SIRIUS ACT 3SU1 ID key-operated switch



SIRIUS ACT 3SU1 electronic module



Signaling column



8WD44 IO-Link adapter element

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 3RS28 temperature monitoring relay for IO-Link

- Measuring the temperature of solids, liquids and gases
- Use of resistance sensors or thermocouples
- 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 method (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 8WD4 signaling columns

8WD44 IO-Link adapter element

- Up to five signaling elements can be connected using an IO-Link adapter element
- 24 V DC, diameter 70 mm
- Connection with bayonet mechanism
- For fastening on feet, 8WD44
- Connection elements with screw or spring-loaded terminals or connection element with 5-pole M12 plug

Your advantage: Signaling columns for monitoring production sequences and for visual or acoustic warnings in emergency situations, with easy IO-Link connection.

| Article No. | Page |
|----------------|-------------|
| 3RR24 | From 10/59 |
| 3UG48 | From 10/103 |
| 3RS28 | From 10/126 |
| 3SU1 | 13/10 |
| 3SU1400 | 13/111 |
| 8WD44 | From 13/184 |

| | Article No. | Page |
|---|---|------------------------------|
| RFID system  RFID system for IO-Link | SIMATIC RF200 RFID system in the HF range Products SIMATIC RF210R, SIMATIC RF220R, SIMATIC RF240R, SIMATIC RF250R, SIMATIC RF260R <ul style="list-style-type: none"> • 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) | 6GT2 Catalog ID 10 |
| Device Description (IODD)  IODD files for IO-Link | IODD files These files provide the device description for IO-Link devices. <ul style="list-style-type: none"> • 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 | -- 2/91 |
|  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/#/ . | -- 2/91 |
| 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 <ul style="list-style-type: none"> • Available as a stand-alone version or integrated into STEP 7 (V5.5 SP1 and higher) and TIA (V12 and higher) • 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 | -- 2/91 |
|  IO-Link device function block for TIA Portal | IO-Link function blocks (IO-Link master and IO-Link device) STEP 7 function block for easy acyclical data exchange in the user program <ul style="list-style-type: none"> • Freely available for download from Industry Online Support, see https://support.industry.siemens.com/cs/ww/en/view/82981502 | -- 2/91 |
|  "Siemens IO-Link Devices" block library | "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. <ul style="list-style-type: none"> • Freely available for download from Industry Online Support, see https://support.industry.siemens.com/cs/ww/en/ps/90529409 | -- 2/91 |

Industrial communication

AS-Interface Introduction

Communication overview

Overview

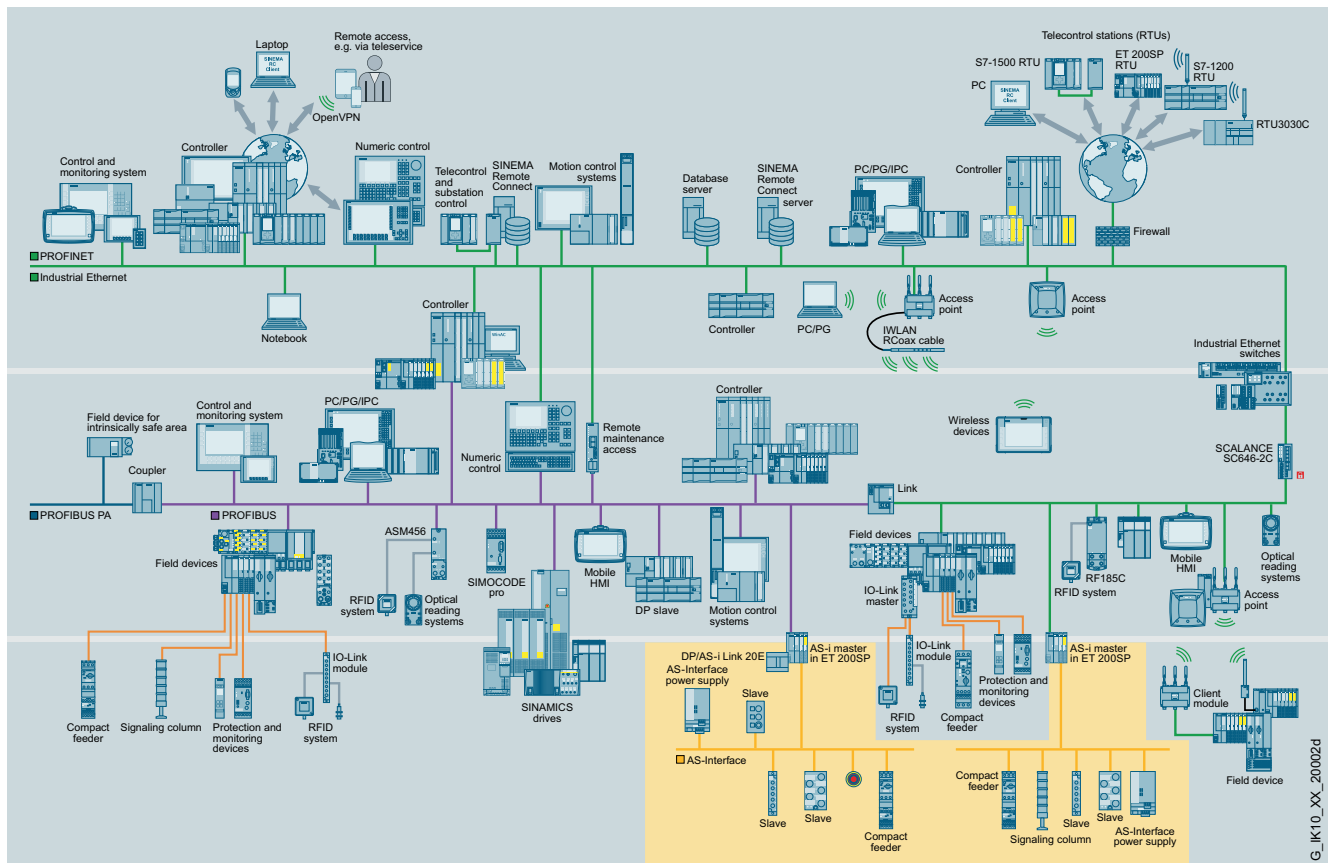
AS-Interface is an open, international standard according to IEC/EN 62026-2 for process and field communication. Leading manufacturers of actuators and sensors all over the world support the AS-Interface. Interested companies are provided with the electrical and mechanical specifications by the AS-Interface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

AS-Interface is a single master system. For automation systems from Siemens, there are communications processors (CPs), communication 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 twisted pair 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.

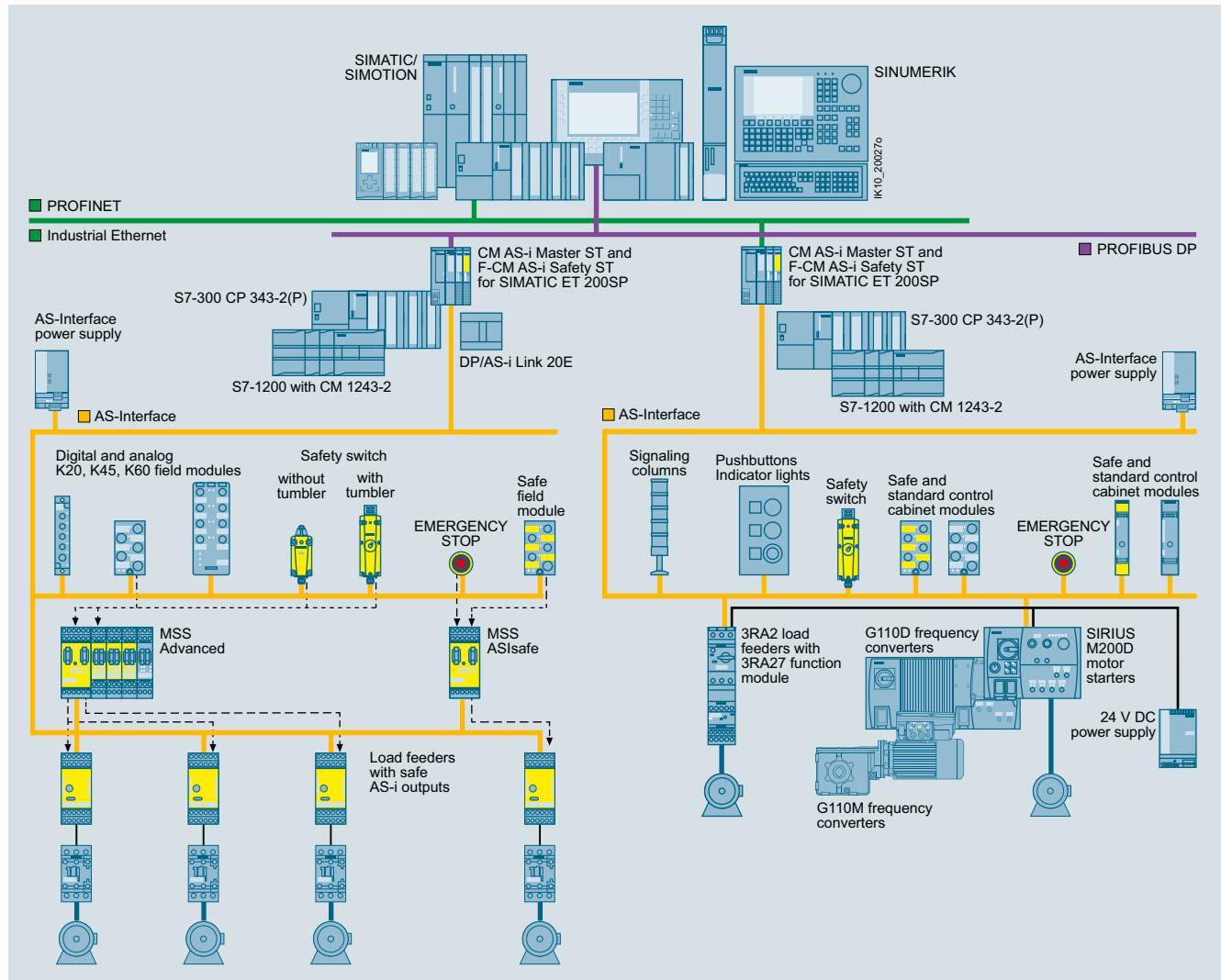
Hence it is possible, for example, for slave addresses to be issued, parameter values transferred or configuration information read out from user programs.

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 master 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 | IEC/EN 62026-2 |
| Topology | Line, star or tree structure (same as electrical wiring) |
| Transmission medium | Unshielded twisted pair (2 x 1.5 mm ²) for data and auxiliary power |
| Connection method | Contacting of the AS-Interface cable by insulation piercing method |
| 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 connected in parallel Longer cable lengths also possible through parallel connection of more repeaters. |

| | |
|--|--|
| 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 |
| Number of stations per AS-Interface line | <ul style="list-style-type: none"> Up to 62 slaves (A/B addressing) Integrated analog value transmission |
| Number of binary sensors and actuators | max. 496 DI / 496 DQ |
| Access control | <ul style="list-style-type: none"> Cyclic polling master/slave procedure Cyclic data acceptance from host (PLC, PC) |
| Error safeguard | Identification and repetition of faulty message frames |

Industrial communication

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 DI | Number of digital outputs DQ |
|--------------------------|--------|---------|--------------------------------|---------------------------------|
| Digital | Analog | ASIsafe | | |
| 62 | 62 | 31 | 62 × 8 = 496 | 62 × 8 = 496 |

Basic data

- AS-Interface specification V3.0 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 DQ or 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.

More information

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

AS-Interface product range

AS-Interface products from Siemens use the current AS-Interface specification V3.0, which is standardized internationally as IEC/EN 62026-2.

The alternating pulse modulation developed more than 20 years ago for AS-Interface has proven to be a reliable transmission method with which the direct voltage supply for the bus modules and the connected sensors is provided on the standard twisted pair.

Multiple development stages were implemented to produce the proven-in-use system components with optimum EMC properties available today. The extensive product range with AS-Interface specification V3.0 undergoes constant innovation and is extremely cost-efficient, both to install and operate.

The bus cable can be retrofitted with repeaters of AS-Interface specification V3.0, and the modules function without any reciprocal interference. Master modules from Siemens enable ideal integration into the SIMATIC environment, in particular for the AS-Interface master of the ET 200SP distributed I/O system.

The underlying industrial requirements for the system concept are still applicable today: Numerous individual digital input and output signals are spatially distributed in the machine. Rather than having to install thick cable harnesses from the control cabinet to the sensors and actuators, smaller, more manageable AS-i modules are simply inserted in situ onto the bus cable in the IP67 enclosure, and the sensors and actuators connected with short M12 cables.

An additional AS-i module is installed in proximity to the next sensor to ensure that the length of the M12 cables is kept as short as possible. As analog signals are likewise transmitted without any problems, the AS-Interface also replaces the long, shielded analog cables.

Depending on requirements, the switching devices can also be connected to AS-i modules with terminal connection or conveniently used with the integrated AS-i connection. Motor controllers with digital and analog inputs and outputs are also offered with the current AS-Interface specification V3.0.

Safety signals are also transmitted simply and flexibly by the AS-Interface. The safety-related sensors for protective doors and EMERGENCY STOP buttons can be installed and retrofitted in any position.

The AS-i Safety functionality from Siemens has been continuously optimized and complies with the proven AS-Interface specification V3.0.

For industrial components which require greater transmission capacities, Siemens provide respective solutions with the suitable communication systems.

The AS-Interface system from Siemens continues to provide an ideal and consistent solution for a multitude of simple sensors and actuators, including safety technology and special applications.

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-Interface Link 20E

Overview

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



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 standard ES1 (IEC/EN 62368-1) or PELV (Protective Extra Low Voltage)/SELV (Safety Extra Low Voltage) standards, 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 or *Catalog KT 10.1*, <https://support.industry.siemens.com/cs/ww/en/view/109745655>.
- When used in conjunction with standard 24 V power supply units, each AS-Interface network requires AS-i Power24V-capable data decoupling, see page 2/69 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.

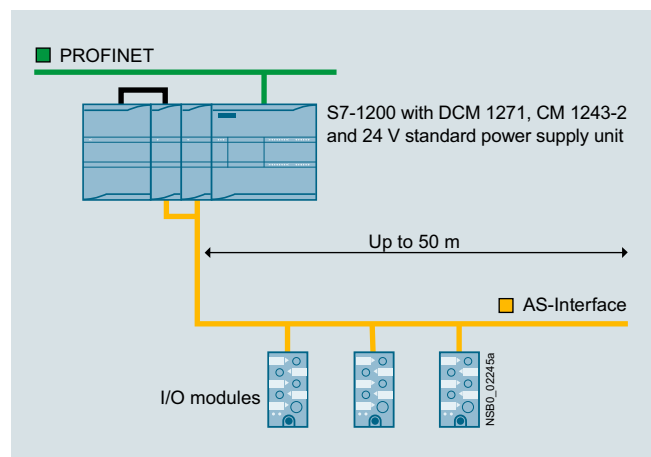
Benefits

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)

Industrial communication

AS-Interface ASIsafe

Introduction

Overview

More information

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

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/EN 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 62061).

AS-i safety solution with F-CPU

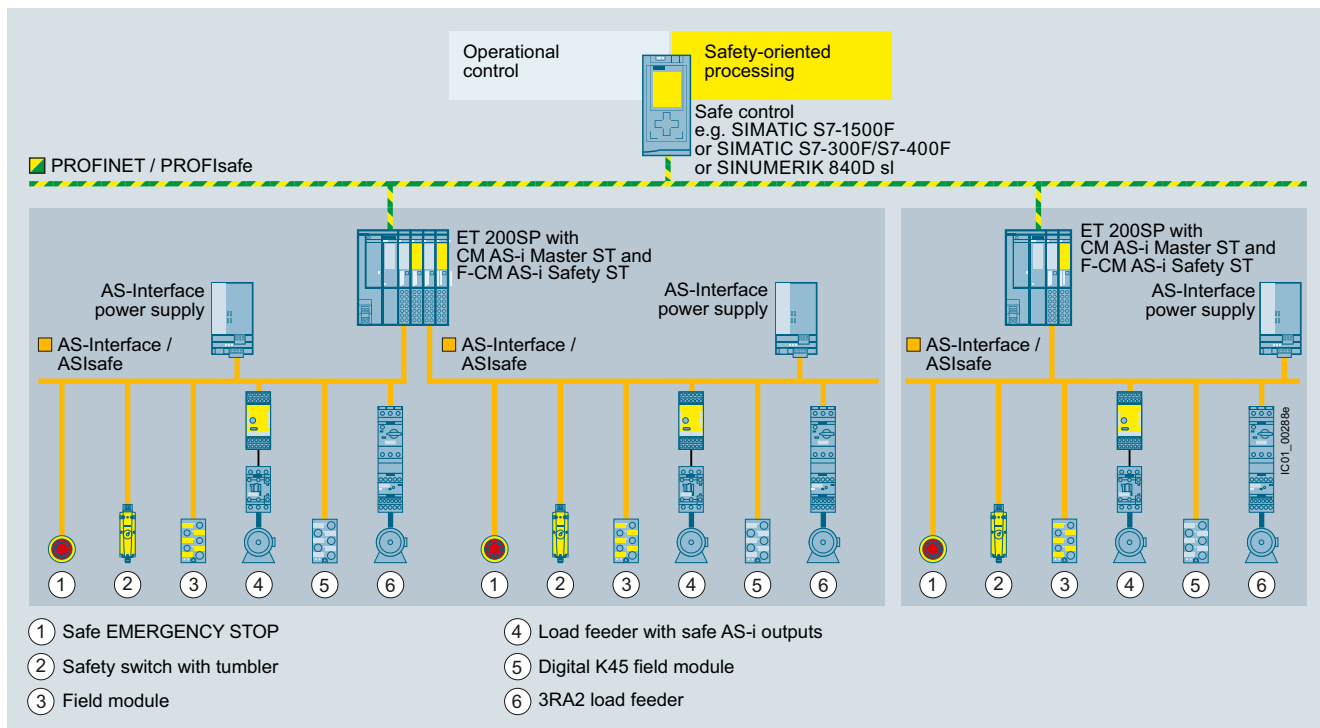
Higher-level control

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.

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

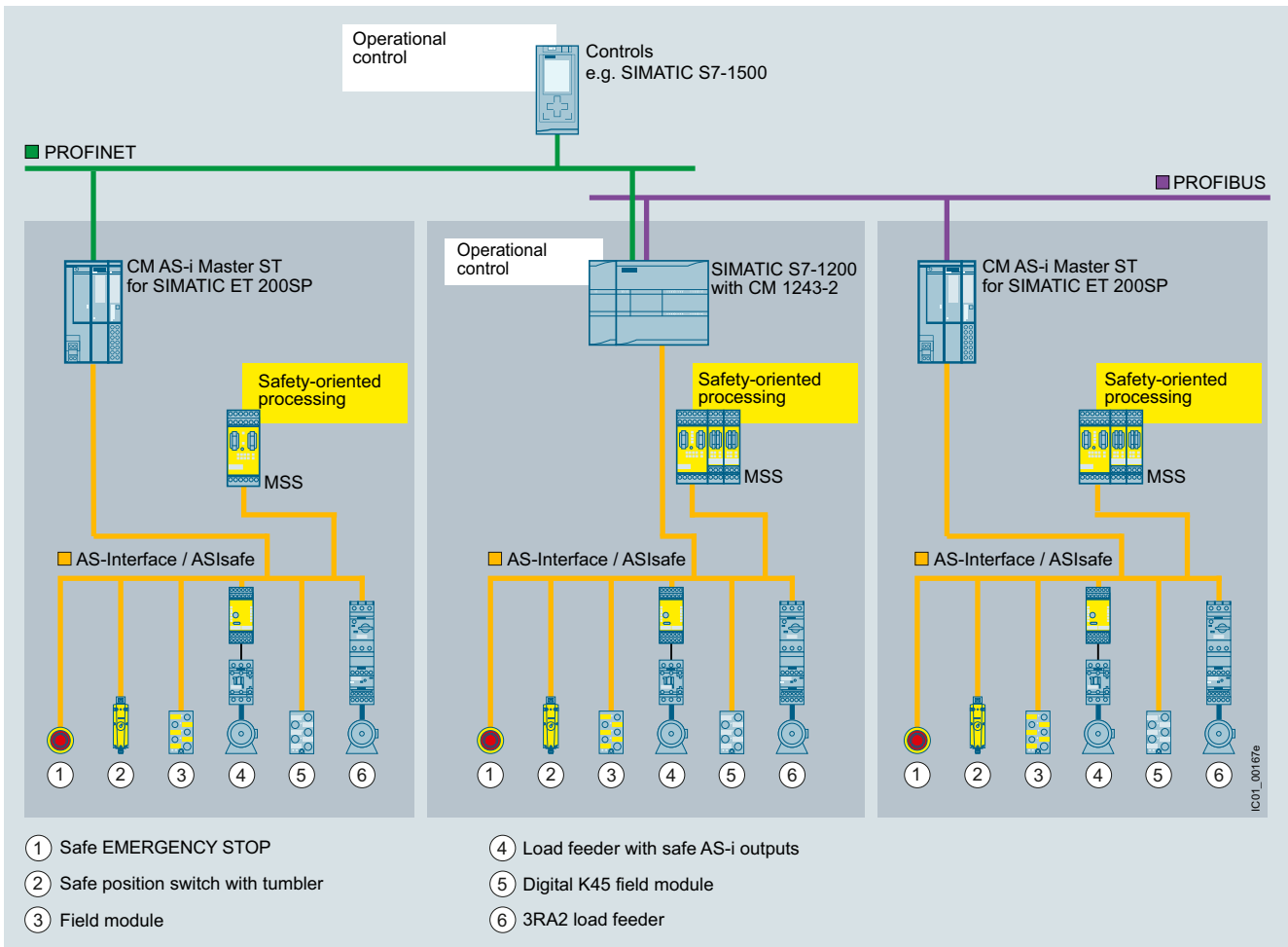
The AS-i communication modules in the ET 200SP facilitate the use of AS-Interface under fail-safe SIMATIC or SINUMERIK controllers.

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

SIRIUS 3RK3 Modular Safety System, [see page 11/36 onwards](#).

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 62061
- 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, protective door interlocks, safety switches, light arrays and two-hand operation are installed.




Industrial communication

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-loaded 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-loaded 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-loaded 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 | | | | | | | |
| | 5 | 3RP1902 | | 1 | 5 units | 41H | |
| Sealable covers For securing against unauthorized configuration of the safety monitor | | | | | | | |
| | 5 | 3RP1903 | | 1 | 10 units | 41H | |
| Push-in lugs 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 cross-circuit 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 SC17.5F SlimLine Compact modules are ideal for space-saving use in a control cabinet. The modules have 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.

Industrial communication

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 | | 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 | -- | ▶ | | 1 | 1 unit | 42C |
| 4 F-DI ¹⁾ | -- | 2 | | 1 | 1 unit | 42C |
| 2 F-DI / 2 DQ | -- | 5 | | 1 | 1 unit | 42C |
| 2 F-DI / 2 DQ | ✓ | 5 | | 1 | 1 unit | 42C |
| SC17.5F SlimLine Compact safety modules | | | | | | |
| Slave addressing type: Standard address | | | | | | |
| I/O type | Outputs | | | | | |
| 2 F-DI | -- | 2 | | 1 | 1 unit | 42C |
| 2 F-DI | -- | ▶ | | 1 | 1 unit | 42C |
| 2 F-DI / 2 DQ | U_{ASi}/U_{aux} supply selectable | 2 | | 1 | 1 unit | 42C |
| 2 F-DI / 2 DQ | U_{ASi}/U_{aux} supply selectable | 2 | | 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 | | 1 | 1 unit | 42C |
| 1 F-RQ / 3 DI / 2 DQ | ✓ | 2 | | 1 | 1 unit | 42C |

✓ Available or possible

-- Not available or not possible

¹⁾ Module occupies two AS-Interface addresses

Standard I/O modules for AS-Interface

- For degree of protection IP67, see page 2/42 onwards
- For degree of protection IP20, see page 2/57 onwards

The existing SlimLine series of ASIsafe 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 2/59.



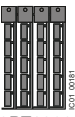
Note:

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

More information

Equipment Manual for SlimLine compact modules, see
<https://support.industry.siemens.com/cs/ww/en/view/109481489>

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG | |
|---|----------|--|--------------|--|------------|------------------------|------------|
| Accessories for compact safety modules | | | | | | | |
|  3RK1901-2EA00 | | K45 mounting plates For mounting K45F | | | | | |
| | | <ul style="list-style-type: none"> For wall mounting For standard rail mounting | ▶ ▶ | 3RK1901-2EA00 3RK1901-2DA00 | 1 1 | 1 unit 1 unit | 42C 42C |
|  3RK1901-1AA00 | 2 30 | Input bridges for K45F | | | | | |
| | | <ul style="list-style-type: none"> Black version Red version | | 3RK1901-1AA00 3RK1901-1AA01 | 1 1 | 1 unit 1 unit | 42C 42C |
|  3RK1901-1KA00 3RK1901-1KA01 | 2 | AS-Interface sealing caps M12 For free M12 sockets | | | | | |
| | | <ul style="list-style-type: none"> Tamper proof | ▶ | 3RK1901-1KA00 3RK1901-1KA01 | 100 100 | 10 units 10 units | 42C 42C |
| Accessories for SlimLine Compact safety modules | | | | | | | |
|  3RK1901-1YA00 3RK1901-1YA01 | 2 2 | 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) | | | | | |
| | | <ul style="list-style-type: none"> Width 17.5 mm Width 22.5 mm | | 3RK1901-1YA00 3RK1901-1YA10 | 1 1 | 1 unit 1 unit | 42C 42C |
|  3RK1901-1YA00 3RK1901-1YA01 | 2 2 | Device termination connectors Required for the last module in the network | | | | | |
| | | <ul style="list-style-type: none"> Width 17.5 mm Width 22.5 mm | | 3RK1901-1YA01 3RK1901-1YA11 | 1 1 | 1 unit 1 unit | 42C 42C |
|  3ZY1121-2BA00 | 2 2 | Removable terminals | | | | | |
| | | <ul style="list-style-type: none"> Screw terminals up to 2 x 1.5 mm² or 1 x 2.5 mm² <ul style="list-style-type: none"> - 2-pole - 4-pole | | Screw terminals  | 1 1 | 6 units 6 units | 41L 41L |
| | | <ul style="list-style-type: none"> Push-in terminals up to 2 x 1.5 mm² <ul style="list-style-type: none"> - 2-pole - 4-pole | | Spring-loaded terminals (push-in)  | 1 1 | 6 units 6 units | 41L 41L |
| | | | | 3ZY1121-2BA00 3ZY1141-2BA00 | 1 1 | 6 units 6 units | 41L 41L |
|  3ZY1450-1BA00 | 2 | Hinged cover Replacement for SlimLine Compact module, without terminal labeling, width 17.5 mm, yellow | | | | 1 5 units 41L | |
| | 2 | Push-in lugs for wall mounting Two lugs are required per device | | | | 1 10 units 41L | |
| | 2 | Coding pins for removable terminals For mechanical coding of the terminals | | | | 1 12 units 41L | |
|  3RT2900-1SB20 | 20 20 | Blank labels Unit labeling plates ¹⁾ | | | | | |
| | | <ul style="list-style-type: none"> 10 mm x 7 mm, titanium gray 20 mm x 7 mm, titanium gray | | 3RT2900-1SB10 3RT2900-1SB20 | 100 100 | 816 units 340 units | 41B 41B |
|  3RA2908-1A | 2 | Tools for opening spring-loaded terminals Screwdriver for SIRIUS devices with spring-loaded 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).

Industrial communication

AS-Interface Masters

Masters for SIMATIC S7 > CM 1243-2

Overview



CM 1243-2 communication module for S7-1200

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>.

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
- 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.

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 "Accessories", page 2/29) 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 2/71.

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.

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.

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 2/65) 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 2/71.
- LEDs for indication of fault statuses for fast diagnostics
- Monitoring of AS-Interface voltage facilitates diagnostics

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 [Equipment Manual for AS-i Master CM 1243-2 and AS-i DCM 1271 data decoupling module](https://support.industry.siemens.com/cs/ww/en/view/57358958), <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 × H × D/mm): 30 × 100 × 75 | | | | |
| | | 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 × H × D/mm): 30 × 100 × 75 | | | | |
| | | 3RK7271-1AA30-0AA0 | | 1 | 1 unit | 42C |
| | | Screw terminals (spare part) | | | | |
| | 5 | 3RK1901-3MA00 | | 1 | 1 unit | 42C |
| | | <ul style="list-style-type: none"> • 5-pole For CM 1243-2 AS-i master and AS-i DCM 1271 data decoupling module | | | | |
| | 5 | 3RK1901-3MB00 | | 1 | 1 unit | 42C |
| | | <ul style="list-style-type: none"> • 3-pole For AS-i DCM 1271 data decoupling module for connecting the power supply unit | | | | |

3RK7271-1AA30-0AA0

Industrial communication

AS-Interface Masters

Masters for SIMATIC S7 > CP 343-2P/CP 343-2

Overview



CP 343-2P/CP 343-2

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-Interface block library for SIMATIC PCS 7 for easy connection of AS-Interface to PCS 7, see [page 14/18 onwards](#)

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

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 2/65](#)) 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 2/69](#).

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 support 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>.

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.

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.

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 | | 1 | 1 unit | 42C |
| 6GK7343-2AH11-0XA0 | | <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 connector • Corresponds to AS-Interface specification V3.0 • Dimensions (W x H x D/mm): 40 x 125 x 120 | | | | |
|  | | 6GK7343-2AH01-0XA0 | | 1 | 1 unit | 42C |
| 6GK7343-2AH01-0XA0 | | <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 connector • Corresponds to AS-Interface specification V3.0 • Dimensions (W x H x D/mm): 40 x 125 x 120 | | | | |

Accessories

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|----|---------------------------|--------------|-------------------|--------|-----|
| | d | | | | | |
| Front connector, 20-pole | | | | | | |
| • With screw terminals  | 1 | 6ES7392-1AJ00-0AA0 | | 1 | 1 unit | 230 |
| • With spring-loaded terminals  | 1 | 6ES7392-1BJ00-0AA0 | | 1 | 1 unit | 230 |

Industrial communication

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

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-Interface block library for SIMATIC PCS 7 for easy connection of AS-Interface to PCS 7, see page 14/18 onwards

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

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

AS-i gateways with ET 200SP

An AS-i gateway or AS-i link enables access to the AS-Interface data via PROFINET or PROFIBUS.

With the CM AS-i Master ST module, flexible and powerful PROFINET/AS-i links or PROFIBUS/AS-i link solutions are set up. Depending on the requirements, even several AS-i masters can be plugged into one ET 200SP station, so that the setup can easily be extended from a single master to double masters or multiple masters.

The maximum number of modules is determined by the ET 200SP interface module (IM): up to 8 AS-i masters with PROFINET IM 155-6 PN Standard, up to 43 AS-i masters with IM 155-6 PN High Feature, or a single AS-i master with IM 155-6 PN Basic. For the connection to PROFIBUS, the IM 155-6DP HF interface module with up to 7 AS-i master modules is used.

Since in many plants an ET 200SP station with I/O, motor starter or other peripheral modules is provided, the AS-i master modules are simply plugged in without any additional effort. There are countless possible combinations.

An AS-i Safety gateway can also be implemented without any problems by adding the safety-oriented module F-CM AS-i Safety ST in the ET 200SP station. This greatly simplifies the cabling and connection of distributed EMERGENCY STOP pushbuttons and protective door monitoring systems to a fail-safe CPU. The AS-i Safety application is completely configured in TIA Portal/STEP 7.

The ET 200SP modules CM AS-i Master ST and F-CM AS-i Safety ST (see from page 2/36) can of course also be used directly on an ET 200SP CPU or F-CPU, so that an extremely compact SIMATIC control system with AS-i bus connection can be set up.

For further application possibilities, see the brochure "The modular AS-i Master" at www.siemens.com/as-interface.

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 module type communication module, light gray
- Hardware and firmware version
- Supported BaseUnit type BU: C0

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 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.

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).

Masters for SIMATIC ET 200 > CM AS-i Master ST for SIMATIC ET 200SP

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.

Configuration is possible with SIMATIC CPUs S7-300 up to S7-1500 and with a SINUMERIK 840D sl or other controller.

The online diagnostic status of the AS-i slaves can be displayed directly on the slaves in the network view in TIA Portal (for S7-1500 CPUs with firmware version V 2.0 or higher, from TIA Portal STEP 7 V14).

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.

Configuration

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

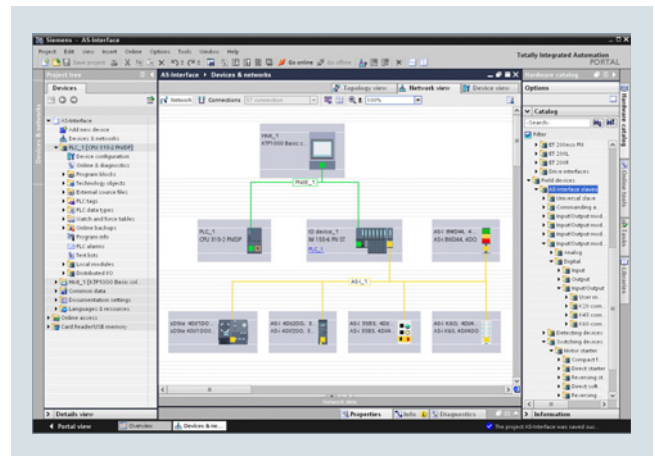
- STEP 7 (TIA Portal) V12 or higher or V13 SP1 or higher (for firmware V1.1) or
- STEP 7 (classic) V5.5 SP3 HF4 or higher with HSP 2092¹⁾ or HSP 2092 V3.0 (for firmware V1.1) or
- the GSD file of the ET 200SP with STEP 7 or another engineering tool

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 TARGET 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 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

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

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.

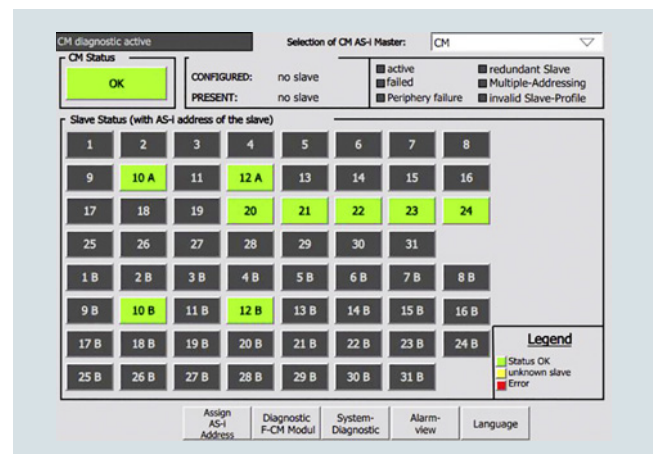
Together with the interface module, a scalable PROFINET/AS-i link or PROFIBUS/AS-i link can be assembled.

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

Industrial communication

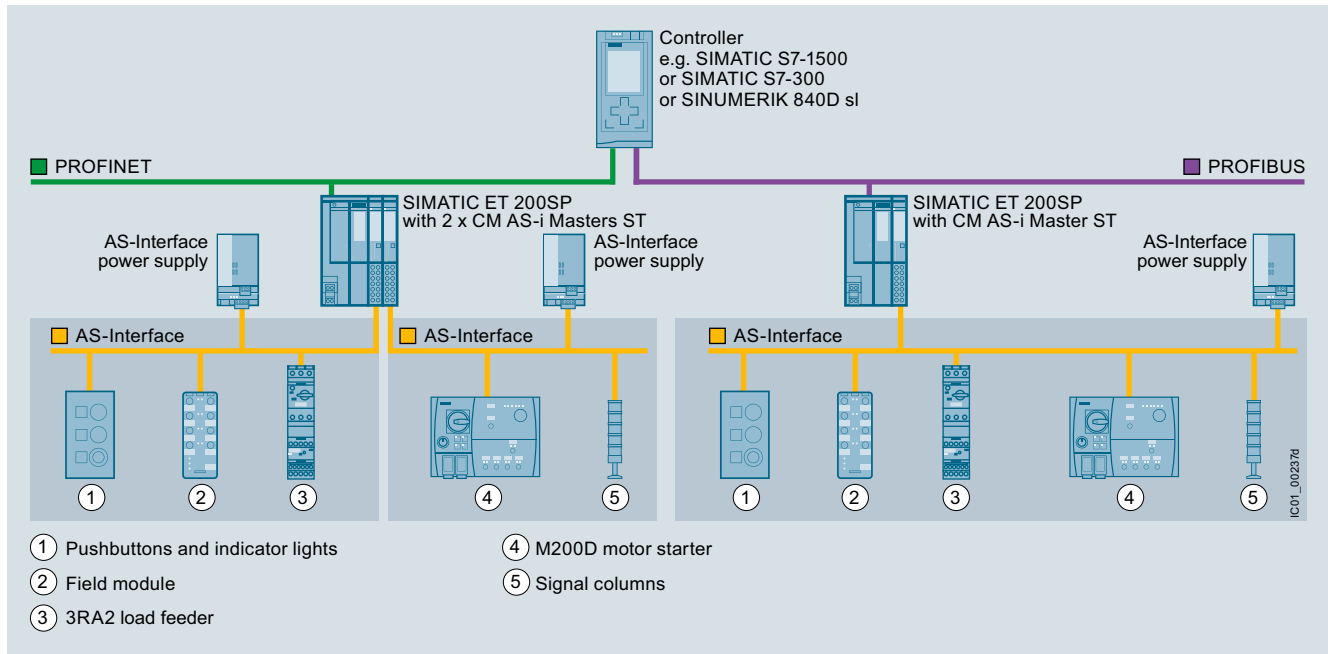
AS-Interface

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 | 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-loaded terminals | PU (UNIT, SET, M) | PS* | PG | |
|--|----|---------------------------|-------------------|-------------------|--------|-----|
| Article No. | d | Price per PU | | | | |
|  | 10 | 6ES7193-6BP20-0DC0 | 1 | 1 unit | 255 | |
| BaseUnit BU20-P6+A2+4D <ul style="list-style-type: none"> • 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 | | | | | | |
| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
| | d | | | | | |
|  | 1 | 6ES7155-6AR00-0AN0 | | 1 | 1 unit | 255 |
| PROFINET interface module IM 155-6 PN Basic Max. 12 I/O modules, max. 32 bytes of I/O data per station <ul style="list-style-type: none"> • Including server module and 2 x RJ45 ports (supplied without RJ45 plug) | | | | | | |
| 6ES7155-6AR00-0AN0 | | | | | | |
|  | 1 | 6ES7155-6AA01-0BN0 | | 1 | 1 unit | 255 |
| PROFINET interface modules IM 155-6 PN Standard Max. 32 I/O modules, max. 256 bytes I/O data per station <ul style="list-style-type: none"> • Including server module and bus adapter 2 x RJ45 (supplied without RJ45 plug) | | | | | | |
| 6ES7155-6AA01-0BN0 | | | | | | |
| | 1 | 6ES7155-6AU01-0BN0 | | 1 | 1 unit | 255 |
| <ul style="list-style-type: none"> • Including server module (bus adapter must be ordered separately, see below) | | | | | | |
| | 15 | 6ES7155-6AU01-0CN0 | | 1 | 1 unit | 255 |
| PROFINET interface modules IM 155-6 PN High Feature Max. 64 I/O modules, max. 1 440 bytes I/O data per station <ul style="list-style-type: none"> • 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) | | | | | | |
|  | 1 | 6ES7155-6AU30-0CN0 | | 1 | 1 unit | 255 |
| <ul style="list-style-type: none"> • IM 155-6 PN/3 High Feature 3-port IM with two bus adapter slots including server module and optional strain relief (bus adapter must be ordered separately, see below) | | | | | | |
| 6ES7155-6AU01-0CN0 | | | | | | |
|  | 1 | 6ES7155-6AU00-0DN0 | | 1 | 1 unit | 255 |
| PROFINET interface module IM 155-6 PN High Speed Max. 30 I/O modules, max. 1 440 bytes I/O data per station <ul style="list-style-type: none"> • Including server module (bus adapter must be ordered separately, see below) | | | | | | |
| 6ES7155-6AU00-0DN0 | | | | | | |
|  | 15 | 6ES7155-6BA01-0CN0 | | 1 | 1 unit | 255 |
| PROFIBUS interface module IM 155-6 DP High Feature Max. 32 I/O modules, max. 244 bytes I/O data per station <ul style="list-style-type: none"> • Including server module and PROFIBUS plug | | | | | | |
| 6ES7155-6BA01-0CN0 | | | | | | |
|  | 1 | 6ES7193-6AR00-0AA0 | | 1 | 1 unit | 255 |
| Bus adapters for PROFINET For connection of the Ethernet cable to the PROFINET IM 155-6 PN interface module <ul style="list-style-type: none"> • Connection 2 x RJ45 (supplied without RJ45 plug) | | | | | | |
| 6ES7193-6AR00-0AA0 | | | | | | |
| | 1 | 6ES7193-6AF00-0AA0 | | 1 | 1 unit | 255 |
| <ul style="list-style-type: none"> • Connection 2 x FC (FastConnect) For more bus adapters with fiber optic cable connection, see Industry Mall . | | | | | | |
| 6ES7193-6AF00-0AA0 | | | | | | |

Industrial communication

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

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>

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 62061), PL e (EN ISO 13849-1)
 - Parameterization conforms with other fail-safe I/O modules of the ET 200SP
- The communication module supports PROFINET 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
 - Start-up 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 2/26).
 - 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 module type communication module: Light gray
 - Hardware and firmware version
 - Supported BaseUnit type BU: C1, C0
- 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 page 2/32 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.

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.

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.
STEP 7 V13 SP1 or higher 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 higher) 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.

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.

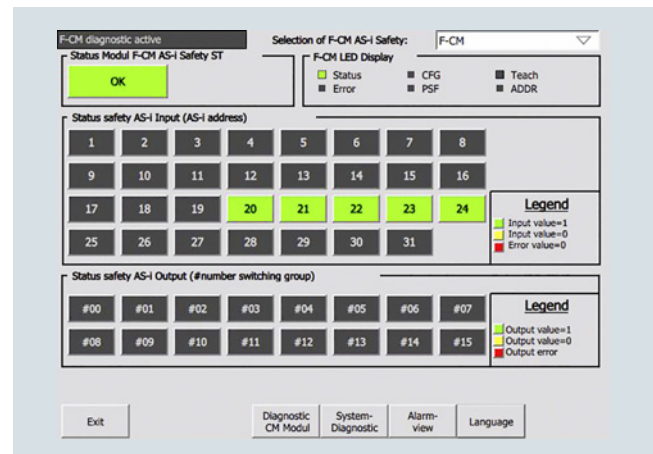
The safety application is programmed in the SIMATIC S7 F-CPU with Distributed Safety/S7 F/FH Systems/Safety Advanced. The fail-safe input signals of the ASIsafe slave modules are read via the AS-i bus line and are combined with any chosen further signals in the fail-safe program.

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

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 2/26). 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.

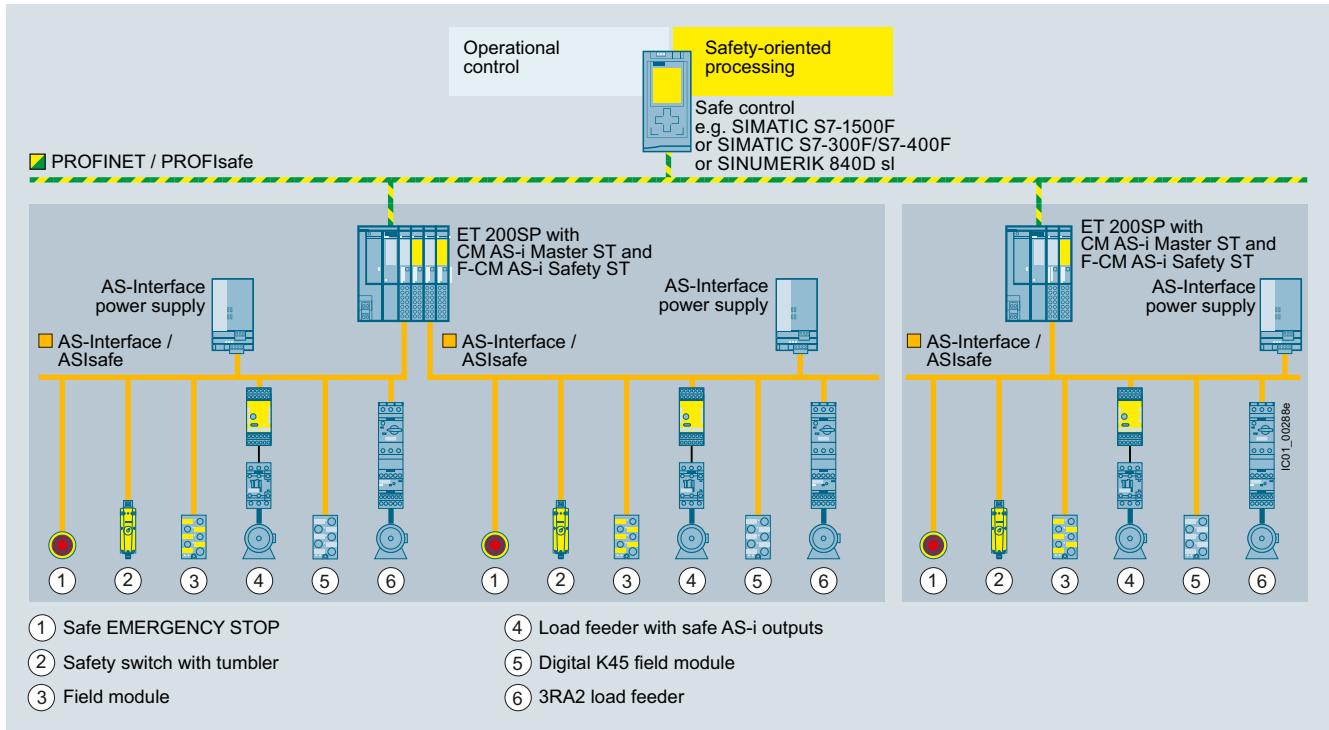
Industrial communication

AS-Interface

Masters

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

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



Selection and ordering data

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|----|-------------|---------------------------|-------------------|----------|-----|
| <div style="display: flex; align-items: center;"> <p>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 2/32 onwards) Can be used up to SIL 3 (IEC 62061), PL e (EN ISO 13849-1) Coding element type H (included in scope of supply) Dimensions (W × H × D/mm): 20 × 73 × 58 </p> </div> | | ▶ | 3RK7136-6SC00-0BC1 | | 1 1 unit | 42C |

Accessories

| Version | SD | Spring-loaded terminals | PU (UNIT, SET, M) | PS* | PG |
|---|----|--------------------------------|-------------------|-----------|-----|
| <div style="display: flex; align-items: center;"> <p>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 </p> </div> | | | | 1 1 unit | 255 |
| <p>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 </p> | | | | 1 5 units | 256 |

More accessories, see page 2/35.

Overview



DP/AS-Interface Link 20E

More information

Manual, see
<https://support.industry.siemens.com/cs/ww/en/view/5281638>

| 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

Routers

High-performance routers between PROFINET and AS-Interface and between PROFIBUS and AS-Interface can be set up 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 2/32 and 2/36.

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>.

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

Communication

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).

Industrial communication

AS-Interface

Routers

DP/AS-Interface Link 20E

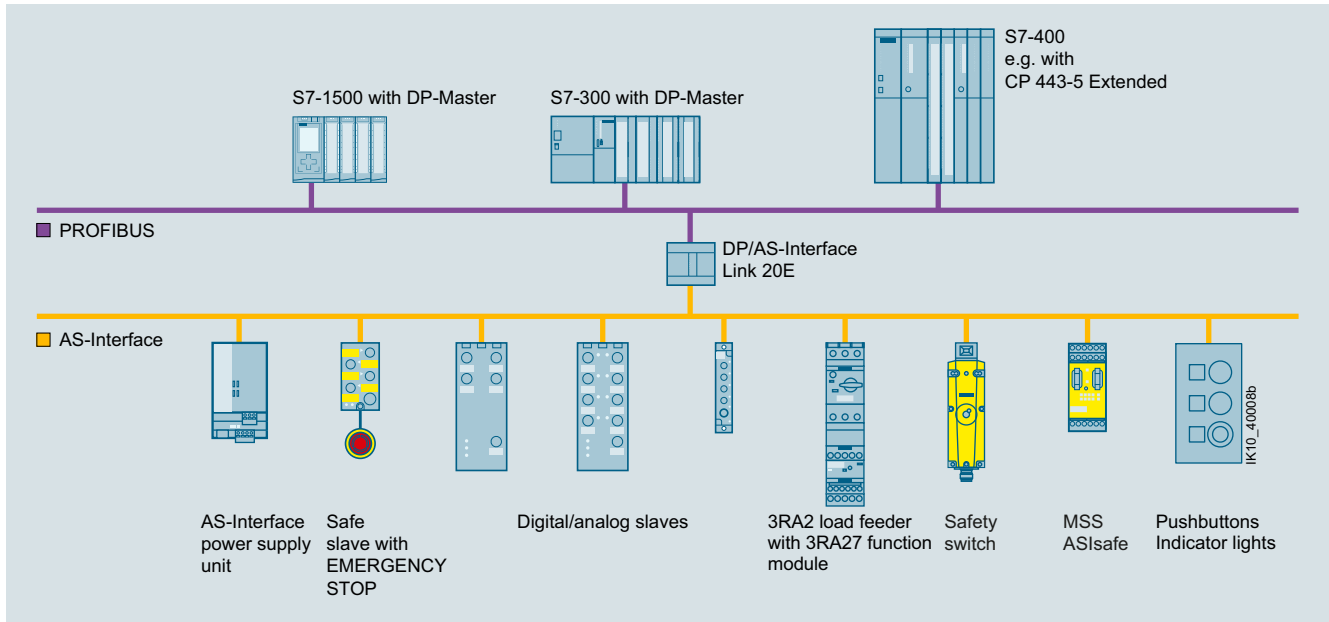
Application

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/EN 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 | |

Accessories

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|----|---------------------------|--------------|-------------------|--------|-----|
| | d | | | | | |
| PROFIBUS FC standard cable GP | 3 | 6XV1830-0EH10 | | 1 | 1 M | 5K1 |
| FastConnect standard type with special design for fast installation, 2-core, shielded | | | | | | |
| PROFIBUS FastConnect bus connector | | | | | | |
| With insulation displacement connection, max. transmission rate 12 Mbps, activatable terminating resistor integrated | | | | | | |
| • RS 485 bus connector 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 connector 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 | 1 | 6GK1905-6AA00 | | 1 | 1 unit | 5K2 |
| Preset stripping tool for speedy stripping of PROFIBUS FastConnect bus cables | | | | | | |

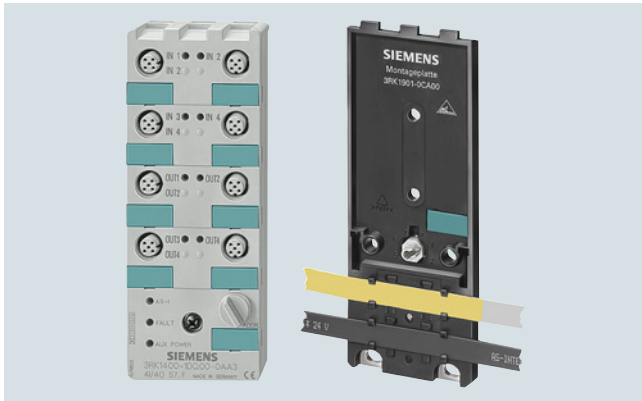
Industrial communication

AS-Interface

Slaves

I/O modules for use in the field, high degree of protection > Digital I/O modules, IP67 - Introduction

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:

- Digital modules with a high degree of protection
 - Series K60, [see pages 2/44 and 2/46](#)
 - Series K45, [see page 2/49](#)
 - Series K20, [see page 2/50](#)
- Analog modules with a high degree of protection
 - Series K60, [see page 2/53](#)

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

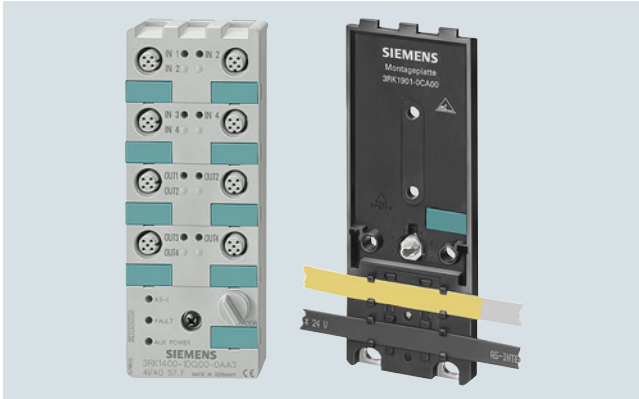
The following table provides an overview of the important features of the digital compact modules.

| 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/ IP69 (IP69K) | IP65/IP67 | IP65/IP67 |
| Addressing type A/B address | ✓ | ✓ | ✓ |

✓ Available

-- Not available

Safety modules for AS-Interface, [see page 2/26](#).

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.

Industrial communication

AS-Interface

Slaves

I/O modules for use in the field, high degree of protection > Digital I/O modules, IP67 - K60




Selection and ordering data

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|--------------------------------------|-----------------------|----------------|-------------------------|------|---------------------------|
| Digital I/O modules, IP67 - K60 | | | | | | |
| <ul style="list-style-type: none"> • PNP transistor • Width 60 mm • Connection method: M12 • Modules supplied without mounting plate | | | | | | |
| Type | Current carrying capacity of outputs | Slave addressing type | Pin assignment | Sensor power supply via | | |
| 8 inputs/ 2 outputs ¹⁾ | 2 A | A/B | Special | AS-i | 2 | 3RK2400-1HQ00-0AA3 |
| | 8 inputs ¹⁾ | -- | Standard | Y-II | AS-i | 3RK1200-0DQ00-0AA3 |
| 4 inputs/ 4 outputs | -- | A/B | Y-II | AS-i | ▶ | 3RK2200-0DQ00-0AA3 |
| | -- | A/B | Y-II | U_{aux} | 2 | 3RK2200-1DQ00-1AA3 |
| | 2 A | Standard | Y-II | AS-i | ▶ | 3RK1400-1DQ00-0AA3 |
| | 2 A | Standard | Standard | AS-i | ▶ | 3RK1400-1CQ00-0AA3 |
| | 1 A | Standard | Y-II | AS-i | 2 | 3RK1400-1DQ01-0AA3 |
| | 1 A | Standard | Standard | AS-i | ▶ | 3RK1400-1DQ03-0AA3 |
| 4 inputs/ 3 outputs | 2 A | A/B (spec. V3.0) | Y-II | AS-i | ▶ | 3RK2400-1DQ00-0AA3 |
| | 2 A | A/B (spec. V3.0) | Y-II | U_{aux} | 2 | 3RK2400-1DQ00-1AA3 |
| 4 inputs/ 2 outputs | 2 A | A/B | Y-II | AS-i | ▶ | 3RK2400-1FQ03-0AA3 |
| 4 inputs/ 2 outputs | 2 A | Standard | Y-II | AS-i | ▶ | 3RK1400-1MQ00-0AA3 |
| 4 inputs | -- | Standard | Y-II | AS-i | ▶ | 3RK1200-0CQ00-0AA3 |
| | -- | A/B | Y-II | AS-i | 2 | 3RK2200-0CQ00-0AA3 |
| 2 x 2 inputs/ 2 x 2 outputs | 1 A | Standard | Y | AS-i | 15 | 3RK1400-1DQ02-0AA3 |
| 4 outputs | 2 A | Standard | Y-II | -- | ▶ | 3RK1100-1CQ00-0AA3 |
| | 2 A | A/B (spec. V3.0) | Y-II | -- | 2 | 3RK2100-1CQ00-0AA3 |
| Digital I/O modules, IP67 - K60 data couplers | | | | | | |
| Modules supplied without mounting plate | | | | | | |
| Type | Current carrying capacity of outputs | Slave addressing type | Pin assignment | Sensor power supply via | | |
| Data coupler 4 inputs/ 4 outputs (virtual) | -- | Standard | -- | -- | 10 | 3RK1408-8SQ00-0AA3 |

¹⁾ Module occupies two AS-Interface addresses

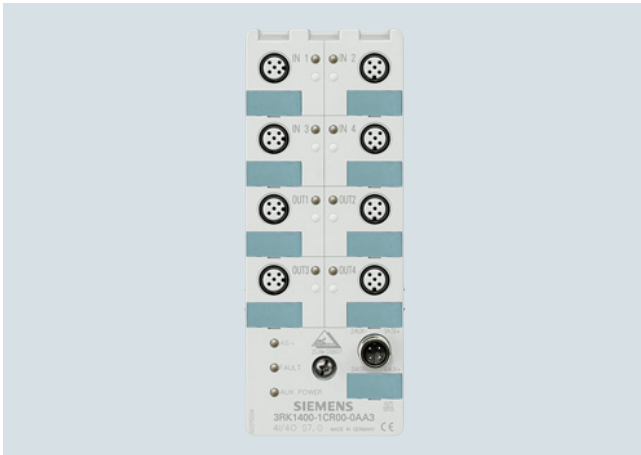
Safety modules for AS-Interface, see page 2/26 onwards.

Accessories

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|----|----------------------|--------------|-------------------|----------|-----|
| K60 mounting plates | | | | | | |
| Suitable for all K60 compact modules | | | | | | |
|  | ▶ | 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 | | | | | | |
| Sealing sets | | | | | | |
| <ul style="list-style-type: none"> • For K60 mounting plate and standard distributor • Cannot be used for K45 mounting plate • One set contains one straight and one shaped seal | | | | | | |
|  | 30 | 3RK1902-0AR00 | | 100 | 5 units | 42D |
| 3RK1902-0AR00 | | | | | | |

Overview

Operation in particularly harsh environments



K60R module in degree of protection IP68/IP69 (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/IP69 (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/IP69 (IP69K) tests", page 2/46.

Cleaning with high-pressure cleaners, such as is regularly required in the food and beverages industry for instance, is possible without difficulty (IP69).

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

Mounting

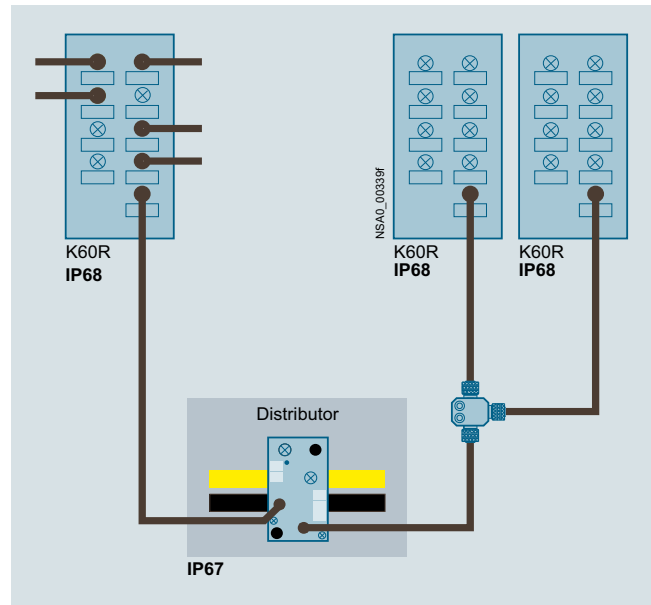
The same mounting plates are used as for the K60 modules. Instead of using flat cables, the K60R is connected using a 4-pole round cable with an M12 connection. With the K60R the mounting plate thus serves only as a fixture and ground terminal.

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

Industrial communication

AS-Interface

Slaves

I/O modules for use in the field, high degree of protection > Digital I/O modules, IP68/IP69 - K60R

IP68/IP69 (IP69K) tests

K60R modules were tested with the following tests:

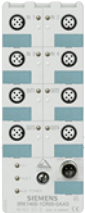
- Stricter test than IP67: 90 min at 1.8 m depth of water (IP67: 30 min at 1 m depth of water)
- Salt water test: Five months in salt water, 20 cm deep, at room temperature
- Test with particularly creepable oil: Five months completely under oil at room temperature
- Test with drilling emulsion: Five 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 IP69 (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/IP69 - K60R</p> <ul style="list-style-type: none"> • 4 inputs/4 outputs • Width 60 mm • IP68/IP69 (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 | 2 | 3RK1400-1CR00-0AA3 | | 1 | 1 unit | 42C |
| 3RK1400-1CR00-0AA3 | | | | | | |

I/O modules for use in the field, high degree of protection > Digital I/O modules, IP68/IP69 - K60R

Accessories

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

Industrial communication

AS-Interface

Slaves

I/O modules for use in the field, high degree of protection > Digital I/O modules, IP67 - K45

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.

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 1 1 unit 42C |
| 4 inputs | -- | Standard | Standard | -- | M12 ▶ | 3RK1200-0CQ20-0AA3 1 1 unit 42C |
| | | Standard | Standard | -- | M8 2 | 3RK1200-0CT20-0AA3 1 1 unit 42C |
| | | A/B | Standard | -- | M12 ▶ | 3RK2200-0CQ20-0AA3 1 1 unit 42C |
| | | A/B | Standard | -- | M8 5 | 3RK2200-0CT20-0AA3 1 1 unit 42C |
| 2 x 2 inputs | -- | A/B | Y | -- | M12 2 | 3RK2200-0CQ22-0AA3 1 1 unit 42C |
| 2 inputs/ 2 outputs | 2 A ²⁾ | Standard | Standard | ✓ | M12 ▶ | 3RK1400-1BQ20-0AA3 1 1 unit 42C |
| 2 x (1 input/ 1 output) | 0.2 A | Standard | Y | -- | M12 2 | 3RK1400-0GQ20-0AA3 1 1 unit 42C |
| 4 x (1 input/ 1 output) | 0.2 A | A/B (spec. V3.0) | Y | -- | M12 5 | 3RK2400-0GQ20-0AA3 1 1 unit 42C |
| | 0.5 A | A/B (spec. V3.0) | Y | ✓ | M12 2 | 3RK2400-1GQ20-1AA3 1 1 unit 42C |
| 4 outputs | 1 A | A/B (spec. V3.0) | Standard | ✓ | M12 2 | 3RK2100-1CQ20-0AA3 1 1 unit 42C |
| 3 outputs | 1 A | A/B | Standard | ✓ | M12 ▶ | 3RK2100-1EQ20-0AA3 1 1 unit 42C |
| 4 outputs | 1 A | Standard | Standard | ✓ | M12 ▶ | 3RK1100-1CQ20-0AA3 1 1 unit 42C |
| 2 outputs/ 2 inputs | 2 A | A/B | Standard | ✓ | M12 2 | 3RK2400-1BQ20-0AA3 1 1 unit 42C |





✓ Available
-- Not available

¹⁾ Module occupies two AS-Interface addresses.

²⁾ The typical current carrying capacity per output increases with version "E12" from 1.5 to 2 A (available since approx. 07/2003).

Safety modules for AS-Interface, see page 2/26 onwards.

Accessories

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|---|-------------|----------------------|----------------------|----------|--------|
| | d | | | | | |
| K45 mounting plates | | | | | | |
|  3RK1901-2EA00 | | ▶ | 3RK1901-2EA00 | 1 | 1 unit | 42C |
| | <ul style="list-style-type: none"> • For wall mounting • For standard rail mounting | | ▶ | 3RK1901-2DA00 | 1 | 1 unit |
| Cable terminating pieces | | | | | | |
|  3RK1901-1MN00 | | ▶ | 3RK1901-1MN00 | 1 | 10 units | 42C |
| For sealing of open cable ends (shaped AS-Interface cable) in IP67 | | | | | | |
| AS-Interface sealing caps | | | | | | |
|  3RK1901-1KA00 | | ▶ | 3RK1901-1KA00 | 100 | 10 units | 42C |
| | <ul style="list-style-type: none"> • For free M12 sockets • For free M8 sockets | 2 | 3RK1901-1PN00 | 100 | 10 units | 42C |
|  3RK1901-1PN00 | | | | | | |

Industrial communication

AS-Interface Slaves

I/O modules for use in the field, high degree of protection > Digital I/O modules, IP67 - K20

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 cable carriers, 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

Safety modules for AS-Interface, [see page 2/26 onwards](#).

Accessories

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|---|---------------------------|---------------------|-------------------|----------|--------|
| AS-Interface sealing caps | | | | | | |
|  3RK1901-1KA00 | ▶ | 3RK1901-1KA00 | | 100 | 10 units | 42C |
| | 2 | 3RK1901-1PN00 | | 100 | 10 units | 42C |
|  3RK1901-1PN00 | | | | | | |
| AS-Interface compact distributors, for AS-Interface flat cable | | | | | | |
|  3RK1901-2NN10 | 2 | 3RK1901-2NN10 | | 1 | 1 unit | 42C |
| Current carrying capacity up to 8 A | | | | | | |
| AS-Interface M12 feeders | | | | | | |
| • Degree of protection IP67 | | | | | | |
| • Current carrying capacity up to 2 A | | | | | | |
|  3RX9801-0AA00 | ▶ | 3RX9801-0AA00 | | 1 | 1 unit | 42C |
| For flat cable | For | Cable length | Cable end in feeder | | | |
| AS-i | M12 socket | -- | Available | | | |
| AS-Interface M12 feeders | | | | | | |
| • Degree of protection IP67/IP68/IP69 (IP69K) | | | | | | |
| • Current carrying capacity up to 4 A | | | | | | |
|  3RK1901-2NR10 | ▶ | 3RK1901-2NR10 | | 1 | 1 unit | 42C |
| For flat cable | For | Cable length | Cable end in feeder | | | |
| AS-i | M12 socket | -- | Not available | 2 | 1 | 1 unit |
| AS-i | M12 cable box | 1 m | Not available | 2 | 1 | 1 unit |
| AS-i | M12 cable box | 2 m | Not available | 2 | 1 | 1 unit |
| AS-i/U _{aux} | M12 socket | -- | Not available | 2 | 1 | 1 unit |
| AS-i/U _{aux} | M12 cable box | 1 m | Not available | 2 | 1 | 1 unit |
| AS-i/U _{aux} | M12 cable box | 2 m | Not available | 2 | 1 | 1 unit |
|  3RK1901-2NR21 | | | | | | |
| AS-Interface M12 feeders, 4-fold | | | | | | |
| Current carrying capacity up to 4 A | | | | | | |
|  3RK1901-1NR04 | ▶ | 3RK1901-1NR04 | | 1 | 1 unit | 42C |
| 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 | 1 | 1 unit |
| M12 Y-shaped coupler plugs | | | | | | |
|  6ES7194-1KA01-0XA0 | 1 | 6ES7194-1KA01-0XA0 | | 1 | 1 unit | 250 |
| For connection of two sensors to one M12 socket with Y-assignment | | | | | | |
| M12 connecting cables | | | | | | |
|  3RK1902-4PB15-3AA0 | 2 | 3RK1902-4PB15-3AA0 | | 1 | 1 unit | 42D |
| • 3-pole | | | | | | |
| • For addressing AS-i slaves with M12 bus connection | | | | | | |
| • Cable length 1.5 m | | | | | | |

Industrial communication

AS-Interface

Slaves

I/O modules for use in the field, high degree of protection > Analog I/O modules, IP67 - K60

Overview



K60 analog compact module

More information

Manual for AS-Interface analog modules, see <https://support.industry.siemens.com/cs/ww/en/view/7643815>

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
 - Current measurement
 - Voltage measurement
 - Resistance/thermal resistance measurement
- 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 twice as fast as 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 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" above.

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

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 | | | | | |
|--|------------------------------|--|---|---------------------------|---|--------|-----|
| 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) | ▶ | 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) | ▶ | 3RK1207-1BQ44-0AA3 | 1 | 1 unit | 42C |
| | Voltage | ± 10 V or 1 ... 5 V (selectable) | ▶ | 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 | | | | | |
| 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 | | | | | |
|-------------------------------------|---------|-------------------------------------|---|---------------------------|---|--------|-----|
| 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.





Industrial communication

AS-Interface

Slaves

I/O modules for use in the field, high degree of protection > Analog I/O modules, IP67 - K60

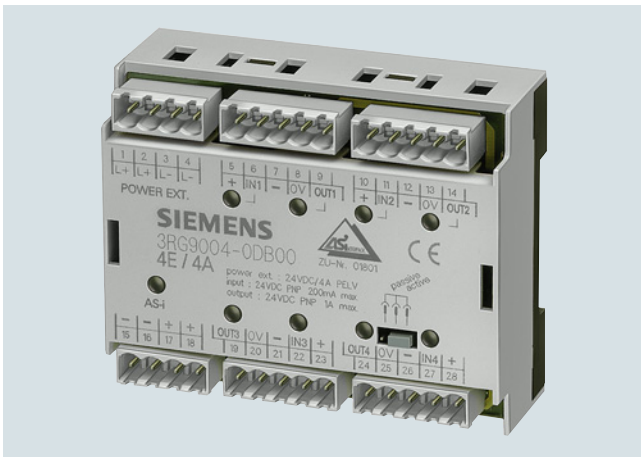
Accessories

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|----|---|--------------|-------------------|----------|-----|
| | d | | | | | |
|  | | K60 mounting plates | | | | |
| | | • Wall mounting | | 1 | 1 unit | 42C |
| | | • Standard rail mounting | | 1 | 1 unit | 42C |
| 3RK1901-0CA00 | | | | | | |
|  | | M12 sealing caps | | 100 | 10 units | 42C |
| 3RK1901-1KA00 | | | | | | |
|  | 30 | Sealing sets | | 100 | 5 units | 42D |
| 3RK1902-0AR00 | | • For K60 mounting plate and distributor | | | | |
| | | • Cannot be used for K45 mounting plate | | | | |
| | | • One set contains one straight and one shaped seal | | | | |
|  | 2 | Jumper plugs | | 1 | 1 unit | 42C |
| 3RK1901-1AA00 | | For changing over the two-channel input modules | | | | |

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

Industrial communication

AS-Interface

Slaves

I/O modules for use in the control cabinet > SlimLine Compact

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 solid-state 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-loaded 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.



SC22.5 SlimLine Compact module 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 diagnostics 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.

Selection and ordering data

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



More information

Equipment Manual for SlimLine compact modules, see
<https://support.industry.siemens.com/cs/ww/en/view/109481489>

| Version | Width | Inputs | Outputs | SD | Screw terminals | SD | Spring-loaded 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 solid-state | 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 | ▶ | 3RK2402-2CG00-2AA2 |
| | 4 inputs/ 4 outputs | 22.5 | 3-wire | 2A solid-state | ▶ | 3RK2400-2CE00-2AA2 | ▶ | 3RK2400-2CG00-2AA2 |

Slave addressing type: Standard address

| | | | | | | | | |
|---|------------------------|------|--------|----------------|---|---------------------------|---|---------------------------|
|  | 4 inputs/ 4 outputs | 22.5 | 3-wire | 2A solid-state | ▶ | 3RK1400-2CE00-2AA2 | ▶ | 3RK1400-2CG00-2AA2 |
|---|------------------------|------|--------|----------------|---|---------------------------|---|---------------------------|


SC22.5 analog SlimLine Compact modules

Slave addressing type: Standard address

| | | | | | | | | |
|---|-----------|------|---|--|---|---------------------------|---|---------------------------|
|  | 4 inputs | 22.5 | Voltage/ current selectable (1 ... 5 V, ± 10 V, 4 ... 20 mA, ± 20 mA) | -- | 2 | 3RK1207-0CE00-2AA2 | 2 | 3RK1207-0CG00-2AA2 |
| | | | Thermal resistance (Pt100, Ni100, 0 ... 600 Ω) | -- | 2 | 3RK1207-3CE00-2AA2 | 2 | 3RK1207-3CG00-2AA2 |
| | 2 outputs | 22.5 | -- | Voltage/ current selectable (0 ... 10 V, 1 ... 5 V, ± 10 V, 0 ... 20 mA, 4 ... 20 mA, ± 20 mA) | 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 | ▶ | 3RK1205-0BG00-2AA2 |
| | 2 safe inputs/ 2 standard outputs | 17.5 | For mechanical contacts | Solid-state, U_{ASi}/U_{aux} supply selectable | 2 | 3RK1405-2BE00-2AA2 | 2 | 3RK1405-2BG00-2AA2 |

Safety modules for AS-Interface, see page 2/26 onwards.

Industrial communication

AS-Interface
Slaves

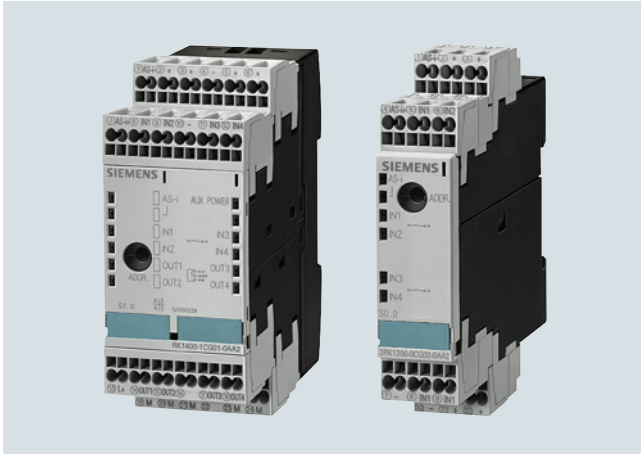
I/O modules for use in the control cabinet > SlimLine Compact

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) | | | | | | |
|  | 2 | 3RK1901-1YA00 | | 1 | 1 unit | 42C |
|  | 2 | 3RK1901-1YA10 | | 1 | 1 unit | 42C |
| Device termination connectors | | | | | | |
| Required for the last module in the network | | | | | | |
|  | 2 | 3RK1901-1YA01 | | 1 | 1 unit | 42C |
|  | 2 | 3RK1901-1YA11 | | 1 | 1 unit | 42C |
| Removable terminals | | | | | | |
| Screw terminals  | | | | | | |
|  | 2 | 3ZY1121-1BA00 | | 1 | 6 units | 41L |
| | 2 | 3ZY1141-1BA00 | | 1 | 6 units | 41L |
| Spring-loaded terminals (push-in)  | | | | | | |
| | 2 | 3ZY1121-2BA00 | | 1 | 6 units | 41L |
| | 2 | 3ZY1141-2BA00 | | 1 | 6 units | 41L |
| Hinged cover | | | | | | |
| Replacement for SlimLine Compact module, without terminal labeling | | | | | | |
|  | 2 | 3ZY1450-1AA00 | | 1 | 5 units | 41L |
|  | 2 | 3ZY1450-1BA00 | | 1 | 5 units | 41L |
|  | 2 | 3ZY1450-1AB00 | | 1 | 5 units | 41L |
|  | | | | | | |
| Push-in lugs for wall mounting | | | | | | |
|  | 2 | 3ZY1311-0AA00 | | 1 | 10 units | 41L |
| Coding pins for removable terminals | | | | | | |
|  | 2 | 3ZY1440-1AA00 | | 1 | 12 units | 41L |
| Blank labels | | | | | | |
| Unit labeling plates ¹⁾ | | | | | | |
|  | 20 | 3RT2900-1SB10 | | 100 | 816 units | 41B |
|  | 20 | 3RT2900-1SB20 | | 100 | 340 units | 41B |
| Tools for opening spring-loaded terminals | | | | | | |
|  | 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).

More information



SlimLine S45 modules (picture on left) and S22.5 module (picture on right) with spring-loaded 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 S22.5, S22.5F and S45 SlimLine modules with the new SC17.5, SC17.5F and SC22.5 SlimLine Compact 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-loaded terminals | Version | Screw terminals | Spring-loaded 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 solid-state, standard address | 3RK1400-2CE00-2AA2 | 3RK1400-2CG00-2AA2 | 4 DI / 4 DQ, 2A solid-state, standard address |
| 3RK1400-1CE01-0AA2 | 3RK1400-1CG01-0AA2 | 4 DI / 4 DQ, 2A solid-state, 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}) | | | |




Industrial communication

AS-Interface

Slaves

I/O modules for use in the control cabinet > F90 module

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 2- and 3-wire PNP transistor 2- and 3-wire PNP transistor floating | PNP transistor 1 A PNP transistor 2 A PNP transistor 2 A | 2 | | |
| | | | | | 1 | 1 unit 42C |
| | | | | | 1 | 1 unit 42C |
| | | | | | 1 | 1 unit 42C |
| | COMBICON ¹⁾ |  2- and 3-wire PNP transistor 2- and 3-wire PNP transistor 2- and 3-wire PNP transistor floating | PNP transistor 1 A PNP transistor 2 A PNP transistor 2 A | 2 | | |
| | | | | | 1 | 1 unit 42C |
| | | | | | 1 | 1 unit 42C |
| | | | | | 1 | 1 unit 42C |

¹⁾ Scope of supply does not include COMBICON connector 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 connector 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 | | | | | | |
| | 2 | 3RX9810-0AA00 | | 1 | 1 unit | 42C |

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 |



3RK1400-0CE00-0AA3

Flat module 4I/4O

Slave addressing type: Standard address

- 4 inputs/4 outputs
- 200 mA for all I/Os

Industrial communication

AS-Interface
Slaves

Modules with special functions > Counter modules

Overview



Counter module with spring-loaded 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.

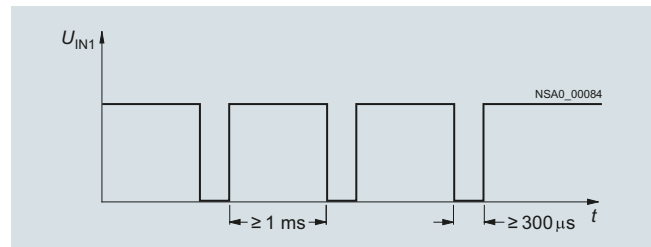
For the values sent to be unambiguous, no more than 15 count values are allowed between two host invocations or AS-Interface master invocations at terminal 8. The maximum permissible transmission frequency is calculated from these times:

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

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).



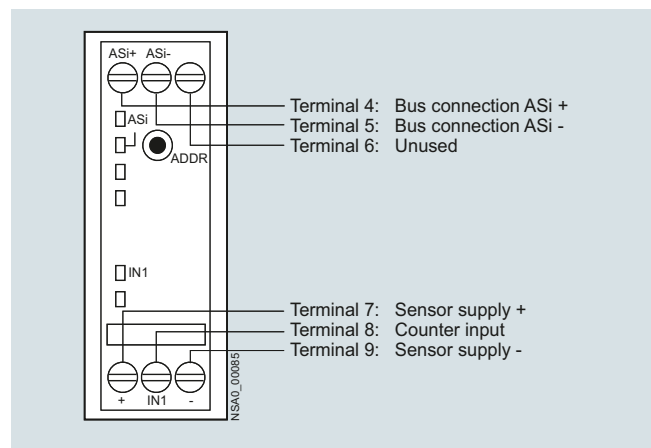
Maximum frequency for the counter module

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 |
|---------|----|-------------|--------------|-------------------|-----|----|
| | d | | | | | |

Counter modules

Slave addressing type: Standard address

Width 22.5 mm

• With screw terminals



10

• With spring-loaded terminals



10

3RK1200-0CE03-0AA2

1 1 unit 42C

3RK1200-0CG03-0AA2

1 1 unit 42C



3RK1200-0CG03-0AA2

Overview



Ground-fault detection module with spring-loaded terminals

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



Note:

Not suitable for AS-i Power24V.

Check whether the AS-i power supply unit or the AS-i master module, etc. features integrated ground-fault detection, and therefore whether a separate ground fault detection module can be omitted.

It should be noted that an AS-i cable segment behind an AS-i repeater requires its own ground-fault monitoring.

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 | | | | | | |
| • With screw terminals |  | 2 | 3RK1408-8KE00-0AA2 | 1 | 1 unit | 42C |
| • With spring-loaded terminals |  | 2 | 3RK1408-8KG00-0AA2 | 1 | 1 unit | 42C |



3RK1408-8KG00-0AA2

Industrial communication

AS-Interface
Slaves

Modules with special functions > Overvoltage protection modules

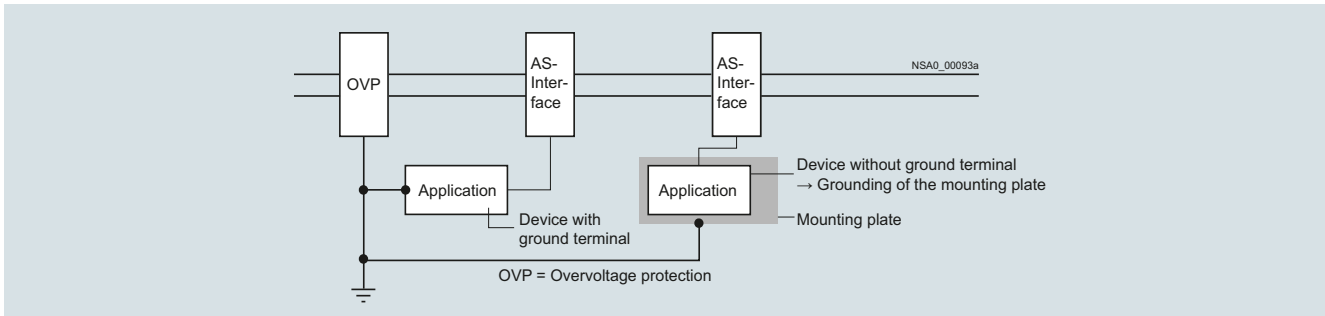
Overview



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 OA to 1.

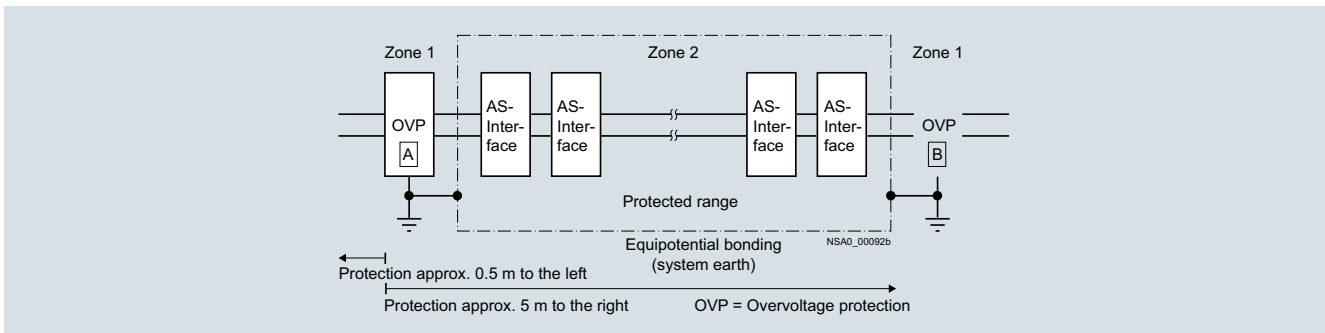
Configuration guidelines




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) | 3RK1901-1GA01 | | 1 | 1 unit | 42C |

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.

Overview



AS-Interface power supply unit for 3 A

More information

Operating Instructions for AS-i power supply units, see <https://support.industry.siemens.com/cs/ww/en/view/21489904> and <https://support.industry.siemens.com/cs/ww/en/view/22317836>

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 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 and signaled 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/2-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-loaded terminals: 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 1-phase and 2-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)


Industrial communication

AS-Interface

Power supply units and data decoupling modules

AS-Interface power supply units

Selection and ordering data

| Version | SD | Spring-loaded terminals  | PU (UNIT, SET, M) | PS* | PG |
|---|----|---|-------------------------|-----|------------|
| | d | Article No. | Price per PU | | |
| AS-Interface power supply units, IP20 | | | | | |
| <ul style="list-style-type: none"> AS-i single output 30 V DC Output voltage ES1 according to EN 62368-1 With integrated ground-fault detection Ambient temperature during operation -10 ... +70 °C 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 | | | |
| 3 A | | 120/230 V AC (selectable) | ▶ 3RX9501-0BA00 | 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 |
| For special applications | | | | | |
| 3 A | | 24 V DC | ▶ 3RX9501-1BA00 | 1 | 1 unit 42C |
| 2.6 A/max. 100 W | | 120/230 V AC (selectable) | 2 3RX9501-2BA00 | 1 | 1 unit 42C |



3RX9501-0BA00



3RX9503-0BA00

Overview



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

More information

For operating instructions and other technical information, see <https://support.industry.siemens.com/cs/ww/en/view/64364000> and <https://support.industry.siemens.com/cs/ww/en/view/44030789>

The PSN130S 30 V power supply units 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 2/69 or 2/71.

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

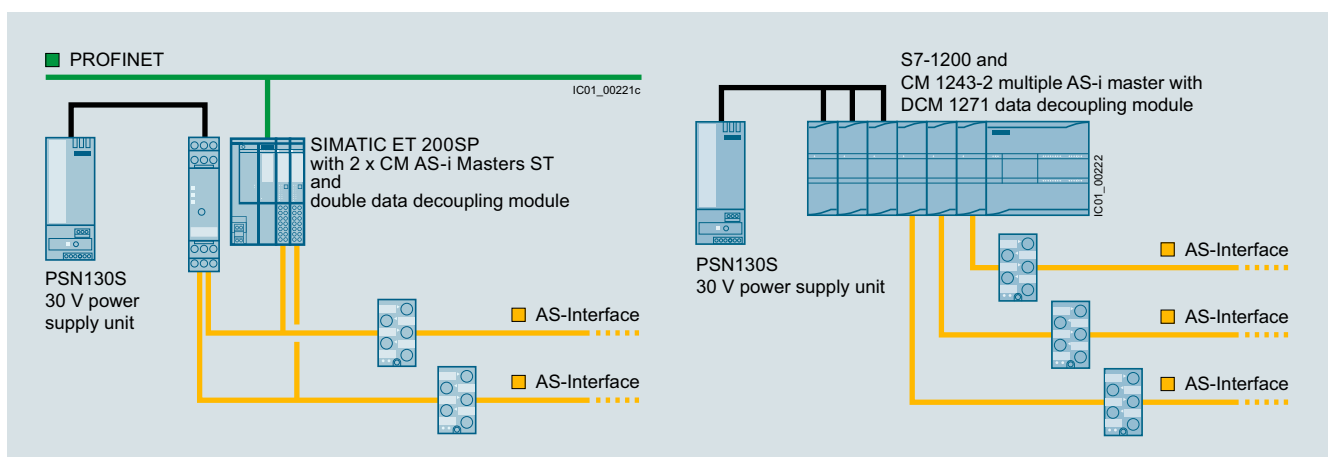
- Primary switched-mode power supply units for connection to a 1-phase AC network
- Power for currents of 3 A, 4 A and 8 A
- The output voltage is floating, and resistant to short-circuits and no-load operation. If there is an overload, the output voltage is reduced or cut-off. After a short circuit 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 a SIMATIC ET 200SP with two CM AS-i Master ST modules
 Right: Triple network based on the SIMATIC S7-1200 with DCM 1271 data decoupling modules and CM 1243-2 communication processors

Industrial communication

AS-Interface

Power supply units and data decoupling modules




30 V power supply units

Technical specifications

| PSN130S 30 V DC power supply unit | | 3 A | 4 A | 8 A |
|---|------------------|---|-----|-----|
| Input data | | | | |
| • Input voltage, rated value U_e | V AC | 120/230 V, 1-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 _{pp} | < 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 |

| PSN130S 30 V DC power supply unit | | 3 A | 4 A | 8 A |
|---|----|-------------|-----|-----|
| Protection and monitoring | | | | |
| • Output overvoltage protection | V | < 37 | | |
| • Current limiting, typ. | A | 4 | 5.5 | 11 |
| 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 | | | |
| PSN130S 30 V DC power supply unit (without AS-i data decoupling) | | | | | | |
| <ul style="list-style-type: none"> Output voltage 30 V DC Output voltage ES1 according to EN 62368-1 Dimensions: <ul style="list-style-type: none"> Width: 50 mm (3 A/4 A); 70 mm (8 A); Height: 125 mm; Depth: 126.5 mm | | | | | | |
|  | Output current | Input voltage | | | | |
| 3RX9511-0AA00 | 3 A | 120/230 V AC (automatic selection) | 2 | 3RX9511-0AA00 | 1 | 1 unit 42C |
|  | 4 A | 120/230 V AC (automatic selection) | 2 | 3RX9512-0AA00 | 1 | 1 unit 42C |
| 3RX9512-0AA00 | 8 A | 120/230 V AC (automatic selection) | 2 | 3RX9513-0AA00 | 1 | 1 unit 42C |
|  | | | | | | |
| 3RX9513-0AA00 | | | | | | |

Overview



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

More information

Operating Instructions, see
<https://support.industry.siemens.com/cs/ww/en/view/44030789>
More information on AS-i Power24V, see *System Manual for AS-Interface*,
<https://support.industry.siemens.com/cs/ww/en/view/26250840>

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 module

- Degree of protection IP20
- Narrow design: 22.5 mm wide
- Version with screw or spring-loaded 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, display can optionally be switched off
- 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.

Using the ground-fault detection in the AS-i master is recommended for non-grounded supply. In this case, the ground-fault indicator can be deactivated in the data decoupling module to avoid any unwanted LED messages.

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 modules, 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 ES1 (IEC/EN 62368-1) or PELV (Protective Extra Low Voltage)/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 or *Catalog KT 10.1*,
<https://support.industry.siemens.com/cs/ww/en/view/109745655>.
- PSN130S 30 V power supply units, see page 2/67

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 "AS-i Power24V" for implementation of AS-i Power24V, see page 2/21.

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

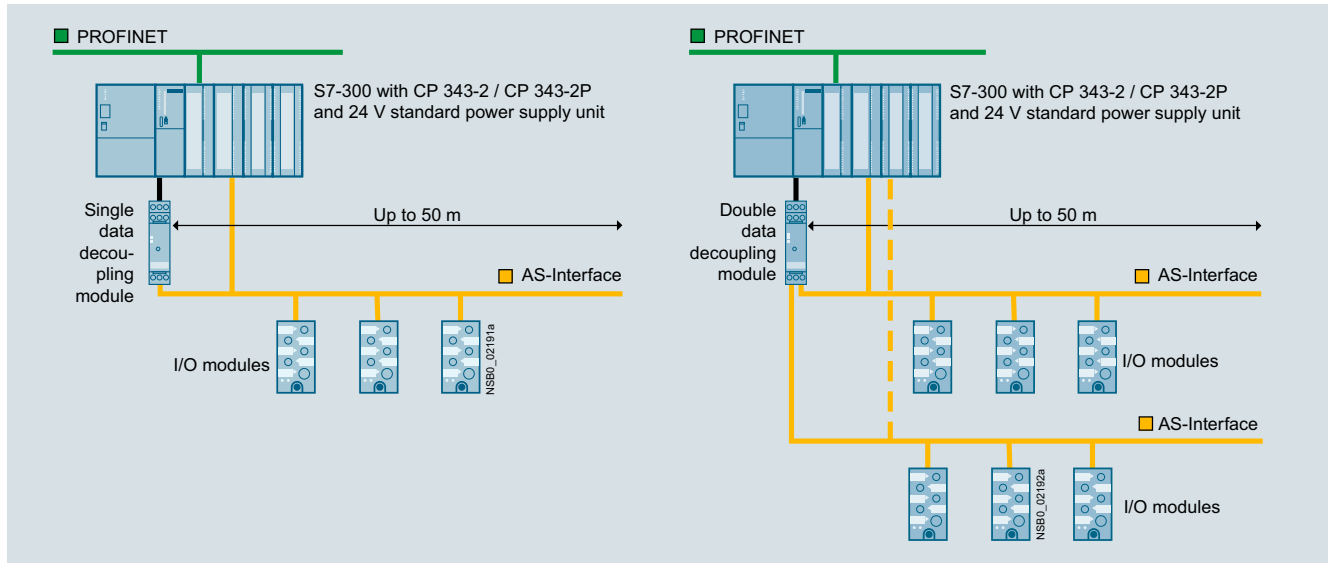
Industrial communication

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-loaded 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

More information

Equipment Manual for AS-i Master CM 1234-2 and AS-i DCM 1271 data decoupling unit, see <https://support.industry.siemens.com/cs/ww/en/view/57358958>

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

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 (downstream of 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 benefit in addition from the advantages of a modern bus system:
 - High level of standardization
 - Additional diagnostics and maintenance information
 - Faster commissioning

Industrial communication

AS-Interface

Power supply units and data decoupling modules

Data decoupling modules for S7-1200 > DCM 1271 data decoupling module

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 ES1 (IEC/EN 62368-1) or PELV (Protective Extra Low Voltage)/SELV (Safety Extra Low Voltage) standards, have a residual ripple of $< 250 \text{ mV}_{pp}$, 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 or Catalog KT 10.1, <https://support.industry.siemens.com/cs/ww/en/view/109745655>
- PSN130S 30 V power supply units, see page 2/67

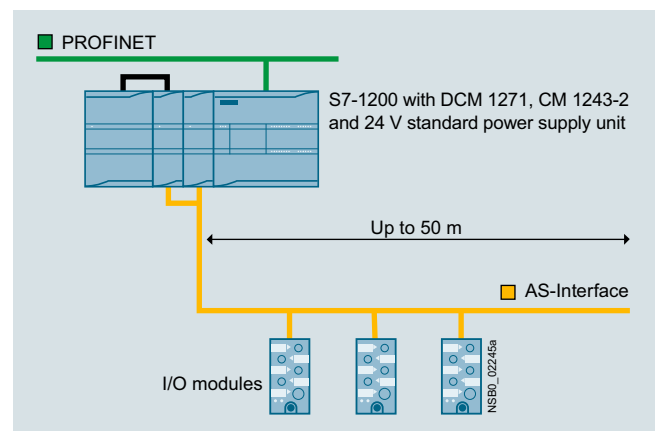
Note on AS-i Power24V:

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 "AS-i Power24V" for the operation of AS-i Power24V, see page 2/21.

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





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

Selection and ordering data

| Version | SD | Screw terminals  | PU (UNIT, SET, M) | PS* | PG |
|--|--------------------|---|-------------------------|--------|-----|
| | d | Article No. | Price per PU | | |
|  <p>DCM 1271 data decoupling module</p> <ul style="list-style-type: none"> • With screw terminals, removable terminals (included in the scope of supply) • Max. current: 1 x 4 A • Dimensions (W x H x D/mm): 30 x 100 x 75 | ▶ | 3RK7271-1AA30-0AA0 | 1 | 1 unit | 42C |
| | 3RK7271-1AA30-0AA0 | | | | |

3RK7271-1AA30-0AA0

Accessories

| Version | SD | Screw terminals  | PU (UNIT, SET, M) | PS* | PG |
|--|----|---|---------------------------|--------|--------|
| | d | Article No. | Price per PU | | |
|  <p>Screw terminals (spare part)</p> <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 | 5 | 3RK1901-3MA00 | 1 | 1 unit | 42C |
| | 5 | 3RK1901-3MB00 | 1 | 1 unit | 42C |
| | ▶ | CM 1243-2 communication module | 3RK7243-2AA30-0XB0 | 1 | 1 unit |
| <ul style="list-style-type: none"> • AS-Interface master 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 <p>See also from page 2/28 onwards</p> | | | | | |
| 3RK7243-2AA30-0XB0 | | | | | |

3RK7243-2AA30-0XB0

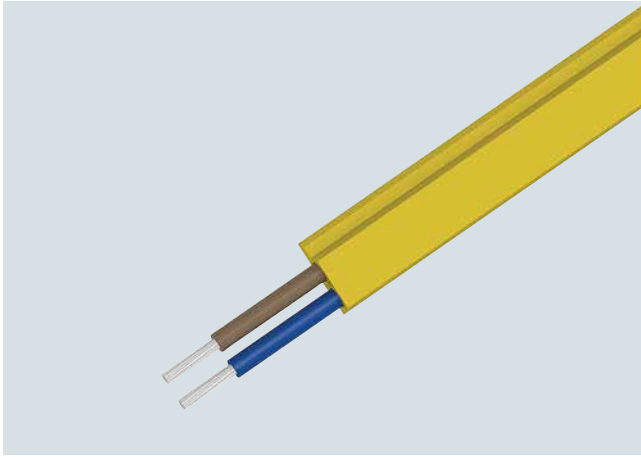
Industrial communication

AS-Interface

Transmission media

AS-Interface shaped cable

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 2-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 cable carriers

The use of the AS-Interface shaped cables with TPE and PUR outer sheath was checked in a cable carrier 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) |

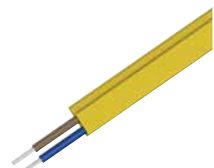
After termination of the 10 million cycles only slight wear was visible due to the lugs of the cable carrier. No damage to the cores and core insulation could be detected.

Note:

When using a cable carrier, 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 cable carrier.

Selection and ordering data

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



3RX90...-0AA00

| AS-Interface shaped cables | | | | | | |
|---|-----------------------|------------|---|----------------------|---|------------|
| Material | Color | Quantity | | | | |
| Rubber | Yellow (AS-Interface) | 100 m roll | 2 | 3RX9010-0AA00 | 1 | 1 unit 42C |
| | Yellow (AS-Interface) | 1 km drum | 2 | 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 | 2 | 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 | 2 | 3RX9017-0AA00 | 1 | 1 unit 42C |
| | Black (24 V DC) | 100 m roll | 2 | 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 |

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 2/76) 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

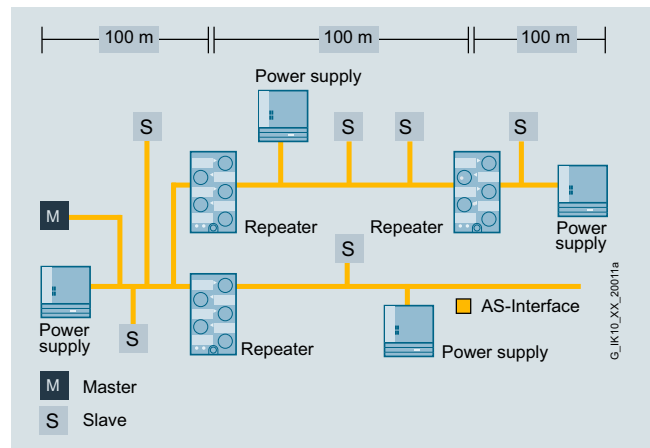
- Parallel switching of several repeaters possible (star configuration)
- Combination of series and parallel switching possible

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 2/76.

Selection and ordering data

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|----|----------------------|--------------|-------------------|--------|-----|
| | d | | | | | |
|  | ▶ | 6GK1210-0SA01 | | 1 | 1 unit | 42C |
| 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 | | | | | | |

6GK1210-0SA01

Industrial communication

AS-Interface

System components and accessories

Extension plugs

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.

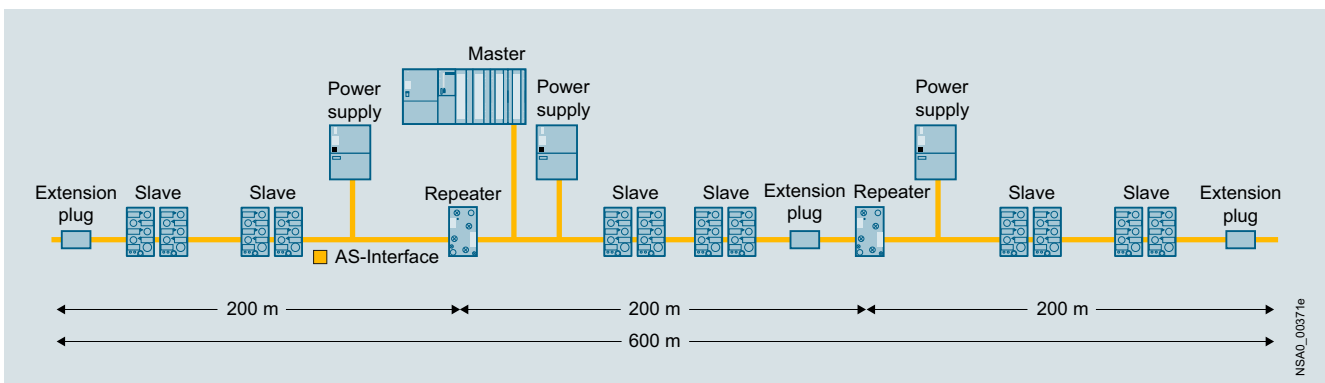
Design of an AS-Interface segment with an extension plug

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 2/83.

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 | | | | | | |
|  | 2 | 3RK1901-1MX02 | | 1 | 1 unit | 42C |
| AS-Interface extension plug compact <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 | | | | | | |

3RK1901-1MX02

Accessories

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|----|----------------------|--------------|-------------------|----------|-----|
| d | | | | | | |
|  | ▶ | 3RK1901-1MN00 | | 1 | 10 units | 42C |
| Cable terminating piece For sealing of open cable ends (shaped AS-Interface cable) in IP67 | | | | | | |

3RK1901-1MN00

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

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 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:
 - Addressing unit with 4 batteries
 - Addressing cable, with M12 plug to addressing plug (hollow plug), length 1.5 m






Industrial communication

AS-Interface

System components and accessories

Addressing units

Accessories

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|----|---------------------------|--------------|-------------------|--------|-----|
|  3RK1902-4PB15-3AA0 | d | 3RK1902-4PB15-3AA0 | | 1 | 1 unit | 42D |
| Addressing cable, with M12 plug to M12 socket¹⁾ | | | | | | |
| <ul style="list-style-type: none"> 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 mm² | | | | | | |
|  3RX9801-0AA00 | | 3RX9801-0AA00 | | 1 | 1 unit | 42C |
| AS-Interface M12 3RX feeder | | | | | | |
| <ul style="list-style-type: none"> 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 | | | | | | |
|  3RK1901-2NR10 | 2 | 3RK1901-2NR10 | | 1 | 1 unit | 42C |
| AS-Interface M12 3RK feeder | | | | | | |
| <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 | | | | | | |
|  3RK1902-4HB50-5AA0 | 2 | 3RK1902-4HB50-5AA0 | | 1 | 1 unit | 42D |
| M12 cable plug²⁾ | | | | | | |
| <ul style="list-style-type: none"> Extruded M12 plug (angled cable feeder 90°), other cable end open Length: 5 m, 5-pole, color: Black | | | | | | |
|  3RK1902-4BA00-5AA0 | 2 | 3RK1902-4BA00-5AA0 | | 1 | 1 unit | 42D |
| M12 plug, straight²⁾ | | | | | | |
| <ul style="list-style-type: none"> For screw fixing, 5-pole screw terminal, max. 0.75 mm² A-coded, max. 4 A | | | | | | |
| | | Z236A | | | | |
| Addressing cable, with M12 plug to addressing plug (hollow plug)³⁾ | | | | | | |
| <ul style="list-style-type: none"> Included in the scope of supply of the addressing unit Length 1.5 m | | | | | | |

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 connector) 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.

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.

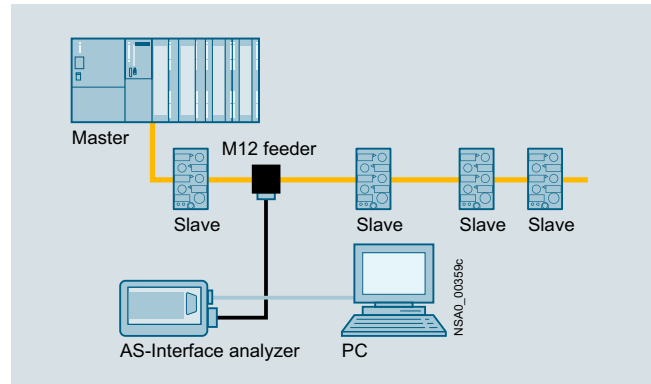
Thanks to the easy-to-use software the user can assess the quality of complete networks even if he lacks detailed specialist knowledge of AS-Interface. In addition it is an easy matter with the AS-Interface analyzer to create test logs from the records produced, thus providing documentation for startups and service assignments.

For advanced AS-Interface users there are trigger functions for detailed diagnostics.

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

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.

Industrial communication

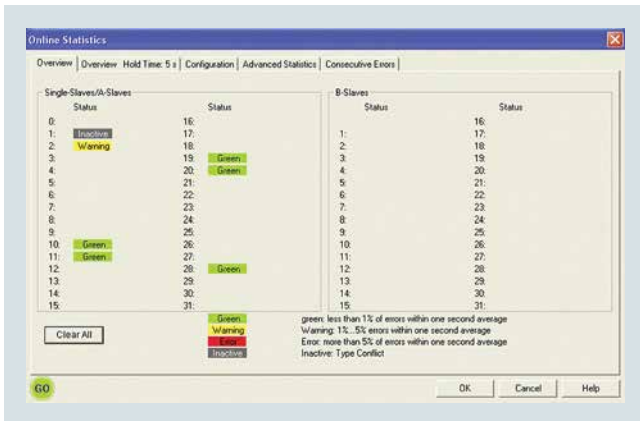
AS-Interface

System components and accessories

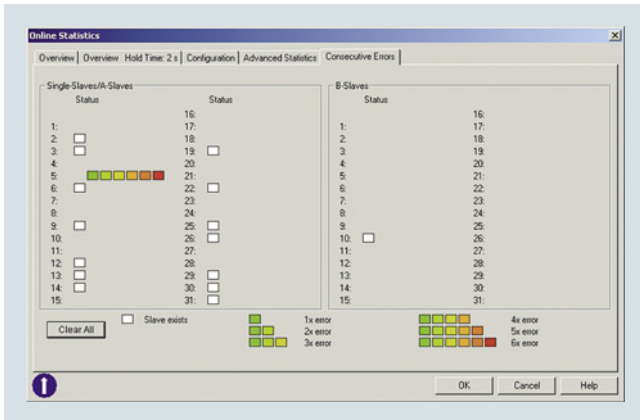
Analyzer

Application

Online statistics



Online statistics, overview



Online statistics, details, e.g. here a fault on slave 5

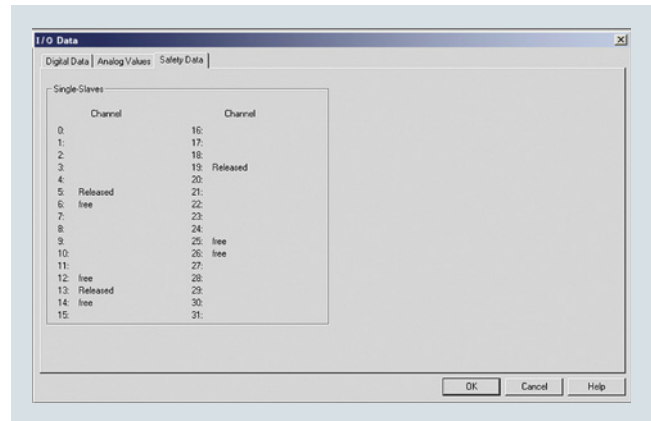
This mode provides a quick overview of the existing AS-Interface system. The error rates are displayed per slave in a traffic-light function (green, yellow, red).

The bus configuration and the currently transmitted data of the slaves are shown in a well arranged presentation.

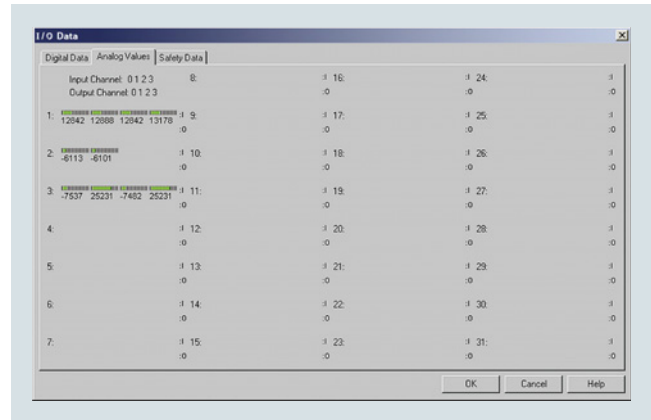
With the expanded statistics function, it is possible to determine the error rates as the number of transmitted or faulty bus message frames.

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.

Data mode



Presentation of the I/O data: Safety data



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.

Trace mode

| Pos. | Time [s] | Slave | Master Daten | Analyse |
|------|----------|-------|------------------------------|-------------------|
| 999 | 153 | 5 | Data_Exchange 0 0 1 1 1 1 17 | No Error |
| 999 | 152 | 8 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 991 | 153 | 11 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 992 | 152 | 14 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 993 | 152 | 15 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 994 | 152 | 21 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 995 | 154 | 22 | Read_Status 1 1 1 1 1 0 - | No Slave Response |
| 996 | 165 | 1 | Data_Exchange 0 0 1 1 1 1 29 | No Error |
| 997 | 152 | 2 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 998 | 152 | 3 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 999 | 153 | 5 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1000 | 153 | 8 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1001 | 153 | 11 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1002 | 152 | 14 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1003 | 153 | 15 | Data_Exchange 0 0 1 1 1 1 15 | No Error |
| 1004 | 153 | 21 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1005 | 155 | 23 | Read_Status 1 1 1 1 1 0 - | No Slave Response |
| 1006 | 165 | 1 | Data_Exchange 0 0 1 1 1 1 29 | No Error |
| 1007 | 153 | 2 | Data_Exchange 0 0 1 1 1 1 17 | No Error |
| 1008 | 152 | 3 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1009 | 153 | 5 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1010 | 152 | 8 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1011 | 152 | 11 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1012 | 152 | 14 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1013 | 153 | 15 | Data_Exchange 0 0 1 1 1 1 18 | No Error |
| 1014 | 152 | 21 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1015 | 155 | 24 | Read_Status 1 1 1 1 1 0 - | No Slave Response |
| 1016 | 166 | 1 | Data_Exchange 0 0 1 1 1 1 29 | No Error |
| 1017 | 152 | 2 | Data_Exchange 0 0 1 1 1 1 16 | No Error |
| 1018 | 152 | 3 | Data_Exchange 0 0 1 1 1 1 15 | No Error |
| 1019 | 152 | 5 | Data_Exchange 0 0 1 1 1 1 16 | No Error |

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

| Anlage | Start der Messung | Stop der Messung | Messdauer |
|--------|-------------------|------------------|-----------|
| | 10.01.16 | 10.01.16 | 00:00:00 |

| Übersicht | Anlage |
|-----------|--------|
| 100 | 1000 |
| 101 | 1001 |
| 102 | 1002 |
| 103 | 1003 |
| 104 | 1004 |
| 105 | 1005 |
| 106 | 1006 |
| 107 | 1007 |
| 108 | 1008 |
| 109 | 1009 |
| 110 | 1010 |
| 111 | 1011 |
| 112 | 1012 |
| 113 | 1013 |
| 114 | 1014 |
| 115 | 1015 |
| 116 | 1016 |
| 117 | 1017 |
| 118 | 1018 |
| 119 | 1019 |
| 120 | 1020 |

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
 - Diagnostics software (CD-ROM) for PC with Windows operating system

Note:

Download the current version of the diagnostics software for PC with Windows operating system, see <https://support.industry.siemens.com/cs/ww/en/view/109750259>.




Industrial communication

AS-Interface

System components and accessories











Analyzer

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 <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/IP69 (IP69K) | | | | | | |
|  3RK1902-4HB50-5AA0 | 2 | 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 | | | | | | |

Selection and ordering data
More information

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

| 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 <ul style="list-style-type: none"> • Current carrying capacity up to 8 A • Degree of protection IP67/IP68/IP69 (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 ▶ | | 1 | 1 unit 42C |
|  3RK1901-2NR10 | | | | | | |
| AS-Interface M12 3RK feeder <ul style="list-style-type: none"> • Degree of protection IP67/IP68/IP69 (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 | 1 | 1 unit 42C |
| AS-i | M12 cable box | 1 m | Not available | 2 | 1 | 1 unit 42C |
| AS-i | M12 cable box | 2 m | Not available | 2 | 1 | 1 unit 42C |
| AS-i/U _{aux} | M12 socket | -- | Not available | 2 | 1 | 1 unit 42C |
| AS-i/U _{aux} | M12 cable box | 1 m | Not available | 2 | 1 | 1 unit 42C |
| AS-i/U _{aux} | M12 cable box | 2 m | Not available | 2 | 1 | 1 unit 42C |
|  3RK1901-2NR21 | | | | | | |
| 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 | 1 | 1 unit 42C |
|  3RK1901-1NR04 | | | | | | |
| M12 Y-shaped coupler plugs <ul style="list-style-type: none"> For connection of two sensors to one M12 socket with Y-assignment | | | | | | |
|  6ES7194-1KA01-0XA0 | 1 | 6ES7194-1KA01-0XA0 | | 1 | 1 unit | 250 |
| AS-Interface sealing caps <ul style="list-style-type: none"> For free M12 sockets • M12 <ul style="list-style-type: none"> - Standard version ▶ 3RK1901-1KA00 100 10 units 42C - Tamper proof 3RK1901-1KA01 100 10 units 42C • M8 standard version 3RK1901-1PN00 100 10 units 42C | | | | | | |
|  3RK1901-1KA00 | | | | | | |
|  3RK1901-1KA01 | | | | | | |
|  3RK1901-1PN00 | | | | | | |
| AS-Interface M20 seals <ul style="list-style-type: none"> • For AS-Interface cable, shaped • For insertion in M20 glands | | | | | | |
|  3RK1901-1MD00 | 2 | 3RK1901-1MD00 | | 100 | 10 units | 42C |

Industrial communication

AS-Interface

System components and accessories

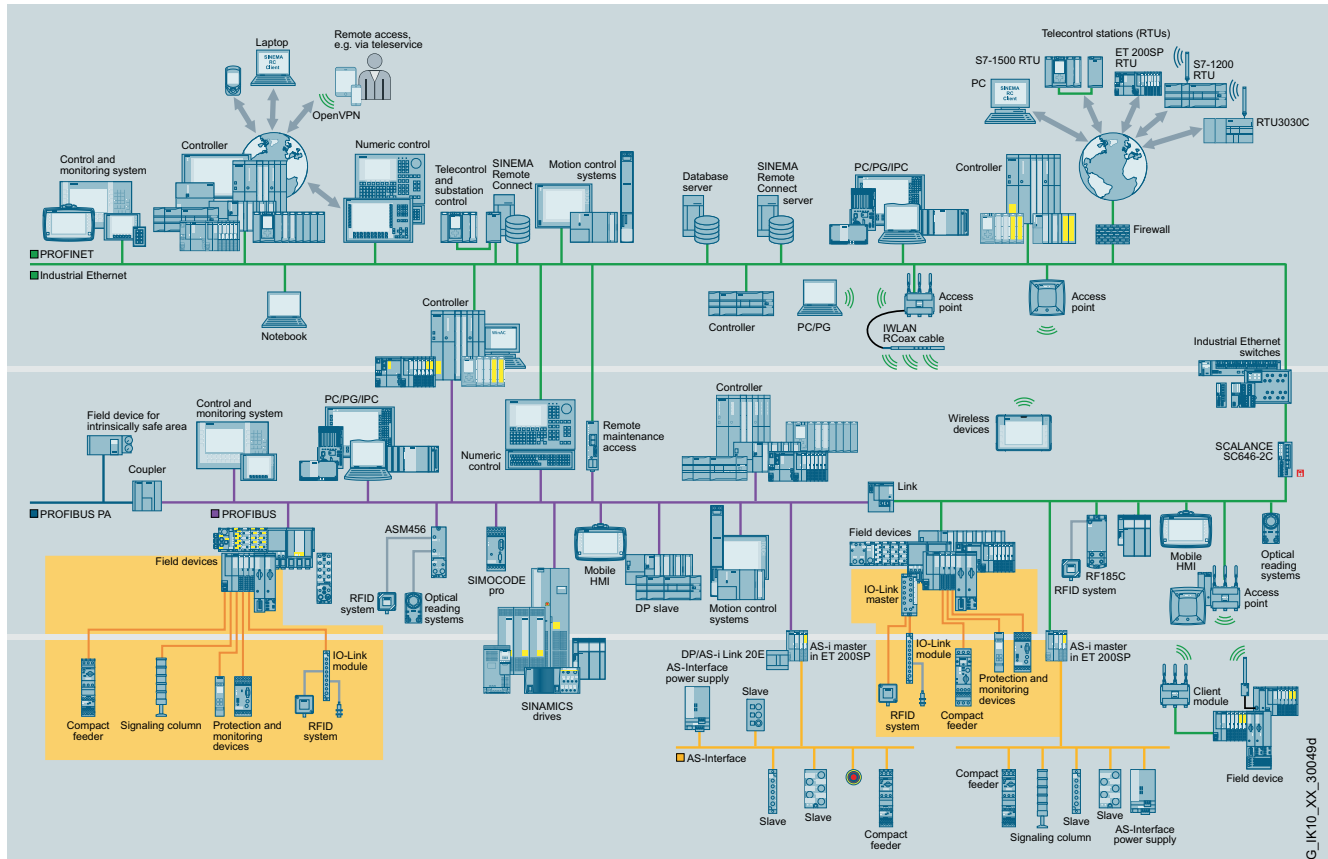
Miscellaneous accessories

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|----|---------------------------|--------------|-------------------|----------|-----|
| Cable adapters for flat cables | | | | | | |
| Connection of AS-Interface cable to metric gland with insulation piercing method | | | | | | |
| <ul style="list-style-type: none"> Continuation using standard cable <ul style="list-style-type: none"> For M16 gland For M20 gland Continuation using pins <ul style="list-style-type: none"> For M16 gland For M20 gland | | | | | | |
|  | 2 | 3RK1901-3QM00 | | 1 | 1 unit | 42C |
| | 2 | 3RK1901-3QM10 | | 1 | 1 unit | 42C |
| 3RK1901-3QM00 | 10 | 3RK1901-3QM01 | | 1 | 1 unit | 42C |
| | 2 | 3RK1901-3QM11 | | 1 | 1 unit | 42C |
| Cable clip 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 | | | | | | |
| <ul style="list-style-type: none"> K45 <ul style="list-style-type: none"> For wall mounting For standard rail mounting K60, suitable for all K60 compact modules <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 |
| 3RK1901-2EA00 | | 3RK1901-0CA00 | | 1 | 1 unit | 42C |
| 3RK1901-0CA00 | | 3RK1901-0CB01 | | 1 | 1 unit | 42C |
| Sealing set | | | | | | |
|  | 30 | 3RK1902-0AR00 | | 100 | 5 units | 42D |
| 3RK1902-0AR00 | | | | | | |
| Control cable, assembled at one end | | | | | | |
|  | | 3RK1902-4GB50-4AA0 | | 1 | 1 unit | 42D |
| 3RK1902-4GB50-4AA0 | 2 | 3RK1902-4CA00-4AA0 | | 1 | 1 unit | 42D |
| <ul style="list-style-type: none"> Cable length 5 m | | | | | | |
| M12 socket, angled | | | | | | |
|  | 2 | 3RK1902-4CA00-4AA0 | | 1 | 1 unit | 42D |
| 3RK1902-4CA00-4AA0 | | | | | | |
| M12 plugs | | | | | | |
|  | 2 | 3RK1902-4BA00-5AA0 | | 1 | 1 unit | 42D |
| 3RK1902-4BA00-5AA0 | 2 | 3RK1902-4DA00-5AA0 | | 1 | 1 unit | 42D |
|  | | | | | | |
| 3RK1902-4DA00-5AA0 | | | | | | |
| Control cable, assembled at one end | | | | | | |
|  | | 3RK1902-4HB15-5AA0 | | 1 | 1 unit | 42D |
| 3RK1902-4H...-5AA0 | 2 | 3RK1902-4HB50-5AA0 | | 1 | 1 unit | 42D |
| | 2 | 3RK1902-4HC01-5AA0 | | 1 | 1 unit | 42D |
| <ul style="list-style-type: none"> Cable length 1.5 m Cable length 5 m Cable length 10 m | | | | | | |
| Control cable, assembled at both ends | | | | | | |
|  | 2 | 3RK1902-4PB15-3AA0 | | 1 | 1 unit | 42D |
| 3RK1902-4PB15-3AA0 | | | | | | |
| <ul style="list-style-type: none"> Straight M12 plug, straight M12 socket, for screw fixing, 3-pole, 3 x 0.34 mm², A-coded, black PUR sheath, max. 4 A Cable length 1.5 m Also for addressing AS-i slaves with M12 bus connection (e.g. K20, K60R compact modules, M200D motor starters) | | | | | | |

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 3-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 diagnostics 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 are 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

Industrial communication

IO-Link Introduction

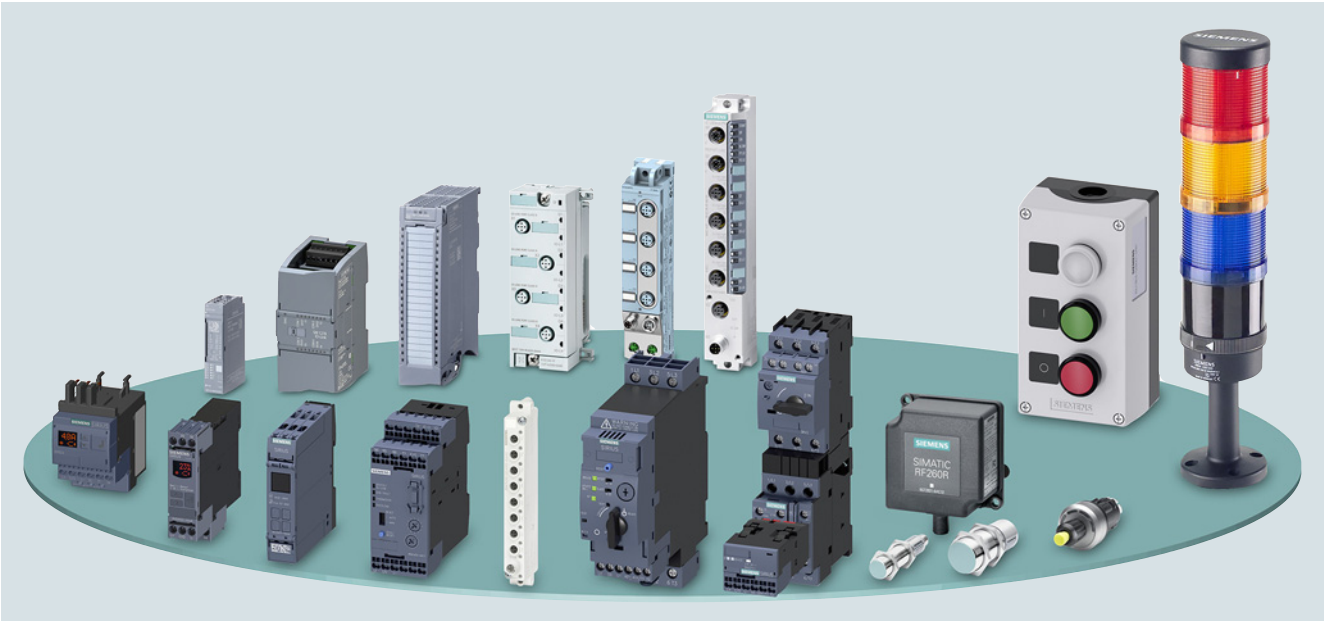
System components

Overview

More information

Homepage, see www.siemens.com/io-link
 TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=IoLink>

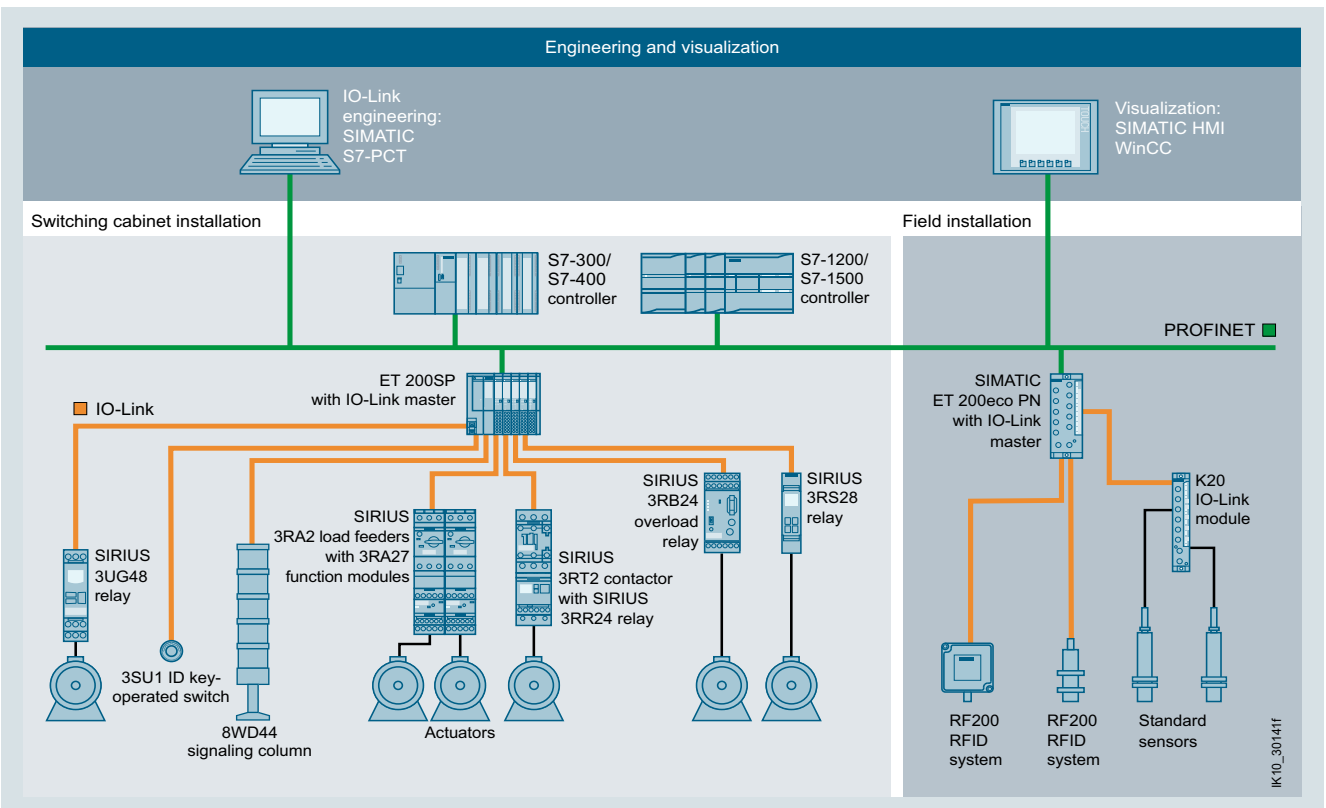
For important topics at a glance, see <https://support.industry.siemens.com/cs/ww/en/view/109737170>



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.

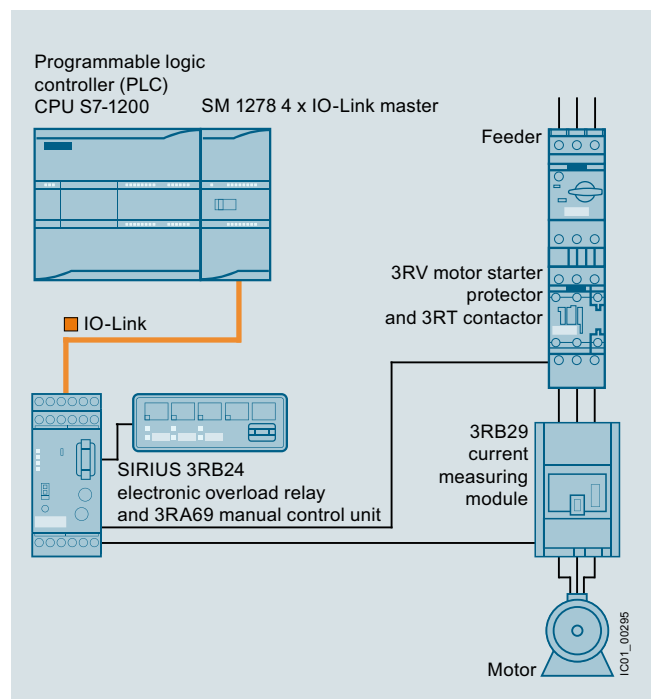
Overload relays

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.

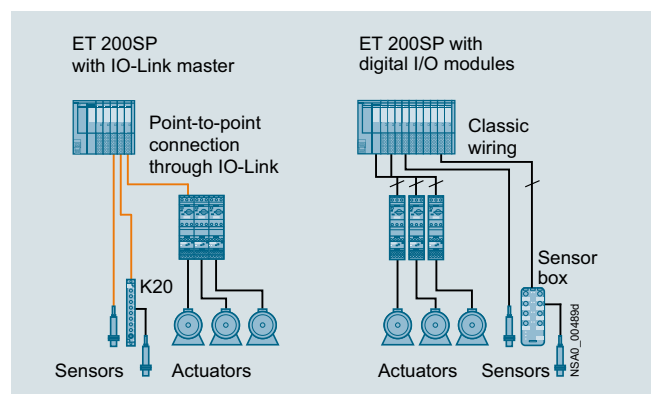
It is also possible to directly address a drive on-site via IO-Link using the optional hand-held device.



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

Industrial communication

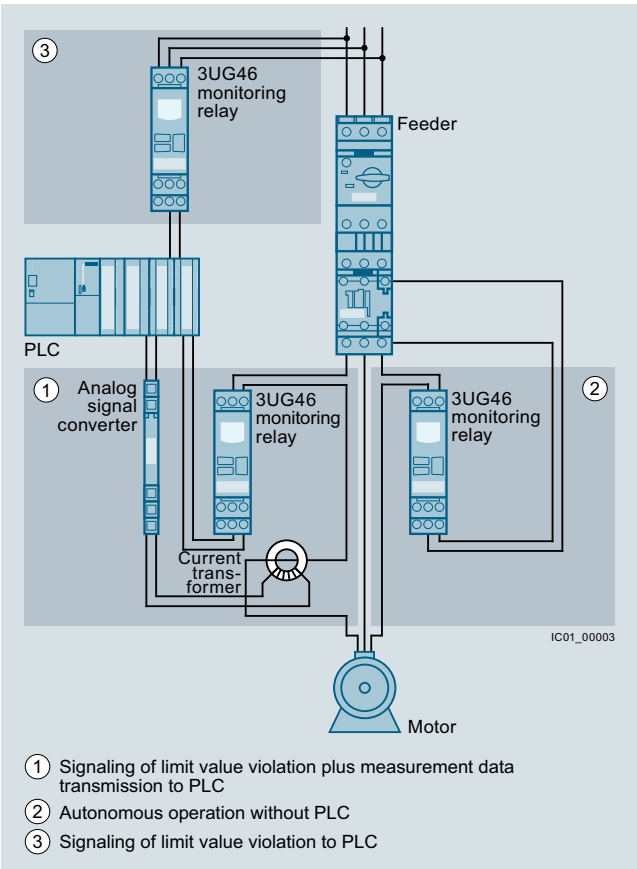
IO-Link

Introduction

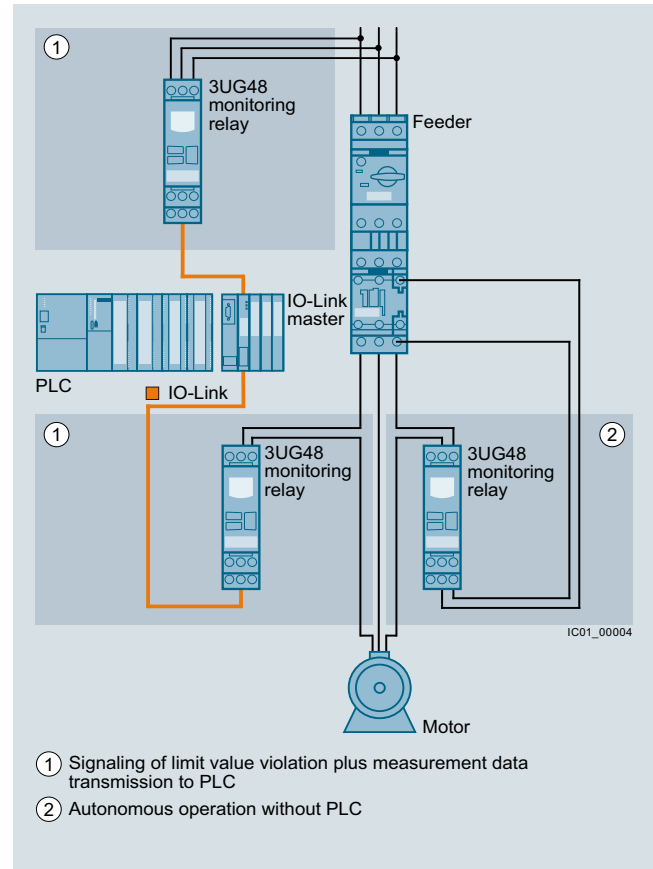
System components

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.



Possibilities of interfacing conventional 3UG46 monitoring relays (in comparison with 3UG48)

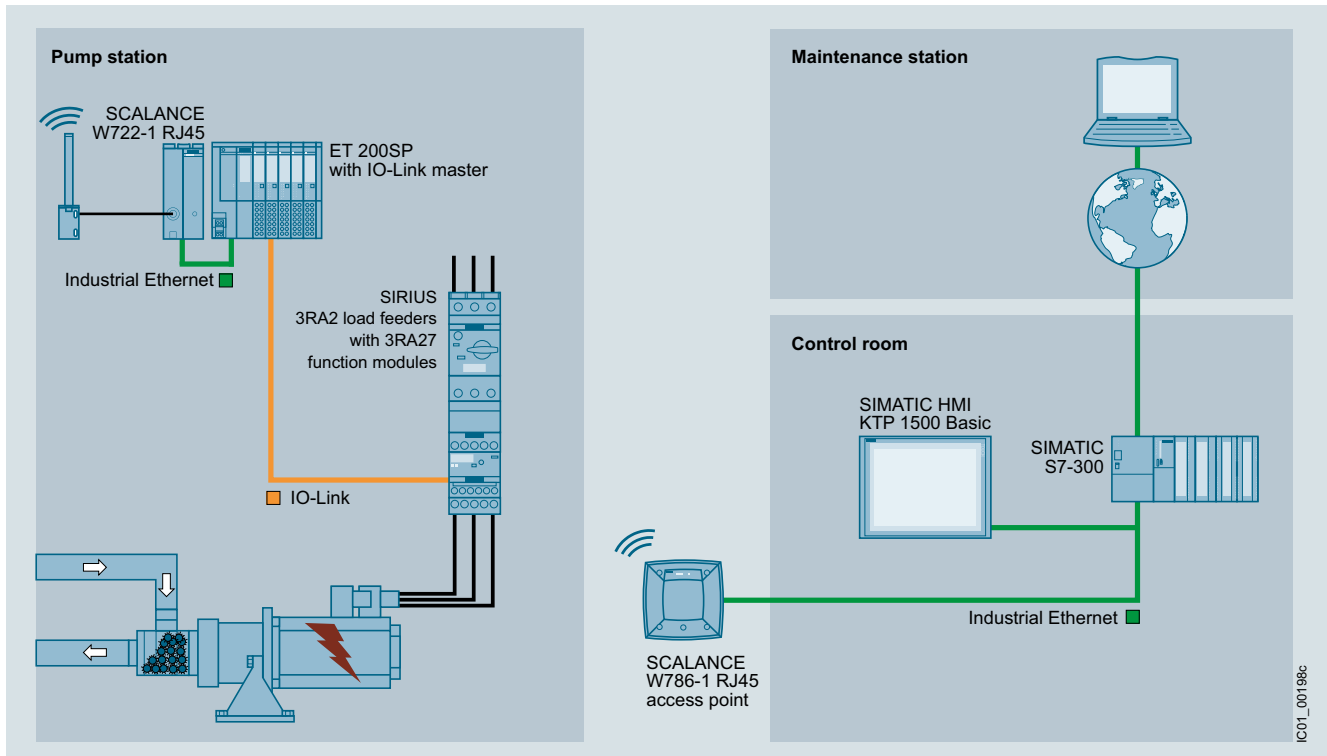


Possibilities of interfacing 3UG48 monitoring relays for IO-Link

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

Industrial communication

IO-Link Introduction

System components

IO-Link components

IO-Link masters



CM 8xIO-Link
for S7-1500

Masters

IO-Link master module for S7-1500

- CM 8xIO-Link communication module, [see page 2/93](#)

IO-Link master module for S7-1200

- SM 1278 4xIO-Link signal module, [see page 2/94](#)

IO-Link master module for ET 200SP

- CM 4xIO-Link V1.1 Standard communication module, [see page 2/95](#)

IO-Link master module for ET 200pro

- 4 IO-Link HF electronic module, [see page 2/96](#)

IO-Link master module for ET 200eco PN

- IO-Link master 4 IO-L + 8 DI + 4 DO 24 V DC/1.3 A
- IO-Link master 4 IO-L
- IO-Link master 8 IO-L + 4 DI 24 V DC

[See page 2/97](#)

IO-Link master module for ET 200AL

- CM IO-Link communication module, [see page 2/98](#)

For full product range, [see Catalog ST 70](#).

IO-Link devices

Detection with IO-Link

IO-Link input modules

K20 input module

- 4 inputs, M12 connections
- 8 inputs, standard M8 connections

[See page 2/100](#)



K20 input module

Switching with IO-Link

Contactors and contactor assemblies

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 3/147 onwards](#)

SIRIUS 3RA24 contactor assemblies for wye-delta starting, up to 90 kW, [see page 3/162 onwards](#)

SIRIUS 3RA27 function modules

- For direct-on-line, reversing, and star-delta (wye-delta) starting with IO-Link connection, [see page 3/108 onwards](#)

Motor starters for use in the control cabinet

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](#)



SIRIUS 3RA64
direct-on-line
starter

Contactors with IO-Link

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 7/136 onwards](#)



SIRIUS 3RB24
overload relay

IO-Link devices (continued)

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 10/59 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 10/103 onwards](#)

SIRIUS 3RS28 temperature monitoring relay for IO-Link

- Digital device for temperature monitoring with connected sensors
- Two limit values, can be adjusted separately

[See page 10/126 onwards](#)



SIRIUS 3RR24
monitoring relay



SIRIUS 3UG48
monitoring relay



SIRIUS 3RS28
temperature
monitoring relay

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 method (push-in)
- For fastening on front plate or for installation in enclosure, [see page 13/111](#)

8WD44 IO-Link adapter element

- Up to five signaling elements can be connected using an IO-Link adapter element
- 24 V DC, diameter 70 mm
- Connection with bayonet mechanism
- For fastening on feet, 8WD44
- Connection elements with screw or spring-loaded terminals or connection element with 5-pole M12 plug

[See page 13/184 onwards](#)



SIRIUS ACT
3SU1 ID key-
operated switch



SIRIUS ACT
3SU1 electronic
module



Signaling
column



8WD44
IO-Link
adapter
element

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

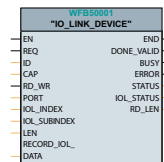


STEP 7 PCT

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 and higher) and TIA (V12 and higher)
- 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>

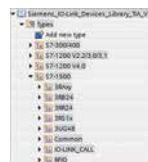


IO-Link device function block

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

"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>

Industrial communication

IO-Link Introduction

IO-Link specification

Overview

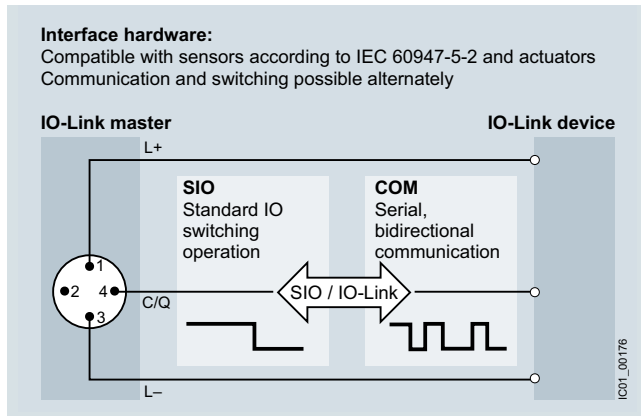
Principles of the IO-Link specification

According to the IO-Link specification, communication functions as follows:

- Transmission takes place via an unshielded 3-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, open circuit 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

Overview

CM 8xIO-Link master

- Communication module for connecting up to 8 IO-Link devices (three-wire connection) or 8 standard sensors
- Can be used directly downstream of an S7-1500 CPU or distributed in ET 200MP via PROFINET or PROFIBUS
- Powerful diagnostic functions facilitate preventive maintenance to avoid plant standstills
- Simple replacement of sensors/actuators without time-consuming parameterization

Application

IO-Link makes it easy to change the parameters for manufacturing and processing different product versions and batches, even during CPU runtime, down to the sensor/actuator level. Easy, much more detailed diagnostics are also possible down to the sensor or actuator, including remote diagnostics.

The CM 8xIO-Link enables direct connection of up to 8 IO-Link devices directly to SIMATIC S7-1500 and ET 200MP. This makes external stations unnecessary.

This results in savings on wiring, engineering and commissioning, because everything can be configured centrally with the CPU.

Design

- Fastening to the S7-1500 mounting rail with a single screw
- 40-pole front connector, optionally with screw terminals or push-in terminals
- Front flap with expandable cable compartment
- Included in the scope of supply:
- One U connector
- Front door

Function**Overview of functions**

- Suitable for connecting up to 8 IO-Link devices (three-wire connection) or 8 standard sensors
- IO-Link master according to IO-Link specification V1.1
- Data transmission rates COM1 (4.8 kBd), COM2 (38.4 kBd), COM3 (230.4 kBd)
- Parameterizable diagnostics can be set for each channel
- Master backup with "IO_Link_MASTER_8" function block
- Replacement of the IO-Link device (for V1.1 devices only)
- Support for firmware updating of IO-Link devices
- Variable address range for I/O data with up to 240 byte inputs and 240 byte outputs; expansion limits:
 - Max. 32 bytes of input data and 32 bytes of output data per port
 - Max. 240 bytes of input data and 240 bytes of output data per module
- Port Qualifier Information (PQI)
- IO-Link port configuration with S7-PCT
- IO-Link port configuration with STEP 7 or GSD (without S7-PCT)
- Standard system functions of SIMATIC ET 200MP:
 - Identification and maintenance data IMO
 - Firmware update
 - Unequivocal, front-side module inscription

Configuration

The IO-Link master of the S7-1500 can be conveniently configured using the graphical user interface in the free S7-Port Configuration Tool (S7-PCT, V3.5 and higher, SP1).

In addition to this configuration, commissioning without S7-PCT is also possible. In this case, the port is configured by means of either the TIA Portal or GSD file. The following port modes are supported:

- Operation in "IO-Link autostart" mode (default)
- Operation in "IO-Link manual" mode
- Operation as DI
- Deactivated

Selection and ordering data

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



6ES7547-1JF00-0AB0

CM 8xIO-Link communication module

Communication module for connecting up to 8 IO-Link devices (three-wire connection) or 8 standard sensors

1 **6ES7547-1JF00-0AB0**

1

1 unit

219

For more information, see <https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10355273>.

Industrial communication

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 3-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)

7-pole, tin-plated; 4 unit

- Screw terminals
- Push-in terminals

| | | | | | | |
|---|--|---------------------------|--|---|---------|-----|
| 1 | | 6ES7292-1AG30-0XA0 | | 1 | 4 units | 212 |
|---|--|---------------------------|--|---|---------|-----|

| | | | | | | |
|---|--|---------------------------|--|---|---------|-----|
| 1 | | 6ES7292-2AG30-0XA0 | | 1 | 4 units | 212 |
|---|--|---------------------------|--|---|---------|-----|

For more information, see <https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10231178>.

Overview



CM 4xIO-Link communication 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)
 - Circuit 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 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

Application

- The CM 4x IO-Link communication module enables an exchange of data with up to 4 external IO-Link devices through one 3-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.

Selection and ordering data

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|----|---------------------------|--------------|-------------------|--------|-----|
| | d | | | | | |
| CM 4xIO-Link V1.1 Standard communication module | 1 | 6ES7137-6BD00-0BA0 | | 1 | 1 unit | 255 |
| <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

For more information, see <https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10205200>.

Industrial communication

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 according 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-LINK 4 X M12 P connection module. Sensors and actuators are integrated using commercially available 3- or 5-pole 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 | | | | | | |
|  | 1 | 6ES7147-4JD00-0AB0 | | 1 | 1 unit | 250 |
| 4 IO-Link HF electronic module <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 | | | | | | |

6ES7147-4JD00-0AB0

Accessories

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|----|---------------------------|--------------|-------------------|-----------|-----|
| d | | | | | | |
| | 1 | 6ES7194-4CA20-0AA0 | | 1 | 1 unit | 250 |
| CM IO-LINK 4 X M12 P connection module 4 M12 sockets for connection of IO-Link devices to ET 200pro 4 IO-Link HF electronic module | | | | | | |
| | 1 | 6ES7194-4HA00-0AA0 | | 1 | 500 units | 250 |
| Module labeling plates For color coding of CM IOs in the colors white, red, blue and green; pack of 100 | | | | | | |
| | ▶ | 3RX9802-0AA00 | | 100 | 10 units | 42C |
| M12 sealing caps For protection of unused M12 terminals on ET 200pro | | | | | | |

For more information, see <https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10304039>.

Overview



ET 200eco PN IO-Link master modules

IO-Link master with 2 x M12-L coded power connector and 45-mm width

- IO-Link communication modules for connecting up to 8 IO-Link devices
- IO-Link master with 4 x port class A and 4 x port class B and additional 4 digital inputs
- The IO-Link specifications V1.0 and V1.1 are supported.

IO-Link master with 2 x M12-A coded power connector and 30-mm width

- IO-Link communication modules for connecting up to 4 IO-Link devices
- IO-Link master with 4 x port class B
- The IO-Link specifications V1.0 and V1.1 are supported.

IO-Link master with 2 x M12-A coded power connector and 60-mm width

- IO-Link communication modules for connecting up to 4 IO-Link devices
- IO-Link master with 4 x port class A and additional 8 digital inputs and 4 digital outputs
- The IO-Link specification V1.0 is supported.

Application

IO-Link enables easy integration of sensors and actuators from different manufacturers. ET200eco PN IO-Link master I/O devices enable an exchange of data with up to 4 or 8 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.

With a high degree of protection, ruggedness and small dimensions, the IO-Link master I/O devices 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.


Function

In addition to the general functions of the ET 200eco PN I/O system, the IO-Link masters according to the IO-Link specification V1.1 have some further functions:

- Supported data transmission rates of the IO-Link communication
 - COM1 (4.8 kBd)
 - COM2 (38.4 kBd)
 - COM3 (230.4 kBd)

- Expansion limits
 - Cable length to the IO-Link device: max. 20 m
 - Max. 32 bytes of input data and 32 bytes of output data per IO-Link port
- Automatic backup of device parameters when the IO-Link device is replaced (V1.1 devices only)
- Reparameterization of the device during operation using a PLC function block
- Master backup using a PLC function block
- Support for firmware updates of IO-Link devices
- Configuration using a GSD file or S7-PCT

Selection and ordering data

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|----|---|--------------|-------------------|--------|-----|
| | d | | | | | |
|  6ES7148-6J.00-0.B0 | | IO-Link Master | | | | |
| | 1 | • 4 IO-L + 8 DI + 4 DO, 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 | | 1 | 1 unit | 257 |
| | 1 | • 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 specifications V1.0 and V1.1 and port class B | | 1 | 1 unit | 257 |
| | 1 | • 8 IO-L + 4 DI 24 V DC; 8 x M12, degree of protection IP67, enclosure width 45 mm; for connecting up to 8 IO-Link devices according to IO-Link specifications V1.0 and V1.1, port class A + 4 x port class B as well as 4 digital inputs | NEW | 1 | 1 unit | 257 |

For more information, see <https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10370454>.

Industrial communication

IO-Link Masters

IO-Link master module for ET 200AL > CM IO-Link

Overview



CM IO-Link communication module

- CM IO-Link communication module, 30 mm wide
- For connecting up to 4 IO-Link devices in accordance with the IO-Link specifications V1.0 and V1.1 and port class B
- The IO-Link parameters are configured by means of the S7-PCT Port Configuration Tool 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 technology for connection to an interface module or other I/O modules

- A power supply connection with M8 connection technology 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
 - PROFIenergy

Selection and ordering data

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|----|---------------------------|--------------|-------------------|--------|-----|
| | d | | | | | |
| CM IO-Link | 1 | 6ES7147-5JD00-0BA0 | | 1 | 1 unit | 254 |
| CM 4 IO-LINK, 4XM12; for connecting up to 4 IO-Link devices in accordance with the IO-Link specifications V1.0 and V1.1 and port class B | | | | | | |



6ES7147-5JD00-0BA0

For more information, see <https://mall.industry.siemens.com/mall/en/ww/Catalog/Products/10233997>.

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:

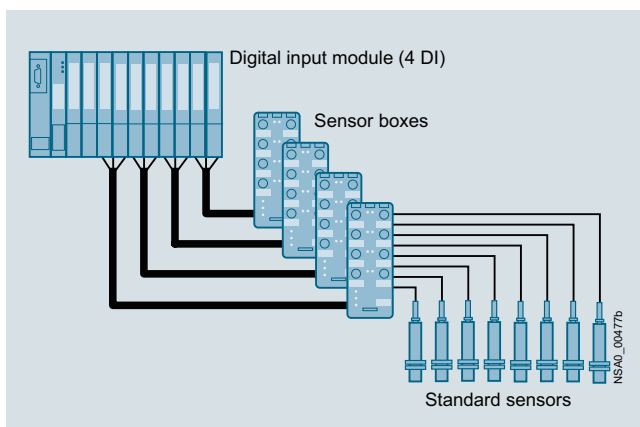
- Economical use of innovative IO-Link technology also for binary sensors
- Optimum use of all ports of the IO-Link master
- Connection of several binary sensors/actuators to one port of the IO-Link master, hence low-cost connection also of binary sensors/actuators to the control system through IO-Link
- 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

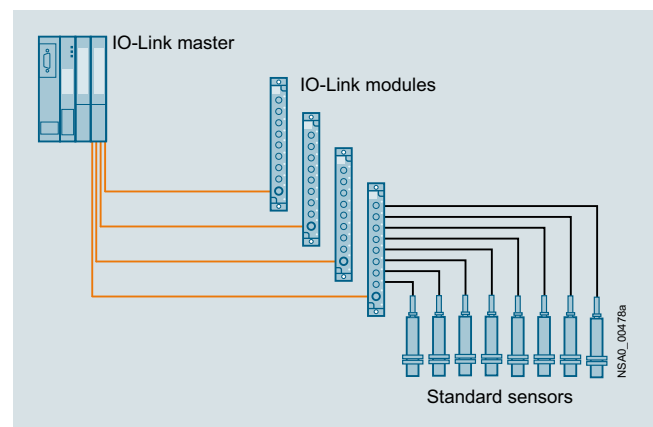
IO-Link input modules are particularly used where sensor boxes had previously been used for the connection of binary sensors.

Application example:

Replacement of sensor boxes by using IO-Link input modules



Former technology with sensor boxes



Technology with IO-Link input modules



Industrial communication

IO-Link










Input modules

K20 IO-Link 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 | | | | | | | | |
|  | 4 inputs | Y | M12 | 5 | 3RK5010-0BA10-0AA0 | 1 | 1 unit | 42C |
|  | 8 inputs | Standard | M8 | 2 | 3RK5010-0CA00-0AA0 | 1 | 1 unit | 42C |

Accessories

| Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|--|-------------|---------------------------|-------------------|----------|-----|
| Sealing caps | | | | | | |
|  | M12, for free M12 sockets | ▶ | 3RK1901-1KA00 | 100 | 10 units | 42C |
|  | M8, for free M8 sockets | ▶ | 3RK1901-1PN00 | 100 | 10 units | 42C |
| Control cable, assembled at one end | | | | | | |
|  | Angular M12 socket for screw fixing, 4-pole, 4 x 0.34 mm ² , A-coded, black PUR sheath, max. 4 A | | | | | |
| | Cable length 5 m | 2 | 3RK1902-4GB50-4AA0 | 1 | 1 unit | 42D |
| M12 socket, angled | | | | | | |
|  | For screw fixing, 4-pole screw terminals, max. 0.75 mm ² , A-coded, max. 4 A | 2 | 3RK1902-4CA00-4AA0 | 1 | 1 unit | 42D |
| M12 plugs | | | | | | |
|  | For screw fixing, 5-pole screw terminals, max. 0.75 mm ² , A-coded, max. 4 A | | | | | |
| | Straight | 2 | 3RK1902-4BA00-5AA0 | 1 | 1 unit | 42D |
|  | Angled | 2 | 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 | 2 | 3RK1902-4HB15-5AA0 | 1 | 1 unit | 42D |
| | Cable length 5 m | 2 | 3RK1902-4HB50-5AA0 | 1 | 1 unit | 42D |
| | Cable length 10 m | 2 | 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 | 2 | 3RK1902-4PB15-3AA0 | 1 | 1 unit | 42D |
| M12 Y-shaped coupler plug | | | | | | |
|  | For connection of two sensors to one M12 socket with Y-assignment | 1 | 6ES7194-1KA01-0XA0 | 1 | 1 unit | 250 |

Switching devices – Contactors and contactor assemblies – for switching motors

**Price groups**

PG 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 for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays

3/77 - General data

3/89 - Auxiliary switches, instantaneous

3/102 - Auxiliary switches, delayed

3/104 - Surge suppressors

3/106 - Modules for contactor control

3/111 - Link modules

3/116 - Connection modules/adapters

3/119 - Covers

3/120 - Miscellaneous accessories

Spare parts for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays

3/123 - Solenoid coils

3/126 - Contacts and arc chutes

3/127 SIRIUS 3RT12 and 3TF6 vacuum contactors

3/139 Accessories and spare parts for SIRIUS 3RT12 and 3TF6 vacuum contactors

3/143 3TG10 power relays/miniature contactors

Reversing contactor assemblies

3/147 SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

3/158 Reversing contactor assemblies consisting of SIRIUS 3RT1 contactors, up to 250 kW

Contactor assemblies for star-delta (wye-delta) starting

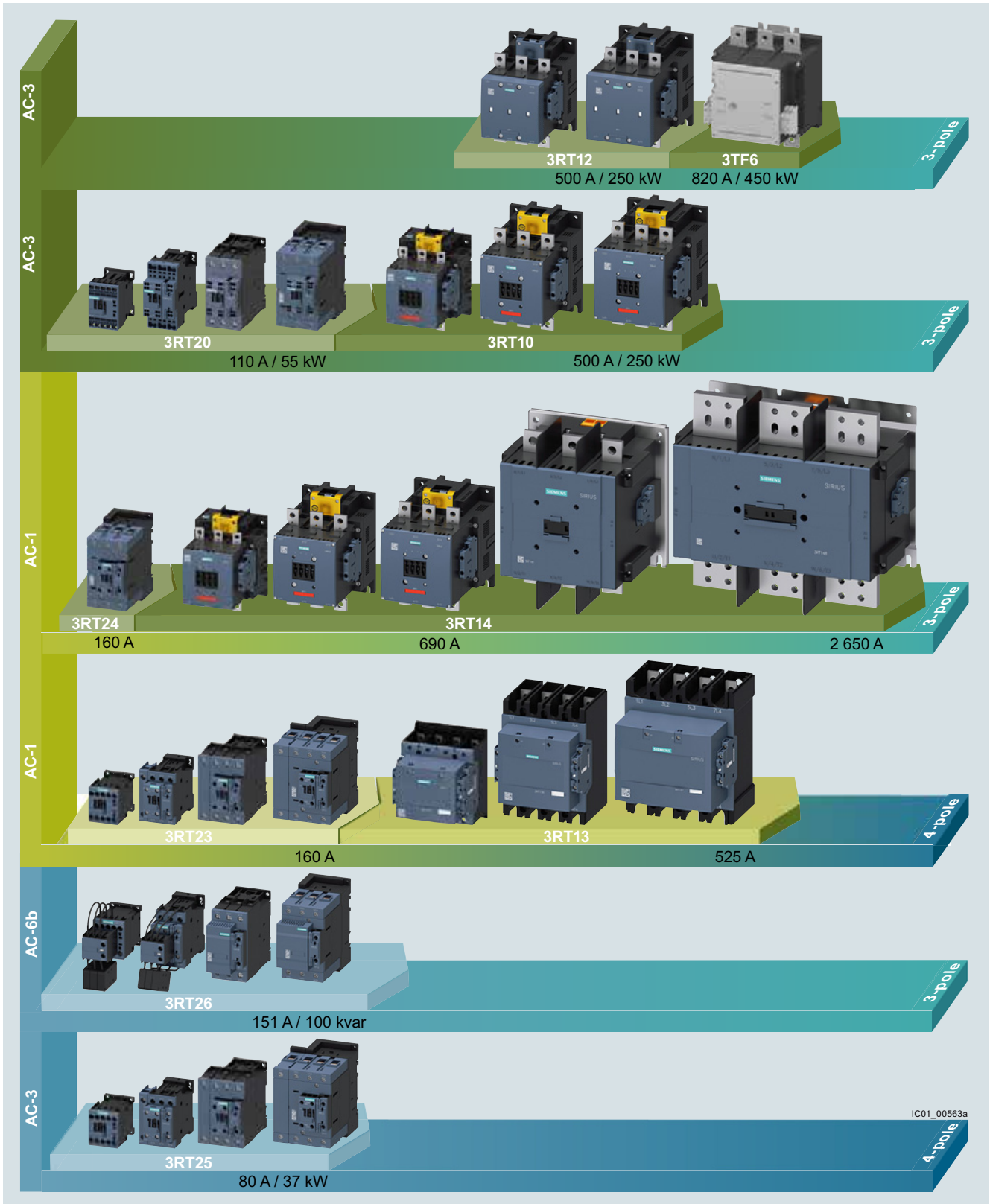
3/162 SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

3/175 Contactor assemblies for star-delta (wye-delta) starting consisting of SIRIUS 3RT contactors, up to 500 kW

Switching devices – Contactors and contactor assemblies – for switching motors

Introduction

Overview



Overview of the 3RT and 3TF contactors

More information

Homepage, see www.siemens.com/siriusIndustry Mall, see www.siemens.com/product?3RT_3TK_3TCConversion tool for article numbers, see www.siemens.com/sirius/conversion-toolTIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=Contactor>Size
Type**S00**
3RT201**S0**
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_e /AC-3/400 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 $I_a = 6 \times I_e$)

| | | | | | | | | | | | |
|----------------------------------|-----------|----------|----------|----------|------------|----------|------------|------------|------------|-----------|-----------|
| 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 switches | <ul style="list-style-type: none"> On front Lateral | 3RH29, 3RA28 | (p. 3/95 ... 3/102) | 3RH29, 3RA28 | (p. 3/95 ... 3/102) |
| | | 3RH29 | (p. 3/99) | 3RH29 | (p. 3/99) |
| Function modules | <ul style="list-style-type: none"> Direct-on-line starting, star-delta (wye-delta) starting IO-Link, AS-Interface | 3RA281. | (p. 3/107) | 3RA281. | (p. 3/107) |
| | | 3RA271.-.AA00 | (p. 3/108, 3/109) | 3RA271.-.AA00 | (p. 3/108, 3/109) |
| Surge suppressors | | 3RT2916 | (p. 3/104, 3/105) | 3RT2926 | (p. 3/104, 3/105) |

3RU2 and 3RB3 overload relays

| | | | | | | |
|---------------------------------------|--|---------------|----------------------|--|--------------|----------------------|
| 3RU thermal overload relays | 3RU2116 | 0.11 ... 16 A | (p. 7/98) | 3RU2126 | 1.8 ... 40 A | (p. 7/98) |
| 3RB electronic overload relays | | | | | | |
| • For standard applications | 3RB3016, 3RB3113 | 0.1 ... 16 A | (p. 7/111 ... 7/113) | 3RB3026, 3RB3123 | 0.1 ... 40 A | (p. 7/111 ... 7/113) |
| • For High-Feature applications | 3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1 | 0.3 ... 25 A | (p. 7/134, 7/142) | 3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1 | 0.3 ... 25 A | (p. 7/134, 7/142) |

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. 7/62) | 3RA2921 | | (p. 7/62) |

3RA23 reversing contactor assemblies

| | | | | | | | | | | | |
|----------------------------|-----------|----------------------|----------------|----------------|----------------|----|----------------------|----------------|----------------|----------------|----------------|
| Complete units | Type | 3RA2315 | 3RA2316 | 3RA2317 | 3RA2318 | -- | 3RA2324 | 3RA2325 | 3RA2326 | 3RA2327 | 3RA2328 |
| | | (p. 3/154) | | | | | (p. 3/155) | | | | |
| 400 V | kW | 3 | 4 | 5.5 | 7.5 | | 5.5 | 7.5 | 11 | 15 | 18.5 |
| Assembly kits, etc. | | 3RA2913-2AA. | | | (p. 3/111) | -- | 3RA2923-2AA. | | | | (p. 3/111) |
| Function modules | | 3RA271.-.BA00 | | | (p. 3/108) | -- | 3RA271.-.BA00 | | | | (p. 3/108) |

3RA24 contactor assemblies for star-delta (wye-delta) starting

| | | | | | | | |
|-------------------------------------|-----------|----------------------|----------------|----------------|----------------|----------------------|----------------|
| Complete units | Type | 3RA2415 | 3RA2416 | 3RA2417 | 3RA2423 | 3RA2425 | 3RA2426 |
| | | (p. 3/171) | | | (p. 3/172) | | |
| 400 V | kW | 5.5 | 7.5 | 11 | 11 | 15/18.5 | 22 |
| Assembly kits/wiring modules | | 3RA2913-2BB. | | | (p. 3/112) | 3RA2923-2BB. | (p. 3/112) |
| Function modules | | 3RA271.-.CA00 | | | (p. 3/108) | 3RA271.-.CA00 | (p. 3/108) |

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/7.

Switching devices – Contactors and contactor assemblies – 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, 3/71) | | |

AC-3

| I_e /AC-3/400 V | A | 41 | 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 switches | <ul style="list-style-type: none"> On front Lateral | 3RH29, 3RA28 | (p. 3/95 ... 3/102) | 3RH29, 3RA28 | (p. 3/95 ... 3/102) |
| Function modules | <ul style="list-style-type: none"> Direct-on-line starting IO-Link, AS-Interface | 3RA283. 3RA271.-.AA00 | (p. 3/107) (p. 3/108, 3/109) | 3RA283. 3RA271.-.AA00 | (p. 3/107) (p. 3/108, 3/109) |
| Surge suppressors | | 3RT2936 | (p. 3/104, 3/105) | 3RT2936, 3RT2946 | (p. 3/104, 3/105) |
| Terminal covers | | 3RT2936-4EA2 | (p. 3/119) | 3RT2946-4EA2 | (p. 3/119) |

3RU2 and 3RB overload relays

| | | | | | | |
|---------------------------------------|---|---------------|---------------------------------|---|----------------|---------------------------------|
| 3RU thermal overload relays | 3RU2136 | 11 ... 80 A | (p. 7/99) | 3RU2146 | 28 ... 100 A | (p. 7/99) |
| 3RB electronic overload relays | | | | | | |
| • For standard applications | 3RB3036, 3RB3133 | 12.5 ... 80 A | (p. 7/111 ... 7/113) | 3RB3046, 3RB3143 | 12.5 ... 115 A | (p. 7/111 ... 7/113) |
| • For High-Feature applications | 3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2JG1 | 10 ... 100 A | (p. 7/134, 7/142) (p. 7/146) | 3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2JG1 | 10 ... 100 A | (p. 7/134, 7/142) (p. 7/146) |

3RV20 motor starter protectors

| | | | | | | |
|---------------------------------|------------------|--------------|-----------|------------------|--------------|-----------|
| Motor starter protectors | 3RV2031, 3RV2032 | 9.5 ... 80 A | (p. 7/31) | 3RV2041, 3RV2042 | 28 ... 100 A | (p. 7/31) |
| Link modules | 3RA2931 | | (p. 7/62) | 3RA1941 | | (p. 7/62) |

3RA23 reversing contactor assemblies

| Complete units | Type | 3RA2335 | 3RA2336 | 3RA2337 | 3RA2338 | 3RA2345 | 3RA2346 | 3RA2347 |
|-------------------------------------|-----------|---------------|-----------|-----------|------------|---------------|-----------|------------|
| | | (p. 3/156) | | | | (p. 3/157) | | |
| 400 V | kW | 18.5 | 22 | 30 | 37 | 37 | 45 | 55 |
| Assembly kits/wiring modules | | 3RA2933-2AA. | | | | 3RA2943-2AA. | | |
| | | | | | (p. 3/111) | | | (p. 3/111) |
| Function modules | | 3RA271.-.BA00 | | | | 3RA271.-.BA00 | | |
| | | | | | (p. 3/108) | | | (p. 3/108) |
| Mechanical interlocks | | 3RA2934-2B | | | | 3RA2934-2B | | |
| | | | | | (p. 3/115) | | | (p. 3/115) |

3RA24 contactor assemblies for star-delta (wye-delta) starting

| Complete units | Type | 3RA2434 | 3RA2435 | 3RA2436 | 3RA2437 | 3RA2444 | 3RA2445 | 3RA2446 |
|-------------------------------------|-----------|------------------|-----------|-----------|------------|------------------|-----------|------------|
| | | (p. 3/173) | | | | (p. 3/174) | | |
| 400 V | kW | 22/30 | 37 | 45 | 55 | 55 | 75 | 90 |
| Assembly kits/wiring modules | | 3RA2933-2BB./-2C | | | | 3RA2943-2BB./-2C | | |
| | | | | | (p. 3/112) | | | (p. 3/112) |
| Function modules | | 3RA271.-.CA00 | | | | 3RA271.-.CA00 | | |
| | | | | | (p. 3/108) | | | (p. 3/108) |

Note:

Safety characteristics for contactors,
see "Standards and approvals", page 16/7.



| 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. 3/72 ... 3/74) | | | (p. 3/72 ... 3/74) | | | (p. 3/72 ... 3/74) | | |
| Type | -- | -- | -- | 3RT1264 | 3RT1265 | 3RT1266 | 3RT1275 | 3RT1276 | |
| | | | | (p. 3/136) | | | (p. 3/136) | | |
| 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. 4/19, 4/20) | | | 3RT1466 | 3RT1467 | (p. 4/19, 4/20) | | 3RT1476 |
| | | | | | | | | | (p. 4/19, 4/20) |
| I_e /AC-1/40 °C/≤ 690 V | A | 275 | | | | 400 | 500 | 690 | |
| Accessories for contactors | | | | | | | | | |
| Auxiliary switches | • On front • Lateral | 3RH19, 3RT1926 | | | | | | (p. 3/98, 3/103) | |
| | | 3RH19 | | | | | | (p. 3/100, 3/101) | |
| Surge suppressors | | 3RT1956-1C (RC element) | | | | | | (p. 3/105) | |
| Terminal covers | | 3RT1956-4EA. | | | 3RT1966-4EA. | | | (p. 3/119) | |
| | | | | | | | | (p. 3/119) | |
| Box terminal blocks | | 3RT1955-4G, 3RT1956-4G | | | 3RT1966-4G | | | (p. 3/117) | |
| | | | | | | | | (p. 3/117) | |
| 3RB2 overload relays | | | | | | | | | |
| 3RB electronic overload relays | | | | | | | | | |
| • For standard applications | | 3RB2056 | 50 ... 200 A | (p. 7/123, 7/124) | 3RB2066 | 55 ... 250 A or 160 ... 630 A | (p. 7/123, 7/124) | | |
| | | 3RB2153 | 50 ... 200 A | (p. 7/125) | 3RB2163 | 55 ... 250 A or 160 ... 630 A | (p. 7/125) | | |
| • For High-Feature applications | | 3RB22, 3RB23 and 3RB24 | | | 3RB22, 3RB23 and 3RB24 | | | (p. 7/134) | |
| | | with current measuring module 3RB2956-2TH2 | | | with current measuring module 3RB2966-2WH2 | | | (p. 7/142) | |
| | | 20 ... 200 A | | | 63 ... 630 A | | | (p. 7/146) | |
| 3RV10 molded case motor starter protectors | | | | | | | | | |
| Molded case motor starter protectors | | 3RV1063 | 40 ... 200 A | (p. 7/81) | 3RV1073 | 160 ... 400 A | (p. 7/81) | 3RV1083 | 252 ... 630 A (p. 7/81) |
| Reversing contactor assemblies¹⁾ | | | | | | | | | |
| Complete units | Type | -- | | | | | | | |
| 400 V | kW | 55 | 75 | 90 | 110 | 132 | 160 | 200 | 250 |
| Assembly kits/wiring modules | | 3RA1953-2A | | | 3RA1963-2A | | | 3RA1973-2A | |
| | | | | | | | | (p. 3/111) | |
| Mechanical interlocks | | 3RA1954-2A | | | | | | (p. 3/115) | |
| Contactor assemblies for star-delta (wye-delta) starting¹⁾ | | | | | | | | | |
| Complete units | Type | -- | | | | | | | |
| 400 V | kW | -- | | | | | | | |
| Assembly kits/wiring modules | | 3RA1953-2B | | | 3RA1963-2B | | | 3RA1973-2B | |
| | | | | | | | | (p. 3/113) | |

¹⁾ Contactor assemblies for customer assembly:
 - Reversing contactor assemblies, see pages 3/159 to 3/161,
 - Contactor assemblies for star-delta (wye-delta) starting,
 see pages 3/176 to 3/181.

Note:

Safety characteristics for contactors,
 see "Standards and approvals", page 16/7.

Switching devices – Contactors and contactor assemblies – for switching motors

Introduction



Size **14**
Type **3TF6**

3TF68/3TF69 vacuum contactors

| | | |
|------|-----------------------------------|-----------------------------------|
| Type | 3TF68 (p. 3/137, 3/138) | 3TF69 (p. 3/137, 3/138) |
|------|-----------------------------------|-----------------------------------|

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 |
|-------|---|------------|------------|

Accessories for contactors**Auxiliary switches**

| | | |
|-----------|----------------|------------|
| • Lateral | 3TY7561 | (p. 3/139) |
|-----------|----------------|------------|

| | | |
|--------------------------|----------------|------------|
| Surge suppressors | 3TX7572 | (p. 3/140) |
|--------------------------|----------------|------------|

| | | |
|------------------------|-------------------------|------------|
| Terminal covers | 3TX7686, 3TX7696 | (p. 3/140) |
|------------------------|-------------------------|------------|

3RB2 overload relays**3RB electronic overload relays**

| | | | | | |
|---------------------------------|--|-------------------------------------|---------------------------------|--|---------------------------------|
| • For standard applications | 3RB2066, 3RB2163 | 55 ... 250 A or 160 ... 630 A | (p. 7/123, 7/124) (p. 7/125) | 3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1 with 3UF series transformer up to 820 A | (p. 7/134, 7/142) (p. 7/146) |
| • For High-Feature applications | 3RB22, 3RB23 and 3RB24 with current measuring module 3RB2966-2WH2 | 63 ... 630 A | (p. 7/134, 7/142) (p. 7/146) | 63 ... 820 A | |

3RV10 molded case motor starter protectors

| | | | |
|---|----------------|---------------|-----------|
| Molded case motor starter protectors | 3RV1083 | 252 ... 630 A | (p. 7/81) |
|---|----------------|---------------|-----------|

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 16/7.



| | |
|------|-------|
| Size | -- |
| Type | 3TG10 |

3TG10 power relays/miniature contactors

| | |
|-------------------------|--------------|
| Type | 3TG10 |
| Number of main contacts | 4 |
| AC, DC operation | (p. 3/143) |

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-loaded terminals.

The 3TG10 power relays/miniature contactors are available with screw terminals or flat connectors.



Screw terminals



Spring-loaded terminals



Flat connectors

The connection method is indicated in the corresponding tables by the respective symbol shown on an orange background.

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 1/8](#).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

General data

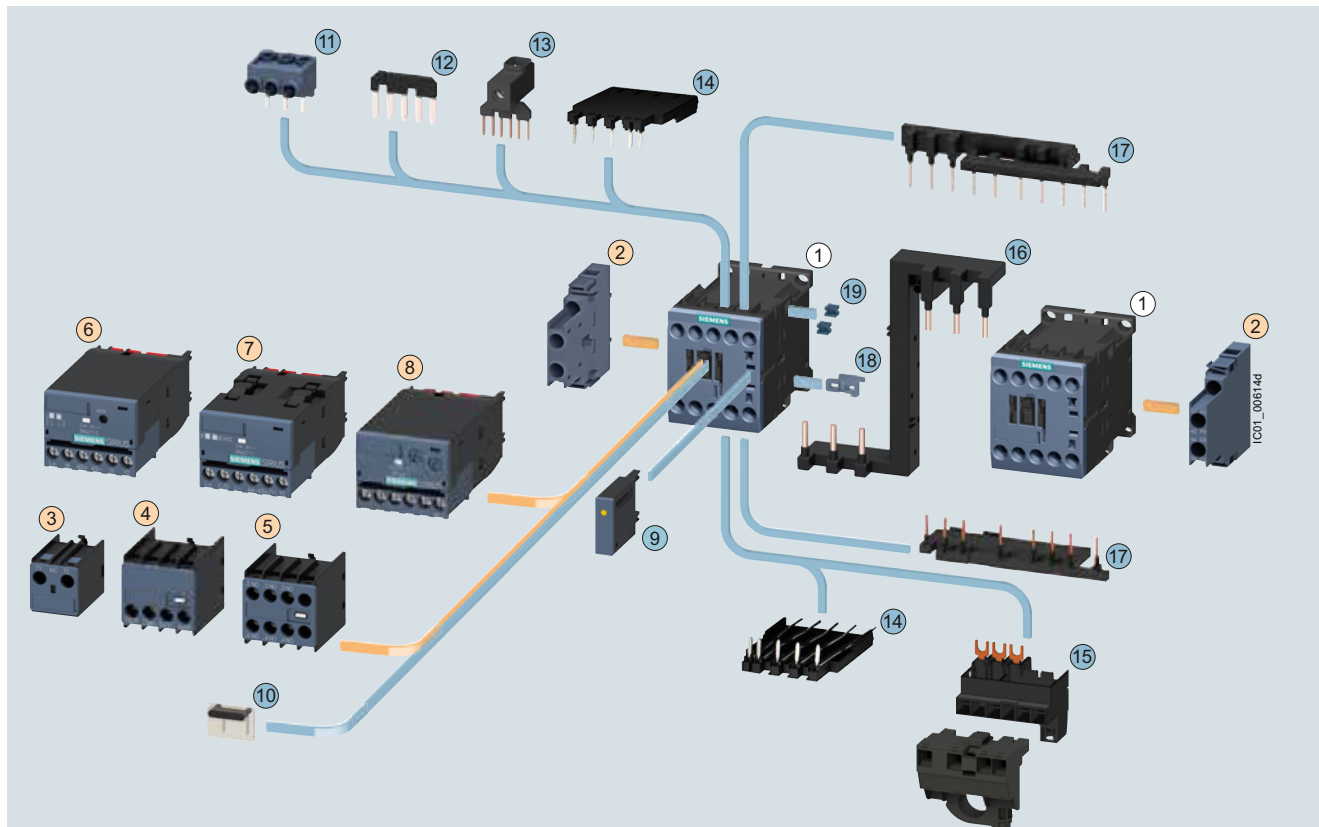
Overview

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, laterally mountable

③ 1-pole auxiliary switch, for snapping onto the front cable entry from the top

④ 2-pole auxiliary switch, for snapping onto the front cable entry from the bottom

⑤ 4-pole auxiliary switch, for snapping onto the front

⑥ 3RA27 function module for AS-Interface

⑦ 3RA27 function module for IO-Link

⑧ 3RA28 function module

⑨ Surge suppressor with/without LED

⑩ Cover, sealable

⑪ 3-phase infeed 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 terminals

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, interruptible (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 3/77 to 3/126.

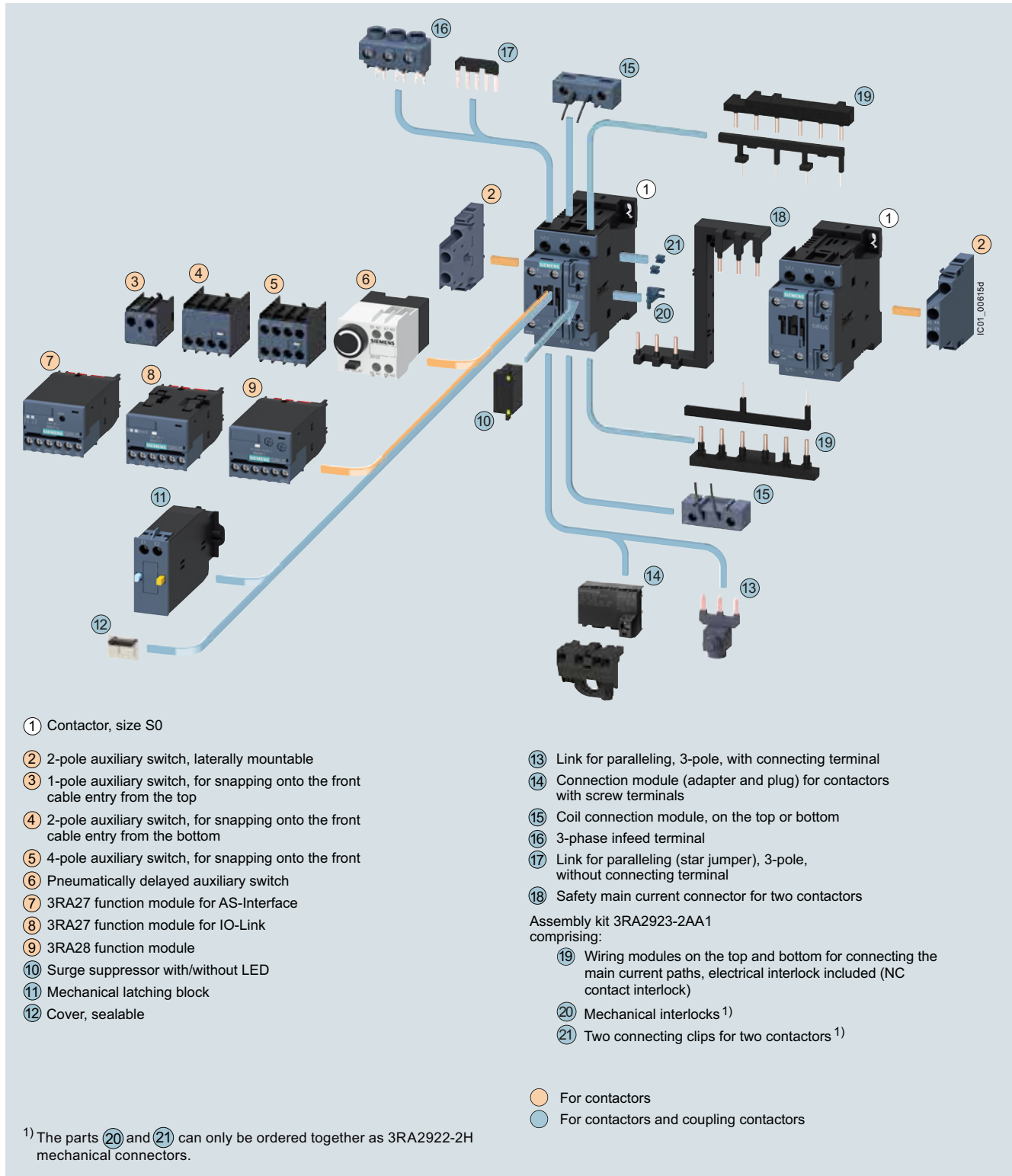
Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

General data

3RT2.2 contactors · Size S0 with mountable accessories

The figure shows the version with screw terminals



Accessories and spare parts, see pages 3/77 to 3/126.

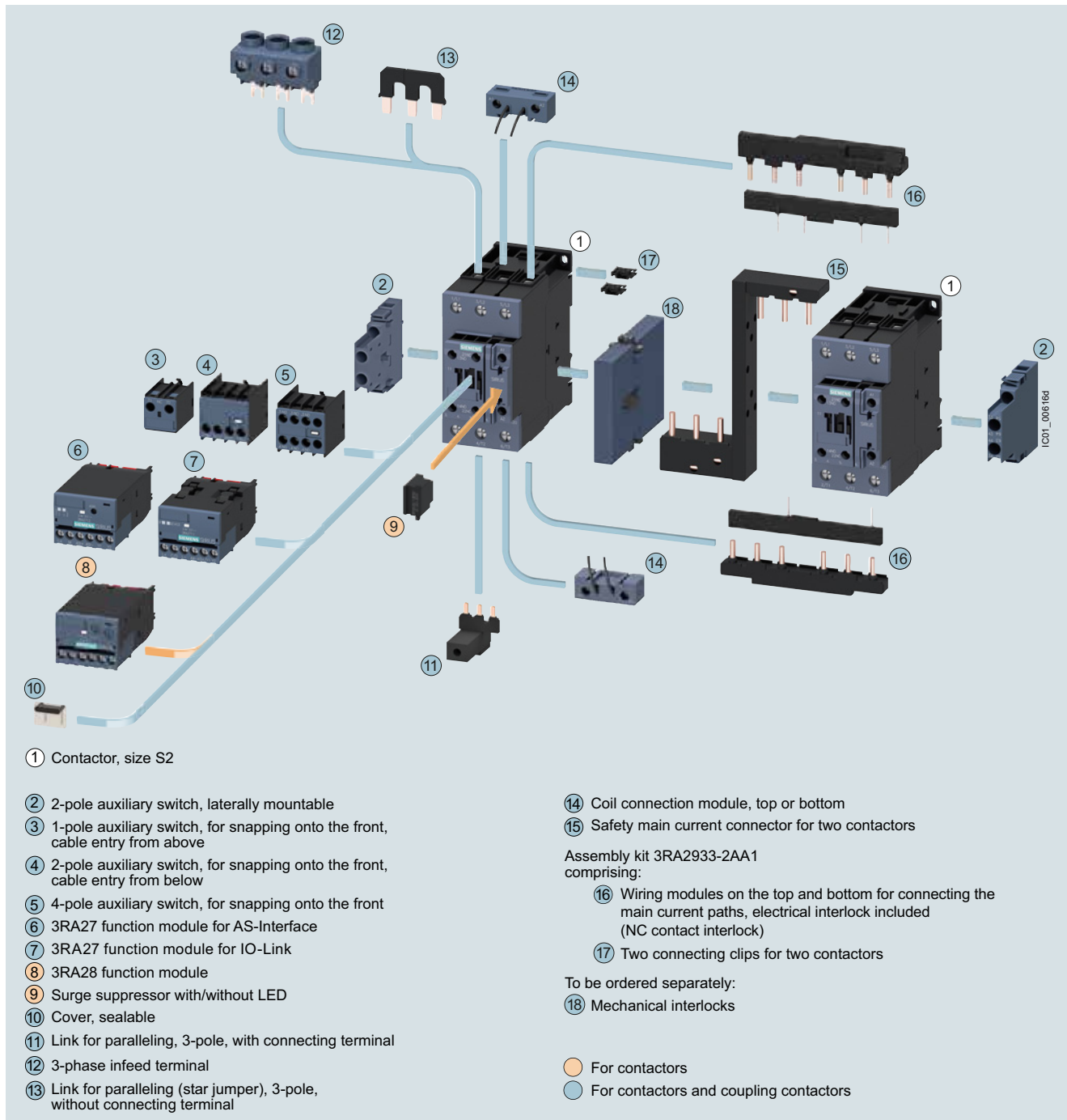
Switching devices – Contactors and contactor assemblies – for switching motors

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 3/77 to 3/126](#).

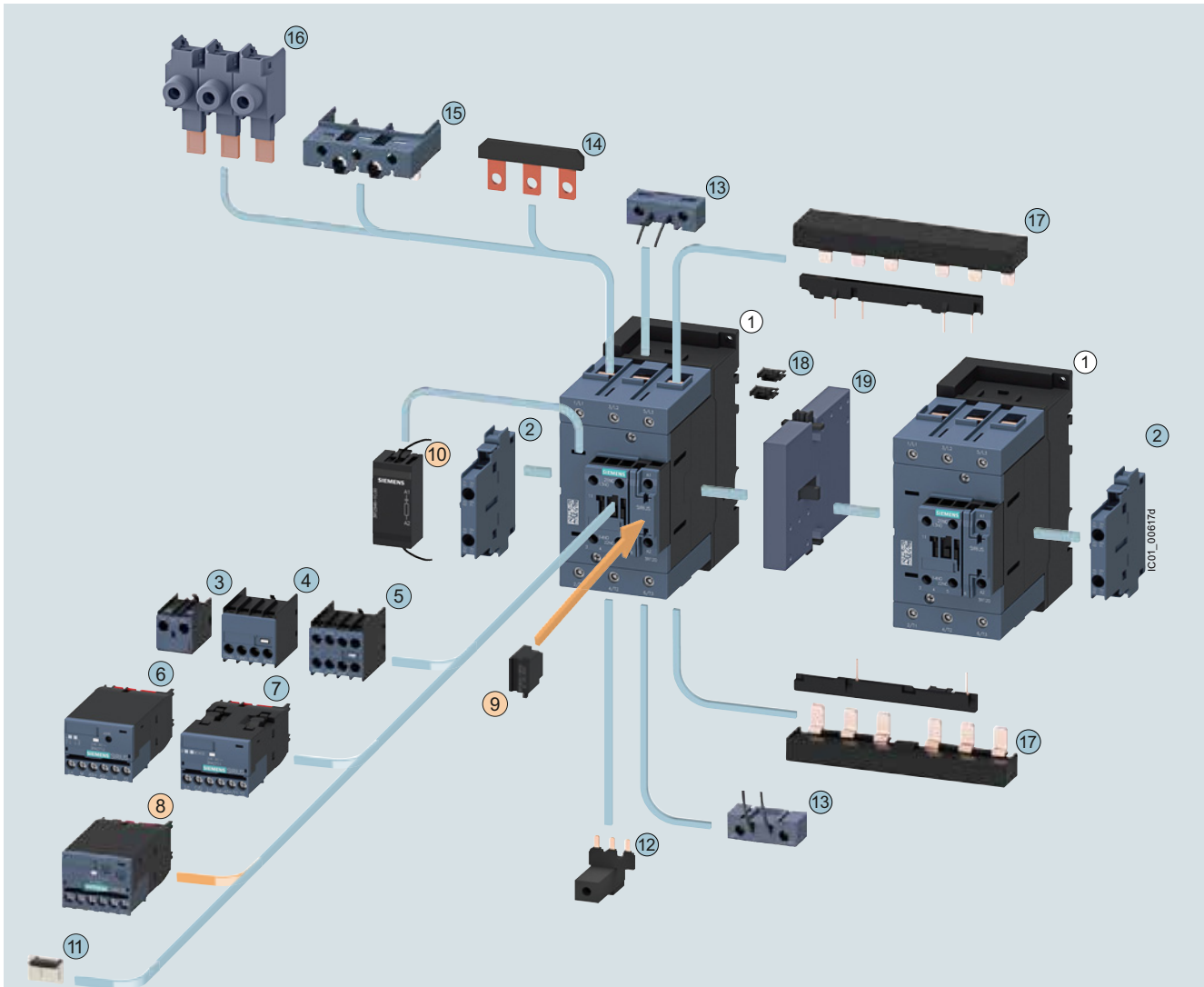
Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

General data

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 module for AS-Interface

⑦ 3RA27 function module for IO-Link

⑧ 3RA28 function module

⑨ Surge suppressor with/without LED (Varistor, diode assembly), can be plugged in on the front

⑩ Surge suppressor without LED (RC element), can be plugged in on the front in the recesses on the left next to the connection block

⑪ Cover, sealable

⑫ Links for paralleling, 3-pole, with connecting terminal

⑬ Coil connection module, top or bottom

⑭ Links for paralleling (star jumper), 3-pole without connecting terminal

⑮ Auxiliary terminal, 3-pole

⑯ Single-phase infeed terminals (3 units)

Assembly kit 3RA2943-2AA1

comprising:

⑰ Wiring modules on the top and bottom for connecting the main, auxiliary and control current paths, electrical interlock¹⁾ included, interruptible (NC contact interlock)

⑱ Two connectors for two contactors

To be ordered separately:

⑲ 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.

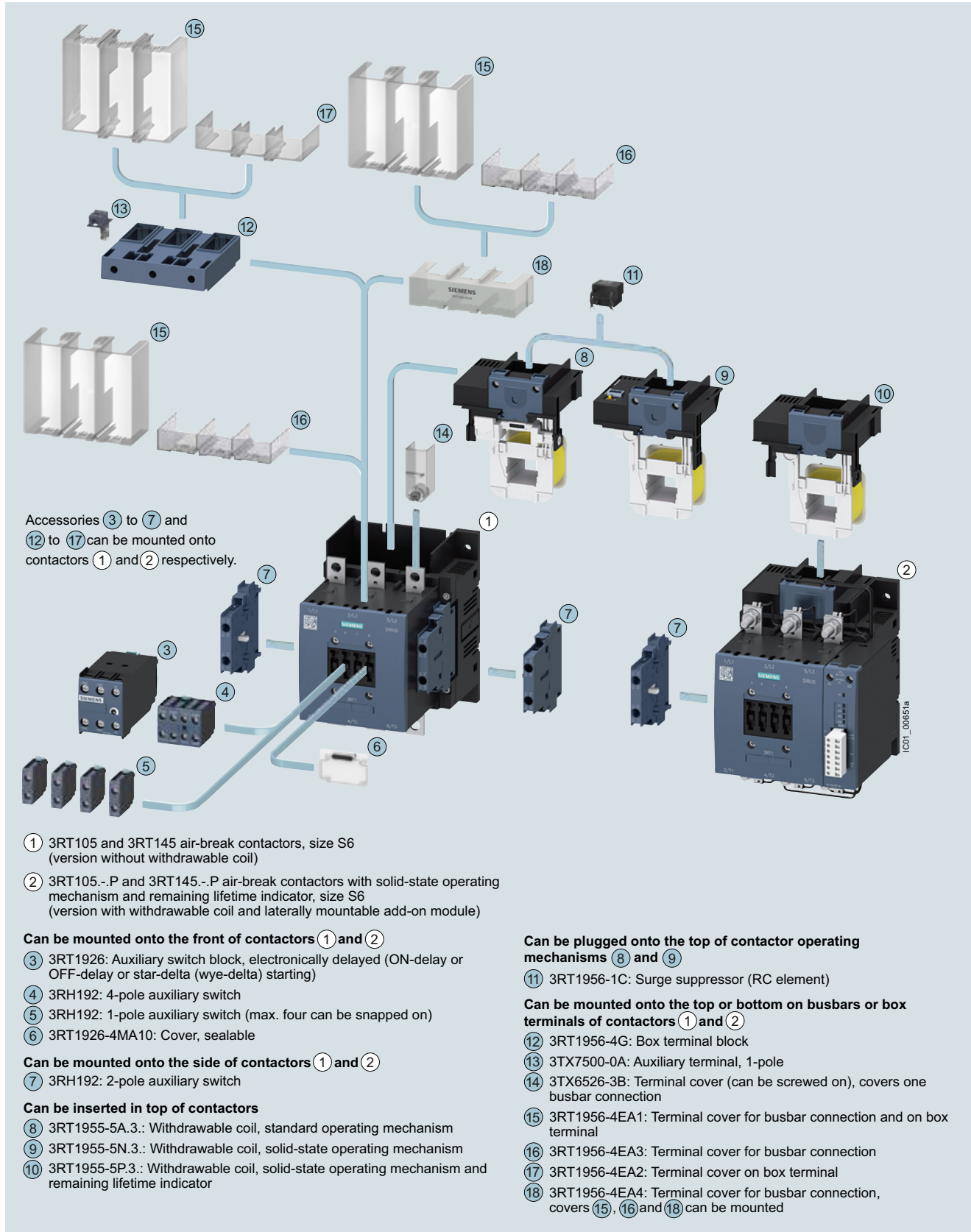
Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

General data

3RT105 and 3RT145 contactors · Size S6 with mountable accessories



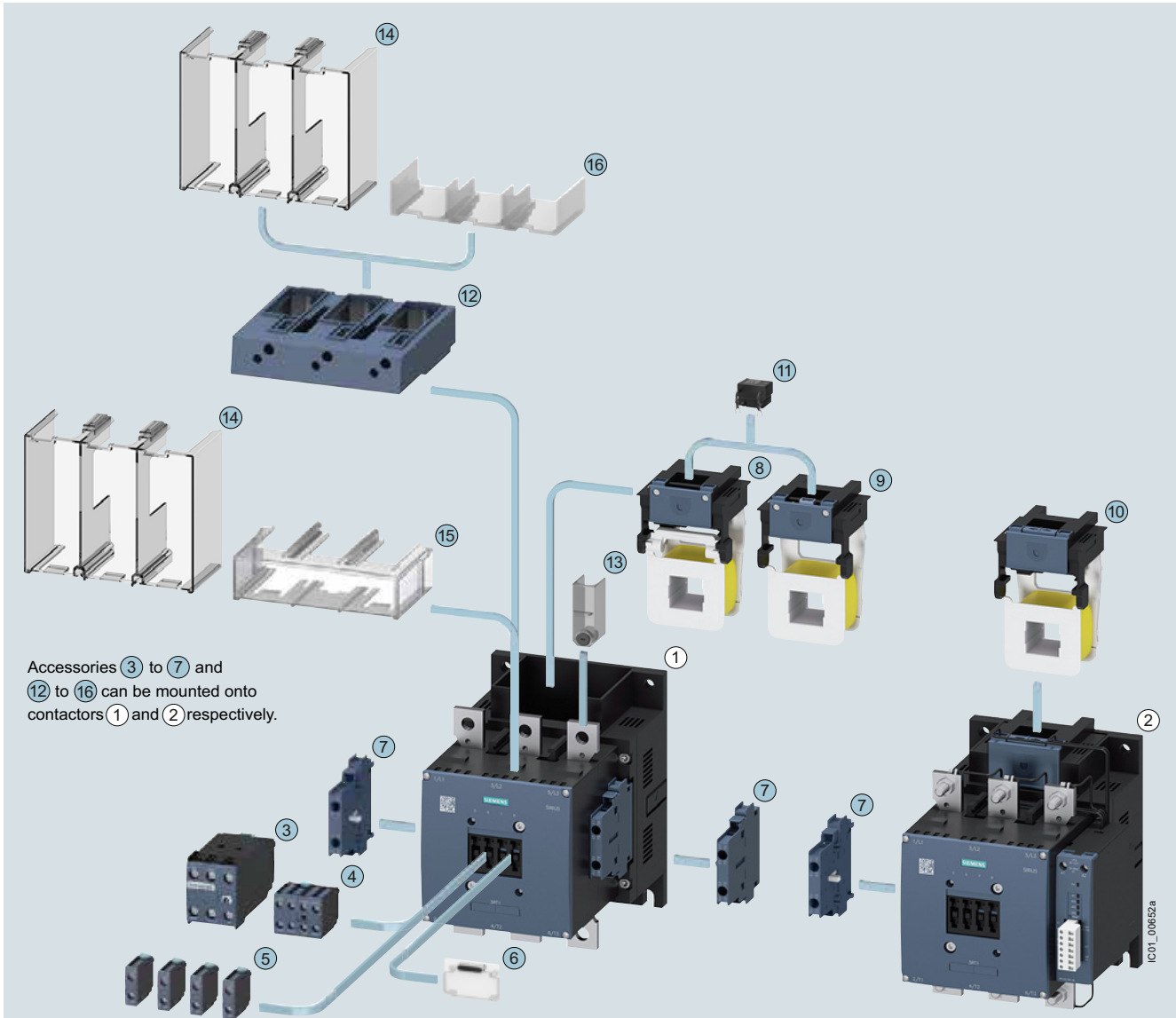
Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

General data

3RT106 and 3RT146 contactors - Size S10 with mountable accessories



Accessories ③ to ⑦ and ⑫ to ⑯ can be mounted onto 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 onto the front of contactors ① and ②

- ③ 3RT1926: Auxiliary switch, electronically delayed (ON-delay or OFF-delay or star-delta (wye-delta) starting)
- ④ 3RH192: 4-pole auxiliary switch
- ⑤ 3RH192: 1-pole auxiliary switch (max. four can be snapped on)
- ⑥ 3RT1926-4MA10: Cover, sealable

Can be mounted onto the side of contactors ① and ②

- ⑦ 3RH192: 2-pole auxiliary switch

Can be inserted in the 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 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 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

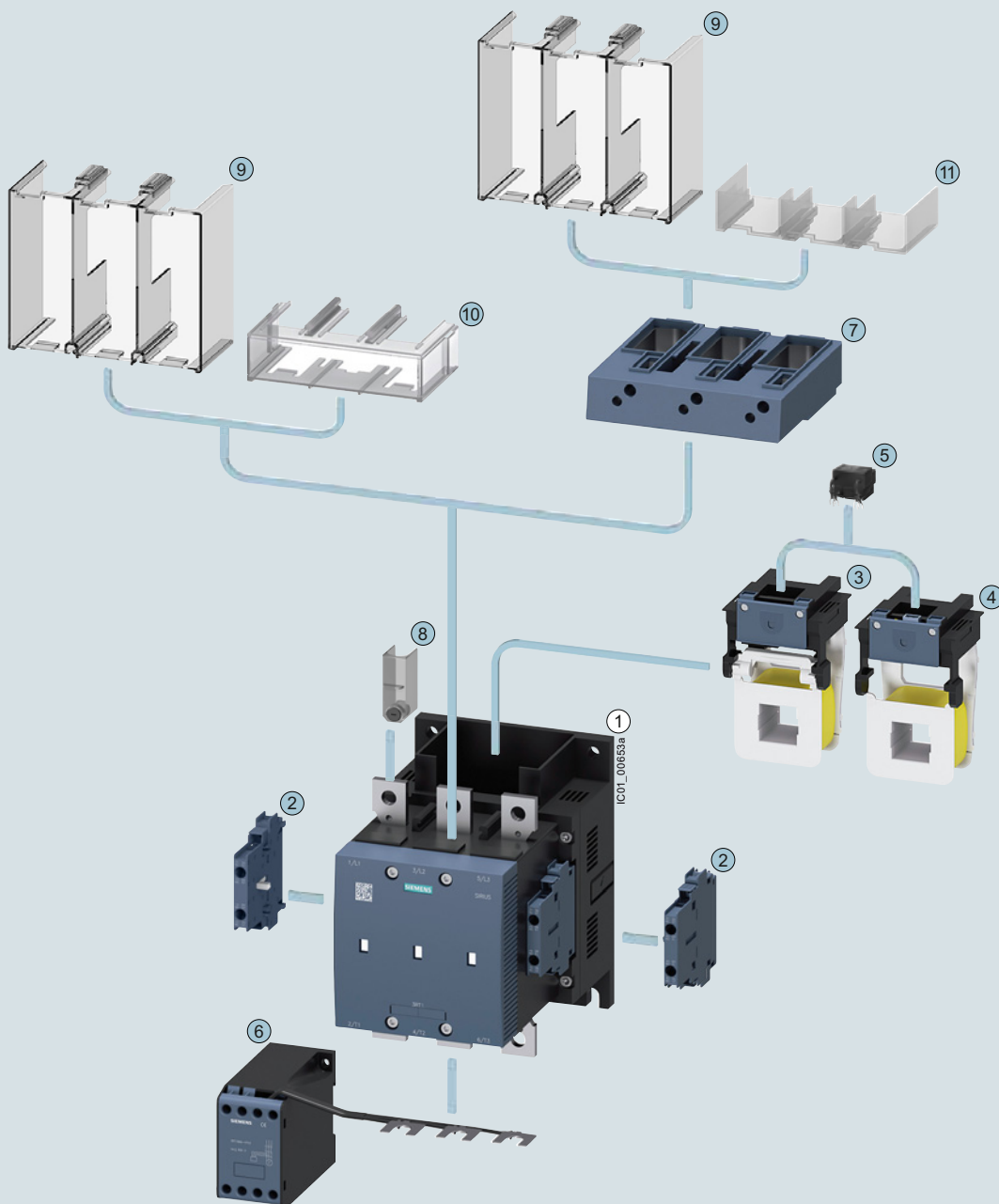
Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

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 onto side of contactor

- ② 3RH192: 2-pole auxiliary switch

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 onto 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

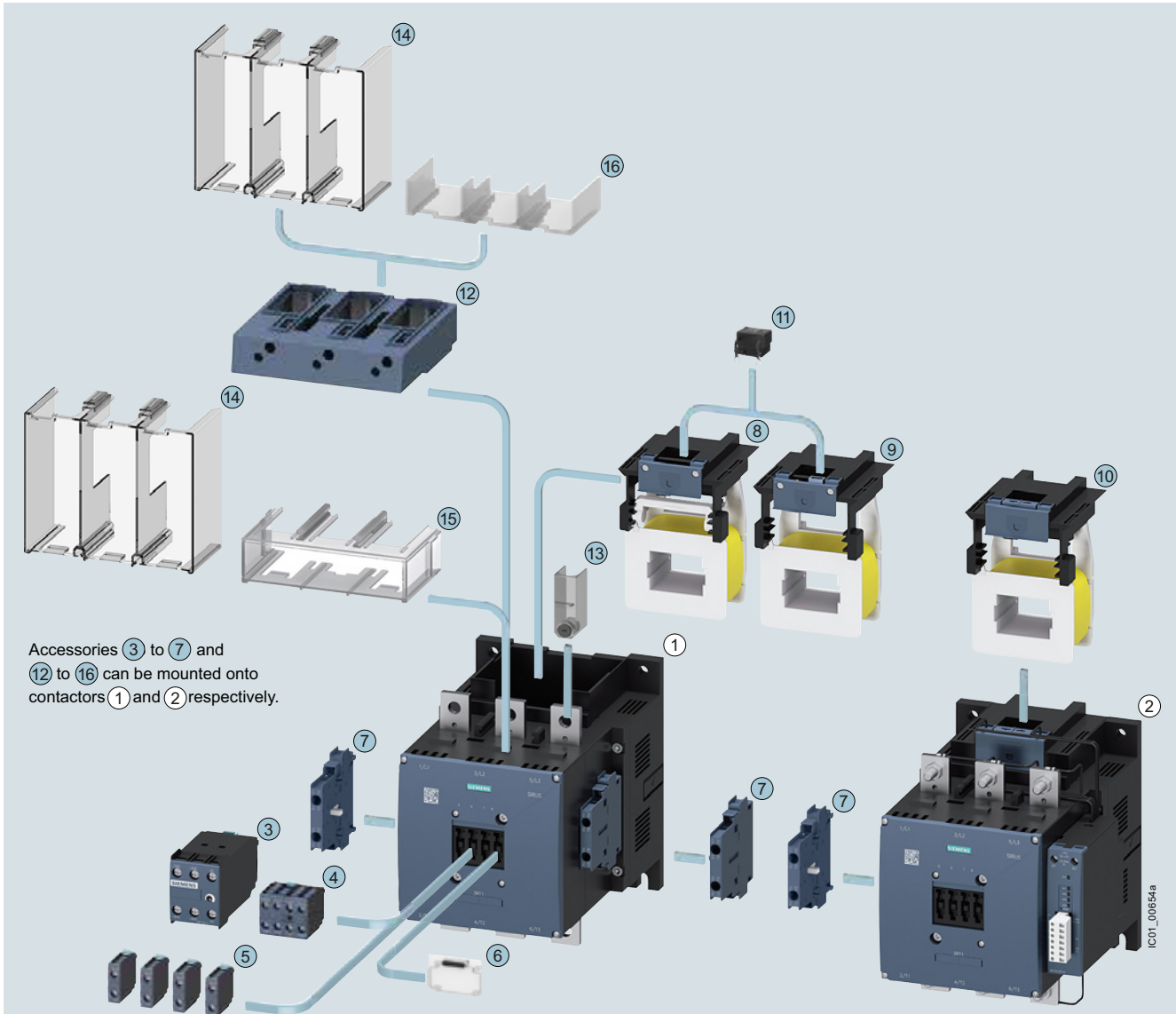
Accessories and spare parts, see pages 3/77 to 3/126 and 3/139 to 3/142.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

General data

3RT107 and 3RT147 contactors - Size S12 with mountable accessories



Accessories 3 to 7 and 12 to 16 can be mounted onto 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 onto the front of contactors ① and ②

- ③ 3RT1926: Auxiliary switch, electronically delayed (ON-delay or OFF-delay or star-delta (wye-delta) starting)
- ④ 3RH192: 4-pole auxiliary switch
- ⑤ 3RH192: 1-pole auxiliary switch (max. four can be snapped on)
- ⑥ 3RT1926-4MA10: Cover, sealable

Can be mounted onto the side of contactors ① and ②

- ⑦ 3RH192: 2-pole auxiliary switch

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

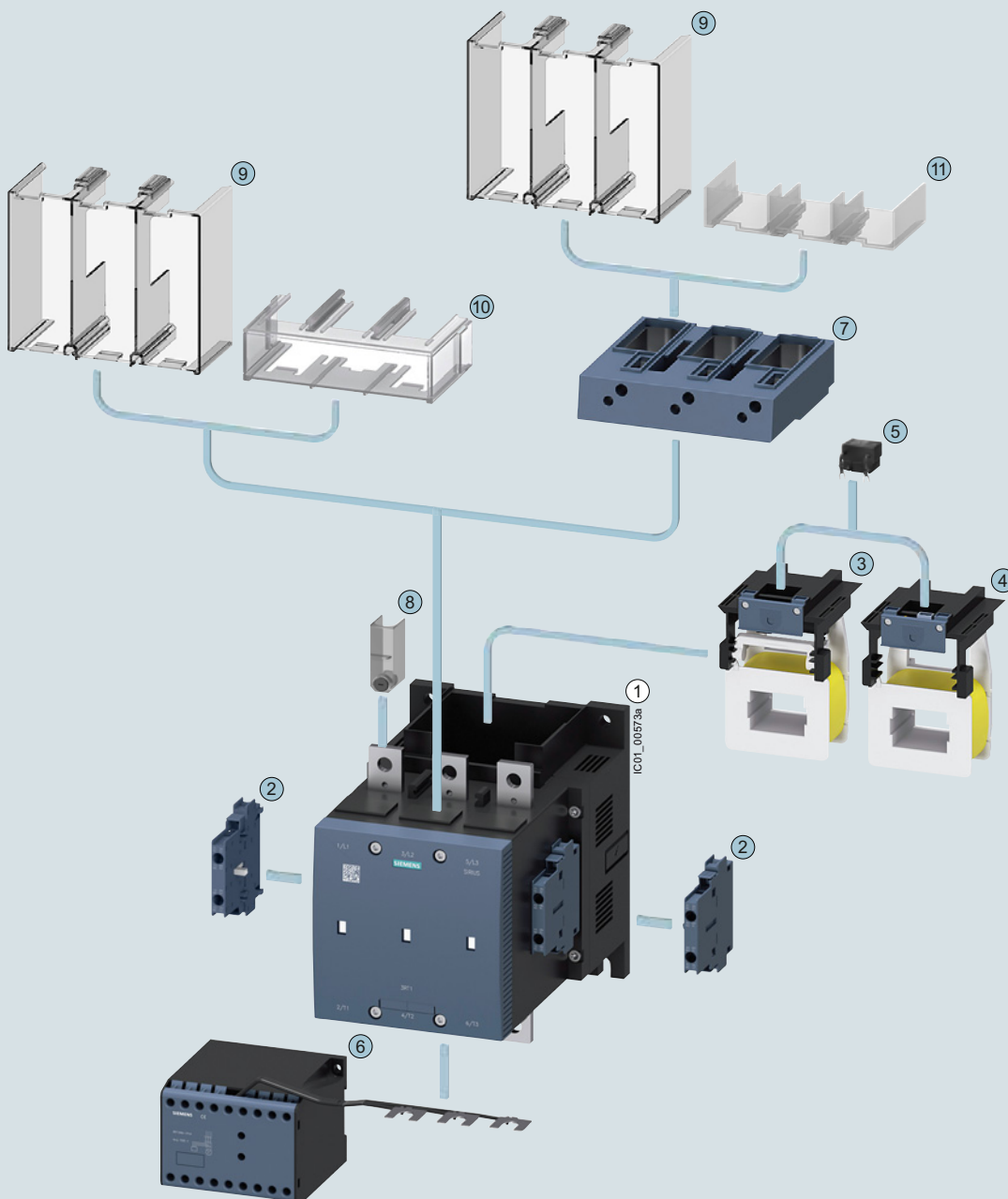
Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

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 onto the side of contactor

- ② 3RH192: 2-pole auxiliary switch

Can be inserted in top of contactors

- ③ 3RT1975-5A.3.: Withdrawable coil, standard operating mechanism
④ 3RT1975-5N.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 3RT1966-4G: Box terminal block

- ⑧ 3TX6546-3B: Terminal cover (can be screwed on), covers one busbar connection

- ⑨ 3RT1956-4EA1: 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 3/77 to 3/126 and 3/139 to 3/142.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Overview

| Version | Size | Ratings of three-phase motors at 50 Hz and 400 V kW | Connection methods Screw terminals | Spring-loaded terminals | Type | Page |
|---|------------|--|---------------------------------------|-------------------------|---------------------|------------|
| Power contactors for switching motors | | | | | | |
| AC operation | | | | | | |
| Basic unit • With permanently mounted auxiliary switch | S00 | 3 ... 7.5 | ✓ | ✓ | 3RT201.-.A.0. | 3/55 |
| • With permanently mounted auxiliary switch and varistor plugged into the front | | | ✓ | ✓ | 3RT201.-.AP04-3MA0 | 3/55 |
| | | | ✓ | ✓ | 3RT201.-.CP04-3MA0 | 3/55 |
| Basic unit • With removable auxiliary switch | S0 | 4 ... 18.5 | ✓ | ✓ | 3RT202.-.A.00 | 3/56 |
| • With permanently mounted auxiliary switch and varistor plugged in | | | ✓ | ✓ | 3RT202.-.A.04 | 3/57 |
| | | | ✓ | ✓ | 3RT202.-.CL24-3MA0 | 3/57 |
| Basic unit • With removable auxiliary switch | S2 | 18.5 ... 37 | ✓ | ✓ | 3RT203.-.A.00 | 3/58 |
| • With permanently mounted auxiliary switch and integrated coil circuit | | | ✓ | -- | 3RT203.-.1A.04 | 3/58 |
| | | | ✓ | ✓ | 3RT203.-.CL24-3MA0 | 3/58 |
| Basic unit • With removable auxiliary switch | S3 | 37 ... 55 | ✓ | ✓ | 3RT20.-.A.00 | 3/59 |
| • With permanently mounted auxiliary switch and integrated coil circuit | | | ✓ | -- | 3RT204.-.1A.04 | 3/59 |
| | | | ✓ | -- | 3RT204.-.1CL24-3MA0 | 3/59 |
| DC operation | | | | | | |
| Basic unit • With integrated coil circuit | S00 | 3 ... 7.5 | ✓ | ✓ | 3RT201.-.B.4. | 3/60 |
| • With permanently mounted auxiliary switch | | | ✓ | ✓ | 3RT201.-..B4. | 3/60 |
| • With permanently mounted auxiliary switch and integrated coil circuit | | | ✓ | ✓ | 3RT201.-.BB44-3MA0 | 3/61 |
| • With voltage tap-off | | | ✓ | ✓ | 3RT201.-.FB44-3MA0 | 3/61 |
| | | | ✓ | ✓ | 3RT201.-.BB4.-0CC0 | 3/61 |
| Basic unit • With coil circuit plugged into front | S0 | 4 ... 18.5 | ✓ | ✓ | 3RT202.-.B.40 | 3/64 |
| • With removable auxiliary switch | | | ✓ | ✓ | 3RT202.-..B40 | 3/64 |
| • With permanently mounted auxiliary switch and integrated coil circuit | | | ✓ | ✓ | 3RT202.-.BB44 | 3/64 |
| • With voltage tap-off | | | ✓ | ✓ | 3RT202.-..B44-3MA0 | 3/65 |
| | | | ✓ | ✓ | 3RT202.-.BB40-0CC0 | 3/65 |
| DC operation for direct control by PLC (coupling contactors) | | | | | | |
| Basic unit | S00 | 3 ... 5.5 | ✓ | ✓ | 3RT201.-..B4. | 3/62 |
| Basic unit with integrated coil circuit | S00 | 3 ... 5.5 | ✓ | ✓ | 3RT201.-..B4. | 3/62, 3/63 |
| | 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 • With removable auxiliary switch | S2 | 18.5 ... 37 | ✓ | ✓ | 3RT203.-.N.30 | 3/69 |
| • With permanently mounted auxiliary switch | | | ✓ | -- | 3RT203.-.1N.34 | 3/69 |
| • With voltage tap-off | | | ✓ | ✓ | 3RT203.-.NB34-3MA0 | 3/69 |
| • With fail-safe 24 V DC control signal input for safety-related applications up to SIL CL 3 | | | ✓ | ✓ | 3RT203.-.NB30-0CC0 | 3/69 |
| | | | ✓ | ✓ | 3RT203.-.S.30 | 3/70 |
| Basic unit with integrated coil circuit • With removable auxiliary switch | S3 | 37 ... 55 | ✓ | ✓ | 3RT204.-.N.30 | 3/71 |
| • With permanently mounted auxiliary switch | | | ✓ | -- | 3RT204.-.1N.34 | 3/71 |
| • With voltage tap-off | | | ✓ | ✓ | 3RT204.-.NB34-3MA0 | 3/71 |
| • With fail-safe 24 V DC control signal input for safety-related applications up to SIL CL 3 | | | ✓ | ✓ | 3RT204.-.NB30-0CC0 | 3/71 |
| | | | ✓ | ✓ | 3RT204.-.S.30 | 3/70 |
| Basic unit with integrated coil circuit • Standard operating mechanism with economy circuit for AC and DC operation | S6 ... S12 | 55 ... 250 | ✓ ¹⁾ | ✓ | 3RT10.-.A.36 | 3/72 |
| • Solid-state operating mechanism 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 | 3/73 |
| - Standard control signal input | | | ✓ ¹⁾ | ✓ | 3RT10.-.N.36 | 3/74 |
| - Standard control signal input, with remaining lifetime indicator (RLT) | | | ✓ ¹⁾ | -- | 3RT10.-.P.35 | 3/74 |

-- Version not possible

✓ Version possible

¹⁾ Connection method:

- Main circuit: Busbar connection (optionally with box terminals),
- Auxiliary/control circuit: Screw terminals or spring-loaded terminals.

Switching devices – Contactors and contactor assemblies – for switching motors

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 3/127 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:

www.siemens.com/support-request.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

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 contactors in sizes S00 and S0, can be expanded using auxiliary switches, see page 3/89 for the permitted selection of auxiliary switches.
- Sizes S6 to S12: These contactors are supplied with two laterally mounted auxiliary switches. 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 3/89 to 3/94.

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 methods

Main circuit

- Sizes S00 and S0: screw or spring-loaded terminals, spring-loaded 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-loaded 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 Equipment 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

For short-circuit protection of contactors with overload relays or of load feeders, refer to the Configuration Manuals, see "More information" on page 3/23.

For fuseless assembly of motor feeders consisting of 3RV2 motor starter protector and 3RT2 contactor, selection aids are available, see "SIRIUS 3RA2 load feeders", page 8/4 onwards.

Motor protection

3RT2 contactors

For protection against overload, 3RU2 thermal overload relays (see page 7/98 onwards) or 3RB3 electronic overload relays (see page 7/111 onwards) can be mounted onto the 3RT2 contactors.

3RT1 contactors

For protection against overload, 3RB2 electronic overload relays (see page 7/123 onwards) can be mounted onto the 3RT1 contactors.

Plant and application monitoring

For monitoring and measuring in the application, 3RR2 monitoring relays can be mounted onto the 3RT2 contactors (see page 10/51).

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.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

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 page 3/104 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.
- Sizes S0 and S2: The surge suppressors (varistors, RC elements or diode combinations) can be plugged into the front of the contactors.
- Size S3: The varistors and diode combinations are plugged into the front of the contactors. The RC element is plugged into the two recesses on the front of the contactor to the left of the terminal block for the auxiliary switches.
- 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", [page 3/23](#)).

Contactors with voltage tap-off

3RT2 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 page 3/81 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", page 2/1 onwards](#).

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).

In addition, for sizes S2 and S3, variants with solid-state operating mechanism for AC or DC operation with a fail-safe PLC input are available.

Control takes place via the control supply voltage connection A1 - A2 with varying operating ranges ([see relevant product data sheet](#) for further details).

DC coupling contactors with reduced power consumption are also ideally suited for connection to the controller.

3RT1 contactors

The following control and/or operating mechanism 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 PLC input
- As above, but additionally with remaining lifetime indicator (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.

Contactors in safety-related 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.

Contactors with mirror contacts according to IEC 60947-4-1 are generally required for use in safety-related applications. Most of our contactors meet this requirement; a corresponding note can be found in the technical product data sheet.

Contactors with increased tamper protection

Increased tamper protection is ensured either by using our contactor versions with factory-installed, permanently mounted auxiliary switches protected against mechanical external actuation (e.g. 3RT2...-.....-3MA0 or 3RT1...-.....-3PA0 contactors), or by using the 3RT2916-4MA10 or 3RT1926-4MA10 sealable cover as an accessory ([see page 3/119](#)).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Connection of contactors to fail-safe control modules

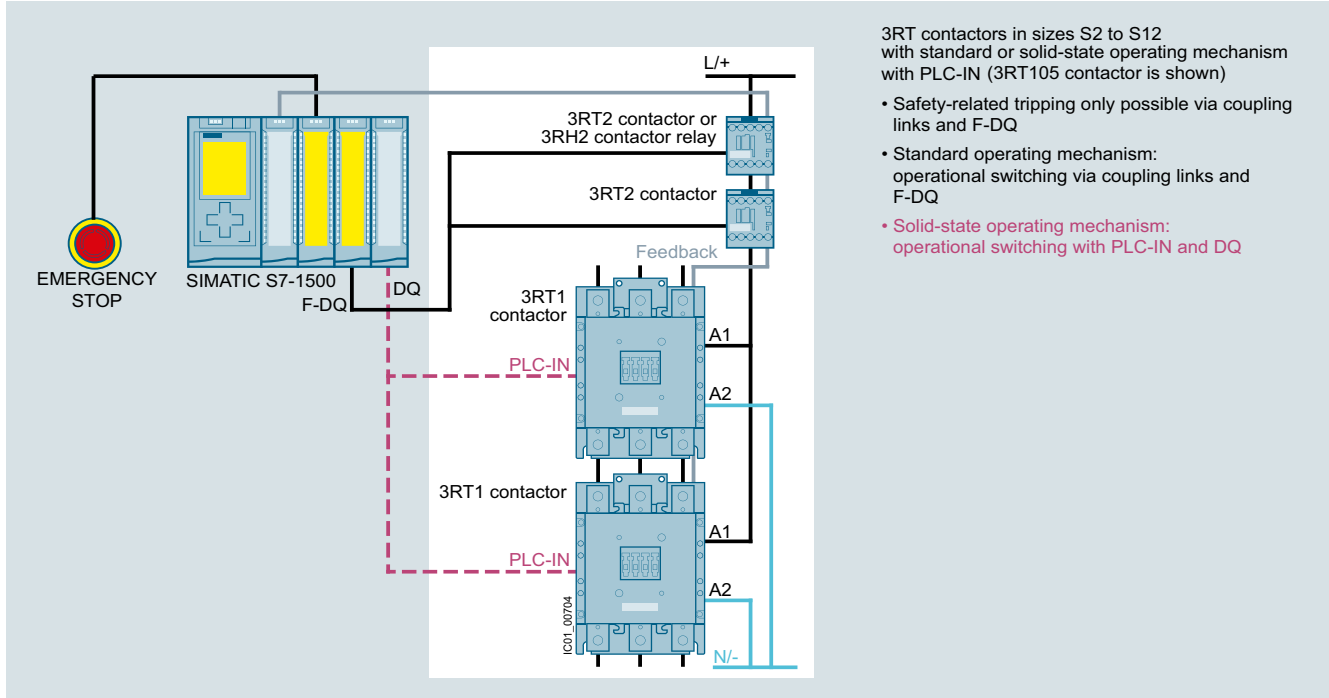
While contactors with smaller power ratings can be connected directly to the outputs of fail-safe controllers, implementing safety-related applications with standard contactors with higher power is much more complicated and elaborate because of the necessary coupling links.

Due to their fail-safe control input, special contactors provide a much simpler way of doing this:

- 3RT20...-S contactors in sizes S2 and S3
- 3RT10...-S contactors in sizes S6 to S12

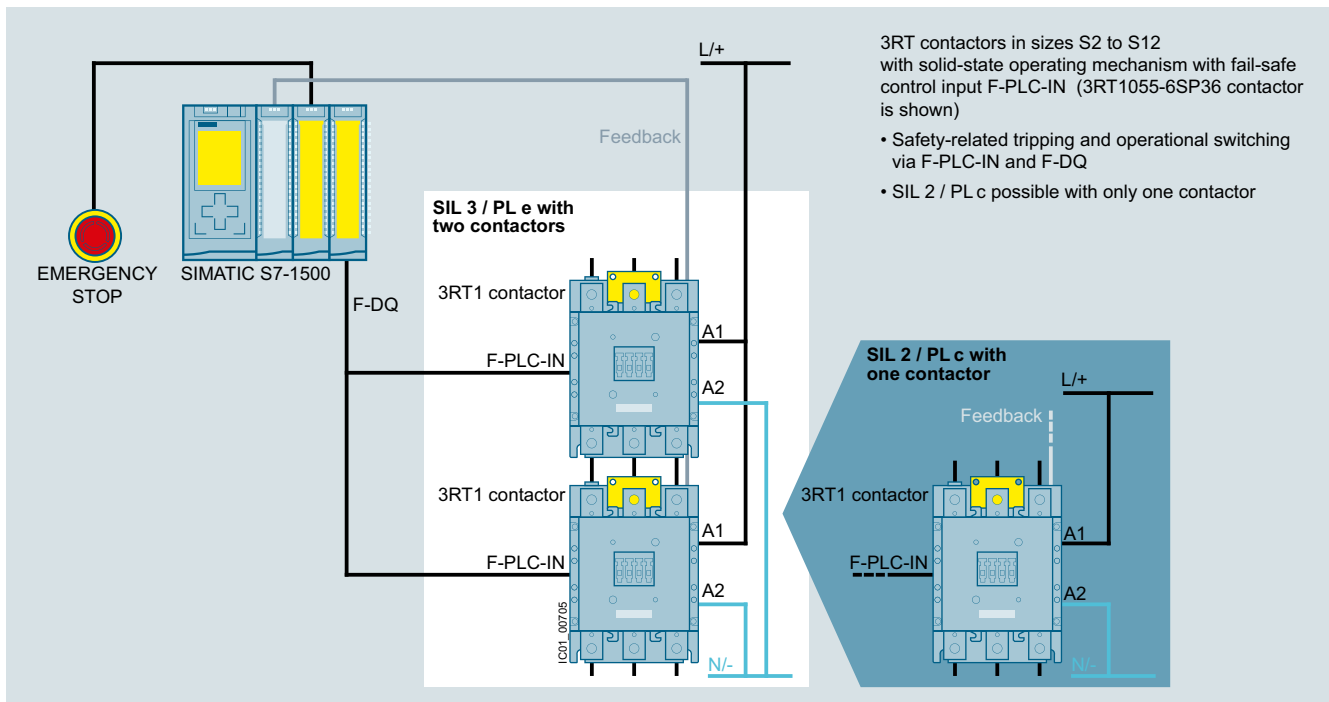
For more information on safety systems, see page 11/1 onwards.

Example for SIL 2 and SIL 3 / PL e application - previously:



Application with safety-related disconnection with standard contactors using the example of a 3RT105 contactor

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 using the example of a 3RT105 contactor

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Contactors for special applications

- SIRIUS 3RT.4 contactors for low or non-inductive loads (AC-1), 3-pole, [see page 4/6 onwards](#)
- SIRIUS 3RT20 and 3RT10 contactors with an extended application range, 3-pole (for rail applications), [see page 4/55 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 |
| Rating dependent on size | e.g. 5 = 37 kW for 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 = for 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.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

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 for modular system, see
<https://support.industry.siemens.com/cs/ww/en/view/60311318>
 Equipment Manual, see
<https://support.industry.siemens.com/cs/ww/en/view/60306557>
 Application Manual for controls with IE3/IE4 motors, see
<https://support.industry.siemens.com/cs/ww/en/view/94770820>
 Configuration Manual for load feeders, see
<https://support.industry.siemens.com/cs/ww/en/view/39714188>
 Configuration Manual for UL, see
<https://support.industry.siemens.com/cs/ww/en/view/53433538>

Type

Contactors

Size

3RT2**S00 to S2****S3****3RT1****S6 to S12**

Rated data of the auxiliary contacts

According to IEC/EN 60947-5-1

Data apply to integrated auxiliary contacts and conventional contacts in the auxiliary switches

Rated insulation voltage U_i (pollution degree 3)

| | | | |
|---|-----|-------------------------------|----|
| V | 690 | 1 000 (3RT20...-0CC0: 690) | -- |
|---|-----|-------------------------------|----|

• For laterally mountable auxiliary switches

| | | | |
|---|-----|-----|-----|
| V | 690 | 690 | 500 |
|---|-----|-----|-----|

• For front auxiliary switches

| | | | |
|---|-----|-----|-----|
| 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

• At rated operational voltage U_e

| | | | | |
|-------------|---|------------------|---|-----------------|
| Up to 230 V | A | 10 ¹⁾ | 6 | 6 |
| 400 V | A | 3 | | 3 |
| 500 V | A | 2 | | 2 |
| 690 V | A | 1 | | 1 ²⁾ |

DC load

Rated operational current I_e /DC-12

• At 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

• At 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⁾ With laterally mountable auxiliary switches, only the currents for rated operational voltages up to 500 V apply.

³⁾ For laterally mountable auxiliary switches, DC-13/at 24 V: Max. 6 A.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type

3RT contactors

Size

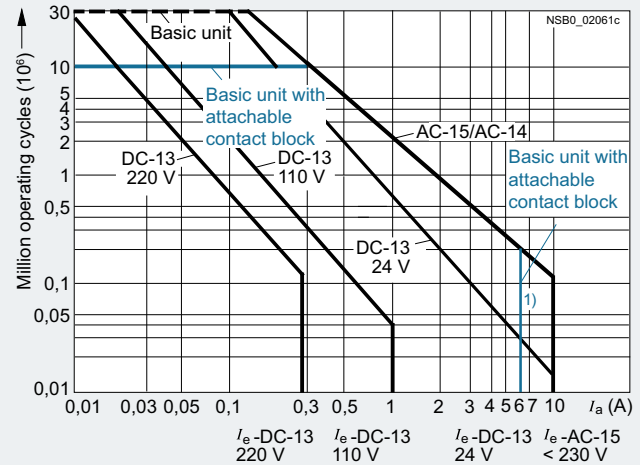
S00 to S12

Contact endurance of the auxiliary contacts

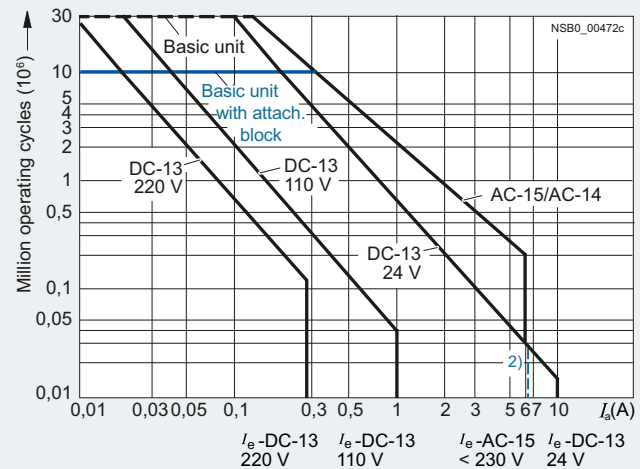
It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

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 switches, DC-13/at 24 V: Max. 6 A.

³⁾ With laterally mountable auxiliary switches, the currents for rated operational voltages up to 500 V apply.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Type **3RT2 contactors**
 Size **S00 and S0**

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching low inductive or non-inductive AC loads (AC-1) and motor-driven 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 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:

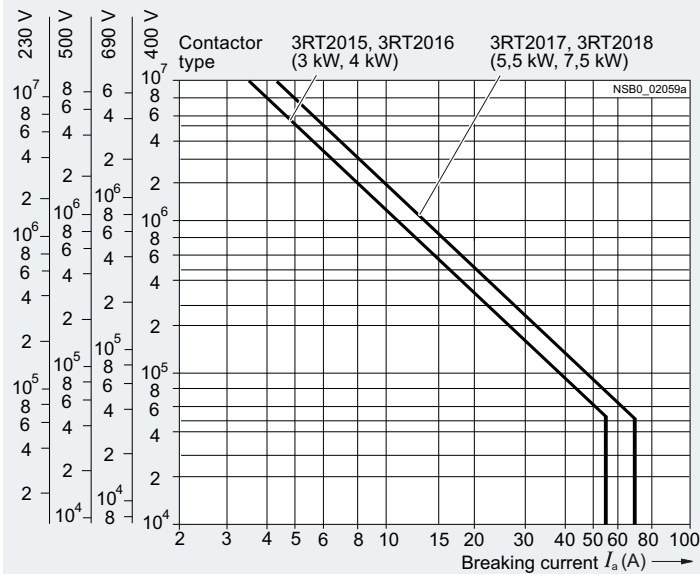
$$X = \frac{A}{1 + \frac{C}{100} \left(\frac{A}{B} - 1 \right)}$$

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

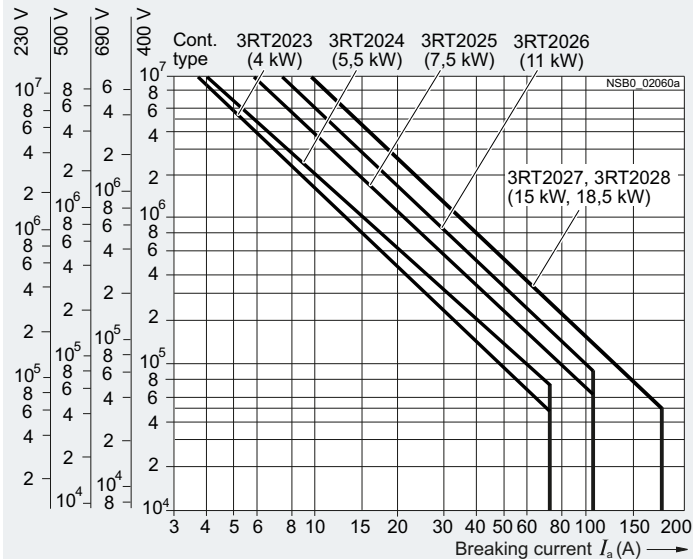
Size S00

Operating cycles at



Size S0

Operating cycles at



Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

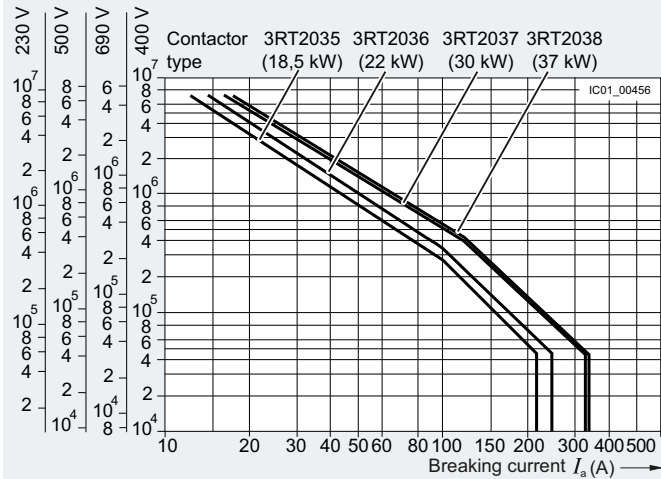
SIRIUS 3RT contactors, 3-pole up to 250 kW

| | |
|------|-----------------------|
| Type | 3RT contactors |
| Size | S2 to S12 |

Contact endurance of main contacts (continued)

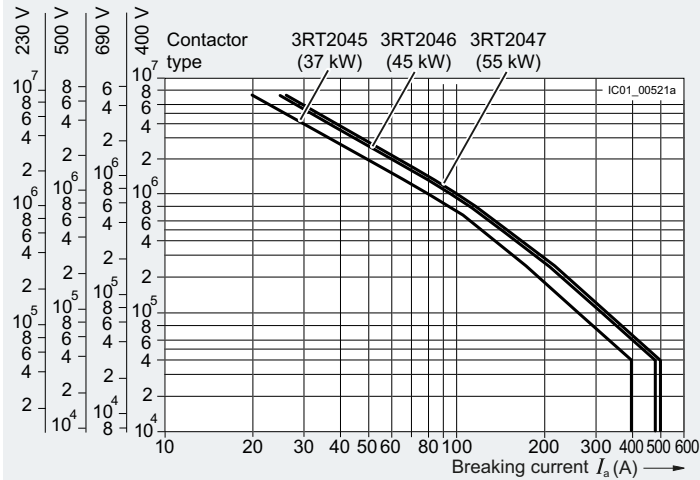
Size S2

Operating cycles at



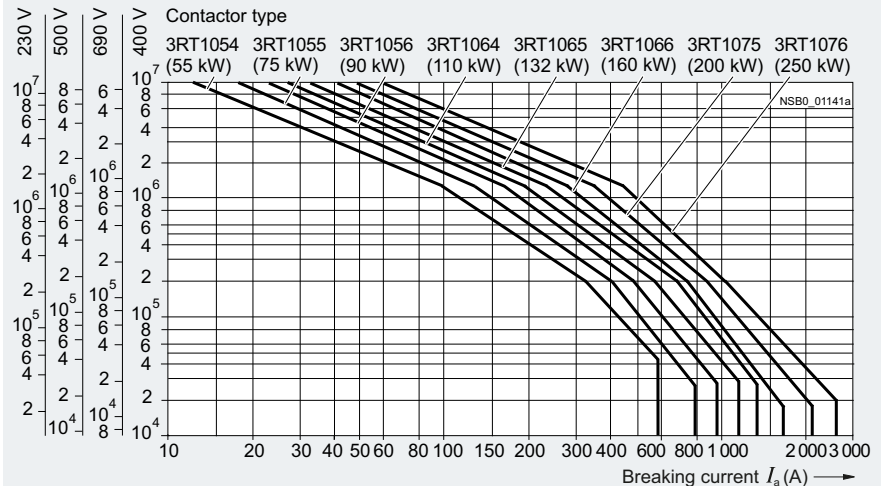
Size S3

Operating cycles at



Sizes S6 to S12

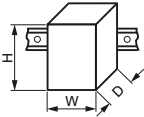
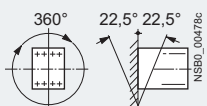

Operating cycles at



Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| | | Contactors | |
|--|---|--|-------------------|
| Type | | 3RT2015, 3RT2016 | 3RT2017, 3RT2018 |
| Size | | S00 | |
| 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-loaded terminals Basic unit with mounted auxiliary switch <ul style="list-style-type: none"> Screw terminals Spring-loaded terminals Basic unit with mounted function module or solid-state time-delay auxiliary switch <ul style="list-style-type: none"> Screw terminals Spring-loaded 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 | Operating cycles | 10 million | |
| - With solid-state compatible auxiliary switch | 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. | | | |
| • 3RT.2.1 (removable auxiliary switch) | | Yes, this applies to both the basic unit as well as to between the basic unit and the mounted auxiliary switch according to IEC 60947-4-1 Appendix F | |
| • 3RH2919-.NF.. solid-state compatible auxiliary switches | | No mirror contact for size S00 | |
| Ambient temperature | | | |
| • During operation | °C | -25 ... +60 | |
| • During storage | °C | -55 ... +80 | |
| Degree of protection IP on the front acc. to IEC 60529 | | IP20 (screw terminals and spring-loaded terminals) | |
| Touch protection on the front acc. to IEC 60529 | | Finger-safe for vertical touching from the front (screw terminals and spring-loaded terminals) | |
| Shock resistance | | | |
| • Rectangular pulse | g/ms | 6.7/5 and 4.2/10 | 7.3/5 and 4.7/10 |
| | | 6.7/5 and 4.2/10 | 7.3/5 and 4.7/10 |
| • Sine pulse | g/ms | 10.5/5 and 6.6/10 | 11.4/5 and 7.3/10 |
| | | 10.5/5 and 6.6/10 | 11.4/5 and 7.3/10 |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| Type | Contactors | |
|---|----------------------------|---|
| Size | 3RT2015, 3RT2016 S00 | 3RT2017, 3RT2018 |
| 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 | 35 |
| - Type of coordination "2" | A | 20 |
| - Weld-free (test conditions acc. to IEC 60947-4-1) | A | 10 |
| • 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 | | |
| • With fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1$ kA | A | 10 |
| • 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, page 8/4 onwards |
| Control | | |
| Solenoid coil operating range | | |
| • AC operation | 50 Hz 60 Hz | 0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s |
| • 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) | | |
| • AC operation, 50/60 Hz, standard version | | |
| - Closing | VA | 27/24.3 |
| - P.f. | | 0.8/0.75 |
| - Closed | VA | 4.2/3.3 |
| - P.f. | | 0.25/0.25 |
| • AC operation, 50 Hz, for USA/Canada | | |
| - Closing | VA | 26.4 |
| - P.f. for closing | | 0.81 |
| - Closed | VA | 4.4 |
| - P.f. for closed | | 0.24 |
| • AC operation, 60 Hz, for USA/Canada | | |
| - Closing | VA | 31.7 |
| - P.f. for closing | | 0.81 |
| - Closed | VA | 4.8 |
| - P.f. for closed | | 0.25 |
| • DC operation (closing = closed) | W | 4 |
| Permissible residual current of the electronics (with 0 signal) | | |
| • AC operation | | < 3 mA x (230 V/ U_s) ¹⁾ |
| • DC operation | | < 4 mA x (230 V/ U_s) ¹⁾ |
| Operating times at 1.0 x U_s²⁾ | | |
| Total break time = Opening delay + Arcing time | | |
| • AC operation | | |
| - Closing delay | ms | 9.5 ... 24 |
| - Opening delay | ms | 4 ... 14 |
| • DC operation | | |
| - Closing delay | ms | 35 ... 50 |
| - Opening delay | ms | 7 ... 12 |
| • Arcing time | ms | 10 ... 15 |




¹⁾ The 3RT2916-1GA00 additional load module is recommended for higher residual currents, see page 3/121.




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).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| Type Size | | Coupling contactors | | |
|---|----|---|---|--|
| | | 3RT201.-HB4. S00 | 3RT201.-JB4. | 3RT201.-KB4. |
| 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  | Integrated diode  | Integrated 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 | 7 ... 20 |
| - OFF-delay NC | ms | 20 ... 30 | 55 ... 75 | 20 ... 30 |

| Type Size | | Coupling contactors | | |
|---|----|---|---|--|
| | | 3RT201.-1MB4.-0KT0 S00 | 3RT201.-1VB4. | 3RT201.-1SB4. |
| 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  | Integrated diode  | Integrated 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 | 5 ... 20 |
| - OFF-delay NC | ms | 10 ... 30 | 30 ... 90 | 10 ... 30 |

Switching devices – Contactors and contactor assemblies – for switching motors

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 | | | | |
| • 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 cross-section in the main circuit for max. AC-1 rated value | | mm ² | 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 |
| • Rated power for slipring or squirrel-cage motors at 50 and 60 Hz | At 230 V 400 V 690 V | kW kW kW | 1.5 3 4 | 2.2 4 5.5 |
| Thermal load capacity | 10 s current | A | 56 | 72 |
| Power loss per conducting path | At $I_e/AC-3$ | W | 0.42 | 0.7 |
| 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 |
| - Rated power for squirrel-cage motors with 50 Hz and 60 Hz | Up to 400 V | kW | 3 | 4 |
| • 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 |
| - 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⁾ 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.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| Type | | | Contactors | |
|--|------------|-----|------------|--------------------|
| Size | | | 3RT2015 | 3RT2016 to 3RT2018 |
| Rated data of the main contacts (continued) | | | | |
| Load rating with DC | | | | |
| Utilization category DC-1, ($L/R \leq 1$ 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' :
 $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h.$

Switching devices – Contactors and contactor assemblies – for switching motors

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) | 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) | 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) | 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) |

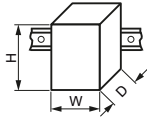
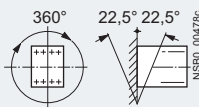

¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

²⁾ Max. external diameter of the conductor insulation: 3.6 mm. On spring-loaded terminals with conductor cross-sections ≤ 1 mm² an insulation stop is recommended, see page 3/122.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| Type Size | | Contactors | |
|---|---|--|--------------------|
| | | 3RT2023 to 3RT2025 S0 | 3RT2026 to 3RT2028 |
| General data | | | |
| Dimensions (W x H x D) | | | |
| <u>AC operation</u> | | | |
| • Basic unit |  | mm | 45 x 85 x 97 |
| - Screw terminals | | mm | 45 x 102 x 97 |
| - Spring-loaded terminals | | | |
| • Basic unit with mounted auxiliary switch | | mm | 45 x 85 x 141 |
| - Screw terminals | | mm | 45 x 102 x 145 |
| - Spring-loaded terminals | | | |
| • Basic unit with mounted function module or solid-state time-delay auxiliary switch | | mm | 45 x 85 x 171 |
| - Screw terminals | | mm | 45 x 102 x 171 |
| - Spring-loaded terminals | | | |
| <u>DC operation</u> | | | |
| • Basic unit | | mm | 45 x 85 x 107 |
| - Screw terminals | | mm | 45 x 102 x 107 |
| - Spring-loaded terminals | | | |
| • Basic unit with mounted auxiliary switch | | mm | 45 x 85 x 151 |
| - Screw terminals | | mm | 45 x 102 x 155 |
| - Spring-loaded terminals | | | |
| • Basic unit with mounted function module or solid-state time-delay auxiliary switch | | mm | 45 x 85 x 181 |
| - Screw terminals | | mm | 45 x 102 x 181 |
| - Spring-loaded terminals | | | |
| 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 | Operating cycles | 10 million | |
| • Basic unit with solid-state compatible auxiliary switch | 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) | 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 IP on the front acc. to IEC 60529 | | IP20 (screw terminals and spring-loaded terminals) | |
| Touch protection on the front acc. to IEC 60529 | | Finger-safe for vertical touching from the front (screw terminals and spring-loaded terminals) | |
| Shock resistance | | | |
| • Rectangular pulse | | | |
| - AC operation | g/ms | 7.5/5 and 4.7/10 | 8.3/5 and 5.3/10 |
| - DC operation | g/ms | 10/5 and 7.5/10 | |
| • Sine pulse | | | |
| - AC operation | g/ms | 11.8/5 and 7.4/10 | 13.5/5 and 8.3/10 |
| - DC operation | g/ms | 15/5 and 10/10 | |

Switching devices – Contactors and contactor assemblies – for switching motors

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, 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 x U_s ¹⁾ | | 0.7 ... 1.3 x U_s ²⁾ | | |
| Power consumption of the solenoid coils (for cold coil and 1.0 x U_s) | | | | | | |
| • AC operation, 50 Hz, standard version | | | | | | |
| - Closing | VA | 65 | 77 | 6.6 | 11.9 | 12.7 |
| - P.f. | | 0.82 | | 0.98 | | |
| - Closed | VA | 7.6 | 9.8 | 1.9 | 1.6 | 3.9 |
| - P.f. | | 0.25 | | 0.86 | 0.79 | 0.51 |
| • AC operation, 50/60 Hz, standard version | | | | | | |
| - Closing | VA | 68/67 | 81/79 | 6.6/6.7 | 11.9/12.0 | 12.7/14.7 |
| - 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 | 3.9/4.3 |
| - P.f. | | 0.25/0.28 | | 0.86/0.82 | 0.79/0.74 | 0.51/0.56 |
| • AC operation, 50 Hz, for USA/Canada | | | | | | |
| - Closing | VA | 65 | 77 | -- | | |
| - P.f. | | 0.82 | 0.82 | -- | | |
| - Closed | VA | 7 ³⁾ /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 | 14.3/1.9 |
| 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 x U_s⁴⁾ | | | | | | |
| • AC operation | | | | | | |
| - Closing delay | ms | 10 ... 18 | 10 ... 17 | 65 ... 80 | 50 ... 70 | 60 ... 80 |
| - Opening delay | ms | 4 ... 16 | | 30 ... 45 | 35 ... 45 | 30 ... 50 |
| • DC operation | | | | | | |
| - Closing delay | ms | 55 ... 80 | | 60 ... 80 | 56 ... 70 | 60 ... 80 |
| - Opening delay | ms | 16 ... 17 | | 30 ... 45 | 35 ... 45 | 30 ... 50 |
| • Arcing time | ms | 10 | | | | |

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⁾ The following applies to $U_{s\max} = 280$ V: Upper limit = 1.1 x $U_{s\max}$


³⁾ Value applies to 3RT2023 contactor 50 Hz AC.

⁴⁾ 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).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| | | Coupling contactors | |
|---|--------------------|---|--|
| Type | | 3RT202.-.KB4. | |
| Size | | S0 | |
| 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 | | Integrated 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 | | | | | |
|--|------------------------|-------------------|----------------|----------------|----------------|----------------|----------------|
| Type | | 3RT2023 | 3RT2024 | 3RT2025 | 3RT2026 | 3RT2027 | 3RT2028 |
| Size | | S0 | | | | | |
| Rated data of the main contacts | | | | | | | |
| Load rating with AC | | | | | | | |
| Utilization category AC-1 | | | | | | | |
| • 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⁾ | 230 V kW | 13.3 | | | | 15.5 | |
| | 400 V kW | 23 | | | | 27.5 | |
| | 690 V kW | 40 | | | | 47.5 | |
| • Minimum cross-section in the main circuit for max. AC-1 rated value | 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 slipping or squirrel-cage motors at 50 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).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| Type Size | Contactors | |
|--|--------------------------|--------------------|
| | 3RT2023 to 3RT2025 S0 | 3RT2026 to 3RT2028 |
| Rated data of the main contacts (continued) | | |
| Load rating with DC | | |
| Utilization category DC-1, ($L/R \leq 1$ 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 |
| | AC/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' :
 $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| 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) | 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 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) | 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) | 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) | 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) |

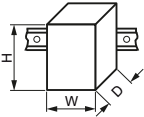
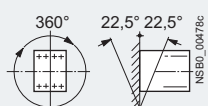
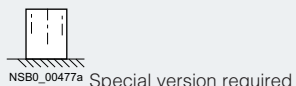
¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

²⁾ Max. external diameter of the conductor insulation: 6.4 mm.
On spring-loaded terminals with conductor cross-sections ≤ 1 mm² an insulation stop is recommended, see page 3/122.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors


SIRIUS 3RT contactors, 3-pole up to 250 kW

| | | Contactors | | | |
|--|---|--|----------------|---------|---------|
| | | 3RT2035 | 3RT2036 | 3RT2037 | 3RT2038 |
| | | S2 | | | |
| 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/spring-loaded terminals Basic unit with mounted auxiliary switch <ul style="list-style-type: none"> - Screw terminals - Spring-loaded terminals Basic unit with mounted function module or solid-state time-delay auxiliary switch <ul style="list-style-type: none"> - Screw/spring-loaded terminals |  | mm | 55 x 114 x 130 | | |
| | | mm | 55 x 114 x 174 | | |
| | | mm | 55 x 114 x 178 | | |
| | | mm | 55 x 114 x 204 | | |
| Permissible mounting position | | | | | |
| The contactors are designed for operation on a vertical mounting surface. | |  | | | |
| Upright mounting position | |  | | | |
| Mechanical endurance | | | | | |
| <ul style="list-style-type: none"> Basic units and basic units with mounted auxiliary switch | Operating cycles | 10 million (3RT203.-S.30: 5 million) | | | |
| <ul style="list-style-type: none"> Basic units with solid-state compatible auxiliary switch | Operating cycles | 5 million | | | |
| Electrical endurance | | | | | |
| For contact endurance of the main contacts, see page 3/26. | | | | | |
| Rated insulation voltage U_i (pollution degree 3) | | V | 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 | 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) | 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 IP on the front acc. to IEC 60529 | | IP20 (screw terminals and spring-loaded terminals) | | | |
| Touch protection on the front acc. to IEC 60529 | | Finger-safe for vertical touching from the front (screw terminals and spring-loaded 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 | 11.8/5 and 7.4/10 | | | |
| | g/ms | 7.7/5 and 4.5/10 | | | |
| | g/ms | 18.5/5 and 11.6/10 | | | |
| | g/ms | 12/5 and 7/10 | | | |
| 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" | A | 160 | | 250 | |
| <ul style="list-style-type: none"> - Type of coordination "2" | A | 80 | | 125 | 160 |
| <ul style="list-style-type: none"> - 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, page 8/4 onwards | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| Type | Contactors | | | Coupling contactors |
|---|-------------------------------------|---|------------------------------|---------------------|
| | 3RT203.-A.../ 3RT203.-C... S2 | 3RT203.-N.3. | 3RT203.-S.3. | 3RT203.-KB4. |
| Size | | | | |
| 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 | -- |
| - Closing for DC operation | VA | -- | 23 ²⁾ | 0.7 |
| - Closed for DC operation | VA | -- | 1 | 1.6 |
| • DC operation | | | | |
| - Closing for DC operation | W | -- | -- | 21.5 ³⁾ |
| - Closed for DC operation | W | -- | -- | 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 | | | | |
| | -- | Integrated varistor  | | |
| PLC control input acc. to IEC 60947-1 | | | | |
| • Solid-state operating mechanism | -- | | | Type 1 |
| • Rated voltage | V DC | -- | 24 | |
| • Operating range | V DC | -- | 17 ... 30 | |
| • Power consumption | mA | -- | ≤ 30 | |
| • Recovery time after mains failure, typical | s | -- | 2 | |
| Operating times at 0.8 ... 1.2 x U_s⁴⁾ | | | | |
| Total break time = Opening delay + Arcing time | | | | |
| • DC operation | Closing delay | ms | -- | 35 ... 80 |
| | Opening delay | ms | -- | 30 ... 55 |
| Operating times at 1.0 x U_s⁴⁾ | | | | |
| • AC operation | Closing delay | ms | 12 ... 22 | 35 ... 80 |
| | Opening delay | ms | 10 ... 18 | 30 ... 55 |
| • DC operation | Closing delay | ms | -- | 35 ... 80 |
| | Opening delay | ms | -- | 30 ... 55 |
| • AC/DC operation (fail-safe PLC input with PLC-IN or F-PLC-IN) | Closing delay | ms | -- | 35 ... 80 |
| | Opening delay | ms | -- | 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 pickup currents (2.6 A on average) arise during the first 230 ms. For direct control by PLC, we therefore recommend special coupling contactors with reduced 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⁾ In the case of DC coils, increased pickup currents (2.1 A on average) arise during the first 230 ms.

⁴⁾ 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).

Switching devices – Contactors and contactor assemblies – for switching motors

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 | | | | | | |
| • Rated operational current I_e | At 40 °C up to 690 V At 60 °C up to 690 V | A A | 60 55 | 70 60 | 80 70 | 90 80 |
| • Rated power for AC loads ¹⁾ P.f. = 0.95 (at 60 °C) | 230 V 400 V 690 V | kW kW kW | 23 39 68 | 26 46 79 | 30 53 91 | 34 59 102 |
| • Minimum cross-section in the main circuit for max. AC-1 rated value | | mm ² | 16 | 25 | | 35 |
| 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 | 41 41 41 24 | 50 50 50 | 65 65 65 47 | 80 80 80 58 |
| • Rated power for slipping or squirrel-cage motors at 50 and 60 Hz | At 230 V 400 V 690 V | kW kW 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 690 V | A 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 230 V 400 V 690 V | kW kW kW 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).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| Type | Contactors | | | |
|--|--------------|---------------------------------|---------|---------|
| Size | 3RT2035 | 3RT2036 | 3RT2037 | 3RT2038 |
| Rated data of the main contacts (continued) | | | | |
| Load rating with DC | | | | |
| Utilization category DC-1, ($L/R \leq 1$ 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 | | |
| | DC 1/h | 1 500 | | |
| | AC/DC 1/h | 1 500 (3RT203.-.S.30: 1 000) | | |
| • Switching frequency z during rated operation ¹⁾ | | | | |
| - $I_e/AC-1$ at 400 V | 1/h | 1 200 (3RT203.-.S.30: 1 000) | 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' :
 $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$.

Switching devices – Contactors and contactor assemblies – for switching motors

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) | 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) | 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) | 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) |

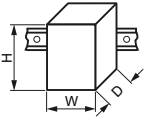
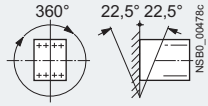
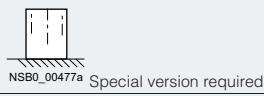
¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

²⁾ Max. external diameter of the conductor insulation: 3.6 mm.
On spring-loaded terminals with conductor cross-sections ≤ 1 mm² an insulation stop is recommended, [see page 3/122](#).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors


SIRIUS 3RT contactors, 3-pole up to 250 kW

| Type | Contactors | | | |
|--|--|--|----------------|----------------|
| Size | 3RT2045 | 3RT2046 | 3RT2047 | |
| S3 | | | | |
| General data | | | | |
| Dimensions (W x H x D) | | | | |
| <ul style="list-style-type: none"> Basic unit <ul style="list-style-type: none"> Screw/spring-loaded terminals Basic unit with mounted auxiliary switch <ul style="list-style-type: none"> Screw terminals Spring-loaded terminals Basic unit with mounted function module or solid-state time-delay auxiliary switch <ul style="list-style-type: none"> Screw/spring-loaded terminals |  | mm | 70 x 140 x 152 | |
| | | | mm | 70 x 140 x 196 |
| | | | 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 | |  | | |
| Mechanical endurance | | | | |
| <ul style="list-style-type: none"> Basic units and basic units with mounted auxiliary switch | Operating cycles | 10 million | | |
| <ul style="list-style-type: none"> Basic units with solid-state compatible auxiliary switch | Operating cycles | 5 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 (3RT20...-.....-OCC0: 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 3RT2.4. (removable auxiliary switch) | | Yes, acc. to IEC 60947-4-1, Appendix F 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 IP on the front acc. to IEC 60529 | IP20 (screw terminals and spring-loaded terminals) | | | |
| Touch protection on the front acc. to IEC 60529 | Finger-safe for vertical touching from the front (screw terminals and spring-loaded 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 g/ms g/ms g/ms | 10.3/5 and 6.7/10 6.7/5 and 4.0/10 (3RT204.-.KB40: 6.3/5 and 3.6/10) 16.3/5 and 10.5/10 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 A A | 250 160 On request | 160 200 | |
| Auxiliary circuit | A | 10 | | |
| <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) 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, page 8/4 onwards | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| Type | Contactors | | | Coupling contactors |
|---|-------------------------------|------------------------------|------------------|--|
| | 3RT204.-A..., 3RT204.-C... | 3RT204.-N.3. | 3RT204.-S.3. | 3RT204.-KB4. |
| Size | S3 | | | |
| 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 | 130 |
| - P.f. | | -- | 0.95 | -- |
| - Closed for AC operation | VA | -- | 3.1 | 2.4 |
| - P.f. | | -- | 0.95 | 0.7 |
| - Closing for DC operation | VA | -- | 76 ²⁾ | 130 |
| - Closed for DC operation | VA | -- | 1.8 | -- |
| • DC operation | | | | |
| - Closing for DC operation | W | -- | | 25 ³⁾ |
| - Closed for DC operation | W | -- | | 0.9 |
| Permissible residual current of the electronics (with 0 signal) | | | | |
| • AC/DC operation | mA | -- | < 20 | -- |
| • DC operation | mA | -- | | < 20 |
| Overtoltage configuration of the solenoid coil | | | | |
| | | | | Integrated varistor |
| | | | |  |
| PLC control input acc. to IEC 60947-1 | | | | |
| • Solid-state operating mechanism | | | | Type 1 |
| • Rated voltage | V DC | -- | | 24 |
| • Operating range | V DC | -- | | 17 ... 30 |
| • Power consumption | mA | -- | | ≤ 30 |
| • Recovery time after mains failure, typical | s | -- | | 2 |
| Operating times at 0.8 ... 1.2 x U_s⁴⁾ | | | | |
| 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_s⁴⁾ | | | | |
| • 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 |
| • AC/DC operation (fail-safe PLC input with PLC-IN or F-PLC-IN) | 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 pickup currents (6.5 A on average) arise during the first 150 ms. For direct control by PLC, we therefore recommend special coupling contactors with reduced 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⁾ In the case of DC coils, increased pickup currents (2.1 A on average) arise during the first 150 ms.

⁴⁾ The OFF-delay of the NO contacts and the ON-delay of the NC contacts are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2x to 6x).

Switching devices – Contactors and contactor assemblies – for switching motors

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 | | | |
| Load rating with AC | | | |
| Utilization category AC-1 | | | |
| • 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 cross-section in the main circuit for max. AC-1 rated value | mm ² | 50 | |
| 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 78 110 110 98 |
| • Rated power for slipping or squirrel-cage motors at 50 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).

Switching devices – Contactors and contactor assemblies – for switching motors

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, ($L/R \leq 1$ 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 | |
| | DC 1/h | 1 000 | |
| | 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 | |
| ¹⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U' : $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$. | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

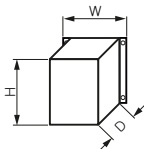
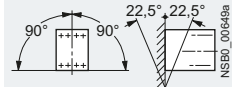
SIRIUS 3RT contactors, 3-pole up to 250 kW

| Type Size | Contactors 3RT2045 to 3RT2047 S3 | |
|--|--|--|
| Conductor cross-sections | | |
| Main conductors (1 or 2 conductors can be connected) | | |
| <ul style="list-style-type: none"> • Solid • Stranded • Finely stranded with end sleeve (DIN 46228) • AWG cables, solid or stranded • Terminal screws - Tightening torque | mm ² mm ² mm ² AWG Nm |  Screw terminals 2 x (2.5 ... 16) ¹⁾ 2 x (6 ... 16) ¹⁾ ; 2 x (10 ... 50) ¹⁾ ; 1 x (10 ... 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⁾ Hexagon socket, A/F 4 4.5 ... 6 (40 ... 53 lb.in) |
| Auxiliary conductors and control conductors (1 or 2 conductors can be connected) | | |
| <ul style="list-style-type: none"> • Solid or stranded • Finely stranded with end sleeve (DIN 46228) • AWG cables, solid or stranded • Terminal screws - Tightening torque | mm ² mm ² AWG Nm | 2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ 2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ 2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾ 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) | | |
| <ul style="list-style-type: none"> • Operating devices • Solid or stranded • Finely stranded with end sleeve (DIN 46228) • Finely stranded without end sleeve • AWG cables, solid or stranded | mm mm ² mm ² mm ² AWG |  Spring-loaded terminals 3.0 x 0.5 2 x (0.5 ... 2.5) 2 x (0.5 ... 1.5) 2 x (0.5 ... 2.5) 2 x (20 ... 16) |
| 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-loaded terminals with conductor cross-sections ≤ 1 mm ² an insulation stop is recommended, see page 3/122 . |

Switching devices – Contactors and contactor assemblies – for switching motors

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 |  | | 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 | | | | | | |
| Rated insulation voltage U_i (pollution degree 3) | | | 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 Main circuit | | | kV | 6 | 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. | | | Yes, acc. to IEC 60947-4-1, Appendix F | | | |
| Permissible ambient temperature | | | | | | |
| <ul style="list-style-type: none"> During operation During storage | | | °C | -25 ... +60 | -55 ... +80 | |
| Degree of protection IP on the front acc. to IEC 60529 | | | | | | |
| | | | IP00 (IP20 with box terminal/cover) | | | |
| Touch protection on the front acc. to IEC 60529 | | | | | | |
| | | | Finger-safe for vertical touching from the front with box terminal/cover | | | |
| Shock resistance | | | | | | |
| <ul style="list-style-type: none"> Rectangular pulse Sine pulse | | | g/ms | 8.5/5 and 4.2/10 | 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 | | | | | | |
| <ul style="list-style-type: none"> Type of coordination "1" Type of coordination "2" Weld-free | | | A | 355 | 500 | 630 |
| | | | A | 250 | 315 | 400 |
| | | | A | 80 | 160 | 250 |
| | | | | | | 500 |
| | | | | | | 315 |
| 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 With miniature circuit breakers with C characteristic with short-circuit current $I_k = 400$ A | | | A | 10 | | |
| | | | A | 10 | | |
| Short-circuit protection for contactors with overload relays | | | | | | |
| | | | See Configuration Manual for load feeders | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

| Type Size | Contactors | | |
|---|--|---|--|
| | 3RT105. S6 | 3RT106. S10 | 3RT107. S12 |
| Control | | | |
| Operating range of the solenoid operating mechanism | AC/DC | 0.8 x $U_{s \min}$... 1.1 x $U_{s \max}$ | |
| Power consumption of the solenoid operating mechanism (with cold coil and rated range $U_{s \min}$... $U_{s \max}$) | | | |
| • Standard operating mechanism (3RT10...-A) | | | |
| - AC operation | Closing at $U_{s \min}$ Closing at $U_{s \max}$ Closed at $U_{s \min}$ Closed at $U_{s \max}$ | 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 |
| - DC operation | Closing at $U_{s \min}$ Closing at $U_{s \max}$ Closed at $U_{s \min}$ Closed at $U_{s \max}$ | W W W W | 300 360 4.3 5.2 |
| • Solid-state operating mechanism (3RT10...-N/-P/-S) | | | |
| - AC operation | Closing at $U_{s \min}$ Closing at $U_{s \max}$ Closed at $U_{s \min}$ Closed at $U_{s \max}$ | 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 |
| - DC operation | Closing at $U_{s \min}$ Closing at $U_{s \max}$ Closed at $U_{s \min}$ Closed at $U_{s \max}$ | W W W W | 250 320 2.1 2.8 |
| PLC control input acc. to IEC 60947-1 | | | |
| • Solid-state operating mechanism 3RT10...-N/-P 3RT10...-S | | | |
| • Rated voltage | V DC | Type 2 Type 1 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 $U_{s \min}$... $U_{s \max}$ (Total break time = Opening delay + Arcing time) | | | |
| • Standard operating mechanism (3RT10...-A) | | | |
| | Closing delay | ms | 25 ... 50 |
| | Opening delay | ms | 40 ... 60 |
| • Solid-state operating mechanism | | | |
| - Actuated via A1/A2 (3RT10...-N/-P) | Closing delay | ms | 100 ... 120 |
| | Opening delay | ms | 80 ... 100 |
| - Actuated via PLC input (3RT10...-N/-P) | Closing delay | ms | 40 ... 60 |
| | 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 |

Switching devices – Contactors and contactor assemblies – for switching motors

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 | | | | | | | | |
| • 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 cross-section in the main circuit for max. AC-1 rated value | mm ² | 70 | 95 | | 150 | 185 | 300 | 370 |
| 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 | 500 |
| • Rated power for slipring or squirrel-cage motors at 50 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 | | 453 |
| 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).

Switching devices – Contactors and contactor assemblies – for switching motors

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 (continued) | | | | | | | |
| Load rating with DC | | | | | | | |
| Utilization category DC-1, ($L/R \leq 1$ 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 | $I_e/AC-1$ at 400 V | 1/h | 800 | | 750 | 800 | 750 |
| | $I_e/AC-2$ at 400 V | 1/h | 400 | 300 | 250 | | 700 |
| and 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 | | | | 500 |
| | | | | | | | 170 |
| | | | | | | | 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 :
 $z' = z \cdot (I_e/I') \cdot (U_e/U)^{1.5} \cdot 1/h.$

Switching devices – Contactors and contactor assemblies – for switching motors

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) Finely stranded without end sleeve Stranded AWG cables, solid or stranded Ribbon cable conductors (number x width x thickness) | mm ² | 16 ... 70 | 16 ... 120 |
| | mm ² | 16 ... 70 | 16 ... 120 |
| | mm ² | 16 ... 70 | 16 ... 120 |
| | AWG | 6 ... 2/0 | 6 ... 250 kcmil |
| | 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 |
| | | | 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) Finely stranded without end sleeve Stranded AWG cables, solid or stranded Ribbon cable conductors (number x width x thickness) | mm ² | 16 ... 70 | 16 ... 120 |
| | mm ² | 16 ... 70 | 16 ... 120 |
| | mm ² | 16 ... 70 | 16 ... 120 |
| | AWG | 6 ... 2/0 | 6 ... 250 kcmil |
| | 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 |
| | | | 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) 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 | Max. 1 x 95, 1 x 120 |
| | mm ² | Max. 1 x 50, 1 x 70 | Max. 1 x 95, 1 x 120 |
| | mm ² | Max. 1 x 50, 1 x 70 | Max. 1 x 95, 1 x 120 |
| | AWG | Max. 2 x 1/0 | Max. 2 x 3/0 |
| | mm | Max. 2 x (6 x 15,5 x 0,8) | 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 | 50 ... 240 |
| | mm ² | 25 ... 120 | 70 ... 240 |
| | AWG | 4 ... 250 kcmil | 2/0 ... 500 kcmil |
| | Nm | M8 x 25 (A/F 13) | M10 x 30 (A/F 17) |
| | lb.in | 10 ... 14 | 14 ... 24 |
| | | 90 ... 124 | 124 ... 210 |
| Auxiliary conductors (1 or 2 conductors can be connected) | | | |
| <ul style="list-style-type: none"> Solid Finely stranded with end sleeve (DIN 46228) 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 can be connected) | | | |
|  Spring-loaded terminals | | | |
| <ul style="list-style-type: none"> Operating devices Solid Finely stranded with end sleeve (DIN 46228) Finely stranded without end sleeve AWG cables, solid or stranded | | 3,0 x 0,5; 3,5 x 0,5 | |
| | 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) | |

¹⁾ 3RT105.: When using cable lugs according to DIN 46235, use the 3RT1956-4EA1 terminal cover for conductor cross-sections from 95 mm² to maintain the phase clearance; see page 3/119.

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 the phase clearance; see page 3/119.

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. On spring-loaded terminals with conductor cross-sections ≤ 1 mm² an insulation stop is recommended; see page 3/122.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

Data for North America

| Type Size | Contactors | | | |
|---|---|--------------------|--------------------|----------------------|
| | 3RT2015 S00 | 3RT2016 | 3RT2017 | 3RT2018 |
| and \mathbb{U} rated data | | | | |
| Rated operational voltage | V AC | 600 | | |
| Uninterrupted current , at 40 °C, open and enclosed | A | 20 | | |
| Maximum horsepower ratings (from \mathbb{C} and \mathbb{U} 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 7.5 10 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 \mathbb{U} rated data | | | | | | | |
| Rated operational voltage | V AC | 600 | | | | | |
| Uninterrupted current , at 40 °C, open and enclosed | A | 30 | | | | | 42 |
| Maximum horsepower ratings (from \mathbb{C} and \mathbb{U} 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 7.5 10 15 | 5 7.5 10 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 \mathbb{U} 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 \mathbb{C} and \mathbb{U} 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 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 | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

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 | |
| Ⓢ 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 . | | | | | | | | |

| Type Size | Contactors | | | |
|---|--|------------------------------|-------------------------------|-------------------------------|
| | 3RT201 S00 | 3RT202 to 3RT204 S0 to S3 | | 3RT105 to 3RT107 S6 to S12 |
| | Integrated or mountable auxiliary switch | Integrated | Mountable auxiliary switch | Mountable auxiliary switch |
| Ⓢ 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 | | |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

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-loaded terminals  |
|---------------------------------------|--|--------------------|------------------------------------|----|---|----|---|
| AC-2 and AC-3, t_u : 60 °C | | Ident. No. | 50/60 Hz AC | | Article No. | | Article No. |
| Operational current I_e up to 400 V | Ratings of three-phase motors at 50 Hz and 400 V | Version | | | Price per PU | | Price per PU |
| A | 400 V | 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 | -- | 24 110 230 | ▶ | 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 | | | | | | | | | | |
| 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 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 3/75](#) on request.

Accessories and spare parts, [see pages 3/77 to 3/126](#).

Switching devices – Contactors and contactor assemblies – for switching motors

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-loaded terminals  |
|---------------------------------------|--|---------------------------------------|------------------------------------|----|---|----|---|
| AC-2 and AC-3, t_j : 60 °C | AC-1, t_j : 40 °C | Ident. No. | 50 Hz AC | | Article No. | | Article No. |
| 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 | | | Price per PU | | Price per PU |
| A | kW | A | | | d | | 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 | ▶ | 3RT2023-2AB00 3RT2023-2AF00 3RT2023-2AP00 |
| 12 | 5.5 | 40 | 11 | 1 | 1 | 24 110 230 | ▶ | 3RT2024-1AB00 3RT2024-1AF00 3RT2024-1AP00 | 2 | 3RT2024-2AB00 3RT2024-2AF00 3RT2024-2AP00 |
| 17 | 7.5 | 40 | 11 | 1 | 1 | 24 110 230 | ▶ | 3RT2025-1AB00 3RT2025-1AF00 3RT2025-1AP00 | 2 | 3RT2025-2AB00 3RT2025-2AF00 3RT2025-2AP00 |
| 25 | 11 | 40 | 11 | 1 | 1 | 24 110 230 | ▶ | 3RT2026-1AB00 3RT2026-1AF00 3RT2026-1AP00 | 2 | 3RT2026-2AB00 3RT2026-2AF00 3RT2026-2AP00 |
| 32 | 15 | 50 | 11 | 1 | 1 | 24 110 230 | ▶ | 3RT2027-1AB00 3RT2027-1AF00 3RT2027-1AP00 | 2 | 3RT2027-2AB00 3RT2027-2AF00 3RT2027-2AP00 |
| 38 | 18.5 | 50 | 11 | 1 | 1 | 24 110 230 | ▶ | 3RT2028-1AB00 3RT2028-1AF00 3RT2028-1AP00 | 2 | 3RT2028-2AB00 3RT2028-2AF00 3RT2028-2AP00 |

Other voltages [according to page 3/75](#) on request.

Accessories and spare parts, see [pages 3/77 to 3/126](#).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

IE3/IE4 ready

SIRIUS 3RT contactors, 3-pole up to 250 kW

AC operation 

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT202.-1A.04



3RT202.-2A.04



3RT202.-1CL24-3MA0



3RT202.-2CL24-3MA0

| Rated data | | Auxiliary contacts | | Rated control supply voltage U_s | SD | Screw terminals | | SD | Spring-loaded terminals | |
|---------------------------------------|--|--------------------|---------|------------------------------------|----|-----------------|--------------|----|-------------------------|--------------|
| AC-2 and AC-3, t_{ij} : 60 °C | AC-1, t_{ij} : 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 690 V | | | | | | | | | |
| 400 V | 400 V | | | | | | | | | |
| A | kW | A | NO NC V | d | | | | | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0**With removable auxiliary switch**

| | | | | | | | | | | | | |
|----|-------------|----|-----------|---|---|------------------|---|---|---|---|---|---|
| 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 | ▶ | 3RT2024-1AB04 3RT2024-1AF04 3RT2024-1AP04 | 5 | ▶ | 3RT2024-2AB04 3RT2024-2AF04 3RT2024-2AP04 |
| 17 | 7.5 | 40 | 22 | 2 | 2 | 24 110 230 | 5 | ▶ | 3RT2025-1AB04 3RT2025-1AF04 3RT2025-1AP04 | 5 | ▶ | 3RT2025-2AB04 3RT2025-2AF04 3RT2025-2AP04 |
| 25 | 11 | 40 | 22 | 2 | 2 | 24 110 230 | 5 | ▶ | 3RT2026-1AB04 3RT2026-1AF04 3RT2026-1AP04 | 5 | ▶ | 3RT2026-2AB04 3RT2026-2AF04 3RT2026-2AP04 |
| 32 | 15 | 50 | 22 | 2 | 2 | 24 110 230 | 5 | ▶ | 3RT2027-1AB04 3RT2027-1AF04 3RT2027-1AP04 | 5 | ▶ | 3RT2027-2AB04 3RT2027-2AF04 3RT2027-2AP04 |
| 38 | 18.5 | 50 | 22 | 2 | 2 | 24 110 230 | 5 | ▶ | 3RT2028-1AB04 3RT2028-1AF04 3RT2028-1AP04 | 5 | ▶ | 3RT2028-2AB04 3RT2028-2AF04 3RT2028-2AP04 |

With permanently mounted auxiliary switch and varistor plugged in

| | | | | | | | | | | | | |
|----|-------------|----|-----------|---|---|-----|---|---|--------------------|---|---|--------------------|
| 9 | 4 | 40 | 22 | 2 | 2 | 230 | 5 | ▶ | 3RT2023-1CL24-3MA0 | 5 | ▶ | 3RT2023-2CL24-3MA0 |
| 12 | 5.5 | 40 | 22 | 2 | 2 | 230 | 5 | ▶ | 3RT2024-1CL24-3MA0 | 2 | ▶ | 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 3/75](#) on request.

Accessories and spare parts, [see pages 3/77 to 3/126](#).

Switching devices – Contactors and contactor assemblies – for switching motors

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-loaded terminals  | |
|---------------------------------------|--|---------------------------------------|------------------------------------|----|---|--------------|---|--------------|
| AC-2 and AC-3, t_j : 60 °C | AC-1, t_j : 40 °C | Ident. No. | 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 | Operational current I_e up to 690 V | | | | | | |
| A | kW | A | NO NC | V | d | | d | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S2

| | | | | | | | | | | | |
|---|-------------|----|-----------|---|---|------------------|---|---|-------------|---|--|
| 41 | 18.5 | 60 | 11 | 1 | 1 | 24 110 230 | ▶ | 3RT2035-1AB00 3RT2035-1AF00 3RT2035-1AP00 | 2 2 ▶ | 3RT2035-3AB00 3RT2035-3AF00 3RT2035-3AP00 | |
| 50 | 22 | 70 | 11 | 1 | 1 | 24 110 230 | ▶ | 3RT2036-1AB00 3RT2036-1AF00 3RT2036-1AP00 | 5 2 ▶ | 3RT2036-3AB00 3RT2036-3AF00 3RT2036-3AP00 | |
| 65 | 30 | 80 | 11 | 1 | 1 | 24 110 230 | ▶ | 3RT2037-1AB00 3RT2037-1AF00 3RT2037-1AP00 | 5 2 ▶ | 3RT2037-3AB00 3RT2037-3AF00 3RT2037-3AP00 | |
| 80 | 37 | 90 | 11 | 1 | 1 | 24 110 230 | ▶ | 3RT2038-1AB00 3RT2038-1AF00 3RT2038-1AP00 | 5 5 ▶ | 3RT2038-3AB00 3RT2038-3AF00 3RT2038-3AP00 | |
| With removable auxiliary switch | | | | | | | | | | | |
| 41 | 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 and integrated coil circuit (varistor plugged in at the factory) | | | | | | | | | | | |
| 41 | 18.5 | 60 | 22 | 2 | 2 | 230 | | 3RT2035-1CL24-3MA0 | 5 | 3RT2035-3CL24-3MA0 | |
| 50 | 22 | 70 | 22 | 2 | 2 | 230 | | 3RT2036-1CL24-3MA0 | 5 | 3RT2036-3CL24-3MA0 | |
| 65 | 30 | 80 | 22 | 2 | 2 | 230 | | 3RT2037-1CL24-3MA0 | 5 | 3RT2037-3CL24-3MA0 | |
| 80 | 37 | 90 | 22 | 2 | 2 | 230 | | 3RT2038-1CL24-3MA0 | 2 | 3RT2038-3CL24-3MA0 | |

Other voltages according to page 3/75 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

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 U_s | SD | Screw terminals  | SD | Spring-loaded terminals  |
|--|---------------------------------------|--------------------|------------------------------------|----|---|----|---|
| AC-2 and AC-3, t_u : 60 °C | AC-1, t_u : 40 °C | Ident. No. | 50 Hz AC | | 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 |
| Ratings of three-phase motors at 50 Hz and 400 V | | NO NC V | | d | | d | |
| A | kW | A | | | | | |

For screw fixing 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 | 3RT2045-1AB00 3RT2045-1AF00 3RT2045-1AP00 | 5 2 2 | 3RT2045-3AB00 3RT2045-3AF00 3RT2045-3AP00 |
| 95 | 45 | 130 | 11 | 1 | 1 | 24 110 230 | 2 | 3RT2046-1AB00 3RT2046-1AF00 3RT2046-1AP00 | 5 2 2 | 3RT2046-3AB00 3RT2046-3AF00 3RT2046-3AP00 |
| 110 | 55 | 130 | 11 | 1 | 1 | 24 110 230 | 5 5 2 | 3RT2047-1AB00 3RT2047-1AF00 3RT2047-1AP00 | 5 5 2 | 3RT2047-3AB00 3RT2047-3AF00 3RT2047-3AP00 |
| With removable auxiliary switch | | | | | | | | | | |
| 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 2 | 3RT2047-1AB04 3RT2047-1AF04 3RT2047-1AP04 | | -- -- -- |
| With permanently mounted auxiliary switch and integrated coil circuit (varistor plugged in at the factory) | | | | | | | | | | |
| 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 | 2 | 3RT2047-1CL24-3MA0 | | -- |

Other voltages [according to page 3/75](#) on request.

Accessories and spare parts, [see pages 3/77 to 3/126](#).

Switching devices – Contactors and contactor assemblies – for switching motors

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 | SD | Screw terminals | | SD | Spring-loaded terminals | |
|---------------------------------|--|---------------------------------|------------|------------------------------|----|-----------------|--------------|-------------|-------------------------|--|
| AC-2 and AC-3, t_U : 60 °C | | AC-1, t_U : 40 °C | | U_s | | | | | | |
| Operational current I_e up to | Ratings of three-phase motors at 50 Hz and | Operational current I_e up to | Ident. No. | Version | DC | Article No. | Price per PU | Article No. | Price per PU | |
| 400 V | 400 V | 690 V | | | | | | | | |
| 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 | ▶ | 3RT2015-1BM41 | ▶ | 3RT2015-2BM41 |
| 9 | 4 | 22 | 10 | 1 | -- | 24 | ▶ | 3RT2016-1BB41 | ▶ | 3RT2016-2BB41 |
| | | | 01 | -- | 1 | 24 | ▶ | 3RT2016-1BM41 | ▶ | 3RT2016-2BM41 |
| 12 | 5.5 | 22 | 10 | 1 | -- | 24 | ▶ | 3RT2017-1BB41 | ▶ | 3RT2017-2BB41 |
| | | | 01 | -- | 1 | 24 | ▶ | 3RT2017-1BM41 | ▶ | 3RT2017-2BM41 |
| 16 | 7.5 | 22 | 10 | 1 | -- | 24 | ▶ | 3RT2018-1BB41 | ▶ | 3RT2018-2BB41 |
| | | | 01 | -- | 1 | 24 | ▶ | 3RT2018-1BM41 | ▶ | 3RT2018-2BM41 |
| With integrated coil circuit (varistor integrated at the factory) | | | | | | | | | | |
| 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 integrated at the factory)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 3/75 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

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-loaded 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 690 V |  |  | V | d | d | | |
| 400 V | 400 V | | | | | | | |
| A | kW | | | | | | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00**With permanently mounted auxiliary switch**

| 7 | 3 | 18 | 22 | 2 | 2 | 24 | ▶ | 3RT2015-1BB44-3MA0 | 2 | 3RT2015-2BB44-3MA0 |
|----|-----|----|----|---|---|----|---|--------------------|---|--------------------|
| 9 | 4 | 22 | 22 | 2 | 2 | 24 | ▶ | 3RT2016-1BB44-3MA0 | 2 | 3RT2016-2BB44-3MA0 |
| 12 | 5.5 | 22 | 22 | 2 | 2 | 24 | 2 | 3RT2017-1BB44-3MA0 | 2 | 3RT2017-2BB44-3MA0 |
| 16 | 7.5 | 22 | 22 | 2 | 2 | 24 | 2 | 3RT2018-1BB44-3MA0 | 2 | 3RT2018-2BB44-3MA0 |

With permanently mounted auxiliary switch and integrated coil circuit (diode integrated at the factory)¹⁾

| 7 | 3 | 18 | 22 | 2 | 2 | 24 | 2 | 3RT2015-1FB44-3MA0 | 2 | 3RT2015-2FB44-3MA0 |
|----|-----|----|----|---|---|----|---|--------------------|---|--------------------|
| 9 | 4 | 22 | 22 | 2 | 2 | 24 | 2 | 3RT2016-1FB44-3MA0 | 2 | 3RT2016-2FB44-3MA0 |
| 12 | 5.5 | 22 | 22 | 2 | 2 | 24 | 2 | 3RT2017-1FB44-3MA0 | 5 | 3RT2017-2FB44-3MA0 |
| 16 | 7.5 | 22 | 22 | 2 | 2 | 24 | 2 | 3RT2018-1FB44-3MA0 | 2 | 3RT2018-2FB44-3MA0 |

With voltage tap-off (only available with 24 V DC coils)

| 7 | 3 | 18 | 10 | 1 | -- | 24 | ▶ | 3RT2015-1BB41-0CC0 | ▶ | 3RT2015-2BB41-0CC0 |
|----|-----|----|----|----|----|----|--|--------------------|---|--------------------|
| | | | 01 | -- | 1 | 24 | ▶ <td>3RT2015-1BB42-0CC0</td> <td>2</td> <td>3RT2015-2BB42-0CC0</td> | 3RT2015-1BB42-0CC0 | 2 | 3RT2015-2BB42-0CC0 |
| 9 | 4 | 22 | 10 | 1 | -- | 24 | ▶ <td>3RT2016-1BB41-0CC0</td> <td>2</td> <td>3RT2016-2BB41-0CC0</td> | 3RT2016-1BB41-0CC0 | 2 | 3RT2016-2BB41-0CC0 |
| | | | 01 | -- | 1 | 24 | 2 | 3RT2016-1BB42-0CC0 | 2 | 3RT2016-2BB42-0CC0 |
| 12 | 5.5 | 22 | 10 | 1 | -- | 24 | 2 | 3RT2017-1BB41-0CC0 | ▶ | 3RT2017-2BB41-0CC0 |
| | | | 01 | -- | 1 | 24 | 5 | 3RT2017-1BB42-0CC0 | ▶ | 3RT2017-2BB42-0CC0 |
| 16 | 7.5 | 22 | 10 | 1 | -- | 24 | 2 | 3RT2018-1BB41-0CC0 | ▶ | 3RT2018-2BB41-0CC0 |
| | | | 01 | -- | 1 | 24 | 2 | 3RT2018-1BB42-0CC0 | 2 | 3RT2018-2BB42-0CC0 |

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 3/75 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

DC operation for direct control by PLC **==**

- Coupling contactors with adapted power consumption
- Suitable for electronic PLC/F-PLC outputs
- Cannot be expanded with auxiliary switches

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-loaded 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 400 V | Operational current I_e up to 690 V | NO NC | V | d | | | | | |
| A | kW | A | | | | | | | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

(Cannot be expanded with auxiliary switches)

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 -- 24 -- 1 24 | 5 5 | 3RT2015-1HB41 3RT2015-1HB42 | 5 5 | 3RT2015-2HB41 3RT2015-2HB42 |
| 9 | 4 | 22 | 10 01 | 1 -- 24 -- 1 24 | 5 2 | 3RT2016-1HB41 3RT2016-1HB42 | 5 5 | 3RT2016-2HB41 3RT2016-2HB42 |
| 12 | 5.5¹⁾ | 22 | 10 01 | 1 -- 24 -- 1 24 | 5 ▶ | 3RT2017-1HB41 3RT2017-1HB42 | 5 5 | 3RT2017-2HB41 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 01 | 1 -- 24 -- 1 24 | 5 5 | 3RT2015-1MB41-0KT0 3RT2015-1MB42-0KT0 | 5 5 | 3RT2015-2MB41-0KT0 3RT2015-2MB42-0KT0 |
| 9 | 4 | 22 | 10 01 | 1 -- 24 -- 1 24 | 5 5 | 3RT2016-1MB41-0KT0 3RT2016-1MB42-0KT0 | 5 5 | 3RT2016-2MB41-0KT0 3RT2016-2MB42-0KT0 |
| 12 | 5.5¹⁾ | 22 | 10 01 | 1 -- 24 -- 1 24 | 5 5 | 3RT2017-1MB41-0KT0 3RT2017-1MB42-0KT0 | 5 5 | 3RT2017-2MB41-0KT0 3RT2017-2MB42-0KT0 |

With integrated coil circuit (diode integrated at the factory)¹⁾

(Cannot be expanded with auxiliary switches)

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 -- 24 -- 1 24 | 2 2 | 3RT2015-1JB41 3RT2015-1JB42 | 2 5 | 3RT2015-2JB41 3RT2015-2JB42 |
| 9 | 4 | 22 | 10 01 | 1 -- 24 -- 1 24 | ▶ 2 | 3RT2016-1JB41 3RT2016-1JB42 | 5 5 | 3RT2016-2JB41 3RT2016-2JB42 |
| 12 | 5.5¹⁾ | 22 | 10 01 | 1 -- 24 -- 1 24 | 2 5 | 3RT2017-1JB41 3RT2017-1JB42 | 5 ▶ | 3RT2017-2JB41 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 01 | 1 -- 24 -- 1 24 | 5 5 | 3RT2015-1VB41 3RT2015-1VB42 | 5 5 | 3RT2015-2VB41 3RT2015-2VB42 |
| 9 | 4 | 22 | 10 01 | 1 -- 24 -- 1 24 | 5 5 | 3RT2016-1VB41 3RT2016-1VB42 | 5 5 | 3RT2016-2VB41 3RT2016-2VB42 |
| 12 | 5.5¹⁾ | 22 | 10 01 | 1 -- 24 -- 1 24 | 5 5 | 3RT2017-1VB41 3RT2017-1VB42 | 5 5 | 3RT2017-2VB41 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 3/75 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

IE3/IE4 ready

SIRIUS 3RT contactors, 3-pole up to 250 kW

DC operation for direct control by PLC

- Coupling contactors with adapted power consumption
- Suitable for electronic PLC/F-PLC outputs
- Cannot be expanded with auxiliary switches



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-loaded terminals  | |
|---------------------------------------|--|--------------------|------------------------------------|----|---|--------------|---|--------------|
| AC-2 and AC-3, t_i : 60 °C | AC-1, t_i : 40 °C | Ident. No. | 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 400 V | Version | | | | | | |
| A | kW | 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 integrated at the factory)¹⁾

(Cannot be expanded with auxiliary switches)

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 | 3RT2015-1KB41 | 2 | 3RT2015-2KB41 |
| | | | 01 | -- | 1 | 24 | 2 | 3RT2015-1KB42 | ▶ | 3RT2015-2KB42 |
| 9 | 4 | 22 | 10 | 1 | -- | 24 | 2 | 3RT2016-1KB41 | 2 | 3RT2016-2KB41 |
| | | | 01 | -- | 1 | 24 | 2 | 3RT2016-1KB42 | 2 | 3RT2016-2KB42 |
| 12 | 5.5¹⁾ | 22 | 10 | 1 | -- | 24 | 2 | 3RT2017-1KB41 | ▶ | 3RT2017-2KB41 |
| | | | 01 | -- | 1 | 24 | 2 | 3RT2017-1KB42 | ▶ | 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 | 1 | -- | 24 | 5 | 3RT2015-1SB41 | 5 | 3RT2015-2SB41 |
| | | | 01 | -- | 1 | 24 | 5 | 3RT2015-1SB42 | 5 | 3RT2015-2SB42 |
| 9 | 4 | 22 | 10 | 1 | -- | 24 | 5 | 3RT2016-1SB41 | 5 | 3RT2016-2SB41 |
| | | | 01 | -- | 1 | 24 | 5 | 3RT2016-1SB42 | 5 | 3RT2016-2SB42 |
| 12 | 5.5¹⁾ | 22 | 10 | 1 | -- | 24 | 5 | 3RT2017-1SB41 | 5 | 3RT2017-2SB41 |
| | | | 01 | -- | 1 | 24 | 5 | 3RT2017-1SB42 | 5 | 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 3/75 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

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



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-loaded 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 |
| 400 V | 690 V |   | V | d | | d | |
| 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 | ▶ | 3RT2024-1BB40 3RT2024-1BM40 | ▶ | 3RT2024-2BB40 3RT2024-2BM40 |
| 17 | 7.5 | 40 | 11 | 1 | 1 | 24 220 | ▶ | 3RT2025-1BB40 3RT2025-1BM40 | ▶ | 3RT2025-2BB40 3RT2025-2BM40 |
| 25 | 11 | 40 | 11 | 1 | 1 | 24 220 | ▶ | 3RT2026-1BB40 3RT2026-1BM40 | ▶ | 3RT2026-2BB40 3RT2026-2BM40 |
| 32 | 15 | 50 | 11 | 1 | 1 | 24 220 | ▶ | 3RT2027-1BB40 3RT2027-1BM40 | ▶ | 3RT2027-2BB40 3RT2027-2BM40 |
| 38 | 18.5 | 50 | 11 | 1 | 1 | 24 220 | ▶ | 3RT2028-1BB40 3RT2028-1BM40 | ▶ | 3RT2028-2BB40 3RT2028-2BM40 |
| With coil circuit plugged into front (varistor plugged in at the factory) | | | | | | | | | | |
| 9 | 4 | 40 | 11 | 1 | 1 | 24 | ▶ | 3RT2023-1DB40 | ▶ | 3RT2023-2DB40 |
| 12 | 5.5 | 40 | 11 | 1 | 1 | 24 | ▶ | 3RT2024-1DB40 | ▶ | 3RT2024-2DB40 |
| 17 | 7.5 | 40 | 11 | 1 | 1 | 24 | ▶ | 3RT2025-1DB40 | ▶ | 3RT2025-2DB40 |
| 25 | 11 | 40 | 11 | 1 | 1 | 24 | ▶ | 3RT2026-1DB40 | ▶ | 3RT2026-2DB40 |
| 32 | 15 | 50 | 11 | 1 | 1 | 24 | ▶ | 3RT2027-1DB40 | ▶ | 3RT2027-2DB40 |
| 38 | 18.5 | 50 | 11 | 1 | 1 | 24 | ▶ | 3RT2028-1DB40 | ▶ | 3RT2028-2DB40 |
| With coil circuit plugged into front (diode assembly plugged in at the factory) | | | | | | | | | | |
| 9 | 4 | 40 | 11 | 1 | 1 | 24 | ▶ | 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 auxiliary switch | | | | | | | | | | |
| 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 3/75 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

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-loaded terminals | |
|---------------------------------------|---------------------------------------|--------------------|------------------------------------|----|-----------------|--------------|-------------------------|--------------|
| AC-2 and AC-3, t_{ij} : 60 °C | AC-1, t_{ij} : 40 °C | Ident. No. | DC | | | | | |
| Operational current I_e up to 400 V | Operational current I_e up to 690 V | Version | | | Article No. | Price per PU | Article No. | Price per PU |
| 400 V | 690 V | NO NC | V | d | | | | |
| kW | A | | | | | | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

With permanently mounted auxiliary switch and integrated coil circuit (varistor integrated at the factory)

| Size | kW | A | Ident. No. | Version | DC | SD | Article No. | Price per PU | Article No. | Price per PU |
|------|-----|----|------------|---------|----|----|--------------------|--------------|--------------------|--------------|
| 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 and integrated coil circuit (diode assembly plugged in at the factory)

| Size | kW | A | Ident. No. | Version | DC | SD | Article No. | Price per PU | Article No. | Price per PU |
|------|------|----|------------|---------|----|----|--------------------|--------------|--------------------|--------------|
| 9 | 4 | 40 | 22 | 2 2 | 24 | ▶ | 3RT2023-1FB44-3MA0 | 5 | 3RT2023-2FB44-3MA0 | |
| 12 | 5.5 | 40 | 22 | 2 2 | 24 | 5 | 3RT2024-1FB44-3MA0 | 2 | 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

| Size | kW | A | Ident. No. | Version | DC | SD | Article No. | Price per PU | Article No. | Price per PU |
|------|------|----|------------|---------|----|----|--------------------|--------------|--------------------|--------------|
| 9 | 4 | 40 | 11 | 1 1 | 24 | 5 | 3RT2023-1BB40-0CC0 | 5 | 3RT2023-2BB40-0CC0 | |
| 12 | 5.5 | 40 | 11 | 1 1 | 24 | 2 | 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 3/75 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

DC operation for direct control by PLC

- Coupling contactors with adapted power consumption
- Suitable for electronic PLC/F-PLC outputs
- Cannot be expanded with auxiliary switches



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-loaded terminals  | |
|---------------------------------------|---|---------------------------------------|------------|------------------------------------|----|---|--------------|----|---|--------------|
| AC-2 and AC-3, t_u : 60 °C | | AC-1, t_u : 40 °C | | 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 400 V | Operational current I_e up to 690 V | Ident. No. | Version | | | | | | |
| A | kW | A | NO | NC | V | d | | d | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

With integrated coil circuit (varistor integrated in electronics at the factory)

(Cannot be expanded with auxiliary switches)

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 | ▶ | 3RT2025-2KB40 |
| 25 | 11 | 40 | 11 | 1 | 1 | 24 | ▶ | 3RT2026-1KB40 | ▶ | 3RT2026-2KB40 |
| 32 | 15 | 50 | 11 | 1 | 1 | 24 | ▶ | 3RT2027-1KB40 | 5 | 3RT2027-2KB40 |

Other voltages [according to page 3/75](#) on request.

Accessories and spare parts, [see pages 3/77 to 3/126](#).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

IE3/IE4 ready

SIRIUS 3RT contactors, 3-pole up to 250 kW

DC operation for direct control by PLC

- Coupling contactors with adapted power consumption
- Suitable for electronic PLC/F-PLC outputs with 2 A
- Can be expanded using front or lateral auxiliary switch (1 x left and 1 x right)

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-loaded terminals  | |
|---------------------------------------|--|--------------------|------------------------------------|----|---|--------------|---|--------------|
| AC-2 and AC-3, t_j : 60 °C | AC-1, t_j : 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 400 V | | | | | | | |
| | 400 V | | | | | | | |
| A | kW | 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 integrated in electronics at the factory)

Operating range **0.8 ... 1.2 x U_s** ,
 closing power of the solenoid coils **21.5 W** at 24 V

| | | | | | | | | | | |
|----|-------------|----|-----------|---|---|----|---|----------------------|---|----------------------|
| 41 | 18.5 | 60 | 11 | 1 | 1 | 24 | ▶ | 3RT2035-1KB40 | ▶ | 3RT2035-3KB40 |
| 50 | 22 | 70 | 11 | 1 | 1 | 24 | ▶ | 3RT2036-1KB40 | ▶ | 3RT2036-3KB40 |
| 65 | 30 | 80 | 11 | 1 | 1 | 24 | ▶ | 3RT2037-1KB40 | ▶ | 3RT2037-3KB40 |
| 80 | 37 | 90 | 11 | 1 | 1 | 24 | ▶ | 3RT2038-1KB40 | ▶ | 3RT2038-3KB40 |

For screw fixing and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

With integrated coil circuit (varistor integrated in electronics at the factory)

Operating range **0.8 ... 1.2 x U_s** ,
 closing power of the solenoid coils **25 W** at 24 V

| | | | | | | | | | | |
|----|-----------|-----|-----------|---|---|----|---|----------------------|---|----------------------|
| 80 | 37 | 125 | 11 | 1 | 1 | 24 | ▶ | 3RT2045-1KB40 | ▶ | 3RT2045-3KB40 |
| 95 | 45 | 130 | 11 | 1 | 1 | 24 | ▶ | 3RT2046-1KB40 | ▶ | 3RT2046-3KB40 |

Other voltages [according to page 3/75](#) on request.

Accessories and spare parts, [see pages 3/77 to 3/126](#).

Switching devices – Contactors and contactor assemblies – for switching motors

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-loaded terminals  | |
|---------------------------------------|--|---------------------------------------|------------|---|-------------------|---|--------------|-------------|---|--|
| AC-2 and AC-3, t_u : 60 °C | Ratings of three-phase motors at 50 Hz and | AC-1, t_u : 40 °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 | 400 V | Operational current I_e up to 690 V | |   | V | d | d | d | d | |
| A | kW | A | | | | | | | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

With integrated coil circuit (varistor integrated in electronics at the factory)

| 12 | 5.5 | 40 | 11 | 1 | 1 | 21 ... 28 | ▶ | 3RT2024-1NB30 | 2 | 3RT2024-2NB30 |
|----|------|----|----|---|---|-------------|---|---------------|---|---------------|
| | | | | | | 95 ... 130 | 2 | 3RT2024-1NF30 | 2 | 3RT2024-2NF30 |
| | | | | | | 200 ... 280 | 2 | 3RT2024-1NP30 | 2 | 3RT2024-2NP30 |
| 17 | 7.5 | 40 | 11 | 1 | 1 | 21 ... 28 | ▶ | 3RT2025-1NB30 | 5 | 3RT2025-2NB30 |
| | | | | | | 95 ... 130 | 2 | 3RT2025-1NF30 | 5 | 3RT2025-2NF30 |
| | | | | | | 200 ... 280 | 2 | 3RT2025-1NP30 | 2 | 3RT2025-2NP30 |
| 25 | 11 | 40 | 11 | 1 | 1 | 21 ... 28 | ▶ | 3RT2026-1NB30 | 2 | 3RT2026-2NB30 |
| | | | | | | 95 ... 130 | 2 | 3RT2026-1NF30 | 5 | 3RT2026-2NF30 |
| | | | | | | 200 ... 280 | 5 | 3RT2026-1NP30 | 5 | 3RT2026-2NP30 |
| 32 | 15 | 50 | 11 | 1 | 1 | 21 ... 28 | ▶ | 3RT2027-1NB30 | 2 | 3RT2027-2NB30 |
| | | | | | | 95 ... 130 | 2 | 3RT2027-1NF30 | 5 | 3RT2027-2NF30 |
| | | | | | | 200 ... 280 | 2 | 3RT2027-1NP30 | 5 | 3RT2027-2NP30 |
| 38 | 18.5 | 50 | 11 | 1 | 1 | 21 ... 28 | ▶ | 3RT2028-1NB30 | 5 | 3RT2028-2NB30 |
| | | | | | | 95 ... 130 | 5 | 3RT2028-1NF30 | 5 | 3RT2028-2NF30 |
| | | | | | | 200 ... 280 | 2 | 3RT2028-1NP30 | 5 | 3RT2028-2NP30 |

Other voltages according to page 3/75 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

IE3/IE4 ready SIRIUS 3RT contactors, 3-pole up to 250 kW

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


3RT203.-1N.30



3RT203.-3N.30



3RT203.-1N.34



3RT203.-1NB34-3MA0



3RT203.-3NB34-3MA0

| Rated data | | Auxiliary contacts | Rated control supply voltage U_s | SD | Screw terminals | SD | Spring-loaded terminals |
|--|---------------------------------------|--------------------|------------------------------------|----|-----------------|--------------|-------------------------|
| AC-2 and AC-3, t_{ij} : 60 °C | AC-1, t_{ij} : 40 °C | Ident. No. | 50/60 Hz AC or DC | | Article No. | Price per PU | Article No. |
| Operational current I_e up to 400 V | Operational current I_e up to 690 V | Version | | | | | Price per PU |
| Ratings of three-phase motors at 50 Hz and 400 V | | NO NC V | | | | | |
| A kW | A | | | | | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail
Size S2
With integrated coil circuit

(varistor integrated in electronics at the factory)

| | | | | | | | | | | |
|----|------|----|----|---|---|-------------|---|---------------|---|---------------|
| 41 | 18.5 | 60 | 11 | 1 | 1 | 20 ... 33 | ▶ | 3RT2035-1NB30 | ▶ | 3RT2035-3NB30 |
| | | | | | | 83 ... 155 | 5 | 3RT2035-1NF30 | 5 | 3RT2035-3NF30 |
| | | | | | | 175 ... 280 | 2 | 3RT2035-1NP30 | 5 | 3RT2035-3NP30 |
| 50 | 22 | 70 | 11 | 1 | 1 | 20 ... 33 | ▶ | 3RT2036-1NB30 | ▶ | 3RT2036-3NB30 |
| | | | | | | 83 ... 155 | 2 | 3RT2036-1NF30 | 5 | 3RT2036-3NF30 |
| | | | | | | 175 ... 280 | 2 | 3RT2036-1NP30 | 5 | 3RT2036-3NP30 |
| 65 | 30 | 80 | 11 | 1 | 1 | 20 ... 33 | ▶ | 3RT2037-1NB30 | ▶ | 3RT2037-3NB30 |
| | | | | | | 83 ... 155 | 5 | 3RT2037-1NF30 | 5 | 3RT2037-3NF30 |
| | | | | | | 175 ... 280 | 2 | 3RT2037-1NP30 | 2 | 3RT2037-3NP30 |
| 80 | 37 | 90 | 11 | 1 | 1 | 20 ... 33 | ▶ | 3RT2038-1NB30 | ▶ | 3RT2038-3NB30 |
| | | | | | | 83 ... 155 | 2 | 3RT2038-1NF30 | X | 3RT2038-3NF30 |
| | | | | | | 175 ... 280 | 2 | 3RT2038-1NP30 | 2 | 3RT2038-3NP30 |

With removable auxiliary switch and integrated coil circuit

(varistor integrated in electronics at the factory)

| | | | | | | | | | | |
|----|------|----|----|---|---|-------------|---|---------------|--|----|
| 41 | 18.5 | 60 | 22 | 2 | 2 | 20 ... 33 | ▶ | 3RT2035-1NB34 | | -- |
| | | | | | | 83 ... 155 | 5 | 3RT2035-1NF34 | | -- |
| | | | | | | 175 ... 280 | 5 | 3RT2035-1NP34 | | -- |
| 50 | 22 | 70 | 22 | 2 | 2 | 20 ... 33 | ▶ | 3RT2036-1NB34 | | -- |
| | | | | | | 83 ... 155 | 5 | 3RT2036-1NF34 | | -- |
| | | | | | | 175 ... 280 | 5 | 3RT2036-1NP34 | | -- |
| 65 | 30 | 80 | 22 | 2 | 2 | 20 ... 33 | 2 | 3RT2037-1NB34 | | -- |
| | | | | | | 83 ... 155 | 5 | 3RT2037-1NF34 | | -- |
| | | | | | | 175 ... 280 | 5 | 3RT2037-1NP34 | | -- |
| 80 | 37 | 90 | 22 | 2 | 2 | 20 ... 33 | ▶ | 3RT2038-1NB34 | | -- |
| | | | | | | 83 ... 155 | 5 | 3RT2038-1NF34 | | -- |
| | | | | | | 175 ... 280 | 5 | 3RT2038-1NP34 | | -- |

With permanently mounted auxiliary switch and integrated coil circuit

(varistor integrated in electronics at the factory)

| | | | | | | | | | | |
|----|------|----|----|---|---|-----------|---|--------------------|---|--------------------|
| 41 | 18.5 | 60 | 22 | 2 | 2 | 20 ... 33 | ▶ | 3RT2035-1NB34-3MA0 | 2 | 3RT2035-3NB34-3MA0 |
| 50 | 22 | 70 | 22 | 2 | 2 | 20 ... 33 | ▶ | 3RT2036-1NB34-3MA0 | 5 | 3RT2036-3NB34-3MA0 |
| 65 | 30 | 80 | 22 | 2 | 2 | 20 ... 33 | 2 | 3RT2037-1NB34-3MA0 | 5 | 3RT2037-3NB34-3MA0 |
| 80 | 37 | 90 | 22 | 2 | 2 | 20 ... 33 | 2 | 3RT2038-1NB34-3MA0 | 2 | 3RT2038-3NB34-3MA0 |

With voltage tap-off and integrated coil circuit

(varistor integrated in electronics at the factory)

| | | | | | | | | | | |
|----|------|----|----|---|---|-----------|---|--------------------|---|--------------------|
| 41 | 18.5 | 60 | 11 | 1 | 1 | 20 ... 33 | 5 | 3RT2035-1NB30-OCC0 | 5 | 3RT2035-3NB30-OCC0 |
| 50 | 22 | 70 | 11 | 1 | 1 | 20 ... 33 | 5 | 3RT2036-1NB30-OCC0 | 5 | 3RT2036-3NB30-OCC0 |
| 65 | 30 | 80 | 11 | 1 | 1 | 20 ... 33 | 5 | 3RT2037-1NB30-OCC0 | 5 | 3RT2037-3NB30-OCC0 |
| 80 | 37 | 90 | 11 | 1 | 1 | 20 ... 33 | 5 | 3RT2038-1NB30-OCC0 | 5 | 3RT2038-3NB30-OCC0 |

Other voltages according to page 3/75 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready** **NEW**

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
- Solid-state operating mechanism 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

PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B



3RT203.-1S.30





3RT203.-3S.30



3RT204.-1S.30



3RT204.-3S.30

| Rated data | | Auxiliary contacts | Rated control supply voltage U_s | SD | Screw terminals  | SD | Spring-loaded terminals  | |
|------------------------------|--|---------------------------------------|------------------------------------|-------------------|---|--------------|---|--------------|
| AC-2 and AC-3, t_u : 60 °C | Operational current I_e up to 400 V | Ident. No. | Version | 50/60 Hz AC or DC | Article No. | Price per PU | Article No. | Price per PU |
| AC-1, t_u : 40 °C | Ratings of three-phase motors at 50 Hz and up to 400 V 400 V | Operational current I_e up to 690 V | | | | | | |
| A | kW | 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 integrated in electronics at the factory)

| 41 | 18.5 | 60 | 01 | -- | 1 | 21 ... 33 83 ... 150 175 ... 280 | 5 | 3RT2035-1SB30 3RT2035-1SF30 3RT2035-1SP30 | 5 | 3RT2035-3SB30 3RT2035-3SF30 3RT2035-3SP30 |
|----|------|----|----|----|---|--|---|---|---|---|
| 50 | 22 | 70 | 01 | -- | 1 | 21 ... 33 83 ... 150 175 ... 280 | 5 | 3RT2036-1SB30 3RT2036-1SF30 3RT2036-1SP30 | 5 | 3RT2036-3SB30 3RT2036-3SF30 3RT2036-3SP30 |
| 65 | 30 | 80 | 01 | -- | 1 | 21 ... 33 83 ... 150 175 ... 280 | 5 | 3RT2037-1SB30 3RT2037-1SF30 3RT2037-1SP30 | 5 | 3RT2037-3SB30 3RT2037-3SF30 3RT2037-3SP30 |
| 80 | 37 | 90 | 01 | -- | 1 | 21 ... 33 83 ... 150 175 ... 280 | 5 | 3RT2038-1SB30 3RT2038-1SF30 3RT2038-1SP30 | 5 | 3RT2038-3SB30 3RT2038-3SF30 3RT2038-3SP30 |

For screw fixing and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

With integrated coil circuit (varistor integrated in electronics at the factory)

| 80 | 37 | 125 | 01 | -- | 1 | 21 ... 33 83 ... 150 175 ... 280 | 5 | 3RT2045-1SB30 3RT2045-1SF30 3RT2045-1SP30 | 5 | 3RT2045-3SB30 3RT2045-3SF30 3RT2045-3SP30 |
|-----|----|-----|----|----|---|--|---|---|---|---|
| 95 | 45 | 130 | 01 | -- | 1 | 21 ... 33 83 ... 150 175 ... 280 | 5 | 3RT2046-1SB30 3RT2046-1SF30 3RT2046-1SP30 | 5 | 3RT2046-3SB30 3RT2046-3SF30 3RT2046-3SP30 |
| 110 | 55 | 130 | 01 | -- | 1 | 21 ... 33 83 ... 150 175 ... 280 | 5 | 3RT2047-1SB30 3RT2047-1SF30 3RT2047-1SP30 | 5 | 3RT2047-3SB30 3RT2047-3SF30 3RT2047-3SP30 |

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

IE3/IE4 ready

SIRIUS 3RT contactors, 3-pole up to 250 kW

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



| Rated data | | Auxiliary contacts | | Rated control supply voltage U_s | SD | Screw terminals | | SD | Spring-loaded 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 | | | | | | |
| A | kW | A | | | | Article No. | Price per PU | | Article No. | Price per PU |
| | | | | | | | | | | |

For screw fixing and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3**With integrated coil circuit (varistor integrated in electronics at the factory)**

| | | | | | | | | | | |
|-----|----|-----|----|---|---|-------------|---|---------------|---|---------------|
| 80 | 37 | 125 | 11 | 1 | 1 | 20 ... 33 | ▶ | 3RT2045-1NB30 | 2 | 3RT2045-3NB30 |
| | | | | | | 83 ... 155 | 2 | 3RT2045-1NF30 | 5 | 3RT2045-3NF30 |
| | | | | | | 175 ... 280 | 5 | 3RT2045-1NP30 | 5 | 3RT2045-3NP30 |
| 95 | 45 | 130 | 11 | 1 | 1 | 20 ... 33 | ▶ | 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 | ▶ | 3RT2047-1NB30 | 2 | 3RT2047-3NB30 |
| | | | | | | 83 ... 155 | 5 | 3RT2047-1NF30 | 5 | 3RT2047-3NF30 |
| | | | | | | 175 ... 280 | 5 | 3RT2047-1NP30 | 5 | 3RT2047-3NP30 |

With removable auxiliary switch and integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | | |
|-----|----|-----|----|---|---|-------------|---|---------------|--|----|
| 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 | 2 | 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 and integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | | |
|-----|----|-----|----|---|---|-----------|---|--------------------|---|--------------------|
| 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 integrated in electronics at the factory)

| | | | | | | | | | | |
|-----|----|-----|----|---|---|-----------|---|--------------------|----|--------------------|
| 80 | 37 | 125 | 11 | 1 | 1 | 20 ... 33 | 5 | 3RT2045-1NB30-0CC0 | 10 | 3RT2045-3NB30-0CC0 |
| 95 | 45 | 130 | 11 | 1 | 1 | 20 ... 33 | 5 | 3RT2046-1NB30-0CC0 | 5 | 3RT2046-3NB30-0CC0 |
| 110 | 55 | 130 | 11 | 1 | 1 | 20 ... 33 | 5 | 3RT2047-1NB30-0CC0 | 5 | 3RT2047-3NB30-0CC0 |

Other voltages according to page 3/75 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**

AC/DC operation

- Standard operating mechanism 3RT10...-A
- For screw fixing
- Auxiliary and control conductors: Screw or spring-loaded terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT105-6A.36





3RT106-6A.36



3RT107-6A.36



3RT107-2A.36

| Size | Rated data | | | | Operational current I_e up to | Operational current I_e up to | Auxiliary contacts, lateral | Rated control supply voltage U_s | SD | Screw terminals  | | Spring-loaded terminals  | |
|------|---------------------------------|--------------|------------------------|-------|---------------------------------|---------------------------------|-----------------------------|------------------------------------|----|---|-------------------|---|--------------|
| | AC-2 and AC-3, t_{ij} : 60 °C | | AC-1, t_{ij} : 40 °C | | | | | | | Version | 50/60 Hz AC or DC | Article No. | Price per PU |
| | 500 V | 400 V | 500 V | 690 V | 690 V | | NO NC | V | d | | | | |
| | A | kW | kW | kW | A | | | | | | | | |

Standard operating mechanism with economy circuit for AC and DC operation (switchover from closing coil to holding coil)

With integrated coil circuit (varistor integrated at the factory)

| Size | 115 | 55 | 75 | 110 | 160 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1054-6AF36 3RT1054-6AP36 | 5 5 | 3RT1054-2AF36 3RT1054-2AP36 |
|------------|------------|-------------------------|------------|-----|-----|-----|---|----------------------------|----------------------------|--------------------------------|--------------------------------|--------------------------------|
| S6 | 150 | 75 | 90 | 132 | 185 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1055-6AF36 3RT1055-6AP36 | 5 | 3RT1055-2AF36 3RT1055-2AP36 |
| | 185 | 90¹⁾ | 110 | 160 | 215 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1056-6AF36 3RT1056-6AP36 | 5 | 3RT1056-2AF36 3RT1056-2AP36 |
| | S10 | 225 | 110 | 160 | 200 | 275 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1064-6AF36 3RT1064-6AP36 | 5 |
| 265 | | 132 | 160 | 250 | 330 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1065-6AF36 3RT1065-6AP36 | 5 | 3RT1065-2AF36 3RT1065-2AP36 |
| 300 | | 160¹⁾ | 200 | 250 | 330 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1066-6AF36 3RT1066-6AP36 | 5 5 | 3RT1066-2AF36 3RT1066-2AP36 |
| S12 | 400 | 200 | 250 | 400 | 430 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1075-6AF36 3RT1075-6AP36 | 5 | 3RT1075-2AF36 3RT1075-2AP36 |
| | 500 | 250¹⁾ | 355 | 400 | 610 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1076-6AF36 3RT1076-6AP36 | 5 5 | 3RT1076-2AF36 3RT1076-2AP36 |

¹⁾ When using 3RT10.6-.A... contactors with IE3/IE4 motors from 8.5 times the starting current, use the versions with solid-state operating mechanism 3RT10.6-.N..., see page 3/74.
 For more information about dimensioning and configuring, see page 3/7.

Other voltages according to page 3/76 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

IE3/IE4 ready




SIRIUS 3RT contactors, 3-pole up to 250 kW

AC/DC operation

- Solid-state operating mechanism 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
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

For more information on safety systems, see page 11/1 onwards.



| Size | Rated data according to IEC 60947-4-1 AC-3, I_n : 60 °C Operational current I_e up to | Ratings of three-phase motors at 50 Hz and up to | Auxiliary contacts, lateral | Rated control supply voltage U_s | SD | Screw terminals  | PU (UNIT, SET, M) | PS* | PG |
|------|---|--|---|------------------------------------|----|---|-------------------|-----|----|
| | 500 V | 400 V | Version | 50/60 Hz AC or DC | | Article No. | Price per PU | | |
| | A | kW |   | V | d | | | | |

Solid-state operating mechanism

With two removable laterally mounted auxiliary switches

With integrated coil circuit (varistor integrated in electronics at the factory)

| Size | Rated current I_n | Rated power P_n | NO | NC | Control supply voltage U_s | SD | Article No. | PU | PS* | PG |
|------|---------------------|-------------------|----|----|------------------------------|----|--------------------------------|--------|------------------|------------|
| S6 | 115 | 55 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1054-6SF36 3RT1054-6SP36 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 150 | 75 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1055-6SF36 3RT1055-6SP36 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 185 | 90 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1056-6SF36 3RT1056-6SP36 | 1 1 | 1 unit 1 unit | 41B 41B |
| S10 | 225 | 110 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1064-6SF36 3RT1064-6SP36 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 265 | 132 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1065-6SF36 3RT1065-6SP36 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 300 | 160 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1066-6SF36 3RT1066-6SP36 | 1 1 | 1 unit 1 unit | 41B 41B |
| S12 | 400 | 200 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1075-6SF36 3RT1075-6SP36 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 500 | 250 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1076-6SF36 3RT1076-6SP36 | 1 1 | 1 unit 1 unit | 41B 41B |

With two permanently laterally mounted auxiliary switches

With integrated coil circuit (varistor integrated in electronics at the factory)

| Size | Rated current I_n | Rated power P_n | NO | NC | Control supply voltage U_s | SD | Article No. | PU | PS* | PG |
|------|---------------------|-------------------|----|----|------------------------------|----|--|--------|------------------|------------|
| S6 | 115 | 55 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1054-6SF36-3PA0 3RT1054-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 150 | 75 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1055-6SF36-3PA0 3RT1055-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 185 | 90 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1056-6SF36-3PA0 3RT1056-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |
| S10 | 225 | 110 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1064-6SF36-3PA0 3RT1064-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 265 | 132 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1065-6SF36-3PA0 3RT1065-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 300 | 160 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1066-6SF36-3PA0 3RT1066-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |
| S12 | 400 | 200 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1075-6SF36-3PA0 3RT1075-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 500 | 250 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1076-6SF36-3PA0 3RT1076-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

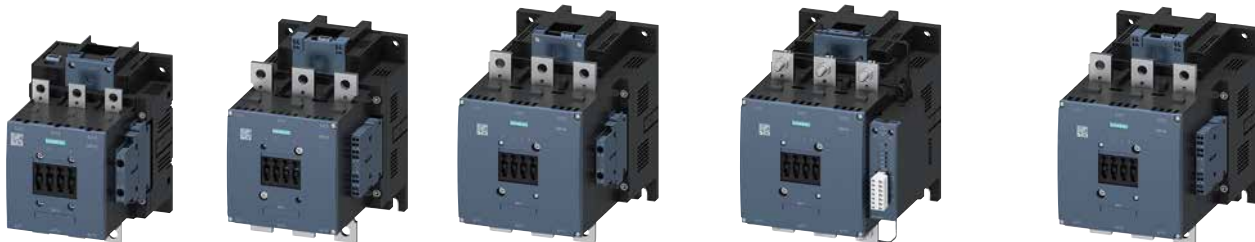
SIRIUS 3RT contactors, 3-pole up to 250 kW **IE3/IE4 ready**





AC/DC operation

- Solid-state operating mechanism
 - 3RT10...-N with 24 V DC control signal input
 - 3RT10...-P with 24 V DC control signal input and with remaining lifetime indicator (RLT)

- For screw fixing
- Auxiliary and control conductors: Screw or spring-loaded terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts 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-loaded terminals  | |
|------|---------------------------------|--|---|------------------------------------|----|---|--------------|---|--------------|
| | Operational current I_e up to | Ratings of three-phase motors at 50 Hz and up to | Version | 50/60 Hz AC or DC | | Article No. | Price per PU | Article No. | Price per PU |
| | 500 V | 400 V |   | | | | | | |
| | A | kW | | V | d | | | | |

Solid-state operating mechanism

With 24 V DC control signal input
 e.g. for control by PLC

With integrated coil circuit (varistor integrated in electronics at the factory)

| S6 | 115 | 55 | 75 | 110 | 160 | 2 | 2 | 96 ... 127 | 5 | 3RT1054-6NF36 | 5 | 3RT1054-2NF36 |
|-----|-----|-----|-----|-----|-----|---|---|-------------|---|---------------|---|---------------|
| | | | | | | | | 200 ... 277 | 5 | 3RT1054-6NP36 | 5 | 3RT1054-2NP36 |
| | 150 | 75 | 90 | 132 | 185 | 2 | 2 | 96 ... 127 | 2 | 3RT1055-6NF36 | 5 | 3RT1055-2NF36 |
| | | | | | | | | 200 ... 277 | ▶ | 3RT1055-6NP36 | 5 | 3RT1055-2NP36 |
| | 185 | 90 | 110 | 160 | 215 | 2 | 2 | 96 ... 127 | 5 | 3RT1056-6NF36 | 5 | 3RT1056-2NF36 |
| | | | | | | | | 200 ... 277 | ▶ | 3RT1056-6NP36 | 5 | 3RT1056-2NP36 |
| S10 | 225 | 110 | 160 | 200 | 275 | 2 | 2 | 96 ... 127 | 5 | 3RT1064-6NF36 | 5 | 3RT1064-2NF36 |
| | | | | | | | | 200 ... 277 | 2 | 3RT1064-6NP36 | 5 | 3RT1064-2NP36 |
| | 265 | 132 | 160 | 250 | 330 | 2 | 2 | 96 ... 127 | 2 | 3RT1065-6NF36 | 5 | 3RT1065-2NF36 |
| | | | | | | | | 200 ... 277 | ▶ | 3RT1065-6NP36 | 5 | 3RT1065-2NP36 |
| | 300 | 160 | 200 | 250 | 330 | 2 | 2 | 96 ... 127 | 5 | 3RT1066-6NF36 | 5 | 3RT1066-2NF36 |
| | | | | | | | | 200 ... 277 | 2 | 3RT1066-6NP36 | 5 | 3RT1066-2NP36 |
| S12 | 400 | 200 | 250 | 400 | 430 | 2 | 2 | 96 ... 127 | 2 | 3RT1075-6NF36 | 5 | 3RT1075-2NF36 |
| | | | | | | | | 200 ... 277 | 2 | 3RT1075-6NP36 | 5 | 3RT1075-2NP36 |
| | 500 | 250 | 355 | 400 | 610 | 2 | 2 | 96 ... 127 | 5 | 3RT1076-6NF36 | 5 | 3RT1076-2NF36 |
| | | | | | | | | 200 ... 277 | 2 | 3RT1076-6NP36 | 5 | 3RT1076-2NP36 |

For 24 V DC control signal input · with remaining lifetime indicator (RLT)
 e.g. for control by PLC

With integrated coil circuit (varistor integrated in electronics at the factory)

| S6 | 115 | 55 | 75 | 110 | 160 | 1 | 1 | 96 ... 127 | 5 | 3RT1054-6PF35 | | -- |
|-----|-----|-----|-----|-----|-----|---|---|-------------|----|---------------|--|----|
| | | | | | | | | 200 ... 277 | 5 | 3RT1054-6PP35 | | -- |
| | 150 | 75 | 90 | 132 | 185 | 1 | 1 | 96 ... 127 | 5 | 3RT1055-6PF35 | | -- |
| | | | | | | | | 200 ... 277 | 5 | 3RT1055-6PP35 | | -- |
| | 185 | 90 | 110 | 160 | 215 | 1 | 1 | 96 ... 127 | 5 | 3RT1056-6PF35 | | -- |
| | | | | | | | | 200 ... 277 | 5 | 3RT1056-6PP35 | | -- |
| S10 | 225 | 110 | 160 | 200 | 275 | 1 | 1 | 96 ... 127 | 5 | 3RT1064-6PF35 | | -- |
| | | | | | | | | 200 ... 277 | 5 | 3RT1064-6PP35 | | -- |
| | 265 | 132 | 160 | 250 | 330 | 1 | 1 | 96 ... 127 | 5 | 3RT1065-6PF35 | | -- |
| | | | | | | | | 200 ... 277 | 5 | 3RT1065-6PP35 | | -- |
| | 300 | 160 | 200 | 250 | 330 | 1 | 1 | 96 ... 127 | 5 | 3RT1066-6PF35 | | -- |
| | | | | | | | | 200 ... 277 | 5 | 3RT1066-6PP35 | | -- |
| S12 | 400 | 200 | 250 | 400 | 430 | 1 | 1 | 96 ... 127 | 5 | 3RT1075-6PF35 | | -- |
| | | | | | | | | 200 ... 277 | 5 | 3RT1075-6PP35 | | -- |
| | 500 | 250 | 355 | 400 | 610 | 1 | 1 | 96 ... 127 | 20 | 3RT1076-6PF35 | | -- |
| | | | | | | | | 200 ... 277 | 5 | 3RT1076-6PP35 | | -- |

Other voltages according to page 3/76 on request.

Accessories and spare parts, see pages 3/77 to 3/126.

Switching devices – Contactors and contactor assemblies – for switching motors

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 Size | 3RT201, 3RH2 S00 | 3RT202 S0 | 3RT203 S2 | 3RT204 S3 |
|---|------------------------|---------------------|--------------|--------------|--------------|
| Sizes S00 to S3 | | | | | |
| AC operation¹⁾ | | | | | |
| Solenoid coils for 50 Hz (exception: size S00: 50 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 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 | | | | | |
| 110 V AC | 120 V AC | K6 | K6 | K6 | K6 |
| 220 V AC | 240 V AC | P6 | P6 | P6 | P6 |
| 60 Hz | | | | | |
| 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 | 3RT2023-1AP00 | Contactors with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC. |
| | 3RT2023-1AG20 | Contactors with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC. |
| DC operation | 3RT2025-2BB40 | Contactors with spring-loaded terminals; for rated control supply voltage 24 V DC. |
| | 3RT2025-2BG40 | Contactors with spring-loaded 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 and Catalog KT 10.1.

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 $U_{s \min}$ to $U_{s \max}$ ¹⁾ | Contactor type Size | 3RT202.-N S0 | Rated control supply voltage $U_{s \min}$ to $U_{s \max}$ ¹⁾ | Contactor type Size | 3RT203.-N S2 | 3RT204.-N 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 = $1.1 \times U_{s \max}$

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT contactors, 3-pole up to 250 kW

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 |
| $U_{s \min}$ to $U_{s \max}$ | Sizes S6 to S12 | $U_{s \min}$ to $U_{s \max}$ | Sizes S6 to S12 | |

Sizes S6 to S12

AC/DC operation (50/60 Hz AC or DC) and operating range $0.8 \times U_{s \min}$ to $1.1 \times U_{s \max}$

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 |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories 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://www.siemens.com/tstcloud/?node=Contactor>

| Version | For contactors | | Selection and ordering data |
|---|---------------------------------------|--|-----------------------------|
| | 3RT2, sizes S00 to S3; 3RH2, size S00 | 3RT105 to 3RT107, 3RT126 and 3RT127, 3RT145 to 3RT147; sizes S6 to S12 | Page |
| Accessories for 3RT contactors and 3RH2 contactor relays | | | |
| Auxiliary switches | | | |
| Instantaneous | 3RH29.1 | 3RH19.1 | 3/89 ... 3/101 |
| Delayed | | | |
| • Pneumatic time-delay auxiliary switches | 3RT2926-2P..1 | -- | 3/102 |
| • Solid-state time-delay auxiliary switches | 3RA2813, 3RA2814, 3RA2815 | 3RT1926-2E/-2F/-2G | 3/102, 3/103 |
| Surge suppressors | | | |
| • Without LED | 3RT29.6-1B/-1C/-1D/-1E | 3RT1956-1C | 3/104, 3/105 |
| • With LED | 3RT29.6-1J/-1L/-1M | -- | 3/105 |
| Modules for contactor control | | | |
| Coupling links for control by PLC | 3RH29.4-.GP11 | -- | 3/106 |
| 3RA28 function modules | | | |
| • For direct on-line starting: ON delay or OFF-delay | 3RA2811, 3RA2812, 3RA2831, 3RA2832 | -- | 3/107 |
| • For star-delta (weye-delta) starting | 3RA2816 | -- | 3/107 |
| 3RA27 function modules for IO-Link or AS-Interface | | | |
| • For direct-on-line, reversing or star-delta (weye-delta) starting | 3RA271.-.A/B/C | -- | 3/108, 3/109 |
| Mechanical latching blocks | | | |
| | 3RT2926-3A.31 | -- | 3/110 |
| OFF-delay devices for contactors with AC/DC and DC operation | | | |
| | 3RT2916-2B.01 | -- | 3/110 |
| Link modules | | | |
| Link modules from motor starter protector to contactor | 3RA.9.1 | -- | 7/62 |
| Safety main current connectors for two contactors | 3RA29.6-1A | -- | 3/111 |
| Assembly kits | | | |
| • For reversing contactor assemblies | 3RA29.3-2AA. | 3RA19.3-2A | 3/111 |
| • For contactor assemblies for star-delta (weye-delta) starting | 3RA29.-.2BB., 3RA29.3-2C | 3RA1953-3G, 3RA19.3-2./-3. | 3/112, 3/113 |
| Single wiring modules | | | |
| | 3RA.9.3-3.A. | 3RA19.3-3. | 3/114 |
| Star jumpers (links for paralleling), 3-pole | | | |
| | 3RT.9.6-4BA3. | 3RT19.6-4BA31 | 3/114 |
| Mechanical interlock kits for two contactors | | | |
| | 3RA29.2-2H | -- | 3/115 |
| Mechanical interlocks for contactor assemblies | | | |
| | 3RA2934-2B | 3RA1954-2. | 3/115 |
| Mechanical connectors for contactor assemblies | | | |
| | 3RA29.2-2. | 3RA1932-2D | 3/115 |
| Connection modules/adapters | | | |
| Links for paralleling for main circuits | 3RT.9.6-4BB.1 | -- | 3/116 |
| 1-phase infeed terminals | | | |
| | 3RA2943-3L | -- | 3/117 |
| 3-phase infeed terminals | | | |
| • With increased clearances and creepage distances | 3RA2913-3K, 3RV29.5-5A. | -- | 3/117 |
| | 3RV2935-5E | -- | 3/117 |
| 3-phase busbars | | | |
| | 3RV1915-1AB | -- | 3/117 |
| Terminal blocks for connecting auxiliary conductors to main terminals | | | |
| • Box terminal blocks | 3RT2946-4G | 3RT19.-.4G | 3/117 |
| • Box terminal for auxiliary conductor connection, 1-pole | -- | 3TX7500-0A | 3/117 |
| • Auxiliary terminals, 3-pole | 3RT2946-4F | -- | 3/117 |
| Solder pin adapters for mounting contactors onto printed circuit boards | | | |
| | 3RT1916-4KA. | -- | 3/118 |
| Coil connection modules for connections from top or from bottom | | | |
| | 3RT2926-4R.1. | -- | 3/118 |
| Connection module (adapter and plug) for contactors with screw terminals | | | |
| • Adapters | 3RT19.6-4RD01 | -- | 3/118 |
| • Motor feeder connector | 3RT1900-4RE01 | -- | 3/118 |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > General data

| Version | For contactors 3RT2, sizes S00 to S3; 3RH2, size S00 | 3RT105 to 3RT107, 3RT126 and 3RT127, 3RT145 to 3RT147; 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 | 3/119 |
| Sealable covers | 3RT2916-4MA10 | 3RT1926-4MA10 | 3/119 |
| Miscellaneous accessories | | | |
| Base plates | | | |
| • For reversing contactor assemblies | -- | 3RT19.2-2A | 3/120 |
| • For contactor assemblies for star-delta (wye-delta) starting | 3RA29.2-2F | 3RA19.2-2. | 3/120 |
| Adapters for screw fixing | 3RT1926-4P | -- | 3/120 |
| Connection kit for one complete contactor | -- | 3RT19..-4PA00 | 3/120 |
| EMC suppression modules | 3RT2916-1P . . | -- | 3/120 |
| Additional load modules | 3RT2916-1GA00 | -- | 3/121 |
| LED modules for displaying contactor operation | 3RT2926-1QT00 | 3RT1926-1QT00 | 3/121 |
| Control kit | 3RT29.6-4MC00 | -- | 3/121 |
| Insulation stop for securely holding back the conductor insulation for conductors up to 1 mm² | 3RT2916-4JA02 | 3RT1916-4JA02 | 3/122 |
| Tools for opening spring-loaded terminals | 3RA2908-1A | 3RA2908-1A | 3/122 |
| Blank labels | 3RT2900-1SB.0 | 3RT2900-1SB.0 | 3/122 |
| Spare parts for 3RT2 contactors | | | |
| Solenoid coils | 3RT29..-5...1 | -- | 3/123, 3/124 |
| Withdrawable coils | -- | 3RT19..-5.... | 3/125 |
| Contacts with fixing parts | 3RT29...-6. | 3RT19...-6. | 3/126 |
| Arc chutes | -- | 3RT19...-7. | 3/126 |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > General data

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 [Manuals](#) → "More information", page 3/84, and in the [selection and ordering data](#), page 3/89 onwards.

Solid-state time-delay auxiliary switches for mounting onto 3RT2 contactors and 3RH2 contactor relays

See pages 3/84 and 3/102

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 onto the contactor is not permitted.

Surge suppressors

- Without LED (also for spring-loaded terminals)
Sizes S00 to S3, see [page 3/104](#)
- With LED (also for spring-loaded terminals)
Sizes S00 to S3, see [page 3/105](#)

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 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.

Varistors, RC elements or diode assemblies can be plugged onto the front of size S0 to S3 contactors. Exception: For size S3, the RC element is inserted on the front into the recesses to the left of the connection block.

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 3/86 and 3/106

- 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.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > General data

3RA28 function modules for mounting onto 3RT2 contactors and 3RH2 contactor relays

See pages 3/87 and 3/107

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 3/153.

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-loaded 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-loaded connection and for all the contactor sizes S00 to S3
- Mechanical interlocking (with wiring kit for the main circuit)

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > General data

SIRIUS 3RA27 function modules for IO-Link or AS-Interface for mounting onto 3RT2 contactors

See pages 3/88 and 3/108

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 e.g. timing and interlocking, required for the particular feeder, and can be connected to the control system via either IO-Link or AS-Interface.

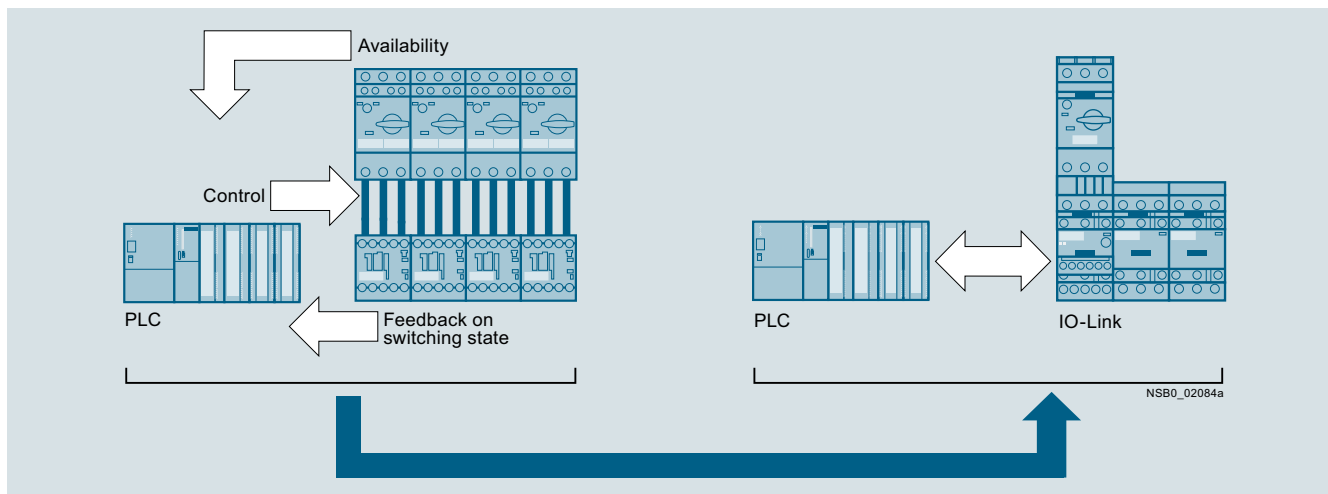
The electrical and mechanical connection to the contactor is established by snapping on and locking the respective modules. An additive protection circuit for the individual contactors can be dispensed with completely because a varistor is integrated in the modules. Feedback from the contactor contacts 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.

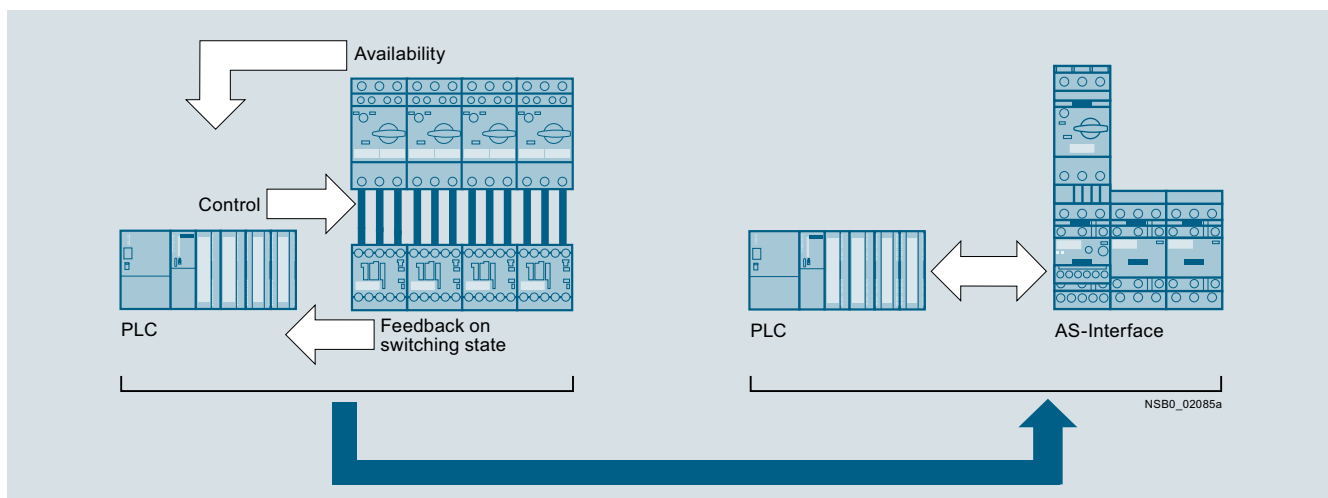
Through this type of connection to the control system, a maximum of wiring is saved. In the case of AS-Interface, the wiring amounts to the control supply voltage and the two individual wires for AS-Interface.

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

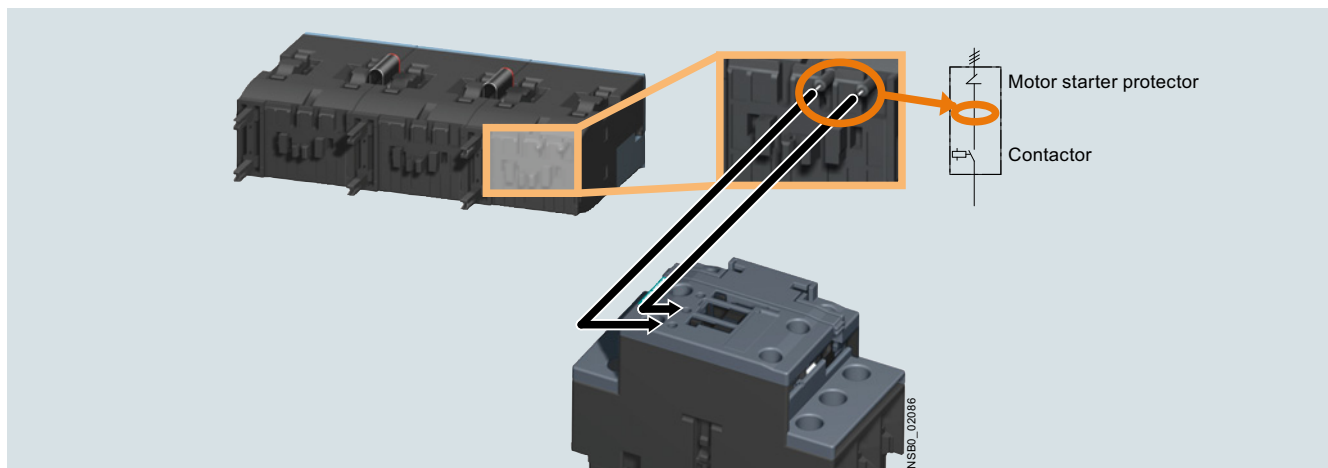
Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > General data

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 3RT20...-.....-0CC0 contactors with voltage tap-off (see pages 3/61, 3/65, 3/69 and 3/71).



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

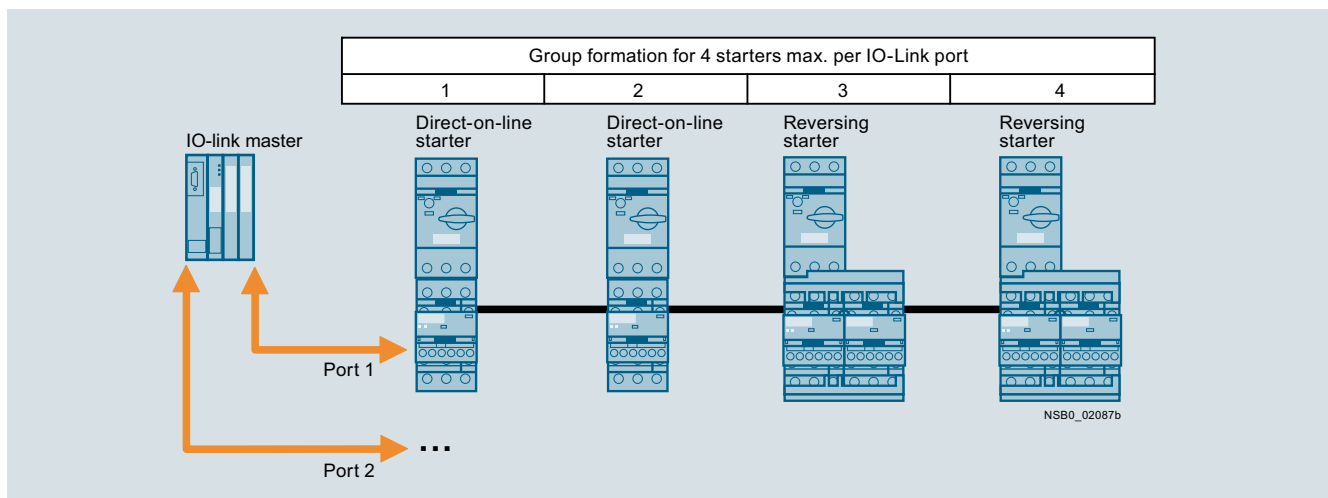
- Dispensing with IO modules saves space in the control cabinet
- All essential timing and interlocking functions for reversing duty and star-delta (wye-delta) starting are integrated
- No additive protection circuit required

For more information on IO-Link and AS-Interface, see "Industrial communication", page 2/1 onwards.

SIRIUS 3RA2711 function modules for IO-Link for mounting onto 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 further reduced 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

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

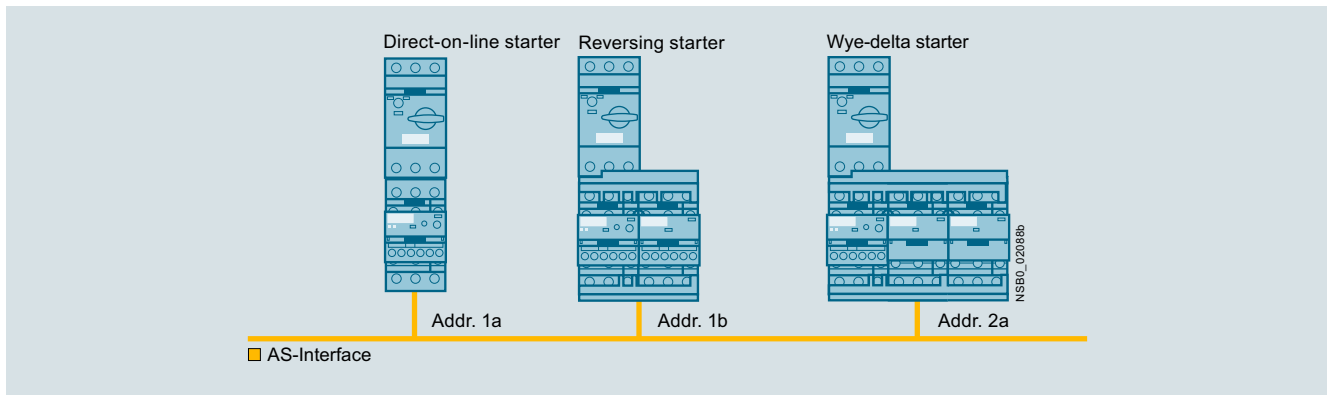
Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > General data

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 onto 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.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > General data

Technical specifications

More information

TIA Selection Tool Cloud (TST Cloud), see
<https://www.siemens.com/tstcloud/?node=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 for modular system, see
<https://support.industry.siemens.com/cs/ww/en/view/60311318>
- Equipment Manual, see
<https://support.industry.siemens.com/cs/ww/en/view/60306557>



Solid-state time-delay auxiliary switches for mounting onto 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) | | 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 IP on the front acc. to IEC 60529 | | IP20 | | |
| Touch protection on the front acc. to IEC 60529 | | Finger-safe for vertical touching from the front | | |
| 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 | - At 24 V - At 125 V - At 250 V | A A A | 1 0.2 0.1 | |
| Mechanical endurance | Operat- ing cycles | 10 x 10 ⁶ | | |
| Electrical endurance at AC-15, 250 V, 3 A | Operat- ing 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 | | |


Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > General data

| 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) | 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-loaded terminals | | |
| • Solid | mm ² | 2 x (0.25 ... 1.5) | | |
| • Finely stranded with end sleeve (DIN 46228) | 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 switches, for snapping onto 3RT1 contactors



| Type | | 3RT1926-2E, 3RT1926-2F, 3RT1926-2G | Type | | 3RT1926-2E, 3RT1926-2F, 3RT1926-2G |
|--|-------|---|--|--------------------------|--|
| Sizes | | S6 to S12 | Sizes | | S6 to S12 |
| General data | | | Load side | | |
| Dimensions (W x H x D) | mm | 45 x 26 x 50 | Rated operational currents I_e | | |
| Rated insulation voltage U_i | V AC | 250 | • AC-15, 230 V, 50 Hz | A | 3 |
| Pollution degree 3, Overvoltage category III acc. to IEC 60664-1 | | | • DC-13, 24 V | A | 1 |
| Permissible ambient temperature | | | • DC-13, 110 V | A | 0.2 |
| • During operation | °C | -25 ... +60 | • DC-13, 230 V | A | 0.1 |
| • During storage | °C | -40 ... +80 | Short-circuit protection | | |
| Degree of protection IP on the front acc. to IEC 60529 | | IP20 | Fuse links, operational class gG: | A | 4 |
| Touch protection on the front acc. to IEC 60529 | | Finger-safe for vertical touching from the front | DIAZED, type 5SB | | |
| Shock resistance | g/ms | 15/11 | Mechanical endurance | | |
| Half-sine acc. to IEC 60068-2-27 | | | | Operat- ing cycles | 10 x 10 ⁶ |
| Vibration resistance | Hz/mm | 10 ... 55/0.35 | Switching frequency for load | | |
| acc. to IEC 60068-2-6 | | | • With I_e at 230 V AC | 1/h | 2 500 |
| Electromagnetic compatibility (EMC) | | IEC 61812-1 | • With 3RT2016 contactor at 230 V AC | 1/h | 5 500 |
| Permissible mounting position | | Any (see 3RT1 contactors, page 3/48) | Conductor cross-sections | | |
| Control | | | Connection type (1 or 2 conductors can be connected) | | |
| Operating range of excitation | | 0.85 ... 1.1 x U_s , 0.95 ... 1.05 times the rated frequency |  Screw terminals | | |
| Rated power | W | 2 | • Solid | mm ² | 2 x (0.5 ... 1.5), 2 x (0.75 ... 4) |
| Power consumption at 230 V AC, 50 Hz | VA | 4 | • Finely stranded with end sleeve | mm ² | 2 x (0.5 ... 2.5) |
| Recovery time | ms | 150 | • AWG cables, solid or stranded | AWG | 2 x (18 ... 14) |
| Minimum ON period | ms | 200 (with OFF-delay) | • Terminal screws | | M3 |
| Setting accuracy, typ., with reference to upper limit of scale | % | ± 15 | • Tightening torque | Nm | 0.8 ... 1.2 |
| Repeat accuracy, max. | % | ± 1 | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > General data

Coupling links for control by PLC

| | | | |
|---|------------------|--|----------------------|
| Type | | 3RH2924-1GP11 | 3RH2914-.GP11 |
| Mounting onto 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 IP on the front acc. to IEC 60529 | | IP20 | |
| Touch protection on the front acc. to IEC 60529 | | Finger-safe for vertical touching from the front | |
| 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) | mm ² | 2 x (0.5 ... 1.5) | |
| • Terminal screws | | M3 | |
| Connection type (1 or 2 conductors can be connected) | |  Spring-loaded terminals | |
| • Solid | mm ² | -- | 2 x (0.25 ... 1.5) |
| • Finely stranded with end sleeve (DIN 46228) | 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 |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > General data

3RA28 function modules for mounting onto 3RT2 contactors and 3RH2 contactor relays



| Type | 3RA2811 | 3RA2831 | 3RA2812 | 3RA2832 | 3RA2816 |
|--|--|--|-------------------------------|---------|-------------------------------------|
| Mounting onto 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 IP on the front acc. to IEC 60529 | IP20 | | | | |
| Touch protection on the front acc. to IEC 60529 | Finger-safe for vertical touching from the front | | | | |
| 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_e , 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 | | | | | |
| • With 3RT2028 contactor | Operating cycles | 100 000 | | | -- |
| • 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 | 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) | 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-loaded 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) | 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) | | | -- |

Switching devices – Contactors and contactor assemblies – for switching motors



Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > General data

3RA27 function modules for IO-Link for mounting onto 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 IP on the front acc. to IEC 60529 | IP20 | |
| Touch protection on the front acc. to IEC 60529 | Finger-safe for vertical touching from the front | |
| Operating voltage U_{Hi} | V DC | 24 ± 20% |
| Max. length of the cables for the input Y1-Y2 | m | 30 |
| 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) | 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-loaded 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) | 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 onto 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 IP on the front acc. to IEC 60529 | IP20 | |
| Touch protection on the front acc. to IEC 60529 | Finger-safe for vertical touching from the front | |
| 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 pickup/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 | m | 30 |
| 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) | 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-loaded 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) | 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) |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, instantaneous

Overview

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 switches for power contactors and contactor relays

The auxiliary switches of the 3RH29 series for mounting onto 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 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 (line).

| Additional auxiliary switch | | 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 switches without NO contact | | 3RT201 | 3RT201 | 3RT202 to 3RT204 |
|---------------------------------------|------|-----------|--------|------------------|
| 3RH2911-□HA01 | -- 1 | 11 | 02 | 12 |
| 3RH2911-□HA02 | -- 2 | 12 | 03 | 13 |
| 3RH2911-□HA03 | -- 3 | 13 | 04 | 14 |
| 3RH2911-□FA04 | -- 4 | 14 | -- | -- |
| IC01_00716 | | | | |
| Auxiliary switch with 1 NO contact | | 3RT201 | 3RT201 | 3RT202 to 3RT204 |
| 3RH2911-□HA10 | 1 -- | 20 | 11 | 21 |

- 1 For screw terminals
- 2 For spring-loaded 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

Example 2

Basic unit: 3-pole 3RT2023 motor contactor with 1 NO + 1 NC
 Required: 1 NO + 4 NC (Ident. No. 14)
 Result: 3RH2911-.HA03 auxiliary switch

| | Example 1 | Example 2 |
|----------------------|---|---|
| Type | 3RT20 motor contactor, S00 with 1 NO | 3RT20 motor contactor, S00 with 1 NO + 1 NC |
| Sequence digit | 2. 3. 4. 5. | 3. 4. 5. 6. |
| Type | Auxiliary switch with 4 NC, H2911-.FA04 | Auxiliary switch 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 | 3RT20 motor contactor, S0 with aux. switch |
| 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 |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, instantaneous

| Additional auxiliary switches | | 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, 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 50012 ¹⁾ | | | According to EN 50012 ¹⁾ | | | | According to EN 50011 ¹⁾ | | |

Auxiliary switches, 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


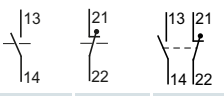
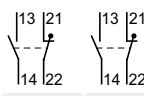


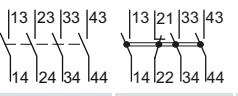
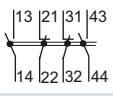
| | | | | | | | | | | | | | |
|---------------|---|----|--|----|----|----|----|----|----|----|-----|-----|-----|
| 3RH2911-□FA40 | 4 | -- | | 50 | 41 | 51 | 40 | 40 | 51 | 51 | 80E | 71X | 62X |
|---------------|---|----|--|----|----|----|----|----|----|----|-----|-----|-----|

¹⁾ Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

Switching devices – Contactors and contactor assemblies – for switching motors




Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, instantaneous









| Additional auxiliary switches | | 3-pole contactors | | | 4-pole contactors | | | | Contactor relays | | | | | |
|--|-------------------------------|---|---|--|-----------------------|---|--|---|-----------------------|---|-------------|---|--|--|
| Article number | Auxiliary contacts Version | S00 3RT201 | S0 to S3 3RT202, 3RT203, 3RT204, 3RT244 | S00 | S0 to S3 3RT231 | 3RT251 | S0 to S3 3RT232, 3RT233, 3RT234 | 3RT252, 3RT253, 3RT254 | S00 3RH21, 3RH24 | | | | | |
| | | S00 | S0 to S3 | S00 | S0 to S3 | | S0 to S3 | | 40E | 31E | 22E | | | |
| NO NC  | |  | |  | |  | |  | |  | |  | | |
| | | 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 switches, 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.



Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, instantaneous

| Additional auxiliary switches | | 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, 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 50011 ¹⁾ | | |

Auxiliary switches, 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 3/97.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, instantaneous

| Additional auxiliary switches | | 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 | | | | |
| | 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 50012 ¹⁾ | | | According to EN 50012 ¹⁾ | | | | According to EN 50011 ¹⁾ | | | |

Lateral auxiliary switches

| For size S00 | | Left | Right | | | | | | | | | | | |
|---------------|------|------|-------|----|----|----|----|----|----|----|----|----|----|----|
| 3RH2911-□DA02 | -- 2 | | | 12 | -- | -- | 02 | 02 | -- | -- | -- | -- | -- | -- |
| 3RH2911-□DA02 | -- 2 | | | 14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3RH2911-□DA11 | 1 1 | | | 21 | -- | -- | 11 | 11 | -- | -- | -- | -- | -- | -- |
| 3RH2911-□DA11 | 1 1 | | | 32 | -- | -- | 22 | 22 | -- | -- | -- | -- | -- | -- |
| 3RH2911-□DA20 | 2 -- | | | 30 | -- | -- | 20 | 20 | -- | -- | -- | -- | -- | -- |
| 3RH2911-□DA20 | 2 -- | | | 50 | -- | -- | 40 | 40 | -- | -- | -- | -- | -- | -- |
| 3RH2911-□DA20 | 2 -- | | | 41 | -- | -- | 31 | 31 | -- | -- | -- | -- | -- | -- |
| 3RH2911-□DA20 | 2 -- | | | 32 | -- | -- | 22 | 22 | -- | -- | -- | -- | -- | -- |
| 3RH2911-□DA11 | 1 1 | | | 23 | -- | -- | 13 | -- | -- | -- | -- | -- | -- | -- |

| For sizes S00 to S3 | | Left | Right | | | | | | | | | | | |
|---------------------|------|------|-------|----|----|----|----|----|----|----|----|----|----|----|
| 3RH2921-□DA02 | -- 2 | | | 12 | 03 | 13 | 02 | 02 | 13 | -- | -- | -- | -- | -- |
| 3RH2921-□DA02 | -- 2 | | | 14 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 3RH2921-□DA11 | 1 1 | | | 21 | 12 | 22 | 11 | 11 | 22 | 22 | -- | -- | -- | -- |
| 3RH2921-□DA11 | 1 1 | | | 32 | 23 | 33 | 22 | 22 | -- | -- | -- | -- | -- | -- |
| 3RH2921-□DA20 | 2 -- | | | 30 | 21 | 31 | 20 | 20 | 31 | 31 | -- | -- | -- | -- |
| 3RH2921-□DA20 | 2 -- | | | 50 | 41 | 51 | 40 | 40 | -- | -- | -- | -- | -- | -- |

¹⁾ Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold** print. All combinations comply with EN 50005.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, instantaneous

| Additional auxiliary switches | | 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 | | | |
| | 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 50012 ¹⁾ | | | According to EN 50012 ¹⁾ | | | | According to EN 50011 ¹⁾ | | |

Lateral auxiliary switches (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 | | | | | | | | | | |
| + 3RH2911-2DE11 | 1 | 1 | | 32 | -- | -- | 22 | 22 | -- | -- | -- | -- |
| | 1 | 1 | | | | | | | | | | |

| For sizes S00 to S3 | | Left | Right | | | | | | | | | |
|---------------------|---|------|-------|----|----|----|----|----|----|----|----|----|
| 3RH2921-□DE11 | 1 | 1 | | 21 | 12 | 22 | 11 | 11 | 22 | 22 | -- | -- |
| 3RH2921-□DE11 | 1 | 1 | | | | | | | | | | |
| + 3RH2921-□DE11 | 1 | 1 | | 32 | 23 | 33 | 22 | 22 | -- | -- | -- | -- |
| | 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.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, instantaneous

Selection and ordering data

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-loaded terminals | |
|---|-------------------------------|----|-----------------|-----------------|----|-------------------------|-----------------|
| | | | Article No. | Price per PU | | Article No. | Price per PU |
| Type | NO NC | d | d | d | d | d | d |

Auxiliary switches 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 | ▶ | 2 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 3/90.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, 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-loaded terminals |
|---|-------------------------|-------------------------------|----|------------------------|--------------|--------------------------------|
| Type | | NO NC NO NC | d | Article No. | Price per PU | Article No. Price per PU |

Auxiliary switches 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 switches, 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 3/90 and 3/91.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, instantaneous

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RH2911-1GA22



3RH2911-2GA22

| For contactor relays ¹⁾ | Contactor relay with auxiliary switch Ident. No. | Auxiliary contacts Version | SD | Screw terminals | SD | Spring-loaded terminals |
|------------------------------------|---|-------------------------------|----|-----------------------------|----|-----------------------------|
| Type | | NO NC | d | Article No. Price per PU | d | Article No. Price per PU |

Auxiliary switches for snapping onto the front

Size S00

Blocks for the assembly of contactor relays with 8 contacts

| 3RH2140, 3RH2440, Ident. No. 40E | 80E | 4 | -- | 53 63 73 83 54 64 74 84 | ▶ | 3RH2911-1GA40 | ▶ | 3RH2911-2GA40 |
|--|-----|----|----|--|---|---------------|---|---------------|
| | 71E | 3 | 1 | 53 61 73 83 54 62 74 84 | ▶ | 3RH2911-1GA31 | ▶ | 3RH2911-2GA31 |
| | 62E | 2 | 2 | 53 61 71 83 54 62 72 84 | ▶ | 3RH2911-1GA22 | ▶ | 3RH2911-2GA22 |
| | 53E | 1 | 3 | 53 61 71 81 54 62 72 82 | ▶ | 3RH2911-1GA13 | ▶ | 3RH2911-2GA13 |
| | 44E | -- | 4 | 51 61 71 81 52 62 72 82 | ▶ | 3RH2911-1GA04 | ▶ | 3RH2911-2GA04 |

¹⁾ For detailed information on use, see page 3/92.

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-loaded terminals |
|---|-------------------------------|----|-----------------------------|----|-----------------------------|
| Type | NO NC | d | Article No. Price per PU | d | Article No. Price per PU |

Auxiliary switches for snapping onto the front

Sizes S00 to S3

| 3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4 | 4 | -- | 53 63 73 83 54 64 74 84 | ▶ | 3RH2911-1XA40-0MA0 | ▶ | 3RH2911-2XA40-0MA0 |
|---|----|----|--|---|--------------------|---|--------------------|
| 3RH21, 3RH24 | 3 | 1 | 53 61 73 83 54 62 74 84 | ▶ | 3RH2911-1XA31-0MA0 | ▶ | 3RH2911-2XA31-0MA0 |
| | 2 | 2 | 53 61 71 83 54 62 72 84 | ▶ | 3RH2911-1XA22-0MA0 | ▶ | 3RH2911-2XA22-0MA0 |
| | -- | 4 | 51 61 71 81 52 62 72 82 | ▶ | 3RH2911-1XA04-0MA0 | ▶ | 3RH2911-2XA04-0MA0 |

¹⁾ For detailed information on use, see page 3/92.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, 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-loaded terminals | |
|----------------|--------------------|-------------|----|-----------------|--------------|----|-------------------------|--------------|
| | Ident. No. | Version | | Article No. | Price per PU | | Article No. | Price per PU |
| Type | | NO NC NO NC | d | | | d | | |

Auxiliary switches for snapping onto the front

Sizes S6 to S12

4-pole auxiliary switches

• According to EN 50012

| | | | | | | | | | | |
|----------------------|----|---|---|----|----|--|---|--------------------|---|--------------------|
| 3RT1.5 ... 3RT1.7 | 22 | 2 | 2 | -- | -- | | ▶ | 3RH1921-1XA22-0MA0 | 2 | 3RH1921-2XA22-0MA0 |
|----------------------|----|---|---|----|----|--|---|--------------------|---|--------------------|

1-pole auxiliary switches

• 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 | | -- | |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, 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-loaded terminals | |
|------------------------------|-------------------------------|----|-----------------|--------------|----|-------------------------|--------------|
| | | | Article No. | Price per PU | | Article No. | Price per PU |
| Type | NO NC | d | d | d | d | d | d |

Laterally mountable auxiliary switches,
 mounting onto the right and/or the left,
 2-pole

Size S00

| | | | Left | Right | | | | |
|--------|----|----|------|-------|---|----------------------|---|----------------------|
| 3RT2.1 | -- | 2 | | | ▶ | 3RH2911-1DA02 | 2 | 3RH2911-2DA02 |
| | 1 | 1 | | | ▶ | 3RH2911-1DA11 | | 3RH2911-2DA11 |
| | 2 | -- | | | ▶ | 3RH2911-1DA20 | | 3RH2911-2DA20 |

Sizes S0 to S3

| | | | Left | Right | | | | |
|--|----|----|------|-------|---|----------------------|--|----------------------|
| 3RT2.1 3RT2.2 ²⁾ 3RT2.3 ³⁾ 3RT2.4 ³⁾ | -- | 2 | | | ▶ | 3RH2921-1DA02 | | 3RH2921-2DA02 |
| | 1 | 1 | | | ▶ | 3RH2921-1DA11 | | 3RH2921-2DA11 |
| | 2 | -- | | | ▶ | 3RH2921-1DA20 | | 3RH2921-2DA20 |

¹⁾ For detailed information on use, see pages 3/93 and 3/94.

²⁾ With 3RT232. and 3RT252. contactors, mountable only onto the right.

³⁾ 3RH2921-1DA.. lateral auxiliary switches can only be mounted onto 3RT26 capacitor contactors of sizes S2 and S3.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, 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-loaded terminals |
|----------------|--------------------|----|-----------------|----|-------------------------|
| | Version | | | | |
| Type | NO NC | d | Article No. | d | Article No. |
| | | | Price per PU | | Price per PU |

Lateral auxiliary switches, mounting onto the right or the left, 2-pole

Sizes S6 to S12

| | Left | Right | | |
|--------------------------------|------|-------|-----------------|------------------|
| First auxiliary switch | | | | |
| • 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 |
| Second auxiliary switch | | | | |
| • 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 |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, 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 | | Spring-loaded terminals | |
|--|------|---------------------|----|-----------------|-----------------|-------------------------|-----------------|
| | | | | Article No. | Price per PU | Article No. | Price per PU |
| Type | | NO NC | d | | | | |

Solid-state compatible auxiliary switches, 2-pole

- For operation in dusty atmospheres
- For solid-state circuits with rated operational currents I_o /AC-14 and DC-13 from 1 to 300 mA at 3 to 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 switches for snapping onto the front

| 3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4 | 3RH21, 3RH24 | S00 | S0 ... S3 | 3RH2911-1NF02 | 3RH2911-2NF02 |
|---|-----------------|-----|-----------|---------------|---------------|
| S00 ... S3 | -- | 2 | 2 | 2 | 2 |
| 3RH21, 3RH24 | 1 | 1 | 1 | 3RH2911-1NF11 | 3RH2911-2NF11 |
| | 2 | -- | 2 | 3RH2911-1NF20 | 3RH2911-2NF20 |

Lateral auxiliary switches, mounting onto the right and/or the left, acc. to EN 50012

| | | Auxiliary switches | | | | | |
|------------------------------|------------|-------------------------|-------|--------------------|--------------------|---|---------------|
| | | Left | Right | | | | |
| 3RT2.1 | S00 | 1 | 1 | 41 53 42 54 | 23 31 24 32 | 2 | 3RH2911-2DE11 |
| 3RT2.2, 3RT2.3, 3RT2.4 | S0 ... S3 | 1 | 1 | 51 63 52 64 | 33 41 34 42 | ▶ | 3RH2921-2DE11 |
| | | First auxiliary switch | | | | | |
| | | Left | Right | | | | |
| 3RT1.5 ... 3RT1.7 | S6 ... S12 | 1 | 1 | 21 13 22 14 | 31 43 32 44 | ▶ | 3RH1921-2DE11 |
| | | Second auxiliary switch | | | | | |
| | | Left | Right | | | | |
| 3RT1.5 ... 3RT1.7 | S6 ... S12 | 1 | 1 | 61 53 62 54 | 71 83 72 84 | ▶ | 3RH1921-2JE11 |

¹⁾ For detailed information on use, see pages 3/92 and 3/94.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, 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 switches for mounting onto 3RT2 contactors

Size S0

Auxiliary contacts 1 NO and 1 NC¹⁾

ON-delay

| | | | | | | |
|----------------------|------------|----|---------------|---|--------|-----|
| 3RT202 ²⁾ | 0.1 ... 30 | 10 | 3RT2926-2PA01 | 1 | 1 unit | 41B |
| | 1 ... 60 | 10 | 3RT2926-2PA11 | 1 | 1 unit | 41B |

OFF-delay

| | | | | | | |
|----------------------|------------|----|---------------|---|--------|-----|
| 3RT202 ²⁾ | 0.1 ... 30 | 10 | 3RT2926-2PR01 | 1 | 1 unit | 41B |
| | 1 ... 60 | 10 | 3RT2926-2PR11 | 1 | 1 unit | 41B |



3RT2926-2P..1

¹⁾ In addition to these, no other auxiliary contacts are permitted.

²⁾ Cannot be fitted onto coupling contactors and coupling contactor relays.

Technical specifications, see [Equipment 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-loaded terminals | ⊕ |
|----------------|--|------------------------|-------------------------------|----|-----------------|-----------------|----|-------------------------|-----------------|
| Type | V | s | | d | Article No. | Price per PU | d | Article No. | Price per PU |

Solid-state time-delay auxiliary switches²⁾ 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 1 NO + 1 NC | 2 2 | 3RA2813-1AW10 3RA2813-1FW10 | 2 2 | 3RA2813-2AW10 3RA2813-2FW10 | 2 2 |
|--|------------------|---|---------------------|--------|--------------------------------|--------|--------------------------------|--------|

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 1 NO + 1 NC | 2 2 | 3RA2814-1AW10 3RA2814-1FW10 | 2 2 | 3RA2814-2AW10 3RA2814-2FW10 | 2 2 |
|--|------------------|---|---------------------|--------|--------------------------------|--------|--------------------------------|--------|

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 1 NO + 1 NC | 2 2 | 3RA2815-1AW10 3RA2815-1FW10 | 2 2 | 3RA2815-2AW10 3RA2815-2FW10 | 2 2 |
|--|------------------|---|---------------------|--------|--------------------------------|--------|--------------------------------|--------|

¹⁾ AC voltage values apply for 50 Hz and 60 Hz.

²⁾ The solid-state time-delay auxiliary switches are also available as 3RA28 function modules for mounting onto 3RT2 contactors and 3RH2 contactor relays, see [page 3/107](#).

³⁾ Cannot be fitted onto coupling contactors and coupling contactor relays.

⁴⁾ From product version E04 onwards, 3RA281.. solid-state time-delay auxiliary switches 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 changeover to the correct setting.

Technical specifications, see [page 3/84](#).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Auxiliary switches, 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 switches for mounting onto 3RT1 contactors | | | | | | | | | |
| Sizes S6 to S12 | | | | | | | | | |
| ON-delay²⁾ | | | | | | | | | |
|  | 3RT10, 3RT14 | 1 NO + 1 NC | 24 AC/DC | 0.05 ... 1 | 2 | 3RT1926-2EJ11 | 1 | 1 unit | 41H |
| | | | | 0.5 ... 10 | ▶ | 3RT1926-2EJ21 | 1 | 1 unit | 41H |
| | | | | 5 ... 100 | 2 | 3RT1926-2EJ31 | 1 | 1 unit | 41H |
| | | 100 ... 127 AC | 0.05 ... 1 | 15 | 3RT1926-2EC11 | 1 | 1 unit | 41H | |
| | | | 0.5 ... 10 | ▶ | 3RT1926-2EC21 | 1 | 1 unit | 41H | |
| | | | 5 ... 100 | 10 | 3RT1926-2EC31 | 1 | 1 unit | 41H | |
| | | 200 ... 240 AC | 0.05 ... 1 | 5 | 3RT1926-2ED11 | 1 | 1 unit | 41H | |
| | | | 0.5 ... 10 | ▶ | 3RT1926-2ED21 | 1 | 1 unit | 41H | |
| | | | 5 ... 100 | 2 | 3RT1926-2ED31 | 1 | 1 unit | 41H | |
| | OFF-delay without control signal²⁾³⁾ | | | | | | | | |
|  | 3RT10, 3RT14 | 1 NO + 1 NC | 24 AC/DC | 0.05 ... 1 | ▶ | 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 | ▶ | 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 + | 24 AC/DC | 1.5 ... 30 | ▶ | 3RT1926-2GJ51 | 1 | 1 unit | 41H |
| | | 1 NO | 100 ... 127 AC | 1.5 ... 30 | ▶ | 3RT1926-2GC51 | 1 | 1 unit | 41H |
| | | instantaneous, dead time 50 ms | 200 ... 240 AC | 1.5 ... 30 | ▶ | 3RT1926-2GD51 | 1 | 1 unit | 41H |

3RT1926-2G.51

1) The AC voltages are valid for 50 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 cables.

3) Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact changeover to the correct setting.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > 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 |
|----------------|---------|---|--------------|----|-------------|--------------|-------------------|-----|----|
| | | AC operation | DC operation | | | | | | |
| Type | | V AC | V DC | d | | | | | |

Surge suppressors without LED (also for spring-loaded terminals)

Size S00

For plugging onto the front of the contactors (with or without auxiliary switches)

| | | | | | | | | |
|-----------------|--|-------------|-------------|---|----------------------|---|--------|-----|
| 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 | -- | ▶ | 3RT2916-1CE00 | 1 | 1 unit | 41B |
| | | 400 ... 600 | -- | 2 | 3RT2916-1CF00 | 1 | 1 unit | 41B |
| 3RT2.1, 3RH2 | 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 |



3RT2916-1B.00

Size S0

For plugging into the front of the contactors (before mounting the auxiliary switch)

| | | | | | | | | |
|--------|---|-------------|-------------|---|----------------------|---|--------|-----|
| 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 | -- | ▶ | 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 |



3RT2926-1E.00

Sizes S2 and S3

For plugging into the front of the contactors (before mounting the auxiliary switch)

| | | | | | | | | |
|-------------------|---|-------------|-------------|---|----------------------|---|--------|-----|
| 3RT2.3, 3RT2.4 | Varistors²⁾ | 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 | -- | 2 | 3RT2936-1BE00 | 1 | 1 unit | 41B |
| | | 400 ... 600 | -- | 2 | 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 | -- | 2 | 3RT2936-1CE00 | 1 | 1 unit | 41B |
| | | 400 ... 600 | -- | 5 | 3RT2936-1CF00 | 1 | 1 unit | 41B |
| 3RT2.3, 3RT2.4 | Diode assemblies for DC operation | -- | 24 | ▶ | 3RT2936-1ER00 | 1 | 1 unit | 41B |
| | | -- | 30 ... 250 | ▶ | 3RT2936-1ES00 | 1 | 1 unit | 41B |



3RT2936-1B.F00

Size S3

For plugging into the two recesses on the left next to the connection block for auxiliary switches and coils A1 and A2. The connecting cables are wired to A1 and A2, see also page 3/11.

| | | | | | | | | |
|--------|--------------------|-------------|-------------|---|----------------------|---|--------|-----|
| 3RT2.4 | RC elements | 24 ... 48 | 24 ... 70 | 2 | 3RT2946-1CB00 | 1 | 1 unit | 41B |
| | | 48 ... 127 | 70 ... 150 | 2 | 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 |



3RT2946-1C.00

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.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Surge suppressors

| For contactors | 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 | -- | 20 |

Screw terminals



| Article No. | PU | 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 |



3RT1956-1C.02

| RC elements | 24 ... 48 | 24 ... 70 | ▶ |
|-------------|-------------|-------------|----|
| 3RT1.5 ... | 48 ... 127 | 70 ... 150 | 2 |
| 3RT1.7 | 127 ... 240 | 150 ... 250 | 2 |
| | 240 ... 400 | -- | 2 |
| | 400 ... 600 | -- | 20 |

Spring-loaded terminals



| Article No. | PU | PS* | PG |
|---------------|----|--------|-----|
| 3RT1956-1CB02 | 1 | 1 unit | 41B |
| 3RT1956-1CC02 | 1 | 1 unit | 41B |
| 3RT1956-1CD02 | 1 | 1 unit | 41B |
| 3RT1956-1CE02 | 1 | 1 unit | 41B |
| 3RT1956-1CF02 | 1 | 1 unit | 41B |

¹⁾ Can be used for AC operation for 50/60 Hz. Other voltages on request.

| For contactors | 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-loaded terminals)

Size S00



3RT2916-1J.00

For plugging onto the front of the contactors (with or without auxiliary switches)

| 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 | 2 |
| Suppression diodes | -- | 24 ... 70 | 20 ... 470 | ▶ |
| 3RT2.1, 3RH2 | -- | 50 ... 150 | 50 ... 700 | 2 |
| | -- | 150 ... 250 | 160 ... 950 | ▶ |

Size S0



3RT2926-1MR00

For plugging into the front of the contactors (before mounting the auxiliary switch)

| Varistors | 24 ... 48 | 12 ... 24 | 10 ... 120 | ▶ |
|------------------|-------------|------------|------------|---|
| 3RT2.2 | 48 ... 127 | 24 ... 70 | 20 ... 470 | ▶ |
| | 127 ... 240 | 70 ... 150 | 50 ... 700 | ▶ |
| Diode assemblies | -- | 24 | 20 ... 470 | ▶ |
| 3RT2.2 | | | | ▶ |

Sizes S2 and S3



3RT2936-1JJ00

For plugging into the front of the contactors (before mounting the auxiliary switch)

| Varistors | 24 ... 48 | 12 ... 24 | 10 ... 120 | ▶ |
|----------------|-------------|------------|------------|---|
| 3RT2.3, 3RT2.4 | 48 ... 127 | 24 ... 70 | 20 ... 470 | 2 |
| | 127 ... 240 | 70 ... 150 | 50 ... 700 | ▶ |

¹⁾ Can be used for AC operation for 50/60 Hz. Other voltages on request.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > 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



3RH2924-1GP11

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

3RT2.2

- 24 V DC control, 17 ... 30 V DC operating range



3RH2924-1GP11

1

1 unit

41B

Sizes S00 to S3



3RH2914-1GP11

For mounting onto the front of contactors with AC, DC or AC/DC operation

- 24 V DC control, 17 ... 30 V DC operating range

3RT2.1,
3RT2.2,
3RT2.3,
3RT2.4
3RH2



3RH2914-1GP11

1

1 unit

41B



3RH2914-2GP11

- 24 V DC control, 17 ... 30 V DC operating range

3RT2.1,
3RT2.2,
3RT2.3,
3RT2.4
3RH2

2

3RH2914-2GP11

1

1 unit

41B

Spring-loaded terminals

Technical specifications, [see page 3/86](#).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Modules for contactor control

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B

More information

Equipment Manual for 3RA28 function modules, 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 | | Spring-loaded terminals | |
|----------------|------|---------|---|------------------------|----|-----------------|--------------|-------------------------|--------------|
| | | | | | | Article No. | Price per PU | Article No. | Price per PU |

3RA28 function modules for mounting onto 3RT2 contactors and 3RH2 contactor relays

For direct-on-line starting

| Type | V AC/DC | s | d | Article No. | Price per PU | Article No. | Price per PU | |
|--|---------|---|-------------------------|---|--------------|--|--------------|--|
| 3RT2.1 ²⁾ , 3RT2.2 ²⁾ , 3RH21 ²⁾ , 3RH24 | S00, S0 | ON-delay 2-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 | 3RA2831-1DG10 3RA2831-1DH10 | 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 | 3RA2832-1DG10 3RA2832-1DH10 | 2 | 3RA2832-2DG10 3RA2832-2DH10 |

For star-delta (wye-delta) starting

| Type | V AC/DC | s | d | Article No. | Price per PU | Article No. | Price per PU | |
|--|------------|---|------------|---|--------------|----------------------|--------------|----------------------|
| 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

| Type | V AC/DC | s | d | Article No. | Price per PU | Article No. | Price per PU |
|-------|------------|------------------------|---|------------------|--------------|------------------|--------------|
| 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 contactors 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 3/87.

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 3/153.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Modules for contactor control

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B

More information

Equipment Manual for 3RA2711 function modules for IO-Link, see <https://support.industry.siemens.com/cs/ww/en/view/39319600>

Equipment Manual for 3RA2712 function modules for AS-Interface, see <https://support.industry.siemens.com/cs/ww/en/view/39318922>



3RA2711-1AA00

3RA2711-2AA00

3RA2711-1BA00

3RA2711-2BA00

3RA2712-1CA00

3RA2711-2CA00

| For contactors | Size | Version | SD | Screw terminals | | SD | Spring-loaded 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 | 5 | 3RA2712-2BA00 | | |
| | | Comprising one basic and one coupling module | | | | | | |
| Assembly kits for making 3-pole contactor assemblies | | | | | | | | |
| See page 3/111 | | | | | | | | |
| 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 3/112 | | | | | | | | |

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 3/154 to 3/157. 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 3/109.

⁴⁾ For complete contactor assemblies for star-delta (wye-delta) starting including function modules, see pages 3/171 to 3/174.

Technical specifications for 3RA27 function modules, see page 3/88.

For contactors with voltage tap-off, see pages 3/61, 3/65, 3/69 and 3/71.

For IO-Link masters and AS-Interface masters, routers and power supply units, see "Industrial Communication", page 2/1 onwards.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > 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 | 5 | 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 <u>Note:</u> Selection of module connectors, see Equipment Manual for 3RA2711 function modules for IO-Link . | 5 5 5 5 5 5 | 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 |
| 3RA2711-...A00 | Interface covers (Set of 5) | 5 | 3RA2711-0EE15 | | 1 | 1 unit | 41B |
| 3RA2711-...A00 | Cover, sealable | 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 | Connecting cable For connecting the operator panel to the coupling module Length 2 m, 10- to 14-pole | 5 | 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 |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > 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 | 2 | 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 |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > 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



3RA2926-1A

| | | | | | | | | |
|--------|------------|---|---|-------------------|--|---|--------|-----|
| 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 | | ▶ | 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



3RA2923-2AA1



3RA2923-2AA2



3RA2933-2AA1



3RA2943-2AA1



3RA2943-2AA2



3RA1953-2A



3RA1963-2A

| For contactors | Size | Version | SD | Article No. | Price per PU | SD | Article No. | Price per PU |
|----------------|----------------|---|----|---------------------|--------------|----|---------------------|--------------|
| Type | | | d | | | d | | |
| 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 3/115) • 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 3/115) • For main and auxiliary circuits 2 • Only for main circuit ³⁾ | 2 | 3RA2943-2AA1 | | 2 | 3RA2943-2AA2 | |
| 3RT1.5 | S6-S6 | The assembly kit contains: Wiring modules on the top and bottom | 5 | 3RA1953-2A | | 5 | 3RA1953-2A | |
| 3RT1.6 | S10-S10 | | 15 | 3RA1963-2A | | 15 | 3RA1963-2A | |
| 3RT1.7 | S12-S12 | | 15 | 3RA1973-2A | | 15 | 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.

²⁾ Version in size S0 with spring-loaded terminals:
Only the wiring modules for the main circuit are included.
No connecting clips are included for the auxiliary and control circuit.

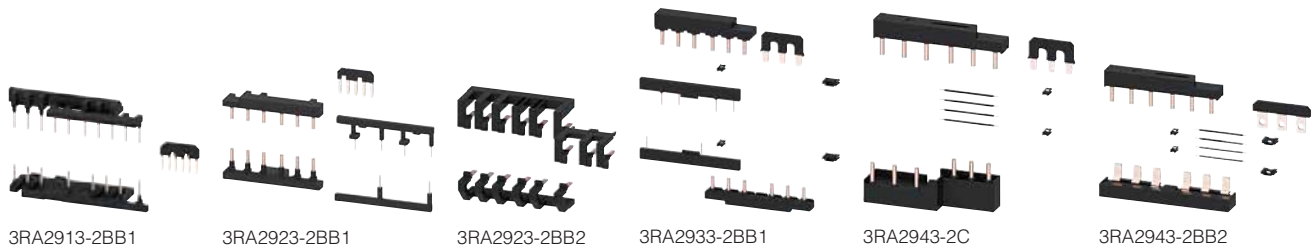
³⁾ Version in sizes S2 and S3 with spring-loaded terminals in the auxiliary and control circuits: Only the wiring modules for the main circuit are included.
A cable set is included for the auxiliary circuit.



Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Link modules

PU (UNIT, SET, M) = 1
 PS* = 1 unit (unless otherwise specified)
 PG = 41B



| For contactors | Size | Version | SD | Screw terminals  | | Spring-loaded terminals  | |
|---|--------------------|--|----|---|--------------|---|-----------------------|
| | | | | 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 of 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 of 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 |
| | | | | -- | 2 | | |
| 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 of the line contactor to the A2 coil contact of the delta contactor | 2 | ▶ 3RA2943-2C | | ▶ 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 of 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 | | -- | ▶ 3RA2943-2BB2 |
| | | | | -- | 2 | | |

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 3/115.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Link modules

PU (UNIT, SET, M) = 1
 PS* = 1 unit (unless otherwise specified)
 PG = 41B

| For contactors Type | Size | Version | SD | Article No. | Price per PU | SD | Article No. | Price per PU |
|--|-------------------|---------------------|--|--------------------------|--------------|----|----------------------------------|--------------|
| Single wiring modules for making 3-pole contactor assemblies | | | | | | | | |
| | | | | Screw terminals ⊕ | | | Spring-loaded terminals ⊕ | |
|  3RA2913-3DA1 | 3RT201 | S00-S00 | • Top (in-phase) PS = 5 units ▶ | 3RA2913-3DA1 | 2 | | 3RA2913-3DA2 | |
| | | | • Bottom (with phase reversal) PS = 5 units ▶ | 3RA2913-3EA1 | 5 | | 3RA2913-3EA2 | |
|  3RA2913-3DA2 | 3RT202 | S0-S0 | • Top (in-phase) PS = 5 units ▶ | 3RA2923-3DA1 | 5 | | 3RA2923-3DA2 | |
| | | | • Bottom (with phase reversal) PS = 5 units ▶ | 3RA2923-3EA1 | 5 | | 3RA2923-3EA2 | |
|  3RA1933-3D | 3RT203 | S2-S2 | • Top (in-phase), contactor clearance 10 mm ▶ | 3RA1933-3D | | | 3RA1933-3D | |
| | | | • Bottom (with phase reversal), contactor clearance 10 mm ▶ | 3RA1933-3E | 2 | | 3RA1933-3E | |
|  3RA1943-3E | 3RT204 | S3-S3 | • Top (in-phase), contactor clearance 10 mm ▶ | 3RA1943-3D | | | 3RA1943-3D | |
| | | | • Bottom (with phase reversal), contactor clearance 10 mm ▶ | 3RA1943-3E | 2 | | 3RA1943-3E | |
|  3RA1953-3D | 3RT1.5 | S6-S6 | • Top (in-phase, for connection with box terminal), contactor clearance 10 mm ▶ | 3RA1953-3D | 5 | | 3RA1953-3D | |
| | | | • Top (with phase reversal, for connection without box terminal), contactor clearance 10 mm ▶ | 3RA1953-3P | 5 | | 3RA1953-3P | |
| Star jumpers (links for paralleling), 3-pole | | | | | | | | |
| | | | | Screw terminals ⊕ | | | Spring-loaded terminals ⊕ | |
|  3RT1916-4BA31 | 3RT201 | S00 | With through-hole The links for paralleling can be reduced by one pole. ▶ | 3RT1916-4BA31 | 2 | | 3RT2916-4BA32 | |
|  3RT2926-4BA32 | 3RT202 | S0 | Without connecting terminal ▶ | 3RT1926-4BA31 | | | 3RT2926-4BA32 | |
|  3RT1936-4BA31 | 3RT203 | S2 | ▶ | 3RT1936-4BA31 | | | 3RT1936-4BA31 | |
|  3RT1946-4BA31 | 3RT204 | S3 | ▶ | 3RT1946-4BA31 | 20 | | 3RT1946-4BA31 | |
|  3RT1956-4BA31 | 3RT1.5 | S6 | ▶ | 3RT1956-4BA31 | 5 | | 3RT1956-4BA31 | |
|  3RT1966-4BA31 | 3RT1.6, 3RT1.7 | S10, S12 | ▶ | 3RT1966-4BA31 | 5 | | 3RT1966-4BA31 | |


Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > 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 ¹⁾ | S6 (3RT1)-S6 (3RT1)-S3 (3RT2)¹⁾ | 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. | 20 | 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 adaptation 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. | ▶ | | | | | | | | | | |
| | 3RT105 | S6-S6 | | | | | | | 3-pole version • Without contactor clearance • With 10 mm contactor clearance • With 10 mm contactor clearance (1 unit corresponds to 2 parts for 1 assembly) | 2 | 3RA2932-2C | 1 | 10 units | 41B |
| | | | | | | | | | 4-pole version • With 20 mm contactor clearance • With 10 mm contactor clearance | 10 | 3RA2932-2D | 1 | 10 units | 41B |
|  3RA2942-2G | 3RT233, 3RT234. | S2-S2, S3-S3 | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |





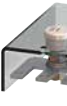

¹⁾ The 3RA1954-2G adapter cannot be used in conjunction with 3RT204.-.KB coupling contactors, size S3.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Connection 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 | | | | | | | |
|  3RT1916-4BB31 | 3RT201 | S00 | • Max. conductor cross-section: 25 mm ² , stranded ▶ | 3RT1916-4BB31 | 1 | 1 unit | 41B |
|  3RT2926-4BB31 | 3RT202 | S0 | • Max. conductor cross-section: 50 mm ² , stranded ▶ | 3RT2926-4BB31 | 1 | 1 unit | 41B |
|  3RT1936-4BB31 | 3RT203 | S2 | • Max. conductor cross-section: 120 mm ² , stranded ▶ | 3RT1936-4BB31 | 1 | 1 unit | 41B |
|  3RT1946-4BB31 | 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). | 3RT1946-4BB31 | 1 | 1 unit | 41B |
|  3RT1916-4BB41 | 3RT231, 3RT251 | S00 | • Max. conductor cross-section: 25 mm ² , stranded ▶ | 3RT1916-4BB41 | 1 | 1 unit | 41B |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Connection modules/adapters

| | For contactors | Size | Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|------------------------------|---------------------|--|----|--------------------|--------------|-------------------|----------|-----|
| Type | d | | | | | | | | |
| 1-phase infeed terminals | | | | | | | | | |
|  | 3RT204, 3RT244, 3RT264 | S3 | Conductor cross-section: 95 mm ² | 2 | 3RA2943-3L | | 1 | 1 unit | 41B |
| 3RA2943-3L | | | | | | | | | |
| 3-phase infeed terminals | | | | | | | | | |
|  | 3RT201 | S00 | Max. conductor cross-section: up to 10 mm ² , AWG 12 ... 8 | 2 | 3RA2913-3K | | 1 | 10 units | 41B |
| 3RA2913-3K | | | | | | | | | |
|  | 3RT202, 3RT262 | S0 | Max. conductor cross-section: up to 25 mm ² , AWG 10 ... 2/0 | ▶ | 3RV2925-5AB | | 1 | 1 unit | 41E |
| 3RV2925-5AB | | | | | | | | | |
|  | 3RT203, 3RT263 | S2 | Max. conductor cross-section: up to 70 mm ² , AWG 10 ... 2/0 | ▶ | 3RV2935-5A | | 1 | 1 unit | 41E |
| 3RV2935-5A | | | | | | | | | |
| 3-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 |
| 3RV2935-5E | | | | | | | | | |
| 3-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 |
| 3RV1915-1AB | | | | | | | | | |
| 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. | | | | | | | | | |
|  | 3RT204 | S3 | • 3-pole, for connection of main contacts, 2.5 to 70 mm ² | X | 3RT2946-4G | | 1 | 1 unit | 41B |
| 3RT1956-4G | 3RT1.5 | S6 | • Up to 70 mm ² , as standard on 3RT1054-1 contactor (55 kW) | ▶ | 3RT1955-4G | | 1 | 1 unit | 41B |
| | | | • Up to 120 mm ² | ▶ | 3RT1956-4G | | 1 | 1 unit | 41B |
|  | 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 | 5 | 3TX7500-0A | | 1 | 1 unit | 41B |
| 3TX7500-0A | | | | | | | | | |
|  | 3RT204 | S3 | Auxiliary terminals, 3-pole | 2 | 3RT2946-4F | | 1 | 1 unit | 41B |
| 3RT2946-4F | | | | | | | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Connection 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 onto printed circuit boards up to 5.5 kW / 12 A | | | | | | | | | | |
|  3RT1916-4KA1 | 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. | Screw terminals  | | | | | |
| | | | | | 3RT1916-4KA1 | | 1 | 4 units | 41B | |
|  3RT1916-4KA2 | 3RT2.1, 3RH21 | S00 | 5 | Assembly kit for soldering contactors with 4-pole mounted auxiliary switch onto a printed circuit board <u>Note:</u> For 1 contactor, 1 set is required. | Screw terminals  | | | | | |
| | | | | | 3RT1916-4KA2 | | 1 | 4 units | 41B | |
| Coil connection modules for connections from top or from below | | | | | | | | | | |
|  3RT2926-4RA11 | 3RT2.2, 3RT2.3, 3RT2.4 | S0 to S3 | • Connection from top • Connection from below • Connection diagonally | 2 2 5 | 3RT2926-4RA11 3RT2926-4RB11 3RT2926-4RC11 | | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B | |
| |  3RT2926-4RA12 | 3RT2.2 | S0 | • Connection from top • Connection from below | 5 5 | Spring-loaded terminals  3RT2926-4RA12 3RT2926-4RB12 | | 1 1 | 1 unit 1 unit | 41B 41B |
| | | | | | | | | | | |
| Connection module (adapter and plug) for contactors with screw terminals | | | | | | | | | | |
|  3RT1926-4RD01 | 3RT201, 3RH2 | S00 | 5 | The connection module comprises an adapter and a motor feeder connector. Adapters Ambient temperature $t_{u \max} = 60 \text{ °C}$ • Rated operational current I_{θ} at AC-3/400 V: 20 A | Screw terminals  | | | | | |
| | 3RT202 | S0 | 5 | • Rated operational current I_{θ} at AC-3/400 V: 25 A | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG | |
| | | | | | | | | | | |
|  3RT1900-4RE01 | 3RT201, 3RT202, 3RH2 | S00, S0 | 5 | Motor feeder connector | 3RT1916-4RD01 | | 1 | 1 unit | 41B | |
| | | | | | 3RT1926-4RD01 | | 1 | 1 unit | 41B | |
| | | | | | 3RT1900-4RE01 | | 1 | 1 unit | 41B | |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > 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 3RT2946-4EA2 | 1 1 | 1 unit 1 unit 41B 41B |
|  |  | 3RT1.5 3RT1.6, 3RT1.7 | S6¹⁾ S10¹⁾, S12¹⁾ | ▶ | 3RT1956-4EA2 3RT1966-4EA2 | 1 1 | 1 unit 1 unit 41B 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 3RT2946-4EA4 | 1 1 | 1 unit 1 unit 41B 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 | ▶ | 3RT1946-4EA1 3RT1956-4EA1 3RT1966-4EA1 | 1 1 1 | 1 unit 1 unit 1 unit 41B 41B 41B |
|  | | 3RT1.5 | S6 | • For the assembly kits for 3RA1953-... contactor assemblies for star-delta (wye-delta) starting (page 3/113) or for the 3RA1953-3 single wiring modules. (page 3/114) - Length: 38 mm | ▶ | 3RT1956-4EA4 | 1 | 1 unit 41B |
| Terminal covers for busbar connections | | | | | | | | |
|  |  | 3RT1.5 3RT1.6, 3RT1.7 | S6 S10²⁾, S12²⁾ | • Cover the three busbar connections, between the contactor and 3RB2 overload relay - Length: 27 mm - Length: 42 mm | ▶ | 3RT1956-4EA3 3RT1966-4EA3 | 1 1 | 1 unit 1 unit 41B 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 3TX6546-3B | 1 1 | 1 unit 1 unit 41B 41B |
| Sealable covers | | | | | | | | |
|  |  | 3RT2.1, 3RT2.2, 3RT2.3, 3RT2.4, 3RH2 ³⁾ 3RT1.5 ... 3RT1.7 ³⁾ | S00 ... S3 S6 ... S12 | For preventing manual operation (Not suitable for coupling contactors) | ▶ ▶ | 3RT2916-4MA10 3RT1926-4MA10 | 1 1 | 5 units 5 units 41B 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 mounted onto the front.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > 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 | | 15 | 3RA1962-2A | | 1 | 1 unit 41B |
| | 3RT1.7 | S12 | | 15 | 3RA1972-2A | | 1 | 1 unit 41B |
| 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 |
|  | | | | | | | | |
| 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 |
| Connection kit for one complete contactor | | | | | | | | |
|  | 3RT105 | S6 | Each set includes 6 screws, spring washers and nuts. M 8 x 25 | 5 | 3RT1955-4PA00 | | 1 | 1 unit 41B |
| | 3RT106, 3RT107 | S10, S12 | M 10 x 30 | 5 | 3RT1966-4PA00 | | 1 | 1 unit 41B |
|  | 3RT1955-4PA00 | | | | | | | |
| EMC suppression modules; 3-phase, up to 7.5 kW | | | | | | | | |
| For contactors with AC or DC operation | | | | | | | | |
|  | 3RT201 | S00 | RC elements (3 x 220 Ω/0.22 μF) <ul style="list-style-type: none"> Up to 400 V Up to 575 V Up to 690 V | 2 | 3RT2916-1PA1 3RT2916-1PA2 3RT2916-1PA3 | | 1 | 1 unit 41B 1 unit 41B 1 unit 41B |
| | 3RT201 | S00 | Varistors <ul style="list-style-type: none"> Up to 400 V Up to 575 V Up to 690 V | 2 2 15 | 3RT2916-1PB1 3RT2916-1PB2 3RT2916-1PB3 | | 1 1 1 | 1 unit 41B 1 unit 41B 1 unit 41B |
| Screw terminals  | | | | | | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors




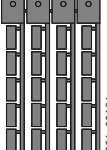

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Miscellaneous accessories

| For contactors | Size | Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|----------------|--------------------|---|-------------|----------------------|-------------------|-----------|-----|
| Additional load modules | | | | | | | | |
|  3RT2916-1GA00 | 3RT2.1, 3RH2 | S00 | | | | | | |
| | | | <p>For plugging onto the front of the contactors with or without auxiliary switches</p> <p>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</p> <p>Rated voltage: 50/60 Hz AC, 180 ... 255 V Operating range: 0.8 ... 1.1 x U_s</p> | d | 3RT2916-1GA00 | | 1 1 unit | 41B |
| LED modules for displaying contactor operation | | | | | | | | |
|  3RT2926-1QT00 | 3RT2, 3RT1 | S00 ... S12 | | | | | | |
| | | | <p>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.</p> <p>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.</p> <p>Rated voltage: 24 ... 240 V AC/DC with reverse polarity protection</p> | 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 |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Miscellaneous accessories

| For contactors | Size | Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|--------------------------------|--------------------|----|----------------------|--------------|-------------------|------------|-----|
| Insulation stop for securely holding back the conductor insulation for conductors up to 1 mm² | | | | | | | | |
| Insulation stop strip | | | | | | | | |
|  | 3RT2.1, 3RH2 | S00 | 2 | 3RT2916-4JA02 | | 1 | 20 units | 41B |
|  | 3RT2.2 ... 3RT2.4, 3RT1, 3RH29 | S0 ... S12 | 5 | 3RT1916-4JA02 | | 1 | 20 units | 41B |
| Tools for opening spring-loaded terminals | | | | | | | | |
|  | 3RT, 3RH | S00 ... S12 | 2 | 3RA2908-1A | | 1 | 1 unit | 41B |
| Blank labels | | | | | | | | |
|  | 3RT | S00 ... S12 | 20 | 3RT2900-1SB10 | | 100 | 816 units | 41B |
| | | | 20 | 3RT2900-1SB20 | | 100 | 340 units | 41B |
|  | 3RT | S00 ... S12 | 5 | 3RT2900-1SB60 | | 100 | 3060 units | 41B |

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

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Spare parts for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Solenoid coils

Selection and ordering data

Screw terminals and spring-loaded 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:

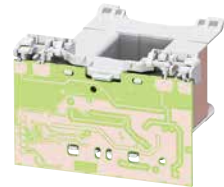
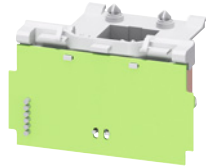
Contactors with AC and AC/DC coils have different depths. It is only possible to replace the coils on AC contactors with AC coils. It is not possible to replace the coils on DC contactors.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Spare parts for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Solenoid coils

Screw terminals and spring-loaded 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 | -- | -- | 2 | 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 | -- | -- | 2 | 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 | -- | 2 | 3RT2934-5AR61 | | 1 | 1 unit | 41B |

Size S3

| | | | | | | | | | | |
|------------|-----|-----|-----|----|----|---------------|--|---|--------|-----|
| 3RT204.-A, | 24 | -- | -- | -- | 5 | 3RT2944-5AB01 | | 1 | 1 unit | 41B |
| 3RT234.-A, | 42 | -- | -- | -- | 10 | 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 | -- | -- | 10 | 3RT2944-5AD21 | | 1 | 1 unit | 41B |
| | | 48 | -- | -- | 5 | 3RT2944-5AH21 | | 1 | 1 unit | 41B |
| | | 110 | -- | -- | 2 | 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 | -- | 10 | 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 | 10 | 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 | 10 | 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:





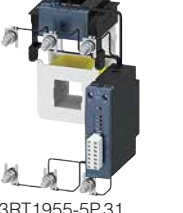

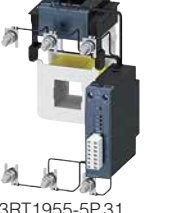





It is only possible to replace the coils on AC contactors with AC coils, and on AC/DC contactors with AC/DC coils.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Spare parts for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > 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-loaded terminals | |
|--|---------------|------------------------------------|-------------------|-----------------|---------------|-------------------------|---------------|
| Size | Type | V | d | Article No. | Price per PU | Article No. | Price per PU |
| Withdrawable coils | | | | | | | |
| Standard operating mechanism for AC/DC | | | | | | | |
|  | 3RT1955-5A.31 | 3RT105, 3RT145 | 23 ... 26 AC/DC | 5 | 3RT1955-5AB31 | 5 | 3RT1955-5AB32 |
| | | | 42 ... 48 AC/DC | 5 | 3RT1955-5AD31 | X | 3RT1955-5AD32 |
| | | | 110 ... 127 AC/DC | ▶ | 3RT1955-5AF31 | 5 | 3RT1955-5AF32 |
| | | | 200 ... 220 AC/DC | 5 | 3RT1955-5AM31 | 5 | 3RT1955-5AM32 |
| | | | 220 ... 240 AC/DC | ▶ | 3RT1955-5AP31 | 5 | 3RT1955-5AP32 |
| | | | 240 ... 277 AC/DC | 5 | 3RT1955-5AU31 | X | 3RT1955-5AU32 |
| | | | 380 ... 420 AC/DC | 5 | 3RT1955-5AV31 | 5 | 3RT1955-5AV32 |
| | | | 440 ... 480 AC/DC | 5 | 3RT1955-5AR31 | X | 3RT1955-5AR32 |
| | | | 500 ... 550 AC/DC | 5 | 3RT1955-5AS31 | X | 3RT1955-5AS32 |
| | | | 575 ... 600 AC/DC | 5 | 3RT1955-5AT31 | X | 3RT1955-5AT32 |
|  | 3RT1955-5A.32 | 3RT106, 3RT146 | 23 ... 26 AC/DC | 5 | 3RT1965-5AB31 | 5 | 3RT1965-5AB32 |
| | | | 42 ... 48 AC/DC | 5 | 3RT1965-5AD31 | X | 3RT1965-5AD32 |
| | | | 110 ... 127 AC/DC | ▶ | 3RT1965-5AF31 | 5 | 3RT1965-5AF32 |
| | | | 200 ... 220 AC/DC | 5 | 3RT1965-5AM31 | X | 3RT1965-5AM32 |
| | | | 220 ... 240 AC/DC | ▶ | 3RT1965-5AP31 | 5 | 3RT1965-5AP32 |
| | | | 240 ... 277 AC/DC | 5 | 3RT1965-5AU31 | X | 3RT1965-5AU32 |
| | | | 380 ... 420 AC/DC | 5 | 3RT1965-5AV31 | 5 | 3RT1965-5AV32 |
| | | | 440 ... 480 AC/DC | 5 | 3RT1965-5AR31 | X | 3RT1965-5AR32 |
| | | | 500 ... 550 AC/DC | 5 | 3RT1965-5AS31 | X | 3RT1965-5AS32 |
| | | | 575 ... 600 AC/DC | 5 | 3RT1965-5AT31 | X | 3RT1965-5AT32 |
|  | 3RT1955-5A.33 | 3RT107, 3RT147 | 23 ... 26 AC/DC | 5 | 3RT1975-5AB31 | 5 | 3RT1975-5AB32 |
| | | | 42 ... 48 AC/DC | 5 | 3RT1975-5AD31 | X | 3RT1975-5AD32 |
| | | | 110 ... 127 AC/DC | 5 | 3RT1975-5AF31 | X | 3RT1975-5AF32 |
| | | | 200 ... 220 AC/DC | 5 | 3RT1975-5AM31 | X | 3RT1975-5AM32 |
| | | | 220 ... 240 AC/DC | ▶ | 3RT1975-5AP31 | 5 | 3RT1975-5AP32 |
| | | | 240 ... 277 AC/DC | 5 | 3RT1975-5AU31 | X | 3RT1975-5AU32 |
| | | | 380 ... 420 AC/DC | 5 | 3RT1975-5AV31 | X | 3RT1975-5AV32 |
| | | | 440 ... 480 AC/DC | 5 | 3RT1975-5AR31 | 5 | 3RT1975-5AR32 |
| | | | 500 ... 550 AC/DC | 5 | 3RT1975-5AS31 | X | 3RT1975-5AS32 |
| | | | 575 ... 600 AC/DC | 5 | 3RT1975-5AT31 | X | 3RT1975-5AT32 |
| Solid-state operating mechanism for AC/DC with 24 V DC control signal input e.g. for control by PLC | | | | | | | |
|  | 3RT1955-5N.31 | 3RT105, 3RT145 | 21 ... 27.3 AC/DC | 5 | 3RT1955-5NB31 | X | 3RT1955-5NB32 |
| | | | 96 ... 127 AC/DC | 5 | 3RT1955-5NF31 | X | 3RT1955-5NF32 |
| | | | 200 ... 277 AC/DC | 5 | 3RT1955-5NP31 | 5 | 3RT1955-5NP32 |
|  | 3RT1955-5N.32 | 3RT106, 3RT146 | 21 ... 27.3 AC/DC | 5 | 3RT1965-5NB31 | 5 | 3RT1965-5NB32 |
| | | | 96 ... 127 AC/DC | 5 | 3RT1965-5NF31 | 5 | 3RT1965-5NF32 |
| | | | 200 ... 277 AC/DC | 5 | 3RT1965-5NP31 | 5 | 3RT1965-5NP32 |
|  | 3RT1955-5N.33 | 3RT107, 3RT147 | 21 ... 27.3 AC/DC | 5 | 3RT1975-5NB31 | X | 3RT1975-5NB32 |
| | | | 96 ... 127 AC/DC | 5 | 3RT1975-5NF31 | 5 | 3RT1975-5NF32 |
| | | | 200 ... 277 AC/DC | 5 | 3RT1975-5NP31 | 5 | 3RT1975-5NP32 |
| <ul style="list-style-type: none"> • Additionally with PLC relay output and remaining lifetime indicator (RLT) (withdrawable coil with laterally mounted solid-state module) | | | | | | | |
|  | 3RT1955-5P.31 | 3RT105, 3RT145 | 96 ... 127 AC/DC | 5 | 3RT1955-5PF31 | | -- |
| | | | 200 ... 277 AC/DC | 5 | 3RT1955-5PP31 | | -- |
| | | | | | | | |
|  | 3RT1955-5P.32 | 3RT106, 3RT146 | 96 ... 127 AC/DC | 5 | 3RT1965-5PF31 | | -- |
| | | | 200 ... 277 AC/DC | 5 | 3RT1965-5PP31 | | -- |
| | | | | | | | |
|  | 3RT1955-5P.33 | 3RT107, 3RT147 | 96 ... 127 AC/DC | X | 3RT1975-5PF31 | | -- |
| | | | 200 ... 277 AC/DC | X | 3RT1975-5PP31 | | -- |
| | | | | | | | |
| Solid-state operating mechanism for DC with 24 ... 110 V DC control signal input e.g. for control by PLC with extended application range (see also contactors for railway applications on page 4/61) | | | | | | | |
|  | 3RT1955-5X.42 | 3RT105...-X...- OLA2 | 24 DC | -- | | 5 | 3RT1955-5XB42 |
| | | | 72 DC | -- | | X | 3RT1955-5XJ42 |
| | | | 110 DC | -- | | 5 | 3RT1955-5XF42 |
|  | 3RT1955-5X.43 | 3RT106...-X...- OLA2 | 24 DC | -- | | 5 | 3RT1965-5XB42 |
| | | | 72 DC | -- | | X | 3RT1965-5XJ42 |
| | | | 110 DC | -- | | 5 | 3RT1965-5XF42 |
|  | 3RT1955-5X.44 | 3RT107...-X...- OLA2 | 24 DC | -- | | 5 | 3RT1975-5XB42 |
| | | | 72 DC | -- | | X | 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.











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

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Spare parts for SIRIUS 3RT contactors and SIRIUS 3RH2 contactor relays > Contacts and arc chutes

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) | 5 | 3RT2935-6A | 1 | 1 unit | 41B |
| | | | 3RT2036 | for utilization category AC-3 | 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 |
|  | 3RT1954-6A | S3 | 3RT2045 | | 2 | 3RT2945-6A | 1 | 1 unit | 41B |
| | | | 3RT2046 | | 2 | 3RT2946-6A | 1 | 1 unit | 41B |
| | | | 3RT2047 | | 5 | 3RT2947-6A | 1 | 1 unit | 41B |
|  | 3RT1954-6A | S6 | 3RT1054 | | ▶ | 3RT1954-6A | 1 | 1 unit | 41B |
| | | | 3RT1055 | | ▶ | 3RT1955-6A | 1 | 1 unit | 41B |
| | | | 3RT1056 | | ▶ | 3RT1956-6A | 1 | 1 unit | 41B |
|  | 3RT1954-6A | S10 | 3RT1064 | | ▶ | 3RT1964-6A | 1 | 1 unit | 41B |
| | | | 3RT1065 | | ▶ | 3RT1965-6A | 1 | 1 unit | 41B |
| | | | 3RT1066 | | ▶ | 3RT1966-6A | 1 | 1 unit | 41B |
|  | 3RT197.-6A, 3RT1976-6D | S12 | 3RT1075 | | ▶ | 3RT1975-6A | 1 | 1 unit | 41B |
| | | | 3RT1076 | | ▶ | 3RT1976-6A | 1 | 1 unit | 41B |
| | | S3 | 3RT2446 | | Main contacts (3 NO contacts) | 10 | 3RT2946-6D | 1 | 1 unit |
| | 3RT2448 | for utilization category AC-1 | 10 | 3RT2948-6D | 1 | 1 unit | 41B | | |
|  | 3RT197.-6A, 3RT1976-6D | 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 | | 10 | 3RT1967-6D | 1 | 1 unit | 41B |
| | 3RT1476 | S12 | 3RT1476 | | 5 | 3RT1976-6D | 1 | 1 unit | 41B |
| For contactors with 4 main contacts | | | | | | | | | |
|  | 3RT2936-6E | S2 | 3RT2336 | Main contacts (4 NO contacts) | 10 | 3RT2936-6E | 1 | 1 unit | 41B |
| | | | 3RT2337 | for utilization category AC-1 | 10 | 3RT2937-6E | 1 | 1 unit | 41B |
| | | | | (1 set = 3 movable and 6 fixed switching elements and spare pole with fixing parts) | | | | | |
| Arc chutes | | | | | | | | | |
| For contactors with 3 main contacts | | | | | | | | | |
|  | 3RT195.-7. | 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 |
|  | 3RT196.-7. | 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 |
|  | 3RT197.-7. | 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 |

Switching devices – Contactors and contactor assemblies – for switching motors

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 3/119 and 3/140).

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 3/128.

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 7/123 onwards) can be mounted onto 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 switches. These can be fitted with up to eight lateral auxiliary contacts (identical auxiliary switches 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.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT12 and 3TF6 vacuum contactors

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 for modular system, see <https://support.industry.siemens.com/cs/ww/en/view/60311318>
 Equipment Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60306557>
 Application Manual for controls with IE3/IE4 motors, see <https://support.industry.siemens.com/cs/ww/en/view/94770820>
 Configuration Manual for load feeders, see <https://support.industry.siemens.com/cs/ww/en/view/39714188>
 Configuration Manual for 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 low inductive or non-inductive AC loads (AC-1) and motor-driven 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_o 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.

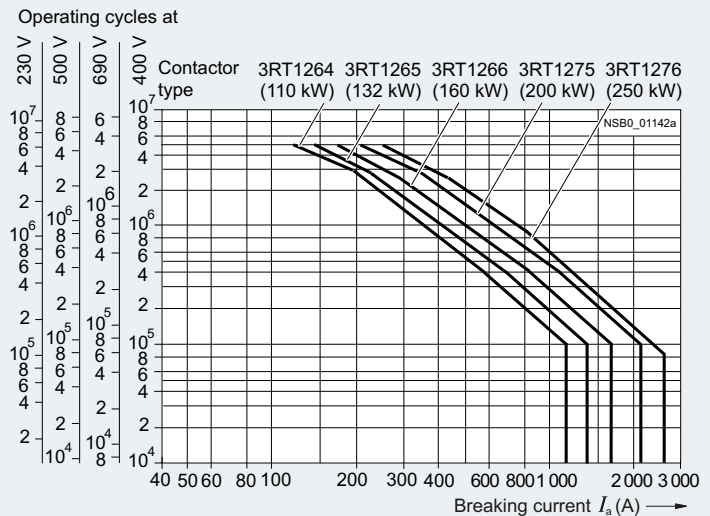
If a shorter contact endurance is sufficient, the rated operational current $I_o/AC-4$ can be increased.

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 ($I_a = I_o$) in operating cycles
- B Contact endurance for inching ($I_a = \text{multiple of } I_o$) in operating cycles
- C Inching operations as a percentage of total switching operations



Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT12 and 3TF6 vacuum contactors

| Type | Vacuum contactors | | |
|--|-------------------|---|------|
| Size | 3TF6 | | |
| 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 | | | |
| • At 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 | | | |
| • At 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 | | Auxiliary contacts with delayed NC contact: | |
| • At rated operational voltage U_e | | N S = No specification | |
| - At 24 V | A | 10 | 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 |

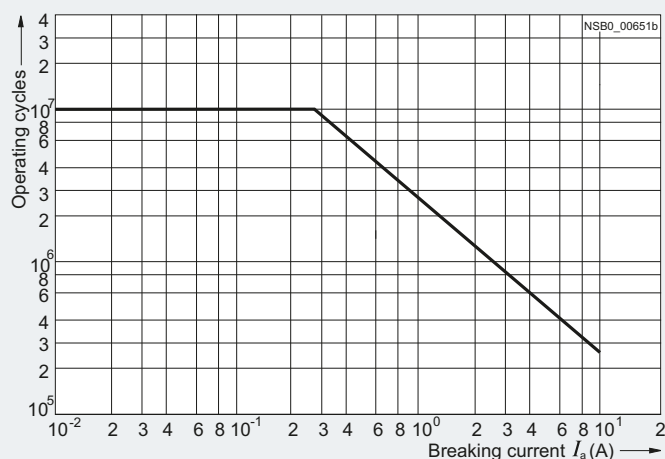
Ⓢ and Ⓣ rated data of the auxiliary contacts

| | | |
|----------------------------|--------------|-----|
| 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.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT12 and 3TF6 vacuum contactors

Type
Size

Vacuum contactors
3TF6
14

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching low inductive or non-inductive AC loads (AC-1) and motor-driven 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 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:

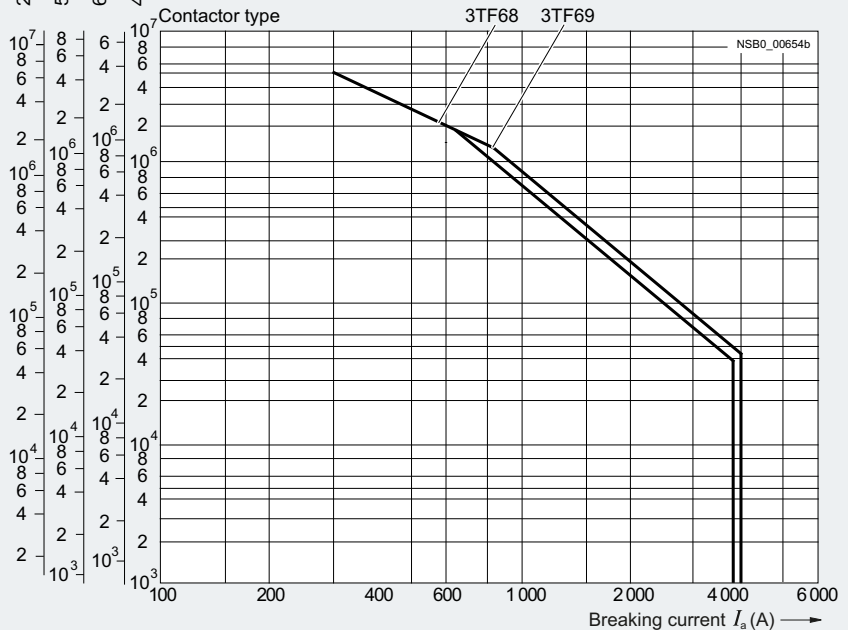
$$X = \frac{A}{1 + \frac{C}{100} \left(\frac{A}{B} - 1 \right)}$$

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

3RT127

Vacuum contactors

3TF68

3TF69

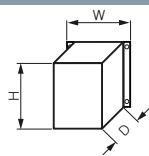
S10

S12

14

General data

Dimensions (W x H x D)



mm

145 x 210 x 206

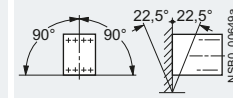
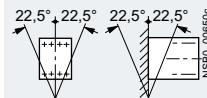
160 x 214 x 225

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 to 80% of the normal values.

No

Yes

No

Yes

Mechanical endurance

Operating cycles

10 million

5 million

Electrical endurance

Contact endurance of the main contacts

[See page 3/128](#)

[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 respectively.

Switching devices – Contactors and contactor assemblies – for switching motors

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 IP on the front acc. to IEC 60529 | | | | |
| | | IP00 (IP20 with box terminal/cover) | | 3TF6...-C...: IP00 (IP20 with cover); 3TF6...-D../-Q...: IP00 |
| Touch protection on the front acc. to IEC 60529 | | | | |
| | | Finger-safe for vertical touching from the front with box terminal/cover | | 3TF6...-C...: Finger-safe for vertical touching from the front with cover; 3TF6...-D../-Q...: -- |
| 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 and 5.7/10 |
| • Sine pulse | | | | 9.5/5 and 5.7/10 |
| - 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 |
| Electromagnetic compatibility (EMC) | | | | |
| See page 3/127 | | | | |
| 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 | 500 |
| • 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. However, derating must be taken into account for these contactors too:
- AC-1: $I_e = 782$ A, 644 operating cycles/h;
- AC-3: Operating range 0.85 to 1.05 x U_n , 460 operating cycles/h, mech. endurance 5 million operating cycles, lateral clearance 10 mm.

Switching devices – Contactors and contactor assemblies – for switching motors

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 |
| 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 $U_{s \text{ min}}/U_{s \text{ max}}$ | VA | 530/630 | 700/830 | -- |
| - P.f. | | 0.9 | | -- |
| - Closed at $U_{s \text{ min}}/U_{s \text{ max}}$ | VA | 6.1/7.4 | 7.6/9.2 | -- |
| - P.f. | | 0.9 | | -- |
| • DC operation | | | | |
| - Closing at $U_{s \text{ min}}/U_{s \text{ max}}$ | W | 580/780 | 770/920 | -- |
| - Closed at $U_{s \text{ min}}/U_{s \text{ max}}$ | W | 6.8/8.2 | 8.5/10 | -- |
| <u>Solid-state operating mechanism</u> | | | | |
| • AC operation | | | | |
| - Closing at $U_{s \text{ min}}/U_{s \text{ max}}$ | VA | 420/570 | 560/750 | 1 200/1 850 |
| - P.f. | | 0.8 | | 1 |
| - Closed at $U_{s \text{ min}}/U_{s \text{ max}}$ | VA | 5.5/8.5 | 5.6/9 | 13.5/49 |
| - P.f. | | 0.5/0.4 | | 0.15 |
| • AC operation for 3TF68/3TF69...Q | | | | |
| - Closing at $U_{s \text{ min}}$ | VA | -- | | 1 000 |
| - P.f. | | -- | | 0.99 |
| - Closed at $U_{s \text{ min}}$ | VA | -- | | 11 |
| - P.f. | | -- | | 1 |
| • DC operation | | | | |
| - Closing at $U_{s \text{ min}}/U_{s \text{ max}}$ | W | 460/630 | 600/800 | -- |
| - Closed at $U_{s \text{ min}}/U_{s \text{ max}}$ | W | 2.8/3.4 | 3/3.6 | -- |
| • DC economy circuit ¹⁾ | | | | |
| - Closing at $U_{s \text{ min}}$ | W | -- | | 1 010 |
| - Closed at $U_{s \text{ min}}$ | 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 | | 80 ... 120 |
| • AC operation for 3TF68/3TF69...Q at $U_{s \text{ min}}$ (including reversing contactor) | | | | |
| - Closing delay | ms | -- | | 35 ... 90 |
| - Opening delay | ms | -- | | 65 ... 90 |
| • 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 | | 85 ... 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 | -- | | 50 |
| • 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 | -- | | 50 |
| Arcing time | ms | 10 ... 15 | | 10 ... 15 |
| Minimum command duration | | | | |
| For closing | Standard | ms | -- | 120 |
| | Reduced make-time | 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.

Switching devices – Contactors and contactor assemblies – for switching motors

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 | | | | | | | | | |
| • 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 cross-section in the main circuit for max. AC-1 rated value | | mm ² | 185 | | 370 | 480 | $I_e \geq 800$ A: 2 x 60 x 5 (copper busbars) | | |
| 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 slipping or squirrel-cage motors at 50 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':
 $z' = z \cdot (I_e/I') \cdot (U_e/U)^{1.5} \cdot 1/h.$

Switching devices – Contactors and contactor assemblies – for switching motors

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 |
| 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) | 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) | 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) | 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 | 50 ... 240 |
| • Stranded with cable lug | mm ² | -- | 70 ... 240 | 70 ... 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 3/140) | | | | |
| • 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 can be connected) | | | | |
| • 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) | 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 (Pozidriv 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 the phase clearance, see page 3/119.

²⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Switching devices – Contactors and contactor assemblies – for switching motors

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 "Competitive control panels for the North American market"](#).

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT12 and 3TF6 vacuum contactors **IE3/IE4 ready**

Selection and ordering data

SIRIUS 3RT12 vacuum contactors, 3-pole, 110 to 250 kW

AC/DC operation


- Standard operating mechanism 3RT12...-A
- 3RT12...-N solid-state operating mechanism with 24 V DC control signal input
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.



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 |
| | Operational current I_e up to | 230 V | 400 V | 500 V | 690 V | 1 000 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)

With integrated coil circuit (varistor integrated at the factory)

| S10 | 225 | 55 | 110 | 160 | 200 | 330 | 2 | 2 | 110 ... 127 220 ... 240 | 2 | 3RT1264-6AF36 3RT1264-6AP36 | 1 | 1 unit | 41B |
|-----|-----|-----|-------------------------|-----|-----|-----|---|---|----------------------------|----|--------------------------------|---|--------|-----|
| | 265 | 75 | 132 | 160 | 250 | 330 | 2 | 2 | 110 ... 127 220 ... 240 | 10 | 3RT1265-6AF36 3RT1265-6AP36 | 1 | 1 unit | 41B |
| | 300 | 90 | 160¹⁾ | 200 | 250 | 330 | 2 | 2 | 110 ... 127 220 ... 240 | 2 | 3RT1266-6AF36 3RT1266-6AP36 | 1 | 1 unit | 41B |
| S12 | 400 | 132 | 200 | 250 | 400 | 610 | 2 | 2 | 110 ... 127 220 ... 240 | 5 | 3RT1275-6AF36 3RT1275-6AP36 | 1 | 1 unit | 41B |
| | 500 | 160 | 250¹⁾ | 355 | 500 | 610 | 2 | 2 | 110 ... 127 220 ... 240 | 5 | 3RT1276-6AF36 3RT1276-6AP36 | 1 | 1 unit | 41B |

Solid-state operating mechanism

With 24 V DC control signal input e.g. for control by PLC

With integrated coil circuit (varistor integrated in electronics at the factory)

| S10 | 225 | 55 | 110 | 160 | 200 | 330 | 2 | 2 | 96 ... 127 200 ... 277 | 20 | 3RT1264-6NF36 3RT1264-6NP36 | 1 | 1 unit | 41B |
|-----|-----|-----|------------|-----|-----|-----|---|---|---------------------------|----|--------------------------------|---|--------|-----|
| | 265 | 75 | 132 | 160 | 250 | 330 | 2 | 2 | 96 ... 127 200 ... 277 | 10 | 3RT1265-6NF36 3RT1265-6NP36 | 1 | 1 unit | 41B |
| | 300 | 90 | 160 | 200 | 250 | 330 | 2 | 2 | 96 ... 127 200 ... 277 | 10 | 3RT1266-6NF36 3RT1266-6NP36 | 1 | 1 unit | 41B |
| S12 | 400 | 132 | 200 | 250 | 400 | 610 | 2 | 2 | 96 ... 127 200 ... 277 | 10 | 3RT1275-6NF36 3RT1275-6NP36 | 1 | 1 unit | 41B |
| | 500 | 160 | 250 | 355 | 500 | 610 | 2 | 2 | 96 ... 127 200 ... 277 | 10 | 3RT1276-6NF36 3RT1276-6NP36 | 1 | 1 unit | 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 3/76 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 page 3/77 onwards.

For spare parts, see page 3/141.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

SIRIUS 3RT12 and 3TF6 vacuum contactors


3TF6 vacuum contactors, 3-pole, 335 to 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_{ij} : 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 | | | | | | |
| A | kW | kW | kW | kW | kW | A | | | | | d | | | | |
| AC operation, 50/60 Hz¹⁾ | | | | | | | | | | | | | | | |
| 14 | 630 | 200 | 335²⁾ | 434 | 600 | -- | 700 | 4 | 4 | 110 ... 132 | X | 3TF6844-0CF7 | 1 | 1 unit | 41B |
| | | | | | | | | | | | | | | | |
| 14 | 820 | 260 | 450³⁾ | 600 | 800 | -- | 910 | 4 | 4 | 110 ... 132 | X | 3TF6944-0CF7 | 1 | 1 unit | 41B |
| | | | | | | | | | | | | | | | |
| 14 | 820 | 260 | 450³⁾ | 600 | 800 | -- | 910 | 4 | 4 | 110 ... 132 | X | 3TF6944-0CF7 | 1 | 1 unit | 41B |
| | | | | | | | | | | | | | | | |
| 14 | 820 | 260 | 450³⁾ | 600 | 800 | -- | 910 | 4 | 4 | 110 ... 132 | X | 3TF6944-0CF7 | 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 3/139 to 3/142.

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 |

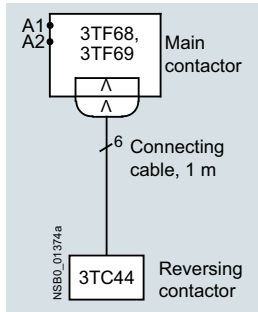
Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors


SIRIUS 3RT12 and 3TF6 vacuum contactors **IE3/IE4 ready**

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_i : 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 | |
|--|---------------------------------|---|-------------------|-------|---------|-------|------------------------|---------------------------------|----|---|----------------|---|-------------------|--------|--------|-----|
| | Operational current I_e up to | Rating of three-phase motors at 50 Hz and | | | | | | Operational current I_e up to | NO | | | | | | | NC |
| 690 V | 230 V | 400 V | 500 V | 690 V | 1 000 V | 690 V | A | | | | d | | | | | |
| DC operation · DC economy circuit¹⁾²⁾ | | | | | | | | | | | | | | | | |
| 14 | 630 | 200 | 335 ³⁾ | 434 | 600 | -- | 700 | 3 | 3 | 24 DC | 20 | 3TF6833-1DB4 | 1 | 1 unit | 41B | |
| | | | | | | | 600 | 700 | 3 | 3 | 24 DC | 20 | 3TF6833-8DB4 | 1 | 1 unit | 41B |
| 14 | 820 | 260 | 450 ⁴⁾ | 600 | 800 | -- | 910 | 3 | 3 | 24 DC | 20 | 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 | 20 | 3TF6833-1QG7 | 1 | 1 unit | 41B | |
| | | | | | | | | | | 220 ... 240 AC | 20 | 3TF6833-1QL7 | 1 | 1 unit | 41B | |
| | | | | | | | | | | 380 ... 420 AC | 20 | 3TF6833-1QV7 | 1 | 1 unit | 41B | |
| | | | | | | | 600 | 700 | 3 | 3 | 220 ... 240 AC | 20 | 3TF6833-8QL7 | 1 | 1 unit | 41B |
| 14 | 820 | 260 | 450 ⁴⁾ | 600 | 800 | -- | 910 | 3 | 3 | 110 ... 120 AC | 20 | 3TF6933-1QG7 | 1 | 1 unit | 41B | |
| | | | | | | | | | | 220 ... 240 AC | 20 | 3TF6933-1QL7 | 1 | 1 unit | 41B | |
| | | | | | | | | | | 380 ... 420 AC | 20 | 3TF6933-1QV7 | 1 | 1 unit | 41B | |
| | | | | | | | 800 | 910 | 3 | 3 | 110 ... 120 AC | X | 3TF6933-8QG7 | 1 | 1 unit | 41B |
| | | | | | | | | | | 220 ... 240 AC | 20 | 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 connection cable (approx. 1 m) and plug is included in the scope of supply of the vacuum contactor.

Accessories and spare parts, see pages 3/139 to 3/142.

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 |

Switching devices – Contactors and contactor assemblies – for switching motors


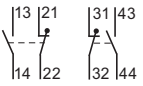
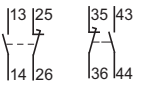
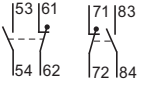


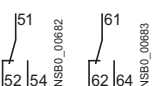
Power contactors for switching motors

Accessories and spare parts for SIRIUS 3RT12 and 3TF6 vacuum contactors

Selection and ordering data

Accessories





For further accessories for the SIRIUS 3RT12 vacuum contactors, see [3RT1 basic units, page 3/77 onwards](#).

| For contactors | Version | Auxiliary contacts | | | Connections | SD | Screw terminals | | PU (UNIT, SET, M) | PS* | PG | |
|--|---------|--------------------|--|----|-------------|--|---|-------------|----------------------|-----|--------|--------------|
| | | Version | NO | NC | | | NC | Article No. | | | | Price per PU |
| Size | Type | NO | NC | NC | Left | Right | d | | | | | |
| Auxiliary switches, instantaneous | | | | | | | | | | | | |
| For lateral mounting | | | | | | | | | | | | |
|  3TY7561-1.A00 | 14 | 3TF68, 3TF69 | First auxiliary switch (replacement for 3TY7561-1A/3TY7561-1B) | | | | | ▶ | 3TY7561-1AA00 | 1 | 1 unit | 41B |
| | | | 1 | 1 | -- |  | | | | | | |
| | | | | | | | | | | | | |
| | | 3TF68, 3TF69 | First auxiliary switch | | | | | | 3TY7561-1EA00 | 1 | 1 unit | 41B |
| | | | 1 | -- | 1 |  | | | | | | |
| | | 3TF68, 3TF69 | Second auxiliary switch (replacement for 3TY7561-1K/3TY7561-1L) | | | | | | 3TY7561-1KA00 | 1 | 1 unit | 41B |
| | | | 1 | 1 | -- |  | | | | | | |
| For switchover of the coil with DC economy circuit | | | | | | | | | | | | |
| | 14 | 3TF68, 3TF69 | -- | -- | -- | 1 |  | | 3TY7681-1G | 1 | 1 unit | 41B |
| Solid-state compatible auxiliary switches | | | | | | | | | | | | |
| For lateral mounting | | | | | | | | | | | | |
|  5TY7561-1UA00 | 14 | 3TF68, 3TF69 | Second auxiliary switch, left or right (replacement for 3TY6561-1U/3TY6561-1V) | | | | | | 3TY7561-1UA00 | 1 | 1 unit | 41B |
| | | | 1 CO contact | | | | | | | | | |
| | | | | | | |  | | | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories and spare parts for SIRIUS 3RT12 and 3TF6 vacuum contactors

| 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 | 2 | 3TX7686-0A | 1 | 1 unit | 41B |
| | | 3TF69 | Can be screwed onto free screw end on middle connecting bar | 2 | 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: <ul style="list-style-type: none"> • Solid 2 x (0.75 ... 2.5) mm² • Finely stranded with end sleeve 2 x (0.5 ... 2.5) mm² • 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 |




Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories and spare parts for SIRIUS 3RT12 and 3TF6 vacuum contactors


Spare parts

PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B


| For contactors | | Rated control supply voltage $U_{s \min} \dots U_{s \max}$ | SD | Screw terminals | SD | Spring-loaded terminals | | |
|--|------|---|-------------|-----------------|---------------|-------------------------|---------------|-----------------|
| Size | Type | V AC/DC | d | Article No. | Price per PU | Article No. | | |
| Withdrawable coils | | | | | | | | |
| Standard operating mechanism for AC/DC | | | | | | | | |
|  | S10 | 3RT126 | 23 ... 26 | 5 | 3RT1966-5AB31 | --- | | |
| | | | 42 ... 48 | X | 3RT1966-5AD31 | --- | | |
| | | | 110 ... 127 | 2 | 3RT1966-5AF31 | --- | | |
| | | | 200 ... 220 | 5 | 3RT1966-5AM31 | --- | | |
| | | | 220 ... 240 | 5 | 3RT1966-5AP31 | --- | | |
| | | | 240 ... 277 | 5 | 3RT1966-5AU31 | --- | | |
| | | | 380 ... 420 | X | 3RT1966-5AV31 | --- | | |
| | | | 440 ... 480 | 5 | 3RT1966-5AR31 | --- | | |
| | | | 500 ... 550 | X | 3RT1966-5AS31 | --- | | |
| | | | 575 ... 600 | X | 3RT1966-5AT31 | --- | | |
|  | S12 | 3RT127 | 23 ... 26 | 5 | 3RT1975-5AB31 | 5 3RT1975-5AB32 | | |
| | | | 42 ... 48 | 5 | 3RT1975-5AD31 | X 3RT1975-5AD32 | | |
| | | | 110 ... 127 | 5 | 3RT1975-5AF31 | X 3RT1975-5AF32 | | |
| | | | 200 ... 220 | 5 | 3RT1975-5AM31 | X 3RT1975-5AM32 | | |
| | | | 220 ... 240 | ▶ 5 | 3RT1975-5AP31 | 5 3RT1975-5AP32 | | |
| | | | 240 ... 277 | 5 | 3RT1975-5AU31 | X 3RT1975-5AU32 | | |
| | | | 380 ... 420 | 5 | 3RT1975-5AV31 | X 3RT1975-5AV32 | | |
| | | | 440 ... 480 | 5 | 3RT1975-5AR31 | 5 3RT1975-5AR32 | | |
| | | | 500 ... 550 | 5 | 3RT1975-5AS31 | X 3RT1975-5AS32 | | |
| | | | 575 ... 600 | 5 | 3RT1975-5AT31 | X 3RT1975-5AT32 | | |
|  | 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 | X 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

| | | | | | | | |
|---|----|----------------|--|--------------|--|--|--|
|  | 14 | 3TF68 3TF69 | AC operation¹⁾ | | | | |
| | | | The solenoid coils are fitted as standard with varistors against overvoltage; the coil is supplied with switch-on electronics. | 3TY7683-0C.. | | | |
| | 14 | 3TF68 3TF69 | DC operation¹⁾ · DC economy circuit | | | | |
| | | | The solenoid coils are supplied without reversing contactor. | 3TY7683-0D.. | | | |

Vacuum interrupters

| | | | | | | | | |
|---|-----|-------------------------------|--|------------|------------|------------|--------|--------|
|  | S10 | 3RT1264 3RT1265 3RT1266 | Set with three 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 three vacuum interrupters with components | | 5 | 3TY7680-0B | 1 | 1 unit |
| | | | | 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 3/137 and 3/138.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

Accessories and spare parts for SIRIUS 3RT12 and 3TF6 vacuum contactors

| 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 connection 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 |

Switching devices – Contactors and contactor assemblies – for switching motors

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

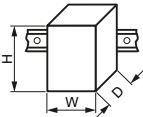
The 3TG10 power relays/miniature contactors have an integrated protective circuit against opening surges.

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 for switching devices, 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 the coil and the 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 IP on the front acc. to IEC 60529 | IP00 |
| 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_s |
| Power consumption of the solenoid coils (for cold coil and 1.0 × U_s) | |
| • 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 | |
| • 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.

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors



3TG10 power relays/miniature contactors

| 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 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 of 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, ($L/R \leq 15$ 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 | |
| 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 | |

Switching devices – Contactors and contactor assemblies – for switching motors

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 |
| | mm ² | M3 2 x (0.75 ... 2.5) |
| | mm ² | 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 - 6.3 ... 1 - 6.3 ... 2.5 | |  Flat connectors |
| | mm ² mm ² | 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 0.5/ -- |
| | 200 V | hp 1/3 |
| | 230 V | hp 1.5/3 |
| | 460 ... 600 V | hp 0/5 |

Switching devices – Contactors and contactor assemblies – for switching motors

Power contactors for switching motors

3TG10 power relays/miniature contactors

Selection and ordering data

AC operation or DC operation

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

| Rated data | | | | Auxiliary contacts | Rated control supply voltage U_s | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|--------------------------------------|--|--------------------------------------|--------------------|------------------------------------|----|-------------|--------------|-------------------|-----|----|
| Utilization category | | | | Version | | | | | | | |
| AC-1 At 55 °C | AC-2 and AC-3 | | | | | | | | | | |
| 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 | d | | | | |
| A | kW | A | kW | | | | | | | | |

Hum-free · with screw terminals



3TG10..-0...

AC operation, 45 ... 450 Hz

| Operational current I_e | Power of AC loads | Operational current I_e | Power of AC loads | Auxiliary contacts | Rated control supply voltage U_s | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---------------------------|-------------------|---------------------------|-------------------|--------------------|------------------------------------|--------|-----------------------|--------------|-------------------|--------|-----|
| 20 | 13 | 8.4 | 4 | 1 | -- | 24 AC | ▶ 3TG1010-0AC2 | | 1 | 1 unit | 41H |
| | | | | | | 110 AC | ▶ 3TG1010-0AG2 | | 1 | 1 unit | 41H |
| | | | | | | 230 AC | ▶ 3TG1010-0AL2 | | 1 | 1 unit | 41H |
| | | | | -- | 1 | 24 AC | ▶ 3TG1001-0AC2 | | 1 | 1 unit | 41H |
| | | | | | | 110 AC | ▶ 3TG1001-0AG2 | | 1 | 1 unit | 41H |
| | | | | | | 230 AC | ▶ 3TG1001-0AL2 | | 1 | 1 unit | 41H |

DC operation

| | | | | | | | | | | | |
|----|----|-----|---|----|----|-------|-----------------------|--|---|--------|-----|
| 20 | 13 | 8.4 | 4 | 1 | -- | 24 DC | ▶ 3TG1010-0BB4 | | 1 | 1 unit | 41H |
| | | | | -- | 1 | 24 DC | ▶ 3TG1001-0BB4 | | 1 | 1 unit | 41H |

Hum-free · with 6.3 mm x 0.8 mm flat connectors



3TG10..-1...

AC operation, 45 ... 450 Hz


| Operational current I_e | Power of AC loads | Operational current I_e | Power of AC loads | Auxiliary contacts | Rated control supply voltage U_s | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---------------------------|-------------------|---------------------------|-------------------|--------------------|------------------------------------|--------|--------------------------|--------------|-------------------|--------|-----|
| 16 | 10 | 8.4 | 4 | 1 | -- | 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 |
| | | | | -- | 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 | 1 | -- | 24 DC | 5 ▶ 3TG1010-1BB4 | | 1 | 1 unit | 41H |
| | | 8.4 | 4 | -- | 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 connecting terminal | 16 | -- | ▶ | 3RT1916-4BA31 | | 1 | 1 unit 41B |
| • With connecting terminal | 40 | 25 | ▶ | 3RT1916-4BB31 | | 1 | 1 unit 41B |
| 4-pole | | | | | | | |
| • With connecting terminal | 40 | 25 | 2 | 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.

Switching devices – Contactors and contactor assemblies – for switching motors

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 for article numbers, see www.siemens.com/sirius/conversion-tool

TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=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 [page 3/154 onwards](#).
- For all individual parts for customer assembly, see from [page 3/77 onwards](#).

The 3RA23 reversing contactor assemblies have screw or spring-loaded 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 [page 7/98 onwards](#)) or 3RB3 overload relays (see [page 7/111 onwards](#)) for contactor mounting or stand-alone installation, SIMOCODE pro 3UF7 motor management and control devices ([page 10/16 onwards](#)) or 3RN2 thermistor motor protection relays ([page 10/143 onwards](#)) can be used for motor protection.

3RA23 reversing contactor assemblies with voltage tap-off

The reversing contactor assemblies with voltage tap-off (see [pages 3/154 to 3/157](#)) 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 3/108](#).



For more information on IO-Link and AS-Interface, see "Industrial communication", from [page 2/1 onwards](#).

Switching devices – Contactors and contactor assemblies – for switching motors

Reversing contactor assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

Sizes S00 to S3

| Rated data AC-2 and AC-3 at 50 Hz 400 V AC | | Size | Type | | |
|--|--------------------------------|------|---------------------------------------|----------------------------------|--|
| Rating kW | Operational current I_e A | | Contactors (See page 3/55 onwards) | Assembly kit (See page 3/111) | 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-loaded 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 3/115.

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"/> <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"/> <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.

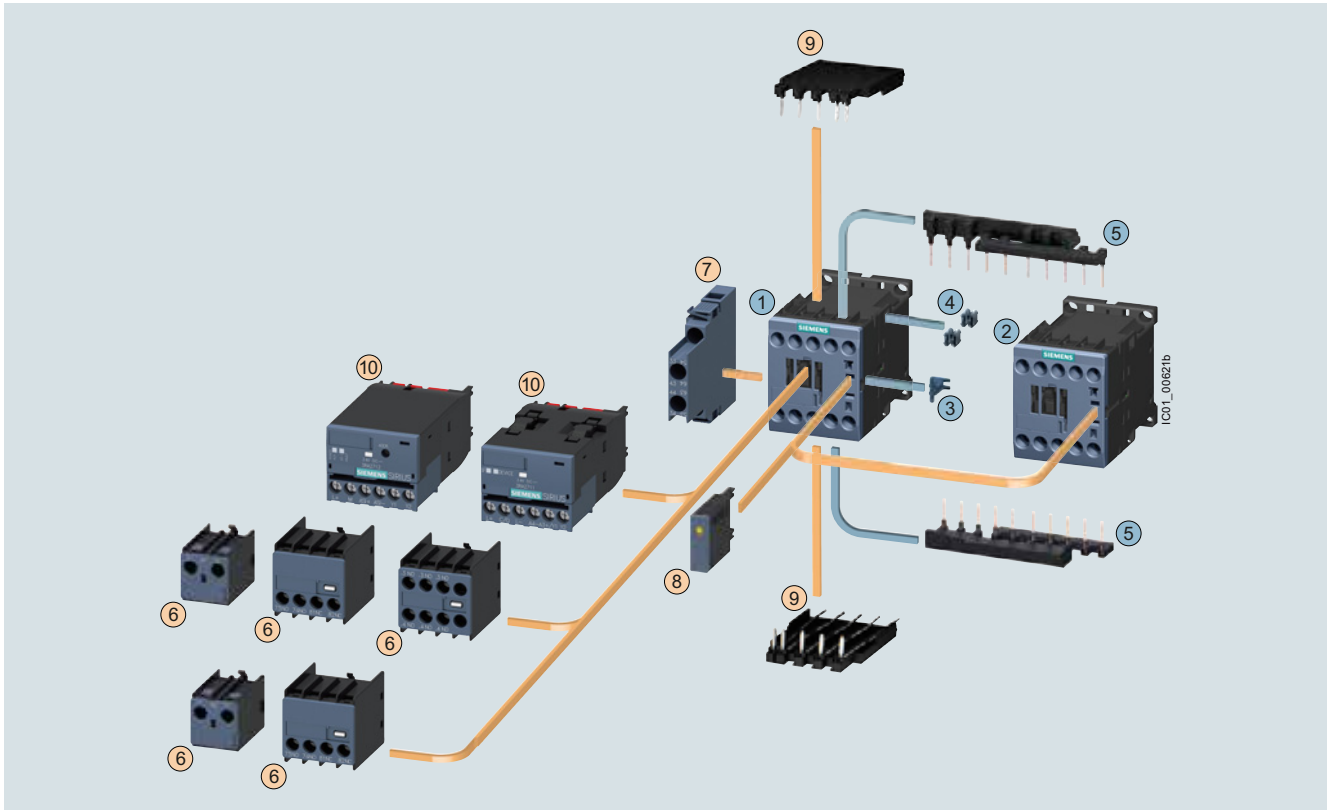
Switching devices – Contactors and contactor assemblies – for switching motors

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, front ¹⁾ | 3RH2911 | 3/95 ... 3/97 |
| ⑦ Auxiliary switch, lateral | 3RH2921 | 3/99 |
| ⑧ Surge suppressors | 3RT2916 | 3/104, 3/105 |
| ⑨ Solder pin adapters | 3RT1916-4KA1 | 3/118 |
| ⑩ Function module for connection to the control system | 3RA271.-1BA00 | 3/108 |

Complete reversing contactor assembly

| Individual parts | Type | Page |
|--|-----------------|------------------|
| ① ② Contactors, 3 kW | 3RT2015 3RT2015 | 3/55, 3/60, 3/61 |
| ① ② Contactors, 4 kW | 3RT2016 3RT2016 | 3/55, 3/60, 3/61 |
| ① ② Contactors, 5.5 kW | 3RT2017 3RT2017 | 3/55, 3/60, 3/61 |
| ① ② Contactors, 7.5 kW | 3RT2018 3RT2018 | 3/55, 3/60, 3/61 |
| ③ ... ⑤ Assembly kit comprising: | 3RA2913-2AA1 | 3/111 |
| 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 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 3/154.

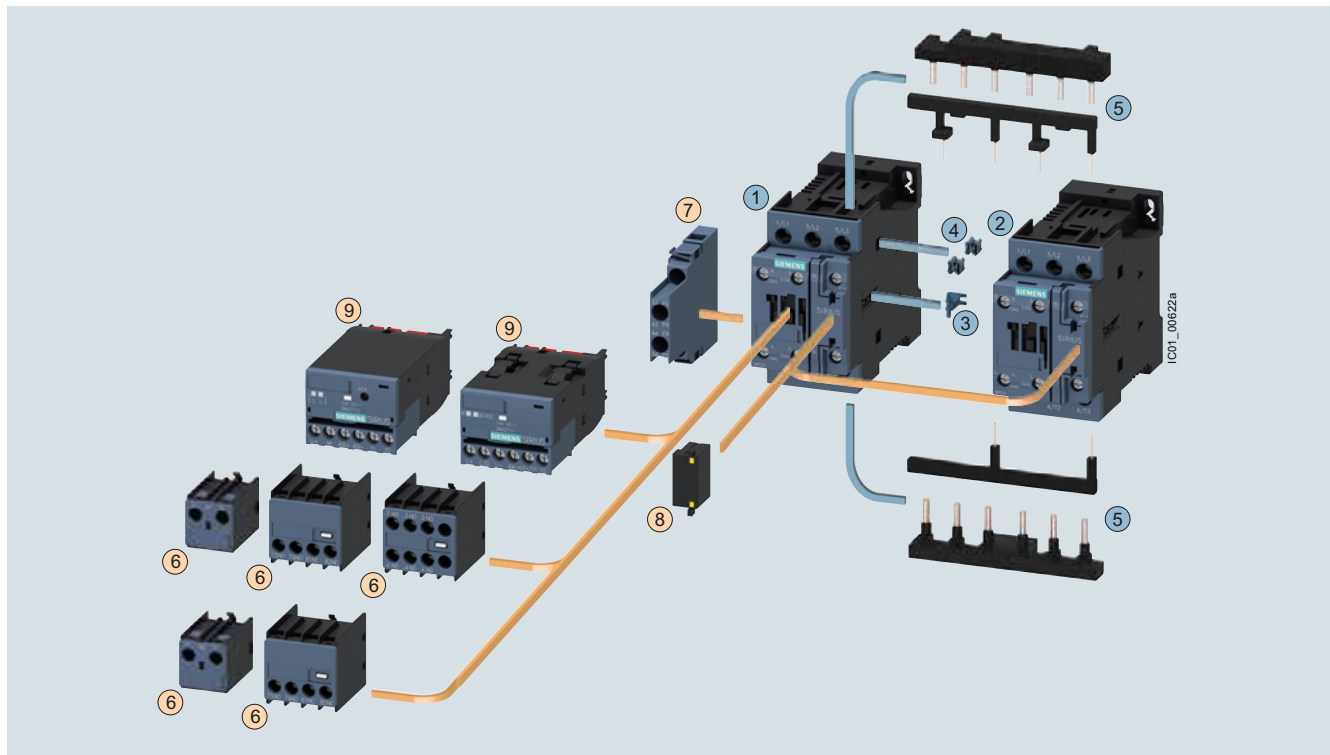
Switching devices – Contactors and contactor assemblies – for switching motors

Reversing contactor assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

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, front | 3RH2911 | 3/95 ... 3/97 |
| ⑦ Auxiliary switch, lateral | 3RH2921 | 3/99 |
| ⑧ Surge suppressors | 3RT2926 | 3/104, 3/105 |
| ⑨ Function module for connection to the control system | 3RA271.-1BA00 | 3/108 |

Complete reversing contactor assembly

| Individual parts | Type | | Page |
|----------------------------------|--|---------|------------------|
| | Q11 | Q12 | |
| ① ② Contactors, 5.5 kW | 3RT2024 | 3RT2024 | 3/56, 3/64, 3/65 |
| ① ② Contactors, 7.5 kW | 3RT2025 | 3RT2025 | 3/56, 3/64, 3/65 |
| ① ② Contactors, 11 kW | 3RT2026 | 3RT2026 | 3/56, 3/64, 3/65 |
| ① ② Contactors, 15 kW | 3RT2027 | 3RT2027 | 3/56, 3/64, 3/65 |
| ① ② Contactors, 18.5 kW | 3RT2028 | 3RT2028 | 3/56, 3/64, 3/65 |
| ③ ... ⑤ Assembly kit comprising: | 3RA2923-2AA1 | | 3/111 |
| 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 3/155.

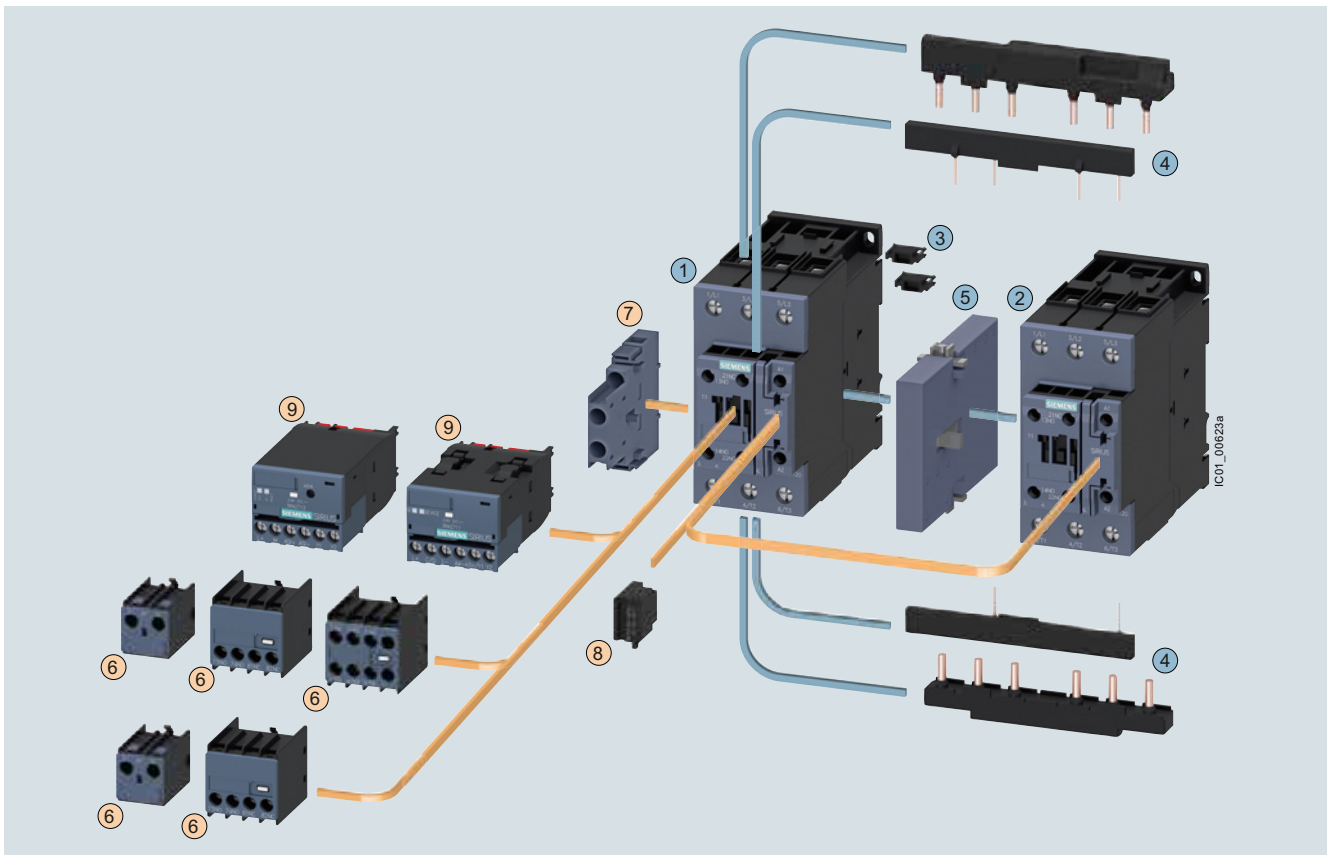
Switching devices – Contactors and contactor assemblies – for switching motors

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, front | 3RH2911 | 3/95 ... 3/97 |
| ⑦ Auxiliary switch, lateral | 3RH2921 | 3/99 |
| ⑧ Surge suppressors | 3RT2936 | 3/104, 3/105 |
| ⑨ Function module for connection to the control system | 3RA271.-1BA00 | 3/108 |

Complete reversing contactor assembly

| Individual parts | Type | | Page |
|---|--------------|---------|------------|
| | Q11 | Q12 | |
| ①② Contactors, 18.5 kW | 3RT2035 | 3RT2035 | 3/58, 3/69 |
| ①② Contactors, 22 kW | 3RT2036 | 3RT2036 | 3/58, 3/69 |
| ①② Contactors, 30 kW | 3RT2037 | 3RT2037 | 3/58, 3/69 |
| ①② Contactors, 37 kW | 3RT2038 | 3RT2038 | 3/58, 3/69 |
| ③④ Assembly kit comprising: | 3RA2933-2AA1 | | 3/111 |
| 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 | | 3/115 |

For complete reversing contactor assemblies, see page 3/156.

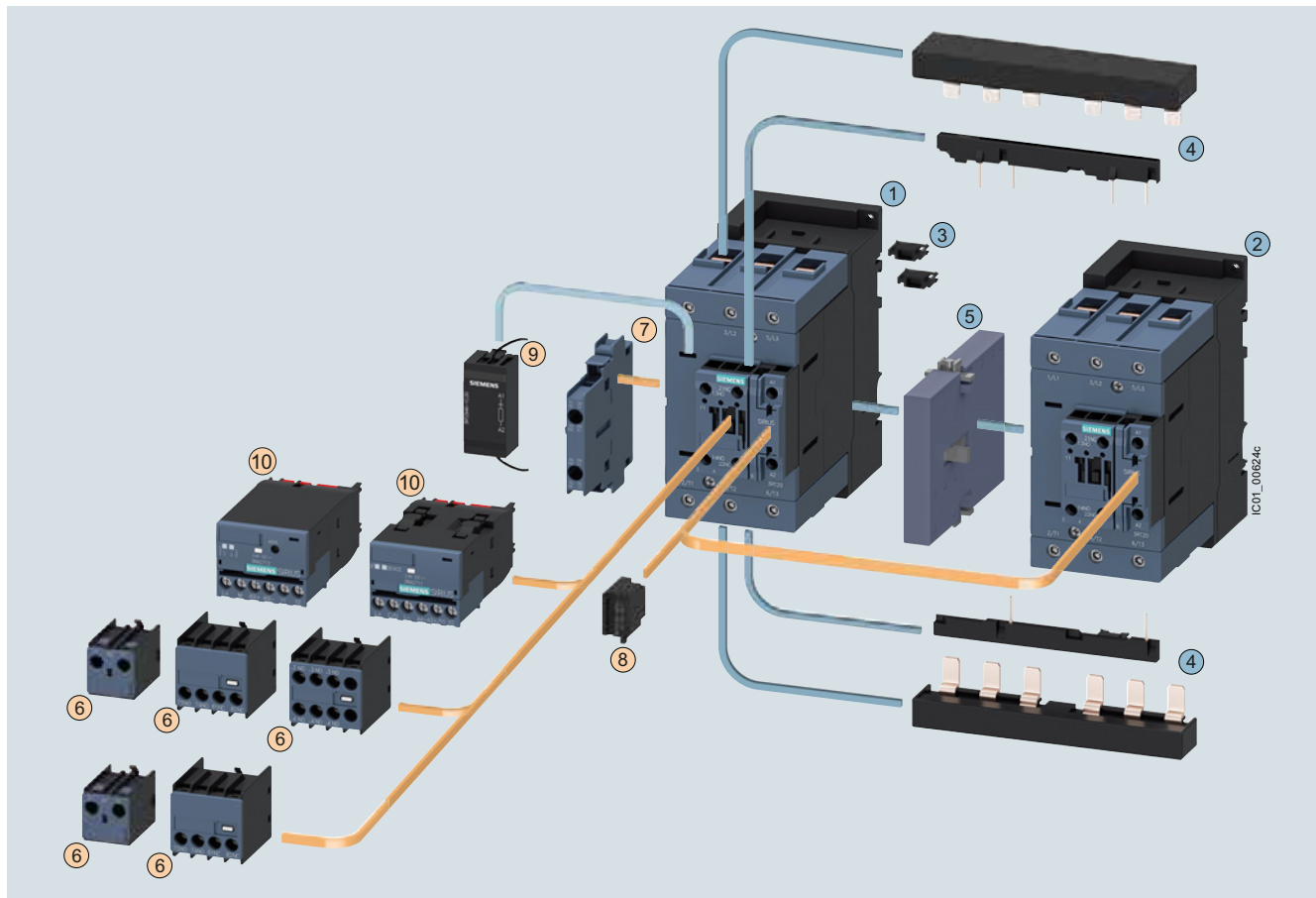
Switching devices – Contactors and contactor assemblies – for switching motors

Reversing contactor assemblies

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, front | 3RH2911 | 3/95 ... 3/97 |
| ⑦ Auxiliary switch, lateral | 3RH2921 | 3/99 |
| ⑧ Surge suppressor (varistor, diode assembly) | 3RT2936 | 3/104, 3/105 |
| ⑨ Surge suppressor (RC element) | 3RT2946 | 3/104 |
| ⑩ Function module for connection to the control system (the associated module connectors 3RA2711-0EE17 must be ordered separately, see page 3/109) | 3RA2711.-1BA00 | 3/108 |

Complete reversing contactor assembly

| Individual parts | Type | | Page |
|---|--------------|---------|------------|
| | Q11 | Q12 | |
| ①② Contactors, 37 kW | 3RT2045 | 3RT2045 | 3/59, 3/71 |
| ①② Contactors, 45 kW | 3RT2046 | 3RT2046 | 3/59, 3/71 |
| ①② Contactors, 55 kW | 3RT2047 | 3RT2047 | 3/59, 3/71 |
| ③④ Assembly kit comprising: | 3RA2943-2AA1 | | 3/111 |
| 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 | | 3/115 |

For complete reversing contactor assemblies, see page 3/157.

Switching devices – Contactors and contactor assemblies – for switching motors

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 with at least one NO contact for self-locking 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 self-locking.

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](https://support.industry.siemens.com/cs/ww/en/ps/16146/td)
FAQs, [see https://support.industry.siemens.com/cs/ww/en/ps/16146/faq](https://support.industry.siemens.com/cs/ww/en/ps/16146/faq)

System Manual for modular system, [see https://support.industry.siemens.com/cs/ww/en/view/60311318](https://support.industry.siemens.com/cs/ww/en/view/60311318)
Equipment Manual, [see https://support.industry.siemens.com/cs/ww/en/view/60306557](https://support.industry.siemens.com/cs/ww/en/view/60306557)
Application Manual for controls with IE3/IE4 motors, [see https://support.industry.siemens.com/cs/ww/en/view/94770820](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](#)).

Switching devices – Contactors and contactor assemblies – for switching motors

Reversing contactor assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW **IE3/IE4 ready**

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  | | Spring-loaded 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 |
| 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 3/149.

Switching devices – Contactors and contactor assemblies – for switching motors

Reversing contactor assemblies

IE3/IE4 ready SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW

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-loaded terminals | | |
|---------------------------------------|--|-------------|-------|------------------------------------|----|---------------------------|--------------|---------------------------|-------------------------|--------------|----|
| Operational current I_e up to 400 V | Ratings of three-phase motors at 50 Hz and 60 Hz | | | | | 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 3/150](#).

Switching devices – Contactors and contactor assemblies – for switching motors

Reversing contactor assemblies

SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW **IE3/IE4 ready**

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 | | | | | SD | Screw terminals  | | SD | Spring-loaded terminals  | |
|---|--|-------------|-------|------------------------------------|-------|---|--------------|----|---|--------------|
| Operational current I_e up to 400 V | Ratings of three-phase motors at 50 Hz and 60 Hz | | | Rated control supply voltage U_s | | Article No. | Price per PU | | Article No. | Price per PU |
| | A | 230 V | 400 V | | 690 V | | | kW | | |
| 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 operation | | | | | | | | | | |
| With integrated coil circuit (varistor integrated in electronics at the factory) | | | | | | | | | | |
| 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 | | -- | | |

Representation of the complete reversing contactor assemblies with optionally mountable accessories, [see page 3/151](#).

Switching devices – Contactors and contactor assemblies – for switching motors

Reversing contactor assemblies

IE3/IE4 ready SIRIUS 3RA23 reversing contactor assemblies, up to 55 kW



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 | | | | Rated control supply voltage U_s ¹⁾ | SD | Screw terminals  | | Spring-loaded terminals  | |
|---|----|--|----|--|----|---|--------------|---|--------------|
| Operational current I_e up to 400 V | | Ratings of three-phase motors at 50 Hz and 60 Hz | | | | Article No. | Price per PU | Article No. | Price per PU |
| A | kW | kW | kW | V | d | | d | | |
| 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 operation | | | | | | | | | |
| With integrated coil circuit (varistor integrated in electronics at the factory) | | | | | | | | | |
| 80 | 22 | 37 | 55 | 20 ... 33 AC/DC | 5 | 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-off¹⁾ | | | | | | | | | |
| 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⁾ The associated module connectors 3RA2711-0EE17 for the 3RA271. function modules must be ordered separately, see page 3/109.

Representation of the complete reversing contactor assemblies with optionally mountable accessories, see page 3/152.

Switching devices – Contactors and contactor assemblies – for switching motors

Reversing contactor assemblies

Reversing contactor assemblies consisting of SIRIUS 3RT1 contactors, up to 250 kW

Overview

The individual parts for the reversing contactor assemblies for customer assembly must be ordered separately.

- 3RT contactors (see page 3/72 onwards): 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 (see page 3/115)
- Wiring kits consisting of link rails (see page 3/111)
- Base plate (see page 3/120)

Additional components

- For momentary-contact operation: auxiliary switch (NO contact) for self-locking
- 3RB2 overload relays (see page 7/123 onwards), SIMOCODE pro 3UF7 motor management and control devices (page 10/16 onwards) or 3RN2 thermistor motor protection relays (page 10/143 onwards) can be used for overload protection.

More information

Homepage, see www.siemens.com/sirius

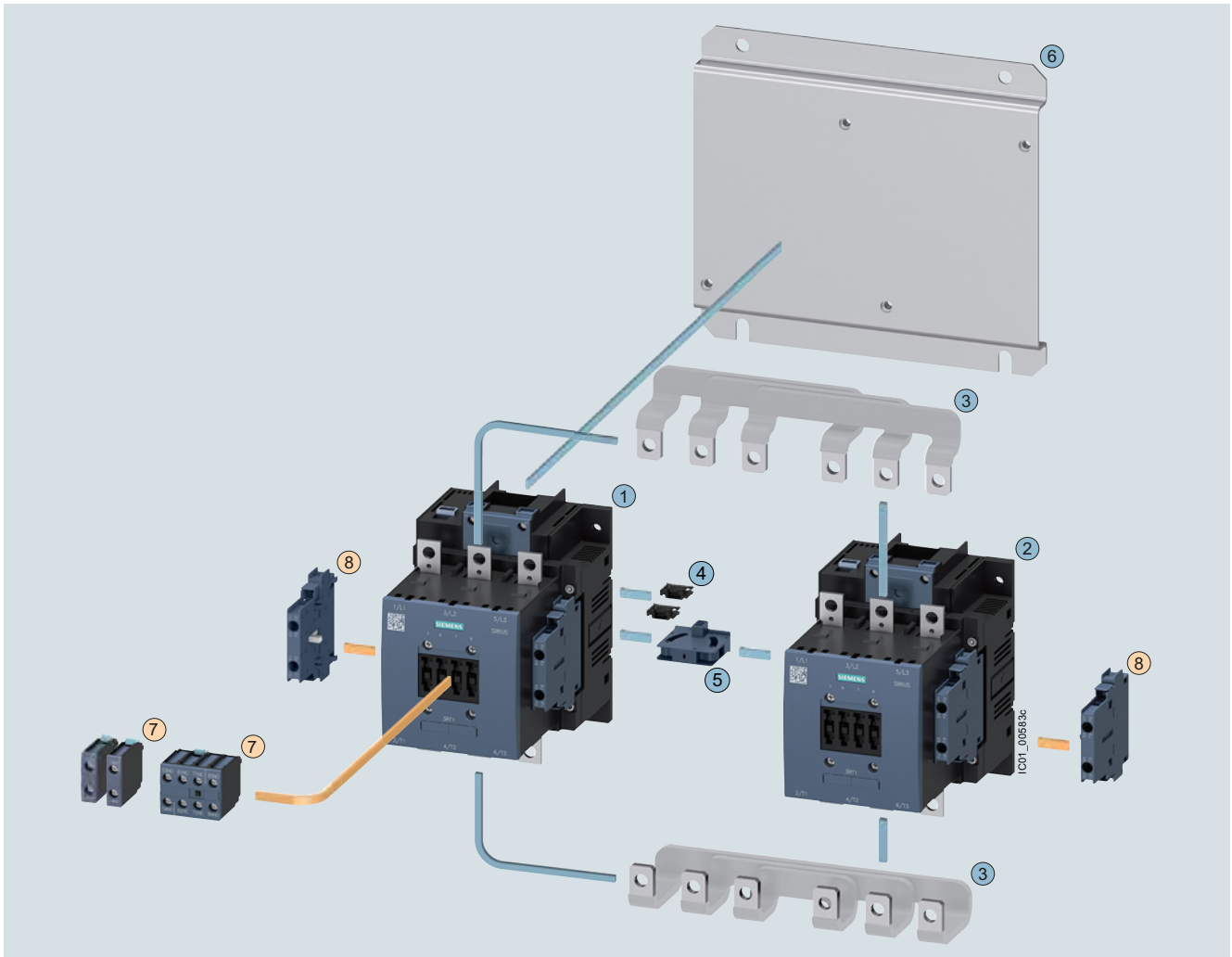
Industry Mall, see www.siemens.com/product?3RA23_3RT1

Switching devices – Contactors and contactor assemblies – for switching motors

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, front | 3RH1921 | 3/98 |
| ⑧ Auxiliary switch, lateral | 3RH1921 | 3/100 |

Reversing contactor assembly for customer assembly

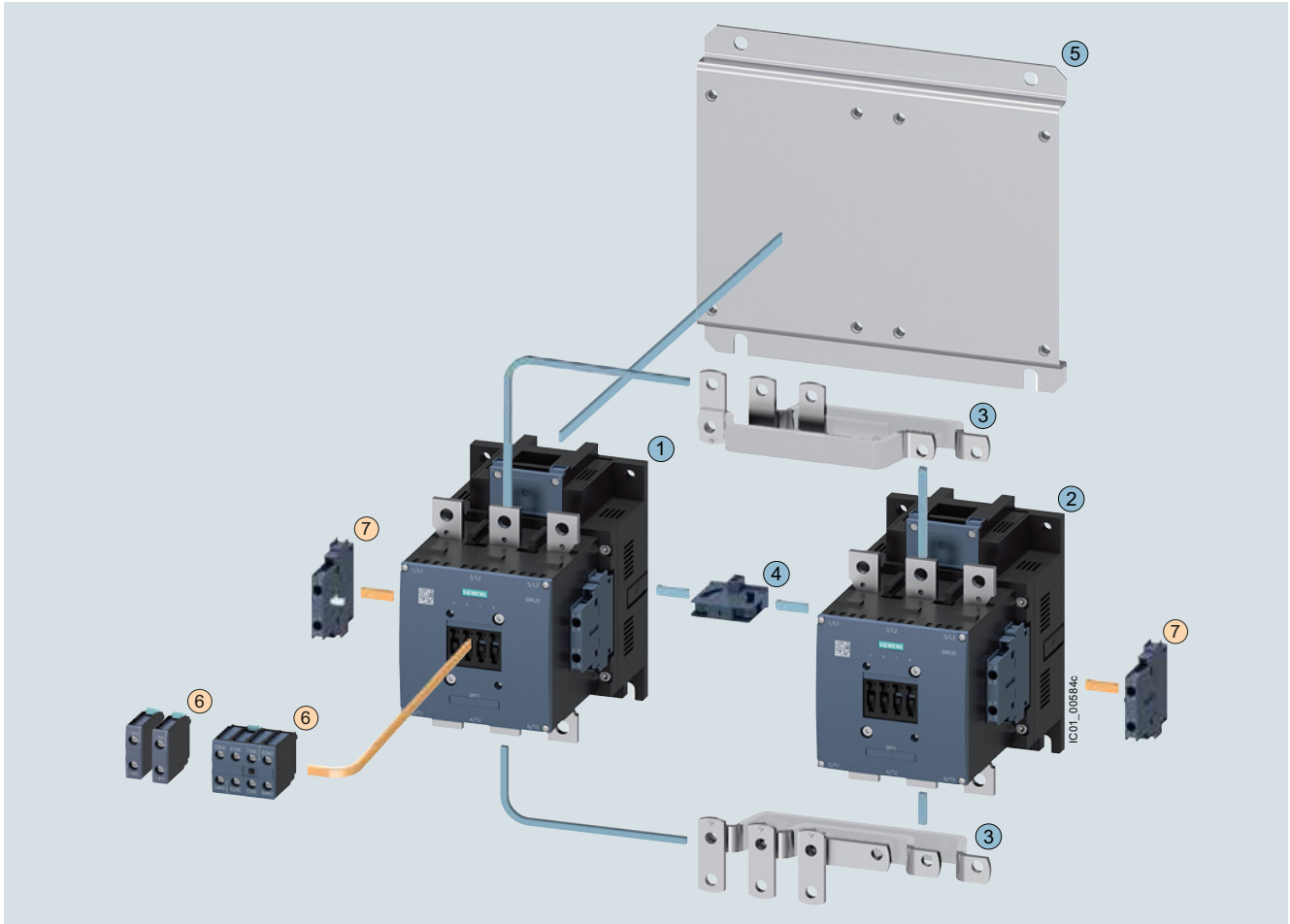
| Individual parts | Type | | Page |
|---|------------|---------|---------------|
| | Q11 | Q12 | |
| ① ② Contactors, 55 kW | 3RT1054 | 3RT1054 | 3/72 ... 3/74 |
| ① ② Contactors, 75 kW | 3RT1055 | 3RT1055 | 3/72 ... 3/74 |
| ① ② Contactors, 90 kW | 3RT1056 | 3RT1056 | 3/72 ... 3/74 |
| ③ Assembly kit 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 | | 3/111 |
| ④ Two connectors for two contactors | 3RA1932-2D | | 3/115 |
| ⑤ Mechanical interlock (must be ordered separately) | 3RA1954-2A | | 3/115 |
| ⑥ Base plate for reversing contactor assemblies | 3RA1952-2A | | 3/120 |

Switching devices – Contactors and contactor assemblies – for switching motors

Reversing contactor assemblies

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, front | 3RH1921 | 3/98 |
| ⑦ Auxiliary switch, lateral | 3RH1921 | 3/100 |

Reversing contactor assembly for customer assembly

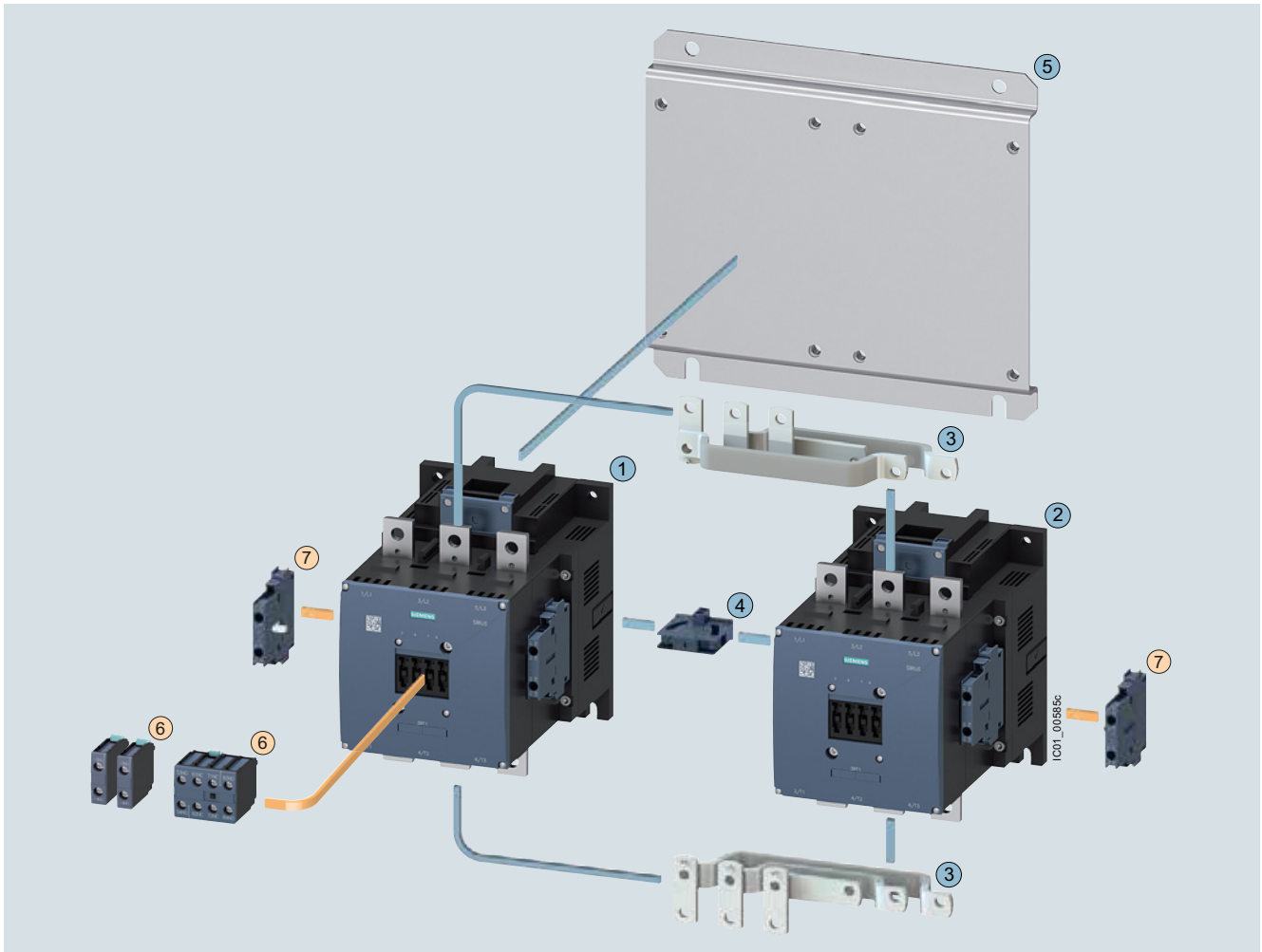
| Individual parts | Type | Page | |
|---|------------|------------|-------------------------|
| | Q11 | Q12 | |
| ①② Contactors, 110 kW | 3RT1.64 | 3RT1.64 | 3/72 ... 3/74, 3/136 |
| ①② Contactors, 132 kW | 3RT1.65 | 3RT1.65 | 3/72 ... 3/74, 3/136 |
| ①② Contactors, 160 kW | 3RT1.66 | 3RT1.66 | 3/72 ... 3/74, 3/136 |
| 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 | | 3/111 |
| ④ Mechanical interlock (must be ordered separately) | 3RA1954-2A | | 3/115 |
| ⑤ Base plate for reversing contactor assemblies | 3RA1962-2A | | 3/120 |

Switching devices – Contactors and contactor assemblies – for switching motors

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, front | 3RH1921 | 3/98 |
| ⑦ Auxiliary switch, lateral | 3RH1921 | 3/100 |

Reversing contactor assembly for customer assembly

| Individual parts | Type | | Page |
|---|------------|---------|-------------------------|
| | Q11 | Q12 | |
| ①② Contactors, 200 kW | 3RT1.75 | 3RT1.75 | 3/72 ... 3/74, 3/136 |
| ①② Contactors, 250 kW | 3RT1.76 | 3RT1.76 | 3/72 ... 3/74, 3/136 |
| 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 | | 3/111 |
| ④ Mechanical interlock (must be ordered separately) | 3RA1954-2A | | 3/115 |
| ⑤ Base plate for reversing contactor assemblies | 3RA1972-2A | | 3/120 |

Switching devices – Contactors and contactor assemblies – for switching motors

Contactors 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 for article numbers, see www.siemens.com/sirius/conversion-tool

TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=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 3/171 onwards](#).
- For all individual parts for customer assembly, see [from page 3/77 onwards](#).

The 3RA24 contactor assemblies for star-delta (wye-delta) starting have screw or spring-loaded terminals and are suitable for screw fixing and snap-on mounting 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:

Contactors 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, www.siemens.com/support-request.

¹⁾ For effective assistance 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 [page 7/98 onwards](#)) or 3RB3 overload relays (see [page 7/111 onwards](#)) for contactor mounting or stand-alone installation, SIMOCODE pro 3UF7 motor management and control devices ([page 10/16 onwards](#)) or 3RN2 thermistor motor protection relays ([page 10/143 onwards](#)) can be used for motor protection.

The overload relay can either be mounted onto the line contactor or fitted separately. 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 3/107](#)) 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

Switching devices – Contactors and contactor assemblies – for switching motors



Contactor 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 | Star contactor | 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 | | |
|  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-loaded 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"/> |
| Size of the contactor | 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.

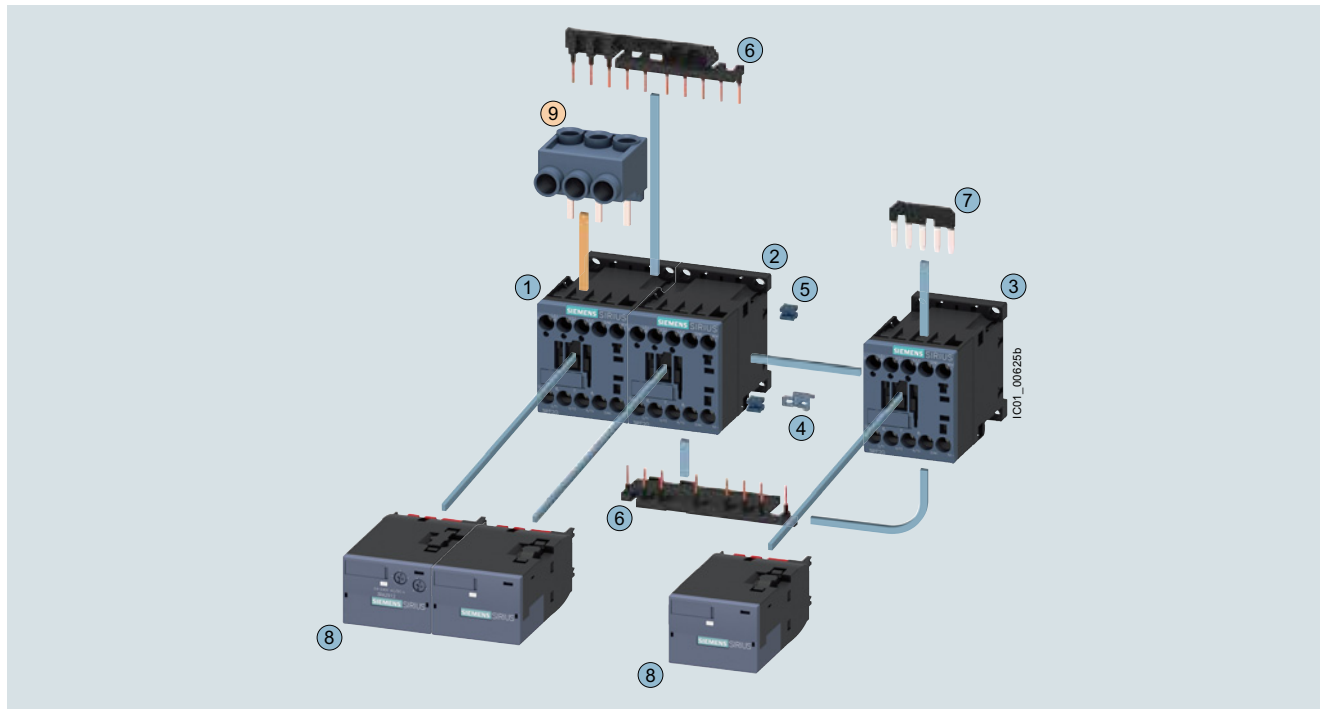
Switching devices – Contactors and contactor assemblies – for switching motors

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 3-phase infeed terminal ¹⁾ | 3RA2913-3K | 3/117 |

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, 3/60 |
| ①②③ Contactors, 7.5 kW | 3RT2017 | 3RT2017 | 3RT2015 | 3/55, 3/60 |
| ①②③ Contactors, 11 kW | 3RT2018 | 3RT2018 | 3RT2016 | 3/55, 3/60 |
| ④ ... ⑦ Assembly kit S00-S00-S00 comprising: | 3RA2913-2BB1 | | | 3/112 |
| 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 | | | 3/107 |

¹⁾ Part ⑨ can only be mounted for contactors with screw terminals.

²⁾ The version with 1 NO is required for momentary-contact operation.

Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/171.

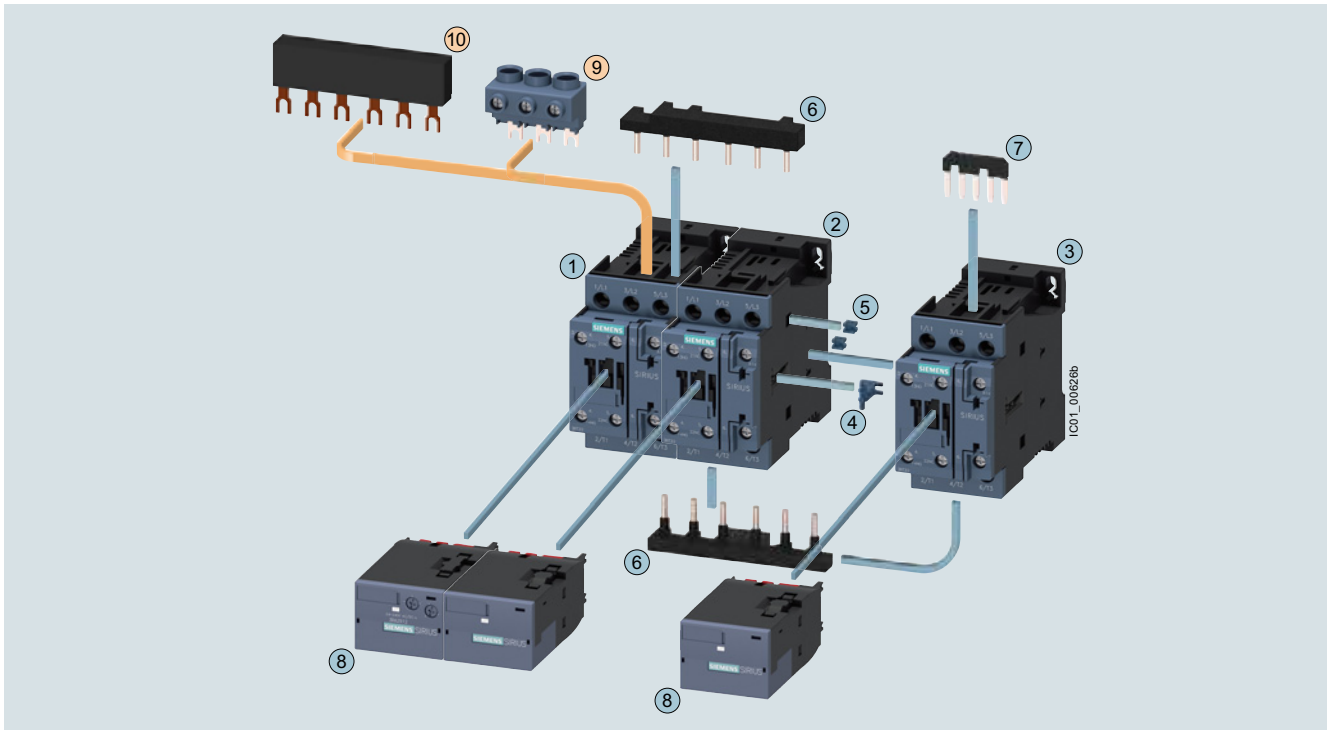
Switching devices – Contactors and contactor assemblies – for switching motors

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 3-phase infeed terminal ¹⁾ | 3RV2925-5AB | 3/117 |
| ⑩ 3-phase busbar ¹⁾ | 3RV1915-1AB | 3/117 |

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, 3/64 |
| ①②③ Contactors, 15/18.5 kW | 3RT2026 | 3RT2026 | 3RT2024 | | 3/56, 3/64 |
| ①②③ Contactors, 22 kW | 3RT2027 | 3RT2027 | 3RT2026 | | 3/56, 3/64 |
| ④ ... ⑦ Assembly kit S0-S0-S0 comprising: | 3RA2923-2BB1 | | | | 3/112 |
| 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 | | | | 3/107 |

¹⁾ The parts ⑨ and ⑩ can only be mounted for contactors with screw terminals, the wiring modules ⑥ must be removed beforehand.

Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/172.

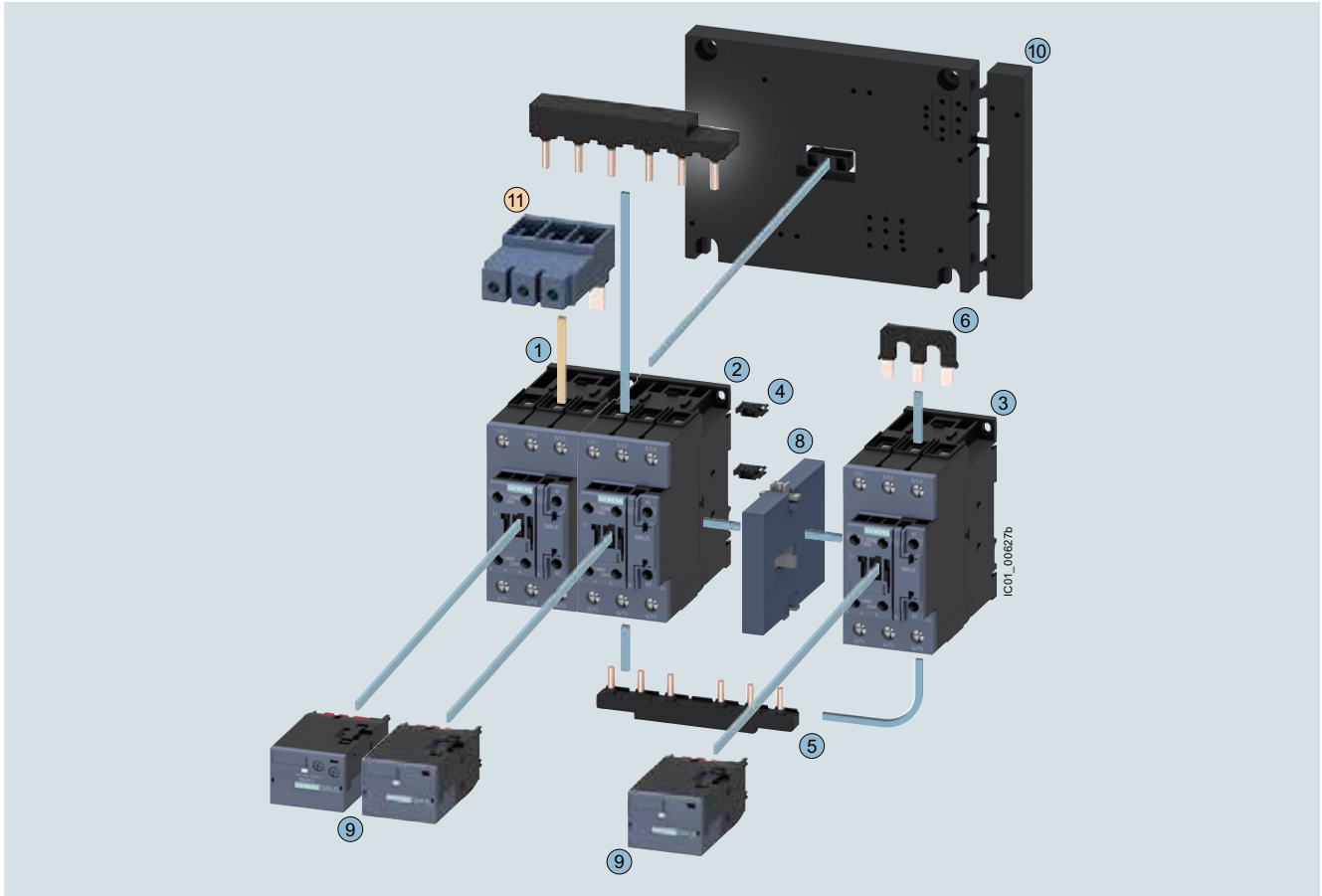
Switching devices – Contactors and contactor assemblies – for switching motors

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 3-phase infeed terminal | 3RV2935-5A | 3/117 |

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, 3/69 | |
| ①②③ Contactors, 37 kW | 3RT2035 | 3RT2035 | 3RT2027 | 3/58, 3/69 | |
| ①②③ Contactors, 45 kW | 3RT2036 | 3RT2036 | 3RT2028 | 3/58, 3/69 | |
| ①②③ Contactors, 55 kW | 3RT2037 | 3RT2037 | 3RT2035 | 3/58, 3/69 | |
| ④ ... ⑦ Assembly kit S2-S2-S2 comprising: | 3RA2933-2BB1 | | | 3/112 | |
| 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 of the line contactor with the A2 coil contact of the delta contactor (not shown in the drawing) | | | | | |
| ⑧ Mechanical interlock | 3RA2934-2B | | | 3/115 | |
| ⑨ Function modules for star-delta (wye-delta) starting | 3RA2816-0EW20 | | | 3/107 | |
| ⑩ Base plate star-delta (wye-delta) | 3RA2932-2F | | | 3/120 | |

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 3/112.

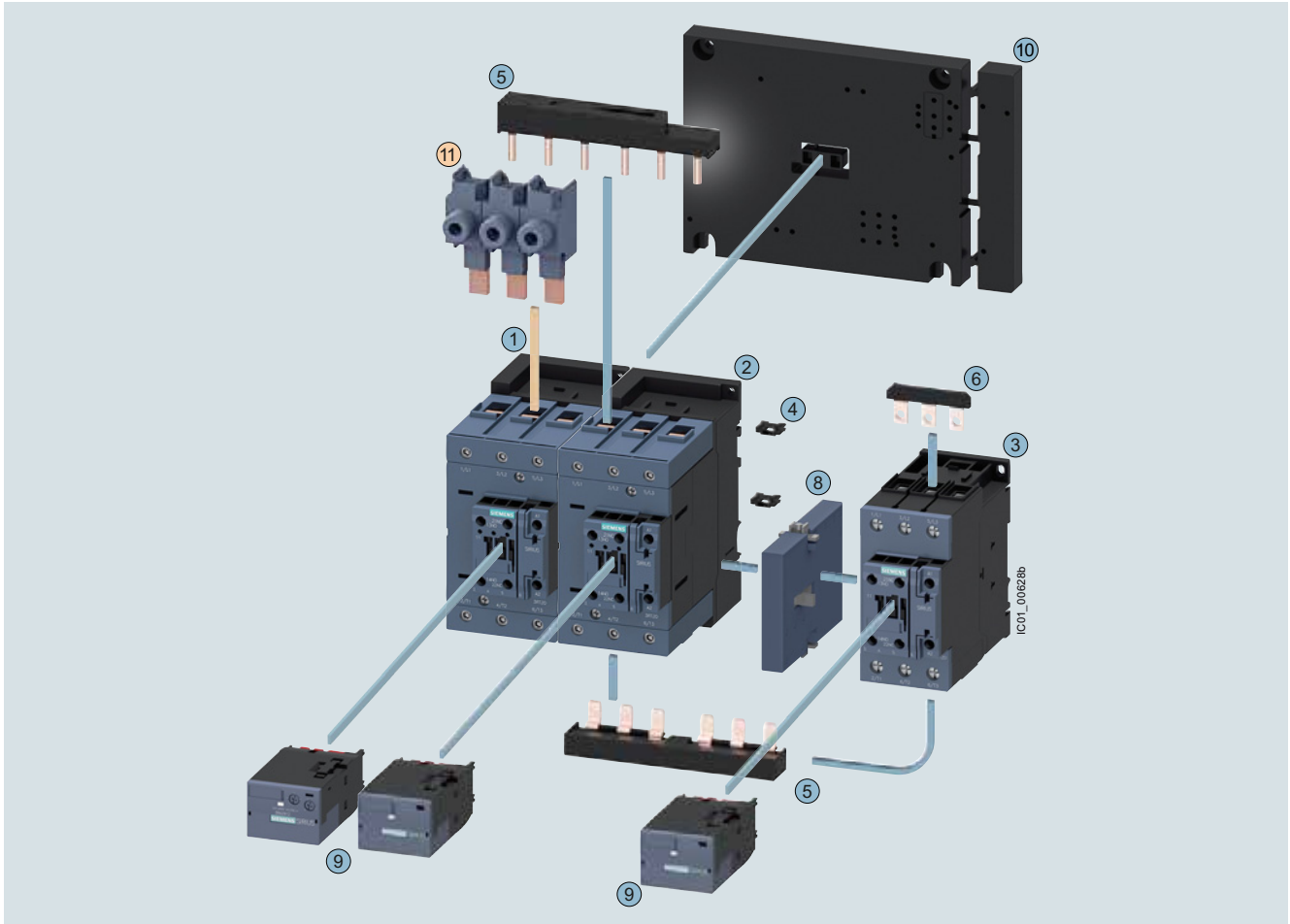
Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/173.

Switching devices – Contactors and contactor assemblies – for switching motors

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 1-phase infeed terminal (3 units are required) | 3RA2943-3L | 3/117 |

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, 3/71 |
| ① ② ③ Contactors, 75 kW | 3RT2045 | 3RT2045 | 3RT2036 | 3/59, 3/71 |
| ① ② ③ Contactors, 90 kW | 3RT2046 | 3RT2046 | 3RT2037 | 3/59, 3/71 |
| ④ ... ⑦ Assembly kit S3-S3-S2 comprising: | 3RA2943-2C | | | 3/112 |
| 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 of the line contactor with the A2 coil contact of the delta contactor (not shown in the drawing) | | | | |
| ⑧ Mechanical interlock | 3RA2934-2B | | | 3/115 |
| ⑨ Function modules for star-delta (wye-delta) starting | 3RA2816-0EW20 | | | 3/107 |
| ⑩ Base plate star-delta (wye-delta) | 3RA2942-2F | | | 3/120 |

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 3/112.

Complete contactor assemblies for star-delta (wye-delta) starting, see page 3/174.

Switching devices – Contactors and contactor assemblies – for switching motors

Contactor assemblies for star-delta (weye-delta) starting

SIRIUS 3RA24 contactor assemblies for star-delta (weye-delta) starting, up to 90 kW

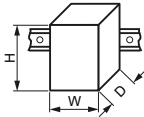
Technical specifications

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 for modular system, see
<https://support.industry.siemens.com/cs/ww/en/view/60311318>
 Equipment Manual, see
<https://support.industry.siemens.com/cs/ww/en/view/60306557>
 Application Manual for controls with IE3/IE4 motors, see
<https://support.industry.siemens.com/cs/ww/en/view/94770820>

Unless otherwise indicated below, the technical specifications correspond to those of the 3RT individual contactors (see page 3/23 onwards) and 3RU2 overload relays (see page 7/94 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 | | | | | | | |
| • AC operation | | | | | | | |
| - Screw terminals |  | mm | 135 x 68 x 145 | | 135 x 101 x 171 | | |
| - Spring-loaded terminals | | mm | 135 x 84 x 145 | | 135 x 114 x 171 | | |
| • DC operation | | | | | | | |
| - Screw terminals | | mm | 135 x 68 x 145 | | 135 x 101 x 181 | | |
| - Spring-loaded terminals | | 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 Equipment Manual for contactors/contactor assemblies . | | | | | |
| Short-circuit protection | | | | | | | |
| Main circuit without overload relays | | | | | | | |
| • 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 | 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 | 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 | 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 | | | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

Contactor assemblies for star-delta (wye-delta) starting

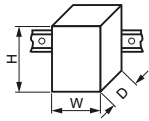
SIRIUS 3RA24 contactor assemblies for star-delta (wye-delta) starting, up to 90 kW

| 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 | | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

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 | 3RT2046 |
| • Q13 delta contactor | | Type | 3RT2035 | 3RT2035 | 3RT2036 | 3RT2037 | 3RT2045 | 3RT2046 |
| • Q12 star contactor | | Type | 3RT2026 | 3RT2027 | 3RT2028 | 3RT2035 | 3RT2035 | 3RT2036 |
| Mechanical endurance | | Operating cycles | 1 million | | | | | |
| Unassigned auxiliary contacts of the individual contactors | | For circuit diagrams of the control circuit, see Equipment 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 | | | | | |

Switching devices – Contactors and contactor assemblies – for switching motors

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

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-loaded terminals  | |
|------------------------------------|---|-------|-------|------------------------------------|----|---|--------------|---|--------------|
| Operational current I_e up to | Ratings of three-phase motors at 50 Hz and 60 Hz at | | | | | Article No. | Price per PU | Article No. | Price per PU |
| 400 V | 230 V | 400 V | 690 V | V | d | d | d | d | |
| A | kW | kW | kW | | | | | | |
| 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 3/164.



Switching devices – Contactors and contactor assemblies – for switching motors

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 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  | | Spring-loaded terminals  | |
|------------------------------------|---|---------|-------|------------------------------------|----|---|--------------|---|--------------|
| Operational current I_e up to | Ratings of three-phase motors at 50 Hz and 60 Hz at | | | | | Article No. | Price per PU | Article No. | Price per PU |
| 400 V | 230 V | 400 V | 690 V | V | d | | | | |
| A | kW | kW | kW | | | | | | |
| 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 | 2 | 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 | ▶ | 3RA2425-8XF32-1AL2 | 2 | 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 | ▶ | 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 3/165.

Switching devices – Contactors and contactor assemblies – for switching motors

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 S2-S2-S0 · Up to 45 kW and S2-S2-S2 · 55 kW
AC operation  or AC/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-loaded terminals  | |
|---|---|--------------|-------|------------------------------------|----|---|--------------|----|---|--------------|
| Operational current I_e up to | Ratings of three-phase motors at 50 Hz and 60 Hz at | | | Rated control supply voltage U_s | | Article No. | Price per PU | | Article No. | Price per PU |
| 400 V | 230 V | 400 V | 690 V | V | d | d | d | d | | |
| A | kW | kW | kW | V | d | d | d | 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, 50/60 Hz AC or DC | | | | | | | | | | |
| With integrated coil circuit (varistor integrated in electronics at the factory) | | | | | | | | | | |
| 50/65 | 19.6 | 22/30 | 34 | 20 ... 33 AC/DC | 2 | 3RA2434-8XF32-1NB3 | -- | -- | -- | |
| 80 | 25 | 37 | 63 | 20 ... 33 AC/DC | 2 | 3RA2435-8XF32-1NB3 | -- | -- | -- | |
| 86 | 27 | 45 | 63 | 20 ... 33 AC/DC | 2 | 3RA2436-8XF32-1NB3 | -- | -- | -- | |
| 115 | 37 | 55 | 93 | 20 ... 33 AC/DC | 5 | 3RA2437-8XF32-1NB3 | -- | -- | -- | |
| For IO-Link connection | | | | | | | | | | |
| 50/65 | 19.6 | 22/30 | 34 | 20 ... 33 AC/DC | 5 | 3RA2434-8XE32-1NB3 | -- | -- | -- | |
| 80 | 25 | 37 | 63 | 20 ... 33 AC/DC | 5 | 3RA2435-8XE32-1NB3 | -- | -- | -- | |
| 86 | 27 | 45 | 63 | 20 ... 33 AC/DC | 5 | 3RA2436-8XE32-1NB3 | -- | -- | -- | |
| 115 | 37 | 55 | 93 | 20 ... 33 AC/DC | 5 | 3RA2437-8XE32-1NB3 | -- | -- | -- | |
| For AS-Interface connection | | | | | | | | | | |
| 50/65 | 19.6 | 22/30 | 34 | 20 ... 33 AC/DC | 5 | 3RA2434-8XH32-1NB3 | -- | -- | -- | |
| 80 | 25 | 37 | 63 | 20 ... 33 AC/DC | X | 3RA2435-8XH32-1NB3 | -- | -- | -- | |
| 86 | 27 | 45 | 63 | 20 ... 33 AC/DC | X | 3RA2436-8XH32-1NB3 | -- | -- | -- | |
| 115 | 37 | 55 | 93 | 20 ... 33 AC/DC | X | 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 3/166.

Switching devices – Contactors and contactor assemblies – for switching motors

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 S3-S3-S2 · Up to 90 kW

AC operation  **or AC/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-loaded terminals  | |
|---|---|-------|-------|------------------------------------|----|---|--------------|---|--------------|
| Operational current I_e up to | Ratings of three-phase motors at 50 Hz and 60 Hz at | | | | | Article No. | Price per PU | Article No. | Price per PU |
| 400 V | 230 V | 400 V | 690 V | V | d | | | | |
| A | kW | kW | kW | | | | | | |
| 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 | 5 | 3RA2445-8XF32-1AL2 | -- | | |
| 160 | 45 | 90 | 132 | 24 AC | X | 3RA2446-8XF32-1AC2 | -- | | |
| | | | | 110 AC | X | 3RA2446-8XF32-1AG2 | -- | | |
| | | | | 230 AC | 5 | 3RA2446-8XF32-1AL2 | -- | | |
| AC/DC operation, 50/60 Hz AC or DC | | | | | | | | | |
| With integrated coil circuit (varistor integrated in electronics at the factory) | | | | | | | | | |
| 115 | 30 | 55 | 90 | 20 ... 33 AC/DC | X | 3RA2444-8XF32-1NB3 | -- | | |
| 150 | 37 | 75 | 110 | 20 ... 33 AC/DC | 5 | 3RA2445-8XF32-1NB3 | -- | | |
| 160 | 45 | 90 | 132 | 20 ... 33 AC/DC | X | 3RA2446-8XF32-1NB3 | -- | | |
| For IO-Link connection | | | | | | | | | |
| 115 | 30 | 55 | 90 | 20 ... 33 AC/DC | X | 3RA2444-8XE32-1NB3 | -- | | |
| 150 | 37 | 75 | 110 | 20 ... 33 AC/DC | X | 3RA2445-8XE32-1NB3 | -- | | |
| 160 | 45 | 90 | 132 | 20 ... 33 AC/DC | X | 3RA2446-8XE32-1NB3 | -- | | |
| For AS-Interface connection | | | | | | | | | |
| 115 | 30 | 55 | 90 | 20 ... 33 AC/DC | X | 3RA2444-8XH32-1NB3 | -- | | |
| 150 | 37 | 75 | 110 | 20 ... 33 AC/DC | X | 3RA2445-8XH32-1NB3 | -- | | |
| 160 | 45 | 90 | 132 | 20 ... 33 AC/DC | X | 3RA2446-8XH32-1NB3 | -- | | |

Representation of the complete contactor assemblies for star-delta (wye-delta) starting with optionally mountable accessories, [see page 3/167](#).

Switching devices – Contactors and contactor assemblies – for switching motors

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

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 ([page 7/123 onwards](#)), SIMOCODE pro 3UF7 motor management and control devices ([page 10/16 onwards](#)) or 3RN2 thermistor motor protection relays ([page 10/143 onwards](#)) 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, www.siemens.com/support-request.

¹⁾ For effective assistance 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

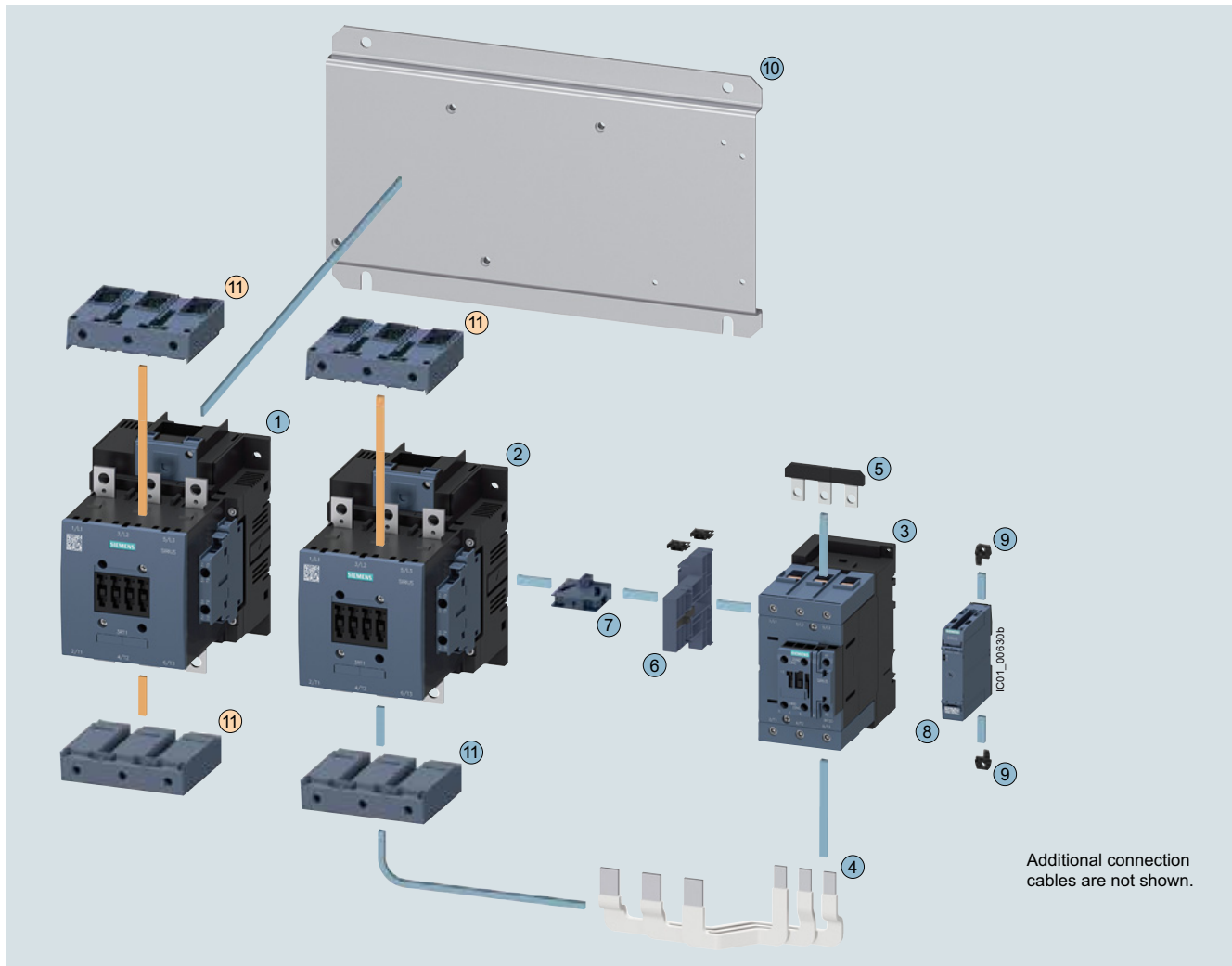
Industry Mall, see www.siemens.com/product?3RA24_3RT

Switching devices – Contactors and contactor assemblies – for switching motors

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



Additional connection cables are not shown.

Mountable accessories (optional)

| To be ordered separately | Type | Page |
|--------------------------|------------|-------|
| ① Box terminal blocks | 3RT1955-4G | 3/117 |

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

| Individual parts | Type | | | Page |
|---|--------------------------|---------|---------|---------------------------|
| | Q11 | Q13 | Q12 | |
| ①②③ Contactors, 110 kW | 3RT1054 | 3RT1054 | 3RT2045 | 3/59, 3/67, 3/71 ... 3/74 |
| ①②③ Contactors, 132 kW | 3RT1055 | 3RT1055 | 3RT2046 | 3/59, 3/67, 3/71 ... 3/74 |
| ①②③ Contactors, 160 kW | 3RT1056 | 3RT1056 | 3RT2047 | 3/59, 3/67, 3/71 ... 3/74 |
| ④ <u>Assembly kit S6-S6-S3 for contactors with box terminals</u> consisting of: Wiring modules, bottom | 3RA1953-3G | | | 3/113 |
| ⑤ Star jumper S3 | 3RT1946-4BA31 | | | 3/114 |
| ⑥ Adapter for the mechanical interlock between S6 and S3 (including two connectors) | 3RA1954-2G ¹⁾ | | | 3/115 |
| ⑦ Mechanical interlock between S6 and S3 | 3RA1954-2A | | | 3/115 |
| ⑧ Timing relay with star-delta (wye-delta) function | 3RP257. | | | 10/38 |
| ⑨ Push-in lugs for star-delta (wye-delta) timing relays | 3ZY1311-0AA00 | | | 10/39 |
| ⑩ Base plate star-delta (wye-delta) | 3RA1952-2E | | | 3/120 |
| ⑪ Box terminal block | 3RT1955-4G | | | 3/117 |

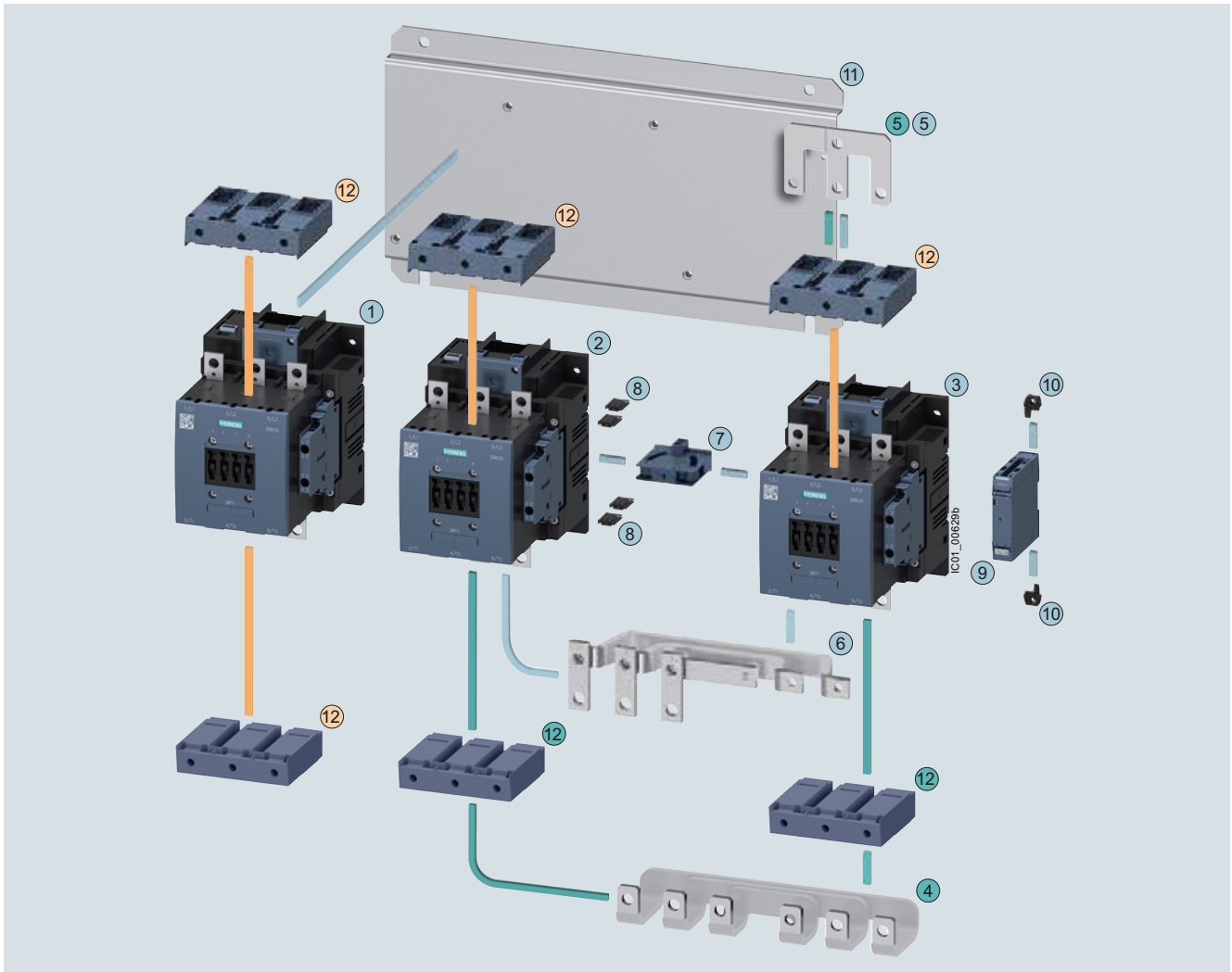
¹⁾ The 3RA1954-2G adapter cannot be used in conjunction with 3RT204...-KB coupling contactors, size S3.

Switching devices – Contactors and contactor assemblies – for switching motors

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 | 3/117 |

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

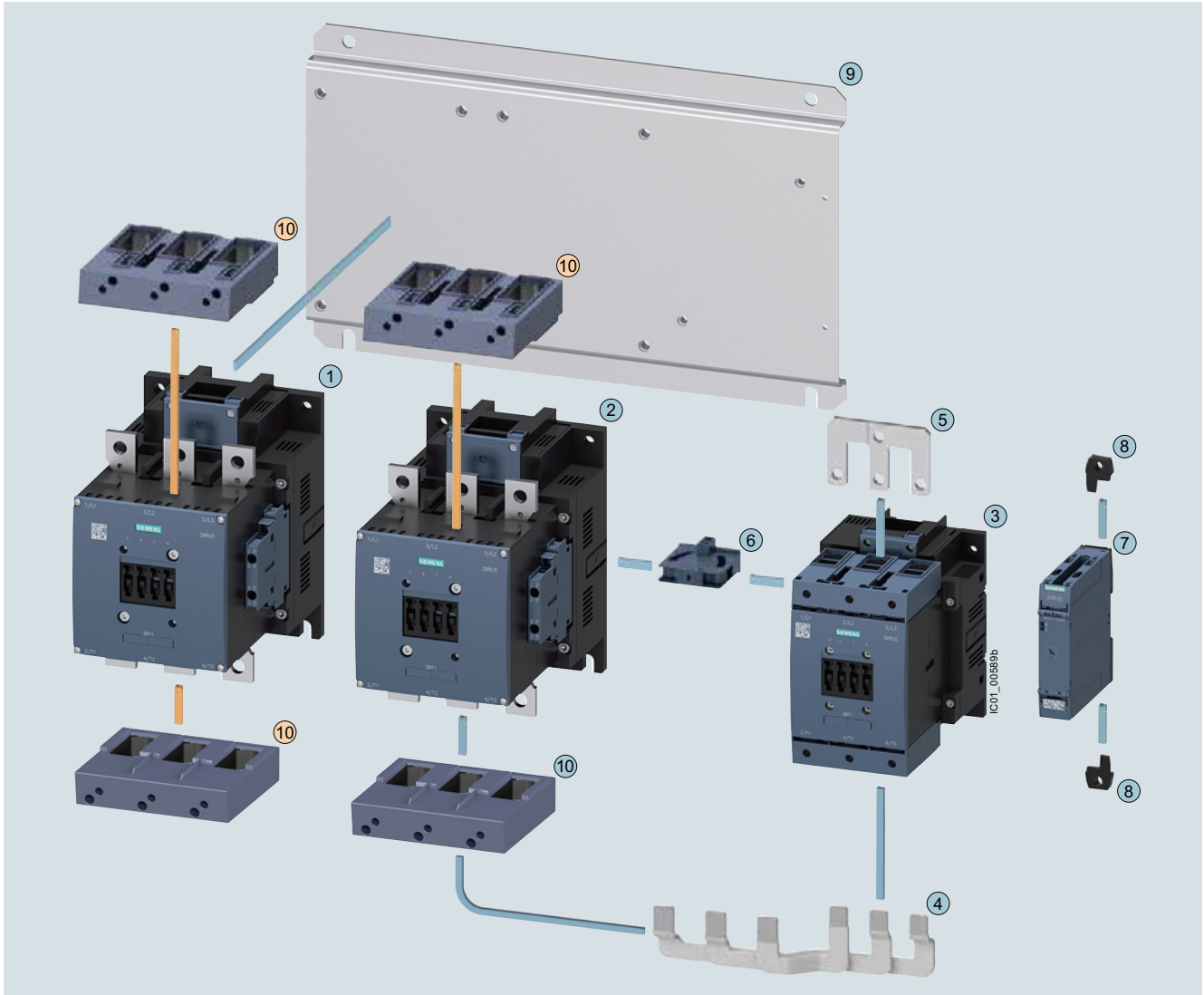
| Individual parts | Type | | | Page |
|---|---------------|---------|---------|---------------|
| | Q11 | Q13 | Q12 | |
| 1 2 3 | 3RT1054 | 3RT1054 | 3RT1054 | 3/72 ... 3/74 |
| 1 2 3 | 3RT1055 | 3RT1055 | 3RT1055 | 3/72 ... 3/74 |
| 1 2 3 | 3RT1056 | 3RT1056 | 3RT1056 | 3/72 ... 3/74 |
| 4 5 | 3RA1953-2B | | | 3/113 |
| Assembly kit S6-S6-S6 for contactors with box terminals consisting of: | | | | |
| 4 | | | | |
| | | | | |
| 5 | | | | |
| 5 6 | 3RA1953-2N | | | 3/113 |
| Assembly kit S6-S6-S6 for contactors without box terminals consisting of: | | | | |
| 6 | | | | |
| 5 | | | | |
| 7 | 3RA1954-2A | | | 3/115 |
| 8 | 3RA1932-2D | | | 3/115 |
| 9 | 3RP257 | | | 10/38 |
| 10 | 3ZY1311-0AA00 | | | 10/39 |
| 11 | 3RA1952-2F | | | 3/120 |
| 12 | 3RT1955-4G | | | 3/117 |

Switching devices – Contactors and contactor assemblies – for switching motors

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 | 3/117 |

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

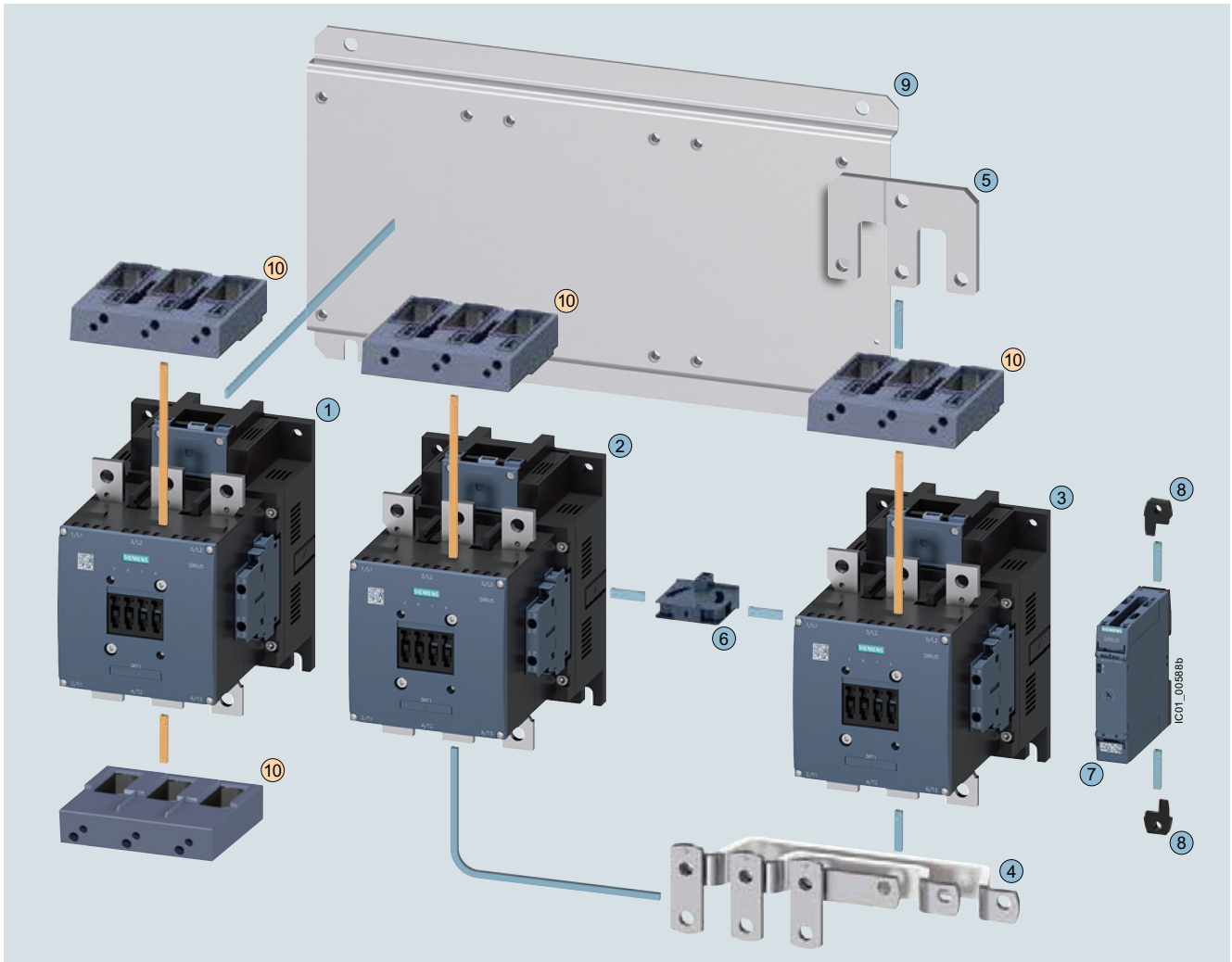
| Individual parts | Type | | | Page |
|--|---------------|---------|---------|----------------------|
| | Q11 | Q13 | Q12 | |
| ①②③ Contactors, 200 kW | 3RT1.64 | 3RT1.64 | 3RT1054 | 3/72 ... 3/74, 3/136 |
| ①②③ Contactors, 250 kW | 3RT1.65 | 3RT1.65 | 3RT1055 | 3/72 ... 3/74, 3/136 |
| ④ Assembly kit S10-S10-S6 for contactors with box terminals consisting of: Wiring modules, bottom | 3RA1963-3E | | | 3/113 |
| ⑤ Star jumper S6 | 3RT1956-4BA31 | | | 3/114 |
| ⑥ Mechanical interlock between S10 and S6 | 3RA1954-2A | | | 3/115 |
| ⑦ Timing relay with star-delta (wye-delta) function | 3RP257. | | | 10/38 |
| ⑧ Push-in lugs for star-delta (wye-delta) timing relays | 3ZY1311-0AA00 | | | 10/39 |
| ⑨ Base plate star-delta (wye-delta) | 3RA1962-2E | | | 3/120 |
| ⑩ Box terminal block | 3RT1966-4G | | | 3/117 |

Switching devices – Contactors and contactor assemblies – for switching motors

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 | 3/117 |

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

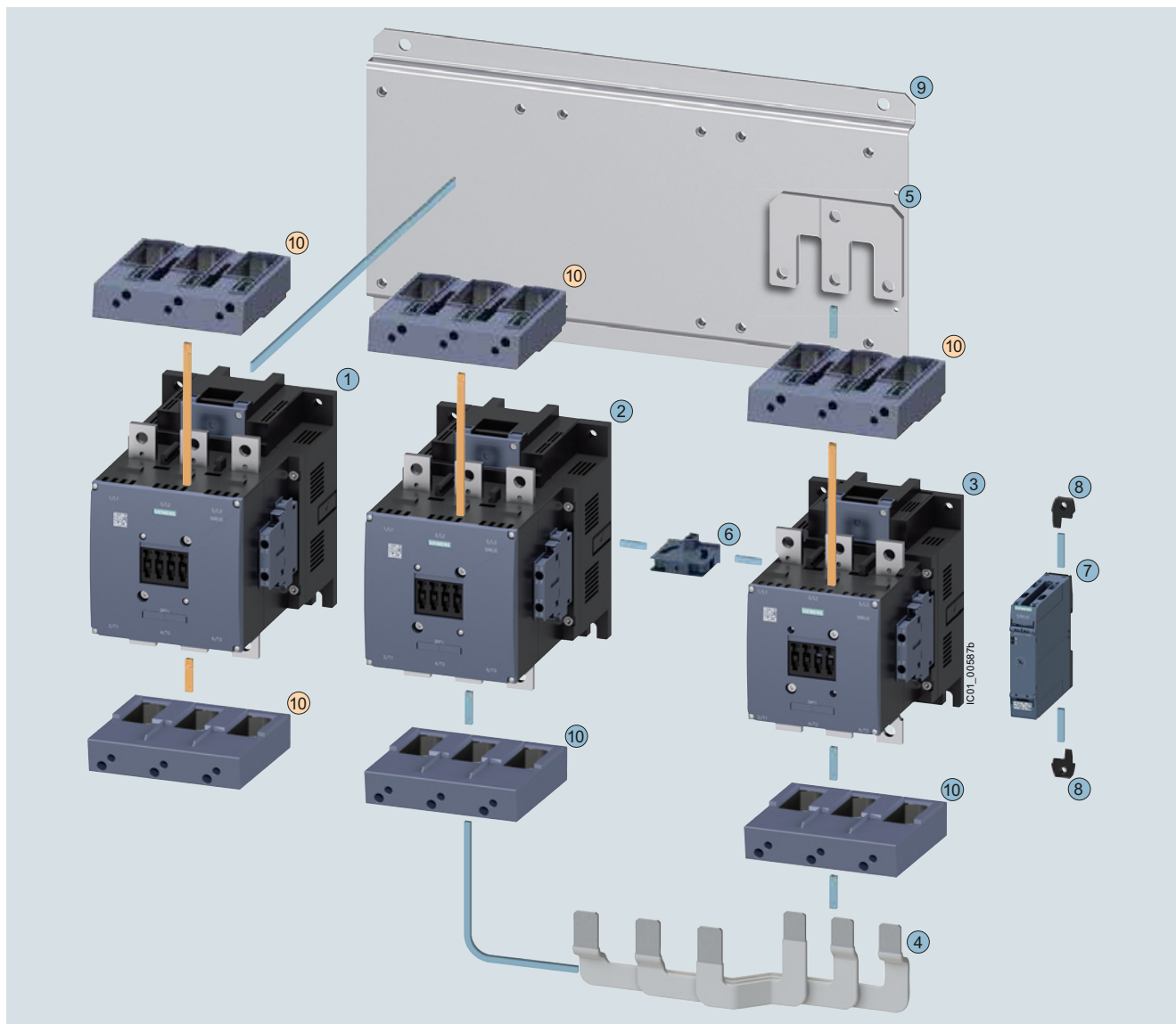
| Individual parts | Type | | | Page |
|---|---------------|---------|---------|----------------------|
| | Q11 | Q13 | Q12 | |
| ①②③ Contactors, 200 kW | 3RT1.64 | 3RT1.64 | 3RT1.64 | 3/72 ... 3/74, 3/136 |
| ①②③ Contactors, 250 kW | 3RT1.65 | 3RT1.65 | 3RT1.65 | 3/72 ... 3/74, 3/136 |
| ④⑤ Assembly kit S10-S10-S10 for contactors without box terminals consisting of: | 3RA1963-2B | | | 3/113 |
| ④ Link rails, bottom | | | | |
| ⑤ Star jumper S10 | | | | |
| ⑥ Mechanical interlock | 3RA1954-2A | | | 3/115 |
| ⑦ Timing relay with star-delta (wye-delta) function | 3RP257. | | | 10/38 |
| ⑧ Push-in lugs for star-delta (wye-delta) timing relays | 3ZY1311-0AA00 | | | 10/39 |
| ⑨ Base plate star-delta (wye-delta) | 3RA1962-2F | | | 3/120 |

Switching devices – Contactors and contactor assemblies – for switching motors

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 | 3/117 |

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

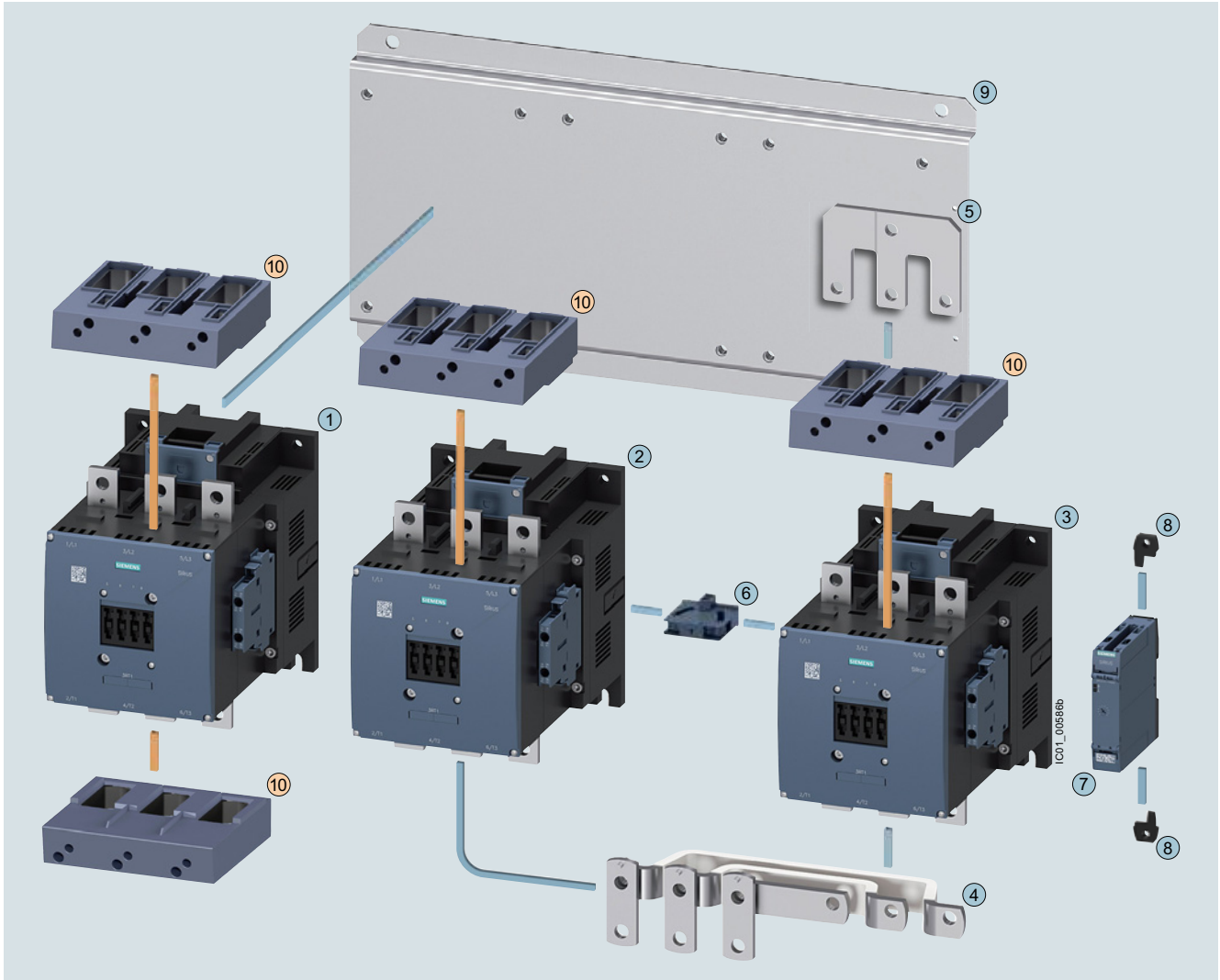
| Individual parts | Type | | | Page |
|---|---------------|---------|---------|----------------------|
| | Q11 | Q13 | Q12 | |
| ①②③ Contactors, 355 kW | 3RT1.75 | 3RT1.75 | 3RT1.64 | 3/72 ... 3/74, 3/136 |
| ①②③ Contactors, 400 kW | 3RT1.75 | 3RT1.75 | 3RT1.65 | 3/72 ... 3/74, 3/136 |
| ①②③ Contactors, 500 kW | 3RT1.76 | 3RT1.76 | 3RT1.66 | 3/72 ... 3/74, 3/136 |
| ④ Assembly kit S12-S12-S10 for contactors with box terminals consisting of: Wiring modules, bottom | 3RA1973-3E | | | 3/113 |
| ⑤ Star jumper S10 | 3RT1966-4BA31 | | | 3/114 |
| ⑥ Mechanical interlock between S12 and S10 | 3RA1954-2A | | | 3/115 |
| ⑦ Timing relay with star-delta (wye-delta) function | 3RP257. | | | 10/38 |
| ⑧ Push-in lugs for star-delta (wye-delta) timing relays | 3ZY1311-0AA00 | | | 10/39 |
| ⑨ Base plate star-delta (wye-delta) | 3RA1972-2E | | | 3/120 |
| ⑩ Box terminal blocks | 3RT1966-4G | | | 3/117 |

Switching devices – Contactors and contactor assemblies – for switching motors

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 | 3/117 |

Contactor assemblies for star-delta (wye-delta) starting for customer assembly

| Individual parts | Type | | | Page |
|--|---|---------------|---------|----------------------|
| | Q11 | Q13 | Q12 | |
| ① ② ③ | 3RT1.75 | 3RT1.75 | 3RT1.75 | 3/72 ... 3/74, 3/136 |
| ① ② ③ | 3RT1.76 | 3RT1.76 | 3RT1.76 | 3/72 ... 3/74, 3/136 |
| ④ ⑤ | 3RA1973-2B | | | 3/113 |
| 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 | | 3/115 |
| ⑦ | Timing relay with star-delta (wye-delta) function | 3RP257. | | 10/38 |
| ⑧ | Push-in lugs for star-delta (wye-delta) timing relays | 3ZY1311-0AA00 | | 10/39 |
| ⑨ | Base plate star-delta (wye-delta) | 3RA1972-2F | | 3/120 |

Switching devices – Contactors and contactor assemblies – for switching motors

Notes

3

**Price groups**

PG 41A, 41B

4/2

Introduction**Contactors for special applications**

- 4/6 SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A **NEW**
- 4/23 SIRIUS 3RT.3 contactors, 4-pole up to 525 A
- 4/38 SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC
- 4/44 SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole
- 4/53 SIRIUS 3RT23 to 3RT26, 3RT14 contactors
Contactors for railway applications
- 4/55 - SIRIUS 3RT contactors with extended operating range, 3-pole
- 4/63 - SIRIUS 3RH2 contactor relays with extended operating range
- 4/65 - 3TH4 contactor relays, 8-pole
- 4/67 - 3TC contactors for switching DC voltage, 2-pole
- 4/69 3TC contactors for switching DC voltage, 1- and 2-pole

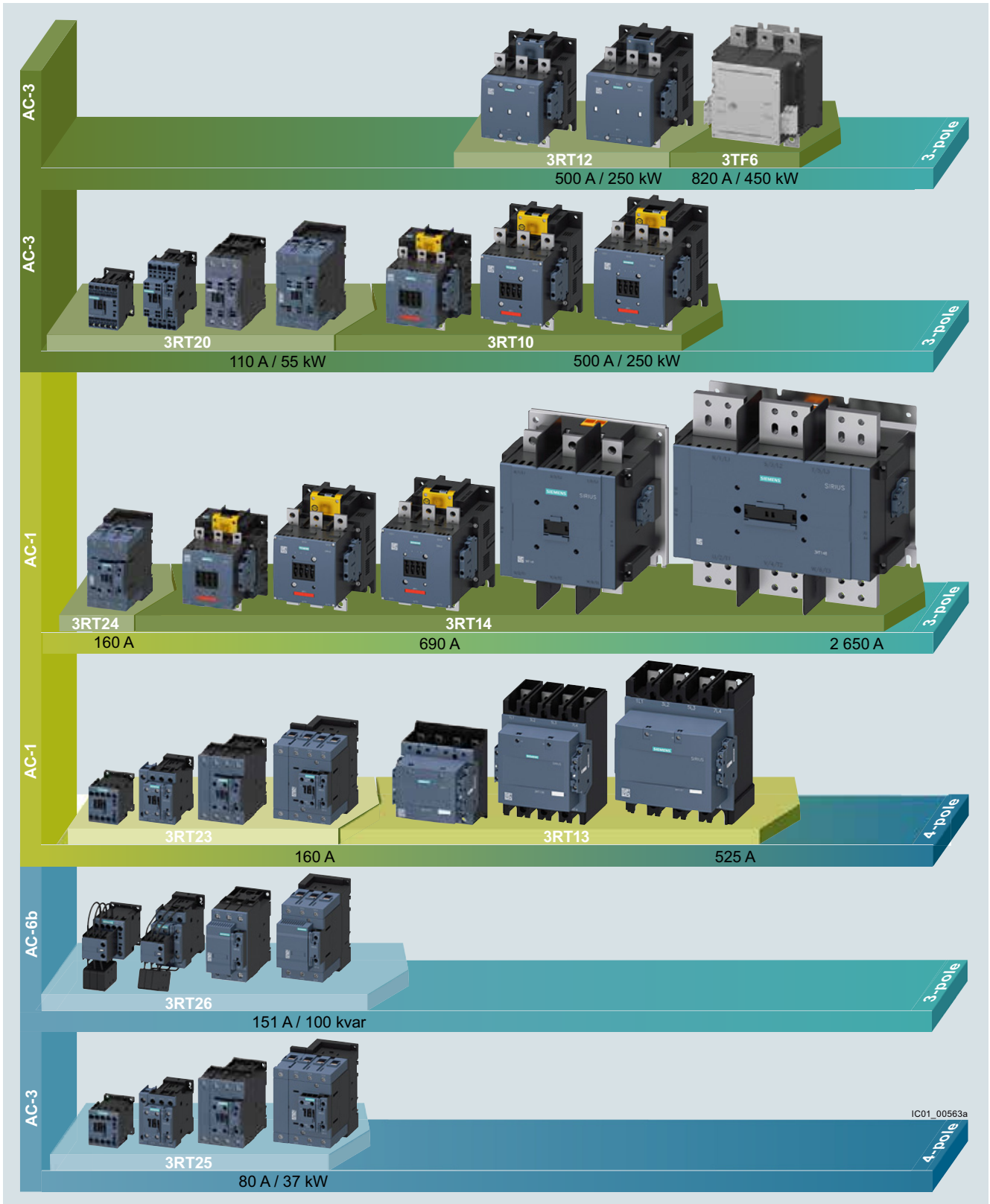
3/143

3TG10 power relays/miniature contactors

Switching devices – Contactors and contactor assemblies – Special applications

Introduction

Overview



Overview of the 3RT and 3TF contactors

More information

Homepage, see www.siemens.com/siriusIndustry Mall, see www.siemens.com/product?3RT_3TK_3TCConversion tool for article numbers, see www.siemens.com/sirius/conversion-toolTIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=Contactor>

| Size | S3 | | S6 | | S10 | | S12 |
|--|----------------|----------------|-----------------|----------------|-----------------|----------------|---|
| Type | 3RT244. | | 3RT1456 | | 3RT146. | | 3RT1476 |
| 3-pole 3RT244 and 3RT145 to 3RT147 contactors | | | | | | | |
| Type | 3RT2446 | 3RT2448 | 3RT1456 | 3RT1466 | 3RT1467 | 3RT1476 | |
| Number of main contacts | 3 NO | | 3 NO | | 3 NO | | 3 NO |
| AC/DC operation | (p. 4/18) | | (p. 4/19, 4/20) | | (p. 4/19, 4/20) | | (p. 4/19, 4/20) |
| AC-1 | | | | | | | |
| U_i | V | 1 000 | | | | | |
| U_e | V | 690 | | | | | |
| 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 switches | 3RH29, 3RA28 | (p. 3/95 ... 3/102) | 3RH19, 3RT1926 | (p. 3/98, 3/100, 3/101, 3/103) |
| Function modules (direct-on-line starting, star-delta (wye-delta) starting) | 3RA281. | (p. 3/107) | -- | |
| Terminal covers | 3RT2946-4EA4 | (p. 3/119) | 3RT1956-4EA. | (p. 3/119) |
| Box terminal blocks | -- | | 3RT1955/56-4G | (p. 3/117) |
| Surge suppressors | 3RT2936, 3RT2946 | (p. 3/104, 3/105) | 3RT1956-1C (RC element) | (p. 3/105) |



| Type | 3RT1481, 3RT1482 | | 3RT1483 | 3RT1485, 3RT1486 | | 3RT1487 |
|-----------------------------------|----------------------|----------------|----------------------|---------------------|----------------------|----------------|
| 3-pole 3RT148 contactors | | | | | | |
| Type | 3RT1481 | 3RT1482 | 3RT1483 | 3RT1485 | 3RT1486 | 3RT1487 |
| Number of main contacts | 3 NO | | | | | |
| AC/DC operation | (p. 4/21) | | | | | |
| AC-1 | | | | | | |
| U_i | V | 1 000 | | | | |
| U_e | V | 1 000 | | | | |
| I_e | 40 °C A | 900 | 1 050 | 1 260 | 1 700 | 2 100 |
| | | | | | | 2 650 |
| Accessories for contactors | | | | | | |
| Second auxiliary switch, lateral | 3RH1981-1JA11 | | | | | (p. 4/21) |
| Spare parts for contactors | | | | | | |
| First auxiliary switch, lateral | 3RH1981-1DA11 | | | | | (p. 4/22) |
| Phase barriers | 3RT1983-4AA1 | | (p. 4/22) | 3RT1987-4AA1 | | (p. 4/22) |
| Withdrawable coils | 3RT1982-5A.31 | (p. 4/22) | 3RT1983-5AP31 | (p. 4/22) | 3RT1987-5AP31 | (p. 4/22) |

Switching devices – Contactors and contactor assemblies – Special applications

Introduction



| | | | | | | | | | | | | | |
|---|------------------------|-----------|--------------------------------|-------------------|------------|------------------------|----------------|--------------------------------|---------------------|---------------------|-------------------------|------------|-------------------|
| 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. 4/31, 4/33) | | (p. 4/31 ... 4/33) | | | (p. 4/31 ... 4/35) | | (p. 4/31 ... 4/35) | | | | | |
| AC-1 | | | | | | | | | | | | | |
| U_i | V | 690 | | | | | | | | | | | |
| U_e | V | 690 | | | | | | | | | | | |
| I_e up to 690 V | 40 °C A | 18 | 22 | 35 | 40 | 50 | 60 | 110 | 110 | 140 | 160 | | |
| | 60 °C A | 16 | 20 | 30 | 35 | 42 | 55 | 95 | 100 | 130 | 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 switches | 3RH29, 3RA28 | | | | | | | | (p. 3/95 ... 3/102) | | | | |
| Function modules (direct-on-line starting, star-delta (wye-delta) starting) | 3RA281. | | | | | | | | (p. 3/107) | | | | |
| Terminal covers | -- | | | | | 3RT2936-4EA4 | | (p. 3/119) | | 3RT2946-4EA4 | | (p. 3/119) | |
| Surge suppressors | 3RT2916 | | | (p. 3/104, 3/105) | | | 3RT2936 | | (p. 3/104, 3/105) | | 3RT2936, 3RT2946 | | (p. 3/104, 3/105) |



| | | | | | | | | | | |
|-----------------------------------|----------------------|------------|------------------------|-------------------|----------------------|--------------------------------|------------|-------------------|----------------------|-----------|
| Size | S6 | | S10 | | | S12 | | | | |
| Type | 3RT1355 | | 3RT136. | | | 3RT137. | | | | |
| 4-pole 3RT13 contactors | | | | | | | | | | |
| Type | 3RT1355 | | 3RT1363 3RT1364 | | | 3RT1373 3RT1374 3RT1375 | | | | |
| Number of main contacts | 4 NO | | 4 NO | | | 4 NO | | | | |
| AC/DC operation | (p. 4/36) | | (p. 4/36) | | | (p. 4/36) | | | | |
| AC-1 | | | | | | | | | | |
| U_i | V | 1 000 | | | | | | | | |
| U_e | V | 690 | | | | | | | | |
| I_e | 40 °C A | 200 | 275 | 350 | 400 | 500 | 525 | | | |
| | | | | | | | | | | |
| Accessories for contactors | | | | | | | | | | |
| Second auxiliary switch, lateral | 3RH1951-1SA11 | | | | | | | | (p. 4/37) | |
| Terminal covers | 3RT1956-4EB10 | | (p. 4/37) | | 3RT1966-4EB10 | | (p. 4/37) | | 3RT1976-4EB10 | (p. 4/37) |
| Mechanical interlocks | 3RA1954-3A | | | | | | | | (p. 4/37) | |
| Bus connectors offset | -- | | | 3RT1966-4D | | (p. 4/37) | | 3RT1976-4D | | (p. 4/37) |
| Spare parts for contactors | | | | | | | | | | |
| First auxiliary switch, lateral | 3RH1951-1TA11 | | | | | | | | (p. 4/37) | |



| 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 | | 2 NO + 2 NC | | | |
| AC, DC and AC/DC operation | (p. 4/41, 4/42) | | (p. 4/41, 4/42) | | (p. 4/41, 4/43) | | (p. 4/41, 4/43) | | | |
| 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 switches | 3RH29, 3RA28 | | | | | | | | (p. 3/95 ... 3/102) | |
| Function modules (direct-on-line starting, star-delta (wye-delta) starting) | 3RA281. | | | | | | | | (p. 3/107) | |
| Terminal covers | -- | | | | | | 3RT2936-4EA4 | | 3RT2946-4EA4 | |
| | | | | | | | (p. 3/119) | | (p. 3/119) | |
| Surge suppressors | 3RT2916 | | | 3RT2926 | | | 3RT2936 | | 3RT2936, 3RT2946 | |
| | (p. 3/104, 3/105) | | | (p. 3/104, 3/105) | | | (p. 3/104, 3/105) | | (p. 3/104, 3/105) | |

¹⁾ The value in brackets applies to the NC for DC operation.

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-loaded terminals both for the main as well as for the auxiliary and control circuits
 - Sizes S2 and S3: screw terminals (complete devices) or spring-loaded terminals (auxiliary circuit only)
- 3RT13 contactors, sizes S6 to S12: Busbar connections (partly with bus connectors offset), auxiliary and control circuits with screw terminals
- 3RT14 contactors: Busbar connections



Screw terminals



Spring-loaded terminals



Busbar connections

The connection method is indicated in the corresponding tables by the respective symbol shown on an orange background.

Further contactors

- For SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole, [see page 4/44](#)
- For 3TC contactors for switching DC voltage, 1- and 2-pole, [see page 4/69](#)
- Contactors for railway applications
 - For SIRIUS 3RT contactors with extended operating range, 3-pole, [see page 4/55](#)
 - For SIRIUS 3RH2 contactor relays with extended operating range, [see page 4/63](#)
 - For 3TH4 contactor relays, 8-pole, [see page 4/65](#)

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Overview



3-pole AC-1 contactors
top row: 3RT148 contactors
bottom row: 3RT244, 3RT145 to 3RT147 contactors

Standards

IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1
(auxiliary switches)

Connection methods

Main circuit

- 3RT244 contactors: Screw terminals with box terminal; direct connection to the connecting bar possible with cable lugs when the box terminal is removed.
- 3RT145 to 3RT147 contactors: 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.
- 3RT148 contactors: Busbar connections

Auxiliary/control circuit

Screw terminals

Operating mechanism types

3RT244 contactors

These 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 x U_s , control takes place via the control supply voltage connection A1 - A2.

3RT145 to 3RT147 contactors

Control and/or operating mechanism versions:

- 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 x 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 PLC input
- As above, but additionally with remaining lifetime indicator (RLT)
- With fail-safe PLC input for simplification of safety applications (without mode of operation selection)

3RT148 contactors

These are equipped with a solid-state operating mechanism for AC/DC control; coil attenuation is integrated. The operating range is 0.85 ... 1.1 x U_s .

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Solenoid coils/drive units

3RT244 contactors

Coil replacement is possible.

3RT145 to 3RT147 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.

3RT148 contactors

The operating mechanisms for the 3RT148 contactors are removable and can be replaced simply by unlocking and pulling them out.

Accessories and spare parts

- 3RT244 and 3RT145 to 3RT147 contactors, [see also Basic units, page 3/77 onwards](#)
- For 3RT148 contactors, [see page 4/21 onwards](#)

Contactors in safety-related 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.

Contactors with mirror contacts according to IEC 60947-4-1 are generally required for use in safety-related applications. Most of our contactors meet this requirement; a corresponding note can be found in the technical product data sheet.

Contactors with increased tamper protection

Increased tamper protection is ensured either by using our contactor versions with permanently mounted auxiliary switches installed in the factory protected against mechanical, external actuation (e.g. 3RT2...-.....-3MA0 or 3RT1...-.....-3PA0 contactors), or by using the 3RT2916-4MA10 or 3RT1926-4MA10 sealable cover as an accessory ([see page 3/119](#)).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

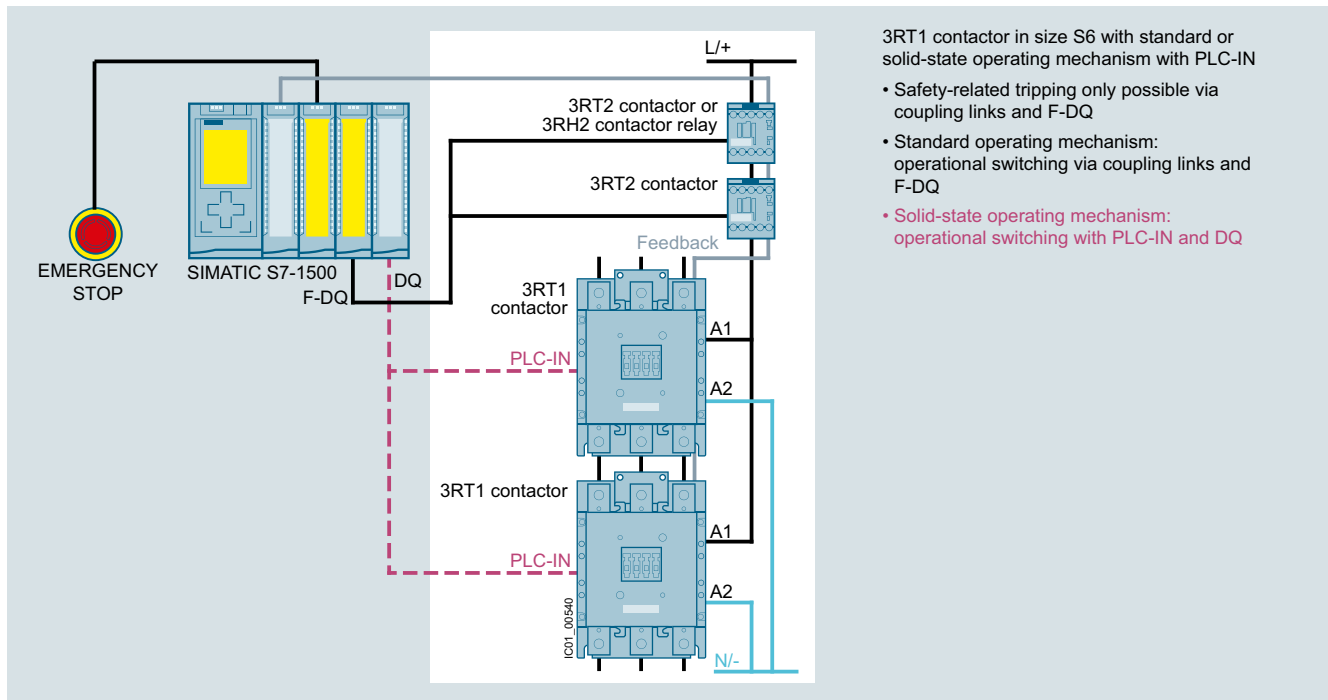
Connection of contactors to fail-safe control modules

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 from size S6 to S12 (3RT14...S) provide a much simpler way of doing this.

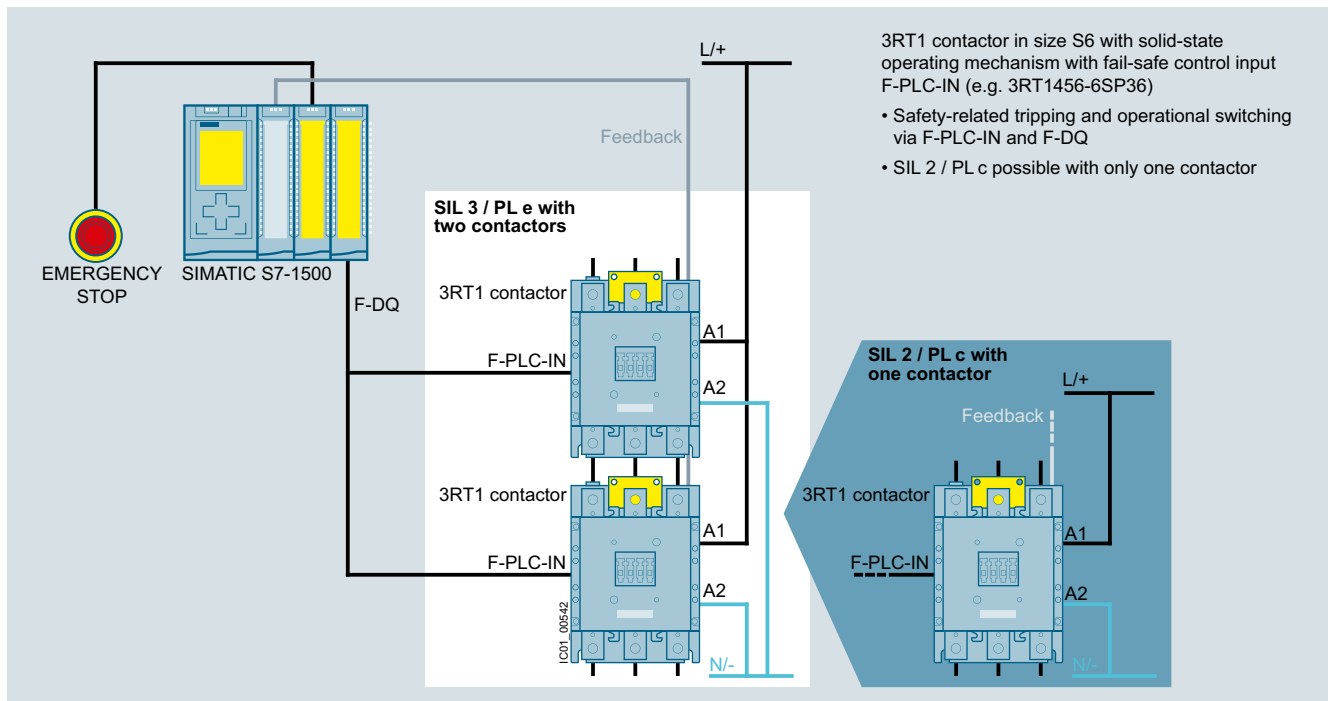
For more information on safety systems, see page 11/1 onwards.

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

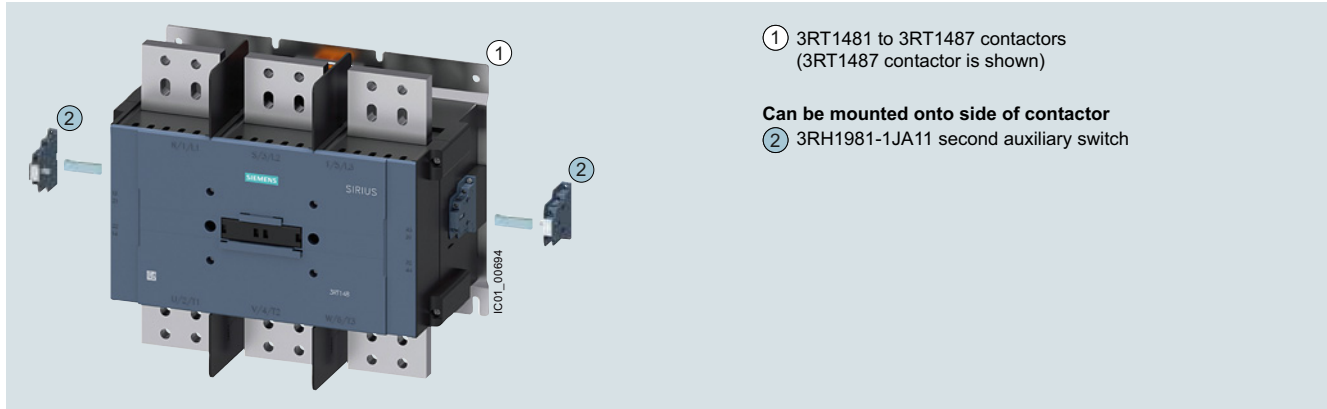
Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Overview graphics with mountable accessories

- 3RT244 and 3RT145 to 3RT147 contactors, [see also Basic units, page 3/11 onwards](#)
- 3RT148 contactors, see following graphic



3RT1481 to 3RT1487 contactors with mountable accessories

Application

The 3RT.4 contactors can be used for the following applications:

- For switching weak or non-inductive loads (AC-1)
- Disconnecting loads or power generation plants from the grid (e.g. wind turbines or photovoltaic systems)
- Disconnecting frequency converters from the grid

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

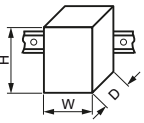

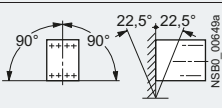

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

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-loaded terminals Basic unit with mounted auxiliary switch <ul style="list-style-type: none"> - Screw terminals - Spring-loaded terminals Basic unit with mounted function module or solid-state time-delayed auxiliary switch <ul style="list-style-type: none"> - Screw/spring-loaded 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 | | Operating cycles | 10 million | | | |
| Basic units with solid-state compatible auxiliary switch | | Operating cycles | 5 million | | -- | |
| Electrical endurance for utilization category AC-1, at $U_e = 400\text{ V}$ | | | | | | |
| 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 | | -- | | Yes | | |
| Permissible ambient temperature | | | | | | |
| During operation | | °C -25 ... +60 | | | | |
| During storage | | °C -55 ... +80 | | | | |
| Degree of protection IP on the front acc. to IEC 60529 | | | | | | |
| IP20 (screw terminals and spring-loaded terminals with box terminal/cover) | | | IP00 (IP20 with box terminal/cover) | | | |
| Touch protection on the front acc. to IEC 60529 | | | | | | |
| Finger-safe for vertical touching from the front (screw terminals and spring-loaded terminals with box terminal/cover) | | | Finger-safe for vertical touching from the front with box terminal/cover | | | |
| Shock resistance | | | | | | |
| Rectangular pulse | | g/ms | 10.3/5 and 10.5/10 | | 8.5/5 and 4.2/10 | |
| - AC operation | | | 6.7/5 and 4.0/10 | | 8.5/5 and 4.2/10 | |
| - DC operation | | | | | | |
| Sine pulse | | g/ms | 16.3/5 and 10.5/10 | | 13.4/5 and 6.5/10 | |
| - AC operation | | | 10.6/5 and 6.3/10 | | 13.4/5 and 6.5/10 | |
| - DC operation | | | | | | |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

| Type | 3RT2446, 3RT2448 | 3RT1456 | 3RT1466 | 3RT1467 | 3RT1476 |
|---|--|------------------------------|------------------------------|---------|------------------------------|
| Size | S3 | S6 | S10 | 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) | | 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) | | gG: 710 A (690 V, 100 kA) |
| Auxiliary circuit | | | | | |
| • Version of the fuse link required for short-circuit protection A of the auxiliary switch | Fuse gG: 10 | | | | |
| • Miniature circuit breaker version required for short-circuit A protection of the auxiliary switch | On request | | | | |
| Short-circuit protection for contactors with overload relays | See Configuration Manual for load feeders | | | | |
| Short-circuit protection for fuseless load feeders | See <ul style="list-style-type: none"> • 3RA2 load feeders, page 8/4 onwards • Configuration Manual for load feeders | | | | |

| Type | 3RT2446, 3RT2448 | | 3RT1456 | | 3RT1466, 3RT1467 | | 3RT1476 | | |
|--|------------------|---|---------|----------|------------------|----------|---------|----------|-----|
| Size | -A | -N | -A | -N/-P/-S | -A | -N/-P/-S | -A | -N/-P/-S | |
| Size | S3 | | S6 | | S10 | | S12 | | |
| Control | | | | | | | | | |
| Solenoid coil operating range (AC/DC) | | | | | | | | | |
| | 0.8 | 0.8 x $U_{s \text{ min}}$... 1.1 x $U_{s \text{ max}}$ | | | | | | | |
| | ... | | | | | | | | |
| | 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 | 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 |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

| 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 3RT14...-S | -- -- | | Type 2 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 |
| - Opening delay | | ms | 10 ... 21 | 40 ... 60 | 50 ... 80 |
| <u>Solid-state operating mechanism</u> | | | | | |
| • Actuated via A1/A2 | 3RT.4...-N/-P | | | | |
| - Closing delay | | ms | 50 ... 70 | 100 ... 120 | 110 ... 130 |
| - Opening delay | | ms | 38 ... 57 | 80 ... 100 | 125 ... 150 |
| • Actuated via PLC input | 3RT14...-N/-P | | | | |
| - Closing delay | | ms | -- | 40 ... 60 | 50 ... 65 |
| - Opening delay | | ms | -- | 80 ... 100 | 65 ... 80 |
| • 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).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

| 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 | | | | | | | |
| • Rated operational currents I_e | At 40 °C up to 690 V A At 60 °C up to 690 V A | 140 130 | 160 140 | 275 250 | 400 380 | 500 450 | 690 Standard operating mechanism: 650, solid-state operating mechanism: 600 |
| | Up to 1 000 V A | 60 | 80 | -- | -- | -- | -- |
| • Minimum cross-section in the main circuit at maximum AC-1 rated value | mm ² | 50 | 70 | 140 | 240 | 300 | 480 |
| 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 Up to 690 V A | | | 97 97 | 138 138 | | 170 170 |
| • Rated power for slipping or squirrel-cage motors at 50 and 60 Hz | At 230 V kW 400 V kW 500 V kW 690 V kW | 12.7 22 29.9 38.2 | | 30 55 55 90 | 37 75 90 132 | | 55 90 110 160 |
| Power loss per conducting path | At $I_e/AC-1$ W | -- | | 20 | 27 | 42 | 55 |
| Load rating with DC | | | | | | | |
| Utilization category DC-1, ($L/R \leq 1$ ms) | | | | | | | |
| • Rated operational currents I_e (at 60 °C) | | | | | | | |
| - 1 conducting path | Up to 24 V A 60 V A 110 V A 220 V A 440 V A 600 V A | 130 80 12 | 140 | 250 250 18 | 380 380 33 | | 500 500 |
| | | 2.5 0.8 0.48 | | 3.4 0.8 0.5 | 3.8 0.9 0.6 | | |
| - 2 conducting paths in series | Up to 24 V A 60 V A 110 V A 220 V A 440 V A 600 V A | 130 130 130 | 140 140 | 250 250 250 | 380 380 380 | | 500 500 500 |
| | | 13 2.4 1.3 | | 20 3.2 1.6 | 380 4 2 | | 500 |
| - 3 conducting paths in series | Up to 24 V A 60 V A 110 V A 220 V A 440 V A 600 V A | 130 130 130 | 140 140 | 250 250 250 | 380 380 380 | | 500 500 500 |
| | | 130 6 3.4 | 140 | 250 11.5 4 | 380 11 5.2 | | 500 |
| 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 60 V A 110 V A 220 V A 440 V A 600 V A | 6 3 1.25 | | 250 7.5 2.5 | 380 11 3 | | 500 |
| | | 0.35 0.15 0.1 | | 0.6 0.17 0.12 | 0.18 0.125 | | |
| - 2 conducting paths in series | Up to 24 V A 60 V A 110 V A 220 V A 440 V A 600 V A | 130 130 130 | 140 140 | 250 250 250 | 380 380 380 | | 500 500 500 |
| | | 1.75 0.42 0.27 | | 2.5 0.65 0.37 | | | |
| - 3 conducting paths in series | Up to 24 V A 60 V A 110 V A 220 V A 440 V A 600 V A | 130 130 130 | 140 140 | 250 250 250 | 380 380 380 | | 500 500 500 |
| | | 4 0.8 0.45 | | 250 1.4 0.75 | 380 | | 500 |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

| | | | | | |
|------|---------|---------|---------|------------------|---------|
| 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 |

500

- 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 | $I_e/AC-1$ 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) | 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) |

Screw terminals

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) | 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.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

| 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) | 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) | 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) | 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) | | 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-loaded terminals | | |
| • Operating devices | | | 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) | | 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, the 3RT1956-4EA1 terminal cover is required for conductor cross-sections larger than 95 mm² to maintain the phase clearance, see page 3/119.

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 the phase clearance, see page 3/119.

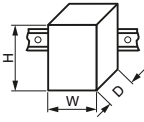
³⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

⁴⁾ Max. external diameter of the conductor insulation: 3,6 mm. On spring-loaded terminals with conductor cross-sections ≤ 1 mm² an insulation stop is recommended, see page 3/122.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

| Type | | 3RT1481-6A.36 | 3RT1482-6A.36 | 3RT1483-6AP36 | 3RT1485-6AP36 | 3RT1486-6AP36 | 3RT1487-6AP36 | |
|---|---|---|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| General data | | | | | | | | |
| Dimensions | | | | | | | | |
| • Width |  | mm | 285 | | | 431 | | |
| • Height | | mm | 352 | | | 403 | | |
| • Depth | | mm | 250 | | | 246 | | |
| Mounting position | | For vertical mounting surface can be rotated $\pm 30^\circ$, for vertical mounting surface can be tilted $\pm 30^\circ$ forward or backward | | | | | | |
| Installation altitude at height above sea level, maximum | | m | 2 000 | | | | | |
| Insulation voltage at pollution degree 3 | | | | | | | | |
| • of the main circuit | | V | 1 000 | | | | | |
| • of the auxiliary circuit | | V | 600 | | | | | |
| Impulse withstand voltage | | | | | | | | |
| • of the main circuit | | kV | 8 | | | | | |
| • of the auxiliary circuit | | kV | 6 | | | | | |
| Product function, mirror contact according to IEC 60947-4-1 | | Yes | | | | | | |
| Ambient temperature | | | | | | | | |
| • During operation | | °C | -25 ... +55 | | | | | |
| • During storage | | °C | -40 ... +80 | | | | | |
| Degree of protection IP on the front acc. to IEC 60529 | | IP00 | | | | | | |
| Short-circuit protection | | | | | | | | |
| Version of the fuse link required | | | | | | | | |
| • For short-circuit protection of the main circuit for type of coordination "2" | | | aR: 1 000 A (1 000 V, 30 kA) | aR: 1 100 A (1 000 V, 42 kA) | aR: 1 400 A (1 000 V, 42 kA) | aR: 2 200 A (1 000 V, 42 kA) | aR: 2 500 A (1 000 V, 42 kA) | aR: 2 800 A (1 000 V, 50 kA) |
| • For short-circuit protection of the auxiliary switch | | | gG: 16 A (600 V, 1 kA) | | | | | |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

| Type | | 3RT1481- 6AF36 | 6AP36 | 3RT1482- 6AF36 | 6AP36 | 3RT1483- 6AP36 | 3RT1485- 6AP36 | 3RT1486- 6AP36 | 3RT1487- 6AP36 | |
|--|--|---|-------|-------------------|-------|-------------------|-------------------|-------------------|-------------------|-------|
| Control circuit/control | | | | | | | | | | |
| Operating range factor of the control supply voltage, rated value of the solenoid coil | | | | | | | | | | |
| <ul style="list-style-type: none"> At AC at 50 Hz At AC at 60 Hz At DC | | 0.85 ... 1.1 0.85 ... 1.1 0.85 ... 1.1 | | | | | | | | |
| Solenoid coil closing for DC | | W | 1 400 | 2 000 | 1 400 | 2 000 | 2 700 | 2 800 | | |
| Closing apparent power of the solenoid coil for AC | | | | | | | | | | |
| <ul style="list-style-type: none"> At 50 Hz At 60 Hz | | VA | 1 000 | | | | 1 700 | 1 800 | | |
| | | VA | 1 000 | | | | 1 700 | 1 800 | | |
| Solenoid coil closed for DC | | W | 6 | 7 | 6 | 7 | 8 | 11 | | |
| Closed apparent power of the solenoid coil for AC | | | | | | | | | | |
| <ul style="list-style-type: none"> At 50 Hz At 60 Hz | | VA | 18 | 23 | 18 | 23 | 20 | 33 | | |
| | | VA | 18 | 23 | 18 | 23 | 20 | 33 | | |
| Closing delay | | | | | | | | | | |
| <ul style="list-style-type: none"> AC DC | | ms | 80 | | | | | | | |
| | | ms | 80 | | | | | | | |
| Opening delay | | | | | | | | | | |
| <ul style="list-style-type: none"> AC DC | | ms | 70 | | | | | | | |
| | | ms | 70 | | | | | | | |
| Main circuit | | | | | | | | | | |
| Operating current at AC-1 | | | | | | | | | | |
| <ul style="list-style-type: none"> Up to 690 V | | | | | | | | | | |
| <ul style="list-style-type: none"> - At an ambient temperature of 40 °C - At an ambient temperature of 55 °C | | A | 900 | | 1 050 | | 1 260 | 1 700 | 2 100 | 2 650 |
| | | A | 900 | | 1 050 | | 1 260 | 1 700 | 2 100 | 2 650 |
| <ul style="list-style-type: none"> Up to 1 000 V | | | | | | | | | | |
| <ul style="list-style-type: none"> - At an ambient temperature of 40 °C - At an ambient temperature of 55 °C | | A | 900 | | 1 050 | | 1 260 | 1 700 | 2 100 | 2 650 |
| | | A | 900 | | 1 050 | | 1 260 | 1 700 | 2 100 | 2 650 |
| No-load switching frequency | | | | | | | | | | |
| <ul style="list-style-type: none"> At AC At DC | | 1/h | 600 | | | | 300 | | | |
| | | 1/h | 600 | | | | 300 | | | |
| Type of electrical connection for the main circuit | | Busbar connections | | | | | | | | |
| Minimum cross-section in the main circuit for max. AC-1 rated value | | mm ² | 600 | | 800 | | 1 000 | 1 500 | 2 000 | 3 000 |
| Conductor cross-sections | | | | | | | | | | |
| Control circuit/control | | | | | | | | | | |
| Type of connectable conductor cross-sections for auxiliary contacts | | | | | | | | | | |
| <ul style="list-style-type: none"> Solid Solid or stranded Finely stranded with end sleeve | | 2x (1 ... 2.5 mm ²) 2x (1 ... 2.5 mm ²) 2x (1 ... 2.5 mm ²) | | | | | | | | |
| Main circuit | | | | | | | | | | |
| Width of connecting bar | | mm | 40 | | 50 | | 103 | | | |
| Thickness of connecting bar | | mm | 10 | | 13 | | 10 | 20 | | |
| Diameter of hole | | mm | 17 | | 13 | | 15 | 13 | | |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A




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 | Ident. No. Version | 50 Hz AC | 50 Hz AC or DC | | Article No. | Price per PU | | |
| | Operational current I_e up to |   | V | V | d | | | | |
| | 690 V 690 V | NO NC | V | V | d | | | | |
| A | A | | | | | | | | |

For screw fixing 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 | -- | 10 | 3RT2448-1AF00 | 1 | 1 unit | 41B | |
| | | | | | | 230 | -- | 5 | 3RT2448-1AP00 | 1 | 1 unit | 41B | |

AC/DC operation

With integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | | | | |
|-----------|------------|-----|-----------|---|---|----|-------------|---|----------------------|---|--------|-----|
| S3 | 140 | 130 | 11 | 1 | 1 | -- | 20 ... 33 | ▶ | 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 4/53](#) on request.

Accessories and spare parts, [see page 3/77 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Sizes S6 to S12: AC/DC operation

- 3RT14...-A standard operating mechanism
- Solid-state operating mechanism
 - 3RT14...-N with 24 V DC control signal input
 - 3RT14...-P with 24 V DC control signal input and remaining lifetime indicator (RLT)
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.



3RT1456-6A.36



3RT1466-6A.36






3RT1476-6A.36



3RT1476-6N.36



3RT1476-6P.35

| Size | Rated data AC-1, t_{ij} : 40 °C Operational current I_e up to | Auxiliary contacts, lateral | Rated control supply voltage U_s | SD | Screw terminals  | PU (UNIT, SET, M) | PS* | PG |
|------|---|--|------------------------------------|----|---|-------------------------|-----|----|
| | 60 °C 690 V A | Version   | 50/60 Hz AC or DC | | Article No. | Price per PU | | |
| | 690 V A | NO NC | V | d | | | | |

Standard operating mechanism with economy circuit for AC and DC operation (switchover from closing coil to holding coil)

With integrated coil circuit (varistor integrated at the factory)

| | | | | | | | | | | |
|------------|------------|-----|---|---|----------------------------|---|----------------------|---|--------|-----|
| S6 | 275 | 250 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1456-6AF36 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1456-6AP36 | 1 | 1 unit | 41B |
| S10 | 400 | 380 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1466-6AF36 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1466-6AP36 | 1 | 1 unit | 41B |
| | 500 | 450 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1467-6AF36 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1467-6AP36 | 1 | 1 unit | 41B |
| S12 | 690 | 650 | 2 | 2 | 110 ... 127 220 ... 240 | ▶ | 3RT1476-6AF36 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1476-6AP36 | 1 | 1 unit | 41B |

Solid-state operating mechanism

With 24 V DC control signal input e.g. for control by PLC

With integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | | |
|------------|------------|-----|---|---|---------------------------|---|----------------------|---|--------|-----|
| S6 | 275 | 250 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1456-6NF36 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1456-6NP36 | 1 | 1 unit | 41B |
| S10 | 400 | 380 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1466-6NF36 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1466-6NP36 | 1 | 1 unit | 41B |
| | 500 | 450 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1467-6NF36 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1467-6NP36 | 1 | 1 unit | 41B |
| S12 | 690 | 650 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1476-6NF36 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1476-6NP36 | 1 | 1 unit | 41B |

With 24 V DC control signal input · with remaining lifetime indicator (RLT) e.g. for control by PLC

With integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | | |
|------------|------------|-----|---|---|---------------------------|----|----------------------|---|--------|-----|
| S6 | 275 | 250 | 1 | 1 | 96 ... 127 200 ... 277 | 20 | 3RT1456-6PF35 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1456-6PP35 | 1 | 1 unit | 41B |
| S10 | 400 | 380 | 1 | 1 | 96 ... 127 200 ... 277 | 20 | 3RT1466-6PF35 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1466-6PP35 | 1 | 1 unit | 41B |
| | 500 | 450 | 1 | 1 | 96 ... 127 200 ... 277 | 5 | 3RT1467-6PF35 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1467-6PP35 | 1 | 1 unit | 41B |
| S12 | 690 | 650 | 1 | 1 | 96 ... 127 200 ... 277 | 5 | 3RT1476-6PF35 | 1 | 1 unit | 41B |
| | | | | | | | 3RT1476-6PP35 | 1 | 1 unit | 41B |

Other voltages [according to page 4/54](#) on request.

Accessories and spare parts, [see page 3/77 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications




SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Sizes S6 to S12: AC/DC operation

- Solid-state operating mechanism 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
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

For more information on safety systems, see page 11/1 onwards.



| Size | Rated data according to IEC 60947-4-1 AC-1, t_U : 40 °C Operational current I_e up to | Auxiliary contacts, lateral Version   | Rated control supply voltage U_s 50/60 Hz AC or DC V | SD | Screw terminals  | PU (UNIT, SET, M) | PS* | PG |
|---------------|---|---|--|----|---|-------------------------|-----|----|
| 3RT1456-6S.36 | 690 V A | | | d | Article No. | Price per PU | | |

Solid-state operating mechanism

With two removable laterally mounted auxiliary switches

With integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | | |
|-----|-----|-----|---|---|---------------------------|----|---------------|---|--------|-----|
| S6 | 275 | 250 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1456-6SF36 | 1 | 1 unit | 41B |
| | | | | | | 5 | 3RT1456-6SP36 | 1 | 1 unit | 41B |
| S10 | 400 | 380 | 2 | 2 | 96 ... 127 200 ... 277 | 20 | 3RT1466-6SF36 | 1 | 1 unit | 41B |
| | | | | | | 5 | 3RT1466-6SP36 | 1 | 1 unit | 41B |
| | 500 | 450 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1467-6SF36 | 1 | 1 unit | 41B |
| | | | | | | 5 | 3RT1467-6SP36 | 1 | 1 unit | 41B |
| S12 | 690 | 650 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1476-6SF36 | 1 | 1 unit | 41B |
| | | | | | | 5 | 3RT1476-6SP36 | 1 | 1 unit | 41B |

With two permanently laterally mounted auxiliary switches

With integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | | |
|-----|-----|-----|---|---|---------------------------|----|--------------------|---|--------|-----|
| S6 | 275 | 250 | 2 | 2 | 96 ... 127 200 ... 277 | 20 | 3RT1456-6SF36-3PA0 | 1 | 1 unit | 41B |
| | | | | | | 5 | 3RT1456-6SP36-3PA0 | 1 | 1 unit | 41B |
| S10 | 400 | 380 | 2 | 2 | 96 ... 127 200 ... 277 | 20 | 3RT1466-6SF36-3PA0 | 1 | 1 unit | 41B |
| | | | | | | 20 | 3RT1466-6SP36-3PA0 | 1 | 1 unit | 41B |
| | 500 | 450 | 2 | 2 | 96 ... 127 200 ... 277 | 5 | 3RT1467-6SF36-3PA0 | 1 | 1 unit | 41B |
| | | | | | | 5 | 3RT1467-6SP36-3PA0 | 1 | 1 unit | 41B |
| S12 | 690 | 650 | 2 | 2 | 96 ... 127 200 ... 277 | 20 | 3RT1476-6SF36-3PA0 | 1 | 1 unit | 41B |
| | | | | | | 20 | 3RT1476-6SP36-3PA0 | 1 | 1 unit | 41B |

Accessories and spare parts, see page 3/77 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

NEW SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

AC/DC operation

- Solid-state operating mechanism
- Version with two laterally mounted auxiliary switches (2 NO + 2 NC each)
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections



3RT1481-6A.36, 3RT1482-6A.36





3RT1483-6AP36



3RT1485-6AP36, 3RT1486-6AP36



3RT1487-6AP36

| Rated data according to IEC 60947-4-1 AC-1, t_u : 40 °C Operational current I_e up to 1 000 V A | Auxiliary contacts, lateral Version | | Rated control supply voltage U_s | | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|---|---|------------------------------------|----|-------------|--------------|-------------------------|-----|----|
| | NO | NC | 50/60 Hz AC | DC | | | | | |
| |  |  | V | V | d | | | | |

Solid-state operating mechanism

With integrated coil circuit

| | | | | | | | | | |
|--------------|---|---|-------------|-------------|---|----------------------|---|--------|-----|
| 900 | 2 | 2 | 100 ... 127 | 100 ... 110 | 5 | 3RT1481-6AF36 | 1 | 1 unit | 41B |
| | | | 200 ... 240 | 200 ... 220 | 5 | 3RT1481-6AP36 | 1 | 1 unit | 41B |
| 1 050 | 2 | 2 | 100 ... 127 | 100 ... 110 | 5 | 3RT1482-6AF36 | 1 | 1 unit | 41B |
| | | | 200 ... 240 | 200 ... 220 | 5 | 3RT1482-6AP36 | 1 | 1 unit | 41B |
| 1 260 | 2 | 2 | 100 ... 240 | 100 ... 220 | 5 | 3RT1483-6AP36 | 1 | 1 unit | 41B |
| 1 700 | 2 | 2 | 100 ... 240 | 100 ... 220 | 5 | 3RT1485-6AP36 | 1 | 1 unit | 41B |
| 2 100 | 2 | 2 | 100 ... 240 | 100 ... 220 | 5 | 3RT1486-6AP36 | 1 | 1 unit | 41B |
| 2 650 | 2 | 2 | 100 ... 240 | 100 ... 220 | 5 | 3RT1487-6AP36 | 1 | 1 unit | 41B |



Accessories, [see next table](#); spare parts, [see page 4/21](#).

Accessories

Overviews graphics for 3RT148 contactors with mountable accessories, [see page 4/9](#).

More information



Manuals, [see https://support.industry.siemens.com/cs/ww/en/ps/24229/man](https://support.industry.siemens.com/cs/ww/en/ps/24229/man)

| For contactors | Auxiliary contacts Version | | SD | | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|----------------|---|---|------|-------|-------------|--------------|-------------------------|-----|----|
| Type | NO | NC | Left | Right | | | | | |
| |  |  | | | d | | | | |

Second auxiliary switch (1 NO + 1 NC)



3RH1981-1JA11











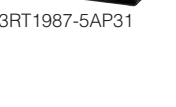
| | | | | | | | | | |
|---|---|---|---|---|---|----------------------|---|--------|-----|
| Lateral mounting on the right and/or the left | | | | | | | | | |
| 3RT148. | 1 | 1 |  |  | 5 | 3RH1981-1JA11 | 1 | 1 unit | 41B |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A
NEW

Spare parts

| For contactors | Auxiliary contacts | | Rated control supply voltage U_s | | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG | |
|--|---|-----|------------------------------------|---|---|--|--------------|----------------------|----------------------|--------|--------|
| | Version | | 50/60 Hz AC | DC | | | | | | | |
| Type | NO | NC | Left | Right | V | V | d | | | | |
| First auxiliary switch (1 NO + 1 NC) | | | | | | | | | | | |
|  3RH1981-1DA11 | Lateral mounting on the right and/or the left | | | | | Screw terminals  | | | | | |
| | 3RT148. | 1 | 1 |  |  | -- | -- | 5 | 3RH1981-1DA11 | 1 | 1 unit |
| Phase barriers | | | | | | | | | | | |
| (1 set = 4 units) | | | | | | | | | | | |
|  3RT1481 | -- | -- | -- | -- | -- | -- | 5 | 3RT1983-4AA1 | 1 | 1 unit | 41B |
| | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
|  3RT1483 | -- | -- | -- | -- | -- | -- | 5 | 3RT1987-4AA1 | 1 | 1 unit | 41B |
| | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
|  3RT1485 | -- | -- | -- | -- | -- | -- | 5 | 3RT1982-4AA1 | 1 | 1 unit | 41B |
| | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
|  3RT1487 | -- | -- | -- | -- | -- | -- | 5 | 3RT1987-4AA1 | 1 | 1 unit | 41B |
| | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
|  3RT1982-5A,31, 3RT1983-5AP31 | 3RT1481, | -- | -- | -- | 100 ... 127 | 100 ... 110 | 5 | 3RT1982-5AF31 | 1 | 1 unit | 41B |
| | 3RT1482 | -- | -- | -- | 200 ... 240 | 200 ... 220 | 5 | 3RT1982-5AP31 | 1 | 1 unit | 41B |
|  3RT1983-5AP31 | 3RT1483 | -- | -- | -- | 100 ... 240 | 100 ... 220 | 5 | 3RT1983-5AP31 | 1 | 1 unit | 41B |
| | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
|  3RT1987-5AP31 | 3RT1485 | -- | -- | -- | 100 ... 240 | 100 ... 220 | 5 | 3RT1987-5AP31 | 1 | 1 unit | 41B |
| | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 3RT1487 | -- | -- | -- | -- | 100 ... 240 | 100 ... 220 | 5 | 3RT1987-5AP31 | 1 | 1 unit | 41B |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

Overview



3RT231 to 3RT234 and 3RT135 to 3RT137 contactors, with screw terminals

Standards

IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1 (auxiliary switches)

Sizes S00 to S3

The 3RT23 contactors have two auxiliary contacts with 1 NO and 1 NC.

Sizes S6 to S12

The 3RT13 contactors have four auxiliary contacts with 2 NO and 2 NC.

Connection methods

Main circuit

- Sizes S00 and S0: screw or spring-loaded terminals, spring-loaded 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. Sizes S10 and S12 can be fitted with bus connectors offset, [see page 4/37](#).

Auxiliary/control circuit

- Sizes S00 to S3: Screw or spring-loaded terminals
- Sizes S6 to S12: Screw terminals

Operating mechanism types

Sizes 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).

Control takes place via the control supply voltage connection A1 - A2 with varying operating ranges ([see relevant product data sheet](#) for further details).

Sizes S6 to S12

The 3RT13 contactors are fitted with a wide-range solid-state operating mechanism that can be controlled with both 50/60 Hz AC and DC.

The operating range of the DC control is $0.8 \times U_{s \text{ min}}$ and $1.1 \times U_{s \text{ max}}$, and for AC operation $0.85 \times U_{s \text{ min}}$ and $1.1 \times U_{s \text{ max}}$.

It is not possible to change the operating mechanism.

Mounting of additional auxiliary contacts

Size S00

Four auxiliary contacts, including no more than three NC

Sizes S0 to S3

Four additional auxiliary contacts, including no more than two NC

Sizes S6 to S12

One additional auxiliary switch with 1 NO + 1 NC can be mounted on each side.

Accessories and spare parts

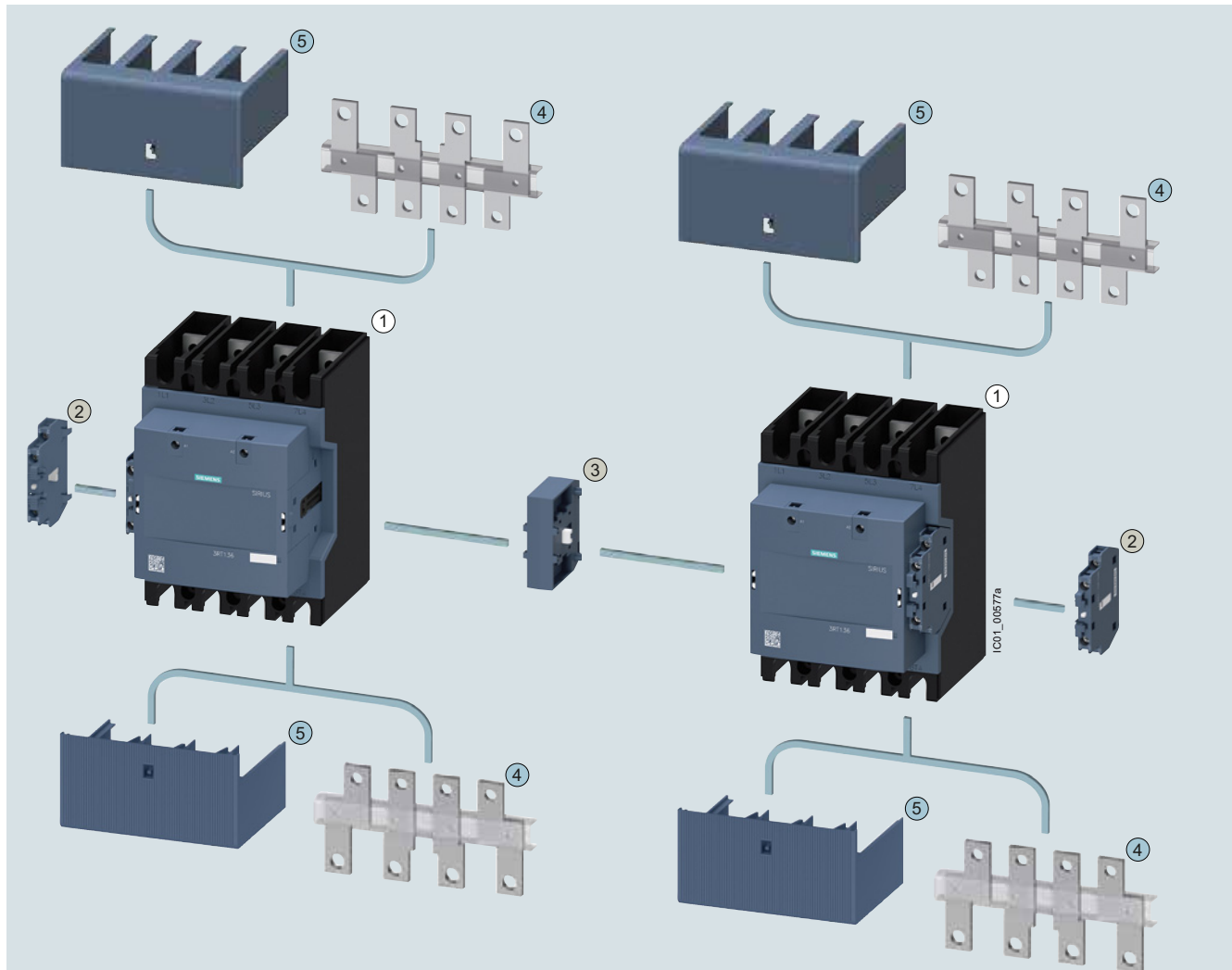
- Sizes S00 to S3, [see page 3/77 onwards](#)
- Sizes S6 to S12, [see page 4/37](#)

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

3RT135 to 3RT137 contactors, sizes S6 to S12 with mountable accessories



① 4-pole 3RT13 contactors, sizes S6 to S12
(scope of supply: The contactors are supplied with two laterally mounted auxiliary switch blocks)

② 3RH1951-1SA11 second auxiliary switch block, can be laterally mounted on the left or right

③ 3RA1954-3A mechanical interlock for configuring contactor assemblies:

Two 3RT13 contactors of the same size (S6, S10 and S12) can be interlocked with each other. The laterally mounted auxiliary switches of the contactors must be removed beforehand.

The mechanical interlock cannot be used in conjunction with the bus connectors offset ④.

④ 3RT19.6-4D bus connectors offsets, can be mounted on the top or bottom (providing no terminal cover ⑤ is mounted)

⑤ 3RT19.6-4EB10 terminal covers, can be mounted on the top or bottom (providing no bus connectors offset ④ is mounted)

○ Same accessories for sizes S6 to S12

● Different accessories depending on size

| | Size | S6 | S10 | S12 | | | |
|---|-------------------------------|-----------------------------|----------------------------------|-----------------------------|----------------------------------|-----------------------------|-----------------------------|
| ① | Contactor | 3RT1355 ($I_e = 200$ A) | 3RT1363 ($I_e = 275$ A) | 3RT1364 ($I_e = 350$ A) | 3RT1373 ($I_e = 400$ A) | 3RT1374 ($I_e = 500$ A) | 3RT1375 ($I_e = 525$ A) |
| ② | Second auxiliary switch block | 3RH1951-1SA11 | | | | | |
| ③ | Mechanical interlock | 3RA1954-3A | | | | | |
| ④ | Bus connectors offset | -- | 3RT1966-4D (from $I > 275$ A) | | 3RT1976-4D (from $I > 450$ A) | | |
| ⑤ | Terminal cover | 3RT1956-4EB10 | 3RT1966-4EB10 | | 3RT1976-4EB10 | | |

3RT135 to 3RT137 contactors with mountable accessories

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

Application

The 3RT.3 contactors can be used for the following applications:

- 4-pole switching of weak or non-inductive loads (AC-1)
- Disconnecting loads or power generation plants from the grid
- For system transfers

We additionally offer special versions of the 3RT23 contactors for switching motor-driven loads (AC-3).

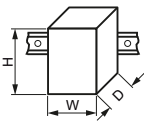
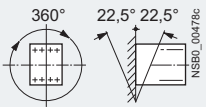

Technical specifications

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 | | | (The values in brackets apply for DC operation) | | |
| <ul style="list-style-type: none"> • Basic units <ul style="list-style-type: none"> - Screw terminals - Spring-loaded terminals • Basic unit with mounted auxiliary switch <ul style="list-style-type: none"> - Screw terminals - Spring-loaded terminals • Basic unit with mounted function module or solid-state time-delayed auxiliary switch <ul style="list-style-type: none"> - Screw terminals - Spring-loaded terminals |  | mm mm | 60 x 85 x 97 (107) 61 x 102 x 97 (107) | 75 x 114 x 130 -- | 96 x 140 x 152 -- |
| | mm 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 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 | |  | | | |
| | | Special version required | | | |
| 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 IP on the front acc. to IEC 60529 | | IP20 (screw terminals and spring-loaded terminals) | | | |
| Touch protection on the front acc. to IEC 60529 | | Finger-safe for vertical touching from the front (screw terminals and spring-loaded terminals) | | | |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

| Type | 3RT2316, 3RT2317 | 3RT2325, 3RT2326 | 3RT2326-1...0-4AA0 | 3RT2327 |
|--|--------------------------------------|-----------------------------|---|-----------------------------|
| Size | S00 | S0 | | |
| 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" | 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) |
| <ul style="list-style-type: none"> - for type of coordination "2" | 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 | Fuse gG: 10 A (690 V, 1 kA) | | | |
| <ul style="list-style-type: none"> Miniature circuit breaker version required for short-circuit protection of the auxiliary switch | 6 A (230 V, 400 A, C characteristic) | | | |

| Type | 3RT2336, 3RT2337 | 3RT2344, 3RT2346 | 3RT2346-1...0-4AA0 | 3RT2348 |
|--|--------------------------------------|--------------------------------|--|--|
| Size | 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 - for type of coordination "1" | 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) |
| <ul style="list-style-type: none"> - for type of coordination "2" | 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) |
| Auxiliary circuit | | | | |
| <ul style="list-style-type: none"> Version of the fuse link required for short-circuit protection of the auxiliary switch | Fuse gG: 10 A (690 V, 1 kA) | | | |
| <ul style="list-style-type: none"> Miniature circuit breaker version required for short-circuit protection of the auxiliary switch | 6 A (230 V, 400 A, C characteristic) | | | |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

| 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 | 76 |
| - Closed for DC operation | W | -- | -- | -- | -- | 1 | 2.7 |
| • DC operation (closing = closed) | W | 4 | -- | 5.9 | -- | -- | ... ¹⁾ |
| Operating times for 0.8 ... 1.1 x U_s²⁾ 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⁾ In the case of AC/DC coils, increased pickup currents (6.5 A on average) arise during the first 200 ms.

²⁾ With size S00, DC operation: Operating times at 0.85 to 1.1 x U_s .

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

| 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 | | | | | | | | | | | | |
| • 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 cross-section in the main circuit at maximum AC-1 rated value | | mm ² | 2.5 | 4 | 10 | | | 16 | 35 | | 50 (35) ¹⁾ | 70 |
| 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 (32) 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 ($L/R \leq 1$ 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 | | | | | | 6 | 6.5 | |
| | 60 V | A | 0.5 | | 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 | 45 | | 70 | 80 | |
| | 440 V | A | 0.2 | | 0.6 | | | | | 0.8 | | |

¹⁾ The values in brackets apply for 3RT23.6-1...0-4AA0 versions.

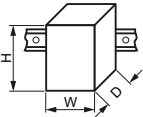
Data for North America

For technical specifications of 3RT contactors, [see page 3/53 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

| Type | 3RT1355-6A.36 | | | | 3RT1363-6A.36 | | | | 3RT1364-6A.36 | | | | 3RT1373-6A.36, 3RT1374-6A.36, 3RT1375-6A.36 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---------------------------|---------------------------|---------------------------|-----|---------------|-----|-----|-----|---------------|-----|-----|-----|---|--|---------------------------|---------------------------|---------------------------|---------------------------|------------------------|-------------|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Size | S6 | | | | S10 | | | | | | | | S12 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| General data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dimensions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> Width Height Depth | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>mm</td> <td>120</td> <td>140</td> <td>184</td> </tr> <tr> <td>mm</td> <td>150</td> <td>196</td> <td>225</td> </tr> <tr> <td>mm</td> <td>128</td> <td>153</td> <td>180</td> </tr> </table> | | | | | | | | | | | | | | | mm | 120 | 140 | 184 | mm | 150 | 196 | 225 | mm | 128 | 153 | 180 | | | | | | | | | | | | | | |
| mm | 120 | 140 | 184 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mm | 150 | 196 | 225 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mm | 128 | 153 | 180 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mounting position | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| For vertical mounting surface can be rotated $\pm 180^\circ$, and with 0° rotation can be tilted forward or backward $\pm 30^\circ$, or standing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Installation altitude at height above sea level, maximum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| m 2 000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Insulation voltage at pollution degree 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> Of the main circuit Of the auxiliary circuit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>V</td> <td>1 000</td> </tr> <tr> <td>V</td> <td>690</td> </tr> </table> | | | | | | | | | | | | | | | V | 1 000 | V | 690 | | | | | | | | | | | | | | | | | | | | | | |
| V | 1 000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V | 690 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Impulse withstand voltage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> Of the main circuit Of the auxiliary circuit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>kV</td> <td>8</td> </tr> <tr> <td>kV</td> <td>6</td> </tr> </table> | | | | | | | | | | | | | | | kV | 8 | kV | 6 | | | | | | | | | | | | | | | | | | | | | | |
| kV | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| kV | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Product function, mirror contact according to IEC 60947-4-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ambient temperature | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> During operation During storage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>°C</td> <td>-40 ... +60</td> </tr> <tr> <td>°C</td> <td>-40 ... +70</td> </tr> </table> | | | | | | | | | | | | | | | °C | -40 ... +60 | °C | -40 ... +70 | | | | | | | | | | | | | | | | | | | | | | |
| °C | -40 ... +60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| °C | -40 ... +70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Degree of protection IP on the front acc. to IEC 60529 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| IP00 (IP20 with cover) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Touch protection on the front acc. to IEC 60529 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Finger-safe for vertical touching from the front with cover | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Short-circuit protection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Version of the fuse link required | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> For short-circuit protection of the main circuit for type of coordination "2" For short-circuit protection of the auxiliary switch | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>gG: 250 A (500 V, 100 kA)</td> <td>gG: 355 A (500 V, 100 kA)</td> <td>gG: 400 A (500 V, 100 kA)</td> <td>gG: 630 A (500 V, 100 kA)</td> </tr> <tr> <td>gG: 10 A (690 V, 1 kA)</td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | | | | | | | | | | gG: 250 A (500 V, 100 kA) | gG: 355 A (500 V, 100 kA) | gG: 400 A (500 V, 100 kA) | gG: 630 A (500 V, 100 kA) | gG: 10 A (690 V, 1 kA) | | | | | | | | | | | | | | | | | | | | | |
| gG: 250 A (500 V, 100 kA) | gG: 355 A (500 V, 100 kA) | gG: 400 A (500 V, 100 kA) | gG: 630 A (500 V, 100 kA) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gG: 10 A (690 V, 1 kA) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Control circuit/control | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating range factor of the control supply voltage, rated value of the solenoid coil | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> At AC at 50 Hz At AC at 60 Hz At DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td></td> <td>0.85 ... 1.1</td> </tr> <tr> <td></td> <td>0.85 ... 1.1</td> </tr> <tr> <td></td> <td>0.8 ... 1.1</td> </tr> </table> | | | | | | | | | | | | | | | | 0.85 ... 1.1 | | 0.85 ... 1.1 | | 0.8 ... 1.1 | | | | | | | | | | | | | | | | | | | | |
| | 0.85 ... 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0.85 ... 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0.8 ... 1.1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solenoid coil closing for DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| W 210 130 135 205 130 190 205 130 190 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Closing apparent power of the solenoid coil for AC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> At 50 Hz At 60 Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>VA</td> <td>225</td> <td>170</td> <td>130</td> <td>205</td> <td>165</td> <td>175</td> <td>220</td> <td>185</td> <td>165</td> <td>175</td> <td>220</td> <td>185</td> </tr> <tr> <td>VA</td> <td>225</td> <td>170</td> <td>130</td> <td>205</td> <td>165</td> <td>175</td> <td>220</td> <td>185</td> <td>165</td> <td>175</td> <td>220</td> <td>185</td> </tr> </table> | | | | | | | | | | | | | | | VA | 225 | 170 | 130 | 205 | 165 | 175 | 220 | 185 | 165 | 175 | 220 | 185 | VA | 225 | 170 | 130 | 205 | 165 | 175 | 220 | 185 | 165 | 175 | 220 | 185 |
| VA | 225 | 170 | 130 | 205 | 165 | 175 | 220 | 185 | 165 | 175 | 220 | 185 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VA | 225 | 170 | 130 | 205 | 165 | 175 | 220 | 185 | 165 | 175 | 220 | 185 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Solenoid coil closed for DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| W 2.5 3 4 2.5 4 2.5 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Closed apparent power of the solenoid coil for AC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> At 50 Hz At 60 Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>VA</td> <td>5.5</td> <td>4</td> <td>6</td> <td>16</td> <td>6</td> <td>4</td> <td>7</td> <td>16</td> <td>6</td> <td>4</td> <td>7</td> <td>16</td> </tr> <tr> <td>VA</td> <td>5.5</td> <td>4</td> <td>6</td> <td>16</td> <td>6</td> <td>4</td> <td>7</td> <td>16</td> <td>6</td> <td>4</td> <td>7</td> <td>16</td> </tr> </table> | | | | | | | | | | | | | | | VA | 5.5 | 4 | 6 | 16 | 6 | 4 | 7 | 16 | 6 | 4 | 7 | 16 | VA | 5.5 | 4 | 6 | 16 | 6 | 4 | 7 | 16 | 6 | 4 | 7 | 16 |
| VA | 5.5 | 4 | 6 | 16 | 6 | 4 | 7 | 16 | 6 | 4 | 7 | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VA | 5.5 | 4 | 6 | 16 | 6 | 4 | 7 | 16 | 6 | 4 | 7 | 16 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Closing delay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> At AC At DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>ms</td> <td>20 ... 55</td> <td>25 ... 60</td> </tr> <tr> <td>ms</td> <td>20 ... 55</td> <td>25 ... 60</td> </tr> </table> | | | | | | | | | | | | | | | ms | 20 ... 55 | 25 ... 60 | ms | 20 ... 55 | 25 ... 60 | | | | | | | | | | | | | | | | | | | | |
| ms | 20 ... 55 | 25 ... 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ms | 20 ... 55 | 25 ... 60 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Opening delay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> At AC At DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>ms</td> <td>40 ... 70</td> <td>45 ... 80</td> </tr> <tr> <td>ms</td> <td>40 ... 70</td> <td>45 ... 80</td> </tr> </table> | | | | | | | | | | | | | | | ms | 40 ... 70 | 45 ... 80 | ms | 40 ... 70 | 45 ... 80 | | | | | | | | | | | | | | | | | | | | |
| ms | 40 ... 70 | 45 ... 80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ms | 40 ... 70 | 45 ... 80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Main circuit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating current at AC-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> Up to 690 V <ul style="list-style-type: none"> At an ambient temperature of 40 °C At an ambient temperature of 60 °C Up to 1 000 V <ul style="list-style-type: none"> At an ambient temperature of 40 °C At an ambient temperature of 60 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>A</td> <td>200</td> <td>275</td> <td>350</td> </tr> <tr> <td>A</td> <td>175</td> <td>250</td> <td>300</td> </tr> <tr> <td>A</td> <td>--</td> <td>250</td> <td>275</td> </tr> <tr> <td>A</td> <td>--</td> <td>225</td> <td>250</td> </tr> </table> | | | | | | | | | | | | | | | A | 200 | 275 | 350 | A | 175 | 250 | 300 | A | -- | 250 | 275 | A | -- | 225 | 250 | | | | | | | | | | |
| A | 200 | 275 | 350 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | 175 | 250 | 300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | -- | 250 | 275 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | -- | 225 | 250 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No-load switching frequency | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> At AC At DC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>1/h</td> <td>300</td> </tr> <tr> <td>1/h</td> <td>300</td> </tr> </table> | | | | | | | | | | | | | | | 1/h | 300 | 1/h | 300 | | | | | | | | | | | | | | | | | | | | | | |
| 1/h | 300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/h | 300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

| Type | 3RT1373- | | | | 3RT1374- | | | | 3RT1375- | | | | |
|---|-----------------|----------------|-------|-------|----------|--|-------|----------------|----------|--|-------|-------|-----|
| Size | 6AE36 | 6AF36 | 6AP36 | 6AR36 | 6AE36 | 6AF36 | 6AP36 | 6AR36 | 6AE36 | 6AF36 | 6AP36 | 6AR36 | |
| Control circuit/control | | | | | | | | | | | | | |
| Operating range factor of the control supply voltage, rated value of the solenoid coil | | | | | | | | | | | | | |
| • At AC at 50 Hz | 0.85 ... 1.1 | | | | | | | | | | | | |
| • At AC at 60 Hz | 0.85 ... 1.1 | | | | | | | | | | | | |
| • At DC | 0.8 ... 1.1 | | | | | | | | | | | | |
| Solenoid coil closing for DC | W | 400 | 360 | 410 | 600 | 400 | 360 | 410 | 600 | 400 | 360 | 410 | 600 |
| Closing apparent power of the solenoid coil for AC | | | | | | | | | | | | | |
| • At 50 Hz | VA | 475 | 340 | 385 | 420 | 475 | 340 | 385 | 420 | 475 | 340 | 385 | 420 |
| • At 60 Hz | VA | 475 | 340 | 385 | 420 | 475 | 340 | 385 | 420 | 475 | 340 | 385 | 420 |
| Solenoid coil closed for DC | W | 3.5 | 2.5 | 4.5 | 4.7 | 3.5 | 2.5 | 4.5 | 4.7 | 3.5 | 2.5 | 4.5 | 4.7 |
| Closed apparent power of the solenoid coil for AC | | | | | | | | | | | | | |
| • At 50 Hz | VA | 8.5 | 17 | 17.5 | 21 | 8.5 | 17 | 17.5 | 21 | 8.5 | 17 | 17.5 | 21 |
| • At 60 Hz | VA | 8.5 | 17 | 17.5 | 21 | 8.5 | 17 | 17.5 | 21 | 8.5 | 17 | 17.5 | 21 |
| Closing delay | | | | | | | | | | | | | |
| • At AC | ms | 30 ... 60 | | | | | | | | | | | |
| • At DC | ms | 30 ... 60 | | | | | | | | | | | |
| Opening delay | | | | | | | | | | | | | |
| • At AC | ms | 45 ... 80 | | | | | | | | | | | |
| • At DC | ms | 45 ... 80 | | | | | | | | | | | |
| Main circuit | | | | | | | | | | | | | |
| Operating current at AC-1 | | | | | | | | | | | | | |
| • Up to 690 V | | | | | | | | | | | | | |
| - At an ambient temperature of 40 °C | A | 400 | | | 500 | | | | 525 | | | | |
| - At an ambient temperature of 60 °C | A | 350 | | | 400 | | | | 425 | | | | |
| • Up to 1 000 V | | | | | | | | | | | | | |
| - At an ambient temperature of 40 °C | A | 350 | | | 375 | | | | 400 | | | | |
| - At an ambient temperature of 60 °C | A | 300 | | | 325 | | | | 350 | | | | |
| No-load switching frequency | | | | | | | | | | | | | |
| • At AC | 1/h | 300 | | | | | | | | | | | |
| • At DC | 1/h | 300 | | | | | | | | | | | |
| Conductor cross-sections | | | | | | | | | | | | | |
| Type of electrical connection for the main circuit | | | | | | | | | | | | | |
| | | Connecting bar | | | | Connecting bar, bus connectors offset > 275 A required | | Connecting bar | | Connecting bar, bus connectors offset > 450 A required | | | |
| Minimum cross-section in the main circuit at maximum AC-1 rated value | mm ² | 95 | | 150 | | 240 | | 300 | | 370 | | | |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

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_n : 40 / 60 °C Operational current I_e up to 690 V A | Auxiliary contacts | | Rated control supply voltage U_s SD | | Screw terminals  SD | | Spring-loaded terminals  | |
|---|--------------------|---|---------------------------------------|----------|--|--------------|---|--------------|
| | Ident. No. | Version | 50/60 Hz AC | 50 Hz AC | Article No. | Price per PU | Article No. | Price per PU |
| | |   | V | V | d | d | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

| | | | | | | | | | |
|---------|----|----|----|------------------|----------------|-------------|---|-------------|---|
| 18 / 16 | -- | -- | -- | 24 110 230 | -- -- -- | 2 5 2 | 3RT2316-1AB00 3RT2316-1AF00 3RT2316-1AP00 | 5 5 5 | 3RT2316-2AB00 3RT2316-2AF00 3RT2316-2AP00 |
| 22 / 20 | -- | -- | -- | 24 110 230 | -- -- -- | 2 5 ▶ | 3RT2317-1AB00 3RT2317-1AF00 3RT2317-1AP00 | 5 5 5 | 3RT2317-2AB00 3RT2317-2AF00 3RT2317-2AP00 |

Size S0

| | | | | | | | | | |
|-----------------------|----|---|---|----------------|------------------|-------------|---|-------------|---|
| 35 / 30 ¹⁾ | 11 | 1 | 1 | -- -- -- | 24 110 230 | 5 5 5 | 3RT2325-1AB00 3RT2325-1AF00 3RT2325-1AP00 | 5 X 2 | 3RT2325-2AB00 3RT2325-2AF00 3RT2325-2AP00 |
| 40 / 35 ¹⁾ | 11 | 1 | 1 | -- -- -- | 24 110 230 | 5 5 2 | 3RT2326-1AB00 3RT2326-1AF00 3RT2326-1AP00 | 5 X 2 | 3RT2326-2AB00 3RT2326-2AF00 3RT2326-2AP00 |
| 50 / 42 ¹⁾ | 11 | 1 | 1 | -- -- -- | 24 110 230 | 5 5 2 | 3RT2327-1AB00 3RT2327-1AF00 3RT2327-1AP00 | 5 5 2 | 3RT2327-2AB00 3RT2327-2AF00 3RT2327-2AP00 |

Size S2

| | | | | | | | | | |
|----------|----|---|---|----------------|------------------|-------------|---|---------------|----------------|
| 60 / 55 | 11 | 1 | 1 | -- -- -- | 24 110 230 | 5 5 ▶ | 3RT2336-1AB00 3RT2336-1AF00 3RT2336-1AP00 | -- -- ▶ | -- -- -- |
| 110 / 95 | 11 | 1 | 1 | -- -- -- | 24 110 230 | 5 5 ▶ | 3RT2337-1AB00 3RT2337-1AF00 3RT2337-1AP00 | -- -- ▶ | -- -- -- |

For screw fixing and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

| | | | | | | | | | |
|-----------|----|---|---|----------------|------------------|-------------|---|----------------|----------------|
| 110 / 100 | 11 | 1 | 1 | -- -- -- | 24 110 230 | 5 5 2 | 3RT2344-1AB00 3RT2344-1AF00 3RT2344-1AP00 | -- -- -- | -- -- -- |
| 140 / 130 | 11 | 1 | 1 | -- -- -- | 24 110 230 | 5 5 2 | 3RT2346-1AB00 3RT2346-1AF00 3RT2346-1AP00 | -- -- -- | -- -- -- |
| 160 / 140 | 11 | 1 | 1 | -- -- -- | 24 110 230 | 5 5 5 | 3RT2348-1AB00 3RT2348-1AF00 3RT2348-1AP00 | -- -- -- | -- -- -- |

¹⁾ Required conductor cross-section 10 mm².

Other voltages according to page 4/53 on request.
 Accessories and spare parts, see page 3/77 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

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-loaded 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 | | | | |
| 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 fixing 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 4/53](#) on request.

Accessories and spare parts, [see page 3/77 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

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



NO




NC

Rated control

supply voltage U_s

DC


SD

Screw terminals 

Article No.

Price
per PU

d

Spring-loaded 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

3RT2316-1BB40

▶

3RT2316-2BB40**3RT2316-1BM40**

5

3RT2316-2BM40

22 / 20

--

--

--

24

220

▶

3RT2317-1BB40

▶

3RT2317-2BB40**3RT2317-1BM40**

5

3RT2317-2BM40**Size S0**35 / 30¹⁾**11**

1

1

24

220

2

3RT2325-1BB40

2

3RT2325-2BB40**3RT2325-1BM40**

5

3RT2325-2BM4040 / 35¹⁾**11**

1

1

24

220

2

3RT2326-1BB40

2

3RT2326-2BB40**3RT2326-1BM40**

X

3RT2326-2BM4050 / 42¹⁾**11**

1

1

24

220

2

3RT2327-1BB40

2

3RT2327-2BB40**3RT2327-1BM40**

X

3RT2327-2BM40

¹⁾ Required conductor cross-section 10 mm².

Other voltages [according to page 4/53](#) on request.

Accessories and spare parts, [see page 3/77 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

AC/DC operation





PU (UNIT, SET, M) = 1
 PS* = 1 unit
 PG = 41B



3RT233.-1N.30



3RT234.-1N.30

| Rated data AC-1, t_{ij} : 40 / 60 °C Operational current I_e up to 690 V A | Auxiliary contacts | | Rated control supply voltage U_c 50/60 Hz AC or DC | SD | Screw terminals  | | SD | Spring-loaded 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 integrated in electronics at the factory)

| | | | | | | | | | |
|----------|----|---|---|--------------------------|--------|--------------------------------|----|----|----|
| 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 | 3RT2337-1NB30 3RT2337-1NP30 | -- | -- | -- |

For screw fixing and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

With integrated coil circuit
(varistor integrated in electronics at the factory)

| | | | | | | | | | |
|-----------|----|---|---|--------------------------|--------|--------------------------------|----|----|----|
| 110 / 100 | 11 | 1 | 1 | 20 ... 33 175 ... 280 | X 5 | 3RT2344-1NB30 3RT2344-1NP30 | -- | -- | -- |
| 140 / 130 | 11 | 1 | 1 | 20 ... 33 175 ... 280 | 2 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 4/53](#) on request.

Accessories and spare parts, [see page 3/77 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

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 control supply voltage U_s | SD | Screw terminals  | SD | Spring-loaded 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 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 V | |  | | | | | | |
| 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 integrated in electronics at the factory)

50 60 / 55 11 1 1 20 ... 33 2

3RT2336-1NB30-4AA0

--

For screw fixing and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

With integrated coil circuit
 (varistor integrated in electronics at the factory)

95 110 / 100 11 1 1 20 ... 33 5

3RT2346-1NB30-4AA0

--

Other voltages [according to page 4/53](#) on request.

Accessories and spare parts, [see page 3/77](#) onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole up to 525 A

Sizes S6 to S12: AC/DC operation

- Solid-state operating mechanism
- Version with two laterally mounted auxiliary switches (2 NO + 2 NC each)
- For screw fixing
- Auxiliary and control circuits: Screw terminals
- Main conductors: Busbar connections; a connection kit is enclosed.






3RT1355-6A.36



3RT1363-6A.36



3RT1373-6A.36

| Size | Rated data AC-1, t_i : 40 °C | Auxiliary contacts, lateral | Operating range | | SD | Busbar connections | PU (UNIT, SET, M) | PS* | PG |
|------|---------------------------------------|---|------------------------------------|---------------------|----|---|-------------------------|-----|----|
| | | | 0.85 ... 1.1 x U_s | 0.8 ... 1.1 x U_s | |  | | | |
| | Operational current I_e at 690 V | Version | Rated control supply voltage U_s | | | Article No. | Price per PU | | |
| A | |   | V | V | d | | | | |

Solid-state operating mechanism

With integrated coil circuit (varistor integrated in electronics at the factory)

| Size | Rated current | NO | NC | Operating range | Rated control supply voltage U_s | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG | |
|------|---------------|----|----|-----------------|------------------------------------|-------------|---------------|---------------|-------------------|--------|-----|-----|
| S6 | 200 | 2 | 2 | 24 ... 60 | 20 ... 60 | 20 | 3RT1355-6AE36 | 1 | 1 unit | | 41B | |
| | | | | 48 ... 130 | 48 ... 130 | 20 | 3RT1355-6AF36 | 1 | 1 unit | | 41B | |
| | | | | 100 ... 250 | 100 ... 250 | 20 | 3RT1355-6AP36 | 1 | 1 unit | | 41B | |
| | | | | 250 ... 500 | 250 ... 500 | 20 | 3RT1355-6AR36 | 1 | 1 unit | | 41B | |
| S10 | 275 | 2 | 2 | 24 ... 60 | 20 ... 60 | 20 | 3RT1363-6AE36 | 1 | 1 unit | | 41B | |
| | | | | 48 ... 130 | 48 ... 130 | 20 | 3RT1363-6AF36 | 1 | 1 unit | | 41B | |
| | | | | 100 ... 250 | 100 ... 250 | 20 | 3RT1363-6AP36 | 1 | 1 unit | | 41B | |
| | | | | 250 ... 500 | 250 ... 500 | 20 | 3RT1363-6AR36 | 1 | 1 unit | | 41B | |
| | 350 | 2 | 2 | 2 | 24 ... 60 | 20 ... 60 | 20 | 3RT1364-6AE36 | 1 | 1 unit | | 41B |
| | | | | | 48 ... 130 | 48 ... 130 | 20 | 3RT1364-6AF36 | 1 | 1 unit | | 41B |
| | | | | | 100 ... 250 | 100 ... 250 | 20 | 3RT1364-6AP36 | 1 | 1 unit | | 41B |
| | | | | | 250 ... 500 | 250 ... 500 | 20 | 3RT1364-6AR36 | 1 | 1 unit | | 41B |
| S12 | 400 | 2 | 2 | 24 ... 60 | 20 ... 60 | 20 | 3RT1373-6AE36 | 1 | 1 unit | | 41B | |
| | | | | 48 ... 130 | 48 ... 130 | 20 | 3RT1373-6AF36 | 1 | 1 unit | | 41B | |
| | | | | 100 ... 250 | 100 ... 250 | 20 | 3RT1373-6AP36 | 1 | 1 unit | | 41B | |
| | | | | 250 ... 500 | 250 ... 500 | 20 | 3RT1373-6AR36 | 1 | 1 unit | | 41B | |
| | 500 | 2 | 2 | 2 | 24 ... 60 | 20 ... 60 | 20 | 3RT1374-6AE36 | 1 | 1 unit | | 41B |
| | | | | | 48 ... 130 | 48 ... 130 | 20 | 3RT1374-6AF36 | 1 | 1 unit | | 41B |
| | | | | | 100 ... 250 | 100 ... 250 | 20 | 3RT1374-6AP36 | 1 | 1 unit | | 41B |
| | | | | | 250 ... 500 | 250 ... 500 | 20 | 3RT1374-6AR36 | 1 | 1 unit | | 41B |
| | 525 | 2 | 2 | 2 | 24 ... 60 | 20 ... 60 | 20 | 3RT1375-6AE36 | 1 | 1 unit | | 41B |
| | | | | | 48 ... 130 | 48 ... 130 | 20 | 3RT1375-6AF36 | 1 | 1 unit | | 41B |
| | | | | | 100 ... 250 | 100 ... 250 | 20 | 3RT1375-6AP36 | 1 | 1 unit | | 41B |
| | | | | | 250 ... 500 | 250 ... 500 | 20 | 3RT1375-6AR36 | 1 | 1 unit | | 41B |

Depending on the operational current, bus connectors offset must be used for sizes S10 and S12, [see page 4/37](#):

- 3RT136: For more than 275 A, the 3RT1966-4D bus connectors offset must be used.
- 3RT137: For more than 450 A, the 3RT1976-4D bus connectors offset must be used.

Accessories and spare parts, [see page 4/37 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications







SIRIUS 3RT.3 contactors, 4-pole up to 525 A

Accessories


Overview graphic for 3RT135 to 3RT137 contactors with mountable accessories, [see page 4/24](#).

More information

Equipment Manual, [see https://support.industry.siemens.com/cs/ww/en/view/60306557](https://support.industry.siemens.com/cs/ww/en/view/60306557)

| For contactors | Auxiliary contacts Version | | SD | | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG | |
|--|----------------------------|----|------|-------|-------------|--|----------------------|--------|--------|-----|
| | NO | NC | Left | Right | | | | | | |
| Type | NO | NC | Left | Right | d | | | | | |
| Second auxiliary switch (1 NO + 1 NC) | | | | | | | | | | |
| Lateral mounting on the right and/or the left, 2-pole | | | | | | | | | | |
|  | 3RT135 | 1 | 1 | | | Screw terminals  | 1 | 1 unit | 41B | |
| ... | 3RT137 | | | | | | | | | |
| 3RH1951-1SA11 | | | | | | | | | | |
| Terminal covers | | | | | | | | | | |
| Two units required per contactor (1 set = 2 units) Either bus connectors offset or terminal covers can be used. | | | | | | | | | | |
|  | 3RT135 | -- | -- | -- | -- | 20 | 3RT1956-4EB10 | 1 | 1 unit | 41B |
| 3RT1956-4EB10 | 3RT136 | -- | -- | -- | -- | | | | | |
|  | 3RT137 | -- | -- | -- | -- | | | | | |
| 3RT1966-4EB10 | | | | | | | 3RT1976-4EB10 | 1 | 1 unit | 41B |
|  | 3RT1976-4EB10 | | | | | | | | | |
| Bus connectors offset | | | | | | | | | | |
| (Two units required per contactor) Either terminal covers or bus connectors offset can be used. | | | | | | | | | | |
|  | 3RT136 | -- | -- | -- | -- | 20 | 3RT1966-4D | 1 | 1 unit | 41B |
| 3RT1966-4D | 3RT137 | -- | -- | -- | -- | | | | | |
|  | 3RT1976-4D | | | | | | 3RT1976-4D | 1 | 1 unit | 41B |
| Mechanical interlocks for contactor assemblies | | | | | | | | | | |
| Enables two 3RT13 contactors of the same size (S6, S10 and S12) to be interlocked with each other. The laterally mounted auxiliary switches of the contactor must be removed beforehand. The mechanical interlock cannot be used in conjunction with the bus connectors offset. | | | | | | | | | | |
|  | 3RT135 ... | -- | -- | -- | -- | 20 | 3RA1954-3A | 1 | 1 unit | 41B |
| 3RA1954-3A | 3RT137 | | | | | | | | | |

Spare parts

| For contactors | Auxiliary contacts Version | | SD | | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG | |
|---|----------------------------|----|------|-------|-------------|--------------|----------------------|-----|--------|-----|
| | NO | NC | Left | Right | | | | | | |
| Type | NO | NC | Left | Right | d | | | | | |
| First auxiliary switch (1 NO + 1 NC) | | | | | | | | | | |
| Lateral mounting on the right and/or the left, 2-pole | | | | | | | | | | |
|  | 3RT135 | 1 | 1 | | | 20 | 3RH1951-1TA11 | 1 | 1 unit | 41B |
| ... | 3RT137 | | | | | | | | | |
| 3RH1951-1TA11 | | | | | | | | | | |

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

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 page 3/77 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 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 1/8](#).

Application

The contactors are suitable:

- For changing the polarity of hoisting gear motors
- For switching two separate loads

Note:

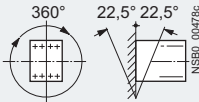

Single device for pole reversal; not suitable for reversing duty. 3RT25 contactors are not suitable for switching a load between two current sources.

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 | S3 |
| General data | | | | | |
| Dimensions (W x H x D) | See 3RT231., page 4/25 | See 3RT232., page 4/25 | See 3RT233., page 4/25 | See 3RT234., page 4/25 | See 3RT234., page 4/25 |
| Permissible mounting position | <p>The contactors are designed for operation on a vertical mounting surface.</p>  | | | | |
| Upright mounting position |  Special version required | | | | |
| 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 IP on the front acc. to IEC 60529 | | IP20 (screw terminals and spring-loaded terminals) | | | |
| Touch protection on the front acc. to IEC 60529 | | Finger-safe for vertical touching from the front (screw terminals and spring-loaded terminals) | | | |

Switching devices – Contactors and contactor assemblies – Special applications

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 | S3 | 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 - 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 At 50 Hz At 60 Hz DC operation 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 | -- | 0.8 ... 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 | -- | 0.8 ... 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 | -- | 0.85 ... 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 - Closing - P.f. - Closed - P.f. DC operation - 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 - Closing delay - Opening delay DC operation - 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).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

| 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 | | | | | | | | | |
| • 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 | At 230 V kW | 6 | 7.5 | | 13.3 | 21 | 23 | 34 | 59 |
| | 400 V kW | 10.5 | 13 | | 23 | 36 | 39 | 40 | 69 |
| | P.f. = 0.95 (at 60 °C) | | | | | | | | |
| • Minimum cross-section in the main circuit at maximum AC-1 rated value | mm ² | 2.5 | 4 | | 10 | 16 | 25 | 35 | 50 |
| Utilization categories AC-2 and AC-3 | | | | | | | | | |
| • Rated operational currents I_e | 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 |
| | (at 60 °C) | | | | | | | | |
| • 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, (L/R ≤ 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 ≤ 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 | | | 1 500 | | 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 conducting paths are equal to 50% of the values for the NO contact conducting 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.

Switching devices – Contactors and contactor assemblies – Special applications

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-loaded 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 up to 400 V | Ratings of three-phase motors at 50 Hz and 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 fixing 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 4/53 on request.

Accessories and spare parts, see page 3/77 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

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_c | SD | Screw terminals  | | SD | Spring-loaded terminals  | |
|--|---------------------------------|--------------------|---|------------------------------------|----|---|--------------|----|---|--------------|
| AC-2/AC-3, t_U : Up to 60 °C | AC-1, t_U : 40 / 60 °C | Ident. No. | Version | 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 | |  | | | | | | | |
| Ratings of three-phase motors at 50 Hz and 400 V | | | | | | | | | | |
| 400 V | 690 | | | | | | | | | |
| A | A | | NO NC V | | 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 |
| | | | | | | | | 3RT2516-1BM40 | 5 | 3RT2516-2BM40 |
| 12/9 ¹⁾ | 5.5/4¹⁾ | 22 / 20 | -- | -- | -- | 24 220 | | 3RT2517-1BB40 | 2 | 3RT2517-2BB40 |
| | | | | | | | | 3RT2517-1BM40 | 5 | 3RT2517-2BM40 |
| 16/9 ¹⁾ | 7.5/4¹⁾ | 22 / 20 | -- | -- | -- | 24 220 | | 3RT2518-1BB40 | 2 | 3RT2518-2BB40 |
| | | | | | | | | 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 4/53 on request.

Accessories and spare parts, see page 3/77 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

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-loaded 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 or 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 400 V | Operational current I_e up to 690 A |  | | | | | | |
| A | kW | 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 integrated in electronics at the factory)

| | | | | | | | | | |
|----|-------------|---------|-----------|---|---|-------------|---|----------------------|----|
| 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 fixing and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

With integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | |
|----|-----------|-----------|-----------|---|---|-------------|---|----------------------|----|
| 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 4/53](#) on request.

Accessories and spare parts, [see page 3/77 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

Overview

Standards

IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1,
IEC/EN 60831-1, IEC/EN 61921

Function

The 3RT26 contactors are special versions of the 3RT2, designed for switching capacitive loads (AC-6b) up to 100 kvar at 400 V.

Characteristic components of the 3RT26 contactors are the precharging resistors switched on via leading auxiliary contacts, which are closed before the main contacts. This limits the peak charging current of capacitive loads and thus minimizes negative impacts on the power supply network.

The 3RT26 contactors are suitable for switching choked or unchoked capacitors in reactive current compensation systems and are also used to switch converters.

Auxiliary contacts

All 3RT26 contactors for capacitive loads are equipped with auxiliary contacts at the factory.

The 3RT261 and 3RT262 contactors are equipped with a front-mounted auxiliary switch with integrated leading auxiliary contacts for the precharging resistors. A further fourth auxiliary contact in the auxiliary switch is unassigned.

A further freely assignable auxiliary contact is integrated in the basic unit of 3RT261; two of these are integrated in 3RT262.

In the case of the 3RT263 and 3RT264 contactors, the precharging resistors and their leading auxiliary contacts are integrated in the basic unit. These devices are supplied with an auxiliary switch mounted on the left, the auxiliary contacts of which are freely assignable.

Expansion is possible by means of an auxiliary switch with two auxiliary contacts on the right-hand side of the device.

| Type Size | 3RT261 S00 | 3RT262 S0 | 3RT263, 3RT264 S2, S3 |
|---|---------------|--------------|--------------------------|
| Number of unassigned auxiliary contacts as delivered from the factory | 2 | 3 | 2 |
| Number of expandable auxiliary contacts | 0 | 0 | 2 |

Conductor cross-sections

In order to connect the required minimum cross-section, the use of an infeed terminal may be necessary, see page 3/117. This enables the connection of larger cross-sections than the device connection itself actually allows. For 3RT2628 contactors, this infeed terminal is already included in the scope of supply and is already mounted on the contactor.

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

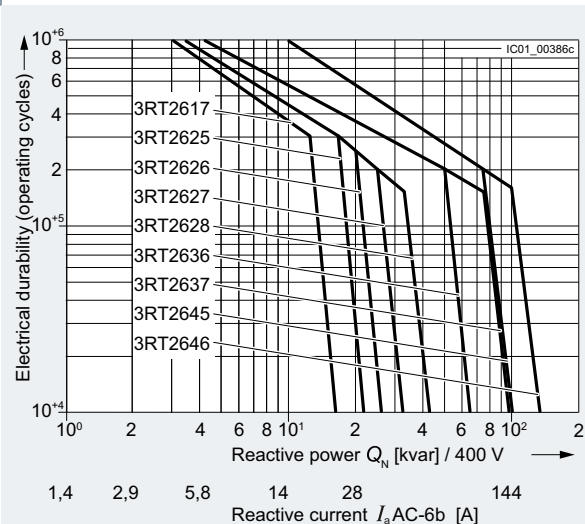
Size

S00 to 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_a 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.



Switching devices – Contactors and contactor assemblies – Special applications

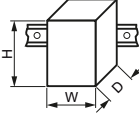
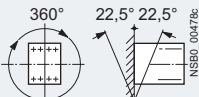
Contactors for special applications

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 | Operating cycles | 3 million | | | | | | | | |
| Electrical endurance | | | | | | | | | | |
| For apparent power at 400 V | kvar | 12.5 | 16.7 | 20 | 25 | 33 | 50 | 75 | 100 | 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 IP on the front acc. to IEC 60529 | | IP20 | | | | | | | | |
| Touch protection on the front acc. to IEC 60529 | | 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.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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 | | | -- | -- |
| • 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 | | -- | -- |
| Operating times for 0.8 ... 1.1 x U_s¹⁾ 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⁾ 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 | ms | -- | | 30 ... 70 | -- |
| - Opening delay | | ms | 35 ... 45 | | 30 ... 55 | 38 ... 57 |
| • Arcing time | | ms | 10 ... 15 | | | |

Switching devices – Contactors and contactor assemblies – Special applications

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 | | | | | |
| Further auxiliary switches, laterally mountable | | -- | | | | | | No more than one lateral auxiliary switch can be mounted. | | | | |
| Technical specifications including CSA and UL rated data of the auxiliary contacts, see 3RT20 contactors, 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 at 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 | |
| | 60 °C A | -- | | | | | | | | | 68 | |
| • Rated operational reactive power at rated operational voltage | | | | | | | | | | | | |
| 230 V, 50/60 Hz kvar | | 7.2 | 9.6 | 11.5 | 14 | 19 | 29 | 43 | | | 57 | |
| 400 V, 50/60 Hz kvar | | 12.5 | 16.7 | 20 | 25 | 33 | 50 | 75 | | | 100 | |
| 500 V, 50/60 Hz kvar | | 15 | 21 | 25 | 31 | 41 | 63 | 94 | | | 125 | |
| 690 V, 50/60 Hz kvar | | 21 | 29 | 34 | 43 | 57 | 86 | 129 | | | 172 | |
| 1 000 V, 50/60 Hz kvar | | -- | | | | | | | | 94 | 125 | |
| • Minimum cross-section in the main circuit for max. AC-6b rated value | | | | | | | | | | | | |
| See Product data sheets of the relevant capacitor contactors and capacitors • Operating instructions and manuals, https://support.industry.siemens.com/cs/ww/en/ps/16171/man | | | | | | | | | | | | |
| Switching frequency | | | | | | | | | | | | |
| No-load switching frequency | AC operation | 1/h | 500 | | | | 500 ¹⁾ | | | | | |
| | DC operation | 1/h | 500 | | | | 500 ¹⁾ | | | | | |
| Max. switching frequency z at $T_u = 60 °C^{2)}$ 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⁾ | | 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 | | 53 | 40 | |
| 600 V, 50/60 Hz | 1/h | 180 | | 100 | | 45 | 40 | 32 | | 30 | 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) In case of AC/DC operation (UC operating mechanisms): max. 300/h.

2) Specifications for worst case scenario, higher switching frequency possible.



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.

Switching devices – Contactors and contactor assemblies – Special applications

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 |
| Conductor cross-sections | |  Screw terminals | | | | | |
| Main conductors (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 | 2 x (1 ... 2.5) ¹⁾ ; 2 x (2.5 ... 10) ¹⁾ | | 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) | 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 | 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) ¹⁾ ; 2 x (18 ... 14) ¹⁾ ; 2 x 12 | 2 x (16 ... 12) ¹⁾ ; 2 x (14 ... 8) ¹⁾ | 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 (hexagon socket, A/F 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) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ ; max. 2 x 4 | | | | | |
| • Finely stranded with end sleeve (DIN 46228) | 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⁾ ; 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⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

Switching devices – Contactors and contactor assemblies – Special applications

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 infed 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 | | Article No. | Price per PU | | |
| Capacitor rating at operational voltage 50/60 Hz | | | |  |  | V | V | d | | | | |
| At 230 V | At 400 V | At 500 V | At 690 V | | | | | | | | | |
| kvar | kvar | kvar | kvar | NO | NC | V | V | d | | | | |
| For screw fixing and snap-on mounting onto TH 35 standard mounting rail | | | | | | | | | | | | |
| Size S00 | | | | | | | | | | | | |
| 7.2 | 12.5 | 15 | 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 |
| 7.2 | 12.5 | 15 | 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 S0 | | | | | | | | | | | | |
| 9.6 | 16.7 | 21 | 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 |
| 11.5 | 20 | 25 | 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 |
| 14 | 25 | 31 | 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 |
| 19 | 33 | 41 | 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 |

Other voltages according to page 4/53 on request.

Accessories and spare parts, see page 3/77 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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 | | Article No. | Price per PU | | |
| Capacitor rating at operational voltage 50/60 Hz | | | |   | | V | d | | | | |
| At 230 V | At 400 V | At 500 V | At 690 V | NO | NC | | | | | | |
| kvar | kvar | kvar | kvar | | | | | | | | |
| For screw fixing and snap-on mounting onto TH 35 standard mounting rail | | | | | | | | | | | |
| Size S2 | | | | | | | | | | | |
| 29 | 50 | 63 | 86 | 1 | 1 | 24 110 230 | 5 2 ▶ | 3RT2636-1AB03 3RT2636-1AF03 3RT2636-1AP03 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| 29 | 50 | 63 | 86 | 0 | 2 | 24 110 230 | 5 5 5 | 3RT2636-1AB05 3RT2636-1AF05 3RT2636-1AP05 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| 43 | 75 | 94 | 129 | 1 | 1 | 24 110 230 | 5 5 ▶ | 3RT2637-1AB03 3RT2637-1AF03 3RT2637-1AP03 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| 43 | 75 | 94 | 129 | 0 | 2 | 24 110 230 | 5 5 5 | 3RT2637-1AB05 3RT2637-1AF05 3RT2637-1AP05 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| For screw fixing and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails | | | | | | | | | | | |
| Size S3 | | | | | | | | | | | |
| 43 | 75 | 94 | 129 | 1 | 1 | 24 110 230 | 5 5 5 | 3RT2645-1AB03 3RT2645-1AF03 3RT2645-1AP03 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| 43 | 75 | 94 | 129 | 0 | 2 | 24 110 230 | 5 5 5 | 3RT2645-1AB05 3RT2645-1AF05 3RT2645-1AP05 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| 57 | 100 | 125 | 172 | 1 | 1 | 24 110 230 | 5 5 2 | 3RT2646-1AB03 3RT2646-1AF03 3RT2646-1AP03 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| 57 | 100 | 125 | 172 | 0 | 2 | 24 110 230 | 5 5 5 | 3RT2646-1AB05 3RT2646-1AF05 3RT2646-1AP05 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |

Other voltages [according to page 4/53](#) on request.

Accessories, [see page 3/77 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

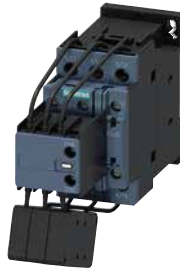
SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

DC operation

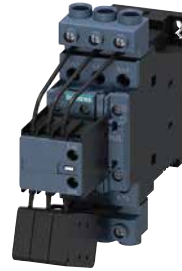
Main, auxiliary and control conductors: Screw terminals






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 | | | |   | V | d | Article No. | Price per PU | | | |
| At 230 V | At 400 V | At 500 V | At 690 V | | | | | | | | |
| kvar | kvar | kvar | kvar | NO | NC | | | | | | |
| For screw fixing and snap-on mounting onto TH 35 standard mounting rail | | | | | | | | | | | |
| Size S00 | | | | | | | | | | | |
| 7.2 | 12.5 | 15 | 21 | 1 | 1 | 24 110 | 5 5 | 3RT2617-1BB43 | 1 | 1 unit | 41B |
| | | | | | | | | 3RT2617-1BF43 | 1 | 1 unit | 41B |
| 7.2 | 12.5 | 15 | 21 | 0 | 2 | 24 110 | 5 5 | 3RT2617-1BB45 | 1 | 1 unit | 41B |
| | | | | | | | | 3RT2617-1BF45 | 1 | 1 unit | 41B |
| Size S0 | | | | | | | | | | | |
| 9.6 | 16.7 | 21 | 29 | 1 | 2 | 24 110 | 5 5 | 3RT2625-1BB45 | 1 | 1 unit | 41B |
| | | | | | | | | 3RT2625-1BF45 | 1 | 1 unit | 41B |
| 11.5 | 20 | 25 | 34 | 1 | 2 | 24 110 | 5 5 | 3RT2626-1BB45 | 1 | 1 unit | 41B |
| | | | | | | | | 3RT2626-1BF45 | 1 | 1 unit | 41B |
| 14 | 25 | 31 | 43 | 1 | 2 | 24 110 | 5 5 | 3RT2627-1BB45 | 1 | 1 unit | 41B |
| | | | | | | | | 3RT2627-1BF45 | 1 | 1 unit | 41B |
| 19 | 33 | 41 | 57 | 1 | 2 | 24 110 | 5 5 | 3RT2628-1BB45 | 1 | 1 unit | 41B |
| | | | | | | | | 3RT2628-1BF45 | 1 | 1 unit | 41B |

Other voltages according to page 4/53 on request.

Accessories, see page 3/77 onwards.

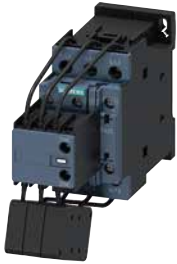
Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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 | | | |   | | | Article No. | Price per PU | | |
| At 230 V | At 400 V | At 500 V | At 690 V | NO | NC | V | | | | |
| kvar | kvar | kvar | kvar | | | | | | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

| 9.6 | 16.7 | 21 | 29 | 1 | 2 | 21 ... 28 95 ... 130 200 ... 280 | 5 | 3RT2625-1NB35 3RT2625-1NF35 3RT2625-1NP35 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
|------|-------------|----|----|---|---|--|-------------|---|-------------|----------------------------|-------------------|
| 11.5 | 20 | 25 | 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 |
| 14 | 25 | 31 | 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 |
| 19 | 33 | 41 | 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 S2

| 29 | 50 | 63 | 86 | 0 | 2 | 20 ... 33 83 ... 155 175 ... 280 | 5 2 5 | 3RT2636-1NB35 3RT2636-1NF35 3RT2636-1NP35 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
|----|-----------|----|-----|---|---|--|-------------|---|-------------|----------------------------|-------------------|
| 43 | 75 | 94 | 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 fixing and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

| 43 | 75 | 94 | 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 |
|----|------------|-----|-----|---|---|--|-------------|---|-------------|----------------------------|-------------------|
| 57 | 100 | 125 | 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 |

Other voltages [according to page 4/53](#) on request.

Accessories, [see page 3/77 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

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 | Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage of 230 V AC Contactor 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 | Contactor with spring-loaded terminals; for rated control supply voltage of 24 V DC Contactor with spring-loaded 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 and Catalog KT 10.1.

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 $U_{s \min}$ to $U_{s \max}$ ¹⁾ | Contactor type 3RT2.2.-N Size S0 | Rated control supply voltage $U_{s \min}$ to $U_{s \max}$ ¹⁾ | Contactor type 3RT2.3.-N Size S2 | 3RT2.4.-N Size 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 $U_{s \max}$.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT23 to 3RT26, 3RT14 contactors

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 |
| $U_{s \min}$ to $U_{s \max}$ | Sizes S6 to S12 | $U_{s \min}$ to $U_{s \max}$ | Sizes S6 to S12 | |

Sizes S6 to S12

AC/DC operation (50/60 Hz AC or DC) and operating range $0.8 \times U_{s \min}$ to $1.1 \times U_{s \max}$

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 |

Switching devices – Contactors and contactor assemblies – Special applications

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 weak or non-inductive 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 contactor operating mechanisms or also
- increased resistance to mechanical oscillations and vibrations is warranted. The design of the terminals in the spring-loaded 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 $1.25 \times U_s$ in the temperature range -40 to 70 °C. Overvoltage damping of the contactor coil with a varistor circuit is already integrated.

As from size S6, the operating mechanisms are equipped with an additional control input that can be operated between 24 and 110 V DC. 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, page 3/8 onwards](#)).

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

Contactors with conventional operating mechanism

- Sizes S00 and S0:
Side-by-side mounting is permissible at ambient temperatures up to 60 °C. At > 60 to 70 °C, a clearance of at least 10 mm shall be provided.

Contactors with series resistor

- Size S00:
Side-by-side mounting is permissible at ambient temperatures up to 70 °C.

Contactors with solid-state operating mechanism (version: 3RT.....-.....0LA2)

- Sizes S00 to S3:
Side-by-side mounting is permissible at ambient temperatures up to 70 °C.
- Sizes S6 to S12:
Side-by-side mounting is permissible at ambient temperatures up to 60 °C. At > 60 to 70 °C, a clearance of at least 10 mm shall be provided.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

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 | 3RT2017- 2XB4.- 0LA2 | 2XF4.- 0LA2 | 3RT2018- 2XB4.- 0LA2 | 2XF4.- 0LA2 | 3RT202. | 3RT202.- 2XB40- 0LA2 | 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 ... +70¹⁾ -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 | 4.5 | 4.0 | 4.5 | -- | 6.7 | 13.2 |
| | Closed | W | -- | 0.95 | 0.75 | 0.95 | 0.75 | -- | 1.4 | 1.3 |

Rated data of the main contacts

Load rating with AC

Minimum cross-section in the main circuit

- At maximum AC-1 rated value mm² 4 10
- At maximum I_{th} rated value mm² -- 4 -- 10

¹⁾ 3RT20...-K contactors without the article number suffix "-0LA2" are coupling contactors that are certified for the -25 to +60 °C standard temperature range. For railway applications, an additional certification approves these contactors with a minimum clearance 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 page 3/23 onwards.

| | | | | | | | | | | |
|------|----------------------------|----------------|----------------------------|----------------|----------------------------|----------------|----------------------------|----------------|----------------------------|----------------|
| Type | 3RT2035- 3XB40- 0LA2 | 3XF40- 0LA2 | 3RT2036- 3XB40- 0LA2 | 3XF40- 0LA2 | 3RT2037- 3XB40- 0LA2 | 3XF40- 0LA2 | 3RT2038- 3XB40- 0LA2 | 3XF40- 0LA2 | 3RT204.- 3XB40- 0LA2 | 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 |

Rated data of the main contacts

Load rating with AC

Minimum cross-section in the main circuit

- At maximum AC-1 rated value mm² 16 25 35 50
- At maximum I_{th} rated value mm² 16 25 35 50

All details and technical specifications not mentioned here are identical to those of the basic units, see page 3/23 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

| 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 | | | | | | | | | |
| • Solenoid coil closing for DC | W | 320 | | | 580 | | 800 | | |
| • Solenoid coil closed for DC | W | 2.8 | | | 3.4 | | 3.6 | | |
| • 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> | | | | | | | | | |
| • 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 | | | | | | | |
| Rated data of the main contacts | | | | | | | | | |
| Load rating with AC | | | | | | | | | |
| Minimum cross-section in the main circuit | | | | | | | | | |
| • At maximum AC-1 rated value | mm ² | 70 | 95 | | 150 | 185 | | 300 | 370 |
| • At maximum I_{th} rated value | mm ² | 70 | 95 | | 150 | 185 | | 300 | 370 |
| 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 | | $I_{\theta}/AC-1$ at 400 V h ⁻¹ | | $I_{\theta}/AC-2$ at 400 V h ⁻¹ | | $I_{\theta}/AC-3$ at 400 V h ⁻¹ | | $I_{\theta}/AC-4$ at 400 V h ⁻¹ | |
| | | 800 | | 700 | | 500 | | 200 | 170 |
| | | 400 | 300 | 250 | 300 | 250 | 500 | | |
| | | 1 000 | 750 | 500 | 700 | 500 | | | 420 |
| | | 130 | | | | | | | |
| ¹⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U': | | | | | For all details and technical specifications not mentioned here, see https://support.industry.siemens.com/cs/ww/en/ps/16177/td . | | | | |
| $z' = z \cdot (I_{\theta}/I) \cdot (U_{\theta}/U)^{1.5} \cdot 1/h.$ | | | | | | | | | |
| 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 | | | | | | | | | |
| • Solenoid coil closing for DC | W | 320 | | | 580 | | 800 | | |
| • Solenoid coil closed for DC | W | 2.8 | | | 3.4 | | 3.6 | | |
| • 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> | | | | | | | | | |
| • 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 | | | | | | | |
| Rated data of the main contacts | | | | | | | | | |
| Load rating with AC | | | | | | | | | |
| Minimum cross-section in the main circuit | | | | | | | | | |
| • At maximum AC-1 rated value | mm ² | 140 | | 240 | | 300 | | 480 | |
| • At maximum I_{th} rated value | mm ² | 140 | | 240 | | | | 480 | |

Switching devices – Contactors and contactor assemblies – Special applications

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



3RT201-2K.4.



3RT201-2K.42-0LA0

| Rated data according to IEC 60947-4-1 AC-2 and AC-3, t_u : 70 °C | | Auxiliary contacts | | Rated control supply voltage U_s | SD | Spring-loaded terminals | PU (UNIT, SET, M) | PS* | PG |
|--|--|--------------------|-------|--|------------|----------------------------|-------------------------|-----------------|----|
| Operational current I_e up to | Ratings of three-phase motors at | | | | Ident. No. | Version | Article No. | Price per PU | d |
| | 400 V | 230 V | 400 V | 500 V | 690 V | NO | | | |
| A | kW | kW | kW | kW | | | | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

Coupling contactors with integrated coil circuit

- Suppressor diode integrated at the factory

| | | | | | | | | | | | | | |
|--------------------------------------|---|-----|-----|-----|------------------|----|----|-----|---|---------------|---|--------|-----|
| 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 |
| • Varistor integrated at the factory | | | | | | | | | | | | | |
| 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 plug-on series resistor and integrated coil circuit

- Suppressor diode integrated at the factory

| | | | | | | | | | | | | | |
|--------------------------------------|---|-----|-----|-----|------------------|----|-----------------|-----|---|--------------------|---|--------|-----|
| 12 | 3 | 5.5 | 5.5 | 5.5 | -- ²⁾ | -- | 1 ³⁾ | 24 | 5 | 3RT2017-2KB42-0LA0 | 1 | 1 unit | 41B |
| | | | | | | | | 110 | 5 | 3RT2017-2KF42-0LA0 | 1 | 1 unit | 41B |
| 16 | 4 | 7.5 | 10 | 11 | -- ²⁾ | -- | 1 ³⁾ | 24 | 5 | 3RT2018-2KB42-0LA0 | 1 | 1 unit | 41B |
| | | | | | | | | 110 | 5 | 3RT2018-2KF42-0LA0 | 1 | 1 unit | 41B |
| • Varistor integrated at the factory | | | | | | | | | | | | | |
| 12 | 3 | 5.5 | 5.5 | 5.5 | -- ²⁾ | -- | 1 ³⁾ | 24 | 5 | 3RT2017-2LB42-0LA0 | 1 | 1 unit | 41B |
| | | | | | | | | 110 | 5 | 3RT2017-2LF42-0LA0 | 1 | 1 unit | 41B |
| 16 | 4 | 7.5 | 10 | 11 | -- ²⁾ | -- | 1 ³⁾ | 24 | 5 | 3RT2018-2LB42-0LA0 | 1 | 1 unit | 41B |
| | | | | | | | | 110 | 5 | 3RT2018-2LF42-0LA0 | 1 | 1 unit | 41B |

¹⁾ It is not possible to mount an auxiliary switch. A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.

²⁾ One 4-pole auxiliary switch 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 3/77 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

IE3/IE4 ready

Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

DC operation 

3RT201.-2X.41-0LA2





3RT201.-2X.42-0LA2



3RT202.-2K.40



3RT202.-2X.40-0LA2

| Rated data acc. to | | Auxiliary contacts | | Rated control supply voltage U_s | SD | Spring-loaded terminals  | PU (UNIT, SET, M) | PS* | PG |
|---|---------------------------------|----------------------------------|--------------|---|---------|---|-------------------|-----|----|
| IEC 60077-2 | IEC 60947-4-1 | | | | | | | | |
| AC-3 | | | | | | | | | |
| t_{ij} : 70 °C | t_{ij} : 60 °C | Ratings of three-phase motors at | | Ident. No. | Version | | | | |
| Conventional thermal current I_{th} up to | Operational current I_e up to | | |  | | Article No. | Price per PU | | |
| 690 V | 400 V | 230 V | 400 V | 500 V | 690 V | | | | |
| A | A | kW | kW | kW | kW | | | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

With integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | | | | | | |
|----|----|---|------------|-----|-----|-----------|----|----|------------|---|---------------------------|---|--------|-----|
| 18 | 12 | 3 | 5.5 | 5.5 | 5.5 | 10 | 1 | -- | 24 ... 34 | 5 | 3RT2017-2XB41-0LA2 | 1 | 1 unit | 41B |
| | | | | | | | | | 72 ... 125 | 5 | 3RT2017-2XF41-0LA2 | 1 | 1 unit | 41B |
| 18 | 12 | 3 | 5.5 | 5.5 | 5.5 | 01 | -- | 1 | 24 ... 34 | 5 | 3RT2017-2XB42-0LA2 | 1 | 1 unit | 41B |
| | | | | | | | | | 72 ... 125 | 5 | 3RT2017-2XF42-0LA2 | 1 | 1 unit | 41B |
| 18 | 16 | 4 | 7.5 | 10 | 11 | 10 | 1 | -- | 24 ... 34 | 5 | 3RT2018-2XB41-0LA2 | 1 | 1 unit | 41B |
| | | | | | | | | | 72 ... 125 | 5 | 3RT2018-2XF41-0LA2 | 1 | 1 unit | 41B |
| 18 | 16 | 4 | 7.5 | 10 | 11 | 01 | -- | 1 | 24 ... 34 | 5 | 3RT2018-2XB42-0LA2 | 1 | 1 unit | 41B |
| | | | | | | | | | 72 ... 125 | 5 | 3RT2018-2XF42-0LA2 | 1 | 1 unit | 41B |

Size S0

With integrated coil circuit

• Coupling contactors with varistor integrated at the factory

| | | | | | | | | | | | | | | |
|----|----|-----|------------|------|------|------------------------|---|---|-----|---|----------------------|---|--------|-----|
| -- | 17 | 4 | 7.5 | 10 | 11 | 11¹⁾ | 1 | 1 | 24 | ▶ | 3RT2025-2KB40 | 1 | 1 unit | 41B |
| | | | | | | | | | 110 | 5 | 3RT2025-2KF40 | 1 | 1 unit | 41B |
| -- | 25 | 5.5 | 11 | 11 | 11 | 11¹⁾ | 1 | 1 | 24 | ▶ | 3RT2026-2KB40 | 1 | 1 unit | 41B |
| | | | | | | | | | 110 | 5 | 3RT2026-2KF40 | 1 | 1 unit | 41B |
| -- | 32 | 7.5 | 15 | 18.5 | 18.5 | 11¹⁾ | 1 | 1 | 24 | ▶ | 3RT2027-2KB40 | 1 | 1 unit | 41B |
| | | | | | | | | | 110 | 5 | 3RT2027-2KF40 | 1 | 1 unit | 41B |

• Varistor integrated in electronics at the factory

| | | | | | | | | | | | | | | |
|----|----|-----|-------------|------|------|-----------|---|---|-----|---|---------------------------|---|--------|-----|
| 30 | 17 | 4 | 7.5 | 10 | 11 | 11 | 1 | 1 | 24 | 5 | 3RT2025-2XB40-0LA2 | 1 | 1 unit | 41B |
| | | | | | | | | | 110 | 5 | 3RT2025-2XF40-0LA2 | 1 | 1 unit | 41B |
| 30 | 25 | 5.5 | 11 | 11 | 11 | 11 | 1 | 1 | 24 | 5 | 3RT2026-2XB40-0LA2 | 1 | 1 unit | 41B |
| | | | | | | | | | 110 | 5 | 3RT2026-2XF40-0LA2 | 1 | 1 unit | 41B |
| 36 | 32 | 7.5 | 15 | 18.5 | 18.5 | 11 | 1 | 1 | 24 | 5 | 3RT2027-2XB40-0LA2 | 1 | 1 unit | 41B |
| | | | | | | | | | 110 | 5 | 3RT2027-2XF40-0LA2 | 1 | 1 unit | 41B |
| 38 | 38 | 7.5 | 18.5 | 18.5 | 18.5 | 11 | 1 | 1 | 24 | 5 | 3RT2028-2XB40-0LA2 | 1 | 1 unit | 41B |
| | | | | | | | | | 110 | 5 | 3RT2028-2XF40-0LA2 | 1 | 1 unit | 41B |

¹⁾ It is not possible to mount an auxiliary switch. A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.

Accessories and spare parts, see page 3/77 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

IE3/IE4 ready

DC operation 

3RT203.-3X.40-0LA2



3RT204.-3X.40-0LA2

| Rated data acc. to IEC 60077-2 IEC 60947-4-1 | | Ratings of three-phase motors at | | | | | Auxiliary contacts | | Rated control supply voltage U_s | SD | Spring-loaded 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 | Ident. No. | Version | V DC | d | Article No. | Price per PU | | | |
| 690 V | 400 V | kW | kW | kW | kW | | | | | | | | | |
| A | A | | | | | | | | | | | | | |

For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S2

With integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | | | | | | |
|----|----|------|------|----|----|----|---|---|-----|---|--------------------|---|--------|-----|
| 50 | 40 | 11 | 18.5 | 22 | 22 | 11 | 1 | 1 | 24 | 2 | 3RT2035-3XB40-0LA2 | 1 | 1 unit | 41B |
| | | | | | | | | | 110 | 2 | 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 fixing and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

With integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | | | | | | |
|----|-----|----|----|----|----|----|---|---|-----|---|--------------------|---|--------|-----|
| 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 3/77 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

IE3/IE4 ready Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

DC operation

- Solid-state operating mechanism with 24 to 110 V DC control signal input
- For screw fixing
- Auxiliary and control conductors: Spring-loaded terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts 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-loaded 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

With integrated coil circuit (varistor integrated in electronics at the factory)

| Size | 120 | 115 | 2 | 2 | 24 72 110 | 5 5 5 | 3RT1054-2XB46-0LA2 3RT1054-2XJ46-0LA2 3RT1054-2XF46-0LA2 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
|------------|-----|-----|---|---|-----------------|---------------|--|-------------|----------------------------|-------------------|
| | 140 | 150 | 2 | 2 | 24 72 110 | 5 5 5 | 3RT1055-2XB46-0LA2 3RT1055-2XJ46-0LA2 3RT1055-2XF46-0LA2 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| | 145 | 185 | 2 | 2 | 24 72 110 | 5 5 5 | 3RT1056-2XB46-0LA2 3RT1056-2XJ46-0LA2 3RT1056-2XF46-0LA2 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| S10 | 215 | 225 | 2 | 2 | 24 72 110 | 5 20 5 | 3RT1064-2XB46-0LA2 3RT1064-2XJ46-0LA2 3RT1064-2XF46-0LA2 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| | 265 | 265 | 2 | 2 | 24 72 110 | 5 5 5 | 3RT1065-2XB46-0LA2 3RT1065-2XJ46-0LA2 3RT1065-2XF46-0LA2 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| | 265 | 300 | 2 | 2 | 24 72 110 | 20 20 5 | 3RT1066-2XB46-0LA2 3RT1066-2XJ46-0LA2 3RT1066-2XF46-0LA2 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| S12 | 350 | 400 | 2 | 2 | 24 72 110 | 5 5 5 | 3RT1075-2XB46-0LA2 3RT1075-2XJ46-0LA2 3RT1075-2XF46-0LA2 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| | 475 | 500 | 2 | 2 | 24 72 110 | 5 20 5 | 3RT1076-2XB46-0LA2 3RT1076-2XJ46-0LA2 3RT1076-2XF46-0LA2 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |

Accessories and spare parts, see page 3/77 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

DC operation

- Solid-state operating mechanism with 24 to 110 V DC control signal input
- For screw fixing
- Auxiliary and control conductors: Spring-loaded terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts 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-loaded 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

With integrated coil circuit (varistor integrated in electronics at the factory)

| Size | 190 | 275 | 2 | 2 | 24 72 110 | 5 20 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 | 20 | 3RT1466-2XJ46-0LA2 | 1 | 1 unit | 41B |
| | | | | | 110 | 20 | 3RT1466-2XF46-0LA2 | 1 | 1 unit | 41B |
| S12 | 520 | 690 | 2 | 2 | 24 | 5 | 3RT1476-2XB46-0LA2 | 1 | 1 unit | 41B |
| | | | | | 72 | 20 | 3RT1476-2XJ46-0LA2 | 1 | 1 unit | 41B |
| | | | | | 110 | 20 | 3RT1476-2XF46-0LA2 | 1 | 1 unit | 41B |

Accessories and spare parts, [see page 3/77 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RH2 contactor relays with extended operating range

Overview

Standards

IEC/EN 60947-5-1

The contactor relays are finger-safe according to IEC 60529. The size S00 contactor relays have spring-loaded 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 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 (according to EN 50005) can be mounted 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.

Side-by-side mounting

Side-by-side mounting is permissible at ambient temperatures up to 70 °C.

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

- Contactors with series resistor
- Contactors with conventional coil

Special version (on request)
Special version (on request)

Ambient temperature

- During operation
- During storage

°C -40 ... +70¹⁾
°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

| | | W | | | |
|---|-----------|---|-----|------|------|
| • 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 | 4.5 |
| | - Closed | W | -- | 0.95 | 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 clearance 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 page 5/4 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RH2 contactor relays with extended operating range

Selection and ordering data


DC operation



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-loaded terminals |  | PU (UNIT, SET, M) | PS* | PG |
|--|-------|-------|-------|---|---------|--|----|----------------------------|---|-------------------------|-----|----|
| I_{th} /AC-15/AC-14 t_{th} : 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 integrated coil circuit

- Suppressor diode integrated at the factory

| | | | | | | | | | | | | |
|----|---|---|---|-----|---|-----------------|-----------|---|---------------|---|--------|-----|
| 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 | | 3RH2140-2KB40 | 1 | 1 unit | 41A |

- Varistor integrated at the factory

| | | | | | | | | | | | | |
|----|---|---|---|-----|---|-----------------|-----------|--|---------------|---|--------|-----|
| 10 | 3 | 2 | 1 | 22E | 2 | 2 ¹⁾ | 24 110 | | 3RH2122-2LB40 | 1 | 1 unit | 41A |
| | | | | | | | | | 3RH2122-2LF40 | 1 | 1 unit | 41A |

With plug-on series resistor and integrated coil circuit

- Suppressor diode integrated at the factory

| | | | | | | | | | | | | |
|----|---|---|---|-----|---|-----------------|-----------|--|--------------------|---|--------|-----|
| 10 | 3 | 2 | 1 | 21X | 2 | 1 ²⁾ | 24 110 | | 3RH2122-2KB40-0LA0 | 1 | 1 unit | 41A |
| | | | | | | | | | 3RH2122-2KF40-0LA0 | 1 | 1 unit | 41A |

- Varistor integrated at the factory

| | | | | | | | | | | | | |
|----|---|---|---|-----|---|-----------------|-----------|--|--------------------|---|--------|-----|
| 10 | 3 | 2 | 1 | 21X | 2 | 1 ²⁾ | 24 110 | | 3RH2122-2LB40-0LA0 | 1 | 1 unit | 41A |
| | | | | | | | | | 3RH2122-2LF40-0LA0 | 1 | 1 unit | 41A |

With integrated coil circuit (varistor integrated in electronics at the factory)

| | | | | | | | | | | | | |
|----|---|---|---|-----|---|-----------------|-------------------------|--|--------------------|---|--------|-----|
| 10 | 3 | 2 | 1 | 22E | 2 | 2 ²⁾ | 24 ... 34 72 ... 125 | | 3RH2122-2XB40-0LA2 | 1 | 1 unit | 41A |
| | | | | | | | | | 3RH2122-2XF40-0LA2 | 1 | 1 unit | 41A |

¹⁾ It is not possible to mount an auxiliary switch.

²⁾ 4-pole auxiliary switch according to EN 50005 can be mounted.

Accessories, see page 3/77 onwards.

Other voltages according to page 3/75 on request.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > 3TH4 contactor relays, 8-pole

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 clearance.

All details and technical specifications not mentioned here are identical to those of the 3TH4 basic units, see [page 5/16 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications


Contactors for railway applications > 3TH4 contactor relays, 8-pole

Selection and ordering data

DC operation 



3TH4244-0L..

| Contacts | Rated operational current $I_e/AC-15/AC-14$ | | | | Contacts ¹⁾ Ident. No. acc. to EN 50011 | | Version | Rated control supply voltage U_s | SD | Screw terminals  | PU (UNIT, SET, M) | PS* | PG | |
|--|--|-------|-------|-------|---|---|---------|--|--------|---|------------------------------|-----------------|------------------|------------|
| | 230 V | 400 V | 500 V | 690 V | | | | | | | | | | |
| 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 With integrated coil circuit (varistor integrated at the factory) | | | | | | | | | | | | | | |
| 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](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > 3TC contactors for switching DC voltage, 2-pole

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 4/69.

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 of size 2 contactors at ambient temperatures > 55 °C. 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 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 switches each with 1 NO + 1 NC contact. Further auxiliary switches cannot be mounted onto the DC-operated contactors.

One NC contact is required for the series resistor function. Two NO contacts and one NC contact are thus unassigned.

Reversing contactors

With the 3TC52 and 3TC56 contactors, the series resistor must be connected using an additional K2 reversing contactor. This contactor is automatically included in the scope of supply.

Dimensions

Attaching resistors and varistors increase 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 4/69.

Switching devices – Contactors and contactor assemblies – Special applications

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



| Size | Utilization category | Rated operational current I_e at | Rated power of loads 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 | | | | | | | |
| | | A | kW | kW | kW | kW | NO | NC | V DC | d | Article No. | Price per PU | | | |

Contactors for switching DC voltage

With integrated coil circuit (varistor integrated at the factory)

| | | | | | | | | | | | | | | |
|---|-----------|-----|---|----|------|----|---|-----------------|-----|----|--------------|---|--------|-----|
| 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 |

With laterally mounted coil circuit (varistor mounted externally in additional auxiliary switch enclosure on the contactor)

| | | | | | | | | | | | | | | |
|----|-----------|-----|------|-----|-----|-----|---|-----------------|-----|----|--------------|---|--------|-----|
| 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 4/76 on request.

Accessories

Accessories, see basic units of the 3TC contactors, page 4/76 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 | V DC | d | | | | | |
| Arc chutes | | | | | | | | |
| 2 | 3TC4417-0L... | -- | X | 3TY2442-0B | | 1 | 1 unit | 41B |
| Solenoid coils | | | | | | | | |
| 2 | 3TC44 | With series resistor, | 24 | 15 | 3TY6443-0LB4 | 1 | 1 unit | 41B |
| | | without varistor | 110 | X | 3TY6443-0LF4 | 1 | 1 unit | 41B |
| 4 | 3TC48 | With series resistor, | 24 | X | 3TY6483-0LB4 | 1 | 1 unit | 41B |
| | | without varistor | 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 4/78.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

3TC contactors for switching DC voltage, 1- and 2-pole

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 4/71](#).

Auxiliary contacts

The contactors are equipped with two lateral auxiliary switches each with 1 NO + 1 NC contact. On the 3TC48 to 3TC56 contactors with AC operation, a second auxiliary switch 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 4/73](#).

Application

The contactors are suitable for switching and controlling DC motors as well as all other DC circuits.

A version with a particularly large coil operating range is available for operation in electrically driven vehicles and in switchgear subject to large fluctuations in actuating voltage ([see page 4/68](#)).

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 |

Switching devices – Contactors and contactor assemblies – Special applications

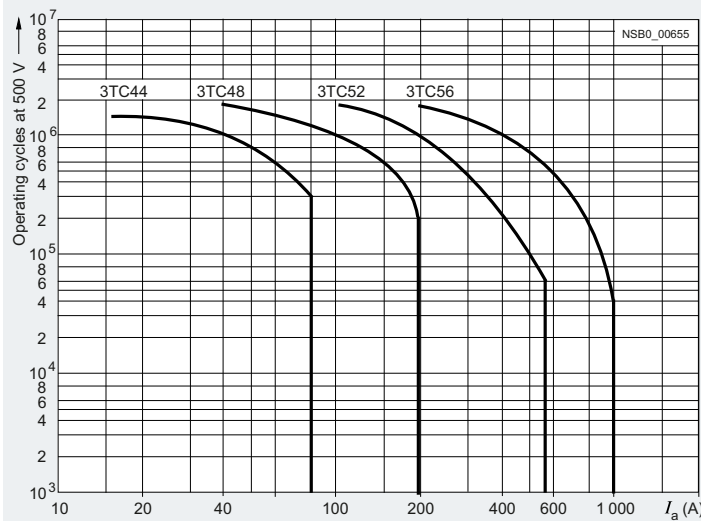
Contactors for special applications

3TC contactors for switching DC voltage, 1- and 2-pole

Type

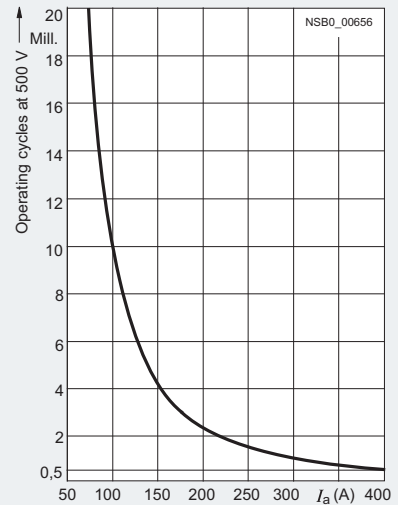
3TC44 to 3TC78

Contact endurance of the main contacts



3TC44 to 3TC56 contactors

Legend for the diagrams:

 I_a = Breaking current

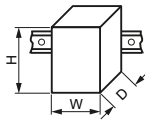
3TC74 and 3TC78 contactors

| Contactor | Type Size | 3TC44 2 | 3TC48 4 | 3TC52 8 | 3TC56 12 |
|-----------|--------------|------------|------------|------------|-------------|
|-----------|--------------|------------|------------|------------|-------------|

General data

Dimensions (W x H x D)

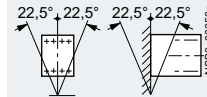
- DC operation
- AC operation

mm
mm

| | | | |
|---------------|-----------------|-----------------|-----------------|
| 70 x 85 x 141 | 100 x 183 x 180 | 135 x 238 x 232 | 160 x 279 x 310 |
| 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 | | | |
| 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 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 IP on the front acc. to IEC 60529 | | IP00 | IP00 (IP20 with cover) | | | |
| Touch protection on the front acc. to IEC 60529 | | -- | Finger-safe for vertical touching from the front with cover | | | |
| 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"
- Type of coordination "2"

| | | | | |
|---|----|-----|-----|-----|
| A | 50 | 160 | 250 | 400 |
| 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
- Miniature circuit breaker with C characteristic

| | |
|---|----|
| A | 16 |
| A | 10 |


¹⁾ For 3TC44, one NC contact each must be connected in series for the right and left auxiliary switch respectively.

Rated data of the auxiliary contacts, see page 4/69.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

3TC contactors for switching DC voltage, 1- and 2-pole

| Type | | | 3TC44 | 3TC48 | 3TC52 | 3TC56 |
|--|-------------------------------|-----------------|---|----------------|-------------|--------------|
| Size | | | 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 | 1 780/0.3 |
| | - 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 | 2 140/0.3 |
| | - Closed | VA/p.f. | 12/0.3 | 35/0.26 | 56/0.24 | 140/0.29 |
| • AC operation, 50/60 Hz coil | - Closing | VA/p.f. | 79/73/0.83/0.78 | -- | -- | -- |
| | at 50 Hz/60 Hz | | | | | |
| | - Closed | VA/p.f. | 11/9/0.28/0.27 | -- | -- | -- |
| | at 50 Hz/60 Hz | | | | | |
| 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 ($L/R \leq 1$ 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 | | | | | | |
| • For weak or non-inductive 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 can be connected) | | |  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 can be connected) | | | | | | |
| • Solid | | mm ² | 2 x (1 ... 2.5) | | | |
| • Finely stranded with end sleeve | | mm ² | 2 x (0.75 ... 1.5) | | | |

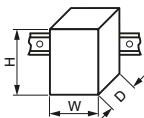
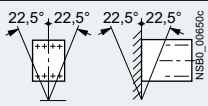
¹⁾ The opening delay times can increase if the contactor coils are attenuated against voltage peaks. The 3TC44 contactors are not allowed to be fitted with diodes.

Rated data of the auxiliary contacts, see page 4/69.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

3TC contactors for switching DC voltage, 1- 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 4/70 | | |
| 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 | |
| Mirror contacts¹⁾ A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact. | Yes, according to IEC 60947-4-1, Appendix F | | |
| Permissible ambient temperature | °C | -25 ... +55 | |
| Degree of protection IP on the front acc. to IEC 60529 | IP00 | | |
| 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 At $U_c > 24$ V | 0.8 ... 1.2 x U_s 0.7 ... 1.2 x U_s | |
| • AC operation | At $U_c = 24$ V At $U_c > 24$ V | 0.7 ... 1.15 x U_s 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 |
| • AC operation, 50 Hz | Closing | VA | 80 |
| | = Closed | 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 |


¹⁾ For 3TC78, one auxiliary NC contact each of the right and left conducting paths must be connected in series.

Rated data of the auxiliary contacts, see page 4/69.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

3TC contactors for switching DC voltage, 1- 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 ($L/R \leq 1$ ms) | | | | |
| • Rated operational current I_e /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_e (at 55 °C) | A | 400 | | |
| • Rated power at U_e | 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 | | | | |
| • For weak or non-inductive 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 can be connected) | | | | |
| • 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 4/69](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

3TC contactors for switching DC voltage, 1- 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 | 2 | 3TC4417-0AB4 | 1 | 1 unit | 41B |
| | | | | | | | | | | 110 DC | 2 | 3TC4417-0AF4 | 1 | 1 unit | 41B |
| | | | | | | | | | | 220 DC | 2 | 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 | 5 | 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 | 5 | 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⁾ | 2 | 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⁾ | 5 | 3TC4817-0BP0 | 1 | 1 unit | 41B |
| | | | | | | | | | | 110 AC | 5 | 3TC4817-0BF0 | 1 | 1 unit | 41B |
| 8 | DC-3, DC-5 | 220 ⁴⁾ | 20 | 41 | 82 | 110 | 110 | 2 | 2 | 220/230 AC ⁵⁾ | 5 | 3TC5217-0BP0 | 1 | 1 unit | 41B |
| | | | | | | | | | | 110 AC | 5 | 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:

| Contactor Type | Rated operational voltage | |
|----------------|---------------------------|-------|
| | 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 4/76 on request.

Accessories, see page 4/76 onwards.

Spare parts, see page 4/78.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

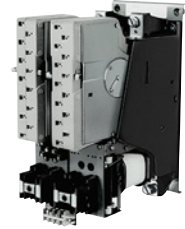
3TC contactors for switching DC voltage, 1- and 2-pole

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⁾ | | 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 | Version | NO | NC | | | | | | |
| A | kW | kW | kW | kW | kW | kW | kW | kW | kW | NO | NC | V | d | | | | | |
| 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 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 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 4/76 on request.

Spare parts, see page 4/78.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

3TC contactors for switching DC voltage, 1- 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






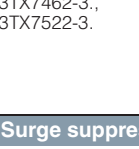

| For contactors | | Version | Auxiliary switches | | SD | Screw terminals | PU (UNIT, SET, M) | PS* | PG |
|--|--------------|-----------------------------|--|-------|----|-----------------|-------------------|--------|-----|
| | | Auxiliary contacts | Left | Right | | ⊕ | | | |
| Size | Type | NO | NC | | d | Article No. | Price per PU | | |
| Second auxiliary switch (for AC operation only) | | | | | | | | | |
| 4 | 3TC48 | 2nd auxiliary switch, left | | | 20 | 3TY6501-1K | 1 | 1 unit | 41B |
| | | 1 | 1 | | | | | | |
| | | 2nd auxiliary switch, right | | | 20 | 3TY6501-1L | 1 | 1 unit | 41B |
| | | 1 | 1 | | | | | | |
| 8 and 12 | 3TC52, 3TC56 | 2nd auxiliary switch, left | | | 20 | 3TY6561-1K | 1 | 1 unit | 41B |
| | | 1 | 1 | | | | | | |
| | | 2nd auxiliary switch, right | | | 20 | 3TY6561-1L | 1 | 1 unit | 41B |
| | | 1 | 1 | | | | | | |
| Solid-state compatible auxiliary switches | | | | | | | | | |
| | 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 | | 5 | 3TY7561-1UA00 | 1 | 1 unit | 41B |
| | | | 2nd auxiliary switch, left or right (replacement for 3TY6561-1U, 3TY6561-1V) | | | | | | |
| | | | 1 CO contact | | | | | | |

5TY7561-1.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications


3TC contactors for switching DC voltage, 1- 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 | | | | | | | | | | | | | | |
|  | 2 | 3TC44 ¹⁾ | Varistors²⁾ | 24 ... 48 | 24 ... 70 | 2 | 3TX7402-3G | | 1 | 1 unit | 41B | | | |
| | | | With line spacer, | 48 ... 127 | 70 ... 150 | 2 | 3TX7402-3H | | 1 | 1 unit | 41B | | | |
| | | | for mounting onto | 127 ... 240 | 150 ... 250 | 2 | 3TX7402-3J | | 1 | 1 unit | 41B | | | |
| | | | the coil terminal | 240 ... 400 | -- | 20 | 3TX7402-3K | | 1 | 1 unit | 41B | | | |
| | | | | 400 ... 600 | -- | 20 | 3TX7402-3L | | 1 | 1 unit | 41B | | | |
|  | 4 | 3TC48 | Varistors²⁾ | 24 ... 48 | 24 ... 70 | 2 | 3TX7462-3G | | 1 | 1 unit | 41B | | | |
| | | | For sticking onto | 48 ... 127 | 70 ... 150 | 2 | 3TX7462-3H | | 1 | 1 unit | 41B | | | |
| | | | the contactor base | 127 ... 240 | 150 ... 250 | 2 | 3TX7462-3J | | 1 | 1 unit | 41B | | | |
| | | | or for mounting | 240 ... 400 | -- | 2 | 3TX7462-3K | | 1 | 1 unit | 41B | | | |
| | | | separately | 400 ... 600 | -- | 2 | 3TX7462-3L | | 1 | 1 unit | 41B | | | |
|  | 8 and 12 | 3TC52, 3TC56 | Varistors | 24 ... 48 | -- | 2 | 3TX7462-3G | | 1 | 1 unit | 41B | | | |
| | | | For sticking onto | 48 ... 127 | -- | 2 | 3TX7462-3H | | 1 | 1 unit | 41B | | | |
| | | | the contactor base | 127 ... 240 | -- | 2 | 3TX7462-3J | | 1 | 1 unit | 41B | | | |
| | | | or for mounting | 240 ... 400 | -- | 2 | 3TX7462-3K | | 1 | 1 unit | 41B | | | |
| | | | separately | 400 ... 600 | -- | 2 | 3TX7462-3L | | 1 | 1 unit | 41B | | | |
|  | 8 and 12 | 3TC52, 3TC56 | Varistors²⁾ | -- | 24 ... 70 | 2 | 3TX7522-3G | | 1 | 1 unit | 41B | | | |
| | | | For separate screw | -- | 70 ... 150 | 2 | 3TX7522-3H | | 1 | 1 unit | 41B | | | |
| | | | fixing or snapping | -- | 150 ... 250 | 2 | 3TX7522-3J | | 1 | 1 unit | 41B | | | |
| | | | | | | | | | | | | | | |
| Surge suppressors · RC elements | | | | | | | | | | | | | | |
|  | 4 | 3TC48 | RC elements | 24 ... 48 | -- | 20 | 3TX7462-3R | | 1 | 1 unit | 41B | | | |
| | | | For lateral snapping | -- | 24 ... 70 | 2 | 3TX7522-3R | | 1 | 1 unit | 41B | | | |
| | | | onto auxiliary | 48 ... 127 | -- | 2 | 3TX7462-3S | | 1 | 1 unit | 41B | | | |
| | | | switch or TH 35 | -- | 70 ... 150 | 2 | 3TX7522-3S | | 1 | 1 unit | 41B | | | |
| | | | standard | 127 ... 240 | -- | 2 | 3TX7462-3T | | 1 | 1 unit | 41B | | | |
| | | | mounting rail | -- | 150 ... 250 | 2 | 3TX7522-3T | | 1 | 1 unit | 41B | | | |
| | | | | 240 ... 400 | -- | 2 | 3TX7462-3U | | 1 | 1 unit | 41B | | | |
| | | | | 400 ... 600 | -- | 2 | 3TX7462-3V | | 1 | 1 unit | 41B | | | |
| | | |  | 8 and 12 | 3TC52, 3TC56 | RC elements | 24 ... 48 | -- | 2 | 3TX7522-3R | | 1 | 1 unit | 41B |
| | | | | | | For lateral | 48 ... 127 | -- | 2 | 3TX7522-3S | | 1 | 1 unit | 41B |
| snapping onto | 127 ... 240 | -- | | | | 2 | 3TX7522-3T | | 1 | 1 unit | 41B | | | |
| auxiliary switch | 240 ... 400 | -- | | | | 2 | 3TX7522-3U | | 1 | 1 unit | 41B | | | |
| or TH 35 standard | 400 ... 600 | -- | | | | 2 | 3TX7522-3V | | 1 | 1 unit | 41B | | | |
| mounting rail | | | | | | | | | | | | | | |
| Surge suppressors · Diodes | | | | | | | | | | | | | | |
|  | 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 | | | | | | | | | | |
|  | 6 | 3TC48 | For protection against inadvertent contact with exposed busbar connections | | M6 | 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 | 3TX6546-3B | | 1 | 1 unit | 41B |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

3TC contactors for switching DC voltage, 1- and 2-pole

Spare parts

| For contactors | Version | Auxiliary contacts | Auxiliary switches Left | Right | SD | Screw terminals | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|----------------|---------|--------------------|----------------------------|-------|----|-----------------|--------------|-------------------|-----|----|
| Size | Type | NO | NC | | d | Article No. | | | | |

Auxiliary switches

For lateral mounting



3TY6561-1A

| | | | | | | | | | | |
|----------|---------------|---|---|---|--|----|----------------------|---|--------|-----|
| 2 and 4 | 3TC44, 3TC48* | Auxiliary switch (replacement for 3TY6501-1A, 3TY6501-1B) | 1 | 1 | | 20 | 3TY6501-1AA00 | 1 | 1 unit | 41B |
| 8 and 12 | 3TC52, 3TC56 | Auxiliary switch, left | 1 | 1 | | 20 | 3TY6561-1A | 1 | 1 unit | 41B |
| | | Auxiliary switch, right | 1 | 1 | | 20 | 3TY6561-1B | 1 | 1 unit | 41B |
| 12 | 3TC74 | Auxiliary switch | 4 | 4 | | 5 | 3TY2741-2J | 1 | 1 unit | 41B |
| 12 | 3TC78 | Auxiliary switch, left | 2 | 2 | | 20 | 3TY2781-2C | 1 | 1 unit | 41B |
| | | Auxiliary switch, right | 2 | 2 | | 15 | 3TY2781-2D | 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 | | | | | |

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



3TY2520-0A

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 |

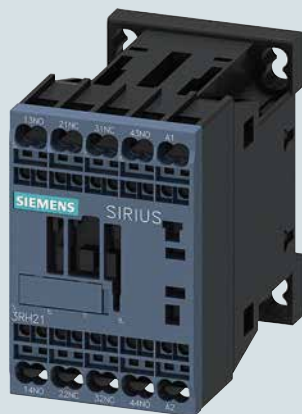
Arc chutes



3TY2482-0A

| | | | | | | | |
|----|-------|---|----|-------------------|---|--------|-----|
| 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 4/76. The 10th and 11th digits of the article number must be supplemented accordingly.

**Price groups**

PG 41A, 41B, 41H, 41L

5/2

Introduction**Contactor relays**

- 5/4 SIRIUS 3RH2 contactor relays, 4- and 8-pole
- 5/16 3TH4 contactor relays, 8- and 10-pole
- 5/23 - Accessories for 3TH4 contactor relays
- 5/23 Contactors for railway applications
- 4/63 - SIRIUS 3RH2 contactor relays with extended operating range
- 4/65 - 3TH4 contactor relays, 8-pole

Coupling relays

- 5/24 SIRIUS 3RQ2 coupling relays with industrial enclosure
- 5/28 SIRIUS 3RQ3 coupling relays, narrow design
- 5/36 LZS coupling relays with plug-in relays

3/143

**3TG10 power relays/
miniature contactors**

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

Conversion tool for article numbers, see www.siemens.com/sirius/conversion-tool

The advantages at a glance



Size
Type

S00
3RH21

S00
3RH22

3TH42

3TH43

| | Article No. | Page |
|--|-------------------------------------|--|
| SIRIUS 3RH2 contactor relays | | |
| 4-pole | • Screw or spring-loaded 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 the PLC | 3RH21 5/14, 5/15 |
| Contactor relays for railway applications | • Coils with extended voltage range | 3RH21 4/64 |
| 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 4/66 |
| Accessories for SIRIUS 3RH2 contactor relays | | |
| Auxiliary switches | • On front | 3RH29, 3RA281. from 3/89, 3/102 |
| | • Lateral | 3RH29 3/99 |
| Function modules (direct-on-line starting, star-delta (wye-delta) starting) | • On front | 3RA281., 3RA283. 3/107 |
| Surge suppressors | • On front | 3RT2916 3/104, 3/105 |
| Additional load modules | • On front | 3RT2916 3/121 |

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/7.

More information

Homepage, see www.siemens.com/relaysIndustry Mall, see www.siemens.com/product?3RQ_3RS_LZConversion tool for article numbers, see www.siemens.com/sirius/conversion-tool

The advantages at a glance



3RQ2



3RQ3



LZS/LZX

Type

Article No.

Page

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

5/26

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
3RQ3035/34
5/34

Coupling relays with plug-in relays

- Width 6.2 mm, 1 CO, versions with hard gold-plated contacts optionally available
- Output coupling links

3RQ311

5/34

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
3RQ3075/34
5/34

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

5/40 ... 5/42

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

5/42

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

5/43

Connection methods

The contactor relays and the relays are available with screw terminals (box terminals) or with spring-loaded terminals.

The 3RQ coupling relays are supplied with screw terminals and spring-loaded (push-in) terminals. The plug-in bases for LZS/LZX coupling relays are also available with plug-in (push-in) terminals.



Screw terminals

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

Flat connectors



Plug-in terminals (push-in)

The connection method is indicated in the corresponding tables by the respective symbol shown on an orange background.

3RQ coupling relays: Spring-loaded terminals (push-in) with TOP-wiring

Push-in terminals are a form of spring-loaded terminals allowing fast wiring without tools for rigid conductors or conductors equipped with end sleeves.

As with other spring-loaded 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-loaded 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-loaded terminals – strong, flexible, safe and fast!"

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.

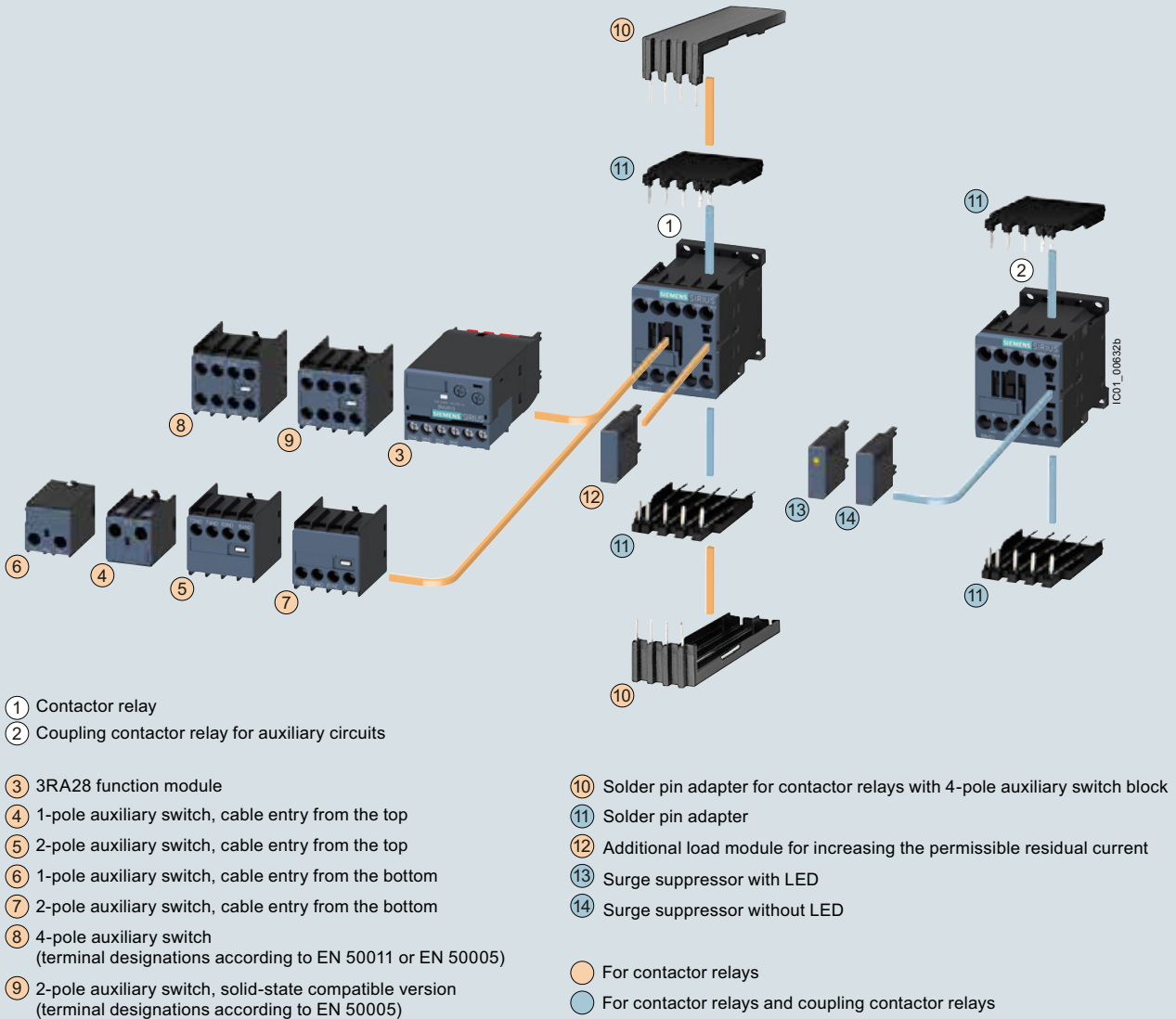
Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Overview

Contactor relays, size S00, with accessories



Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

Standards

IEC/EN 60947-1, IEC/EN 60947-4-1, IEC/EN 60947-5-1

The 3RH2 contactor relays are available with screw or spring-loaded terminals. The basic unit contains four contacts with terminal designations according to EN 50011.

The 3RH2 contactor relays are suitable for use in any climate. They are finger-safe according to IEC 60529.

The 3RH21 coupling contactor relays for switching auxiliary circuits are tailored to the special requirements of working with electronic controls.

Contact reliability

High contact stability at low voltages and currents, suitable for solid-state circuits with currents ≥ 1 mA at a voltage of ≥ 17 V.

Surge suppression

RC elements, varistors, diodes or diode assemblies (combination of a diode and a Zener diode) can be plugged onto all 3RH2 contactor relays from the front for damping opening surges in the coil. The plug-in direction is determined by a coding device.

Coupling contactor relays have a low power consumption and an extended solenoid coil operating range.

Depending on the version, the solenoid coils of the coupling contactor relays are supplied either without overvoltage damping (versions 3RH21...-HB40 or 3RH21...-MB40-0KT0) or with a diode or suppressor diode connected as standard.

Accessories

The accessories for the 3RT2 contactors in size S00 can also be used for the 3RH2 contactor relays (see page 3/77 onwards).

Article No. scheme

| Product versions | Article number |
|---------------------------------------|---|
| SIRIUS contactor relays | 3RH2 □ □ □ - □ □ □ □ 0 - □ □ □ □ |
| Device type | e.g. 1 = 4-pole contactor relay □ |
| Number of NO contacts | e.g. 2 = 2 NO □ |
| Number of NC contacts | e.g. 2 = 2 NC □ |
| Type of electrical connection | Screw terminals 1 |
| | Spring-loaded terminals 2 |
| Operating range/solenoid coil circuit | e.g. A = AC standard/without coil circuit □ |
| Rated control supply voltage | e.g. P0 = 50/60 Hz 230 V AC □ □ |
| Special version | □ □ □ □ |
| Example | 3RH2 1 2 2 - 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.

Auxiliary switches

The 3RH21 contactor relays (with the exception of coupling contactor relays) can be expanded by up to four contacts by the addition of mounted auxiliary switches.

The auxiliary switch can easily be snapped onto the front of the contactor relays. The auxiliary switch has a centrally positioned release lever for disassembly.

The conventional front auxiliary contacts fulfill the characteristics of positively driven operation and are therefore suitable for safety applications.

Contactor relays in safety-related applications

Contactor relays 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.

Contactor relays with positively driven operation according to IEC 60947-5-1 are generally required for use in safety-related applications. Most of our contactors meet this requirement; a corresponding note can be found in the technical product data sheet.

Contactor relays with increased tamper protection

Increased tamper protection is ensured either by using our contactor relay versions with permanently mounted auxiliary switches installed in the factory (e.g. 3RH22 contactor relays), or by using the 3RT2916-4MA10 sealable cover as an accessory (see page 3/119).

For your orders, please use the article numbers quoted in the selection and ordering data.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor 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>

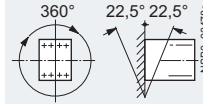
Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16188/man>

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 as well as between the basic unit and the mounted auxiliary switch (**removable**) acc. to:

- ZH1/457
- IEC 60947-5-1, Appendix L

3RH22:

Yes, in the basic unit and the auxiliary switch as well as between the basic unit and the mounted auxiliary switch (**permanently mounted**) acc. to:

- ZH1/457
- IEC 60947-5-1, Appendix L

Note:

3RH2911-NF. solid-state compatible auxiliary switches 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 operating mechanisms 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 switches¹⁾
- Auxiliary switches for snapping onto the front, max. 4-pole and for mounting onto the side in size S00

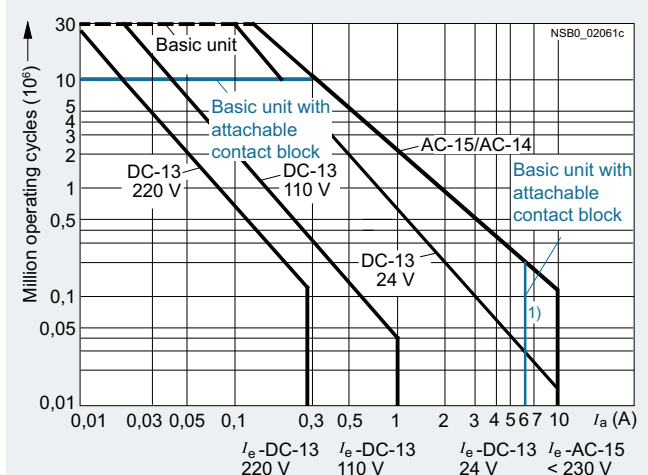


Diagram legend:

I_a = Breaking current

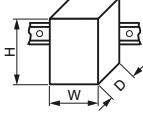
I_e = Rated operational current

¹⁾ 3RH22, 3RH2911: $I_e = 6$ A for AC-15/AC-14 and DC-13.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays



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-loaded terminals Basic unit with mounted auxiliary switch <ul style="list-style-type: none"> Screw terminals Spring-loaded terminals Basic unit with mounted function module or solid-state time-delay auxiliary switch <ul style="list-style-type: none"> Screw terminals Spring-loaded 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 | | | | |
| | | • Basic units | Operat- ing cycles | 30 million | | 5 million |
| | | • Basic unit with mounted auxiliary switch | Operat- ing cycles | 10 million | | 5 million |
| | | • Solid-state-compatible auxiliary switch | Operat- ing cycles | 5 million | | |
| Rated insulation voltage U_i (pollution degree 3) | | | | | | |
| | V | 690 | | | | |
| Rated impulse withstand voltage U_{imp} | | | | | | |
| | kV | 6 | | | | |
| Protective separation between coil and contacts in the basic unit, acc. to IEC 60947-1, Appendix N | | | | | | |
| | V | 400 | | | | |
| Permissible ambient temperature | | | | | | |
| • During operation | °C | -25 ... +60 | | | | |
| • During storage | °C | -55 ... +80 | | | | |
| Degree of protection IP on the front according to IEC 60529 | | | | | | |
| | | IP20 (screw terminals and spring-loaded terminals) | | | | |
| Touch protection on the front according to IEC 60529 | | | | | | |
| | | Finger-safe for vertical touching from the front (screw and spring-loaded terminals) | | | | |
| Shock resistance | | | | | | |
| • Rectangular pulse | | | | | | |
| - AC operation | <i>g/ms</i> | 7.3/5 and 4.7/10 | | | | |
| - DC operation | <i>g/ms</i> | 10/5 and 5/10 | | | | |
| • Sine pulse | | | | | | |
| - AC operation | <i>g/ms</i> | 11.4/5 and 7.3/10 | | | | |
| - DC operation | <i>g/ms</i> | 15/5 and 8/10 | | | | |
| Short-circuit protection | | | | | | |
| • 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 acc. to IEC 60947-5-1 | A | 6 | | | | |

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor 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-loaded terminals | |
| • Operating devices | 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 devices | 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-loaded terminals with conductor cross-sections ≤ 1 mm² an insulation stop is recommended, see page 3/122.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

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 |
| Power consumption of the solenoid coil (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) | | |
| • For 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 3/121.




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).

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

| | | Coupling contactor relays | | |
|---|--------------|---|---|--|
| Type Size | | 3RH21...-HB40 | 3RH21...-JB40 | 3RH21...-KB40 |
| 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 with 0 signal | | < 10 mA x (24 V/ U_s) | | |
| Overvoltage configuration of the solenoid coil | | No overvoltage damping  | Integrated diode  | Integrated 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 | | |
|---|--------------|---|---|--|
| Type Size | | 3RH21...-MB40-0KT0 | 3RH21...-VB40 | 3RH21...-SB40 |
| 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 with 0 signal | | < 8 mA x (24 V/ U_s) | | |
| Overvoltage configuration of the solenoid coil | | No overvoltage damping  | Integrated diode  | Integrated 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 | | |

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

| | | Contactor relays | |
|---|---------------|------------------|--------|
| Type | | 3RH2 | |
| Size | | S00 | |
| Rated data of the auxiliary contacts | | | |
| Load rating with AC | | | |
| Rated operational currents I_e | | | |
| AC-12 | A | 10 | |
| AC-15/AC-14, at 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, at 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, at 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 switches | | | |
| • 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.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

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_c at 50/60 Hz ¹⁾ | SD | Screw terminals  | | SD | Spring-loaded 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 | |
| 6 | 44E | 4 | 4 | 230 | ▶ | 3RH2244-1AP00 | 2 | 3RH2244-2AP00 |
| | | | | 62E | | 6 | | 2 |
| 10 | 40E | 4 | -- | 24 | 5 | 3RH2440-1AB00 | | -- |
| | | | | 110 | | 3RH2440-1AF00 | | -- |
| | | | | 230 | | 3RH2440-1AP00 | | -- |
| 31E | 3 | 1 | 24 | 5 | 3RH2431-1AB00 | | -- | |
| | | | 110 | | 3RH2431-1AF00 | | -- | |
| | | | 230 | | 3RH2431-1AP00 | | -- | |
| 22E | 2 | 2 | 24 | 5 | 3RH2422-1AB00 | | -- | |
| | | | 110 | | 3RH2422-1AF00 | | -- | |
| | | | 230 | | 3RH2422-1AP00 | | -- | |

¹⁾ Coil operating range
 - At 50 Hz: 0.8 to 1.1 x U_c
 - At 60 Hz: 0.85 to 1.1 x U_c

Other voltages according to page 3/75 on request.

Accessories, see page 3/77 onwards.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

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-loaded 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 coil circuit (diode integrated at factory) | | | | | | | | | |
| 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 | | | | | | | | | |
| 6 | 44E | 4 | 4 | 24 | ▶ | 3RH2244-1BB40 | ▶ | 3RH2244-2BB40 | |
| | 62E | 6 | 2 | 24 | ▶ | 3RH2262-1BB40 | ▶ | 3RH2262-2BB40 | |
| Latched | | | | | | | | | |
| No lateral auxiliary switches can be mounted | | | | | | | | | |
| 10 | 40E | 4 | -- | 24 110 220 | 5 5 5 | 3RH2440-1BB40 3RH2440-1BF40 3RH2440-1BM40 | | -- -- -- | |
| | 31E | 3 | 1 | 24 110 220 | 5 5 5 | 3RH2431-1BB40 3RH2431-1BF40 3RH2431-1BM40 | | -- -- -- | |
| | 22E | 2 | 2 | 24 110 220 | 2 5 5 | 3RH2422-1BB40 3RH2422-1BF40 3RH2422-1BM40 | | -- -- -- | |

Other voltages according to page 3/75 on request.

Accessories, see page 3/77 onwards.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

DC operation for direct control by PLC

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switches





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 | | Rated control supply voltage U_s | SD | Screw terminals  | | SD | Spring-loaded terminals  | |
|---|-----------------------------------|---|---------------------------------------|----|---|-----------------|----|--|-----------------|
| | Ident. No. acc. to EN 50011 | Version | | | Article No. | Price per PU | | Article No. | Price per PU |
| | |   | V DC | d | | | d | | |

A
 For screw fixing and snap-on mounting
 onto TH 35 standard mounting rail

Size S00

Cannot be expanded with auxiliary switches

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 | -- | 24 | 5 |
| | 31E | 3 | 1 | 24 | 5 |
| | 22E | 2 | 2 | 24 | 5 |

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 | -- | 24 | 5 |
| | 31E | 3 | 1 | 24 | 2 |
| | 22E | 2 | 2 | 24 | 5 |

| | |
|----------------------|---|
| 3RH2140-1HB40 | 5 |
| 3RH2131-1HB40 | 5 |
| 3RH2122-1HB40 | 5 |

| | |
|----------------------|---|
| 3RH2140-2HB40 | 5 |
| 3RH2131-2HB40 | 5 |
| 3RH2122-2HB40 | 5 |

| | |
|---------------------------|---|
| 3RH2140-1MB40-0KT0 | 5 |
| 3RH2131-1MB40-0KT0 | 5 |
| 3RH2122-1MB40-0KT0 | 5 |

| | |
|---------------------------|---|
| 3RH2140-2MB40-0KT0 | 5 |
| 3RH2131-2MB40-0KT0 | 5 |
| 3RH2122-2MB40-0KT0 | 5 |

Other voltages [according to page 3/75](#) on request.

Accessories, [see page 3/77 onwards](#).

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

SIRIUS 3RH2 contactor relays, 4- and 8-pole

DC operation for direct control by PLC

- Coupling contactor relays with adapted power consumption
- Suitable for solid-state PLC outputs
- Cannot be expanded with auxiliary switches





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 | | Rated control supply voltage U_s | SD | Screw terminals  | | SD | Spring-loaded terminals  | |
|---|-----------------------------------|---|---------------------------------------|----|---|-----------------|----|--|-----------------|
| | Ident. No. acc. to EN 50011 | Version | | | Article No. | Price per PU | | Article No. | Price per PU |
| | |   | V DC | d | | | d | | |

**For screw fixing and snap-on mounting
onto TH 35 standard mounting rail**

Size S00

With integrated coil circuit (diode integrated at factory)

Cannot be expanded with auxiliary switches

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 | -- | 24 | 2 | 3RH2140-1JB40 | ▶ | 3RH2140-2JB40 |
|----|-----|---|----|----|---|---------------|---|---------------|
| | 31E | 3 | 1 | 24 | ▶ | 3RH2131-1JB40 | ▶ | 3RH2131-2JB40 |
| | 22E | 2 | 2 | 24 | ▶ | 3RH2122-1JB40 | 2 | 3RH2122-2JB40 |

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 | -- | 24 | 5 | 3RH2140-1VB40 | 5 | 3RH2140-2VB40 |
|----|-----|---|----|---|---|--|--------------------------|---------------|
| | 31E | 3 | 1 | 24 <td>5 <td>3RH2131-1VB40 <td>5 <td>3RH2131-2VB40</td> </td></td></td> | 5 <td>3RH2131-1VB40 <td>5 <td>3RH2131-2VB40</td> </td></td> | 3RH2131-1VB40 <td>5 <td>3RH2131-2VB40</td> </td> | 5 <td>3RH2131-2VB40</td> | 3RH2131-2VB40 |
| | 22E | 2 | 2 | 24 <td>5 <td>3RH2122-1VB40 <td>5 <td>3RH2122-2VB40</td> </td></td></td> | 5 <td>3RH2122-1VB40 <td>5 <td>3RH2122-2VB40</td> </td></td> | 3RH2122-1VB40 <td>5 <td>3RH2122-2VB40</td> </td> | 5 <td>3RH2122-2VB40</td> | 3RH2122-2VB40 |

With integrated coil circuit (suppressor diode integrated at factory)

Cannot be expanded with auxiliary switches

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 | -- | 24 | 5 | 3RH2140-1KB40 | ▶ | 3RH2140-2KB40 |
|----|-----|---|----|----|---|--|--------------------------|---------------|
| | 31E | 3 | 1 | 24 | ▶ <td>3RH2131-1KB40 <td>▶ <td>3RH2131-2KB40</td> </td></td> | 3RH2131-1KB40 <td>▶ <td>3RH2131-2KB40</td> </td> | ▶ <td>3RH2131-2KB40</td> | 3RH2131-2KB40 |
| | 22E | 2 | 2 | 24 | ▶ <td>3RH2122-1KB40 <td>▶ <td>3RH2122-2KB40</td> </td></td> | 3RH2122-1KB40 <td>▶ <td>3RH2122-2KB40</td> </td> | ▶ <td>3RH2122-2KB40</td> | 3RH2122-2KB40 |

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 | -- | 24 | 5 | 3RH2140-1SB40 | 5 | 3RH2140-2SB40 |
|----|-----|---|----|----|---|--|--------------------------|---------------|
| | 31E | 3 | 1 | 24 | 2 <td>3RH2131-1SB40 <td>5 <td>3RH2131-2SB40</td> </td></td> | 3RH2131-1SB40 <td>5 <td>3RH2131-2SB40</td> </td> | 5 <td>3RH2131-2SB40</td> | 3RH2131-2SB40 |
| | 22E | 2 | 2 | 24 | 2 <td>3RH2122-1SB40 <td>5 <td>3RH2122-2SB40</td> </td></td> | 3RH2122-1SB40 <td>5 <td>3RH2122-2SB40</td> </td> | 5 <td>3RH2122-2SB40</td> | 3RH2122-2SB40 |

Other voltages [according to page 3/75](#) on request.

Accessories, [see page 3/77 onwards](#).

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor 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 "Particular 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

Contactor relays

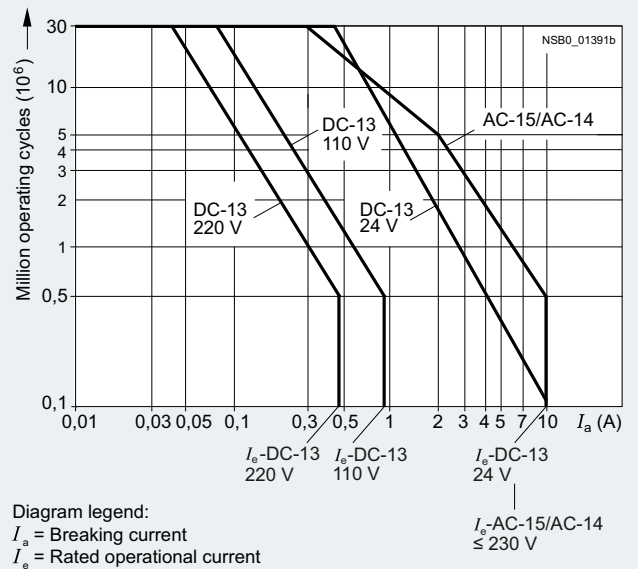
Type **3TH42, 3TH43**

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 operating mechanisms or solenoid valves are present, e.g. magnetic brakes, protective measures for the load circuits are necessary.

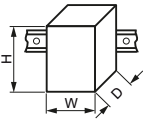
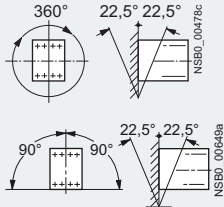


RC elements or freewheel diodes are suitable as protective measures for the circuits.



Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

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 -55 ... +80 |
| Degree of protection IP on the front according to IEC 60529 | | | |
| IP00 | | | |
| 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 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

3TH4 contactor relays, 8- and 10-pole

| Contactor 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 |
| Power consumption of the solenoid coil (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).

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

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' : $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$ | | | |

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor 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 |
|----------|-----------|---|-------|-----------|-----------------------------|----------|--|-------------|---|-------------------|-----|----|
| Number | A | A | A | A | Ident. No. acc. to EN 50011 | Version | | | | | | |
| | 230/220 V | 400/380 V | 500 V | 690/660 V | | | | Article No. | Price per PU | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

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.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor relays

3TH4 contactor relays, 8- and 10-pole

10-pole contactor relays

AC operation  or DC operation 



3TH4355-0AP0



3TH4355-0BB4

| Contacts | | Rated operational current I_e /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.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Contactor 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 | | Contactor type | 3TH42/3TH43 |
|---|------------------|------------------|-------------|
| Control supply voltage at | | | |
| 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 | | Contactor type | 3TH42/3TH43 |
|------------------------------------|--|----------------|-------------|
| Control supply voltage at | | | |
| 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 | |

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

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.

| | | | | | | | | |
|--|-------------|-------------|----|-------------------|--|---|--------|-----|
| 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 | 24 ... 70 | 2 | 3TX7402-3G | | 1 | 1 unit | 41B |
| | 48 ... 127 | 70 ... 150 | 2 | 3TX7402-3H | | 1 | 1 unit | 41B |
| | 127 ... 240 | 150 ... 250 | 2 | 3TX7402-3J | | 1 | 1 unit | 41B |
| | 240 ... 400 | -- | 20 | 3TX7402-3K | | 1 | 1 unit | 41B |
| RC elements With line spacer, for mounting onto the coil terminal | 400 ... 600 | -- | 20 | 3TX7402-3L | | 1 | 1 unit | 41B |
| | 24 ... 48 | 24 ... 70 | 2 | 3TX7402-3R | | 1 | 1 unit | 41B |
| | 48 ... 127 | 70 ... 150 | 2 | 3TX7402-3S | | 1 | 1 unit | 41B |
| | 127 ... 240 | 150 ... 250 | 2 | 3TX7402-3T | | 1 | 1 unit | 41B |
| | 240 ... 400 | -- | 5 | 3TX7402-3U | | 1 | 1 unit | 41B |
| | 400 ... 600 | -- | X | 3TX7402-3V | | 1 | 1 unit | 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 |
|----------------|---------|--|------------------------------------|----|------------------------|-------------------|-----|----|
| Type | | V | s | d | Article No. | Price per PU | | |

ON-delay devices



3TX4180-0A

| | | | | | | | | | |
|--------------|---|-------------|-----|---|-------------------|--|---|--------|-----|
| 3TH42, 3TH43 | NTC thermistors Time tolerance +100%, -50% | 220 ... 230 | 0.1 | 5 | 3TX4180-0A | | 1 | 1 unit | 41B |
|--------------|---|-------------|-----|---|-------------------|--|---|--------|-----|

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

SIRIUS 3RQ2 coupling relays with industrial enclosure

Overview



SIRIUS 3RQ2 coupling relay, screw terminals, 3 changeover contacts

More information

Homepage, see www.siemens.com/relays

Industry Mall, see www.siemens.com/product?3RQ2

Conversion tool for article numbers, 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-loaded 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-loaded 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 = AgSnO2 | | | | | | | 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.

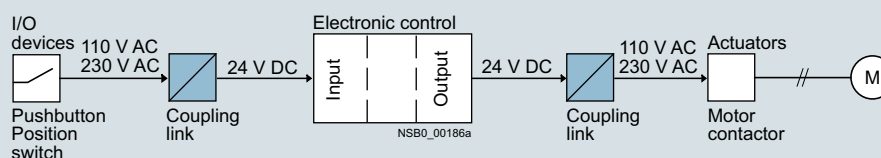
For your orders, please use the article numbers quoted in the selection and ordering data.

Benefits

- Permanent wiring thanks to removable terminals in screw or spring-loaded 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
- Adjustment of different signal levels
- Signal amplification
- Contact multiplication



Application example motor controller

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

SIRIUS 3RQ2 coupling relays with industrial enclosure

Technical specifications

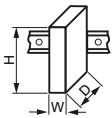
More information



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 | | -40 ... +60 |
| • During storage | °C | | -40 ... +80 |
| Degree of protection IP | | | 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 contacts | | | AgSnO2 AgNi + Au |

| | | |
|---|--|--|
| Type | 3RQ2000-1 | 3RQ2000-2 |
| Type of electrical connection |  Screw terminals |  Spring-loaded terminals (push-in) |
| Type of connectable conductor cross-sections | | |
| • Solid | 1x (0.5 ... 4 mm ²), 2x (0.5 ... 2.5 mm ²) | 1x (0.5 ... 4 mm ²) |
| • Finely stranded with end sleeve | 1x (0.5 ... 4 mm ²), 2x (0.5 ... 1.5 mm ²) | 1x (0.5 ... 2.5 mm ²) |
| • Solid for AWG cables | 1x (20 ... 12), 2x (20 ... 14) | 1x (20 ... 12) |
| Tightening torque | Nm | |
| | 0.6 ... 0.8 | -- |



Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

SIRIUS 3RQ2 coupling relays with industrial enclosure

Selection and ordering data

PU (UNIT, SET, M) = 1
 PS* = 1 UNIT
 PG = 41H

| Control supply voltage At AC At 50 Hz | Control supply voltage At DC | Number of CO contacts for auxiliary contacts | Material of switching contacts | SD | Screw terminals  | | Spring-loaded terminals (push-in)  | |
|---|---------------------------------|---|--------------------------------------|----|---|-----------------|--|-----------------|
| | | | | | Article No. | Price per PU | Article No. | Price per PU |
| V | V | W | | d | | | | |
| 24 ... 240 | 24 ... 240 | 1 | AgSnO ₂ | 2 | 3RQ2000-1AW00 | 2 | 3RQ2000-2AW00 | |
| | | 2 | AgSnO ₂ | 2 | 3RQ2000-1BW00 | 2 | 3RQ2000-2BW00 | |
| | | 3 | AgSnO ₂ | 2 | 3RQ2000-1CW00 | 2 | 3RQ2000-2CW00 | |
| | | 3 | AgNi + Au | 2 | 3RQ2000-1CW01 | 2 | 3RQ2000-2CW01 | |

Coupling relays with industrial enclosure, 22.5 mm



3RQ2000-1CW00

3RQ2000-2CW00

Accessories



More information

Operating Instructions, [see](https://support.industry.siemens.com/cs/ww/en/ps/25158/man)
<https://support.industry.siemens.com/cs/ww/en/ps/25158/man>

Conversion tool for article numbers, [see](http://www.siemens.com/sirius/conversion-tool)
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

| Removable terminals | Screw terminals  | Spring-loaded terminals (push-in)  | PU | PS* | PG |
|--|---|--|----|---------|-----|
| | | | | | |
|  3ZY1122-1BA00 • 2-pole, up to 1 x 4 mm ² or 2 x 2.5 mm ² | 2 | 3ZY1122-1BA00 | 1 | 6 units | 41L |
| • 2-pole, up to 1 x 4 mm ² or 2 x 1.5 mm ² (in shared end sleeve) | 2 | 3ZY1122-2BA00 | 1 | 6 units | 41L |

Accessories for enclosures

| | | | | | |
|--|---|----------------------|---|----------|-----|
|  3ZY1450-1AB00 Hinged cover Replacement cover, without terminal labeling, titanium gray, 22.5 mm wide | 2 | 3ZY1450-1AB00 | 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 |

Tools for opening spring-loaded terminals

| | | | | | |
|---|---|-------------------|---|--------|-----|
|  3RA2908-1A Screwdrivers For all SIRIUS devices with spring-loaded terminals 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated | 2 | 3RA2908-1A | 1 | 1 unit | 41B |
|---|---|-------------------|---|--------|-----|

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

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-loaded terminals | Version | Contacts | Screw terminals | Spring-loaded 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 | | | | | |
| 3RS1800-1HQ00 | 3RS1800-2HQ00 | 24 V AC/DC; 110 ... 120 V AC | 3 CO contacts, hard gold-plated | 3RQ2000-1CW01 | 3RQ2000-2CW01 | 24 ... 240 V AC/DC | 3 CO contacts, hard gold-plated |
| 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 | | | | | |

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

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-off-automatic switches.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

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-loaded 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-loaded 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-loaded terminals (push-in) | 2 | | | | | |
| Example | | 3RQ30 7 0 – 1 S 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.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

SIRIUS 3RQ3 coupling relays, narrow design

Benefits

General

- All versions with screw terminals or spring-loaded terminals (push-in technology)
- TOP wiring with spring-loaded 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 stockkeeping 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

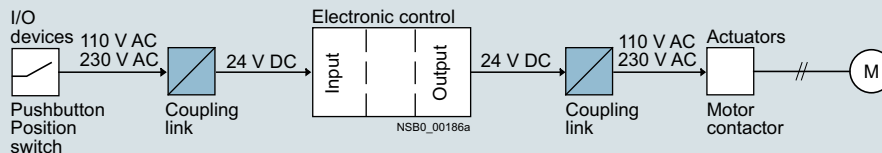
- Fast replacement of the relays with existing wiring
- Shorter installation times thanks to certified complete units
- Individual relays available as spare parts
- Device variants with hard gold-plated contacts, hence high contact reliability at low currents

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

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

SIRIUS 3RQ3 coupling relays, narrow design

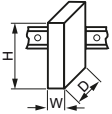
Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16198/td>

Operating Instructions, see
<https://support.industry.siemens.com/cs/ww/en/ps/16198/man>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16198/faq>

Coupling relays with relay output (not plug-in)

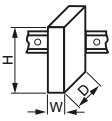
| Type | | 3RQ30.8- .AB00 | 3RQ30.8- .AB01 | 3RQ30.8- .AE00 | 3RQ30.8- .AE01 | 3RQ30.8- .AF00 | 3RQ30.8- .AF01 | 3RQ3018- 2AM08-0AA0 | 3RQ3018- 2AN08-0AA0 |
|---|----|-------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------------------------|------------------------|
| 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 IP | | 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 250 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 | | | | | | | |
| • Note | | -- | | | | | | | |
| | | Derating, see characteristic curves | | | | | | | |

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

SIRIUS 3RQ3 coupling relays, narrow design

Coupling relays with plug-in relays

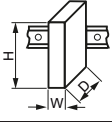


| Type | | 3RQ3118- .AB00 | 3RQ3118- .AB01 | 3RQ3118- .AE00 | 3RQ3118- .AE01 | 3RQ3118- .AF00 | 3RQ3118- .AF01 | 3RQ3118- .AM00 | 3RQ3118- .AM01 | |
|---|----|---|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------|
| 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 IP | | 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 250 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 | | | | | | | | |

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

SIRIUS 3RQ3 coupling relays, narrow design

Coupling relays with semiconductor output (not plug-in)

| Type | | 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 IP | | 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 | | -- | | | | 0.7 ... 1.1 | -- | 1 ... 1 | | 0.7 ... 1.1 | |
| - At 60 Hz | | -- | | | | 0.7 ... 1.1 | -- | 1 ... 1 | | 0.7 ... 1.1 | |
| • At DC | | 1 ... 1 | | | | | | | | 1 ... 1 | 0.7 ... 1.1 |
| Active power input | W | 0.3 | | | | 0.25 | 0.3 | 0.5 | | | |
| Thermal current | A | 0.5 | 2 | | | | 3 | 5 | 0.5 | | |
| Type | | 3RQ3...-1.... | | | | | 3RQ3...-2.... | | | | |
| Type of electrical connection for auxiliary and control circuits | |  Screw terminals | | | | |  Spring-loaded 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) | | | | | | | | | |

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

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 | ▶ | 3RQ3018-□AB00 | 1 | 5 units | 41H |
| | | | | | AgSnO2 hard gold-plated | ▶ | 3RQ3018-□AB01 | | | |
| | 115 | 115 | 115 | 1 | AgSnO2 | 2 | 3RQ3018-□AE00 | 1 | 5 units | 41H |
| | | | | | AgSnO2 | ▶ | 3RQ3018-□AF00 | | | |
| DC | -- | -- | 24 | 1 | AgSnO2 | ▶ | 3RQ3018-2AM08-0AA0 | 1 | 5 units | 41H |
| | | | | | AgSnO2 | 2 | 3RQ3018-2AN08-0AA0 | | | |

Input coupling links

| | | | | | | | | | | |
|-------|-----|-----|-----|-------------------------|-------------------------|----------------------|----------------------|---------|---------|-----|
| AC/DC | 24 | 24 | 24 | 1 | AgSnO2 | ▶ | 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 | ▶ | 3RQ3038-□AF00 | 1 | 5 units | 41H | |
| | | | | AgSnO2 hard gold-plated | 2 | 3RQ3038-□AF01 | | | | |

3RQ30.8-2....

Coupling relays with plug-in relays

Output coupling links

| | | | | | | | | | | |
|-------|-----|-----|-----|-------------------------|-------------------------|----------------------|----------------------|---------|---------|-----|
| AC/DC | 24 | 24 | 24 | 1 | AgSnO2 | ▶ | 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 | ▶ | 3RQ3118-□AF00 | 1 | 5 units | 41H | |
| | | | | AgSnO2 hard gold-plated | 2 | 3RQ3118-□AF01 | | | | |
| DC | -- | -- | 24 | 1 | AgSnO2 | ▶ | 3RQ3118-□AM00 | 1 | 5 units | 41H |
| | | | | | AgSnO2 hard gold-plated | ▶ | 3RQ3118-□AM01 | | | |

3RQ3118-2....

Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)

1
2

| 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 | -- | ▶ | 3RQ3052-□SM30 | | | | |
| | | | | | 1 mA ... 2 A | -- | ▶ | 3RQ3052-□SM40 | | | | |
| | | | | | 5 mA ... 2 A | -- | 2 | 3RQ3052-□SM50 | | | | |
| | | | | | -- | 5 mA ... 5 A | -- | ▶ | | | | 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 | |
| | | | | | | | | | | | | |

3RQ3050-2SM50

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 |
| | | | | | 10 mA ... 0.5 A | -- | 2 | 3RQ3070-□SG30 | | | |

Type of electrical connection

- Screw terminals
- Spring-loaded terminals (push-in)






1
2

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

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 | | | | | |
| 3RQ3901-0B | | <ul style="list-style-type: none"> • 2-pole • 4-pole • 8-pole • 16-pole | ▶ | 3RQ3901-0A | 1 | 10 units | 41H |
| | | | ▶ | 3RQ3901-0B | 1 | 10 units | 41H |
| | | | ▶ | 3RQ3901-0C | 1 | 10 units | 41H |
| | | | ▶ | 3RQ3901-0D | 1 | 10 units | 41H |
| Clip-on labels¹⁾ | | | | | | | |
|  | | For terminal and equipment labeling, white | | | | | |
| 3RQ3902-0A | | <ul style="list-style-type: none"> • 5 x 5 mm • 6 x 12 mm | 2 | 3RQ3902-0A | 100 | 2000 units | 41H |
| | | | 2 | 3RQ3902-0B | 100 | 1200 units | 41H |
| Tools for opening spring-loaded terminals | | | | | | | |
|  | | Screwdrivers For all SIRIUS devices with spring-loaded terminals | | | | | |
| 3RA2908-1A | | 3.0 mm x 0.5 mm, length approx. 200 mm, titanium gray/black, partially insulated | 2 | Spring-loaded terminals (push-in)  | 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 | 20 units | 41H |
| 3RQ3118-.AF00 | 230 AC/DC | AgSnO2 | | | | | | | |
| 3RQ3118-.AE01 | 115 AC/DC | AgSnO2 hard gold-plated | 1 | 2 | 3TX7014-7BP02 | | 1 | 20 units | 41H |
| 3RQ3118-.AF01 | 230 AC/DC | AgSnO2 hard gold-plated | | | | | | | |

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

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 (freewheel 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).

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

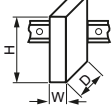


LZS coupling relays with plug-in relays

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 | V | 250 | | | | | | | |
| (Pollution degree 3) | | | | | | | | | |
| Overvoltage category | | III | | | | | | | |
| Acc. to IEC 60664-1 | | | | | | | | | |
| Protective separation | | | | | | | | | |
| Between coil and contacts | | Up to 250 V (with plug-in base LZS:RT78726) | | | | No | | | |
| Acc. to IEC 60947-1, Appendix N | | No (for complete units with standard base) | | | | | | | |
| Degree of protection | | | | | | | | | |
| • Relays | | IP67 | | | | IP50 | | | |
| • Bases | | IP20 | | | | | | | |
| Permissible ambient temperature | | | | | | | | | |
| • During operation | | °C | -40 ... +70 | | | | | | |
| • During storage | | °C | -40 ... +80 | | | | | | |
| Conductor cross-sections | | | | | | | | | |
| Connection type | |  Screw terminals | | | | | | | |
| • Solid | | mm ² | 2 x 2.5 | | | | | | |
| • Finely stranded with end sleeve | | mm ² | 2 x 1.5 | | | | | | |
| • Corresponding opening tool | | Screwdriver, size 3.0 ... 3.5 mm x 0.5 mm (3RA2908-1A) | | | | | | | |
| Connection type | |  Plug-in terminals (push-in) | | | | | | | |
| • Solid | | mm ² | 1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5 | | | | | | |
| • Finely stranded without end sleeve | | mm ² | 1 x (0.75 ... 1.5), 2 x (0.75 ... 1.0), 2 x 1.5 | | | | | | |
| • Finely stranded with end sleeve | | 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.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

LZX 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 | | | |
| Power consumption at U_s | | | | | | | | | |
| • AC | VA | -- | 0.75 | | | -- | 1 | | |
| • DC | W | 0.4 | -- | | | 0.75 | -- | | |
| Release voltage | V | 2.4 | 3.6 | 17.3 | 34.5 | 2.4 | 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 | 8 | | | | 12 | | | |
| - 3 CO contacts | A | -- | | | | 10 | | | |
| - 4 CO contacts | A | -- | | | | 6 | | | |
| • Rated operational current I_o /AC-15 acc. to utilization categories (IEC 60947-5-1) | | | | | | | | | |
| - 1 CO contact | A | 6 | 3 | | | 4 | 2 | | |
| - 2 CO contacts | A | 3 | | | 4 | 2 | | | |
| - 3 CO contacts | A | -- | | | 4 | 2 | | | |
| - 4 CO contacts | A | -- | | | 4 | 2 | | | |
| • Rated operational current I_o 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 | | | | | | | | | |
| • 1 CO contact | Operating cycles | 30×10^6 | 10×10^6 | 1×10^5 | 7×10^4 | 30×10^6 | 20×10^6 | | |
| • 2 CO contacts | Operating cycles | 30×10^6 | 5×10^6 | 1×10^5 | 8×10^4 | 30×10^6 | 20×10^6 | | |
| • 3 CO contacts | Operating cycles | -- | | | | 30×10^6 | 20×10^6 | | |
| • 4 CO contacts | Operating cycles | -- | | | | 30×10^6 | 20×10^6 | | |
| Electrical endurance (resistive load at 250 V AC) | | | | | | | | | |
| • 1 CO contact | Operating cycles | 1×10^5 | 7×10^4 | | | -- | | | |
| • 2 CO contacts | Operating cycles | 1×10^5 | 8×10^4 | | | 180×10^3 | | | |
| • 3 CO contacts | Operating cycles | -- | | | | 180×10^3 | | | |
| • 4 CO contacts | Operating cycles | -- | | | | 250×10^3 | | | |

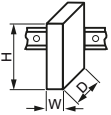

¹⁾ AC voltages, 50 Hz; for 60 Hz operation, the lower response value must be increased by 10%; the power loss will decrease slightly.

²⁾ Capacitive loads can result in micro-welding on the contacts.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

Coupling relays

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 | | | | | |
| • Relays | | IP50 | | | |
| • Bases | | IP20 | | | |
| 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_e /DC-13 acc. to utilization categories (IEC 60947-5-1) | A | 2 at 24 V, 0.27 at 230 V | | | |
| • Rated operational current I_e /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 | 3 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.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

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 | 3 | 28 | 2 | LZS:PT3A5L24 | | 1 | 5 units | 41H |
| | | 24 AC | | | 2 | LZS:PT3A5R24 | | 1 | 5 units | 41H |
| | | 115 AC | | | 2 | LZS:PT3A5S15 | | 1 | 5 units | 41H |
| | | 230 AC | | | 2 | LZS:PT3A5T30 | | 1 | 5 units | 41H |
| | 4 CO contacts | 24 DC | 4 | 28 | 2 | LZS:PT5A5L24 | | 1 | 5 units | 41H |
| | | 24 AC | | | 2 | LZS:PT5A5R24 | | 1 | 5 units | 41H |
| | 115 AC | | | 2 | LZS:PT5A5S15 | | 1 | 5 units | 41H | |
| | 230 AC | | | 2 | LZS:PT5A5T30 | | 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 | 4 | 28 | 2 | LZS:PT5B5L24 | | 1 | 5 units | 41H | |
| | 24 AC | | | 2 | LZS:PT5B5R24 | | 1 | 5 units | 41H | |
| | 115 AC | | | 2 | LZS:PT5B5S15 | | 1 | 5 units | 41H | |
| | 230 AC | | | 2 | LZS:PT5B5T30 | | 1 | 5 units | 41H | |
| Complete units, 8- and 14-pole, PT series | | | | | | | | | | |
|  LZS:PT5D5L24 | Complete units with plug-in base | | | | Plug-in terminals (push-in)  | | | | | |
| | 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 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 | 2 | 28 | 2 | LZS:PT2D5L24 | | 1 | 5 units | 41H |
| | | 230 AC | | | 2 | LZS:PT2D5T30 | | 1 | 5 units | 41H |
| | 4 CO contacts | 24 DC | 4 | 28 | 2 | LZS:PT5D5L24 | | 1 | 5 units | 41H |
| | | 24 AC | | | 2 | LZS:PT5D5R24 | | 1 | 5 units | 41H |
| | | 115 AC | | | 2 | LZS:PT5D5S15 | | 1 | 5 units | 41H |
| | 230 AC | | | 2 | LZS:PT5D5T30 | | 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).

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

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

Industrial relays, 8-, 11-, and 14-pole

Mini industrial relays

- With test bracket and mechanical switch position indicator, without LED¹⁾



LZX:PT370024

| | | | | | | | | | |
|--------------------------|--------|---|------|---|--------------|--|---|--------|-----|
| LZX:PT370024 | 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 | 2 | LZX:PT270615 | | 1 | 1 unit | 41H |
| | | 3 | | 2 | LZX:PT370615 | | 1 | 1 unit | 41H |
| | | 4 | | 2 | 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 |
| • With hard gold-plating | | | | | | | | | |
| LZX:PT580024 | 24 DC | 4 | 22.5 | ▶ | LZX:PT580024 | | 1 | 1 unit | 41H |
| | 230 AC | | | ▶ | LZX:PT580730 | | 1 | 1 unit | 41H |
| • Without test bracket | | | | | | | | | |
| LZX:PT520024 | 24 DC | 4 | 22.5 | ▶ | LZX:PT520024 | | 1 | 1 unit | 41H |
| | 230 AC | | | 2 | 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 | | | | | |
|-------------|----|---|----|-----------------|-------------|--|---|--------|-----|
| LZS:PT78740 | -- | 2 | 28 | ▶ | LZS:PT78720 | | 1 | 1 unit | 41H |
| | | 3 | | ▶ | LZS:PT78730 | | 1 | 1 unit | 41H |
| | | 4 | | ▶ | LZS:PT78740 | | 1 | 1 unit | 41H |

Plug-in bases with logical separation

For mounting onto TH 35 standard mounting rail



LZS:PT78722

| | | | | | | | | | |
|-------------|----|---|----|---|-------------|--|---|--------|-----|
| 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) | | | | | |
|-------------|----|---|----|-----------------------------|-------------|--|---|--------|-----|
| LZS:PT7874P | -- | 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 series 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).






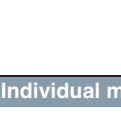
Switching devices – Contactors and contactor assemblies – Contactor relays and relays

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 | | | ▶ | 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 | | | ▶ | 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 | | | | | | | | | | |
| | | 6 ... 230 DC | -- | 26 | ▶ | LZS:PTMT00A0 | | 1 | 1 unit | 41H |
| Connecting combs for PT screw base | | | | | | | | | | |
| | 6-pole, 10 A current carrying capacity, natural-colored | -- | -- | -- | 5 | LZS:PT170R6 | | 1 | 10 units | 41H |
| Connecting brackets for PT push-in base | | | | | | | | | | |
| | 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 | | | | | | | | | | |
|  LZX:MT78750 | For mounting onto TH 35 standard mounting rail | -- | -- | 38 | ▶ | Screw terminals  | | | | |
| | | -- | -- | 38 | ▶ | LZX:MT78750 | | 1 | 1 unit | 41H |
| Fixing brackets | | | | | | | | | | |
| | | -- | -- | 38 | ▶ | LZX: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 15/1 or Catalog KT 10.1.

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

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 | | | | | | |
| 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: | | | | | | | | | |
| | <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 | | | | | | | | | |
| | 1 CO contact | 24 DC | 1 | 15.5 | 2 | LZS:RT3A4L24 | | 1 | 5 units | 41H |
| | | 24 AC | | | 2 | LZS:RT3A4R24 | | 1 | 5 units | 41H |
| | | 115 AC | | | 2 | LZS:RT3A4S15 | | 1 | 5 units | 41H |
| | | 230 AC | | | 2 | LZS:RT3A4T30 | | 1 | 5 units | 41H |
| | 2 CO contacts | 24 DC | 2 | 15.5 | 2 | LZS:RT4A4L24 | | 1 | 5 units | 41H |
| | | 24 AC | | | 2 | LZS:RT4A4R24 | | 1 | 5 units | 41H |
| | 115 AC | | | 2 | LZS:RT4A4S15 | | 1 | 5 units | 41H | |
| | 230 AC | | | 2 | LZS:RT4A4T30 | | 1 | 5 units | 41H | |
|  LZS:RT4B4T30 | 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 | | | | | | | | | |
| | 1 CO contact | 24 DC | 1 | 15.5 | 2 | LZS:RT3B4L24 | | 1 | 5 units | 41H |
| | | 24 AC | | | 2 | LZS:RT3B4R24 | | 1 | 5 units | 41H |
| | | 115 AC | | | 2 | LZS:RT3B4S15 | | 1 | 5 units | 41H |
| | | 230 AC | | | 2 | LZS:RT3B4T30 | | 1 | 5 units | 41H |
| | 2 CO contacts | 24 DC | 2 | 15.5 | 2 | LZS:RT4B4L24 | | 1 | 5 units | 41H |
| | 24 AC | | | 2 | LZS:RT4B4R24 | | 1 | 5 units | 41H | |
| | 115 AC | | | 2 | LZS:RT4B4S15 | | 1 | 5 units | 41H | |
| | 230 AC | | | 2 | LZS:RT4B4T30 | | 1 | 5 units | 41H | |
|  LZS:RT3D4L24 | Complete units with plug-in base | | | | | Plug-in terminals (push-in)  | | | | |
| | 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 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 | 1 | 15.5 | 2 | LZS:RT3D4L24 | | 1 | 5 units | 41H |
| | | 24 AC | | | 2 | LZS:RT3D4R24 | | 1 | 5 units | 41H |
| | | 115 AC | | | 2 | LZS:RT3D4S15 | | 1 | 5 units | 41H |
| | | 230 AC | | | 2 | LZS:RT3D4T30 | | 1 | 5 units | 41H |
| | 2 CO contacts | 24 DC | 2 | 15.5 | 2 | LZS:RT4D4L24 | | 1 | 5 units | 41H |
| | 24 AC | | | 2 | LZS:RT4D4R24 | | 1 | 5 units | 41H | |
| | 115 AC | | | 2 | LZS:RT4D4S15 | | 1 | 5 units | 41H | |
| | 230 AC | | | 2 | 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).

Switching devices – Contactors and contactor assemblies – Contactor relays and relays

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 |
| Version with 2 CO contacts | | | | | | | | | |
| LZS:RT78725 | 12 DC 24 DC | 2 | 12.7 | ▶ ▶ | LZX:RT424012 LZX:RT424024 | | 1 1 | 1 unit 1 unit | 41H 41H |
| | 24 AC 115 AC 230 AC | | | ▶ ▶ ▶ | LZX:RT424524 LZX:RT424615 LZX:RT424730 | | 1 1 1 | 1 unit 1 unit 1 unit | 41H 41H 41H |
| Standard plug-in bases For mounting onto TH 35 standard mounting rail | | | | | Screw terminals  | | | | |
| | -- | -- | 15.5 | ▶ | LZS:RT78725 | | 1 | 1 unit | 41H |
| Plug-in bases with logical separation For mounting onto TH 35 standard mounting rail | | | | | Plug-in terminals (push-in)  | | | | |
| LZS:RT78726 | -- | -- | 15.5 | ▶ | LZS:RT78726 | | 1 | 1 unit | 41H |
| Plug-in bases with logical separation For mounting onto TH 35 standard mounting rail | | | | | Plug-in terminals (push-in)  | | | | |
| | -- | -- | 15.5 | ▶ | LZS:RT7872P | | 1 | 1 unit | 41H |
| LED modules | | | | | | | | | |
| • Red | | | | | | | | | |
| With freewheel diode 24 DC | | | | | | | | | |
| | 24 DC | -- | 15.5 | ▶ | LZS:PTML0024 | | 1 | 1 unit | 41H |
| Without freewheel diode 24 AC/DC | | | | | | | | | |
| | 24 AC/DC | -- | | ▶ | LZS:PTML0524 | | 1 | 1 unit | 41H |
| 110 ... 230 AC | | | | | | | | | |
| | 110 ... 230 AC | -- | | ▶ | LZS:PTML0730 | | 1 | 1 unit | 41H |
| LZS:RT7872P | | | | | | | | | |
| • Green | | | | | | | | | |
| With freewheel diode 24 DC | | | | | | | | | |
| | 24 DC | -- | 15.5 | ▶ | LZS:PTMG0024 | | 1 | 1 unit | 41H |
| Without freewheel diode 24 AC/DC | | | | | | | | | |
| | 24 AC/DC | -- | | ▶ | LZS:PTMG0524 | | 1 | 1 unit | 41H |
| 110 ... 230 AC | | | | | | | | | |
| | 110 ... 230 AC | -- | | ▶ | LZS:PTMG0730 | | 1 | 1 unit | 41H |
| LZS:PTML0024 | | | | | | | | | |
| Fixing/ejection brackets for RT base | | | | | | | | | |
| | -- | -- | 15.5 | ▶ | LZS:RT17016 | | 100 | 10 units | 41H |
| Labels | | | | | | | | | |
| | -- | -- | 15.5 | ▶ | LZS:RT17040 | | 100 | 10 units | 41H |
| RC elements | | | | | | | | | |
| | 6 ... 60 AC 110 ... 230 AC | -- | 15.5 | ▶ ▶ | LZS:PTMU0524 LZS:PTMU0730 | | 1 1 | 1 unit 1 unit | 41H 41H |
| LZS:RT17040 | | | | | | | | | |
| Freewheel diodes with connection to A1 | | | | | | | | | |
| | 6 ... 230 DC | -- | 15.5 | ▶ | LZS:PTMT00A0 | | 1 | 1 unit | 41H |
| Connecting combs for RT screw base | | | | | | | | | |
| | 8-pole, 10 A current carrying capacity, natural-colored | -- | -- | ▶ | LZS:RT170R8 | | 1 | 10 units | 41H |
| LZS:PTMU0730 | | | | | | | | | |
| Connecting brackets for push-in base | | | | | | | | | |
| | 2-pole, 10 A current carrying capacity, natural-colored | -- | -- | ▶ 5 | LZS: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 15/1 or Catalog KT 10.1.

Switching devices – Soft starters and solid-state switching devices



| | | | |
|-------|--|-------|--|
| | Price groups PG 140, 41B, 41C, 41E, 41H, 41L, 42G, 42J, 42S | | Solid-state switching devices for resistive/inductive loads |
| 6/2 | Introduction | 6/115 | General data <u>Solid-state relays</u> |
| | SIRIUS 3RW soft starters | 6/119 | General data |
| 6/5 | General data <u>High Performance soft starters</u> 3RW55 soft starters | 6/120 | SIRIUS 3RF21 solid-state relays, 1-phase, 22.5 mm |
| 6/14 | - General data | 6/126 | SIRIUS 3RF20 solid-state relays, 1-phase, 45 mm |
| 6/28 | - Inline circuit | 6/130 | SIRIUS 3RF22 solid-state relays, 3-phase, 45 mm |
| 6/32 | - Inside-delta circuit | | <u>Solid-state contactors</u> |
| 6/36 | - Accessories 3RW55 Failsafe soft starters | 6/133 | General data |
| 6/38 | - General data | 6/134 | SIRIUS 3RF23 solid-state contactors, 1-phase |
| 6/50 | - Inline circuit | 6/144 | SIRIUS 3RF24 solid-state contactors, 3-phase |
| 6/51 | - Inside-delta circuit | | <u>Function modules</u> |
| 6/52 | - Accessories <u>General Performance soft starters</u> 3RW52 soft starters | 6/148 | General data |
| 6/54 | - General data | 6/150 | SIRIUS converters for 3RF2 |
| 6/66 | - Inline circuit | 6/151 | SIRIUS load monitoring for 3RF2 |
| 6/68 | - Inside-delta circuit | 6/152 | SIRIUS heating current monitoring for 3RF2 |
| 6/70 | - Accessories <u>Basic Performance soft starters</u> 3RW50 soft starters | 6/153 | SIRIUS power controllers for 3RF2 |
| 6/72 | - General data | 6/155 | SIRIUS power regulators for 3RF2 |
| 6/80 | - Inline circuit | | Solid-state switching devices for switching motors |
| 6/81 | - Accessories 3RW40 soft starters | | <u>Solid-state contactors</u> |
| 6/83 | - General data | 6/157 | General data |
| 6/91 | - Inline circuit | 6/160 | SIRIUS 3RF34 solid-state contactors, 3-phase |
| 6/93 | - Accessories 3RW30 soft starters | 6/164 | SIRIUS 3RF34 solid-state reversing contactors, 3-phase |
| 6/95 | - General data | | |
| 6/103 | - Inline circuit | | |
| 6/104 | - Accessories <u>Spare parts</u> | | |
| 6/106 | For 3RW55/3RW55 Failsafe | | |
| 6/110 | For 3RW52 | | |
| 6/113 | For 3RW50 <u>Software</u> | | |
| 14/4 | Simulation Tool for Soft Starters (STS) | | |
| 14/5 | SIRIUS Soft Starter ES (TIA Portal) | | |
| 14/7 | SIRIUS 3RW Soft Starter block library for SIMATIC PCS 7 | | |
| 14/23 | SIRIUS Sim | | |

Switching devices – Soft starters and solid-state switching devices

Introduction

Overview

More information

Homepage, see www.siemens.com/sirius-soft-starter
 Industry Mall, see www.siemens.com/product?3RW
 TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=Sirius3rwFolder>

Industry Online Support (SIOS) topic page, see <https://support.industry.siemens.com/cs/ww/en/view/109747404>
 Simulation Tool for Soft Starters (STS), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>



3RW55



3RW55 Failsafe



3RW52



3RW50



3RW40



3RW30

| Article No. | Page |
|---------------|------|
| 3RW55...-HA.. | 6/14 |
| 3RW55...-HF.. | 6/38 |
| 3RW52 | 6/54 |

3RW soft starters

High Performance soft starters

3RW55 soft starters

- TIA integration optional
- Plug-in communication modules for PROFINET, PROFIBUS, EtherNet/IP and Modbus
- Removable HMI module with color display, local interface and slot for a micro SD memory card
- Extended protection functions
- Up to 1 200 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 technology for minimum power loss and 3-phase motor control for optimum/symmetrical motor control
- Pump stop for reduced mechanical loading and optimum pump stop control
- ATEX/IECEX certification

| | |
|---------------|------|
| 3RW55...-HA.. | 6/14 |
|---------------|------|

3RW55 Failsafe soft starters

- TIA integration optional
- Plug-in communication modules for PROFINET, PROFIBUS, EtherNet/IP 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 480 V)
- SIL 1 - PL c / STO without additional components
- SIL 3 - PL e / STO with additional contactor and safety relay
- Hybrid switching technology for minimum power loss and 3-phase motor control for optimum/symmetrical motor control
- Pump stop for reduced mechanical loading and optimum pump stop control
- ATEX/IECEX certification

| | |
|---------------|------|
| 3RW55...-HF.. | 6/38 |
|---------------|------|

General Performance soft starters

3RW52 soft starters

- TIA integration optional
- Plug-in communication modules for PROFINET, PROFIBUS, EtherNet/IP and Modbus
- HMI modules optional
- Soft starting and stopping
- Current limiting
- Motor overload protection (optionally with thermistor motor protection)
- Analog output (optional)
- Up to 560 kW at 400 V (can be used in supply systems up to 600 V)
- Hybrid switching technology for minimum power loss and 3-phase motor control for optimum/symmetrical motor control
- Soft Torque for reduced mechanical loading and optimum pump stop
- Parameterization using potentiometers

| | |
|-------|------|
| 3RW52 | 6/54 |
|-------|------|



3RW55



3RW55 Failsafe



3RW52



3RW50



3RW40



3RW30

| Article No. | Page |
|-------------|------|
|-------------|------|

3RW soft starters

Basic Performance soft starters

3RW50 soft starters

- TIA integration optional
- Communication modules for PROFINET, PROFIBUS, EtherNet/IP and Modbus
- HMI modules optional
- Soft starting and stopping
- Current limiting
- Motor overload protection (optionally with thermistor motor protection)
- Analog output (optional)
- Up to 315 kW at 400 V (can be used in supply systems up to 600 V)
- Hybrid switching technology for minimum power loss and 2-phase motor control
- Soft Torque for reduced mechanical loading and optimum pump stop
- Parameterization using potentiometers
- ATEX/IECEX certification

3RW50

6/72

3RW40 soft starters

- Soft starting and stopping
- Current limiting
- Motor overload protection (optionally with thermistor motor protection)
- Up to 55 kW at 400 V (can be used in supply systems up to 600 V)
- Hybrid switching technology for minimum power loss and 2-phase motor control
- ATEX certification

3RW40

6/83

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)

3RW30

6/95

Use of SIRIUS 3RW 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 1/8](#).

Switching devices – Soft starters and solid-state switching devices

Introduction



3RF21



3RF20



3RF22



3RF23



3RF24



3RF29



3RF34 (motor)

| Article No. | Page |
|-------------|------|
|-------------|------|

SIRIUS solid-state switching devices for switching resistive/inductive loads

Solid-state relays

Solid-state relays

- Widths of 22.5 mm and 45 mm
- Compact and space-saving design
- "Zero-point switching" version
- Mounting onto existing cooling surfaces

| | |
|-------|-------|
| 3RF21 | 6/120 |
| 3RF20 | 6/126 |
| 3RF22 | 6/130 |

Solid-state contactors

Solid-state contactors

- 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 "low noise" and "short-circuit-proof" versions

| | |
|-------|-------|
| 3RF23 | 6/134 |
| 3RF24 | 6/144 |

Function modules

For extending the functionality of the 3RF21 solid-state relays and the 3RF23 solid-state contactors for many different applications

Converters

- For converting an analog input signal into an on/off ratio; can also be used on 3RF22 and 3RF24 3-phase switching devices

| | |
|---------------|-------|
| 3RF2900-0EA18 | 6/150 |
|---------------|-------|

Load monitoring

- For load monitoring of one or more loads (partial loads)

| | |
|---------------------------------|-------|
| 3RF29..-0FA08, 3RF29.0-0GA1. | 6/151 |
|---------------------------------|-------|

Heating current monitoring

- For load monitoring of one or more loads (partial loads); remote teach

| | |
|---------------|-------|
| 3RF29..-0JA.. | 6/152 |
|---------------|-------|

Power controllers

- 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.. | 6/153 |
|---------------|-------|

Power regulators

- 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.. | 6/155 |
|---------------|-------|

SIRIUS solid-state switching devices for switching motors

Solid-state contactors

Solid-state contactors, solid-state reversing contactors

- Complete units in the insulated enclosure with integrated heat sink, "ready to use"
- Compact and space-saving design
- Version for motors, "instantaneous switching"

| | |
|-------|--------------|
| 3RF34 | 6/160, 6/164 |
|-------|--------------|

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 1/8](#).

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General data

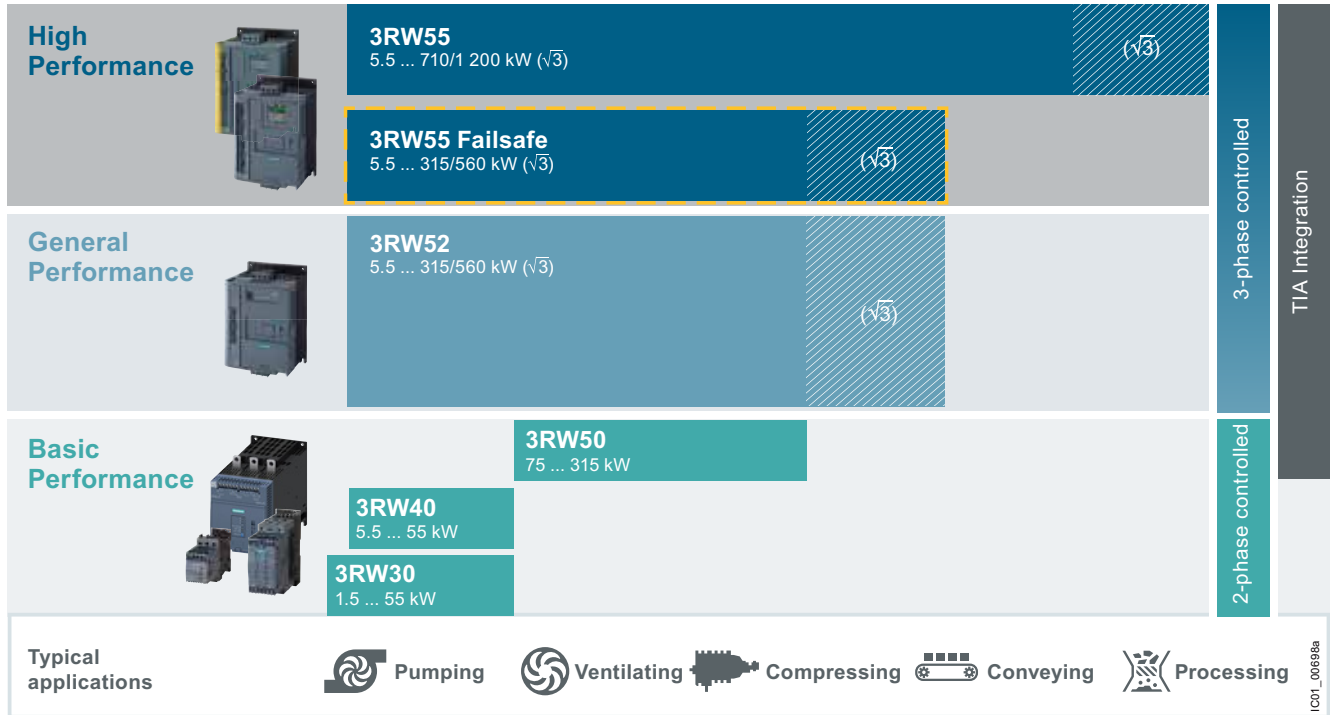
Overview

More information

Homepage, see www.siemens.com/sirius-soft-starter
 Industry Mall, see www.siemens.com/product?3RW
 TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=Sirius3rwFolder>
 Industry Online Support (SIOS) topic page, see <https://support.industry.siemens.com/cs/ww/en/view/109747404>

Simulation Tool for Soft Starters (STS), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>
 SIRIUS Soft Starter ES (TIA Portal), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/24230/dl>

SIRIUS 3RW soft starters – as versatile as your application



SIRIUS 3RW soft starters

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General data



| Applications | High Performance 3RW55/3RW55-F | General Performance 3RW52 | Basic Performance | | |
|----------------------|-----------------------------------|------------------------------|-------------------|-------|-------|
| SIRIUS soft starters | | | 3RW50 | 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 | ● | ○ | ○ | ○ | |

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.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General data



| Applications | | High Performance | | General Performance | Basic Performance | | |
|--|----|---------------------------|-----------------|---------------------|-------------------|-----------------|------------------------|
| SIRIUS soft starters | | 3RW55 | 3RW55-F | 3RW52 | 3RW50 | 3RW40 | 3RW30 |
| General technical specifications | | | | | | | |
| Operational current at 40 °C | A | 13 ... 2 217 | 13 ... 987 | 13 ... 987 | 143 ... 570 | 12.5 ... 106 | 3 ... 106 |
| Operational voltage | V | 200 ... 690 ¹⁾ | 200 ... 480 | 200 ... 600 | 200 ... 600 | 200 ... 600 | 200 ... 480 |
| Operating power for three-phase motors | | | | | | | |
| • At 400 V, at 40 °C | | | | | | | |
| - Inline circuit | kW | 5.5 ... 710 | 5.5 ... 315 | 5.5 ... 315 | 75 ... 315 | 5.5 ... 55 | 1.5 ... 55 |
| - Inside-delta circuit | kW | 11 ... 1 200 | 11 ... 560 | 11 ... 560 | -- | -- | -- |
| • At 460/480 V at 50 °C | | | | | | | |
| - Inline circuit | hp | 7.5 ... 1 000 | 7.5 ... 400 | 7.5 ... 400 | 100 ... 400 | 7.5 ... 75 | 1.5 ... 75 |
| - Inside-delta circuit | hp | 10 ... 1 700 | 10 ... 750 | 10 ... 750 | -- | -- | -- |
| Ambient temperature²⁾ | °C | -25 ... +60 | -25 ... +60 | -25 ... +60 | -25 ... +60 | -25 ... +60 | -25 ... +60 |
| Soft starting/stopping | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ ³⁾ |
| Voltage ramp | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Starting voltage | % | 20 ... 100 | 20 ... 100 | 30 ... 100 | 30 ... 100 | 40 ... 100 | 40 ... 100 |
| Ramp-up and ramp-down time | s | 0 ... 360 | 0 ... 360 | 0 ... 20 | 0 ... 20 | 0 ... 20 | 0 ... 20 ³⁾ |
| Pump stop (torque control)⁴⁾ | | ✓ | ✓ | -- | -- | -- | -- |
| • Starting torque | % | 10 ... 100 | 10 ... 100 | -- | -- | -- | -- |
| • Torque limit | % | 20 ... 200 | 20 ... 200 | -- | -- | -- | -- |
| Soft Torque (torque limit) | | -- | -- | ✓ | ✓ | -- | -- |
| Integral bypass contact system | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Intrinsic device protection | | ✓ | ✓ | ✓ | ✓ | ✓ | -- |
| Motor overload protection | | ✓ ⁵⁾ | ✓ ⁵⁾ | ✓ | ✓ ⁵⁾ | ✓ ⁵⁾ | -- |
| Thermistor motor protection evaluation | | ✓ | ✓ | ✓ ⁶⁾ | ✓ ⁶⁾ | ✓ ⁶⁾ | -- |
| Analog output | | ✓ | ✓ | ✓ ⁶⁾ | ✓ ⁶⁾ | -- | -- |
| Remote RESET | | ✓ | ✓ | ✓ | ✓ | ✓ | -- |
| Adjustable current limiting | | ✓ | ✓ | ✓ | ✓ | ✓ | -- |
| Inside-delta circuit¹⁾ | | ✓ | ✓ | ✓ | -- | -- | -- |
| Breakaway pulse | | ✓ | ✓ | -- | -- | -- | -- |
| Automatic parameterization | | ✓ | ✓ | -- | -- | -- | -- |
| Pump cleaning | | ✓ | ✓ | -- | -- | -- | -- |
| Condition monitoring | | ✓ | ✓ | -- | -- | -- | -- |
| User account administration⁷⁾ | | ✓ | ✓ | -- | -- | -- | -- |
| Creep speed in both directions of rotation | | ✓ | -- | -- | -- | -- | -- |
| Reversing duty | | ✓ | ✓ | -- | -- | -- | -- |
| Reversing DC braking⁴⁾⁸⁾ | | ✓ | -- | -- | -- | -- | -- |
| DC braking⁴⁾⁸⁾ | | ✓ | -- | -- | -- | -- | -- |
| Dynamic DC braking⁴⁾⁸⁾ | | ✓ | -- | -- | -- | -- | -- |
| Motor heating | | ✓ | -- | -- | -- | -- | -- |
| Communication function⁹⁾ | | ✓ | ✓ | ✓ | ✓ | -- | -- |
| HMI module installable in the cabinet door | | ✓ | ✓ | ✓ ⁹⁾ | ✓ ⁹⁾ | -- | -- |
| Operating measured value display | | ✓ | ✓ | ✓ ⁹⁾ | ✓ ⁹⁾ | -- | -- |
| Logbooks | | ✓ | ✓ | ✓ ⁹⁾ | ✓ ⁹⁾ | -- | -- |
| Statistical data and slave pointer function | | ✓ | ✓ | ✓ ⁹⁾ | ✓ ⁹⁾ | -- | -- |
| Trace function⁷⁾ | | ✓ | ✓ | -- | -- | -- | -- |
| Programmable control inputs and outputs | | ✓ | ✓ | -- | -- | -- | -- |
| Number of parameter sets | | 3 | 3 | 1 | 1 | 1 | 1 |
| Parameterizable via software⁷⁾ | | ✓ | ✓ | -- | -- | -- | -- |
| Number of controlled phases | | 3 | 3 | 3 | 2 | 2 | 2 |
| Heavy starting CLASS 30⁴⁾ | | ✓ | ✓ | -- | -- | -- | -- |

✓ Function available

-- Function not available

1) Inside-delta circuit only up to operational 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/IECEX, an upstream contactor may be required, see page 6/12.

6) Special device versions only.

7) With software Soft Starter ES (TIA Portal).

8) Not possible in inside-delta circuit.

9) Only in conjunction with special accessories.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General data

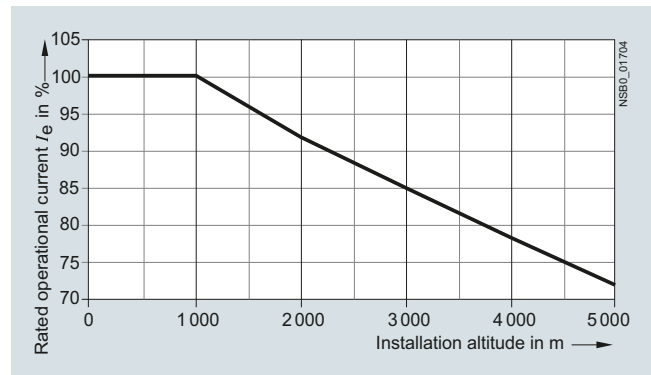
Constraints

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, the 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 auxiliary fan)



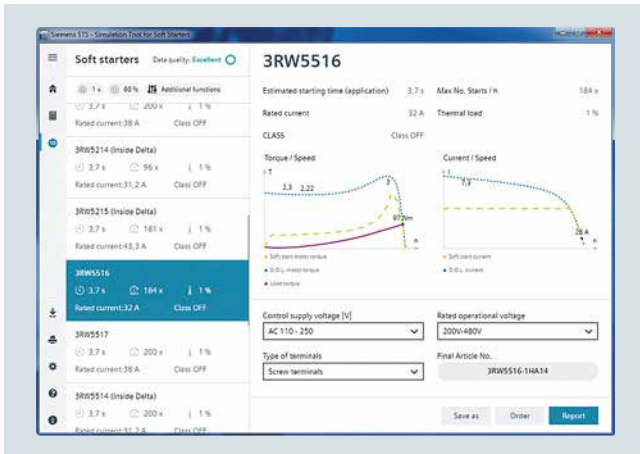
| Applications | | High Performance | General Performance | Basic Performance | |
|--|-------|------------------|---------------------|-------------------|----------------|
| SIRIUS soft starters | | 3RW55/3RW55-F | 3RW52 | 3RW50 | 3RW40 3RW30 |
| Constraints | | | | | |
| Maximum starting time | s | 20 | 10 | | 3 |
| Maximum starting current in % of motor current | I_e | 300 | | | |
| Maximum number of starts per hour | 1/h | 5 | | | 20 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General data

Simulation Tool for Soft Starters (STS) (see page 14/4)



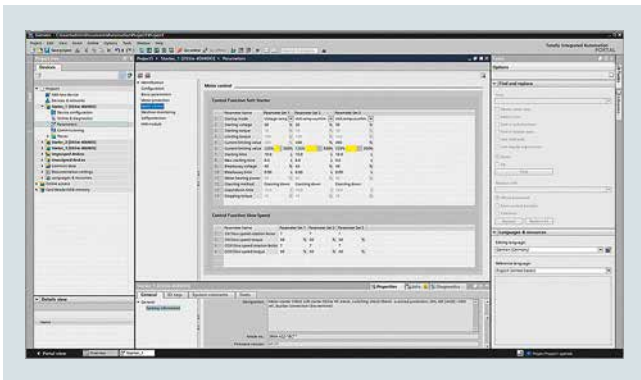
Easy input of motor and load data

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.

- Simple, quick and user-friendly interface
- Detailed and up-to-date Siemens motor database, including IE3/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

The Simulation Tool for Soft Starters (STS) is available as a free download for Windows and as an app (for Android and iOS).

SIRIUS Soft Starter ES (TIA Portal) (see page 14/5)



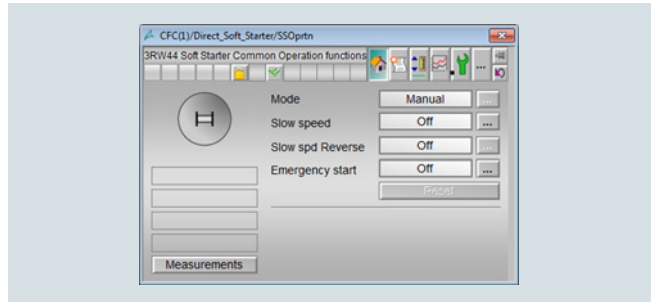
Easy and clearly arranged parameter setting of the SIRIUS 3RW44 and 3RW55 soft starters with SIRIUS Soft Starter ES (TIA Portal)

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.

- Transparent setting of the device functions and their parameters – online and offline
- Effective diagnostic 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 Standard and Premium software versions)
- Time savings through shorter startup times
- Fast, low-cost licensing using a simple licensing procedure (also available online)

SIRIUS 3RW Soft Starter block library for SIMATIC PCS 7 (see page 14/7)

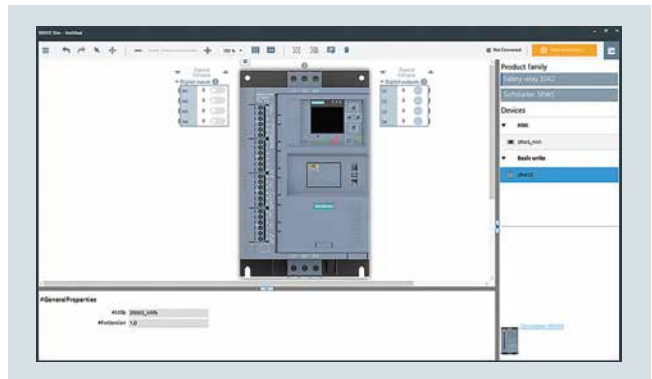


Faceplate of the motor block

The SIRIUS 3RW Soft Starter block library for PCS 7 can be used for simple and convenient integration of SIRIUS 3RW44, 3RW52 and 3RW55 soft starters into the SIMATIC PCS 7 process control system.

The SIRIUS 3RW Soft Starter block library for PCS 7 contains the diagnostics and driver blocks that correspond to the SIMATIC PCS 7 diagnostics and driver concept as well as the elements (symbols and faceplates) required for operator control and process monitoring.

SIRIUS Sim (see page 14/23)



SIRIUS Sim 3RW55

The SIRIUS simulation tool can be used to quickly and easily test functions and configurations in an office environment. These configurations can then be loaded directly into real devices.

SIRIUS Sim V2.0 integrates the SIRIUS 3RW55 soft starters with the following features:

- Complete parameterization of the SIRIUS 3RW55 High Performance soft starters
- Complete navigation with the same menu structure as on the HMI
- Optional storage of the parameterization on a micro SD micro SD memory card for transfer to the real soft starter
- Simulation of starting and stopping, including operating phases as well as different fault conditions

SIRIUS Sim is available as a free download.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

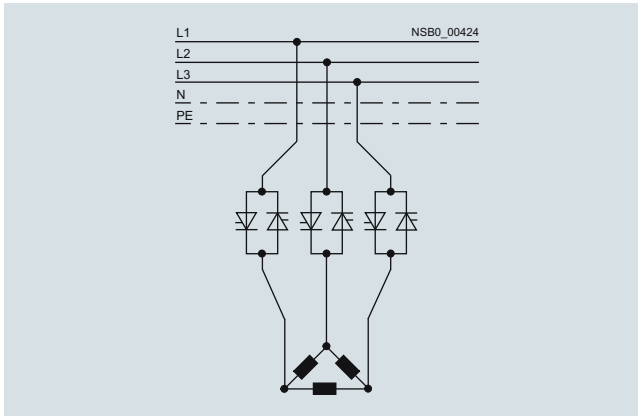
General data

Circuit concept

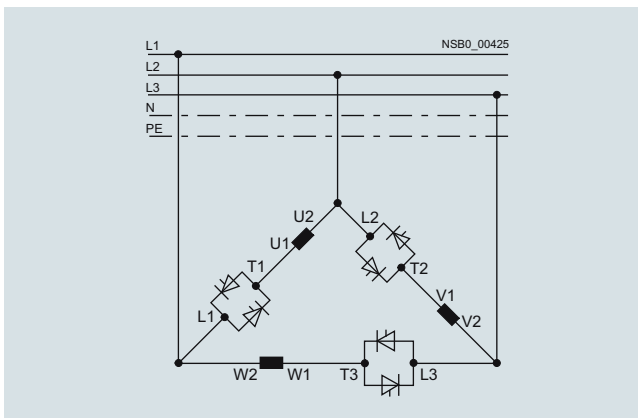
3-phase controlled SIRIUS 3RW soft starters can be operated in two different types of circuit:

- **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 cables.
- **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 solid-state 3RW soft starters are designed for normal starting. In case of heavy starting or increased starting frequency, a larger unit must be selected. The 3RW50 and 3RW52 soft starters may be used in isolated supply networks (IT systems) up to 600 V AC and the 3RW55 soft starters 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 ramp-down modes torque control, pump stop and DC braking, because during the ramp-down time in these modes, an additional current loading applies in contrast to free ramp-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 stopping 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 local short-circuit conditions. Fuses and switching devices must be ordered separately. The harmonic component load of the starting current must be taken into consideration for the selection of motor starter protectors (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 6/9 or our Technical Support, www.siemens.com/support-request.

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.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General data

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 events

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_{q1} in kA were determined and documented.

If the short-circuit breaking capacity is the same, of course, smaller circuit breakers 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.

Setting the motor current

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.

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 6/8) 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 can not 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 a switching device at a higher level (e.g. by a 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 circuit breaker both in case of an overload and in case of a short circuit. The 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 in all cases.

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 6/8 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:

Trip classes

Tested fuseless switchgear assemblies comprising SIRIUS 3RW soft starters and motor starter protectors only comply with CLASS 10.

To configure tested motor feeders, for example, for CLASS 20 or CLASS 30, fuses must be used together with SIRIUS 3RW soft starters.

Line contactor

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 longer possible due to the operating state of the thyristors).

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General data

ATEX/IECEX-certified motor overload protection

Ambient temperature during operation

The SIRIUS 3RW soft starters are approved for operation in a temperature range of -25 to +60 °C.

Please take into account derating of the rated operational current for ambient temperatures above 40 °C.

For more information, see [Equipment Manual and the technical product data sheet of the selected soft starter](#).

Trip class (electronic overload protection)

The motor and cables must be dimensioned for the selected trip class.

The rated data of the soft starters refers to normal starting (CLASS 10). For heavy starting (> CLASS 10), the soft starter may need to be oversized as only a rated motor current that is lower than the soft starter rated current can be set.

Short-circuit protection

The SIRIUS 3RW soft starter does not have short-circuit protection. Short-circuit protection must be ensured.

Line protection

Avoid impermissibly high cable surface temperatures by correctly dimensioning the cross-sections.

The cable cross-section must be adequately dimensioned.

Line contactor or additional undervoltage release on the motor starter protector

In many ATEX/IECEX applications no additional measures (e.g. the use of a line contactor) are necessary with regard to the motor feeder configuration.

The operation of the selected soft starter may, depending on the amplitude of the line voltage and the type of motor connection (inline circuit or inside-delta circuit), result in the loss of the certified motor overload protection according to ATEX/IECEX if one of the two remedial measures listed below is not implemented.

Remedial measures

- An additional line contactor in the main circuit
- An additional undervoltage release for a motor feeder configuration with a motor starter protector

The line contactor or the undervoltage release are connected to error outputs 95, 96 and 98 of the selected soft starter

Note:

For ATEX/IECEX applications, the accompanying information on parameterization and commissioning must be observed in the ATEX/IECEX chapters of the [Equipment Manual](#) for the selected soft starter.

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"/> |
| | 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 | 3RW50 | <input type="checkbox"/> | <input type="checkbox"/> | - | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | | 3RW40 | <input type="checkbox"/> | <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, 3-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:

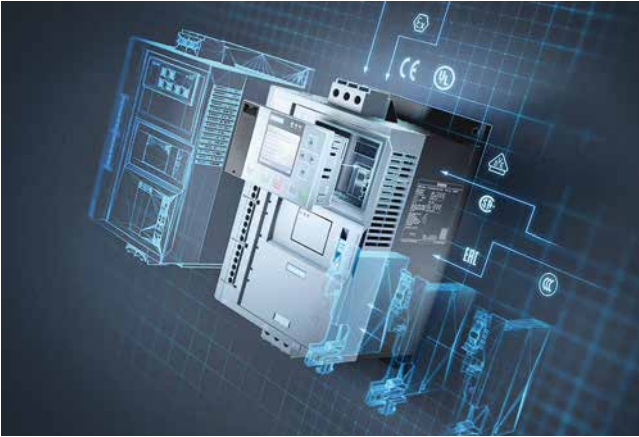
The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

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: Wide range of matching products



- 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, EtherNet/IP and Modbus
- Design 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, ATEX/IECEX, shipbuilding

Intelligent operation: concentrated, application-specific functionality



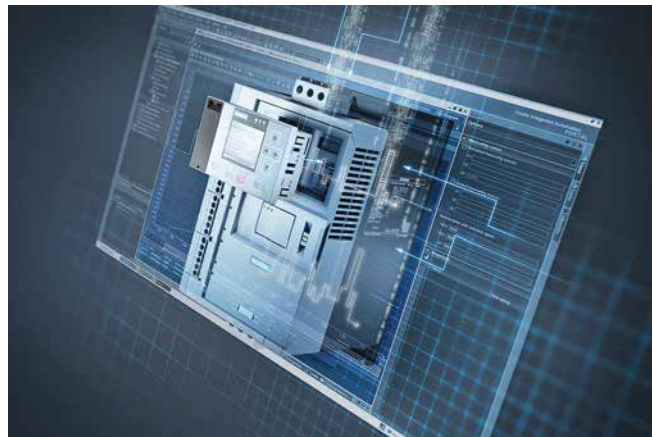
- Can be used in a wide variety of applications: Pumping, ventilating, compressing, moving and processing
- Integrated, self-learning automatic parameterization depending on motor starting conditions
- Application-specific functionality such as pump cleaning and pump stop
- Condition monitoring: Current and power 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

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > General data

Overview

More information

Homepage, see www.siemens.com/sirius-soft-starter
 Industry Mall, see www.siemens.com/product?3RW55
 TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=3rw55>
 Industry Online Support (SIOS) topic page, see <https://support.industry.siemens.com/cs/ww/en/view/109747404>

Simulation Tool for Soft Starters (STS), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

SIRIUS Soft Starter ES (TIA Portal), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/24230/dl>

SIRIUS 3RW Soft Starter block library for SIMATIC PCS 7, see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/109770336>

SIRIUS Sim, see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/109763750>

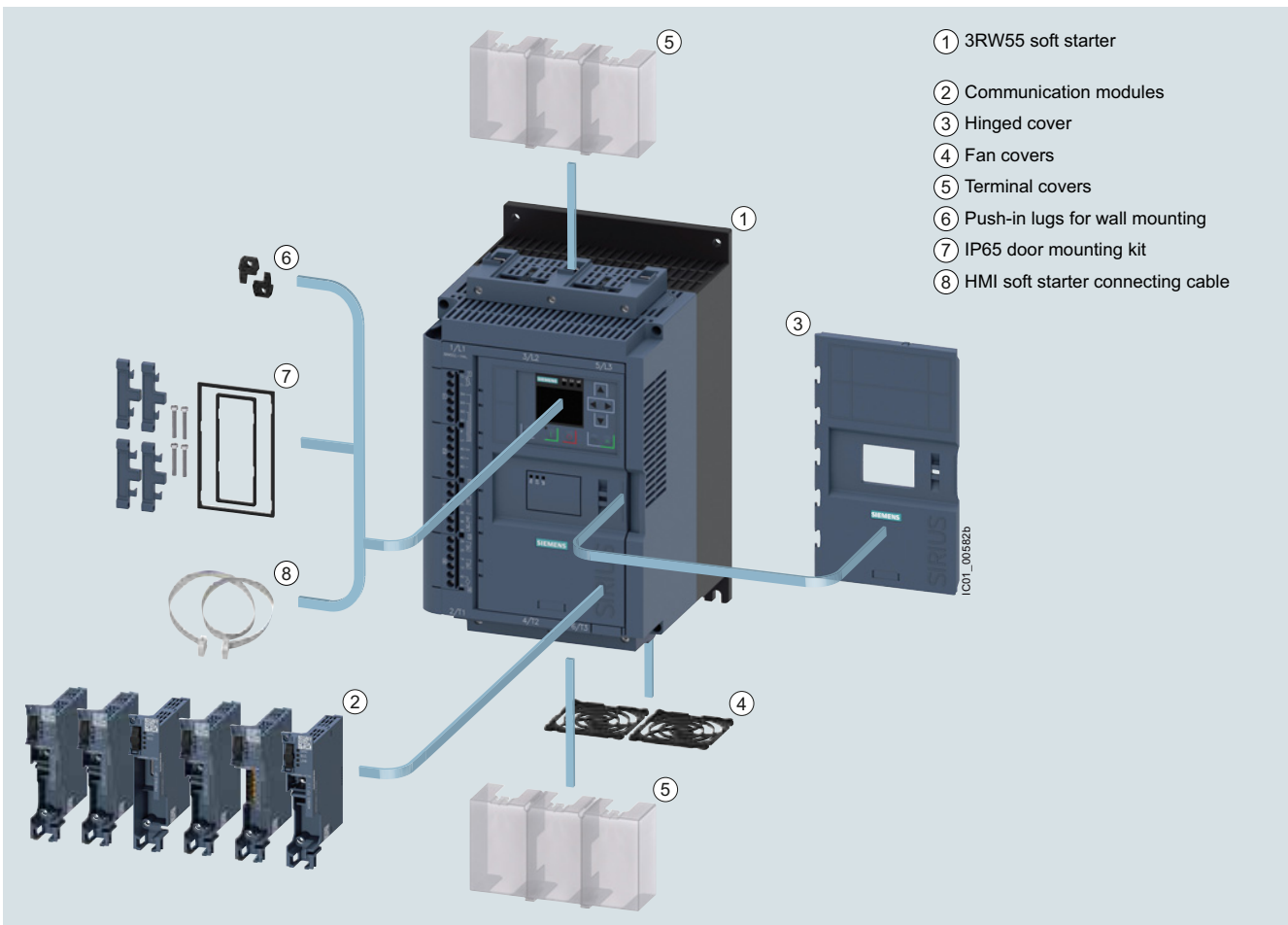


SIRIUS 3RW55 soft starters device family

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 1 200 kW (at 400 V).

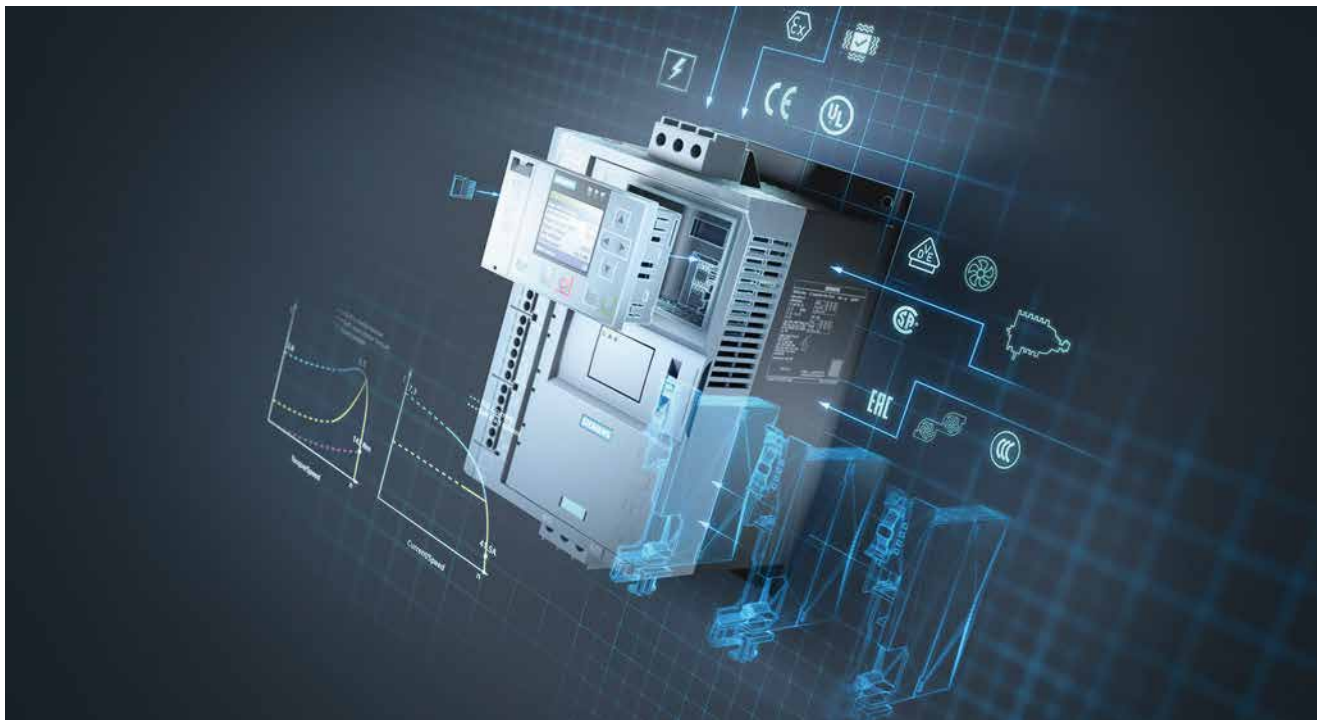
The functions have been specially designed to offer maximum user friendliness. The HMI (with color display, local interface and a slot for micro SD memory card) and plug-in communication modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) ensure maximum flexibility.

With their modern hybrid switching technology, the SIRIUS 3RW55 soft starters offer efficient switching for long-term, energy-saving use.



SIRIUS 3RW55 High Performance soft starter with accessories (see page 6/36)

Benefits



| Product characteristics / function | Performance features / benefits |
|--|--|
| Automatic parameterization | Extremely easy commissioning and reliability even under changing load conditions |
| Hybrid switching technology and 3-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 |
| Removable HMI with color display, local interface, slot for micro SD memory 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 |
| Certified according to ATEX/IECEX directive | Suitable for the starting of explosion-proof motors |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > General data

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/25099/td>
 Equipment Manual, 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 6/9 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 | 3RW555.-.HA.4 | 3RW555.-.HA.6 |
|---|---|---|--------------------------------|-----------------|---------------|-----------------|---------------|
| Installation/fixing/dimensions | | | | | | | |
| Width x height x depth mm | 170 x 275 x 152 | 185 x 306 x 203 | | 210 x 393 x 203 | | 478 x 764 x 241 | |
| | | | | | | | |
| Type of mounting | 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 | <ul style="list-style-type: none"> • 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 | 5 000 | 2 000 |
| Degree of protection IP on the front acc. to IEC 60529 | IP20 | IP00 (IP20 with cover) | | | | IP00 | |
| Touch protection on the front acc. to IEC 60529 | Finger-safe for vertical touching from the front | Finger-safe for vertical touching from the front with cover | | | | -- | |
| Ambient conditions | | | | | | | |
| Ambient temperature | <ul style="list-style-type: none"> • During operation²⁾ °C -25 ... +60 • During storage and transport °C -40 ... +80 | | | | | | |
| Environmental category according to IEC 60721 | <ul style="list-style-type: none"> • During operation 3K6 (no ice formation, only occasional 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 get into the devices), 1M4 • During transport 2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m) | | | | | | |

¹⁾ Derating from 1 000 m, see [characteristic curve on page 6/8](#).

²⁾ Note derating above 40 °C.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters High Performance soft starters

3RW55 soft starters > General data

| Type | | 3RW55...-HA0. | 3RW55...-HA1. |
|--|----|---------------|---------------|
| Control circuit/control | | | |
| Control supply voltage | | | |
| • At AC/DC | V | 24/24 | --/-- |
| • At AC | V | -- | 110 ... 250 |
| • Relative negative tolerance/relative positive tolerance with AC | % | -20/20 | -15/10 |
| • Relative negative tolerance/relative positive tolerance with DC | % | -20/20 | --/-- |
| Frequency of the control supply voltage | | | |
| • Relative negative tolerance/relative positive tolerance | 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 ($I_{cu} = 1 \text{ kA}$), fuse 6 A quick-response ($I_{cu} = 1 \text{ kA}$), MCB C1 ($I_{cu} = 600 \text{ A}$), MCB C6 ($I_{cu} = 300 \text{ A}$) | | | |

¹⁾ Not included in scope of supply.

| Type | | 3RW55...-HA.4 | 3RW55...-HA.5 | 3RW55...-HA.6 |
|--|----|---------------|---------------|---------------|
| Power electronics | | | | |
| Operational voltage, rated value | | | | |
| • Relative negative tolerance/relative positive tolerance | V | 200 ... 480 | 200 ... 600 | 200 ... 690 |
| • Relative negative tolerance/relative positive tolerance | % | -15/10 | | |
| Operational voltage for inside-delta circuit, rated value | | | | |
| • Relative negative tolerance/relative positive tolerance | V | 200 ... 480 | 200 ... 600 | |
| • Relative negative tolerance/relative positive tolerance | % | -15/10 | | |
| Operating frequency | | | | |
| • Relative negative tolerance/relative positive tolerance | Hz | 50 ... 60 | | |
| • Relative negative tolerance/relative positive tolerance | % | -10/10 | | |
| Minimum load [% of I_M]¹⁾ | | | | |
| % | | | | |
| Maximum cable length between soft starter and motor | | | | |
| m | | | | |

¹⁾ Relative to set I_e .

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > General data

| Type | | 3RW5513 | 3RW5514 | 3RW5515 | 3RW5516 | 3RW5517 |
|--|-----|--------------|--------------|--------------|----------------|----------------|
| Rated operational current I_e | A | 13 | 18 | 25 | 32 | 38 |
| Power electronics | | | | | | |
| Load rating with rated operational current I_e | | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a | | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 32/28.4/26 | 38/33.5/30.5 |
| Permissible rated motor current and starts/h | | | | | | |
| Normal starting (CLASS 10A) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 32/28.4/26 | 38/33.5/30.5 |
| • 300% I_M | | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 43 | 43 | 43 |
| - Start-up time 10 s | 1/h | 18 | 18 | 18 | 18 | 18 |
| • 350% I_M | | | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | 28 | 28 | 28 |
| - Start-up time 10 s | 1/h | 10 | 10 | 10 | 10 | 10 |
| Normal starting (CLASS 10E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 32/28.4/26 | 38/33.5/30.5 |
| • 300% I_M | | | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 21 | 21 | 21 |
| - Start-up time 20 s | 1/h | 8 | 8 | 8 | 8 | 8 |
| • 350% I_M | | | | | | |
| - Start-up time 10 s | 1/h | 13 | 13 | 13 | 13 | 13 |
| - Start-up time 20 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| Heavy starting (CLASS 20E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 29.6/27.2/23.6 | 33.5/30.5/27.5 |
| • 300% I_M | | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| • 350% I_M | | | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Heavy starting (CLASS 30E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 26/23.6/21.2 | 29/26/23 |
| • 300% I_M | | | | | | |
| - Start-up time 30 s | 1/h | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 60 s | 1/h | 3 | 3 | 3 | 3 | 3 |
| • 350% I_M | | | | | | |
| - Start-up time 30 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| - Start-up time 60 s | 1/h | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| Adjustable rated motor current I_M | | | | | | |
| • Minimum/maximum | A | 2.5/13 | 3.5/18 | 5/25 | 6.5/32 | 7.5/38 |
| • Minimum/maximum in inside-delta circuits | A | 4.3/22.5 | 6.1/31.1 | 8.7/43.3 | 11.3/55.4 | 13/65.8 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > General data

| Type | | 3RW5521 | 3RW5524 | 3RW5525 | 3RW5526 | 3RW5527 |
|--|-----|--------------|--------------|--------------|----------|--------------|
| Rated operational current I_e | A | 25 | 47 | 63 | 77 | 93 |
| Power electronics | | | | | | |
| Load rating with rated operational current I_e | | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a | | | | | | |
| | | 25/22.3/19.6 | 47/41.6/36.2 | 63/55.5/50.5 | 77/68/62 | 93/82.5/75.5 |
| Permissible rated motor current and starts/h | | | | | | |
| Normal starting (CLASS 10A) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | | | | | | |
| | A | 25/22.3/19.6 | 47/41.6/36.2 | 63/55.5/50.5 | 77/68/62 | 93/82.5/75.5 |
| • 300% I_M | | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 43 | 43 | 43 |
| - Start-up time 10 s | 1/h | 18 | 18 | 18 | 18 | 18 |
| • 350% I_M | | | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | 28 | 28 | 28 |
| - Start-up time 10 s | 1/h | 10 | 10 | 10 | 10 | 10 |
| Normal starting (CLASS 10E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | | | | | | |
| | A | 25/22.3/19.6 | 47/41.6/36.2 | 63/55.5/50.5 | 77/68/62 | 93/82.5/75.5 |
| • 300% I_M | | | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 21 | 21 | 21 |
| - Start-up time 20 s | 1/h | 8 | 8 | 8 | 8 | 8 |
| • 350% I_M | | | | | | |
| - Start-up time 10 s | 1/h | 13 | 13 | 13 | 13 | 13 |
| - Start-up time 20 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| Heavy starting (CLASS 20E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | | | | | | |
| | A | 25/22.3/19.6 | 47/41.6/36.2 | 63/55.5/50.5 | 77/68/62 | 93/82.5/75.5 |
| • 300% I_M | | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| • 350% I_M | | | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Heavy starting (CLASS 30E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | | | | | | |
| | A | 25/22.3/19.6 | 43.4/38/34.4 | 53/48/43 | 68/62/56 | 82.5/75.5/65 |
| • 300% I_M | | | | | | |
| - Start-up time 30 s | 1/h | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 60 s | 1/h | 3 | 3 | 3 | 3 | 3 |
| • 350% I_M | | | | | | |
| - Start-up time 30 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| - Start-up time 60 s | 1/h | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| Adjustable rated motor current I_M | | | | | | |
| • Minimum/maximum | A | 5/25 | 10/47 | 13/63 | 16/77 | 19/93 |
| • Minimum/maximum in inside-delta circuits | A | 8.7/43.3 | 17.3/81.4 | 22.5/109 | 27.7/133 | 32.9/161 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > General data

| Type | | 3RW5534 | 3RW5535 | 3RW5536 |
|--|-----|------------|-------------|-------------|
| Rated operational current I_e | A | 113 | 143 | 171 |
| Power electronics | | | | |
| Load rating with rated operational current I_e | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a | A | 113/101/89 | 143/128/118 | 171/153/141 |
| Permissible rated motor current and starts/h | | | | |
| Normal starting (CLASS 10A) | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 113/101/89 | 143/128/118 | 171/153/141 |
| • 300% I_M | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 43 |
| - Start-up time 10 s | 1/h | 18 | 18 | 18 |
| • 350% I_M | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | 28 |
| - Start-up time 10 s | 1/h | 10 | 10 | 10 |
| Normal starting (CLASS 10E) | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 113/101/89 | 143/128/118 | 171/153/141 |
| • 300% I_M | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 21 |
| - Start-up time 20 s | 1/h | 8 | 8 | 8 |
| • 350% I_M | | | | |
| - Start-up time 10 s | 1/h | 13 | 13 | 13 |
| - Start-up time 20 s | 1/h | 4 | 4 | 4 |
| Heavy starting (CLASS 20E) | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 109/97/85 | 128/113/103 | 141/129/117 |
| • 300% I_M | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 |
| • 350% I_M | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2.5 | 2.5 | 2.5 |
| Heavy starting (CLASS 30E) | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 89/81/74 | 108/98/88 | 117/105/93 |
| • 300% I_M | | | | |
| - Start-up time 30 s | 1/h | 7 | 7 | 7 |
| - Start-up time 60 s | 1/h | 3 | 3 | 3 |
| • 350% I_M | | | | |
| - Start-up time 30 s | 1/h | 4 | 4 | 4 |
| - Start-up time 60 s | 1/h | 1.8 | 1.8 | 1.8 |
| Adjustable rated motor current I_M | | | | |
| • Minimum/maximum | A | 23/113 | 29/143 | 34/171 |
| • Minimum/maximum in inside-delta circuits | A | 39.8/195 | 50.2/247 | 58.9/296 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > General data

| Type | | 3RW5543 | 3RW5544 | 3RW5545 | 3RW5546 | 3RW5547 | 3RW5548 |
|--|-----|-------------|-------------|-------------|-------------|-------------|-------------|
| Rated operational current I_e | A | 210 | 250 | 315 | 370 | 470 | 570 |
| Power electronics | | | | | | | |
| Load rating with rated operational current I_e | | | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a | A | 210/186/170 | 250/220/200 | 315/279/255 | 370/328/300 | 470/416/380 | 570/504/460 |
| Permissible rated motor current and starts/h | | | | | | | |
| Normal starting (CLASS 10A) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 210/186/170 | 250/220/200 | 315/279/255 | 370/328/300 | 470/416/380 | 570/504/460 |
| • 300% I_M | | | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 43 | 43 | 40 | 20 |
| - Start-up time 10 s | 1/h | 18 | 18 | 18 | 18 | 17 | 6 |
| • 350% I_M | | | | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | 28 | 28 | 26 | 9 |
| - Start-up time 10 s | 1/h | 10 | 10 | 10 | 10 | 10 | 1 |
| Normal starting (CLASS 10E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 210/186/170 | 250/220/200 | 315/279/255 | 370/328/300 | 470/416/380 | 551/490/445 |
| • 300% I_M | | | | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 21 | 21 | 17 | 8 |
| - Start-up time 20 s | 1/h | 8 | 8 | 8 | 8 | 6 | 1 |
| • 350% I_M | | | | | | | |
| - Start-up time 10 s | 1/h | 13 | 13 | 13 | 13 | 10 | 2 |
| - Start-up time 20 s | 1/h | 4 | 4 | 4 | 4 | 2 | -- |
| Heavy starting (CLASS 20E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 162/146/130 | 200/180/160 | 231/207/183 | 258/230/202 | 272/254/236 | 284/262/240 |
| • 300% I_M | | | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 | 4 | 4 | 4 |
| • 350% I_M | | | | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Heavy starting (CLASS 30E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 138/122/106 | 160/140/120 | 183/159/135 | 202/174/160 | 210/190/170 | 220/200/180 |
| • 300% I_M | | | | | | | |
| - Start-up time 30 s | 1/h | 7 | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 60 s | 1/h | 3 | 3 | 3 | 3 | 3 | 3 |
| • 350% I_M | | | | | | | |
| - Start-up time 30 s | 1/h | 4 | 4 | 4 | 4 | 4 | 4 |
| - Start-up time 60 s | 1/h | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| Adjustable rated motor current I_M | | | | | | | |
| • Minimum/maximum | A | 42/210 | 50/250 | 63/315 | 74/370 | 94/470 | 114/570 |
| • Minimum/maximum in inside-delta circuits | A | 72.7/363 | 86.6/433 | 109.1/545 | 128.2/640 | 162.8/814 | 197.5/987 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > General data

| Type | | 3RW5552 | 3RW5553 | 3RW5554 | 3RW5556 | 3RW5558 |
|--|-----|-------------|-------------|-------------|---------------|-------------------|
| Rated operational current I_e | A | 630 | 720 | 840 | 1 100 | 1 280 |
| Power electronics | | | | | | |
| Load rating with rated operational current I_e | | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a | | 630/561/510 | 720/641/580 | 840/748/670 | 1 100/979/890 | 1 280/1 139/1 030 |
| Permissible rated motor current and starts/h | | | | | | |
| Normal starting (CLASS 10A) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 630/561/510 | 720/641/580 | 840/748/670 | 1 100/979/890 | 1 280/1 139/1 030 |
| • 300% I_M | | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 42 | 43 | 32 |
| - Start-up time 10 s | 1/h | 18 | 18 | 18 | 18 | 12 |
| • 350% I_M | | | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | 25 | 27 | 17 |
| - Start-up time 10 s | 1/h | 10 | 10 | 10 | 9 | 4 |
| Normal starting (CLASS 10E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 630/561/510 | 720/641/580 | 840/748/670 | 1 100/979/890 | 1 225/1 130/1 030 |
| • 300% I_M | | | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 19 | 18 | 15 |
| - Start-up time 20 s | 1/h | 8 | 8 | 7 | 7 | 5 |
| • 350% I_M | | | | | | |
| - Start-up time 10 s | 1/h | 13 | 13 | 10 | 9 | 1 |
| - Start-up time 20 s | 1/h | 4 | 4 | 2 | 2 | 1 |
| Heavy starting (CLASS 20E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 500/450/400 | 520/470/420 | 570/520/470 | 920/840/760 | 980/900/810 |
| • 300% I_M | | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| • 350% I_M | | | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Heavy starting (CLASS 30E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 380/340/300 | 400/360/320 | 420/380/340 | 740/670/600 | 790/720/650 |
| • 300% I_M | | | | | | |
| - Start-up time 30 s | 1/h | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 60 s | 1/h | 3 | 3 | 3 | 3 | 3 |
| • 350% I_M | | | | | | |
| - Start-up time 30 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| - Start-up time 60 s | 1/h | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| Adjustable rated motor current I_M | | | | | | |
| • Minimum/maximum | A | 114/630 | 144/720 | 168/840 | 220/1 100 | 258/1 280 |
| • Minimum/maximum in inside-delta circuits | A | 197.5/987 | 249.4/1 247 | 291/1 454 | 381.1/1 905 | 446.9/2 217 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters
High Performance soft starters

3RW55 soft starters > General data

**Motor feeders according to IEC with 3RV2 motor starter protectors or 3VA 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 6/11](#).

| Soft starters | Motor starter protectors | | | | Motor starter protectors | | | |
|---------------------------------|--------------------------|-------------|--------------------|-------------|-----------------------------|-------------|--------------------|-------------|
| | for 400 V systems | | for 500 V systems | | for 400 V systems | | 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" | 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 | -- | -- | -- | -- | -- | -- | -- | -- |
| 3RW5522 | 3RV2032-4JA10 | 65 | 3RV2032-4JA10 | 10 | 3RV2032-4RA10 | 65 | 3RV2032-4RA10 | 10 |
| 3RW5525 | 3VA2163-7MN32-0AA0 | 65 | 3VA2163-7MN32-0AA0 | 20 | 3VA2110-7MN32-0AA0 | 65 | 3VA2110-7MN32-0AA0 | 20 |
| 3RW5526 | 3VA2110-7MN32-0AA0 | 65 | 3VA2110-7MN32-0AA0 | 20 | 3VA2216-7MN32-0AA0 | 65 | 3VA2216-7MN32-0AA0 | 20 |
| 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 |
| 3RW5552 | 3VA2580-6HN32-0AA0 | 65 | 3VA2580-6HN32-0AA0 | 65 | 3VA2716-7AB05-0AA0 | 65 | 3VA2716-7AB05-0AA0 | 65 |
| 3RW5553 | 3VA2510-6HN32-0AA0 | 65 | 3VA2510-6HN32-0AA0 | 65 | 3VA2716-7AB05-0AA0 | 65 | 3VA2716-7AB05-0AA0 | 65 |
| 3RW5554 | 3VA2510-6HN32-0AA0 | 65 | 3VA2510-6HN32-0AA0 | 65 | 3VA2716-7AB05-0AA0 | 65 | 3VA2716-7AB05-0AA0 | 65 |
| 3RW5556 | 3VA2716-7AB05-0AA0 | 65 | 3VA2716-7AB05-0AA0 | 65 | -- | -- | -- | -- |
| 3RW5558 | 3VA2716-7AB05-0AA0 | 65 | 3VA2716-7AB05-0AA0 | 65 | -- | -- | -- | -- |

Note:

The service factor and measurement inaccuracies, for example, have been taken into account for the selection of the specified motor starter protectors/circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

When using braking functions, the use of fuses is recommended to avoid the risk of false tripping of 3VA circuit breakers with electronic motor protection function during braking.

In motor feeder tests with soft starters conducted in 690 V systems, demonstrable short-circuit breaking capacities could only be achieved using fuses ($I_q > 5$ to 10 kA).

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 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 $I_{qk} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/11](#).

| 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 690 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 delta | for systems up to 600 V in the delta | |
| Q11 Type | F1 Type | Q21 Type | Q21 Type | F1 Type | Q21 Type | Q21 Type | Q21 Type | Q21 Type | Q21 Type | |
| Type of coordination "1" | Inline circuit | | | Inside-delta circuit | | | | | | |
| 3RW5513 | 3NA3820-6 | 3RT2025 | 3RT2025 | 3NA3820-6 | 3RT2027 | 3RT2035 | 3RT2025 | 3RT2025 | 3RT2025 | |
| 3RW5514 | 3NA3820-6 | 3RT2026 | 3RT2027 | 3NA3820-6 | 3RT2027 | 3RT2037 | 3RT2026 | 3RT2027 | 3RT2027 | |
| 3RW5515 | 3NA3822-6 | 3RT2027 | 3RT2037 | 3NA3822-6 | 3RT2036 | 3RT2037 | 3RT2027 | 3RT2037 | 3RT2037 | |
| 3RW5516 | 3NA3824-6 | 3RT2035 | 3RT2037 | 3NA3824-6 | 3RT2037 | 3RT2038 | 3RT2035 | 3RT2037 | 3RT2037 | |
| 3RW5517 | 3NA3824-6 | 3RT2035 | 3RT2037 | 3NA3824-6 | 3RT2038 | 3RT2046 | 3RT2035 | 3RT2037 | 3RT2037 | |
| 3RW5521 | 3NA3824-6 | 3RT2027 | 3RT2037 | 3NA3824-6 | 3RT2036 | 3RT2037 | 3RT2027 | 3RT2037 | 3RT2037 | |
| 3RW5522 | 3NA3824-6 | 3RT2036 | 3RT2037 | 3NA3824-6 | 3RT2046 | 3RT2047 | 3RT2036 | 3RT2037 | 3RT2037 | |
| 3RW5525 | 3NA3830-6 | 3RT2037 | 3RT2046 | 3NA3830-6 | 3RT2047 | 3RT1054 | 3RT2037 | 3RT2046 | 3RT2046 | |
| 3RW5526 | 3NA3132-6 | 3RT2038 | 3RT2046 | 3NA3132-6 | 3RT1055 | 3RT1055 | 3RT2038 | 3RT2046 | 3RT2046 | |
| 3RW5527 | 3NA3136-6 | 3RT2046 | 3RT2047 | 3NA3136-6 | 3RT1056 | 3RT1056 | 3RT2046 | 3RT2047 | 3RT2047 | |
| 3RW5534 | 3NA3244-6 | 3RT1054 | 3RT1054 | 3NA3244-6 | 3RT1064 | 3RT1064 | 3RT1054 | 3RT1054 | 3RT1054 | |
| 3RW5535 | 3NA3244-6 | 3RT1055 | 3RT1055 | 3NA3244-6 | 3RT1065 | 3RT1065 | 3RT1055 | 3RT1055 | 3RT1055 | |
| 3RW5536 | 3NA3365-6 | 3RT1056 | 3RT1064 | 3NA3365-6 | 3RT1066 | 3RT1075 | 3RT1056 | 3RT1064 | 3RT1064 | |
| 3RW5543 | 2 x 3NA3354-6 | 3RT1064 | 3RT1064 | 2 x 3NA3354-6 | 3RT1075 | 3RT1075 | 3RT1064 | 3RT1064 | 3RT1064 | |
| 3RW5544 | 2 x 3NA3354-6 | 3RT1065 | 3RT1065 | 2 x 3NA3354-6 | 3RT1076 | 3RT1076 | 3RT1065 | 3RT1065 | 3RT1065 | |
| 3RW5545 | 2 x 3NA3365-6 | 3RT1075 | 3RT1075 | 2 x 3NA3365-6 | 3TF68 | 3TF68 | 3RT1075 | 3RT1075 | 3RT1075 | |
| 3RW5546 | 2 x 3NA3365-6 | 3RT1075 | 3RT1075 | 2 x 3NA3365-6 | 3TF69 | 3TF69 | 3RT1075 | 3RT1075 | 3RT1075 | |
| 3RW5547 | 2 x 3NA3365-6 | 3RT1076 | 3RT1276 | 2 x 3NA3365-6 | 3TF69 | 3TF69 | 3RT1076 | 3RT1276 | 3RT1276 | |
| 3RW5548 | 2 x 3NA3365-6 | 3TF68 | 3TF68 | 2 x 3NA3365-6 | -- | -- | 3TF68 | 3TF68 | 3TF68 | |
| 3RW5552 | 2 x 3NA3365-6 | 3TF68 | 3TF69 | -- | -- | -- | 3TF68 | 3TF69 | 3TF69 | |
| 3RW5553 | 2 x 3NA3365-6 | 3TF69 | 3TF69 | -- | -- | -- | 3TF69 | 3TF69 | 3TF69 | |
| 3RW5554 | 2 x 3NA3365-6 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 3RW5556 | 3 x 3NA3365-6 | -- | -- | -- | -- | -- | -- | -- | -- | |
| 3RW5558 | 3 x 3NA3365-6 | -- | -- | -- | -- | -- | -- | -- | -- | |

Note:

The specified short-circuit breaking capacities I_{qk} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

In inside-delta circuits, motor feeders with soft starters can only be operated in systems with up to 600 V.

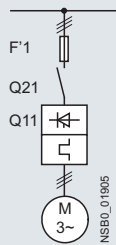
Motor feeders according to IEC with 3NE1/3NB3 SITOR fuses

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 6/11](#).



| Soft starters | gR class fuse | Line contactor (optional) | |
|--------------------------|---|---------------------------|-------------------------|
| Q11 | for systems up to 690 V | for systems up to 480 V | for systems up to 690 V |
| Type | F'1 | Q21 | Q21 |
| Type | Type | Type | Type |
| Type of coordination "2" | Inline circuit Toc 2 | | |
| 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 | 3RT2027 | 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 | 3NE1230-2 ¹⁾ | 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 |
| 3RW5552 | 3NB3350-1KK26 | 3TF68 | 3TF69 |
| 3RW5553 | 3NB3351-1KK26 | 3TF69 | 3TF69 |
| 3RW5554 | 3NB3351-1KK26 | -- | -- |
| 3RW5556 | 3NB3354-1KK26 | -- | -- |
| 3RW5558 | 3NB3357-1KK26 | -- | -- |

¹⁾ For systems up to 500 V.

Note:

The specified short-circuit breaking capacities I_{q} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

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 6/26](#)).

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > General data

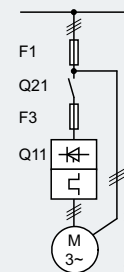
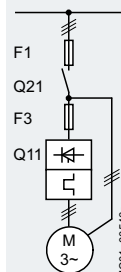
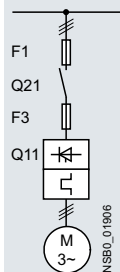
Motor feeders according to IEC with 3NE8 / 3NE3 / 3NC3 fuses

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 6/11.



| 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) | | | |
| Q11 Type | 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 |
| Type of coordination "2" | F1 | F3 | Q21 | Q21 | F1 | F3 | Q21 | Q21 | Q21 | Q21 |
| Type | Type | Type | Type | Type | Type | Type | Type | Type | Type | Type |
| 3RW5513 | 3NA3820-6 | 3NE8017-1 | 3RT2025 | 3RT2025 | 3NA3820-6 | 3NE8017-1 | 3RT2027 | 3RT2035 | 3RT2025 | 3RT2025 |
| 3RW5514 | 3NA3820-6 | 3NE8020-1 | 3RT2026 | 3RT2027 | 3NA3820-6 | 3NE8020-1 | 3RT2027 | 3RT2037 | 3RT2026 | 3RT2027 |
| 3RW5515 | 3NA3822-6 | 3NE8021-1 | 3RT2027 | 3RT2037 | 3NA3822-6 | 3NE8021-1 | 3RT2036 | 3RT2037 | 3RT2027 | 3RT2037 |
| 3RW5516 | 3NA3824-6 | 3NE8022-1 | 3RT2035 | 3RT2037 | 3NA3824-6 | 3NE8022-1 | 3RT2037 | 3RT2038 | 3RT2035 | 3RT2037 |
| 3RW5517 | 3NA3824-6 | 3NE8024-1 | 3RT2035 | 3RT2037 | 3NA3824-6 | 3NE8024-1 | 3RT2038 | 3RT2046 | 3RT2035 | 3RT2037 |
| 3RW5521 | 3NA3824-6 | 3NE8021-1 | 3RT2027 | 3RT2037 | 3NA3824-6 | 3NE8021-1 | 3RT2036 | 3RT2037 | 3RT2027 | 3RT2037 |
| 3RW5524 | 3NA3824-6 | 3NE8024-1 | 3RT2036 | 3RT2037 | 3NA3824-6 | 3NE8024-1 | 3RT2046 | 3RT2047 | 3RT2036 | 3RT2037 |
| 3RW5525 | 3NA3830-6 | 3NE3227 | 3RT2037 | 3RT2046 | 3NA3830-6 | 3NE3227 | 3RT2047 | 3RT1054 | 3RT2037 | 3RT2046 |
| 3RW5526 | 3NA3132-6 | 3NE3227 | 3RT2038 | 3RT2046 | 3NA3132-6 | 3NE3227 | 3RT1055 | 3RT1055 | 3RT2038 | 3RT2046 |
| 3RW5527 | 3NA3136-6 | 3NE3227 | 3RT2046 | 3RT2047 | 3NA3136-6 | 3NE3227 | 3RT1056 | 3RT1056 | 3RT2046 | 3RT2047 |
| 3RW5534 | 3NA3244-6 | 3NE3231 | 3RT1054 | 3RT1054 | 3NA3244-6 | 3NE3231 | 3RT1064 | 3RT1064 | 3RT1054 | 3RT1054 |
| 3RW5535 | 3NA3244-6 | 3NE3233 | 3RT1055 | 3RT1055 | 3NA3244-6 | 3NE3233 | 3RT1065 | 3RT1065 | 3RT1055 | 3RT1055 |
| 3RW5536 | 3NA3365-6 | 3NE3334-0B | 3RT1056 | 3RT1064 | 3NA3365-6 | 3NE3334-0B | 3RT1066 | 3RT1075 | 3RT1056 | 3RT1064 |
| 3RW5543 | 2 x 3NA3354-6 | 3NE3333 | 3RT1064 | 3RT1064 | 2 x 3NA3354-6 | 3NE3333 | 3RT1075 | 3RT1075 | 3RT1064 | 3RT1064 |
| 3RW5544 | 2 x 3NA3354-6 | 3NE3335 | 3RT1065 | 3RT1065 | 2 x 3NA3354-6 | 3NE3335 | 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 | 3NE3340-8 | 3RT1076 | 3RT1276 | 2 x 3NA3365-6 | 3NE3340-8 | 3TF69 | 3TF69 | 3RT1076 | 3RT1276 |
| 3RW5548 | 2 x 3NA3365-6 | 3NC3342-1U | 3TF68 | 3TF68 | 2 x 3NA3365-6 | 3NC3342-1U | -- | -- | 3TF68 | 3TF68 |
| 3RW5552 | 2 x 3NA3365-6 | 3NC3343-1U | 3TF68 | 3TF69 | -- | 3NC3343-1U | -- | -- | 3TF68 | 3TF69 |
| 3RW5553 | 2 x 3NA3365-6 | 3NC3343-1U | 3TF69 | 3TF69 | -- | 3NC3343-1U | -- | -- | 3TF69 | 3TF69 |
| 3RW5554 | 2 x 3NA3365-6 | 3NC3343-1U | -- | -- | -- | 3NC3343-1U | -- | -- | -- | -- |
| 3RW5556 | 3 x 3NA3365-6 | 3 x 3NE3340-8 | -- | -- | -- | 3 x 3NE3340-8 | -- | -- | -- | -- |
| 3RW5558 | 3 x 3NA3365-6 | 3 x 3NE3340-8 | -- | -- | -- | 3 x 3NE3340-8 | -- | -- | -- | -- |

Note:

The specified short-circuit breaking capacities I_{q} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2 motor starter protectors or 3VA circuit breakers can also be used, possibly with reduced short-circuit breaking capacity (see page 6/23). 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.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > General data

Reversing operation with reversing contactors

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/11](#).

(For an example circuit, [see 3RW55 Equipment Manual, Appendix A.3](#))

| Soft starters | Reversing contactor assembly | | For 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 | 3RA2327 | 3RA2337 | 3RT2027 | 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 |
| 3RW5552 | -- | -- | 3TF68 | 3TF69 |
| 3RW5553 | -- | -- | 3TF69 | 3TF69 |
| 3RW5554 | -- | -- | -- | -- |
| 3RW5556 | -- | -- | -- | -- |
| 3RW5558 | -- | -- | -- | -- |

DC braking with braking contactors

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/11](#).

(For an example circuit, [see 3RW55 Equipment Manual, Appendix A.3](#))

| Soft starters | DC braking contactor | DC braking contactor assembly | | for systems up to 690 V | |
|----------------|---|---|--------------------------------|--------------------------------|--------------------------------|
| | for systems up to 400 V with 2 NC contacts + 2 NO contacts parallel | for systems up to 480 V with 3 NO contacts parallel | with 3 NO contacts parallel | with 3 NO contacts parallel | 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 | 3RT2526 | 3RT2015 | 3RT2025 | 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 |
| 3RW5552 | -- | 3RT1065 | 3RT1075 | 3RT1065 | 3RT1075 |
| 3RW5553 | -- | 3RT1065 | 3RT1075 | 3RT1065 | 3RT1075 |
| 3RW5554 | -- | 3RT1466 | 3RT1076 | 3RT1466 | 3RT1076 |
| 3RW5556 | -- | 3RT1476 | 3TF68 | 3RT1476 | 3TF68 |
| 3RW5558 | -- | 3RT1476 | 3TF69 | 3RT1476 | 3TF69 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > Inline circuit **IE3/IE4 ready**

Selection and ordering data

For normal starting (CLASS 10E)



3RW551.



3RW552.

| 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 | 2 | 3 | 7.5 | -- | 5 | 3RW5513-□HA□4 | | 1 | 1 unit | 42S |
| 18 | 4 | 7.5 | -- | -- | 15.9 | 3 | 5 | 10 | -- | 5 | 3RW5514-□HA□4 | | 1 | 1 unit | 42S |
| 25 | 5.5 | 11 | -- | -- | 22.3 | 5 | 7.5 | 15 | -- | 5 | 3RW5515-□HA□4 | | 1 | 1 unit | 42S |
| 32 | 7.5 | 15 | -- | -- | 28.4 | 7.5 | 10 | 20 | -- | 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 | 10 | 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 | 25 | 50 | -- | 5 | 3RW5526-□HA□4 | | 1 | 1 unit | 42S |
| 93 | 22 | 45 | -- | -- | 82.5 | 25 | 30 | 60 | -- | 5 | 3RW5527-□HA□4 | | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded 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 6/8.

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Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters
High Performance soft starters

IE3/IE4 ready 3RW55 soft starters > Inline circuit

For normal starting (CLASS 10E)



3RW553.



3RW554.



3RW555.

| 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 | 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 | 40 | 40 | 100 | -- | 5 | 3RW5535-□HA□4 | | 1 | 1 unit | 42S |
| 171 | 45 | 90 | -- | -- | 153 | 50 | 50 | 100 | -- | 5 | 3RW5536-□HA□4 | | 1 | 1 unit | 42S |
| 210 | 55 | 110 | -- | -- | 186 | 60 | 60 | 150 | -- | 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 | 150 | 150 | 350 | -- | 5 | 3RW5547-□HA□4 | | 1 | 1 unit | 42S |
| 570 | 160 | 315 | -- | -- | 504 | 150 | 200 | 400 | -- | 5 | 3RW5548-□HA□4 | | 1 | 1 unit | 42S |
| 630 | 200 | 355 | -- | -- | 561 | 200 | 200 | 450 | -- | 15 | 3RW5552-□HA□4 | | 1 | 1 unit | 42S |
| 720 | 200 | 400 | -- | -- | 641 | 200 | 250 | 500 | -- | 15 | 3RW5553-□HA□4 | | 1 | 1 unit | 42S |
| 840 | 250 | 450 | -- | -- | 748 | 250 | 300 | 600 | -- | 15 | 3RW5554-□HA□4 | | 1 | 1 unit | 42S |
| 1 100 | 315 | 560 | -- | -- | 979 | 350 | 400 | 850 | -- | 15 | 3RW5556-□HA□4 | | 1 | 1 unit | 42S |
| 1 280 | 400 | 710 | -- | -- | 1 139 | 400 | 450 | 1 000 | -- | 15 | 3RW5558-□HA□4 | | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

Spring-loaded 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 6/8.

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Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > Inline circuit **IE3/IE4 ready**

For normal starting (CLASS 10E)



3RW551.



3RW552.

| 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 | 2 | 3 | 7.5 | 10 | 5 | 3RW5513-□HA□5 | | 1 | 1 unit | 42S |
| 18 | 4 | 7.5 | 11 | -- | 15.9 | 3 | 5 | 10 | 10 | 5 | 3RW5514-□HA□5 | | 1 | 1 unit | 42S |
| 25 | 5.5 | 11 | 15 | -- | 22.3 | 5 | 7.5 | 15 | 20 | 5 | 3RW5515-□HA□5 | | 1 | 1 unit | 42S |
| 32 | 7.5 | 15 | 18.5 | -- | 28.4 | 7.5 | 10 | 20 | 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 | 7.5 | 15 | 20 | 5 | 3RW5521-□HA□6 | | 1 | 1 unit | 42S |
| 47 | 11 | 22 | 30 | 45 | 41.6 | 10 | 10 | 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 | 25 | 50 | 60 | 5 | 3RW5526-□HA□6 | | 1 | 1 unit | 42S |
| 93 | 22 | 45 | 55 | 90 | 82.5 | 25 | 30 | 60 | 75 | 5 | 3RW5527-□HA□6 | | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

Screw terminals

Spring-loaded terminals

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 6/8.

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Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters
High Performance soft starters

IE3/IE4 ready 3RW55 soft starters > Inline circuit

For normal starting (CLASS 10E)



3RW553.



3RW554.



3RW555.

| 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 | | | | | | | | | |
| A | At 230 V | At 400 V | At 500 V | At 690 V | A | At 200/208 V | At 220/230 V | At 460/480 V | At 575/600 V | d | | | | | |
| Operational voltage 200 ... 690 V | | | | | | | | | | | | | | | |
| 113 | 30 | 55 | 75 | 110 | 101 | 30 | 30 | 75 | 100 | 5 | 3RW5534-□HA□6 | | 1 | 1 unit | 42S |
| 143 | 37 | 75 | 90 | 132 | 128 | 40 | 40 | 100 | 125 | 5 | 3RW5535-□HA□6 | | 1 | 1 unit | 42S |
| 171 | 45 | 90 | 110 | 160 | 153 | 50 | 50 | 100 | 150 | 5 | 3RW5536-□HA□6 | | 1 | 1 unit | 42S |
| 210 | 55 | 110 | 132 | 200 | 186 | 60 | 60 | 150 | 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 | 150 | 150 | 350 | 450 | 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 |
| 630 | 200 | 355 | 400 | 630 | 561 | 200 | 200 | 450 | 600 | 15 | 3RW5552-□HA□6 | | 1 | 1 unit | 42S |
| 720 | 200 | 400 | 500 | 710 | 641 | 200 | 250 | 500 | 700 | 15 | 3RW5553-□HA□6 | | 1 | 1 unit | 42S |
| 840 | 250 | 450 | 560 | 800 | 748 | 250 | 300 | 600 | 800 | 15 | 3RW5554-□HA□6 | | 1 | 1 unit | 42S |
| 1 100 | 315 | 560 | 710 | 1 000 | 979 | 350 | 400 | 850 | 1 100 | 15 | 3RW5556-□HA□6 | | 1 | 1 unit | 42S |
| 1 280 | 400 | 710 | 900 | 1 200 | 1 139 | 400 | 450 | 1 000 | 1 250 | 15 | 3RW5558-□HA□6 | | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

Spring-loaded 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 690 V:
- Sizes 3 and 4: Standard delivery time SD = 2 days (d).
 - Size 5: Standard delivery time SD = 5 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/8.

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Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > Inside-delta circuit **IE3/IE4 ready**

Selection and ordering data

For normal starting (CLASS 10E)



3RW551.



3RW552.

| 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 | 3RW5513-□HA□4 | 1 | 1 unit | 42S |
| 31.5 | 7.5 | 15 | -- | 28 | 7.5 | 7.5 | 20 | -- | 5 | 3RW5514-□HA□4 | 1 | 1 unit | 42S |
| 43.3 | 11 | 18.5 | -- | 39 | 10 | 10 | 25 | -- | 5 | 3RW5515-□HA□4 | 1 | 1 unit | 42S |
| 55.4 | 15 | 22 | -- | 49 | 15 | 15 | 30 | -- | 5 | 3RW5516-□HA□4 | 1 | 1 unit | 42S |
| 65.8 | 18.5 | 30 | -- | 58 | 15 | 20 | 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 | 30 | 30 | 75 | -- | 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-loaded 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 6/8.

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Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

IE3/IE4 ready 3RW55 soft starters > Inside-delta circuit

For normal starting (CLASS 10E)


3RW553.



3RW554.



3RW555.

| 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 | 3RW5534-□HA□4 | | 1 | 1 unit | 42S |
| 248 | 75 | 132 | -- | 222 | 75 | 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 |
| 364 | 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 |
| 546 | 160 | 315 | -- | 483 | 150 | 200 | 400 | -- | 5 | 3RW5545-□HA□4 | | 1 | 1 unit | 42S |
| 641 | 200 | 355 | -- | 568 | 200 | 200 | 450 | -- | 5 | 3RW5546-□HA□4 | | 1 | 1 unit | 42S |
| 814 | 250 | 400 | -- | 721 | 250 | 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 |
| 1 091 | 355 | 630 | -- | 972 | 350 | 400 | 850 | -- | 15 | 3RW5552-□HA□4 | | 1 | 1 unit | 42S |
| 1 247 | 400 | 710 | -- | 1 110 | 400 | 450 | 950 | -- | 15 | 3RW5553-□HA□4 | | 1 | 1 unit | 42S |
| 1 454 | 450 | 800 | -- | 1 295 | 450 | 550 | 1 150 | -- | 15 | 3RW5554-□HA□4 | | 1 | 1 unit | 42S |
| 1 905 | 560 | 1 000 | -- | 1 695 | 600 | 700 | 1 500 | -- | 15 | 3RW5556-□HA□4 | | 1 | 1 unit | 42S |
| 2 217 | 710 | 1 200 | -- | 1 973 | 700 | 850 | 1 700 | -- | 15 | 3RW5558-□HA□4 | | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

 Spring-loaded 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 6/8.

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Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > Inside-delta circuit **IE3/IE4 ready**

For normal starting (CLASS 10E)



3RW551.



3RW552.

| 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 | 3RW5513-□HA□5 | 1 | 1 unit | 42S |
| 31.5 | 7.5 | 15 | 18.5 | 28 | 7.5 | 7.5 | 20 | 25 | 5 | 3RW5514-□HA□5 | 1 | 1 unit | 42S |
| 43.3 | 11 | 18.5 | 22 | 39 | 10 | 10 | 25 | 30 | 5 | 3RW5515-□HA□5 | 1 | 1 unit | 42S |
| 55.4 | 15 | 22 | 30 | 49 | 15 | 15 | 30 | 40 | 5 | 3RW5516-□HA□5 | 1 | 1 unit | 42S |
| 65.8 | 18.5 | 30 | 37 | 58 | 15 | 20 | 40 | 50 | 5 | 3RW5517-□HA□5 | 1 | 1 unit | 42S |
| 43.3 | 11 | 18.5 | 22 | 39 | 10 | 10 | 25 | 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 | 30 | 30 | 75 | 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-loaded 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 6/8.

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Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

IE3/IE4 ready 3RW55 soft starters > Inside-delta circuit

For normal starting (CLASS 10E)


3RW553.



3RW554.



3RW555.

| 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 | | | | d | | | | | |
| | 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 | | | | | | |
| Operational voltage 200 ... 600 V | | | | | | | | | | | | | | |
| 196 | 55 | 110 | 132 | 175 | 50 | 60 | 125 | 150 | 5 | 3RW5534-□HA□6 | | 1 | 1 unit | 42S |
| 248 | 75 | 132 | 160 | 222 | 75 | 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 |
| 364 | 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 |
| 546 | 160 | 315 | 355 | 483 | 150 | 200 | 400 | 500 | 5 | 3RW5545-□HA□6 | | 1 | 1 unit | 42S |
| 641 | 200 | 355 | 450 | 568 | 200 | 200 | 450 | 600 | 5 | 3RW5546-□HA□6 | | 1 | 1 unit | 42S |
| 814 | 250 | 400 | 500 | 721 | 250 | 250 | 600 | 800 | 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 |
| 1 091 | 355 | 630 | 710 | 972 | 350 | 400 | 850 | 1 050 | 15 | 3RW5552-□HA□6 | | 1 | 1 unit | 42S |
| 1 247 | 400 | 710 | 800 | 1 110 | 400 | 450 | 950 | 1 250 | 15 | 3RW5553-□HA□6 | | 1 | 1 unit | 42S |
| 1 454 | 450 | 800 | 900 | 1 295 | 450 | 550 | 1 150 | 1 450 | 15 | 3RW5554-□HA□6 | | 1 | 1 unit | 42S |
| 1 905 | 560 | 1 000 | 1 200 | 1 695 | 600 | 700 | 1 500 | 1 900 | 15 | 3RW5556-□HA□6 | | 1 | 1 unit | 42S |
| 2 217 | 710 | 1 200 | 1 500 | 1 973 | 700 | 850 | 1 700 | 2 200 | 15 | 3RW5558-□HA□6 | | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

 Spring-loaded 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:
- Sizes 3 and 4: Standard delivery time SD = 2 days (d).
 - Size 5: Standard delivery time SD = 5 days (d).

Note:

For the constraints for the motor outputs specified here, see page 6/8.

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Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 soft starters > Accessories

Selection and ordering data

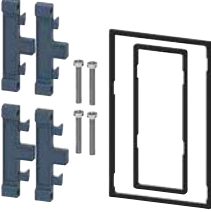


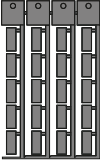

| Product designation | Manufacturer's Article No. of the soft starter | Type of product | Application | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|--|---|--|----|-------------|----------------------|-------------------|--------|-----|
| Fan covers | | | | | | | | | |
|  3RW5983-0FC00 | Fan cover | 3RW551 (1x), 3RW552 (2x), 3RW553 (2x) | -- | -- | ▶ | 3RW5983-0FC00 | 1 | 1 unit | 42S |
| | | 3RW554 (1x) | -- | -- | ▶ | 3RW5984-0FC00 | 1 | 1 unit | 42S |
| | | 3RW555 (3x) | -- | -- | ▶ | 3RW5985-0FC00 | 1 | 1 unit | 42S |
| Terminal covers | | | | | | | | | |
|  3RW5983-0TC20 | Terminal cover | 3RW552 (2x), 3RW553 (2x) | -- | -- | ▶ | 3RW5983-0TC20 | 1 | 1 unit | 42S |
| | | 3RW554 (2x) | -- | -- | ▶ | 3RW5984-0TC20 | 1 | 1 unit | 42S |
|  3RW5984-0TC20 | | | | | | | | | |
| Enclosure components | | | | | | | | | |
|  3RW5950-0GL20 | Hinged cover | 3RW55 | Without cutout | -- | ▶ | 3RW5950-0GL20 | 1 | 1 unit | 42S |
| Communication modules | | | | | | | | | |
|  3RW5980-0CS00 | Communication module | 3RW55 | PROFINET High Feature with integral switch | -- | ▶ | 3RW5950-0CH00 | 1 | 1 unit | 42S |
| | | | PROFINET Standard | -- | ▶ | 3RW5980-0CS00 | 1 | 1 unit | 42S |
| | | | PROFIBUS | -- | ▶ | 3RW5980-0CP00 | 1 | 1 unit | 42S |
|  3RW5980-0CE00 | | | EtherNet/IP | -- | ▶ | 3RW5980-0CE00 | 1 | 1 unit | 42S |
| | | | Modbus RTU | -- | ▶ | 3RW5980-0CR00 | 1 | 1 unit | 42S |
|  3RW5980-0CR00 | | | Modbus TCP | -- | ▶ | 3RW5980-0CT00 | 1 | 1 unit | 42S |

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

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters
High Performance soft starters

3RW55 soft starters > 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 | | | | | | | | | |
|  | IP65 door mounting kit for HMI modules | 3RW55 | IP65 | For HMI modules | ▶ | 3RW5980-0HD00 | 1 | 1 unit | 42S |
| 3RW5980-0HD00 | | | | | | | | | |
| Connecting cables | | | | | | | | | |
|  | HMI connecting cable | 3RW55 | 5 m, round | For door mounting | ▶ | 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 | |
| 3UF793.-0BA00-0 | | | | | | | | | |
| Further accessories | | | | | | | | | |
|  | Push-in lugs for wall mounting | -- | Two lugs are required per device | For HMI modules and communication modules | 2 | 3ZY1311-0AA00 | 1 | 10 units | 41L |
| 3ZY1311-0AA00 | | | | | | | | | |
| Blank labels | | | | | | | | | |
|  | Unit labeling plates¹⁾ | -- | 20 mm x 7 mm, titanium gray | For SIRIUS devices | 20 | 3RT2900-1SB20 | 100 | 340 units | 41B |
| 3RT2900-1SB20 | | | | | | | | | |
| 3RW55 starter kit | | | | | | | | | |
|  | SIRIUS 3RW55 starter kit | -- | Including 3RW55 soft starter 13 A, 200 ... 480 V, 24 V AC/DC Soft Starter ES V15.1, 24 V power supply unit, connection cable and RJ45 network cable | | 5 | 3RW5951-1ES04 | 1 | 1 unit | 42S |
| 3RW5951-1ES04 | | | | | | | | | |

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

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe soft starters > General data

Overview

More information

Homepage, see www.siemens.com/sirius-soft-starter

Industry Mall, see www.siemens.com/product?3RW55Failsafe

TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=3rw55>

Industry Online Support (SIOS) topic page, see <https://support.industry.siemens.com/cs/ww/en/view/109747404>

Simulation Tool for Soft Starters (STS), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

SIRIUS Soft Starter ES (TIA Portal), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/24230/dl>

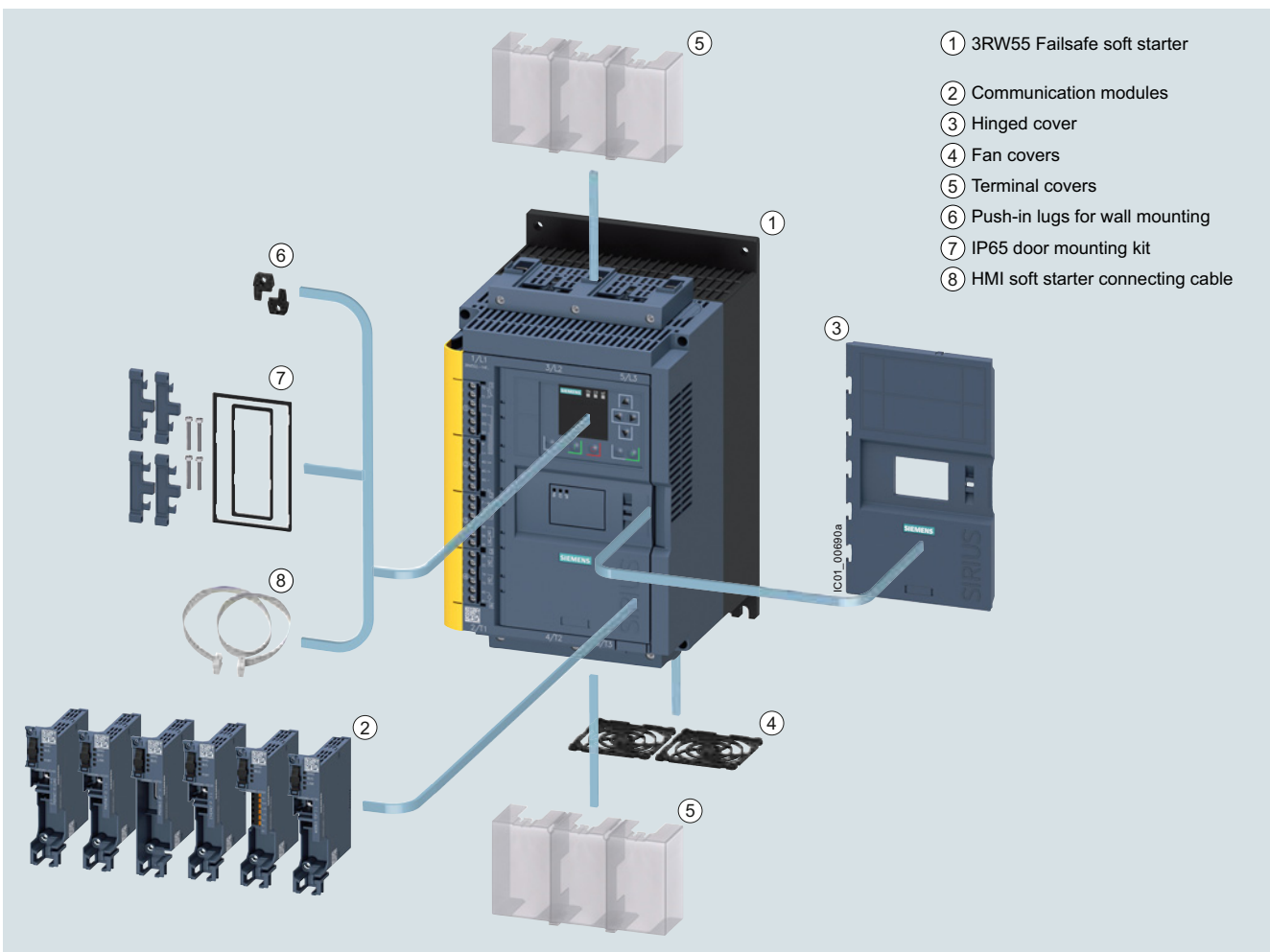


SIRIUS 3RW55 Failsafe soft starters device family

Equipped with the utmost functionality, the SIRIUS 3RW55 Failsafe 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 innovative 3RW55 Failsafe soft starter features an integrated fail-safe digital input for directly connecting the EMERGENCY STOP, and thus covers SIL 1 STO applications. The HMI (with color display, local interface and a slot for micro SD memory card) and plug-in communication modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) ensure maximum flexibility.

With their modern hybrid switching technology, the 3RW55 Failsafe soft starters offer efficient switching for long-term, energy-saving use.



SIRIUS 3RW55 Failsafe High Performance soft starter with accessories (see page 6/52)

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe soft starters > General data

Benefits



| Product characteristics / function | Performance features / benefits |
|--|--|
| Automatic parameterization | Extremely easy commissioning and reliability even under changing load conditions |
| Hybrid switching technology and 3-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 |
| Removable HMI with color display, local interface, slot for micro SD memory 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 |
| Certified according to ATEX/IECEX directive | Suitable for the starting of explosion-proof motors |
| Fail-safe disconnection up to SIL 3 - PL e / STO | Reduced costs and space requirements thanks to direct wiring of the EMERGENCY STOP mushroom pushbutton to the soft starter for SIL 1 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

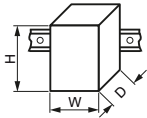
3RW55 Failsafe soft starters > General data

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/25776/td>
 Equipment Manual, see
<https://support.industry.siemens.com/cs/ww/en/view/109753752>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/25776/faq>
 Simulation Tool for Soft Starters (STS), see page 6/9 or
<https://support.industry.siemens.com/cs/ww/en/view/101494917>

| Type | | 3RW551.-.HF.4 | 3RW552.-.HF.4 3RW553.-.HF.4 | 3RW554.-.HF.4 |
|---|---|--|---|-----------------|
| Installation/fixing/dimensions | | | | |
| Width x height x depth | mm | 170 × 275 × 152 | 185 × 306 × 203 | 210 × 393 × 203 |
| |  | | | |
| Type of mounting | | 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 | 2 000 | | |
| Degree of protection IP on the front acc. to IEC 60529 | | IP20 | IP00 (IP20 with cover) | |
| Touch protection on the front acc. to IEC 60529 | | Finger-safe for vertical touching from the front | Finger-safe for vertical touching from the front with cover | |

Ambient conditions

Ambient temperature

- During operation²⁾ °C -25 ... +60
- During storage and transport °C -40 ... +80

Environmental category according to IEC 60721

- During operation 3K6 (no ice formation, only occasional 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 get into the devices), 1M4
- During transport 2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)

¹⁾ Derating from 1 000 m, see characteristic curve on page 6/8.

²⁾ Note derating above 40 °C.

| Type | | 3RW55.-.HF04 | 3RW55.-.HF14 |
|--|----|--|--------------|
| Control circuit/control | | | |
| Control supply voltage | | | |
| • At AC/DC | V | 24/24 | --/-- |
| • At AC | V | -- | 110 ... 250 |
| Relative negative tolerance/relative positive tolerance of the control supply voltage | | | |
| • At AC | % | -20/20 | -15/10 |
| • At DC | % | -20/20 | --/-- |
| 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.-.HF.4 |
|--|----|--------------|
| Power electronics | | |
| Operational voltage, rated value | V | 200 ... 480 |
| • Relative negative tolerance/relative positive tolerance | % | -15/10 |
| Operational voltage for inside-delta circuit, rated value | V | 200 ... 480 |
| • Relative negative tolerance/relative positive tolerance | % | -15/10 |
| Operating frequency | 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 .

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe soft starters > General data

| Type | | 3RW5513 | 3RW5514 | 3RW5515 | 3RW5516 | 3RW5517 |
|--|-----|--------------|--------------|--------------|----------------|----------------|
| Rated operational current I_e | A | 13 | 18 | 25 | 32 | 38 |
| Power electronics | | | | | | |
| Load rating with rated operational current I_e | | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 25/22.3/19.6 | 38/33.5/30.5 |
| Permissible rated motor current and starts/h | | | | | | |
| Normal starting (CLASS 10A) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 32/28.4/26 | 38/33.5/30.5 |
| • 300% I_M | | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 43 | 43 | 43 |
| - Start-up time 10 s | 1/h | 18 | 18 | 18 | 18 | 18 |
| • 350% I_M | | | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | 28 | 28 | 28 |
| - Start-up time 10 s | 1/h | 10 | 10 | 10 | 10 | 10 |
| Normal starting (CLASS 10E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 32/28.4/26 | 38/33.5/30.5 |
| • 300% I_M | | | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 21 | 21 | 21 |
| - Start-up time 20 s | 1/h | 8 | 8 | 8 | 8 | 8 |
| • 350% I_M | | | | | | |
| - Start-up time 10 s | 1/h | 13 | 13 | 13 | 13 | 13 |
| - Start-up time 20 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| Heavy starting (CLASS 20E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 29.6/27.2/23.6 | 33.5/30.5/27.5 |
| • 300% I_M | | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| • 350% I_M | | | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Heavy starting (CLASS 30E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 26/23.6/21.2 | 29/26/23 |
| • 300% I_M | | | | | | |
| - Start-up time 30 s | 1/h | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 60 s | 1/h | 3 | 3 | 3 | 3 | 3 |
| • 350% I_M | | | | | | |
| - Start-up time 30 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| - Start-up time 60 s | 1/h | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| Adjustable rated motor current I_M | | | | | | |
| • Minimum/maximum | A | 2.5/13 | 3.5/18 | 5/25 | 6.5/32 | 7.5/38 |
| • Minimum/maximum in inside-delta circuits | A | 4.3/22.5 | 6.1/31.1 | 8.7/43.3 | 11.3/55.4 | 13/65.8 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe soft starters > General data

| Type | | 3RW5524 | 3RW5525 | 3RW5526 | 3RW5527 |
|--|-----|--------------|--------------|----------|--------------|
| Rated operational current I_e | A | 47 | 63 | 77 | 93 |
| Power electronics | | | | | |
| Load rating with rated operational current I_e | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a | | 47/41.6/36.2 | 63/55.5/50.5 | 77/68/62 | 93/82.5/75.5 |
| Permissible rated motor current and starts/h | | | | | |
| Normal starting (CLASS 10A) | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 47/41.6/36.2 | 63/55.5/50.5 | 77/68/62 | 93/82.5/75.5 |
| • 300% I_M | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 43 | 43 |
| - Start-up time 10 s | 1/h | 18 | 18 | 18 | 18 |
| • 350% I_M | | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | 28 | 28 |
| - Start-up time 10 s | 1/h | 10 | 10 | 10 | 10 |
| Normal starting (CLASS 10E) | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 47/41.6/36.2 | 63/55.5/50.5 | 77/68/62 | 93/82.5/75.5 |
| • 300% I_M | | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 21 | 21 |
| - Start-up time 20 s | 1/h | 8 | 8 | 8 | 8 |
| • 350% I_M | | | | | |
| - Start-up time 10 s | 1/h | 13 | 13 | 13 | 13 |
| - Start-up time 20 s | 1/h | 4 | 4 | 4 | 4 |
| Heavy starting (CLASS 20E) | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 47/41.6/36.2 | 63/55.5/50.5 | 77/68/62 | 93/82.5/75.5 |
| • 300% I_M | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 | 4 |
| • 350% I_M | | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2.5 | 0 | 0 | 0 |
| Heavy starting (CLASS 30E) | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 43.4/38/34.4 | 53/48/43 | 68/62/56 | 82.5/75.5/65 |
| • 300% I_M | | | | | |
| - Start-up time 30 s | 1/h | 7 | 7 | 7 | 7 |
| - Start-up time 60 s | 1/h | 3 | 3 | 3 | 3 |
| • 350% I_M | | | | | |
| - Start-up time 30 s | 1/h | 4 | 4 | 4 | 4 |
| - Start-up time 60 s | 1/h | 1.8 | 1.8 | 1.8 | 1.8 |
| Adjustable rated motor current I_M | | | | | |
| • Minimum/maximum | A | 10/47 | 13/63 | 16/77 | 19/93 |
| • Minimum/maximum in inside-delta circuits | A | 17.3/81.4 | 22.5/109 | 27.7/133 | 32.9/161 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe soft starters > General data

| Type | | 3RW5534 | 3RW5535 | 3RW5536 |
|--|-----|------------|-------------|-------------|
| Rated operational current I_e | A | 113 | 143 | 171 |
| Power electronics | | | | |
| Load rating with rated operational current I_e | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a | | 113/101/89 | 143/128/118 | 171/153/141 |
| Permissible rated motor current and starts/h | | | | |
| Normal starting (CLASS 10A) | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 113/101/89 | 143/128/118 | 171/153/141 |
| • 300% I_M | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 35 |
| - Start-up time 10 s | 1/h | 18 | 18 | 13 |
| • 350% I_M | | | | |
| - Start-up time 5 s | 1/h | 28 | 17 | 10 |
| - Start-up time 10 s | 1/h | 10 | 4 | 0 |
| Normal starting (CLASS 10E) | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 113/101/89 | 143/128/118 | 171/153/141 |
| • 300% I_M | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 14 |
| - Start-up time 20 s | 1/h | 8 | 7 | 4 |
| • 350% I_M | | | | |
| - Start-up time 10 s | 1/h | 13 | 4 | 0 |
| - Start-up time 20 s | 1/h | 4 | 0 | 0 |
| Heavy starting (CLASS 20E) | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 109/97/85 | 128/113/103 | 141/129/117 |
| • 300% I_M | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 |
| • 350% I_M | | | | |
| - Start-up time 20 s | 1/h | 7 | 6 | 6 |
| - Start-up time 40 s | 1/h | 0 | 0 | 0 |
| Heavy starting (CLASS 30E) | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 89/81/74 | 108/98/88 | 117/105/93 |
| • 300% I_M | | | | |
| - Start-up time 30 s | 1/h | 7 | 7 | 7 |
| - Start-up time 60 s | 1/h | 3 | 3 | 3 |
| • 350% I_M | | | | |
| - Start-up time 30 s | 1/h | 4 | 4 | 4 |
| - Start-up time 60 s | 1/h | 1.8 | 1.8 | 1.8 |
| Adjustable rated motor current I_M | | | | |
| • Minimum/maximum | A | 23/113 | 29/143 | 34/171 |
| • Minimum/maximum in inside-delta circuits | A | 39.8/195 | 50.2/247 | 58.9/296 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe soft starters > General data

| Type | | 3RW5543 | 3RW5544 | 3RW5545 | 3RW5546 | 3RW5547 | 3RW5548 |
|--|-----|-------------|-------------|-------------|-------------|-------------|-------------|
| Rated operational current I_e | A | 210 | 250 | 315 | 370 | 470 | 570 |
| Power electronics | | | | | | | |
| Load rating with rated operational current I_e | | | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a | A | 210/186/170 | 250/220/200 | 315/279/255 | 370/328/300 | 470/416/380 | 570/504/460 |
| Permissible rated motor current and starts/h | | | | | | | |
| Normal starting (CLASS 10A) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 210/186/170 | 250/220/200 | 315/279/255 | 370/328/300 | 470/416/380 | 570/504/460 |
| • 300% I_M | | | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 38 | 43 | 32 | 13 |
| - Start-up time 10 s | 1/h | 13 | 18 | 14 | 18 | 13 | 3 |
| • 350% I_M | | | | | | | |
| - Start-up time 5 s | 1/h | 14 | 28 | 19 | 28 | 19 | 4 |
| - Start-up time 10 s | 1/h | 0 | 10 | 5 | 10 | 6 | 0.4 |
| Normal starting (CLASS 10E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 210/186/170 | 250/220/200 | 315/279/255 | 370/328/300 | 470/416/380 | 551/490/445 |
| • 300% I_M | | | | | | | |
| - Start-up time 10 s | 1/h | 13 | 21 | 14 | 20 | 13 | 5 |
| - Start-up time 20 s | 1/h | 2 | 8 | 4 | 8 | 3 | -- |
| • 350% I_M | | | | | | | |
| - Start-up time 10 s | 1/h | 0 | 13 | 5 | 12 | 6 | 1 |
| - Start-up time 20 s | 1/h | 0 | 4 | 0 | 3 | 0.4 | -- |
| Heavy starting (CLASS 20E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 162/146/130 | 200/180/160 | 231/207/183 | 258/230/202 | 272/254/236 | 284/262/240 |
| • 300% I_M | | | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 | 4 | 4 | 4 |
| • 350% I_M | | | | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Heavy starting (CLASS 30E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 138/122/106 | 160/140/120 | 183/159/135 | 202/174/160 | 210/190/170 | 220/200/180 |
| • 300% I_M | | | | | | | |
| - Start-up time 30 s | 1/h | 7 | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 60 s | 1/h | 3 | 3 | 3 | 3 | 3 | 3 |
| • 350% I_M | | | | | | | |
| - Start-up time 30 s | 1/h | 4 | 4 | 4 | 4 | 4 | 4 |
| - Start-up time 60 s | 1/h | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 |
| Adjustable rated motor current I_M | | | | | | | |
| • Minimum/maximum | A | 42/210 | 50/250 | 63/315 | 74/370 | 94/470 | 114/570 |
| • Minimum/maximum in inside-delta circuits | A | 72.7/363 | 86.6/433 | 109.1/545 | 128.2/640 | 162.8/814 | 197.5/987 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters
High Performance soft starters


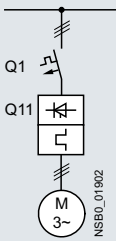
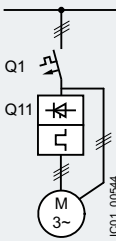
3RW55 Failsafe soft starters > General data

Motor feeders according to IEC with 3RV2 motor starter protectors or 3VA 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 6/11.

| Soft starters | Motor starter protectors | | | | Motor starter protectors | | | |
|--|--|-------------|--------------------|-------------|---|-------------|--------------------|-------------|
| | for 400 V systems | | for 480 V systems | | for 400 V systems | | for 480 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"  | 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 |
| 3RW5524 | 3RV2032-4JA10 | 65 | 3RV2032-4JA10 | 10 | 3RV2032-4RA10 | 65 | 3RV2032-4RA10 | 10 |
| 3RW5525 | 3VA2163-7MN32-0AA0 | 65 | 3VA2163-7MN32-0AA0 | 20 | 3VA2110-7MN32-0AA0 | 65 | 3VA2110-7MN32-0AA0 | 20 |
| 3RW5526 | 3VA2110-7MN32-0AA0 | 65 | 3VA2110-7MN32-0AA0 | 20 | 3VA2216-7MN32-0AA0 | 65 | 3VA2216-7MN32-0AA0 | 20 |
| 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:

The service factor and measurement inaccuracies, for example, have been taken into account for the selection of the specified motor starter protectors/circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe 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 6/11](#).

| Soft starters | Inline circuit | | Inside-delta circuit | | |
|--------------------------|--|---------------------------|--|---------------------------|---------------------------|
| | gG class fuse | Line contactor (optional) | gG class fuse | Line contactor (optional) | Line contactor (optional) |
| Q11 Type | F1 Type | Q21 Type | F1 Type | Q21 Type | Q21 Type |
| Type of coordination "1" | Type of coordination "1" TOC 1 | | Type of coordination "1" TOC 1 | | |
| 3RW5513 | 3NA3820-6 | 3RT2025 | 3NA3820-6 | 3RT2027 | 3RT2025 |
| 3RW5514 | 3NA3820-6 | 3RT2026 | 3NA3820-6 | 3RT2027 | 3RT2026 |
| 3RW5515 | 3NA3822-6 | 3RT2027 | 3NA3822-6 | 3RT2036 | 3RT2027 |
| 3RW5516 | 3NA3824-6 | 3RT2035 | 3NA3824-6 | 3RT2037 | 3RT2035 |
| 3RW5517 | 3NA3824-6 | 3RT2035 | 3NA3824-6 | 3RT2038 | 3RT2035 |
| 3RW5524 | 3NA3824-6 | 3RT2036 | 3NA3824-6 | 3RT2046 | 3RT2036 |
| 3RW5525 | 3NA3830-6 | 3RT2037 | 3NA3830-6 | 3RT2047 | 3RT2037 |
| 3RW5526 | 3NA3132-6 | 3RT2038 | 3NA3132-6 | 3RT1055 | 3RT2038 |
| 3RW5527 | 3NA3136-6 | 3RT2046 | 3NA3136-6 | 3RT1056 | 3RT2046 |
| 3RW5534 | 3NA3244-6 | 3RT1054 | 3NA3244-6 | 3RT1064 | 3RT1054 |
| 3RW5535 | 3NA3244-6 | 3RT1055 | 3NA3244-6 | 3RT1065 | 3RT1055 |
| 3RW5536 | 3NA3365-6 | 3RT1056 | 3NA3365-6 | 3RT1066 | 3RT1056 |
| 3RW5543 | 2 x 3NA3354-6 | 3RT1064 | 2 x 3NA3354-6 | 3RT1075 | 3RT1064 |
| 3RW5544 | 2 x 3NA3354-6 | 3RT1065 | 2 x 3NA3354-6 | 3RT1076 | 3RT1065 |
| 3RW5545 | 2 x 3NA3365-6 | 3RT1075 | 2 x 3NA3365-6 | 3TF68 | 3RT1075 |
| 3RW5546 | 2 x 3NA3365-6 | 3RT1075 | 2 x 3NA3365-6 | 3TF69 | 3RT1075 |
| 3RW5547 | 2 x 3NA3365-6 | 3RT1076 | 2 x 3NA3365-6 | 3TF69 | 3RT1076 |
| 3RW5548 | 2 x 3NA3365-6 | 3TF68 | 2 x 3NA3365-6 | – | 3TF68 |

Note:

The specified short-circuit breaking capacities I_{q} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

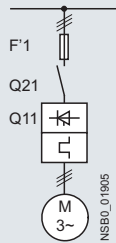
Motor feeders according to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection,
cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_{cs} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders
with soft starters, [see page 6/11](#).



| Soft starters | gR class fuse | Line contactor (optional) |
|--------------------------|---|---|
| Q11 Type | for systems up to 480 V F'1 Type | for systems up to 480 V Q21 Type |
| Type of coordination "2" | Inline circuit | |
| 3RW5513 | 3NE1815-0 | 3RT2025 |
| 3RW5514 | 3NE1802-0 | 3RT2026 |
| 3RW5515 | 3NE1817-0 | 3RT2027 |
| 3RW5516 | 3NE1818-0 | 3RT2035 |
| 3RW5517 | 3NE1820-0 | 3RT2035 |
| 3RW5524 | 3NE1021-2 | 3RT2036 |
| 3RW5525 | 3NE1022-0 | 3RT2037 |
| 3RW5526 | 3NE1224-0 | 3RT2038 |
| 3RW5527 | 3NE1224-0 | 3RT2046 |
| 3RW5534 | 3NE1225-0 | 3RT1054 |
| 3RW5535 | 3NE1227-0 | 3RT1055 |
| 3RW5536 | 3NE1230-0 | 3RT1056 |
| 3RW5543 | 3NE1230-2 | 3RT1064 |
| 3RW5544 | 3NE1331-0 | 3RT1065 |
| 3RW5545 | 3NE1334-2 | 3RT1075 |
| 3RW5546 | 3NE1334-2 | 3RT1075 |
| 3RW5547 | 3NE1436-2 | 3RT1076 |
| 3RW5548 | 3NE1437-2 | 3TF68 |

Note:

The specified short-circuit breaking capacities I_{cs} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

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 6/48](#)).

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe soft starters > General data

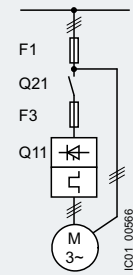
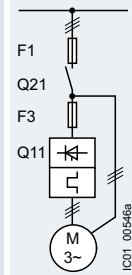
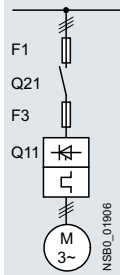
Motor feeders according to IEC with 3NE8 / 3NE3 / 3NC3 fuses

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 6/11](#).



| 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) | Line contactor (optional) |
| for systems up to 480 V | for systems up to 480 V | for systems up to 480 V | for systems up to 480 V | for systems up to 480 V | for systems up to 480 V | for systems up to 480 V in the supply cable | for systems up to 480 V in the delta |
| Q11 | F1 | F3 | Q21 | F1 | F3 | Q21 | Q21 |
| Type | Type | Type | Type | Type | Type | Type | Type |
| Type of coordination "2" | Type of coordination "2" | | | Type of coordination "2" | | | |
| 3RW5513 | 3NA3820-6 | 3NE8017-1 | 3RT2025 | 3NA3820-6 | 3NE8017-1 | 3RT2027 | 3RT2025 |
| 3RW5514 | 3NA3820-6 | 3NE8020-1 | 3RT2026 | 3NA3820-6 | 3NE8020-1 | 3RT2027 | 3RT2026 |
| 3RW5515 | 3NA3822-6 | 3NE8021-1 | 3RT2027 | 3NA3822-6 | 3NE8021-1 | 3RT2036 | 3RT2027 |
| 3RW5516 | 3NA3824-6 | 3NE8022-1 | 3RT2035 | 3NA3824-6 | 3NE8022-1 | 3RT2037 | 3RT2035 |
| 3RW5517 | 3NA3824-6 | 3NE8024-1 | 3RT2035 | 3NA3824-6 | 3NE8024-1 | 3RT2038 | 3RT2035 |
| 3RW5524 | 3NA3824-6 | 3NE8024-1 | 3RT2036 | 3NA3824-6 | 3NE8024-1 | 3RT2046 | 3RT2036 |
| 3RW5525 | 3NA3830-6 | 3NE3227 | 3RT2037 | 3NA3830-6 | 3NE3227 | 3RT2047 | 3RT2037 |
| 3RW5526 | 3NA3132-6 | 3NE3227 | 3RT2038 | 3NA3132-6 | 3NE3227 | 3RT1055 | 3RT2038 |
| 3RW5527 | 3NA3136-6 | 3NE3227 | 3RT2046 | 3NA3136-6 | 3NE3227 | 3RT1056 | 3RT2046 |
| 3RW5534 | 3NA3244-6 | 3NE3231 | 3RT1054 | 3NA3244-6 | 3NE3231 | 3RT1064 | 3RT1054 |
| 3RW5535 | 3NA3244-6 | 3NE3233 | 3RT1055 | 3NA3244-6 | 3NE3233 | 3RT1065 | 3RT1055 |
| 3RW5536 | 3NA3365-6 | 3NE3334-0B | 3RT1056 | 3NA3365-6 | 3NE3334-0B | 3RT1066 | 3RT1056 |
| 3RW5543 | 2 x 3NA3354-6 | 3NE3333 | 3RT1064 | 2 x 3NA3354-6 | 3NE3333 | 3RT1075 | 3RT1064 |
| 3RW5544 | 2 x 3NA3354-6 | 3NE3335 | 3RT1065 | 2 x 3NA3354-6 | 3NE3335 | 3RT1076 | 3RT1065 |
| 3RW5545 | 2 x 3NA3365-6 | -- | 3RT1075 | 2 x 3NA3365-6 | -- | 3TF68 | 3RT1075 |
| 3RW5546 | 2 x 3NA3365-6 | -- | 3RT1075 | 2 x 3NA3365-6 | -- | 3TF69 | 3RT1075 |
| 3RW5547 | 2 x 3NA3365-6 | 3NE3340-8 | 3RT1076 | 2 x 3NA3365-6 | 3NE3340-8 | 3TF69 | 3RT1076 |
| 3RW5548 | 2 x 3NA3365-6 | 3NC3342-1U | 3TF68 | 2 x 3NA3365-6 | 3NC3342-1U | -- | 3TF68 |

Note:

The specified short-circuit breaking capacities I_{q} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2 motor starter protectors or 3VA circuit breakers can also be used, possibly with reduced short-circuit breaking capacity ([see page 6/45](#)). In these cases, optional line contactors can be dispensed with.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe soft starters > General data

Reversing operation with reversing contactors

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/11](#).

(For an example circuit, [see 3RW55 Equipment Manual, Appendix A.3](#))

| Soft starters | Reversing contactor assembly | For reversing contactor |
|----------------|--|--|
| Q11 Type | for systems up to 480 V Q21 / Q22 Type | for systems up to 480 V Q21 / Q22 Type |
| 3RW5513 | 3RA2325 | 3RT2025 |
| 3RW5514 | 3RA2326 | 3RT2026 |
| 3RW5515 | 3RA2327 | 3RT2027 |
| 3RW5516 | 3RA2335 | 3RT2035 |
| 3RW5517 | 3RA2335 | 3RT2035 |
| 3RW5524 | 3RA2336 | 3RT2036 |
| 3RW5525 | 3RA2337 | 3RT2037 |
| 3RW5526 | 3RA2338 | 3RT2038 |
| 3RW5527 | 3RA2346 | 3RT2046 |
| 3RW5534 | -- | 3RT1054 |
| 3RW5535 | -- | 3RT1055 |
| 3RW5536 | -- | 3RT1056 |
| 3RW5543 | -- | 3RT1064 |
| 3RW5544 | -- | 3RT1065 |
| 3RW5545 | -- | 3RT1075 |
| 3RW5546 | -- | 3RT1075 |
| 3RW5547 | -- | 3RT1076 |
| 3RW5548 | -- | 3TF68 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe soft starters > Inline circuit **IE3/IE4 ready**

Selection and ordering data

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 200/208 V | At 220/230 V | At 460/480 V | d | | | | | |
| A | kW | kW | A | hp | hp | hp | | | | | | |
| Operational voltage 200 ... 480 V | | | | | | | | | | | | |
| 13 | 3 | 5.5 | 11.5 | 2 | 3 | 7.5 | 5 | 3RW5513-□HF□4 | | 1 | 1 unit | 42S |
| 18 | 4 | 7.5 | 15.9 | 3 | 5 | 10 | 5 | 3RW5514-□HF□4 | | 1 | 1 unit | 42S |
| 25 | 5.5 | 11 | 22.3 | 5 | 7.5 | 15 | 5 | 3RW5515-□HF□4 | | 1 | 1 unit | 42S |
| 32 | 7.5 | 15 | 28.4 | 7.5 | 10 | 20 | 5 | 3RW5516-□HF□4 | | 1 | 1 unit | 42S |
| 38 | 11 | 18.5 | 33.5 | 10 | 10 | 20 | 5 | 3RW5517-□HF□4 | | 1 | 1 unit | 42S |
| 47 | 11 | 22 | 41.6 | 10 | 10 | 30 | 5 | 3RW5524-□HF□4 | | 1 | 1 unit | 42S |
| 63 | 18.5 | 30 | 55.5 | 15 | 20 | 40 | 5 | 3RW5525-□HF□4 | | 1 | 1 unit | 42S |
| 77 | 22 | 37 | 68 | 20 | 25 | 50 | 5 | 3RW5526-□HF□4 | | 1 | 1 unit | 42S |
| 93 | 22 | 45 | 82.5 | 25 | 30 | 60 | 5 | 3RW5527-□HF□4 | | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

Screw terminals
Spring-loaded 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 6/8.

1
3
0
1

| 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 200/208 V | At 220/230 V | At 460/480 V | d | | | | | |
| A | kW | kW | A | hp | hp | hp | | | | | | |
| Operational voltage 200 ... 480 V | | | | | | | | | | | | |
| 113 | 30 | 55 | 101 | 30 | 30 | 75 | 5 | 3RW5534-□HF□4 | | 1 | 1 unit | 42S |
| 143 | 37 | 75 | 128 | 40 | 40 | 100 | 5 | 3RW5535-□HF□4 | | 1 | 1 unit | 42S |
| 171 | 45 | 90 | 153 | 50 | 50 | 100 | 5 | 3RW5536-□HF□4 | | 1 | 1 unit | 42S |
| 210 | 55 | 110 | 186 | 60 | 60 | 150 | 5 | 3RW5543-□HF□4 | | 1 | 1 unit | 42S |
| 250 | 75 | 132 | 220 | 60 | 75 | 150 | 5 | 3RW5544-□HF□4 | | 1 | 1 unit | 42S |
| 315 | 90 | 160 | 279 | 75 | 100 | 200 | 5 | 3RW5545-□HF□4 | | 1 | 1 unit | 42S |
| 370 | 110 | 200 | 328 | 100 | 125 | 250 | 5 | 3RW5546-□HF□4 | | 1 | 1 unit | 42S |
| 470 | 132 | 250 | 416 | 150 | 150 | 350 | 5 | 3RW5547-□HF□4 | | 1 | 1 unit | 42S |
| 570 | 160 | 315 | 504 | 150 | 200 | 400 | 5 | 3RW5548-□HF□4 | | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

Spring-loaded 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 6/8.

2
6
0
1

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

IE3/IE4 ready 3RW55 Failsafe soft starters > 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 | | | d | | | | |
| | At 230 V | At 400 V | | At 200/208 V | At 220/230 V | At 460/480 V | | | | | |
| A | kW | kW | A | hp | hp | hp | | | | | |
| Operational voltage 200 ... 480 V | | | | | | | | | | | |
| 22.5 | 5.5 | 11 | 19.9 | 5 | 5 | 10 | 5 | 3RW5513-□HF□4 | 1 | 1 unit | 42S |
| 31.5 | 7.5 | 15 | 28 | 7.5 | 7.5 | 20 | 5 | 3RW5514-□HF□4 | 1 | 1 unit | 42S |
| 43.3 | 11 | 18.5 | 39 | 10 | 10 | 25 | 5 | 3RW5515-□HF□4 | 1 | 1 unit | 42S |
| 55.4 | 15 | 22 | 49 | 15 | 15 | 30 | 5 | 3RW5516-□HF□4 | 1 | 1 unit | 42S |
| 65.8 | 18.5 | 30 | 58 | 15 | 20 | 40 | 5 | 3RW5517-□HF□4 | 1 | 1 unit | 42S |
| 81.4 | 22 | 45 | 72 | 20 | 25 | 50 | 5 | 3RW5524-□HF□4 | 1 | 1 unit | 42S |
| 109 | 30 | 55 | 96 | 30 | 30 | 75 | 5 | 3RW5525-□HF□4 | 1 | 1 unit | 42S |
| 133 | 37 | 75 | 118 | 30 | 40 | 75 | 5 | 3RW5526-□HF□4 | 1 | 1 unit | 42S |
| 161 | 45 | 90 | 143 | 40 | 50 | 100 | 5 | 3RW5527-□HF□4 | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

Screw terminals
Spring-loaded 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 6/8.



| 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 | | | d | | | | |
| | At 230 V | At 400 V | | At 200/208 V | At 220/230 V | At 460/480 V | | | | | |
| A | kW | kW | A | hp | hp | hp | | | | | |
| Operational voltage 200 ... 480 V | | | | | | | | | | | |
| 196 | 55 | 110 | 175 | 50 | 60 | 125 | 5 | 3RW5534-□HF□4 | 1 | 1 unit | 42S |
| 248 | 75 | 132 | 222 | 75 | 75 | 150 | 5 | 3RW5535-□HF□4 | 1 | 1 unit | 42S |
| 296 | 90 | 160 | 265 | 75 | 100 | 200 | 5 | 3RW5536-□HF□4 | 1 | 1 unit | 42S |
| 364 | 110 | 200 | 322 | 100 | 125 | 250 | 5 | 3RW5543-□HF□4 | 1 | 1 unit | 42S |
| 433 | 132 | 250 | 381 | 125 | 150 | 300 | 5 | 3RW5544-□HF□4 | 1 | 1 unit | 42S |
| 546 | 160 | 315 | 483 | 150 | 200 | 400 | 5 | 3RW5545-□HF□4 | 1 | 1 unit | 42S |
| 641 | 200 | 355 | 568 | 200 | 200 | 450 | 5 | 3RW5546-□HF□4 | 1 | 1 unit | 42S |
| 814 | 250 | 400 | 721 | 250 | 250 | 600 | 5 | 3RW5547-□HF□4 | 1 | 1 unit | 42S |
| 987 | 315 | 560 | 873 | 300 | 350 | 750 | 5 | 3RW5548-□HF□4 | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

Spring-loaded 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 6/8.



Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe soft starters > Accessories

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 | 3RW551 (1x), 3RW552 (2x), 3RW553 (2x) | -- | -- | ▶ | 3RW5983-0FC00 | | 1 | 1 unit | 42S |
| | | 3RW554 (1x) | -- | -- | ▶ | 3RW5984-0FC00 | | 1 | 1 unit | 42S |
| 3RW5983-0FC00 | | | | | | | | | | |
| Terminal covers | | | | | | | | | | |
|  | Terminal cover | 3RW552 (2x), 3RW553 (2x) | -- | -- | ▶ | 3RW5983-0TC20 | | 1 | 1 unit | 42S |
| | | 3RW554 (2x) | -- | -- | ▶ | 3RW5984-0TC20 | | 1 | 1 unit | 42S |
| 3RW5983-0TC20 | | | | | | | | | | |
| 3RW5984-0TC20 | | | | | | | | | | |
| Enclosure components | | | | | | | | | | |
|  | Hinged cover | 3RW55 | Without cutout | -- | ▶ | 3RW5950-0GL20 | | 1 | 1 unit | 42S |
| 3RW5950-0GL20 | | | | | | | | | | |
| Communication modules | | | | | | | | | | |
|  | Communication module | 3RW55 | PROFINET High Feature with integral switch | -- | ▶ | 3RW5950-0CH00 | | 1 | 1 unit | 42S |
| | | | PROFINET Standard | -- | ▶ | 3RW5980-0CS00 | | 1 | 1 unit | 42S |
| | | | PROFIBUS | -- | ▶ | 3RW5980-0CP00 | | 1 | 1 unit | 42S |
| | | | EtherNet/IP | -- | ▶ | 3RW5980-0CE00 | | 1 | 1 unit | 42S |
| 3RW5980-0CS00 | | | | | | | | | | |
| 3RW5980-0CE00 | | | | | | | | | | |
| 3RW5980-0CR00 | | | | | | | | | | |
| 3RW5980-0CT00 | | | | | | | | | | |
| 3RW5980-0CR00 | | | | | | | | | | |

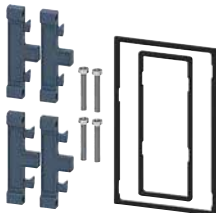


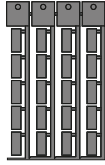
* You can order this quantity or a multiple thereof. Illustrations are approximate

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

High Performance soft starters

3RW55 Failsafe soft starters > 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 | | | | | | | | | | |
|  | IP65 door mounting kit for HMI modules | 3RW55 | IP65 | For HMI modules | ▶ | 3RW5980-0HD00 | | 1 | 1 unit | 42S |
| 3RW5980-0HD00 | | | | | | | | | | |
| Connecting cables | | | | | | | | | | |
|  | HMI connecting cable | 3RW55 | 5 m, round | For door mounting | ▶ | 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 |
| 3UF793.-0BA00-0 | | | | | | | | | | |
| Further accessories | | | | | | | | | | |
|  | Push-in lugs for wall mounting | -- | Two lugs are required per device | For HMI modules and communication modules | 2 | 3ZY1311-0AA00 | | 1 | 10 units | 41L |
| 3ZY1311-0AA00 | | | | | | | | | | |
| Blank labels | | | | | | | | | | |
|  | Unit labeling plates¹⁾ | -- | 20 mm x 7 mm, titanium gray | For SIRIUS devices | 20 | 3RT2900-1SB20 | | 100 | 340 units | 41B |
| 3RT2900-1SB20 | | | | | | | | | | |

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

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

3RW52 soft starters > General data

Overview

More information

Homepage, see www.siemens.com/sirius-soft-starter
 Industry Mall, see www.siemens.com/product?3RW52
 TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=3rw52>
 Industry Online Support (SIOS) topic page, see <https://support.industry.siemens.com/cs/ww/en/view/109747404>

Simulation Tool for Soft Starters (STS), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>
 SIRIUS Soft Starter ES (TIA Portal) for diagnostics, see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/ps/24230/dl>
 SIRIUS 3RW Soft Starter block library for SIMATIC PCS 7, see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/109770336>

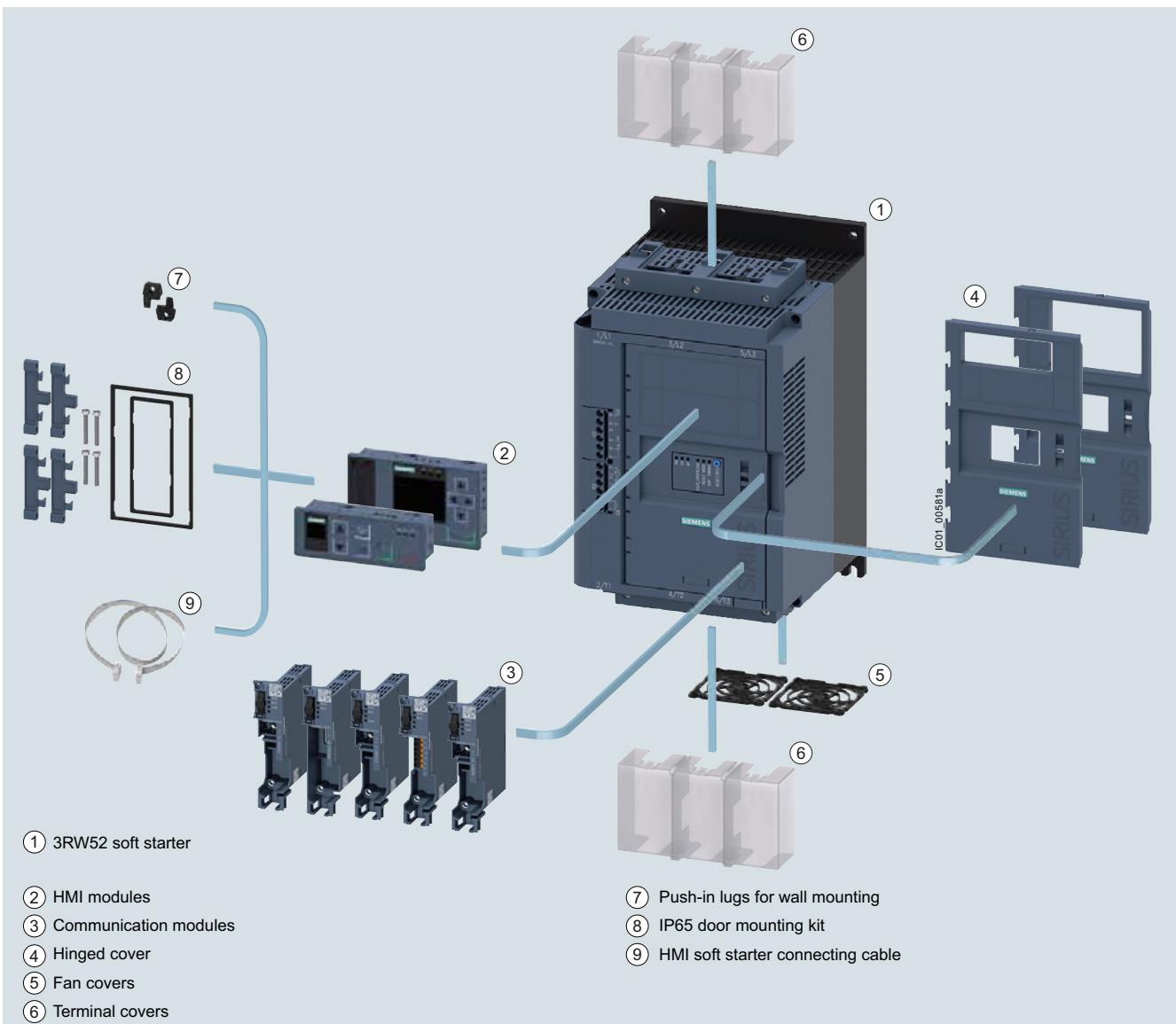


SIRIUS 3RW52 General Performance soft starters are the ideal solution for standard applications. With ideal 3-phase motor control, they cover the performance range from 5.5 kW to 560 kW (at 400 V).

Optional HMI modules, plug-in communication modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) and either an analog output or thermistor motor protection ensure maximum flexibility.

With their modern hybrid switching technology, the SIRIUS 3RW52 soft starters offer efficient switching for long-term, energy-saving use.

SIRIUS 3RW52 soft starters device family



① 3RW52 soft starter

② HMI modules

③ Communication modules

④ Hinged cover

⑤ Fan covers

⑥ Terminal covers

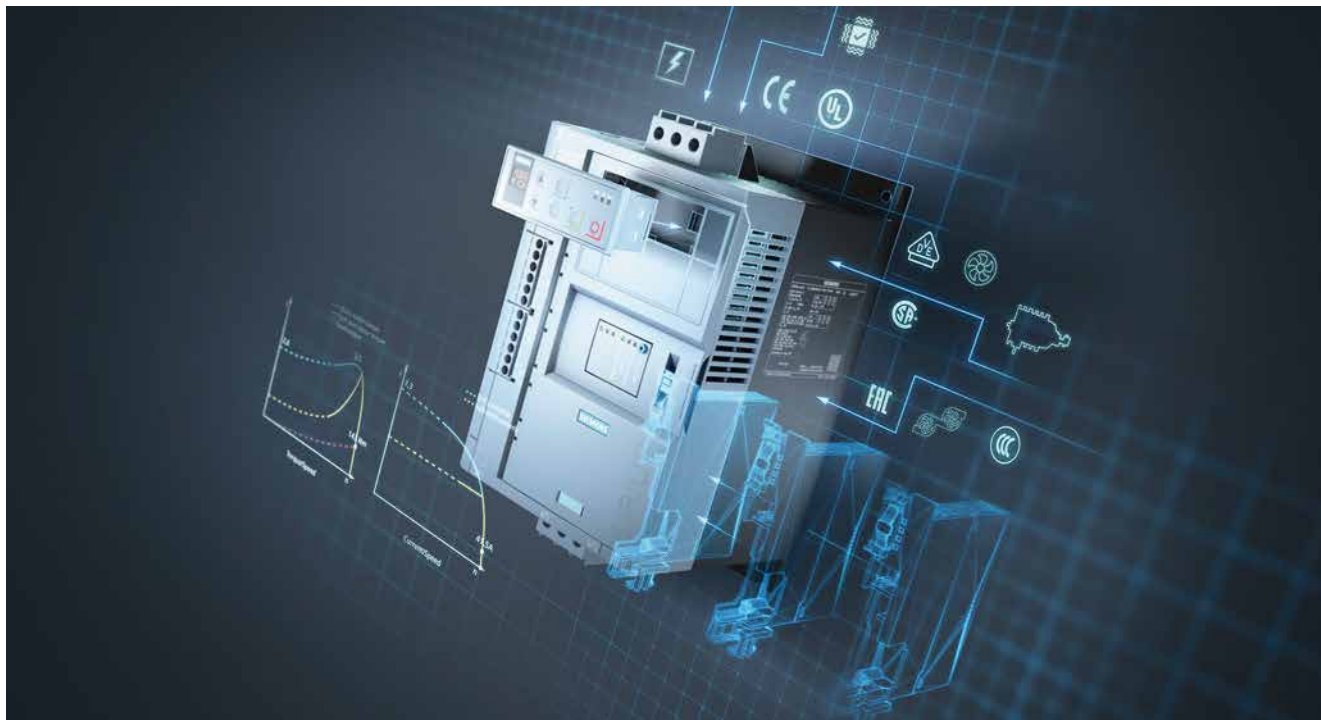
⑦ Push-in lugs for wall mounting

⑧ IP65 door mounting kit

⑨ HMI soft starter connecting cable

SIRIUS 3RW52 General Performance soft starter with accessories (see page 6/70), for expansion with HMI module or communication module

Benefits



6

| Product characteristics / function | Performance features / benefits |
|--|---|
| Hybrid switching technology and 3-phase motor control | Minimum power loss and optimum/symmetrical motor control |
| TIA integration – communication modules and HMI modules optional | Efficient configuration and maximum flexibility in automation engineering |
| Soft Torque | Reduced mechanical loading and optimum pump stop |
| Parameterization using potentiometers | Simple and fast commissioning |
| Wide range for control supply and main voltage | Low variance, high system availability even with weak supply networks |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

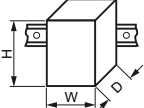
3RW52 soft starters > General data

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/25100/td>
 Equipment Manual, 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 6/9 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 |
|---|---|--------------------|---|---|--|
| Installation/fixing/dimensions | | | | | |
| Width x height x depth |  | mm 170 × 275 × 152 | 185 × 306 × 203 | 210 × 393 × 203 | |
| Type of mounting | 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 +/- 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 level¹⁾ | m | 5 000 | | | |
| Degree of protection IP on the front acc. to IEC 60529 | IP20 | | IP00 (IP20 with cover) | | |
| Touch protection on the front acc. to IEC 60529 | Finger-safe for vertical touching from the front | | Finger-safe for vertical touching from the front with cover | | |
| Ambient conditions | | | | | |
| Ambient temperature | | | | | |
| • During operation ²⁾ | °C | -25 ... +60 | | | |
| • During storage and transport | °C | -40 ... +80 | | | |
| Environmental category according to IEC 60721 | | | | | |
| • During operation | 3K6 (no ice formation, only occasional 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 get into the devices), 1M4 | | | | |
| • During transport | 2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m) | | | | |

¹⁾ Derating from 1 000 m, see characteristic curve on page 6/8.

²⁾ Note derating above 40 °C.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters General Performance soft starters

3RW52 soft starters > General data

| Type | | 3RW52...-C0. | 3RW52...-C1. |
|---|----|--------------|--------------|
| Control circuit/control | | | |
| Control supply voltage | | | |
| • At AC/DC | V | 24/24 | --/-- |
| • At AC | V | -- | 110 ... 250 |
| • Relative negative tolerance/relative positive tolerance with AC | % | -20/20 | -15/10 |
| • Relative negative tolerance/relative positive tolerance with DC | % | -20/20 | --/-- |
| Frequency of the control supply voltage | | | |
| • Relative negative tolerance/relative positive tolerance | Hz | 50 ... 60 | |
| | % | -10/10 | |
| Type of overvoltage protection | | | |
| Varistors | | | |
| Type of short-circuit protection for control circuit¹⁾ | | | |
| Fuse 4 A gG ($I_{cu} = 1 \text{ kA}$), fuse 6 A quick-response ($I_{cu} = 1 \text{ kA}$), MCB C1 ($I_{cu} = 600 \text{ A}$), MCB C6 ($I_{cu} = 300 \text{ A}$) | | | |

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 | 200 ... 600 |
| | % | -15/10 | |
| Operational voltage for inside-delta circuit, rated value | | | |
| • Relative negative tolerance/relative positive tolerance | V | 200 ... 480 | 200 ... 600 |
| | % | -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 the smallest adjustable I_e .

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

3RW52 soft starters > General data

| Type | | 3RW5213 | 3RW5214 | 3RW5215 | 3RW5216 | 3RW5217 |
|--|-----|--------------|--------------|--------------|----------------|----------------|
| Rated operational current I_e | A | 13 | 18 | 25 | 32 | 38 |
| Power electronics | | | | | | |
| Load rating with rated operational current I_e | | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a | | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 32/28.4/26 | 38/33.5/30.5 |
| Permissible rated motor current and starts/h | | | | | | |
| Normal starting (CLASS 10A) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 32/28.4/26 | 38/33.5/30.5 |
| • 300% I_M | | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 43 | 43 | 43 |
| - Start-up time 10 s | 1/h | 18 | 18 | 18 | 18 | 18 |
| • 350% I_M | | | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | 28 | 28 | 28 |
| - Start-up time 10 s | 1/h | 10 | 10 | 10 | 10 | 10 |
| Normal starting (CLASS 10E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 32/28.4/26 | 38/33.5/30.5 |
| • 300% I_M | | | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 21 | 21 | 21 |
| - Start-up time 20 s | 1/h | 8 | 8 | 8 | 8 | 8 |
| • 350% I_M | | | | | | |
| - Start-up time 10 s | 1/h | 13 | 13 | 13 | 13 | 13 |
| - Start-up time 20 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| Heavy starting (CLASS 20E) | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 13/11.5/10.5 | 18/15.9/13.8 | 25/22.3/19.6 | 29.6/27.2/23.6 | 33.5/30.5/27.5 |
| • 300% I_M | | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 | 4 | 4 |
| • 350% I_M | | | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Adjustable rated motor current I_M | | | | | | |
| • Minimum/maximum | A | 5.5/13 | 7.5/18 | 11.5/25 | 14/32 | 15.5/38 |
| • Minimum/maximum in inside-delta circuits | A | 9.5/22.5 | 13/31.2 | 19.9/43.3 | 24.2/55.4 | 26.8/65.8 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters
General Performance soft starters

3RW52 soft starters > General data

| Type | | 3RW5224 | 3RW5225 | 3RW5226 | 3RW5227 |
|--|-----|--------------|--------------|----------|--------------|
| Rated operational current I_e | A | 47 | 63 | 77 | 93 |
| Power electronics | | | | | |
| Load rating with rated operational current I_e | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a | A | 47/41.6/36.2 | 63/55.5/50.5 | 77/68/62 | 93/82.5/75.5 |
| Permissible rated motor current and starts/h | | | | | |
| Normal starting (CLASS 10A) | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 47/41.6/36.2 | 63/55.5/50.5 | 77/68/62 | 93/82.5/75.5 |
| • 300% I_M | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 43 | 43 |
| - Start-up time 10 s | 1/h | 18 | 18 | 18 | 18 |
| • 350% I_M | | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | 28 | 28 |
| - Start-up time 10 s | 1/h | 10 | 10 | 10 | 10 |
| Normal starting (CLASS 10E) | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 47/41.6/36.2 | 63/55.5/50.5 | 77/68/62 | 93/82.5/75.5 |
| • 300% I_M | | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 21 | 21 |
| - Start-up time 20 s | 1/h | 8 | 8 | 8 | 8 |
| • 350% I_M | | | | | |
| - Start-up time 10 s | 1/h | 13 | 13 | 13 | 13 |
| - Start-up time 20 s | 1/h | 4 | 4 | 4 | 4 |
| Heavy starting (CLASS 20E) | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 47/41.6/36.2 | 63/55.5/50.5 | 65/59/53 | 93/82.5/75.5 |
| • 300% I_M | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 3 | 4 | 4 |
| • 350% I_M | | | | | |
| - Start-up time 20 s | 1/h | 7 | 4 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2 | 0 | 2.5 | 2.5 |
| Adjustable rated motor current I_M | | | | | |
| • Minimum/maximum | A | 20/47 | 25.5/63 | 32/77 | 40.5/93 |
| • Minimum/maximum in inside-delta circuits | A | 34.6/81.4 | 44.2/109 | 55.4/133 | 70.1/161 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

3RW52 soft starters > General data

| Type | | 3RW5234 | 3RW5235 | 3RW5236 |
|--|-----|------------|-------------|-------------|
| Rated operational current I_e | A | 113 | 143 | 171 |
| Power electronics | | | | |
| Load rating with rated operational current I_e | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a | A | 113/101/89 | 143/128/118 | 171/153/141 |
| Permissible rated motor current and starts/h | | | | |
| Normal starting (CLASS 10A) | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 113/101/89 | 143/128/118 | 171/153/141 |
| • 300% I_M | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 43 |
| - Start-up time 10 s | 1/h | 18 | 18 | 18 |
| • 350% I_M | | | | |
| - Start-up time 5 s | 1/h | 28 | 27 | 20 |
| - Start-up time 10 s | 1/h | 10 | 8 | 4 |
| Normal starting (CLASS 10E) | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 113/101/89 | 139/127/116 | 158/146/129 |
| • 300% I_M | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 21 |
| - Start-up time 20 s | 1/h | 8 | 8 | 8 |
| • 350% I_M | | | | |
| - Start-up time 10 s | 1/h | 13 | 12 | 12 |
| - Start-up time 20 s | 1/h | 4 | 1 | 1 |
| Heavy starting (CLASS 20E) | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 109/97/85 | 113/103/93 | 129/117/105 |
| • 300% I_M | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 |
| • 350% I_M | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2.5 | 2.5 | 2.5 |
| Adjustable rated motor current I_M | | | | |
| • Minimum/maximum | A | 53/113 | 68/143 | 81/171 |
| • Minimum/maximum in inside-delta circuits | A | 91.8/196 | 118/248 | 140/296 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

3RW52 soft starters > General data

| Type | | 3RW5243 | 3RW5244 | 3RW5245 | 3RW5246 | 3RW5247 | 3RW5248 |
|--|-----|-------------|-------------|-------------|-------------|-------------|-------------|
| Rated operational current I_e | A | 210 | 250 | 315 | 370 | 470 | 570 |
| Power electronics | | | | | | | |
| Load rating with rated operational current I_e | | | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, A AC-53a | A | 210/186/170 | 250/220/200 | 315/279/255 | 370/328/300 | 470/416/380 | 570/504/460 |
| Permissible rated motor current and starts/h | | | | | | | |
| Normal starting (CLASS 10A) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 210/186/170 | 250/220/200 | 315/279/255 | 370/328/300 | 470/416/380 | 570/504/460 |
| • 300% I_M | | | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 43 | 43 | 30 | 20 |
| - Start-up time 10 s | 1/h | 18 | 18 | 14 | 18 | 11 | 6 |
| • 350% I_M | | | | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | 16 | 28 | 17 | 9 |
| - Start-up time 10 s | 1/h | 5 | 10 | 4 | 10 | 5 | 1 |
| Normal starting (CLASS 10E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 197/184/170 | 250/220/200 | 279/255/231 | 370/328/300 | 398/362/326 | 460/416/372 |
| • 300% I_M | | | | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 21 | 21 | 21 | 18 |
| - Start-up time 20 s | 1/h | 8 | 8 | 8 | 8 | 8 | 7 |
| • 350% I_M | | | | | | | |
| - Start-up time 10 s | 1/h | 12 | 13 | 12 | 13 | 13 | 11 |
| - Start-up time 20 s | 1/h | 1 | 4 | 3 | 4 | 4 | 2 |
| Heavy starting (CLASS 20E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 162/146/130 | 200/180/160 | 195/171/147 | 258/230/202 | 272/236/218 | 284/262/240 |
| • 300% I_M | | | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 | 4 | 4 | 4 |
| • 350% I_M | | | | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Adjustable rated motor current I_M | | | | | | | |
| • Minimum/maximum | A | 90/210 | 100/250 | 135/315 | 160/370 | 200/470 | 240/570 |
| • Minimum/maximum in inside-delta circuits | A | 156/364 | 173/433 | 234/546 | 277/641 | 346/814 | 416/987 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

3RW52 soft starters > General data

Motor feeders according to IEC with 3RV2 motor starter protectors or 3VA 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 6/11](#).

| Soft starters | Motor starter protectors | | | | Motor starter protectors | | | |
|--|--------------------------|-------|--------------------|-------|--------------------------|-------|--------------------|-------|
| | for 400 V systems | | for 500 V systems | | for 400 V systems | | for 500 V systems | |
| Q11 | Q1 | I_q | Q1 | I_q | Q1 | I_q | Q1 | I_q |
| Type | Type | kA | Type | kA | Type | kA | Type | kA |
| Type of coordination "1" 1 | Inline circuit | | | | Inside-delta circuit | | | |
| | | | | | | | | |
| 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 | 20 | 3VA2110-7MN32-0AA0 | 65 | 3VA2110-7MN32-0AA0 | 20 |
| 3RW5226 | 3VA2110-7MN32-0AA0 | 65 | 3VA2110-7MN32-0AA0 | 20 | 3VA2216-7MN32-0AA0 | 65 | 3VA2216-7MN32-0AA0 | 20 |
| 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 |

Note:

The service factor and measurement inaccuracies, for example, have been taken into account for the selection of the specified motor starter protectors/circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters
General Performance soft starters

3RW52 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 $I_{q1} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/11](#).

| Soft starters | Inline circuit | | | Inside-delta circuit | | | | | |
|----------------|----------------|---------------------------|----------|----------------------|---------------------------|----------|---------------|---------------------------|----------|
| | gG class fuse | Line contactor (optional) | | gG class fuse | Line contactor (optional) | | gG class fuse | Line contactor (optional) | |
| Q11 Type | F1 Type | Q21 Type | Q21 Type | F1 Type | Q21 Type | Q21 Type | Q21 Type | Q21 Type | Q21 Type |
| 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 | 3RT1076 | 3RT1276 |
| 3RW5248 | 2 x 3NA3365-6 | 3TF68 | 3TF68 | 2 x 3NA3365-6 | -- | -- | 3TF68 | 3TF68 | 3TF68 |

Note:

The specified short-circuit breaking capacities I_{q1} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

3RW52 soft starters > General data

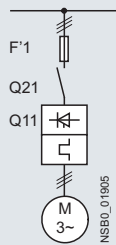
Motor feeders according to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_{cs} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, see page 6/11.



| Soft starters | gR 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 ¹⁾ | 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 |

¹⁾ For systems up to 500 V.

Note:

The specified short-circuit breaking capacities I_{cs} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

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 6/65).

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

3RW52 soft starters > General data

Motor feeders according to IEC with fuses 3NE8 / 3NE4 / 3NE3

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity $I_{q1} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/11](#).

| 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) | | | | |
| Q11 Type | for systems up to 600 V | for systems up to 500 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 | |
| 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:

The specified short-circuit breaking capacities I_{q1} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2 motor starter protectors or 3VA circuit breakers can also be used, possibly with reduced short-circuit breaking capacity ([see page 6/62](#)). In these cases, optional line contactors can be dispensed with.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

3RW52 soft starters > Inline circuit **IE3/IE4 ready**

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 | d | | | | |
| A | kW | kW | kW | A | hp | hp | hp | hp | | | | | |
| 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-loaded terminals

Product function

Analog output

Thermistor motor protection

Control supply voltage

24 V AC/DC

110 ... 250 V AC

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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 6/8.

| 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 ... 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-loaded terminals

Screw terminals

Product function

Analog output

Thermistor motor protection

Control supply voltage

24 V AC/DC

110 ... 250 V AC

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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 6/8.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

IE3/IE4 ready 3RW52 soft starters > Inline circuit

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 | 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-loaded 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 6/8.

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| 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-loaded 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 6/8.

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Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

3RW52 soft starters > Inside-delta circuit **IE3/IE4 ready**

Selection and ordering data

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 | | | | | |
| A | kW | kW | kW | A | hp | hp | hp | hp | d | | | | |
| 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-loaded 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 6/8.



| 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 | | | | | |
| A | kW | kW | kW | A | hp | hp | hp | hp | d | | | | |
| 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-loaded 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 6/8.



Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

IE3/IE4 ready 3RW52 soft starters > 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-loaded 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 6/8.



| 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-loaded 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 6/8.



Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

3RW52 soft starters > Accessories

Selection and ordering data



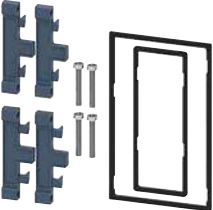



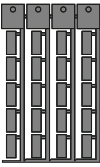
| Product designation | Manufacturer's Article No. of the soft starter | Type of product | Application | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG | |
|---|--|---|---|----|-------------|----------------------|-------------------|-----|--------|-----|
| Fan covers | | | | | | | | | | |
|  | Fan cover | 3RW5216/17 (1x), 3RW5226/27 (2x), 3RW523 (2x) | -- | -- | ▶ | 3RW5983-0FC00 | | 1 | 1 unit | 42S |
| | | 3RW524 (1x) | -- | -- | ▶ | 3RW5984-0FC00 | | 1 | 1 unit | 42S |
| 3RW5983-0FC00 | | | | | | | | | | |
| Terminal covers | | | | | | | | | | |
|  | Terminal cover | 3RW522 (2x), 3RW523 (2x) | -- | -- | ▶ | 3RW5983-0TC20 | | 1 | 1 unit | 42S |
| | | 3RW524 (2x) | -- | -- | ▶ | 3RW5984-0TC20 | | 1 | 1 unit | 42S |
| 3RW5983-0TC20 | | | | | | | | | | |
| 3RW5984-0TC20 | | | | | | | | | | |
| Enclosure components | | | | | | | | | | |
|  | Hinged cover | 3RW52 | With cutout for High Feature HMI module | -- | ▶ | 3RW5950-0GL30 | | 1 | 1 unit | 42S |
| | | | With cutout for Standard HMI module | -- | ▶ | 3RW5950-0GL40 | | 1 | 1 unit | 42S |
| 3RW5950-0GL30 | | | | | | | | | | |
| 3RW5950-0GL40 | | | | | | | | | | |
| Communication modules | | | | | | | | | | |
|  | Communication module | 3RW52 | PROFINET Standard | -- | ▶ | 3RW5980-0CS00 | | 1 | 1 unit | 42S |
| | | | PROFIBUS | -- | ▶ | 3RW5980-0CP00 | | 1 | 1 unit | 42S |
| | | | EtherNet/IP | -- | ▶ | 3RW5980-0CE00 | | 1 | 1 unit | 42S |
| 3RW5980-0CS00 | | | | | | | | | | |
| 3RW5980-0CP00 | | | | | | | | | | |
| 3RW5980-0CE00 | | | | | | | | | | |
|  | | | Modbus RTU | -- | ▶ | 3RW5980-0CR00 | | 1 | 1 unit | 42S |
| | | | Modbus TCP | -- | ▶ | 3RW5980-0CT00 | | 1 | 1 unit | 42S |
| 3RW5980-0CR00 | | | | | | | | | | |
| 3RW5980-0CT00 | | | | | | | | | | |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

General Performance soft starters

3RW52 soft starters > 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 | -- | ▶ 3RW5980-0HF00 | | 1 | 1 unit | 42S |
| 3RW5980-0HF00 | | | | | | | | | |
|  | | | Standard | -- | ▶ 3RW5980-0HS00 | | 1 | 1 unit | 42S |
| 3RW5980-0HS00 | | | | | | | | | |
|  | IP65 door mounting kit for HMI modules | 3RW52 | IP65 | For HMI modules | ▶ 3RW5980-0HD00 | | 1 | 1 unit | 42S |
| 3RW5980-0HD00 | | | | | | | | | |
| Connecting cables | | | | | | | | | |
|  | HMI connecting cable | 3RW52 | 5 m, round | For door mounting | ▶ 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 |
| 3UF793.-0BA00-0 | | | | | | | | | |
|  | | | 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 | For HMI modules and communication modules | ▶ 3ZY1311-0AA00 | | 1 | 10 units | 41L |
| 3ZY1311-0AA00 | | | | | | | | | |
| Blank labels | | | | | | | | | |
|  | Unit labeling plates¹⁾ | -- | 20 mm x 7 mm, titanium gray | For SIRIUS devices | ▶ 3RT2900-1SB20 | | 100 | 340 units | 41B |
| 3RT2900-1SB20 | | | | | | | | | |

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

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW50 soft starters > General data

Overview

More information

Homepage, see www.siemens.com/sirius-soft-starter
 Industry Mall, see www.siemens.com/product?3RW50
 TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=3rw50>
 Industry Online Support (SIOS) topic page, see <https://support.industry.siemens.com/cs/ww/en/view/109747404>

Simulation Tool for Soft Starters (STS), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>
 SIRIUS Soft Starter ES (TIA Portal) for diagnostics, see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/ps/24230/dl>

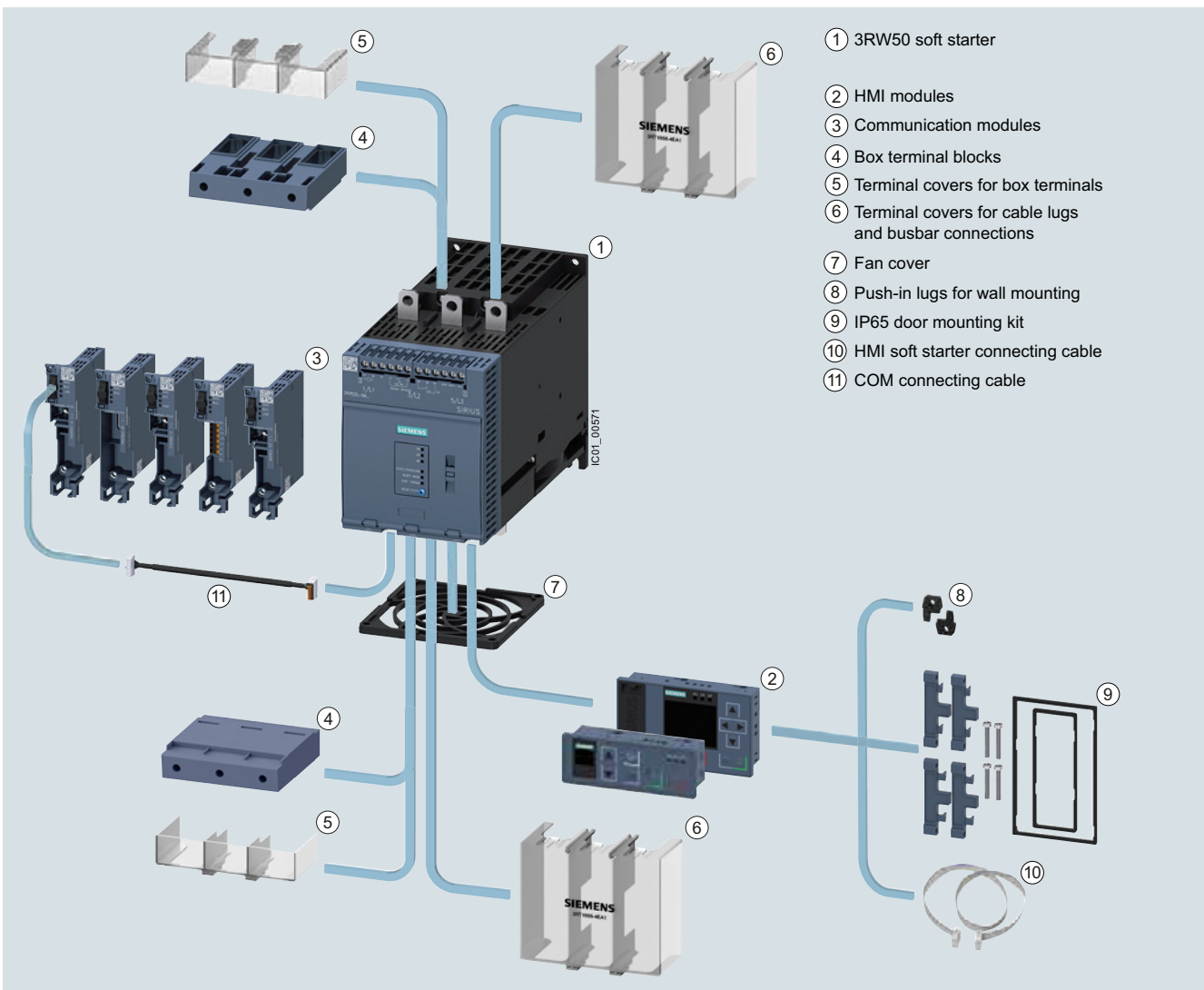


SIRIUS 3RW50 Basic Performance soft starters are the compact solution for standard applications. With 2-phase motor control, they cover the performance range from 75 to 315 kW (at 400 V).

Optional HMI modules for installation in the control cabinet door, laterally mountable communication modules (PROFINET, PROFIBUS, EtherNet/IP and Modbus) and either an analog output or thermistor motor protection ensure maximum flexibility.

With their modern hybrid switching technology, the SIRIUS 3RW50 soft starters offer efficient switching for long-term, energy-saving use.

SIRIUS 3RW50 soft starters device family



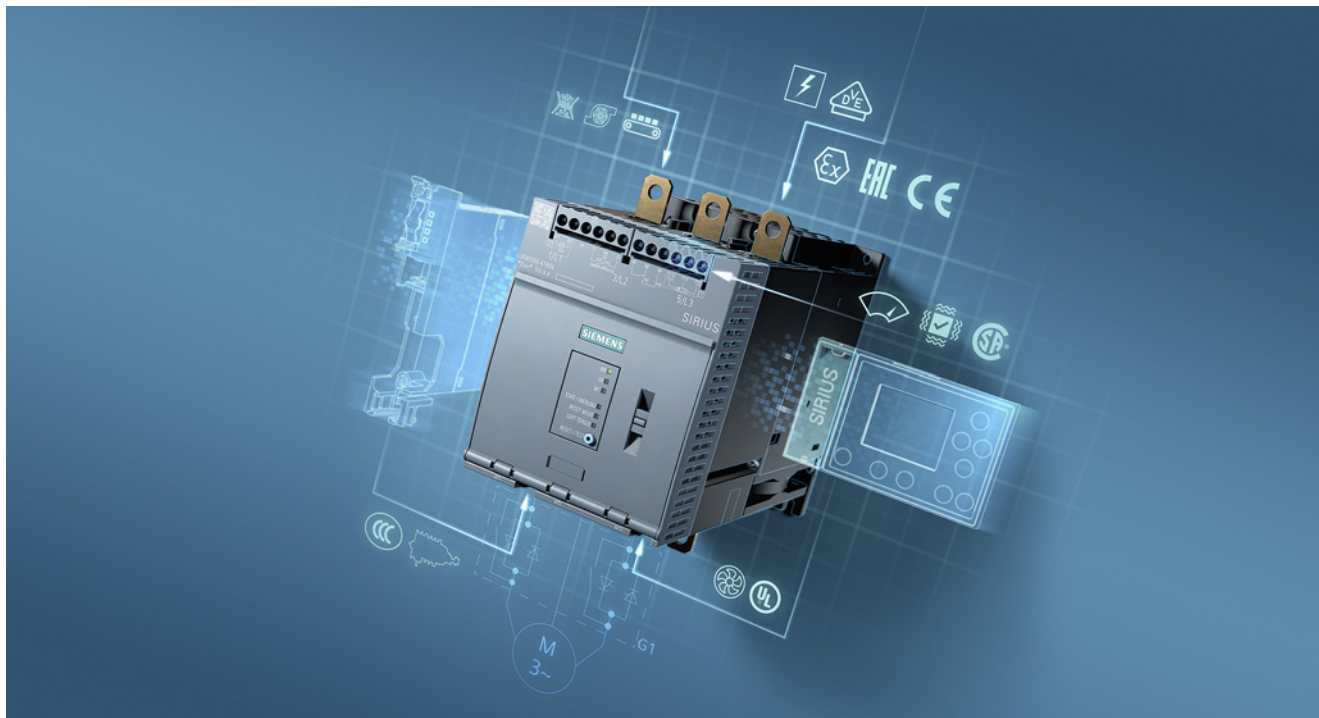
SIRIUS 3RW50 Basic Performance soft starter with accessories (see page 6/81), for expansion with HMI module or communication module

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters
Basic Performance soft starters

3RW50 soft starters > General data

Benefits



| Product characteristics / function | Performance features / benefits |
|--|--|
| Hybrid switching technology and 2-phase motor control | Minimum power loss and optimized motor control by avoiding DC components |
| Small and compact design | Space-saving, clearly arranged control panel layout |
| TIA integration – communication modules and HMI modules optional | Efficient configuration and maximum flexibility in automation engineering |
| Motor overload and intrinsic device protection without additional wiring | Adjustable trip classes, integrated diagnostic functions |
| Soft Torque | Reduced mechanical loading and optimum pump stop |
| Parameterization using potentiometers | Simple and fast commissioning |
| Wide range for control supply and main voltage | Low variance, high system availability even with weak supply networks |
| Certified according to ATEX/IECEx directive | Suitable for the starting of explosion-proof motors with "increased safety" type of protection |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW50 soft starters > General data

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/25252/td>
 Equipment Manual, see
<https://support.industry.siemens.com/cs/ww/en/view/109753750>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/25252/faq>
 Simulation Tool for Soft Starters (STS), see page 6/9 or
<https://support.industry.siemens.com/cs/ww/en/view/101494917>

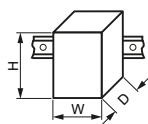
Type

3RW5055
3RW5056

3RW5072
3RW5073
3RW5074
3RW5075
3RW5076
3RW5077

Installation/fixing/dimensions

Width x height x depth



mm 120 × 198 × 249

160 × 230 × 282

Type of mounting

Screw fixing

Mounting position

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 level¹⁾

m 5 000

Degree of protection IP on the front acc. to IEC 60529

IP00 (IP20 with cover)

Touch protection on the front acc. to IEC 60529

Finger-safe for vertical touching from the front with cover

Ambient conditions

Ambient temperature

- During operation²⁾ °C -25 ... +60
- During storage and transport °C -40 ... +80

Environmental category according to IEC 60721

- During operation 3K6 (no ice formation, only occasional 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 get into the devices), 1M4
- During transport 2K2, 2C1, 2S1, 2M2 (max. height of fall 0.3 m)

¹⁾ Derating from 1 000 m, see characteristic curve on page 6/8.

²⁾ Note derating above 40 °C.

Type

3RW50...B0.

3RW50...B1.

Control circuit/control

Control supply voltage

- | Control supply voltage | 3RW50...B0. | 3RW50...B1. |
|---|-------------|-------------|
| • At AC/DC, rated value | V 24/24 | --/-- |
| • At AC | V -- | 110 ... 250 |
| • Relative negative tolerance/relative positive tolerance with AC | % -20/20 | -15/10 |
| • Relative negative tolerance/relative positive tolerance with DC | % -20/20 | --/-- |

Frequency of the control supply voltage

- | Frequency of the control supply voltage | 3RW50...B0. | 3RW50...B1. |
|---|--------------|-------------|
| • Relative negative tolerance/relative positive tolerance | Hz 50 ... 60 | |
| | % -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

3RW50...B4

3RW50...B5

Power electronics

Operational voltage, rated value

- | Operational voltage, rated value | 3RW50...B4 | 3RW50...B5 |
|---|---------------|-------------|
| • Relative negative tolerance/relative positive tolerance | V 200 ... 480 | 200 ... 600 |
| | % -15/10 | |

Operating frequency, rated value

- | Operating frequency, rated value | 3RW50...B4 | 3RW50...B5 |
|---|--------------|------------|
| • 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 the smallest adjustable I_e .

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters
Basic Performance soft starters

3RW50 soft starters > General data

| Type | | 3RW5055 | 3RW5056 | | | | |
|--|-----|-------------|-------------|-------------|-------------|-------------|-------------|
| Rated operational current I_e | A | 143 | 171 | | | | |
| Power electronics | | | | | | | |
| Load rating with rated operational current I_e | | | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a | A | 143/128/118 | 171/153/141 | | | | |
| Permissible rated motor current and starts/h | | | | | | | |
| Normal starting (CLASS 10A) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 143/128/118 | 171/153/141 | | | | |
| • 300% I_M | | | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | | | | |
| - Start-up time 10 s | 1/h | 18 | 18 | | | | |
| • 350% I_M | | | | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | | | | |
| - Start-up time 10 s | 1/h | 10 | 9 | | | | |
| Normal starting (CLASS 10E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 143/128/118 | 171/153/141 | | | | |
| • 300% I_M | | | | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | | | | |
| - Start-up time 20 s | 1/h | 8 | 8 | | | | |
| • 350% I_M | | | | | | | |
| - Start-up time 10 s | 1/h | 12 | 9 | | | | |
| - Start-up time 20 s | 1/h | 4 | -- | | | | |
| Heavy starting (CLASS 20E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 108/98/88 | 135/123/111 | | | | |
| • 300% I_M | | | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | | | | |
| - Start-up time 40 s | 1/h | 4 | 4 | | | | |
| • 350% I_M | | | | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | | | | |
| - Start-up time 40 s | 1/h | 2.5 | 2.5 | | | | |
| Adjustable rated motor current I_M | | | | | | | |
| • Minimum/maximum | A | 68/143 | 81/117 | | | | |
| Power electronics | | | | | | | |
| Load rating with rated operational current I_e | | | | | | | |
| IEC + UL/CSA, individual mounting at 40/50/60 °C, AC-53a | A | 210/186/170 | 250/220/200 | 315/279/255 | 370/328/300 | 470/416/380 | 570/504/460 |
| Permissible rated motor current and starts/h | | | | | | | |
| Normal starting (CLASS 10A) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 210/186/170 | 250/220/200 | 315/279/255 | 370/328/300 | 470/416/380 | 570/504/460 |
| • 300% I_M | | | | | | | |
| - Start-up time 5 s | 1/h | 43 | 43 | 43 | 43 | 43 | 28 |
| - Start-up time 10 s | 1/h | 18 | 18 | 18 | 18 | 18 | 11 |
| • 350% I_M | | | | | | | |
| - Start-up time 5 s | 1/h | 28 | 28 | 28 | 28 | 28 | 16 |
| - Start-up time 10 s | 1/h | 8 | 10 | 10 | 10 | 10 | 4 |
| Normal starting (CLASS 10E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 210/186/170 | 250/220/200 | 315/279/255 | 370/328/300 | 470/416/380 | 570/504/460 |
| • 300% I_M | | | | | | | |
| - Start-up time 10 s | 1/h | 21 | 21 | 21 | 21 | 20 | 21 |
| - Start-up time 20 s | 1/h | 8 | 8 | 8 | 8 | 7 | 8 |
| • 350% I_M | | | | | | | |
| - Start-up time 10 s | 1/h | 8 | 13 | 12 | 13 | 12 | 13 |
| - Start-up time 20 s | 1/h | -- | 4 | 4 | 4 | 2 | 4 |
| Heavy starting (CLASS 20E) | | | | | | | |
| Rated motor current I_M , $T_u = 40/50/60$ °C ON period = 70%; motor protection activated | A | 162/146/130 | 200/180/160 | 219/195/171 | 258/230/202 | 272/254/218 | 284/262/240 |
| • 300% I_M | | | | | | | |
| - Start-up time 20 s | 1/h | 10 | 10 | 10 | 10 | 10 | 10 |
| - Start-up time 40 s | 1/h | 4 | 4 | 4 | 4 | 4 | 4 |
| • 350% I_M | | | | | | | |
| - Start-up time 20 s | 1/h | 7 | 7 | 7 | 7 | 7 | 7 |
| - Start-up time 40 s | 1/h | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Adjustable rated motor current I_M | | | | | | | |
| • Minimum/maximum | A | 90/210 | 100/250 | 135/315 | 160/370 | 200/470 | 240/570 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

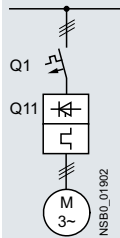
3RW50 soft starters > General data

Motor feeders according to IEC with 3VA 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 6/11](#).



| Soft starters | Motor starter protectors | | Motor starter protectors | |
|---------------------------------|--------------------------|-------|--------------------------|-------|
| | for 400 V systems | | for 500 V systems | |
| Q11 | Q1 | I_q | Q1 | I_q |
| Type | Type | kA | Type | kA |
| Type of coordination "1" | Inline circuit | | | |
| 3RW5055 | 3VA2220-7MN32-0AA0 | 20 | 3VA2220-7MN32-0AA0 | 20 |
| 3RW5056 | 3VA2220-7MN32-0AA0 | 20 | 3VA2220-7MN32-0AA0 | 20 |
| 3RW5072 | 3VA2440-7MN32-0AA0 | 65 | 3VA2440-7MN32-0AA0 | 65 |
| 3RW5073 | 3VA2440-7MN32-0AA0 | 65 | 3VA2440-7MN32-0AA0 | 65 |
| 3RW5074 | 3VA2440-7MN32-0AA0 | 65 | 3VA2440-7MN32-0AA0 | 65 |
| 3RW5075 | 3VA2580-6HN32-0AA0 | 65 | 3VA2580-6HN32-0AA0 | 65 |
| 3RW5076 | 3VA2580-6HN32-0AA0 | 65 | 3VA2580-6HN32-0AA0 | 65 |
| 3RW5077 | 3VA2580-6HN32-0AA0 | 65 | 3VA2580-6HN32-0AA0 | 65 |

Note:

The service factor and measurement inaccuracies, for example, have been taken into account for the selection of the specified circuit breakers; the specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

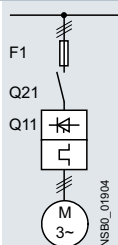
Motor feeders according to IEC with 3NA3 fuses

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 6/11](#).



| 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 | F1 | Q21 | Q21 |
| Type | Type | Type | Type |
| Type of coordination "1" | Inline circuit | | |
| | | | |
| 3RW5055 | 3NA3244-6 | 3RT1055 | 3RT1055 |
| 3RW5056 | 3NA3244-6 | 3RT1056 | 3RT1064 |
| 3RW5072 | 2 x 3NA3354-6 | 3RT1064 | 3RT1064 |
| 3RW5073 | 2 x 3NA3354-6 | 3RT1065 | 3RT1065 |
| 3RW5074 | 2 x 3NA3365-6 | 3RT1075 | 3RT1075 |
| 3RW5075 | 2 x 3NA3365-6 | 3RT1075 | 3RT1075 |
| 3RW5076 | 2 x 3NA3365-6 | 3RT1076 | 3RT1076 |
| 3RW5077 | 2 x 3NA3365-6 | 3TF68 | 3TF68 |

Note:

The specified short-circuit breaking capacities I_{q} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW50 soft starters > General data

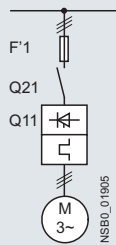
Motor feeders according to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection, cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_{cs} = 65 \text{ kA}$

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/11](#).



| Soft starters | gR 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 ToC 2 | | |
| 3RW5055 | 3NE1227-0 | 3RT1055 | 3RT1055 |
| 3RW5056 | 3NE1230-0 | 3RT1056 | 3RT1064 |
| 3RW5072 | 3NE1230-2 | 3RT1064 | 3RT1064 |
| 3RW5073 | 3NE1331-0 | 3RT1065 | 3RT1065 |
| 3RW5074 | 3NE1333-2 | 3RT1075 | 3RT1075 |
| 3RW5075 | 3NE1334-2 | 3RT1075 | 3RT1075 |
| 3RW5076 | 3NE1436-2 | 3RT1076 | 3RT1076 |
| 3RW5077 | 3NE1437-2 | 3TF68 | 3TF68 |

Note:

The specified short-circuit breaking capacities I_{cs} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

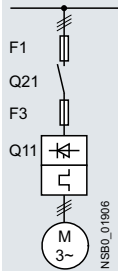
Motor feeders according to IEC with 3NE3 fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65$ kA

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/11](#).



| Soft starters | gG class fuse | aR class fuse | Line contactor (optional) | |
|---------------------------------|-------------------------|-------------------------|---------------------------|-------------------------|
| | for systems up to 600 V | for systems up to 600 V | for systems up to 480 V | for systems up to 600 V |
| Q11 | F1 | F3 | Q21 | Q21 |
| Type | Type | Type | Type | Type |
| Type of coordination "2" | Inline circuit | | | |
| 3RW5055 | 3NA3244-6 | 3NE3334-0B | 3RT1055 | 3RT1055 |
| 3RW5056 | 3NA3244-6 | 3NE3335 | 3RT1056 | 3RT1064 |
| 3RW5072 | 2 x 3NA3354-6 | 3NE3333 | 3RT1064 | 3RT1064 |
| 3RW5073 | 2 x 3NA3354-6 | 3NE3335 | 3RT1065 | 3RT1065 |
| 3RW5074 | 2 x 3NA3365-6 | 3NE3335 | 3RT1075 | 3RT1075 |
| 3RW5075 | 2 x 3NA3365-6 | 3NE3336 | 3RT1075 | 3RT1075 |
| 3RW5076 | 2 x 3NA3365-6 | 3NE3340-8 | 3RT1076 | 3RT1076 |
| 3RW5077 | 2 x 3NA3365-6 | 3NE3340-8 | 3TF68 | 3TF68 |

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3VA 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.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW50 soft starters > Inline circuit **IE3/IE4 ready**

Selection and ordering data

For normal starting (CLASS 10E)



3RW5055



3RW5075

| At 40 °C | | At 50 °C | | | | Size | SD ¹⁾ | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG | | |
|--|--|------------|----------|--------------------------|------------------------------------|--------------|------------------|--------------|--------------|-------------------|----------------------|----|--------|-----|
| Operational current A | Operating power for three-phase motors | | | Operational current A | 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 | | | | | | |
| | kW | kW | kW | | hp | hp | hp | hp | | | | | | |
| Operational voltage 200 ... 480 V | | | | | | | | | | | | | | |
| 143 | 37 | 75 | -- | 128 | 40 | 40 | 100 | -- | S6 | 5 | 3RW5055-□□B□4 | 1 | 1 unit | 42S |
| 171 | 45 | 90 | -- | 153 | 50 | 50 | 100 | -- | S6 | 5 | 3RW5056-□□B□4 | 1 | 1 unit | 42S |
| 210 | 55 | 110 | -- | 186 | 60 | 60 | 150 | -- | S12 | 5 | 3RW5072-□□B□4 | 1 | 1 unit | 42S |
| 250 | 75 | 132 | -- | 220 | 60 | 75 | 150 | -- | S12 | 5 | 3RW5073-□□B□4 | 1 | 1 unit | 42S |
| 315 | 90 | 160 | -- | 279 | 75 | 100 | 200 | -- | S12 | 5 | 3RW5074-□□B□4 | 1 | 1 unit | 42S |
| 370 | 110 | 200 | -- | 328 | 100 | 125 | 250 | -- | S12 | 5 | 3RW5075-□□B□4 | 1 | 1 unit | 42S |
| 470 | 132 | 250 | -- | 416 | 150 | 150 | 350 | -- | S12 | 5 | 3RW5076-□□B□4 | 1 | 1 unit | 42S |
| 570 | 160 | 315 | -- | 504 | 150 | 200 | 400 | -- | S12 | 5 | 3RW5077-□□B□4 | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

Spring-loaded terminals
Screw terminals

Product function

Analog output
Thermistor motor protection

Control supply voltage

24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW50 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 6/8.



| At 40 °C | | At 50 °C | | | | Size | SD ¹⁾ | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG | | |
|--|--|------------|----------|--------------------------|------------------------------------|--------------|------------------|--------------|--------------|-------------------|----------------------|----|--------|-----|
| Operational current A | Operating power for three-phase motors | | | Operational current A | 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 | | | | | | |
| | kW | kW | kW | | hp | hp | hp | hp | | | | | | |
| Operational voltage 200 ... 600 V | | | | | | | | | | | | | | |
| 143 | 37 | 75 | 90 | 128 | 40 | 40 | 100 | 125 | S6 | 5 | 3RW5055-□□B□5 | 1 | 1 unit | 42S |
| 171 | 45 | 90 | 110 | 153 | 50 | 50 | 100 | 150 | S6 | 5 | 3RW5056-□□B□5 | 1 | 1 unit | 42S |
| 210 | 55 | 110 | 132 | 186 | 60 | 60 | 150 | 150 | S12 | 5 | 3RW5072-□□B□5 | 1 | 1 unit | 42S |
| 250 | 75 | 132 | 160 | 220 | 60 | 75 | 150 | 200 | S12 | 5 | 3RW5073-□□B□5 | 1 | 1 unit | 42S |
| 315 | 90 | 160 | 200 | 279 | 75 | 100 | 200 | 250 | S12 | 5 | 3RW5074-□□B□5 | 1 | 1 unit | 42S |
| 370 | 110 | 200 | 250 | 328 | 100 | 125 | 250 | 300 | S12 | 5 | 3RW5075-□□B□5 | 1 | 1 unit | 42S |
| 470 | 132 | 250 | 315 | 416 | 150 | 150 | 350 | 450 | S12 | 2 | 3RW5076-□□B□5 | 1 | 1 unit | 42S |
| 570 | 160 | 315 | 355 | 504 | 150 | 200 | 400 | 500 | S12 | 5 | 3RW5077-□□B□5 | 1 | 1 unit | 42S |

Type of electrical connection for the control circuit

Spring-loaded terminals
Screw terminals

Product function

Analog output
Thermistor motor protection

Control supply voltage

24 V AC/DC
110 ... 250 V AC

¹⁾ 3RW50 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 6/8.






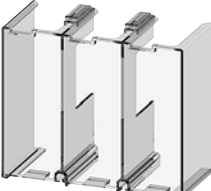


Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW50 soft starters > Accessories

Selection and ordering data



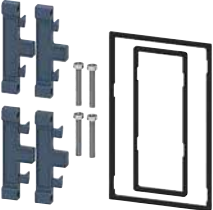


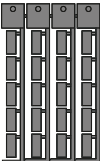
| Product designation | Manufacturer's Article No. of the soft starter | Type of product | Application | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|---|-----------------|--|----|-------------|----------------------|-------------------|--------|-----|
| Fan covers | | | | | | | | | |
|  | Fan cover | 3RW50 (1x) | -- | -- | ▶ | 3RW5985-0FC00 | 1 | 1 unit | 42S |
| 3RW5985-0FC00 | | | | | | | | | |
| Box terminal block | | | | | | | | | |
|  | Box terminal block for round and ribbon cables | 3RW505 (2x) | Up to 70 mm ² | -- | ▶ | 3RT1955-4G | 1 | 1 unit | 41B |
| | | | Up to 120 mm ² | -- | ▶ | 3RT1956-4G | 1 | 1 unit | 41B |
| | | 3RW507 (2x) | Up to 240 mm ² (with auxiliary conductor connection) | -- | ▶ | 3RT1966-4G | 1 | 1 unit | 41B |
| 3RT1956-4G | | | | | | | | | |
| Terminal covers | | | | | | | | | |
|  | Covers for box terminals | 3RW505 (2x) | -- | -- | ▶ | 3RT1956-4EA2 | 1 | 1 unit | 41B |
| | | 3RW507 (2x) | -- | -- | 5 | 3RT1966-4EA2 | 1 | 1 unit | 41B |
| 3RT1956-4EA2 | | | | | | | | | |
|  | Covers for cable lugs and busbar connections | 3RW505 (2x) | -- | -- | ▶ | 3RT1956-4EA1 | 1 | 1 unit | 41B |
| | | 3RW507 (2x) | -- | -- | 5 | 3RT1966-4EA1 | 1 | 1 unit | 41B |
| 3RT1956-4EA1 | | | | | | | | | |
| Communication modules | | | | | | | | | |
|  | Communication module | 3RW50 | PROFINET Standard | -- | ▶ | 3RW5980-0CS00 | 1 | 1 unit | 42S |
| | | | PROFIBUS | -- | ▶ | 3RW5980-0CP00 | 1 | 1 unit | 42S |
| | | | EtherNet/IP | -- | ▶ | 3RW5980-0CE00 | 1 | 1 unit | 42S |
| | | | Modbus RTU | -- | ▶ | 3RW5980-0CR00 | 1 | 1 unit | 42S |
| | | | Modbus TCP | -- | ▶ | 3RW5980-0CT00 | 1 | 1 unit | 42S |
| 3RW5980-0CS00 | | | | | | | | | |
|  | COM connecting cable | 3RW50 | 0.3 m, round | -- | ▶ | 3RW5900-0CC00 | 1 | 1 unit | 42S |
| 3RW5900-0CC00 | | | | | | | | | |
| For mounting laterally on the device | | | | | | | | | |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW50 soft starters > 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 | 3RW50 | High Feature | -- | ▶ 3RW5980-0HF00 | | 1 | 1 unit | 42S |
| 3RW5980-0HF00 | | | | | | | | | |
|  | | | Standard | -- | ▶ 3RW5980-0HS00 | | 1 | 1 unit | 42S |
| 3RW5980-0HS00 | | | | | | | | | |
|  | IP65 door mounting kit for HMI modules | 3RW50 | IP65 | For HMI modules | ▶ 3RW5980-0HD00 | | 1 | 1 unit | 42S |
| 3RW5980-0HD00 | | | | | | | | | |
| Connecting cables | | | | | | | | | |
|  | HMI connecting cable | 3RW50 | 5 m, round | For door mounting | ▶ 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 |
| 3UF793.-0BA00-0 | | | | | | | | | |
| Further accessories | | | | | | | | | |
|  | Push-in lugs for wall mounting | -- | Two lugs are required per device | For HMI modules and communication modules | 2 3ZY1311-0AA00 | | 1 | 10 units | 41L |
| 3ZY1311-0AA00 | | | | | | | | | |
| Blank labels | | | | | | | | | |
|  | Unit labeling plates¹⁾ | -- | 20 mm x 7 mm, titanium gray | For SIRIUS devices | 20 3RT2900-1SB20 | | 100 | 340 units | 41B |
| 3RT2900-1SB20 | | | | | | | | | |

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/sirius-soft-starter
Industry Mall, see www.siemens.com/product?3RW40

TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=3rw40>
Simulation Tool for Soft Starters (STS), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

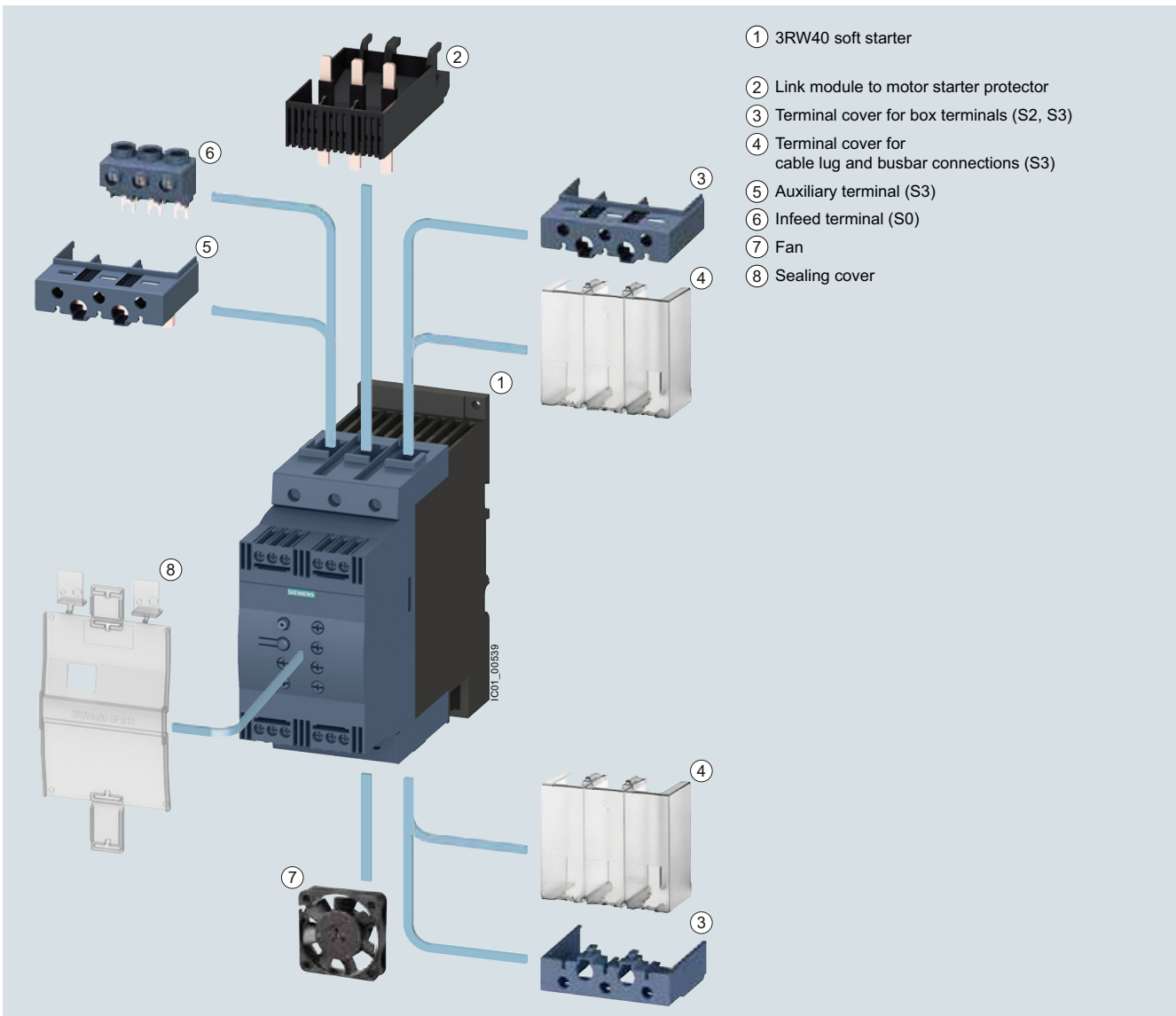


SIRIUS 3RW40 soft starter

The SIRIUS 3RW40 Basic Performance soft starters are suitable for soft starting and stopping of three-phase asynchronous motors.

Thanks to 2-phase control, not only is the current kept at minimum values in all three phases throughout the entire starting time, but disturbing direct current components are also eliminated. This not only enables the 2-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.

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.



- ① 3RW40 soft starter
- ② Link module to motor starter protector
- ③ Terminal cover for box terminals (S2, S3)
- ④ Terminal cover for cable lug and busbar connections (S3)
- ⑤ Auxiliary terminal (S3)
- ⑥ Infeed terminal (S0)
- ⑦ Fan
- ⑧ Sealing cover

SIRIUS 3RW40 Basic Performance soft starter with accessories (see page 6/93)

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW40 soft starters > General data

Benefits



3RW402.



3RW403.



3RW404.

| 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 diagnostic functions |
| Integrated in the SIRIUS modular system | Link modules to motor starter protectors |
| Hybrid switching technology and 2-phase motor control | Minimum power loss and optimized motor control by avoiding DC components |
| 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 | Full motor protection |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

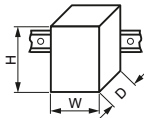
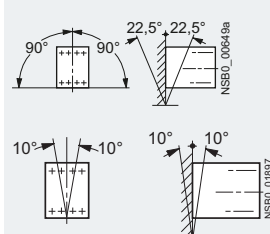
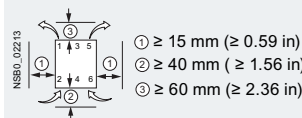
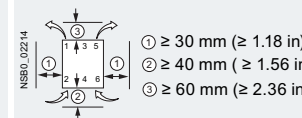
3RW40 soft starters > General data

Technical specifications

More information

Technical specifications, see <https://support.industry.siemens.com/cs/ww/en/ps/25251/td>
Equipment Manual, see <https://support.industry.siemens.com/cs/ww/en/view/38752095>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/25251/faq>
Simulation Tool for Soft Starters (STS), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>

| Type | | 3RW402. | 3RW403. | 3RW404. | |
|---|---|--|----------------|---|----------------|
| Mechanics and environment | | | | | |
| Mounting dimensions (W x H x D) | | | | | |
| <ul style="list-style-type: none"> Screw terminals Spring-loaded terminals |  | mm | 45 x 125 x 154 | 55 x 144 x 170 | 70 x 160 x 188 |
| | | mm | 45 x 150 x 154 | 55 x 144 x 170 | 70 x 160 x 188 |
| Permissible ambient temperature | | | | | |
| During operation | °C | -25 ... +60; (derating from +40) | | | |
| During storage | °C | -40 ... +80 | | | |
| Weight | | | | | |
| | kg | 0.77 | 1.35 | 1.9 | |
| Permissible mounting position¹⁾ | | | | | |
| <ul style="list-style-type: none"> With auxiliary fan (for 3RW402. ... 3RW404.) Without auxiliary fan (for 3RW402. ... 3RW404.) |  | | | | |
| | Stand-alone installation |  <ul style="list-style-type: none"> ① ≥ 15 mm (≥ 0.59 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in) | |  <ul style="list-style-type: none"> ① ≥ 30 mm (≥ 1.18 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in) | |
| Installation type¹⁾ | | | | | |
| | m | 5 000 (Derating from 1 000, see characteristic curve on page 6/8) | | | |
| Degree of protection IP on the front acc. to IEC 60529 | | | | | |
| IP20 | | | | | |
| Touch protection on the front acc. to IEC 60529 | | | | | |
| Finger-safe for vertical touching from the front | | | | | |
| ¹⁾ In the case of deviations, please observe derating, see Equipment Manual in the chapter "Configuring". | | | | | |
| 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 | | |
| Power electronics | | | | | |
| Rated operational voltage | | | | | |
| | V AC | 200 ... 480 | | 400 ... 600 | |
| Tolerance | % | -15/+10 | | | |
| Maximum blocking voltage (thyristor) | | | | | |
| | V AC | 1 600 | | | |
| Rated frequency | | | | | |
| | Hz | 50/60 | | | |
| Tolerance | % | ± 10 | | | |
| Uninterrupted duty at 40 °C (% of I_g) | | | | | |
| | % | 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 | | | |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW40 soft starters > General data

| Type | | 3RW4024 | 3RW4026 | 3RW4027 | 3RW4028 |
|--|-----|------------|------------|------------|----------|
| Power electronics | | | | | |
| Load rating with rated operational current I_e | | | | | |
| • According to IEC and UL/CSA ¹⁾ , individual mounting at 40/50/60 °C, AC-53a | A | 12.5/11/10 | 25.3/23/21 | 32.2/29/26 | 38/34/31 |
| 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 limiting set to 300% I_M (40 °C) | W | 68 | 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 | 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 |
| • For heavy starting (CLASS 20) at 40/50 °C | | | | | |
| - Rated motor current $I_M^{(2)}$, start-up time 6 s | A | 10/9 | 21/19 | 27/24 | 31/28 |
| - Starts per hour ³⁾ | 1/h | 47/47 | 21/21 | 20/20 | 18/18 |
| - Rated motor current $I_M^{(2)}$, start-up time 8 s | A | 10/9 | 21/19 | 27/24 | 31/28 |
| - Starts per hour ³⁾ | 1/h | 34/34 | 15/15 | 14/14 | 13/13 |
| ¹⁾ Measurement at 60 °C according to UL/CSA not required. ²⁾ Current limiting 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 Equipment Manual in the chapter "Configuring" . | | | | | |

| Type | | 3RW4036 | 3RW4037 | 3RW4038 | 3RW4046 | 3RW4047 |
|--|-----|----------|----------|------------|----------|-----------|
| Power electronics | | | | | | |
| Load rating with rated operational current I_e | | | | | | |
| • According to IEC and UL/CSA ¹⁾ , individual mounting at 40/50/60 °C, AC-53a | A | 45/42/39 | 63/58/53 | 72/62.1/60 | 80/73/66 | 106/98/90 |
| 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 limiting set to 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 | 106/98 |
| - 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 |
| • For heavy starting (CLASS 20) at 40/50 °C | | | | | | |
| - Rated motor current $I_M^{(2)}$, start-up time 6 s | A | 38/34 | 46/42 | 50/46 | 64/58 | 77/70 |
| - Starts per hour ³⁾ | 1/h | 30/30 | 31/31 | 34/34 | 23/23 | 23/23 |
| - Rated motor current $I_M^{(2)}$, start-up time 8 s | A | 38/34 | 46/42 | 50/46 | 64/58 | 77/70 |
| - Starts per hour ³⁾ | 1/h | 21/21 | 22/22 | 24/24 | 16/16 | 16/16 |
| ¹⁾ Measurement at 60 °C according to UL/CSA not required. ²⁾ Current limiting 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 Equipment Manual in the chapter "Configuring" . | | | | | | |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters
Basic Performance soft starters

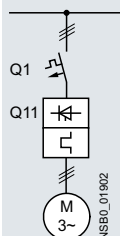
3RW40 soft starters > General data

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 6/11](#).



| Soft starters | Motor starter protectors | | | |
|---------------------------------|--------------------------|-------|-------------------|-------|
| | for 400 V systems | | for 500 V systems | |
| Q11 | Q1 | I_q | Q1 | I_q |
| Type | Type | kA | Type | 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 | 3RV2041-4YA10 | 5 |
| 3RW4047 | 3RV2041-4MA10 | 11 | 3RV2041-4MA10 | 5 |

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW40 soft starters > General data

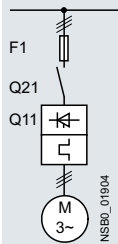
Motor feeders according to IEC with 3NA3 fuses

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 6/11](#).



| Soft starters | gG class fuse | | Line contactor (optional) | |
|--------------------------|---|-------------------------|--------------------------------------|-------------------------|
| | for systems up to 600 V | 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" | <div style="border: 1px solid black; padding: 2px; display: inline-block;">T_{QC} 1</div> 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 |

Note:

The specified short-circuit breaking capacities I_{q} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

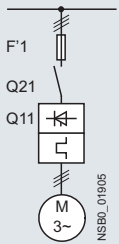
Motor feeders according to IEC with 3NE1 SITOR fuses


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 6/11](#).



| Soft starters | gR class fuse | Line contactor (optional) | | |
|---------------------------------|---|---------------------------|--------------------------------------|-------------------------|
| | for systems up to 600 V | 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 |

Note:

The specified short-circuit breaking capacities I_{q} in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW40 soft starters > General data

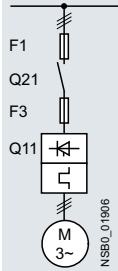
Motor feeders according to IEC with 3NE8 / 3NE4 / 3NE3 / 3NC fuses

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 6/11](#).



| 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 400 V | for systems up to 480 V |
| Q11 | F1 | F3 | F3 | F3 | F3 | Q21 | Q21 | Q21 |
| Type | Type | Type | Type | Type | Type | Type | Type | Type |
| Type of coordination "2" | TOC 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 |

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2 motor starter protectors can also be used, possibly with reduced short-circuit breaking capacity ([see page 6/87](#)). In these cases, optional line contactors can be dispensed with.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters
Basic Performance soft starters

IE3/IE4 ready 3RW40 soft starters > 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 | ▶ | 3RW4024-□BB□4 | 1 | 1 unit | 42G |
| 25 | 5.5 | 11 | -- | 23 | 5 | 5 | 15 | -- | S0 | ▶ | 3RW4026-□BB□4 | 1 | 1 unit | 42G |
| 32 | 7.5 | 15 | -- | 29 | 7.5 | 7.5 | 20 | -- | S0 | ▶ | 3RW4027-□BB□4 | 1 | 1 unit | 42G |
| 38 | 11 | 18.5 | -- | 34 | 10 | 10 | 25 | -- | S0 | ▶ | 3RW4028-□BB□4 | 1 | 1 unit | 42G |
| 45 | 11 | 22 | -- | 42 | 10 | 15 | 30 | -- | S2 | ▶ | 3RW4036-□BB□4 | 1 | 1 unit | 42G |
| 63 | 18.5 | 30 | -- | 58 | 15 | 20 | 40 | -- | S2 | ▶ | 3RW4037-□BB□4 | 1 | 1 unit | 42G |
| 72 | 22 | 37 | -- | 62 | 20 | 20 | 40 | -- | S2 | ▶ | 3RW4038-□BB□4 | 1 | 1 unit | 42G |
| 80 | 22 | 45 | -- | 73 | 20 | 25 | 50 | -- | S3 | ▶ | 3RW4046-□BB□4 | 1 | 1 unit | 42G |
| 106 | 30 | 55 | -- | 98 | 30 | 30 | 75 | -- | S3 | ▶ | 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

- Screw terminals
- Spring-loaded terminals²⁾

Control supply voltage

- 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 6/8.

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Switching devices – Soft starters and solid-state switching devices

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 | ▶ | 3RW4024-□TB04 | 1 | 1 unit | 42G |
| 25 | 5.5 | 11 | -- | 23 | 5 | 5 | 15 | -- | S0 | ▶ | 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 | ▶ | 3RW4028-□TB04 | 1 | 1 unit | 42G |
| 45 | 11 | 22 | -- | 42 | 10 | 15 | 30 | -- | S2 | ▶ | 3RW4036-□TB04 | 1 | 1 unit | 42G |
| 63 | 18.5 | 30 | -- | 58 | 15 | 20 | 40 | -- | S2 | ▶ | 3RW4037-□TB04 | 1 | 1 unit | 42G |
| 72 | 22 | 37 | -- | 62 | 20 | 20 | 40 | -- | S2 | ▶ | 3RW4038-□TB04 | 1 | 1 unit | 42G |
| 80 | 22 | 45 | -- | 73 | 20 | 25 | 50 | -- | S3 | ▶ | 3RW4046-□TB04 | 1 | 1 unit | 42G |
| 106 | 30 | 55 | -- | 98 | 30 | 30 | 75 | -- | S3 | ▶ | 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

- Screw terminals
- Spring-loaded 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 6/8.




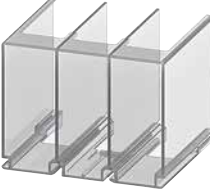

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2

Switching devices – Soft starters and solid-state switching devices

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 | | | | | |
| 3-phase infeed terminals | | | | | | | | | |
|  | 2.5 ... 25 | 2.5 ... 16 | 10 ... 4 | 3 ... 4 | S0 (3RW402.) | | | | |
| 3RV2925-5AB | | | | | | | 1 | 1 unit | 41E |
| Auxiliary terminals | | | | | | | | | |
|  | Auxiliary terminals, 3-pole | | | | | | | | |
| 3RT2946-4F | 3RW404. | S3 | For connection of auxiliary and control cables (0.5 ... 2.5 mm ²) to the main conductor terminals | | 2 | 3RT2946-4F | 1 | 1 unit | 41B |
| Covers for soft starters | | | | | | | | | |
|  | Terminal covers for box terminals | | | | | | | | |
| 3RT2936-4EA2 | 3RW403. | S2 | Additional touch protection to be fitted at the box terminals (two units required per device) | | ▶ | 3RT2936-4EA2 | 1 | 1 unit | 41B |
| | 3RW404. | S3 | | | | 3RT2946-4EA2 | 1 | 1 unit | 41B |
|  | Terminal covers for cable lugs and busbar connections | | | | | | | | |
| 3RT1946-4EA1 | 3RW404. | S3 | For complying with the voltage clearances and as touch protection if box terminal is removed (two units required per device) | | 20 | 3RT1946-4EA1 | 1 | 1 unit | 41B |
|  | Sealing covers | | | | | | | | |
| 3RW4900-0PB10 | 3RW402. to 3RW404. | S0, S2, S3 | -- | | 2 | 3RW4900-0PB10 | 1 | 1 unit | 42G |

Switching devices – Soft starters and solid-state switching devices

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

| | | | | | | | | |
|-----------|-----------|---|---|----------------------|--|---|--------|-----|
| 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 |
|-----------|-----------|---|---|----------------------|--|---|--------|-----|

| For soft starters | Version | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|-------------------|---------|----|-------------|--------------|-------------------|-----|----|
| Type | Size | d | | | | | |

Fans (to increase switching frequency and for device mounting in positions different to the standard position)



3RW49..-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 | d | | | | | |

Link modules to motor starter protectors¹⁾



3RA2921-1BA00

| | | | | | | | | |
|-------------------|-----------|---------------|------------------------|----------------------|--|---|--------|-----|
| • Screw terminals | | | Screw terminals | | | | | |
| 3RW402. | S0 | S00/S0 | ▶ | 3RA2921-1BA00 | | 1 | 1 unit | 41B |
| 3RW4036 | S2 | S2 | ▶ | 3RA2931-1AA00 | | 1 | 1 unit | 41B |
| 3RW404. | S3 | S3 | ▶ | 3RA1941-1AA00 | | 1 | 1 unit | 41B |

| | | | | | | | | |
|---------------------------|-----------|-----------|--------------------------------|----------------------|--|---|--------|-----|
| • Spring-loaded terminals | | | Spring-loaded terminals | | | | | |
| 3RW402. | S0 | S0 | 2 | 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 with mounting plate.

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

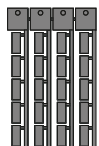
Tools for opening spring-loaded terminals in sizes S00 and S0



3RA2908-1A

| | | | | | | | |
|--|---|-------------------|--------------------------------|---|--------|-----|--|
| Screwdrivers | | | Spring-loaded terminals | | | | |
| For all SIRIUS devices with spring-loaded terminals | | | | | | | |
| Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated | 2 | 3RA2908-1A | | 1 | 1 unit | 41B | |

Blank labels



3RT2900-1SB20

| | | | | | | | |
|--|----|----------------------|--|-----|-----------|-----|--|
| Unit labeling plates¹⁾ | | | | | | | |
| For SIRIUS devices | | | | | | | |
| 20 mm x 7 mm, titanium gray | 20 | 3RT2900-1SB20 | | 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/sirius-soft-starter
Industry Mall, see www.siemens.com/product?3RW30

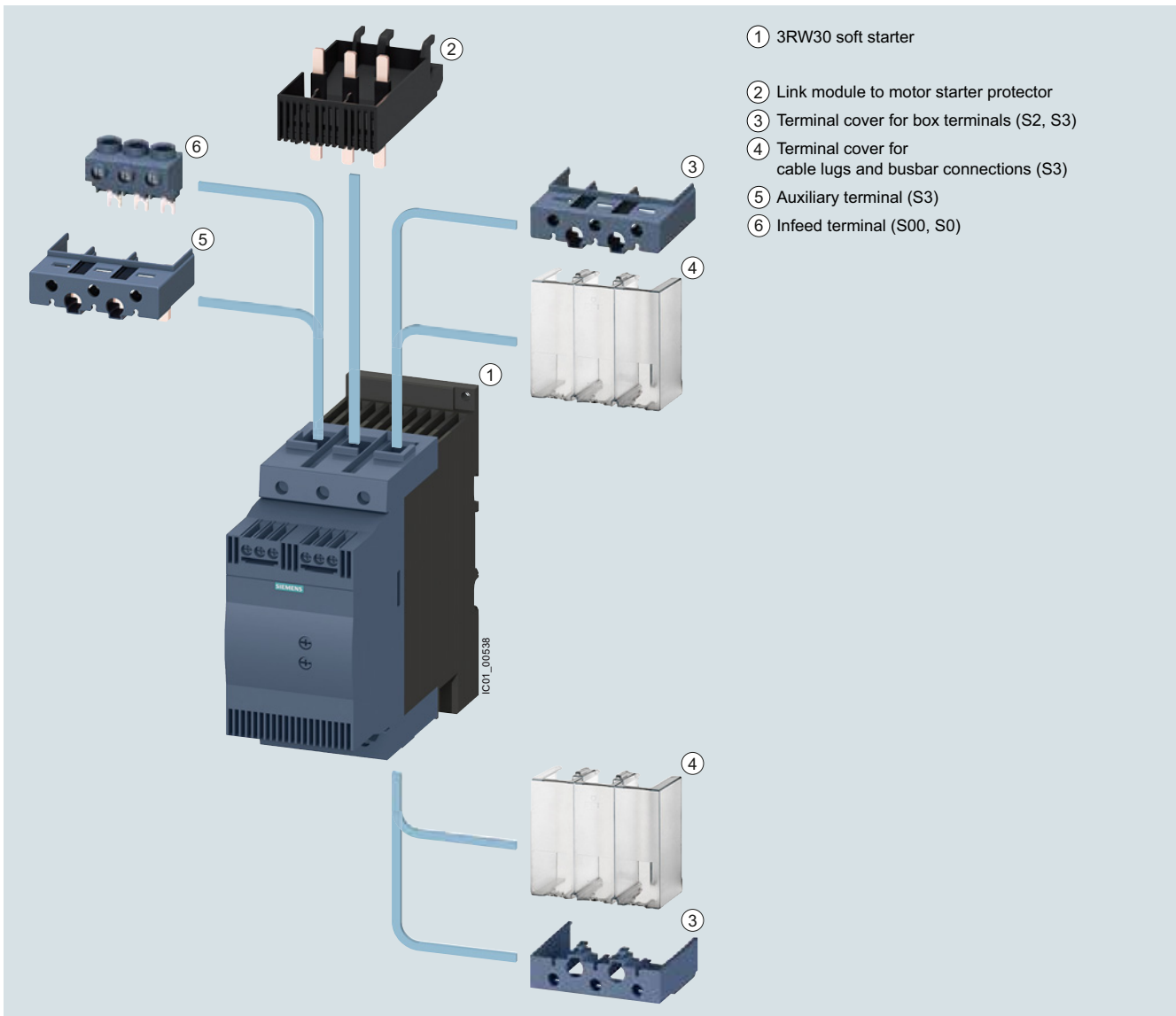
TIA Selection Tool Cloud (TST Cloud), see <https://www.siemens.com/tstcloud/?node=3rw30>
Simulation Tool for Soft Starters (STS), see page 6/9 or <https://support.industry.siemens.com/cs/ww/en/view/101494917>



SIRIUS 3RW30 soft starter

The SIRIUS 3RW30 Basic Performance soft starters are suitable for soft starting of three-phase asynchronous motors.

Thanks to 2-phase control, not only is the current kept at minimum values in all three phases throughout the entire starting time, but disturbing direct current components are also eliminated. This not only enables the 2-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)

SIRIUS 3RW30 Basic Performance soft starter with accessories (see page 6/104)

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW30 soft starters > General data

Benefits



| 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 in the SIRIUS modular system | Link modules to motor starter protectors |
| Hybrid switching technology and 2-phase motor control | Minimum power loss and optimized motor control by avoiding DC components |

Technical specifications

More information

Equipment Manual, 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-loaded 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 possible) | | | | | | |
| | | | | | | |
| Installation type¹⁾ | | | | | | |
| Stand-alone installation | | | | | | |
| | | ① ≥ 15 mm (≥ 0.59 in) ② ≥ 40 mm (≥ 1.56 in) ③ ≥ 60 mm (≥ 2.36 in) | | 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 6/9) | | | | |
| Degree of protection IP on the front acc. to IEC 60529 | | | | | | |
| | | IP20 | | | | |
| Touch protection on the front acc. to IEC 60529 | | | | | | |
| | | Finger-safe for vertical touching from the front | | | | |

¹⁾ In the case of deviations, please observe derating, see Equipment Manual in the chapter "Configuring".

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW30 soft starters > General data

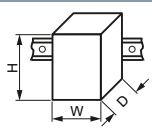
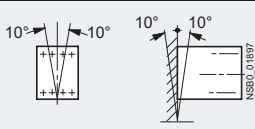
| Type | Terminal | 3RW301., 3RW302. | | 3RW303., 3RW304. | | | |
|---|----------|------------------|-------------------|------------------|------------|-------------|------------|
| Control electronics | | | | | | | |
| Rated values | | | | | | | |
| Rated control supply voltage | A1/A2 | V | 24 | 110 ... 230 | 24 | 110 ... 230 | |
| • Tolerance | | % | ± 20 | -15/+10 | ± 20 | -15/+10 | |
| Rated frequency | | Hz | 50/60 | | | | |
| • Tolerance | | % | ± 10 | | | | |
| Power electronics | | | | | | | |
| Rated operational voltage | | | | | | | |
| Tolerance | | V AC | 200 ... 480 | | | | |
| | | % | -15/+10 | | | | |
| Rated frequency | | | | | | | |
| Tolerance | | Hz | 50/60 | | | | |
| | | % | ± 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 | | | | |
| Power electronics | | | | | | | |
| Load rating with rated operational current I_e | | | | | | | |
| • According to IEC and UL/CSA ¹⁾ , individual mounting at 40/50/60 °C, AC-53a A | | | | | | | |
| | | A | 3.6/3.3/3 | 6.5/6/5.5 | 9/8/7 | 12.5/12/11 | 17.6/17/14 |
| 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. | | | | | | | |
| Power electronics | | | | | | | |
| Load rating with rated operational current I_e | | | | | | | |
| • According to IEC and UL/CSA ¹⁾ , individual mounting at 40/50/60 °C, AC-53a A | | | | | | | |
| | | A | 25.3/23/21 | 32.2/29/26 | 38/34/31 | | |
| 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 Equipment Manual in the chapter "Configuring". | | | | | | | |
| Power electronics | | | | | | | |
| Load rating with rated operational current I_e | | | | | | | |
| • According to IEC and UL/CSA ¹⁾ , individual mounting at 40/50/60 °C, AC-53a A | | | | | | | |
| | | A | 45/42/39 | 65/58/53 | 72/62.1/60 | 80/73/66 | 106/98/90 |
| 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. | | | | | | | |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW30 soft starters > General data

| Type | | 3RW3003-1CB54 | 3RW3003-2CB54 |
|--|---|---|--------------------------|
| Mechanics and environment | | | |
| Mounting dimensions (W x H x D) | | | |
| <ul style="list-style-type: none"> Screw terminals Spring-loaded terminals |  | mm 22.5 x 100 x 120 | -- 22.5 x 101.6 x 120 |
| Permissible ambient temperature | | | |
| During operation | °C | -25 ... +60; (derating from +40) | |
| During storage | °C | -40 ... +80 | |
| Weight | kg | 0.207 | 0.188 |
| Permissible mounting position | |  | |
| Permissible installation altitude | m | 5 000 (Derating from 1 000, see characteristic curve on page 6/9) | |
| Degree of protection IP on the front acc. to IEC 60529 | | IP20 | |
| Touch protection on the front acc. to IEC 60529 | | Finger-safe for vertical touching from the front | |
| Control electronics | | | |
| Rated values | | | |
| Rated control supply voltage | V | 24 ... 230 AC/DC | |
| <ul style="list-style-type: none"> Tolerance | % | ± 10 | |
| Rated frequency at AC | Hz | 50/60 | |
| <ul style="list-style-type: none"> 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 | | | |
| <ul style="list-style-type: none"> According to IEC and UL/CSA, individual mounting at 40/50/60 °C, AC-53a | A | 3/2.6/2.2 | |
| <ul style="list-style-type: none"> According to IEC and UL/CSA, side-by-side mounting at 40/50/60 °C, AC-53a | A | 2.6/2.2/1.8 | |
| Power loss | | | |
| <ul style="list-style-type: none"> In operation after completed starting with uninterrupted rated operational current (40 °C) approx. | W | 6.5 | |
| <ul style="list-style-type: none"> With utilization of maximum switching frequency | W | 3 | |
| Permissible starts per hour (cannot be increased by using a fan) | | | |
| <ul style="list-style-type: none"> For intermittent duty S4 $T_{ij} = 40$ °C, stand-alone installation vertical | 1/h | 1 500 | |
| <ul style="list-style-type: none"> 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 .

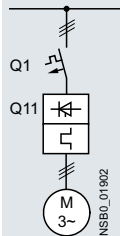
²⁾ If this value is exceeded, problems with line capacities may arise, which can result in false firing.

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 6/11](#).



| Soft starters | Motor starter protectors | |
|--------------------------|--------------------------|-------------|
| Q11 | for 400 V systems | |
| Type | Q1 | I_q kA |
| Type of coordination "1" | Inline circuit | |
| 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 |

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller motor starter protectors/circuit breakers from the same series can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must match the connected three-phase motor, the short-circuit and overload requirements of the application, and the line protection for the cables used.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW30 soft starters > General data

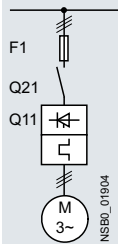
Motor feeders according to IEC with 3NA3 fuses

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 $I_q = 65$ kA

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/11](#).



| 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 TQC 1 | | |
| 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).

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

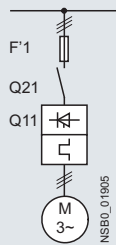
Motor feeders according to IEC with 3NE1 SITOR fuses

gR class full-range fuses for semiconductor protection,
cable and line protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65$ kA

Note:

For general recommendations for constructing motor feeders
with soft starters, see page 6/11.



| Soft starters | gR class fuse | Line contactor (optional) | |
|--------------------------|---|----------------------------|----------------------------|
| Q11 | for systems up to 480 V | for systems up to 400 V | for systems up to 480 V |
| Type | F'1 | Q21 | Q21 |
| Type | Type | Type | Type |
| Type of coordination "2" | Inline circuit 2 | | |
| 3RW3003 ¹⁾ | 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⁾ $I_q = 50$ kA at 400 V.

²⁾ No SITOR fuse required!
Alternatively: 3NA3803 (NH00), 5SB221 (DIAZED), 5SE2206 (NEOZED).

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW30 soft starters > General data

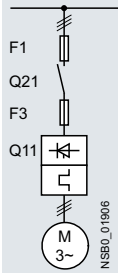
Motor feeders according to IEC with 3NE8 / 3NE4 / 3NE3 / 3NC fuses

aR class partial-range fuses for semiconductor protection

Type of coordination "2",
short-circuit breaking capacity $I_q = 65$ kA

Note:

For general recommendations for constructing motor feeders with soft starters, [see page 6/11](#).



| Soft starters | gG class fuse | aR class fuse | | | Cylindrical fuse | Line contactor (optional) | |
|---------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|---------------------------|-------------------------|
| | for systems up to 480 V | for systems up to 480 V | for systems up to 480 V | for systems up to 480 V | for systems up to 480 V | for systems up to 400 V | for systems up to 480 V |
| Q11 | F1 | F3 | F3 | F3 | F3 | Q21 | Q21 |
| 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⁾ $I_q = 50$ kA at 400 V.

²⁾ 3NA3805-1 (NH00), 5SB261 (DIAZED).

Note:

The specified short-circuit breaking capacities I_q in kA are covered by combination tests. Smaller fuses than those specified can be used at any time as smaller ones trip more quickly in the event of a short circuit (unchanged short-circuit breaking capacity) and thus protect the soft starter in any case. The dimensioning of the short-circuit components must, however, be suitable for the connected three-phase motor and the line protection for the cables used.

For CLASS 10 applications, as an alternative to the gG class full-range fuses for cable and line protection 3NA3 (F1), 3RV2 motor starter protectors can also be used, possibly with reduced short-circuit breaking capacity ([see page 6/99](#)). In these cases, optional line contactors can be dispensed with.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

IE3/IE4 ready 3RW30 soft starters > Inline circuit

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 | ▶ | 3RW3013-□BB□4 | 1 | 1 unit | 42G |
| 6.5 | 1.5 | 3 | -- | 6 | 1 | 1 | 3 | -- | S00 | ▶▶ | 3RW3014-□BB□4 | 1 | 1 unit | 42G |
| 9 | 2.2 | 4 | -- | 8 | 2 | 2 | 5 | -- | S00 | ▶▶ | 3RW3016-□BB□4 | 1 | 1 unit | 42G |
| 12.5 | 3 | 5.5 | -- | 12 | 3 | 3 | 7.5 | -- | S00 | ▶▶ | 3RW3017-□BB□4 | 1 | 1 unit | 42G |
| 17.6 | 4 | 7.5 | -- | 17 | 3 | 3 | 10 | -- | S00 | ▶▶ | 3RW3018-□BB□4 | 1 | 1 unit | 42G |
| 25 | 5.5 | 11 | -- | 23 | 5 | 5 | 15 | -- | S0 | ▶▶ | 3RW3026-□BB□4 | 1 | 1 unit | 42G |
| 32 | 7.5 | 15 | -- | 29 | 7.5 | 7.5 | 20 | -- | S0 | ▶▶ | 3RW3027-□BB□4 | 1 | 1 unit | 42G |
| 38 | 11 | 18.5 | -- | 34 | 10 | 10 | 25 | -- | S0 | ▶▶ | 3RW3028-□BB□4 | 1 | 1 unit | 42G |
| 45 | 11 | 22 | -- | 42 | 10 | 15 | 30 | -- | S2 | ▶▶ | 3RW3036-□BB□4 | 1 | 1 unit | 42G |
| 63 | 18.5 | 30 | -- | 58 | 15 | 20 | 40 | -- | S2 | ▶▶ | 3RW3037-□BB□4 | 1 | 1 unit | 42G |
| 72 | 22 | 37 | -- | 62 | 20 | 20 | 40 | -- | S2 | ▶▶ | 3RW3038-□BB□4 | 1 | 1 unit | 42G |
| 80 | 22 | 45 | -- | 73 | 20 | 25 | 50 | -- | S3 | ▶▶ | 3RW3046-□BB□4 | 1 | 1 unit | 42G |
| 106 | 30 | 55 | -- | 98 | 30 | 30 | 75 | -- | S3 | ▶▶ | 3RW3047-□BB□4 | 1 | 1 unit | 42G |

Article No. supplement for connection types

- Screw terminals
- Spring-loaded terminals²⁾

Control supply voltage U_s

- 24 V AC/DC
- 110 ... 230 V AC/DC

Soft starters for easy 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 |

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 6/8.

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters





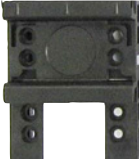

Basic Performance soft starters

3RW30 soft starters > Accessories

Selection and ordering data

More information

Equipment Manual, see <https://support.industry.siemens.com/cs/ww/en/view/38752095>

| Solid or stranded | Conductor cross-section | | Tightening torque | For soft starters size | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|--|--|---|------------------------|-----------------------------|----------------------|--------------|-------------------|----------|-----|
| | mm ² | Finely stranded with end sleeve mm ² | | | | | | | | |
| 3-phase infeed terminals | | | | | | | | | | |
|  | 2.5 ... 25 | 2.5 ... 16 | 10 ... 4 | 3 ... 4 | S00 (3RW301.), S0 (3RW302.) | 3RV2925-5AB | | 1 | 1 unit | 41E |
| Auxiliary terminals | | | | | | | | | | |
|  | Auxiliary terminals, 3-pole | | | | | | | | | |
| 3RW304. | S3 | | | | 2 | 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 (two units required per device) | | | | | | | |
| 3RW303. | S2 | | | | | 3RT2936-4EA2 | | 1 | 1 unit | 41B |
| 3RW304. | S3 | | | | | 3RT2946-4EA2 | | 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 (two units required per device) | | | | | | | |
| 3RW304. | S3 | | | | 20 | 3RT1946-4EA1 | | 1 | 1 unit | 41B |
| Mounting rails for mounting contactors for the customer assembly of 3RA21 load feeders with busbar adapters for 60 mm systems | | | | | | | | | | |
|  | -- | 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 |
| Standard mounting rail adapters | | | | | | | | | | |
|  | 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 |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Basic Performance soft starters

3RW30 soft starters > Accessories

| For soft starters Type | Size | Motor starter protectors Size | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---------------------------|------|----------------------------------|----|-------------|-----------------|-------------------------|-----|----|
| | | | d | | | | | |

Link modules to motor starter protectors¹⁾



3RA2921-1BA00

• Screw terminals

| | | | | | | | | |
|---------|------------|---------------|---|----------------------|--|---|--------|-----|
| 3RW301. | S00 | S00 | ▶ | 3RA2921-1BA00 | | 1 | 1 unit | 41B |
| 3RW302. | S0 | S00/S0 | ▶ | 3RA2921-1BA00 | | 1 | 1 unit | 41B |
| 3RW3036 | S2 | S2 | ▶ | 3RA2931-1AA00 | | 1 | 1 unit | 41B |
| 3RW304. | S3 | S3 | ▶ | 3RA1941-1AA00 | | 1 | 1 unit | 41B |

Screw terminals



Spring-loaded terminals



• Spring-loaded terminals

| | | | | | | | | |
|---------|------------|------------|---|----------------------|--|---|--------|-----|
| 3RW301. | S00 | S00 | 2 | 3RA2911-2GA00 | | 1 | 1 unit | 41B |
| 3RW302. | S0 | S0 | 2 | 3RA2921-2GA00 | | 1 | 1 unit | 41B |



3RA2921-2GA00

- ¹⁾ Can be used in size S0 up to 32 A.
Can be used in size S2 up to 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 |
|---------|----------------------------|-----|----|-------------|-----------------|-------------------------|-----|----|
| | | | d | | | | | |

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 |
|---------|----|-------------|-----------------|-------------------------|-----|----|
| | d | | | | | |

Tools for opening spring-loaded terminals in sizes S00 and S0



3RA2908-1A

Screwdrivers

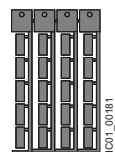
For all SIRIUS devices with spring-loaded terminals
Length approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated

Spring-loaded terminals



| | | | | | |
|---|-------------------|--|---|--------|-----|
| 2 | 3RA2908-1A | | 1 | 1 unit | 41B |
|---|-------------------|--|---|--------|-----|

Blank labels



3RT2900-1SB20

Unit labeling plates¹⁾

For SIRIUS devices
20 mm x 7 mm, titanium gray

| | | | | | |
|----|----------------------|--|-----|-----------|-----|
| 20 | 3RT2900-1SB20 | | 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).

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Spare parts

For 3RW55/3RW55 Failsafe





Overview

More information

Homepage, see www.siemens.com/sirius-soft-starter
 Industry Mall, see www.siemens.com/product?3RW

Industry Online Support (SIOS) topic page, see
<https://support.industry.siemens.com/cs/ww/en/view/109747404>

Selection and ordering data


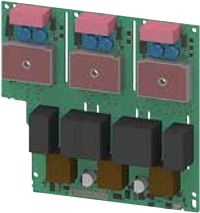
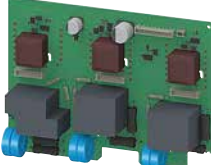






| Product designation | Manufacturer's Article No. of the soft starter | Type of product | SD | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG | |
|---|--|--|----------------------|-------------|----------------------|-------------------|-----|--------|-----|
| Power semiconductor modules | | | | | | | | | |
|  | Power semiconductor module | 3RW5524-.HA.4 (3x) | 480 V, 47 A | ▶ | 3RW5952-0SF04 | | 1 | 1 unit | 42S |
| | | 3RW5525-.HA.4 (3x), 3RW5526-.HA.4 (3x) | 480 V, 77 A | ▶ | 3RW5952-0SH04 | | 1 | 1 unit | 42S |
| | | 3RW5527-.HA.4 (3x) | 480 V, 93 A | ▶ | 3RW5952-0SJ04 | | 1 | 1 unit | 42S |
| | | 3RW5534-.HA.4 (3x), 3RW5535-.HA.4 (3x) | 480 V, 143 A | ▶ | 3RW5953-0SL04 | | 1 | 1 unit | 42S |
| | | 3RW5536-.HA.4 (3x) | 480 V, 171 A | ▶ | 3RW5953-0SM04 | | 1 | 1 unit | 42S |
| | | 3RW5543-.HA.4 (3x) | 480 V, 210 A | ▶ | 3RW5954-0SN04 | | 1 | 1 unit | 42S |
| | | 3RW5544-.HA.4 (3x) | 480 V, 250 A | ▶ | 3RW5954-0SP04 | | 1 | 1 unit | 42S |
| | | 3RW5545-.HA.4 (3x), 3RW5546-.HA.4 (3x) | 480 V, 370 A | ▶ | 3RW5954-0SR04 | | 1 | 1 unit | 42S |
| | | 3RW5547-.HA.4 (3x), 3RW5548-.HA.4 (3x) | 480 V, 570 A | ▶ | 3RW5954-0ST04 | | 1 | 1 unit | 42S |
| | | 3RW5552-.HA.4 (3x) | 480 V, 630 A | ▶ | 3RW5955-0SU04 | | 1 | 1 unit | 42S |
| | | 3RW5553-.HA.4 (3x) | 480 V, 720 A | ▶ | 3RW5955-0SV04 | | 1 | 1 unit | 42S |
| | | 3RW5554-.HA.4 (3x) | 480 V, 840 A | ▶ | 3RW5955-0SW04 | | 1 | 1 unit | 42S |
| 3RW5556-.HA.4 (3x) | 480 V, 1 100 A | ▶ | 3RW5955-0SX04 | | 1 | 1 unit | 42S | | |
| 3RW5558-.HA.4 (3x) | 480 V, 1 280 A | ▶ | 3RW5955-0SY04 | | 1 | 1 unit | 42S | | |
|  | Power semiconductor module | 3RW5521-.HA.6 (3x), 3RW5524-.HA.6 (3x) | 690 V, 47 A | ▶ | 3RW5952-0SF06 | | 1 | 1 unit | 42S |
| | | 3RW5525-.HA.6 (3x), 3RW5526-.HA.6 (3x) | 690 V, 77 A | ▶ | 3RW5952-0SH06 | | 1 | 1 unit | 42S |
| | | 3RW5527-.HA.6 (3x) | 690 V, 93 A | ▶ | 3RW5952-0SJ06 | | 1 | 1 unit | 42S |
| | | 3RW5534-.HA.6 (3x), 3RW5535-.HA.6 (3x) | 690 V, 143 A | ▶ | 3RW5953-0SL06 | | 1 | 1 unit | 42S |
| | | 3RW5536-.HA.6 (3x) | 690 V, 171 A | ▶ | 3RW5953-0SM06 | | 1 | 1 unit | 42S |
| | | 3RW5543-.HA.6 (3x) | 690 V, 210 A | ▶ | 3RW5954-0SN06 | | 1 | 1 unit | 42S |
| | | 3RW5544-.HA.6 (3x) | 690 V, 250 A | ▶ | 3RW5954-0SP06 | | 1 | 1 unit | 42S |
| | | 3RW5545-.HA.6 (3x), 3RW5546-.HA.6 (3x) | 690 V, 370 A | ▶ | 3RW5954-0SR06 | | 1 | 1 unit | 42S |
| | | 3RW5547-.HA.6 (3x), 3RW5548-.HA.6 (3x) | 690 V, 570 A | ▶ | 3RW5954-0ST06 | | 1 | 1 unit | 42S |
| | | 3RW5552-.HA.6 (3x) | 690 V, 630 A | ▶ | 3RW5955-0SU06 | | 1 | 1 unit | 42S |
| | | 3RW5553-.HA.6 (3x) | 690 V, 720 A | ▶ | 3RW5955-0SV06 | | 1 | 1 unit | 42S |
| | | 3RW5554-.HA.6 (3x) | 690 V, 840 A | ▶ | 3RW5955-0SW06 | | 1 | 1 unit | 42S |
| 3RW5556-.HA.6 (3x) | 690 V, 1 100 A | ▶ | 3RW5955-0SX06 | | 1 | 1 unit | 42S | | |
| 3RW5558-.HA.6 (3x) | 690 V, 1 280 A | ▶ | 3RW5955-0SY06 | | 1 | 1 unit | 42S | | |
|  | Power semiconductor module | 3RW5521-.HA.6 (3x), 3RW5524-.HA.6 (3x) | 690 V, 47 A | ▶ | 3RW5952-0SF06 | | 1 | 1 unit | 42S |
| | | 3RW5525-.HA.6 (3x), 3RW5526-.HA.6 (3x) | 690 V, 77 A | ▶ | 3RW5952-0SH06 | | 1 | 1 unit | 42S |
| | | 3RW5527-.HA.6 (3x) | 690 V, 93 A | ▶ | 3RW5952-0SJ06 | | 1 | 1 unit | 42S |
| | | 3RW5534-.HA.6 (3x), 3RW5535-.HA.6 (3x) | 690 V, 143 A | ▶ | 3RW5953-0SL06 | | 1 | 1 unit | 42S |
| | | 3RW5536-.HA.6 (3x) | 690 V, 171 A | ▶ | 3RW5953-0SM06 | | 1 | 1 unit | 42S |
|  | Bypass unit | 3RW552-.HA..., 3RW553-.HA... | -- | ▶ | 3RW5953-0BY00 | | 1 | 1 unit | 42S |
| | | 3RW5543-.HA..., 3RW5544-.HA..., 3RW5545-.HA... | 210 ... 315 A | ▶ | 3RW5954-0BP00 | | 1 | 1 unit | 42S |
| | | 3RW5546-.HA..., 3RW5547-.HA..., 3RW5548-.HA... | 370 ... 570 A | ▶ | 3RW5954-0BT00 | | 1 | 1 unit | 42S |
| | | 3RW5552, 3RW5553, 3RW5554 | 630 ... 840 A | ▶ | 3RW5955-0BW00 | | 1 | 1 unit | 42S |
| | | 3RW5556, 3RW5558 | 1 100 A, 1 280 A | ▶ | 3RW5955-0BY00 | | 1 | 1 unit | 42S |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Spare parts

For 3RW55/3RW55 Failsafe





| 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 | | |
|---|--|---|---|---|--------------------------------|---|---|--------|--------|--------|
| Control units | | | | | | | | | | |
|  | Control unit | 3RW551.-.HA0., 3RW552.-.HA0., 3RW553.-.HA0., 3RW554.-.HA0. | 24 V | ▶ | 3RW5950-1UY00 | | 1 | 1 unit | 42S | |
| | | 3RW555.-.HA0. | | ▶ | 3RW5955-1UY00 | | 1 | 1 unit | 42S | |
| | | 3RW551.-.HA1., 3RW552.-.HA1., 3RW553.-.HA1., 3RW554.-.HA1. | 110 ... 250 V | ▶ | 3RW5950-1UY10 | | 1 | 1 unit | 42S | |
| | | 3RW555.-.HA1. | | ▶ | 3RW5955-1UY10 | | 1 | 1 unit | 42S | |
| Printed circuit boards | | | | | | | | | | |
|  | Printed circuit boards | 3RW5513-.HA.4 | 480 V, 13 A | ▶ | 3RW5951-0PA04 | | 1 | 1 unit | 42S | |
| | | 3RW5514-.HA.4 | 480 V, 18 A | ▶ | 3RW5951-0PB04 | | 1 | 1 unit | 42S | |
| | | 3RW5515-.HA.4 | 480 V, 25 A | ▶ | 3RW5951-0PC04 | | 1 | 1 unit | 42S | |
| | | 3RW5516-.HA.4 | 480 V, 32 A | ▶ | 3RW5951-0PD04 | | 1 | 1 unit | 42S | |
| | | 3RW5517-.HA.4 | 480 V, 38 A | ▶ | 3RW5951-0PE04 | | 1 | 1 unit | 42S | |
| | | 3RW552.-.HA.4, 3RW553.-.HA.4 | 480 V | ▶ | 3RW5953-0PY04 | | 1 | 1 unit | 42S | |
| | | 3RW554.-.HA.4 | 480 V | ▶ | 3RW5954-0PY04 | | 1 | 1 unit | 42S | |
| | | 3RW5513-.HA.5 | 600 V, 13 A | ▶ | 3RW5951-0PA05 | | 1 | 1 unit | 42S | |
| | | 3RW5514-.HA.5 | 600 V, 18 A | ▶ | 3RW5951-0PB05 | | 1 | 1 unit | 42S | |
| | | 3RW5515-.HA.5 | 600 V, 25 A | ▶ | 3RW5951-0PC05 | | 1 | 1 unit | 42S | |
|  | Printed circuit boards | 3RW5516-.HA.5 | 600 V, 32 A | ▶ | 3RW5951-0PD05 | | 1 | 1 unit | 42S | |
| | | 3RW5517-.HA.5 | 600 V, 38 A | ▶ | 3RW5951-0PE05 | | 1 | 1 unit | 42S | |
| | | 3RW552.-.HA.6, 3RW553.-.HA.6 | 690 V | ▶ | 3RW5953-0PY06 | | 1 | 1 unit | 42S | |
| | | 3RW554.-.HA.6 | 690 V | ▶ | 3RW5954-0PY06 | | 1 | 1 unit | 42S | |
| | | Firing printed circuit boards | 3RW555.-.HA.4 | 480 V | ▶ | 3RW5955-0PY14 | | 1 | 1 unit | 42S |
| | | | 3RW555.-.HA.6 | 690 V | ▶ | 3RW5955-0PY16 | | 1 | 1 unit | 42S |
| | | TSE printed circuit boards | 3RW555.-.HA.4 | 480 V | ▶ | 3RW5955-0PY24 | | 1 | 1 unit | 42S |
| | | | 3RW555.-.HA.6 | 690 V | ▶ | 3RW5955-0PY26 | | 1 | 1 unit | 42S |
| | | Fans | | | | | | | | |
| | |  | Fan | 3RW551 (1x), 3RW552 (2x), 3RW553 (2x) | -- | ▶ | 3RW5983-0FF00 | | 1 | 1 unit |
| 3RW554 (1x) | -- | | | ▶ | 3RW5984-0FF00 | | 1 | 1 unit | 42S | |
| 3RW555 (3x) | -- | | | ▶ | 3RW5985-0FF00 | | 1 | 1 unit | 42S | |
| Terminals and terminal covers | | | | | | | | | | |
|  | Box terminal block | 3RW552 (2x) | -- | ▶ | 3RW5982-0TB00 | | 1 | 1 unit | 42S | |
| | | Removable control terminals | • Screw terminals | | ▶ | Screw terminals |  | | | |
| | | | 3RW551.-.1H... (2x), 3RW552.-.1H... (2x), 3RW553.-.6H... (2x), 3RW554.-.6H... (2x), 3RW555.-.6H... (2x) | contains 2 blocks each with 6 terminals | ▶ | 3RW5980-1TR00 | | 1 | 1 unit | 42S |
| | | • Spring-loaded terminals | | ▶ | Spring-loaded terminals |  | | | | |
|  | Removable control terminals | 3RW551.-.3H... (2x), 3RW552.-.3H... (2x), 3RW553.-.2H... (2x), 3RW554.-.2H... (2x), 3RW555.-.2H... (2x) | contains 2 blocks each with 6 terminals | ▶ | 3RW5980-2TR00 | | 1 | 1 unit | 42S | |
| | | Terminal cover | | | | | | | | |
|  | Terminal cover | 3RW555 | -- | ▶ | 3RW5955-0TC20 | | 1 | 1 unit | 42S | |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Spare parts

For 3RW55/3RW55 Failsafe





| 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 | | | | | | | | | |
|  | Enclosure base | 3RW552..-HA.. | -- | ▶ | 3RW5953-0GB00 | | 1 | 1 unit | 42S |
| | | 3RW553..-HA.. | -- | ▶ | 3RW5954-0GB00 | | 1 | 1 unit | 42S |
| | | 3RW554..-HA.. | -- | ▶ | 3RW5954-0GB00 | | 1 | 1 unit | 42S |
| 3RW5953-0GB00 | | | | | | | | | |
|  | Ventilation cover | 3RW555 (3x) | -- | ▶ | 3RW5955-0GC00 | | 1 | 1 unit | 42S |
| | | | | | | | | | |
| 3RW5955-0GC00 | | | | | | | | | |
|  | Cover for control cable duct | 3RW55..-HA.. | Titanium gray | ▶ | 3RW5950-0GD20 | | 1 | 1 unit | 42S |
| | | | | | | | | | |
| | | 3RW55..-HF.. | Yellow | ▶ | 3RW5950-0GD30 | | 1 | 1 unit | 42S |
| 3RW5950-0GD20 | | | | | | | | | |
|  | | | | | | | | | |
| 3RW5950-0GD30 | | | | | | | | | |
|  | Front cover | 3RW554..-HA.. | -- | ▶ | 3RW5954-0GF00 | | 1 | 1 unit | 42S |
| | | 3RW555 | -- | ▶ | 3RW5955-0GF00 | | 1 | 1 unit | 42S |
| 3RW5954-0GF00 | | | | | | | | | |
|  | Hinged cover | 3RW55 | With cutout for High Feature HMI module | ▶ | 3RW5950-0GL30 | | 1 | 1 unit | 42S |
| | | | | | | | | | |
| 3RW5950-0GL30 | | | | | | | | | |

Switching devices – Soft starters and solid-state switching devices

SIRIUS 3RW soft starters

Spare parts

For 3RW55/3RW55 Failsafe

| 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 |
|---|--|-----------------|--------------|--------------------------|--------------|-------------------|--------|-----|
| HMI modules | | | | | | | | |
|  | HMI module | 3RW55 | High Feature | ▶ 3RW5980-0HF00 | | 1 | 1 unit | 42S |
| 3RW5980-0HF00 | | | | | | | | |
|  | Interface cover | 3RW55 | -- | ▶ 3RW5980-0HL00 | | 1 | 1 unit | 42S |
| 3RW5980-0HL00 | | | | | | | | |
| Connecting cable for installing the HMI module in the soft starter | | | | | | | | |
|  | Connecting cable | -- | 0.1 m, flat | ▶ 3UF7931-0AA00-0 | | 1 | 1 unit | 42J |
| 3UF7931-0AA00-0 | | | | | | | | |
| Transport packaging | | | | | | | | |
|  | Transport packaging | 3RW551 | -- | ▶ 3RW5951-0VY00 | | 1 | 1 unit | 42S |
| | | 3RW552, 3RW553 | -- | ▶ 3RW5953-0VY00 | | 1 | 1 unit | 42S |
| | | 3RW554 | -- | ▶ 3RW5954-0VY00 | | 1 | 1 unit | 42S |
| | | 3RW555 | -- | ▶ 3RW5955-0VY00 | | 1 | 1 unit | 42S |
| 3RW5953-0VY00 | | | | | | | | |

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