

**Price groups**

PG 41A, 41B

4/2

Introduction**Contactors for special applications**

- 4/7 SIRIUS 3RT.4 contactors for low or non-inductive loads (AC-1), 3-pole up to 2 650 A
- 4/21 SIRIUS 3RT.3 contactors, 4-pole, up to 525 A
- 4/36 SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC
- 4/42 SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole
- 4/52 SIRIUS 3RT23 to 3RT26, 3RT14 contactors
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- SIRIUS 3RT contactors with extended operating range, 3-pole
- 4/63 - SIRIUS 3RH2 contactor relays with extended operating range
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- 4/68 - 3TC contactors for switching DC voltage, 2-pole
- 4/70 3TC contactors for switching DC voltage, 1- and 2-pole

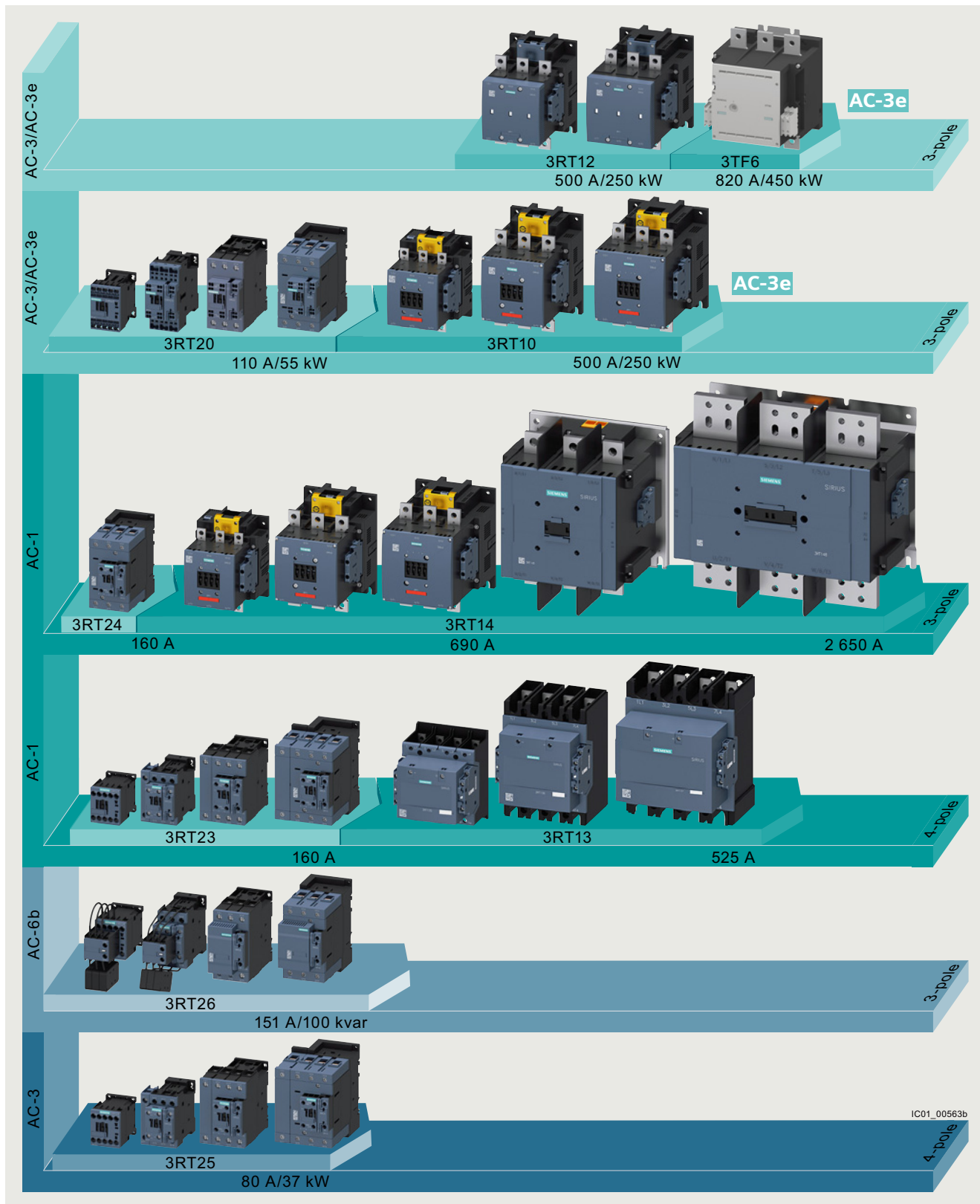
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3TG10 power relays/miniature contactors

Switching devices – Contactors and contactor assemblies – Special applications

Introduction

Overview



Overview of the 3RT and 3TF contactors

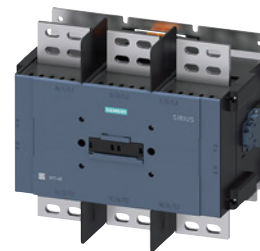
More information

Homepage, see www.siemens.com/siriusIndustry Mall, see www.siemens.com/product?3RT_3TK_3TCConversion tool, see www.siemens.com/conversion-toolTIA Selection Tool Cloud (TST Cloud), see 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 | |
| AC, AC/DC operation | (p. 4/16) | | (p. 4/17, 4/18) | (p. 4/17, 4/18) | (p. 4/17, 4/18) | |
| 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. 3/87 ... 3/95) | 3RH19, 3RT1926 | (p. 3/90, 3/92, 3/94, 3/96) |
| Function modules (direct-on-line starting, star-delta (wye-delta) starting) | 3RA281. | (p. 3/100) | -- | |
| Terminal covers | 3RT2946-4EA4 | (p. 3/112) | 3RT1956-4EA. | (p. 3/112) |
| Box terminal blocks | -- | | 3RT1955/56-4G | (p. 3/110) |
| Surge suppressors | 3RT2936, 3RT2946 | (p. 3/97, 3/98) | 3RT1956-1C (RC element) | (p. 3/98) |



| 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. 4/19) | | | |
| 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. 4/19) |
| Spare parts for contactors | | | | |
| First auxiliary switch, lateral | 3RH1981-1DA11 | | | (p. 4/20) |
| Phase barriers | 3RT1983-4AA1 | (p. 4/20) | 3RT1987-4AA1 | (p. 4/20) |
| Withdrawable coils | 3RT1982-5A.31 (p. 4/20) | 3RT1983-5AP31 (p. 4/20) | 3RT1987-5AP31 | (p. 4/20) |

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. 4/29, 4/31) | | (p. 4/29 ... 4/31) | | | (p. 4/29 ... 4/33) | | (p. 4/29 ... 4/33) | | | |
| 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-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. 3/87 ... 3/95) | | |
| Function modules (direct-on-line starting, star-delta (wye-delta) starting) | 3RA281. | | | | | | | | (p. 3/100) | | |
| Terminal covers | -- | | | | 3RT2936-4EA4 (p. 3/112) | | 3RT2946-4EA4 (p. 3/112) | | | | |
| Surge suppressors | 3RT2916 | | | (p. 3/97, 3/98) | | 3RT2936 (p. 3/97, 3/98) | | 3RT2936, 3RT2946 (p. 3/97, 3/98) | | | |



| | | | | | | | | | |
|-----------------------------------|-------------------------|-------|-------------------------|-------|-----------------|------------|-----------|-----------|--|
| 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 | | 4 NO | | |
| AC/DC operation | (p. 4/34) | | (p. 4/34) | | (p. 4/34) | | (p. 4/34) | | |
| AC-1 | | | | | | | | | |
| U_i | V | 1 000 | | | | | | | |
| U_e | V | 690 | | 1 000 | | | | | |
| I_e | 40 °C A | 200 | 275 | 350 | 400 | 500 | 525 | | |
| Accessories for contactors | | | | | | | | | |
| Second auxiliary switch, lateral | 3RH1951-1SA11 | | | | | | | (p. 4/35) | |
| Terminal covers | 3RT1956-4EB10 (p. 4/35) | | 3RT1966-4EB10 (p. 4/35) | | 3RT1976-4EB10 | | (p. 4/35) | | |
| Mechanical interlocks | 3RA1954-3A | | | | | | | (p. 4/35) | |
| Bus connectors offset | -- | | 3RT1966-4D (p. 4/35) | | 3RT1976-4D | | (p. 4/35) | | |
| Spare parts for contactors | | | | | | | | | |
| First auxiliary switch, lateral | 3RH1951-1TA11 | | | | | | | (p. 4/35) | |



| | | | | | | | | | | |
|---|-----------------------------------|-----------|-----------------------------------|------------|-----------------------------------|------------------------------|--|--------------------|------------|------------|
| 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. 4/39, 4/40) | | (p. 4/39, 4/40) | | (p. 4/39, 4/41) | | (p. 4/39, 4/41) | | | |
| 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-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. 3/87 ... 3/95) | | |
| Function modules (direct-on-line starting, star-delta (wye-delta) starting) | 3RA281. | | | | | | | (p. 3/100) | | |
| Terminal covers | -- | | | | 3RT2936-4EA4 (p. 3/112) | | 3RT2946-4EA4 (p. 3/112) | | | |
| Surge suppressors | 3RT2916 (p. 3/97, 3/98) | | 3RT2926 (p. 3/97, 3/98) | | 3RT2936 (p. 3/97, 3/98) | | 3RT2936, 3RT2946 (p. 3/97, 3/98) | | | |

¹⁾ The value in brackets applies to the NC for DC operation.

Further contactors

- SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole, [see page 4/42 onwards](#)
- 3TC contactors for switching DC voltage, 1-pole and 2-pole, [see page 4/70 onwards](#)
- Contactors for railway applications
 - SIRIUS 3RT contactors with extended operating range, 3-pole, [see page 4/54 onwards](#)
 - SIRIUS 3RH2 contactor relays with extended operating range, [see page 4/65](#)
 - 3TH4 contactor relays, 8-pole, [see page 4/66 onwards](#)

Switching devices – Contactors and contactor assemblies – Special applications

Introduction

Connection methods

The following connection options are available for 3RT contactors depending on the size and version:

- 3RT2 contactors
 - Sizes S00 and S0: screw terminals or spring-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

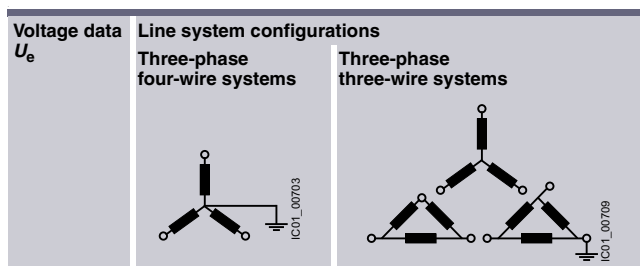


Busbar connections

The connection method is indicated in the corresponding tables by the symbols shown on orange backgrounds.

Voltage data

The data for 3-phase power systems according to IEC 60947-4-1 are valid for the following forms of power supply:



| V | V | V |
|-------|---------|-------------------------|
| 230 | -- | 230 |
| 400 | 230/400 | 400 |
| 440 | 260/440 | 440 |
| 500 | -- | 500 |
| 690 | 400/690 | 690 (only from size S3) |
| 1 000 | -- | 1 000 |

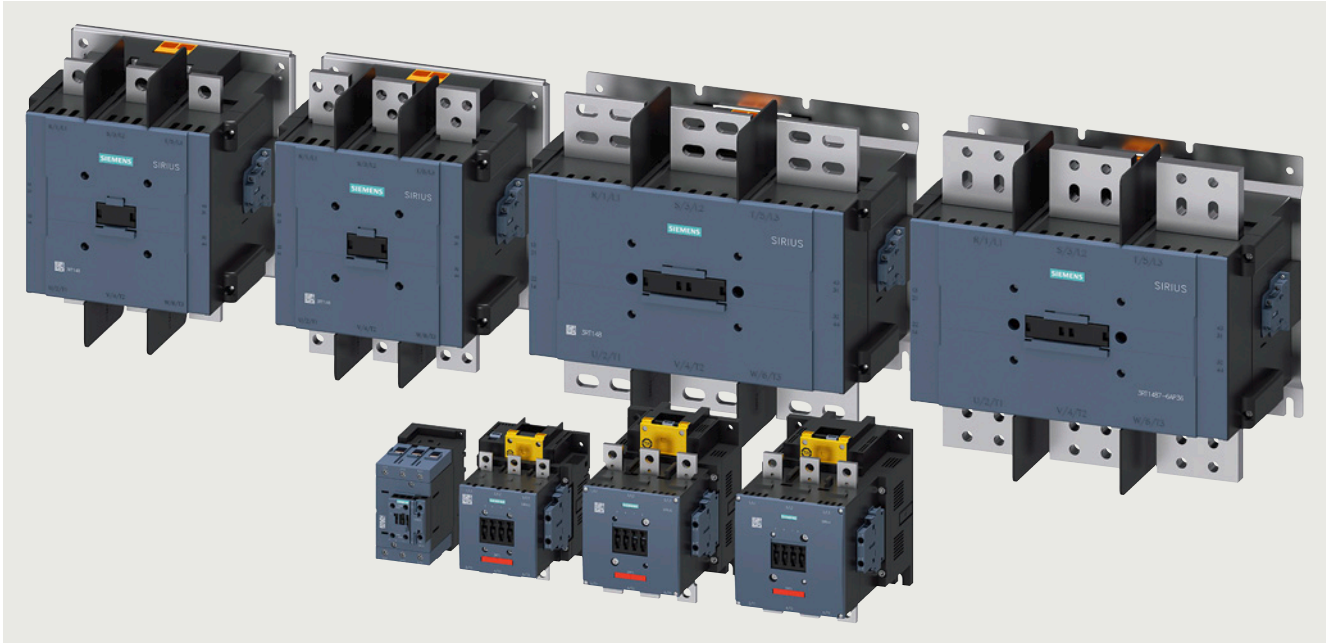
-- Not specified

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

Overview



3-pole AC-1 contactors
top row: 3RT148 contactors
bottom row: 3RT244, 3RT145 to 3RT147 contactors

Standards

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1 (auxiliary switches)

Contactors with increased tamper protection

Increased tamper protection is ensured either by using our contactor versions with factory-installed, permanently mounted auxiliary switches which are protected against mechanical external actuation (e.g. 3RT14...-...-3PA0 contactors), or by using the 3RT1926-4MA10 sealable cover as an accessory, (see page 3/112).

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, see the [technical product data sheet](#).

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see [Configuration Manual for load feeders](#).

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the [technical product data sheet](#)

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see [Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably](#).

Short-circuit and overload protection of contactors with a digital input

A typical rated current of 20 mA applies to these inputs according to the PLC input types according to IEC 60947-4-1. The inputs can be protected accordingly.

- Contactors with PLC and F-PLC inputs:
 - For 3RT14...-S and 3RT14...-N, marked with +/-
- Supply voltage connections A1 - A2:
 - For 3RT14...-N, protection based on the load characteristics must be employed. For information on power consumption, see the [technical product data sheet](#).
 - For 3RT14...-S, protection is already integrated.

Short-circuit and overload protection of other connections

The 3RT14...-P contactor version with remaining lifetime indicator (RLT) also has additional connections H1 - H2 and R1 - R2.

If A1 - A2 is already protected, further protection of H1 - H2 is not required.

For protection specifications for protecting R1 - R2, see the [technical product data sheet](#).

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

Protection against overvoltage at the control supply voltage connection

3RT244 contactors supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (combination of diode and Zener diode for short break times) for damping switching overvoltages in the coil and can be ordered separately as accessories, [see page 3/97 onwards](#).

3RT14 contactors are already equipped with coil damping (varistor).

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information about influencing the time response using damping, [see Equipment Manual](#).

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:
Screw terminals with connecting bars

Auxiliary and control circuits

- 3RT24, 3RT145 to 3RT147:
Screw or spring-loaded terminals
- 3RT148:
Screw terminals

Electromagnetic compatibility (EMC)

The contactors comply with the conditions for environment A according to IEC 60947-1.

Note:

When the contactors are used in an environment with frequency converters, the configuration notes must be observed, [see Equipment Manual](#).

Contact reliability of the auxiliary contacts

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.

Operating mechanism types

3RT244 contactors

The contactors are available as versions with conventional AC or DC operating mechanisms or as versions with a wide-range solid-state operating mechanism and a universal actuating voltage (AC or DC operation).

With an operating range from 0.8 to $1.1 \times U_s$, control takes place via the control supply voltage connection A1 - A2.

3RT145 to 3RT147 contactors

The contactors 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 control and/or operating mechanism versions are available:

- 3RT14...-A contactors:
Standard operating mechanism for AC and DC operation (power consumption reduced from closing to closed)
- 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 following versions are available:
 - 3RT14...-N contactors:
With two operating modes: direct control or via PLC input (24 V DC)
 - 3RT14...-P contactors:
Control via PLC input (24 V DC) only, but with additional remaining lifetime indicator (RLT)
 - 3RT14...-S contactors:
Control via fail-safe PLC input (24 V DC) only, for simplification of safety applications

3RT148 contactors

The contactors are equipped with a solid-state operating mechanism for AC/DC control; coil damping is integrated. The operating range is 0.85 to $1.1 \times U_s$.

Replacing solenoid coils, operating mechanisms or spare contacts

3RT244 contactors

Solenoid coil or spare contact 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. The spare contacts can also be replaced.

NOTICE:

Removal or changing of the operating mechanism is not permitted for 3RT14...-S contactors with fail-safe control.

3RT148 contactors

The operating mechanisms are removable and can be replaced simply by unlocking and pulling them out.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in delivery condition

- 3RT244 contactors:
Two auxiliary contacts (1 NO + 1 NC) are integrated in the basic unit.
- 3RT14 contactors:
These contactors are supplied with two laterally mounted auxiliary switches with two contacts each (2 NO + 2 NC).

Expansion possibilities

All basic units can be expanded using auxiliary switches; the permissible configuration must be observed.

For detailed information about the fitting of auxiliary switches for 3RT244 contactors, [see pages 3/81 to 3/86](#).

Accessories and spare parts

- 3RT244 and 3RT145 to 3RT147 contactors, [see Basic units, page 3/69 onwards](#)
- 3RT148 contactors, [see page 4/19 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

Connection of contactors to fail-safe control modules

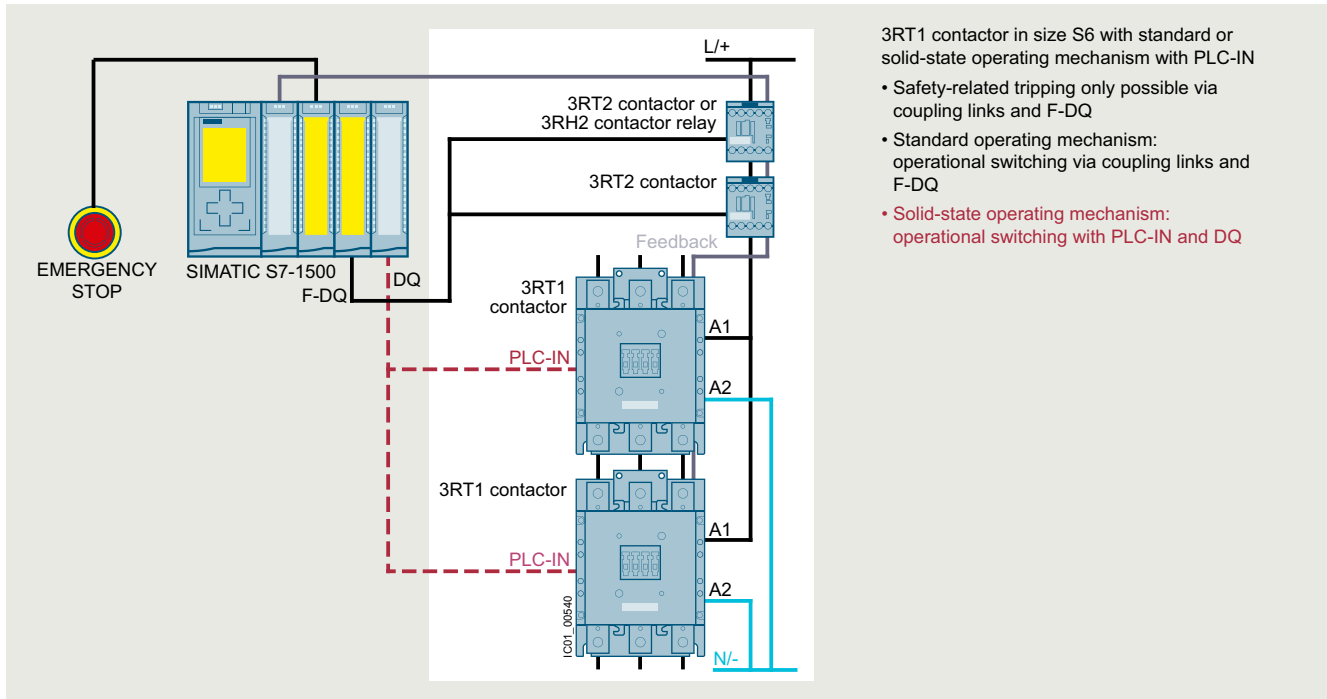
While contactors with smaller power ratings can be connected directly to the outputs of fail-safe controllers, implementing safety-related applications with standard contactors with higher power is much more complicated and elaborate because of the necessary coupling links.

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.

More information, see

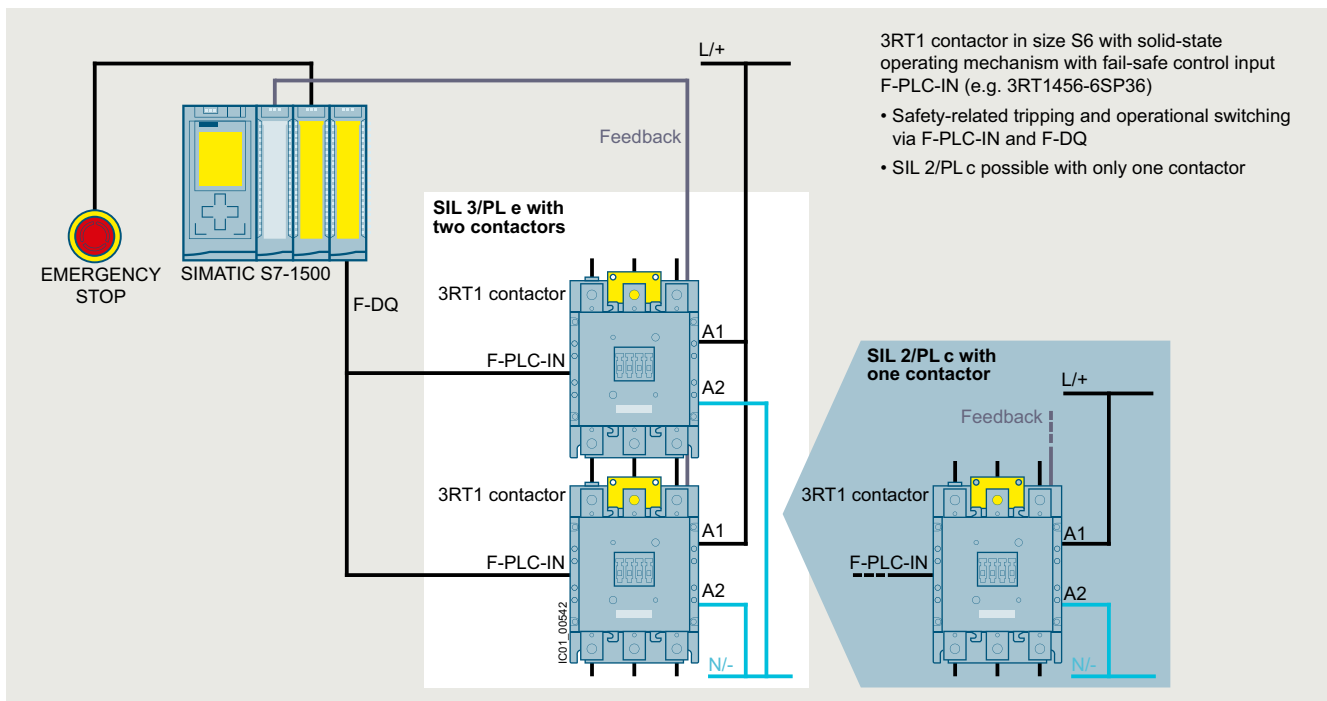
- Safety technology, page 11/1 onwards
- Guide of use for contactors in safety applications

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



Application with safety-related disconnection with standard contactors using the example of a 3RT145 contactor

Example for SIL 3/PL e (left-hand side) or 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 3RT145 contactor

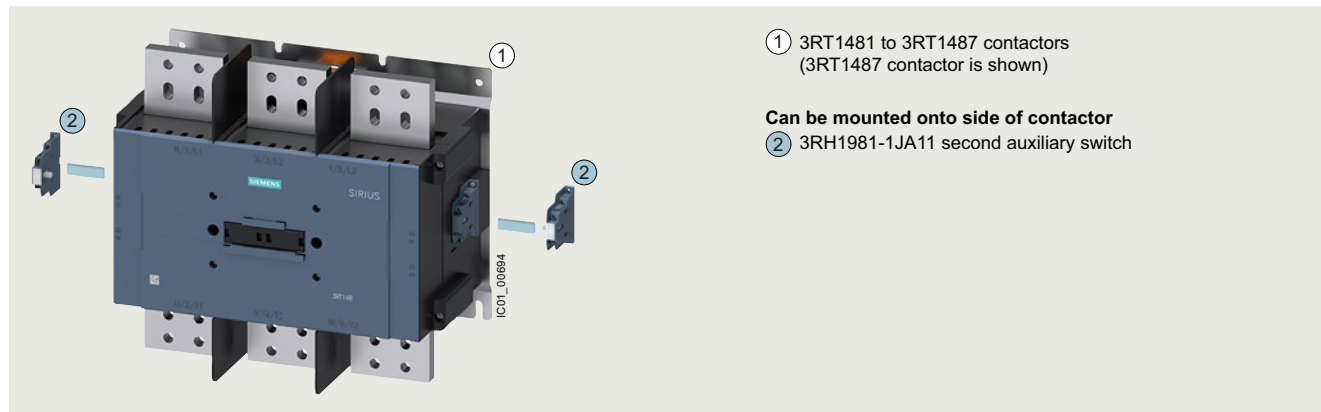
Switching devices – Contactors and contactor assemblies – Special applications

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 contactors, [see page 3/11](#)
- 3RT145 to 3RT147 contactors, [see page 3/12 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

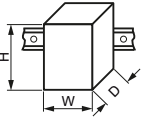
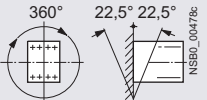
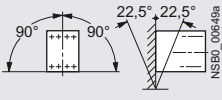

SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/24229/td>
 For 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>
 Guide of use for contactors in safety applications, see
<https://support.industry.siemens.com/cs/ww/en/view/109807687>

| Type | | 3RT2446, 3RT2448 | 3RT1456 | 3RT1466 | 3RT1467 | 3RT1476 |
|---|---|--|---|--|--|---|
| Size | | S3 | S6 | S10 | | 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 | | | | | | |
| <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 utilization category AC-1, at $U_e = 400\text{ V}$ | | | | | | |
| | | Operating cycles | 0.5 million | | 0.35 million | 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 according to IEC 60947-1, Annex N | | V | 690 | | | |
| Mirror contacts according to IEC 60947-4-1, Annex F 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 Removable auxiliary switches | | | Yes -- | -- Yes | | |
| Permissible ambient temperature | | | | | | |
| <ul style="list-style-type: none"> During operation During storage | | °C | -25 ... +60 -55 ... +80 | | | |
| 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: 250 A (690 V, 100 kA) gG: 250 A (690 V, 100 kA) | gG: 355 A (690 V, 100 kA) gG: 350 A (690 V, 100 kA) | gG: 500 A (690 V, 100 kA) gG: 500 A (690 V, 100 kA) | gG: 800 A (690 V, 50 kA) gG: 710 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 Version of the miniature circuit breaker required for short-circuit protection of the auxiliary switch | | A | Fuse gG: 10 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 8/5 onwards Configuration Manual for load feeders | | | |


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 | -A -N | | -A -N/-P/-S | | -A -N/-P/-S | | -A -N/-P/-S | | | |
| Control | S3 | | S6 | | S10 | | S12 | | | |
| Solenoid coil operating range (AC/DC) | 0.8 ... 1.1 x U_s | | 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) | | | | | | | | | | |
| • AC operation, 50 Hz, standard version | Closing | VA | 296 | -- | -- | -- | -- | -- | | |
| | P.f. φ | | 0.61 | -- | -- | -- | -- | -- | | |
| • AC operation, 50/60 Hz, standard version | Closed | VA | 19 | -- | -- | -- | -- | -- | | |
| | P.f. φ | | 0.38 | -- | -- | -- | -- | -- | | |
| • AC operation, 50/60 Hz, for USA/Canada | Closing | VA | 348/296 | -- | -- | -- | -- | -- | | |
| | P.f. φ | | 0.62/0.55 | -- | -- | -- | -- | -- | | |
| • AC/DC operation | Closed | VA | 25/18 | -- | -- | -- | -- | -- | | |
| | P.f. φ | | 0.35/0.41 | -- | -- | -- | -- | -- | | |
| • AC operation, 50/60 Hz, for USA/Canada | Closing | VA | 326/326 | -- | -- | -- | -- | -- | | |
| | P.f. φ | | 0.62/0.55 | -- | -- | -- | -- | -- | | |
| • AC/DC operation | Closed | VA | 22/22 | -- | -- | -- | -- | -- | | |
| | P.f. φ | | 0.38/0.4 | -- | -- | -- | -- | -- | | |
| • AC/DC operation | Closing for AC operation | VA | -- | 163 | 300 | 280 | 590 | 530 | 830 | 750 |
| | P.f. φ | | -- | -- | 0.9 | 0.8 | 0.9 | 0.8 | 0.9 | 0.8 |
| • AC/DC operation | Closed for AC operation | VA | -- | 3.1 | 5.8 | 4.8 | 6.7 | 8.5 | 9.2 | 9 |
| | P.f. φ | | -- | -- | 0.8 | 0.6 | 0.9 | 0.4 | 0.9 | 0.4 |
| • AC/DC operation | 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 |
| Type of PLC control input according to IEC 60947-1 | | | | | | | | | | |
| • Solid-state operating mechanism | 3RT14...-N/-P | | -- | -- | Type 2 | | | | | |
| | 3RT14...-S | | -- | -- | Type 1 | | | | | |
| • Rated voltage | V DC | | -- | -- | 24 | | | | | |
| • Operating range | V DC | | -- | -- | 17 ... 30 | | | | | |
| • Power consumption | mA | | -- | -- | ≤ 30 | | | | | |
| • Recovery time after mains failure, typical (applicable only for fail-safe version 3RT14...-S) | s | | -- | -- | 2 | | | | | |

| Type | 3RT2446 | 3RT2448 | 3RT1456 | 3RT1466 | 3RT1467 | 3RT1476 | |
|---|--------------------------|---------|---------|---------|---------|---------|---|
| Size | S3 | S6 | S6 | S10 | 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 | 140 | 160 | 275 | 400 | 500 | 690 |
| | At 60 °C up to 690 V A | 130 | 140 | 250 | 380 | 450 | Standard operating mechanism: 650, solid-state operating mechanism: 600 |
| • Minimum cross-section in the main circuit at maximum AC-1 rated value | At 40 °C up to 1 000 V A | 60 | 80 | -- | -- | -- | -- |
| | At 60 °C 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 |
| Power loss per main conducting path | At I_e /AC-1/40 °C W | 9.8 | 12.8 | 28.8 | 35.2 | 35.2 | 61.9 |






| Type | 3RT2446, 3RT2448 | |
|--|---|--|
| Size | S3 | |
| Conductor cross-sections | | |
| Main conductors (1 or 2 conductors can be connected) | | |
| |  | Screw terminals |
| • 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, size 4 |
| - Tightening torque | Nm | 4.5 ... 6 (40 ... 53 lb.in) |
| Auxiliary conductors and control conductors (1 or 2 conductors can be connected) | | |
| • Solid or stranded | mm ² | 2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ |
| • Finely stranded with end sleeve (DIN 46228) | 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 mm) |
| - 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 lb.in 90 ... 110 | 10 ... 12 90 ... 110 | 20 ... 22 180 ... 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 lb.in 90 ... 124 | | 14 ... 24 124 ... 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⁾ | according 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, use the 3RT1956-4EA1 terminal cover for conductor cross-sections from 95 mm² to maintain the phase clearance, see page 3/112.

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 3/112.

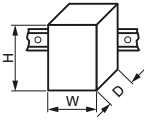
3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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 3/115.

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 | | | | | |
| 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 power 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 | | |
| Main circuit | | | | | | | | | | |
| Operational current at AC-1 | | | | | | | | | | |
| <ul style="list-style-type: none"> Up to 690 V | | | | | | | | | | |
| - At an ambient temperature of 40 °C | | A | 900 | 1 050 | | 1 260 | 1 700 | 2 100 | 2 650 | |
| - At an ambient temperature of 55 °C | | A | 900 | 1 050 | | 1 260 | 1 700 | 2 100 | 2 650 | |
| <ul style="list-style-type: none"> Up to 1000 V | | | | | | | | | | |
| - At an ambient temperature of 40 °C | | A | 900 | 1 050 | | 1 260 | 1 700 | 2 100 | 2 650 | |
| - At an ambient temperature of 55 °C | | A | 900 | 1 050 | | 1 260 | 1 700 | 2 100 | 2 650 | |
| 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 | | 2x (1 ... 2.5 mm ²) | | | | | | | | |
| <ul style="list-style-type: none"> Solid or stranded | | 2x (1 ... 2.5 mm ²) | | | | | | | | |
| <ul style="list-style-type: none"> Finely stranded with end sleeve | | 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 | | Screw terminals  | PU (UNIT, SET, M) | PS* | PG |
|--------------|-----------------------------------|---------------------------------------|--------------------|---------|------------------------------------|----------------|---|-------------------------|-----|----|
| | AC-1, t_{ij} : 40 °C 60 °C | Operational current I_e up to | Ident. No. | Version | 50 Hz AC | 50 Hz AC or DC | | | | |
| 690 V | 690 V | | | | | | | | | |
| A | A | | NO | NC | V | V | Article No. | Price per PU | | |

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

AC operation

| | | | | | | | | | | | |
|-----------|------------|-----|-----------|---|-----|----|----------------------|----------------------|---|--------|-----|
| S3 | 140 | 130 | 11 | 1 | 1 | 24 | -- | 3RT2446-1AB00 | 1 | 1 unit | 41B |
| | | | | | 110 | -- | 3RT2446-1AF00 | | 1 | 1 unit | 41B |
| | | | | | 230 | -- | 3RT2446-1AP00 | | 1 | 1 unit | 41B |
| | 160 | 140 | 11 | 1 | 1 | 24 | -- | 3RT2448-1AB00 | 1 | 1 unit | 41B |
| | | | | | 110 | -- | 3RT2448-1AF00 | | 1 | 1 unit | 41B |
| | | | | | 230 | -- | 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 | | 3RT2446-1NF30 | 1 | 1 unit | 41B |
| | | | | | | -- | 175 ... 280 | | 3RT2446-1NP30 | 1 | 1 unit | 41B |
| | 160 | 140 | 11 | 1 | 1 | -- | 20 ... 33 | 3RT2448-1NB30 | 1 | 1 unit | 41B | |
| -- | | | | | | 83 ... 155 | 3RT2448-1NF30 | | 1 | 1 unit | 41B | |
| -- | | | | | | 175 ... 280 | 3RT2448-1NP30 | | 1 | 1 unit | 41B | |

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/69 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 | Auxiliary contacts, lateral | Rated control supply voltage U_s | Screw terminals  | PU (UNIT, SET, M) | PS* | PG |
|------|---|---|------------------------------------|---|-------------------|-----|----|
| | AC-1, t_{ij} : 40 °C Operational current I_e up to | Version | 50/60 Hz AC or DC | Article No. | Price per PU | | |
| | 690 V A |   V | | | | | |
| | 60 °C 690 V A | | | | | | |

Standard operating mechanism for AC and DC operation (power consumption reduced from closing to closed)

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 | 3RT1456-6NF36 | 1 | 1 unit | 41B |
| | | | | | | 3RT1456-6NP36 | 1 | 1 unit | 41B |
| S10 | 400 | 380 | 2 | 2 | 96 ... 127 200 ... 277 | 3RT1466-6NF36 | 1 | 1 unit | 41B |
| | | | | | | 3RT1466-6NP36 | 1 | 1 unit | 41B |
| | 500 | 450 | 2 | 2 | 96 ... 127 200 ... 277 | 3RT1467-6NF36 | 1 | 1 unit | 41B |
| | | | | | | 3RT1467-6NP36 | 1 | 1 unit | 41B |
| S12 | 690 | 650 | 2 | 2 | 96 ... 127 200 ... 277 | 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 | 3RT1456-6PF35 | 1 | 1 unit | 41B |
| | | | | | | 3RT1456-6PP35 | 1 | 1 unit | 41B |
| S10 | 400 | 380 | 1 | 1 | 96 ... 127 200 ... 277 | 3RT1466-6PF35 | 1 | 1 unit | 41B |
| | | | | | | 3RT1466-6PP35 | 1 | 1 unit | 41B |
| | 500 | 450 | 1 | 1 | 96 ... 127 200 ... 277 | 3RT1467-6PF35 | 1 | 1 unit | 41B |
| | | | | | | 3RT1467-6PP35 | 1 | 1 unit | 41B |
| S12 | 690 | 650 | 1 | 1 | 96 ... 127 200 ... 277 | 3RT1476-6PF35 | 1 | 1 unit | 41B |
| | | | | | | 3RT1476-6PP35 | 1 | 1 unit | 41B |

Other voltages [according to page 4/53](#) on request.

Accessories and spare parts, [see page 3/69 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

- Certified and fail-safe 24 V DC control input with max. 20 mA, e.g. for control via the fail-safe output module of a controller (F-PLC) or safety relay
- Achievable Safety Integrity Level (SIL) according to IEC 62061 and Performance Level (PL) according to ISO 13849-1 with corresponding fault diagnostics:
 - With one contactor: SIL 2/PL c
 - With two contactors in series: SIL 3/PL e
 - Fail-safe applications can be implemented using this contactor.
- 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.

More information, see

- [Safety technology, page 11/1 onwards](#)
- [Guide of use for contactors in safety applications](#)






3RT1456-6S.36

3RT1466-6S.36

3RT1476-6S.36

3RT1456-6S.36-3PA0

3RT1476-6S.36-3PA0

| Size | Rated data according to IEC 60947-4-1 AC-1, t_U : 40 °C 60 °C Operational current I_e up to 690 V A | Auxiliary contacts, lateral Version   V | Rated control supply voltage U_s 50/60 Hz AC or DC | Screw terminals  | PU (UNIT, SET, M) | PS* | PG |
|------|--|---|---|---|-------------------------|-----|----|
| | | | | 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)

| Size | 275 | 250 | 2 | 2 | 96 ... 127 200 ... 277 | 3RT1456-6SF36 3RT1456-6SP36 | 1 1 | 1 unit 1 unit | 41B 41B |
|------|-----|-----|---|---|---------------------------|--------------------------------|--------|------------------|------------|
| S10 | 400 | 380 | 2 | 2 | 96 ... 127 200 ... 277 | 3RT1466-6SF36 3RT1466-6SP36 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 500 | 450 | 2 | 2 | 96 ... 127 200 ... 277 | 3RT1467-6SF36 3RT1467-6SP36 | 1 1 | 1 unit 1 unit | 41B 41B |
| S12 | 690 | 650 | 2 | 2 | 96 ... 127 200 ... 277 | 3RT1476-6SF36 3RT1476-6SP36 | 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 | 275 | 250 | 2 | 2 | 96 ... 127 200 ... 277 | 3RT1456-6SF36-3PA0 3RT1456-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |
|------|-----|-----|---|---|---------------------------|--|--------|------------------|------------|
| S10 | 400 | 380 | 2 | 2 | 96 ... 127 200 ... 277 | 3RT1466-6SF36-3PA0 3RT1466-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |
| | 500 | 450 | 2 | 2 | 96 ... 127 200 ... 277 | 3RT1467-6SF36-3PA0 3RT1467-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |
| S12 | 690 | 650 | 2 | 2 | 96 ... 127 200 ... 277 | 3RT1476-6SF36-3PA0 3RT1476-6SP36-3PA0 | 1 1 | 1 unit 1 unit | 41B 41B |

Accessories and spare parts, see page 3/69 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

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_j : 40 °C Operational current I_e up to 1 000 V | Auxiliary contacts, lateral Version | Rated control supply voltage U_s 50/60 Hz AC DC | Busbar connections | PU (UNIT, SET, M) | PS* | PG |
| | | V V | Article No. Price per PU | | | |

Solid-state operating mechanism

With integrated coil circuit

| Rated current | NO | NC | 50/60 Hz AC | DC | Article No. | PU | PS* | PG |
|---------------|----|----|-------------|-------------|----------------------|----|--------|-----|
| 900 | 2 | 2 | 100 ... 127 | 100 ... 110 | 3RT1481-6AF36 | 1 | 1 unit | 41B |
| | | | 200 ... 240 | 200 ... 220 | 3RT1481-6AP36 | 1 | 1 unit | 41B |
| 1 050 | 2 | 2 | 100 ... 127 | 100 ... 110 | 3RT1482-6AF36 | 1 | 1 unit | 41B |
| | | | 200 ... 240 | 200 ... 220 | 3RT1482-6AP36 | 1 | 1 unit | 41B |
| 1 260 | 2 | 2 | 100 ... 240 | 100 ... 220 | 3RT1483-6AP36 | 1 | 1 unit | 41B |
| 1 700 | 2 | 2 | 100 ... 240 | 100 ... 220 | 3RT1485-6AP36 | 1 | 1 unit | 41B |
| 2 100 | 2 | 2 | 100 ... 240 | 100 ... 220 | 3RT1486-6AP36 | 1 | 1 unit | 41B |
| 2 650 | 2 | 2 | 100 ... 240 | 100 ... 220 | 3RT1487-6AP36 | 1 | 1 unit | 41B |

Accessories, [see next table](#); spare parts, [see page 4/19](#).

Accessories

Overview graphics for 3RT148 contactors with mountable accessories, [see page 4/10](#).

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 | | | | Screw terminals | PU (UNIT, SET, M) | PS* | PG |
| | | | | | Article No. Price per PU | | | |
| Type | NO NC | Left | Right | | | | | |

Second auxiliary switch (1 NO + 1 NC)



3RH1981-1JA11

| | | | | | | | | |
|--|--------------------------|--|--|--|----------------------|---|--------|-----|
| Lateral mounting on the right and/or the left 3RT148. | 1 1 | | | | 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

Spare parts

| For contactors | Auxiliary contacts | | Rated control supply voltage U_s | | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|---|----|---|---|--|--------------|-------------------|--------|-----|
| | Version | | 50/60 Hz AC | DC | | | | | |
| Type | NO | NC | Left | Right | V | V | | | |
| First auxiliary switch (1 NO + 1 NC) | | | | | | | | | |
|  | Lateral mounting on the right and/or the left | | | | Screw terminals  | | | | |
| 3RH1981-1DA11 | 1 | 1 | | | -- | -- | 1 | 1 unit | 41B |
| | | |  |  | | | | | |
| Phase barriers | | | | | | | | | |
|  | (1 set = 4 units) | | | | 3RT1983-4AA1 | | 1 | 1 unit | 41B |
| 3RT1481 | -- | -- | -- | -- | -- | -- | | | |
| ... | | | | | | | | | |
| 3RT1483 | | | | | | | | | |
|  | 3RT1983-4AA1 | | | | 3RT1987-4AA1 | | 1 | 1 unit | 41B |
| 3RT1485 | -- | -- | -- | -- | -- | -- | | | |
| ... | | | | | | | | | |
| 3RT1487 | | | | | | | | | |
|  | 3RT1987-4AA1 | | | | 3RT1982-5AF31 | | 1 | 1 unit | 41B |
| 3RT1481, | -- | -- | -- | -- | 100 ... 127 | 100 ... 110 | | | |
| 3RT1482 | -- | -- | -- | -- | 200 ... 240 | 200 ... 220 | | | |
| 3RT1483 | -- | -- | -- | -- | 100 ... 240 | 100 ... 220 | | | |
|  | 3RT1982-5A,31, 3RT1983-5AP31 | | | | 3RT1987-5AP31 | | 1 | 1 unit | 41B |
| 3RT1485 | -- | -- | -- | -- | 100 ... 240 | 100 ... 220 | | | |
| ... | | | | | | | | | |
| 3RT1487 | | | | | | | | | |
|  | 3RT1987-5AP31 | | | | | | | | |

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 60947-1, IEC 60947-4-1, IEC60947-5-1 (auxiliary switches)

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, [see the technical product data sheet](#).

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, [see Configuration Manual for load feeders](#).

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, [see the technical product data sheet](#).

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, [see Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably](#).

Protection against overvoltage at the control supply voltage connection

3RT23 contactors supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (combination of diode and Zener diode for short break times) for damping switching overvoltages in the coil and can be ordered separately as accessories, [see page 3/97 onwards](#).

3RT13 contactors are already equipped with coil damping (varistor).

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information about influencing the time response using damping, [see Equipment Manual](#).

Connection methods

Main circuit

- 3RT231 and 3RT232 contactors:
Screw terminals or spring-loaded terminals;
spring-loaded terminals with convenient plug-in design for device connectors
- 3RT233 and 3RT234 contactors:
Screw terminals with box terminal;
direct connection to the connecting bar possible with cable lugs for 3RT234 when the box terminal is removed.
- 3RT135 to 3RT137 contactors:
Screw terminals with connecting bars that the cables can be connected to using either cable lugs or flexible or rigid busbars.
- 3RT136 and 3RT137 contactors:
These can be fitted with bus connectors offset, [see page 4/35](#).

Auxiliary and control circuits

Screw terminals

Electromagnetic compatibility

The contactors fulfill the requirements for environment category A.

Note:

When the contactors are used in an environment with frequency converters, the configuration notes must be observed, [see Equipment Manual](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

Contact reliability of the auxiliary contacts

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.

Motor protection

3RT23 contactors

For protection against overload, 3RU2 thermal overload relays (see page 7/89 onwards) or 3RB3 electronic overload relays (see page 7/102 onwards) can be mounted on the 3RT23 contactors.

3RT13 contactors

For protection against overload, 3RB2 electronic overload relays (see page 7/114 onwards) can be mounted on the 3RT13 contactors.

Operating mechanism types

3RT23 contactors

The 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).

3RT13 contactors

The 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 $1.1 \times U_{s \text{ max}}$.

Replacing solenoid coils, operating mechanisms or spare contacts

3RT23 contactors

Solenoid coil replacement is possible. Only the contacts for 3RT233 contactors can be replaced.

3RT13 contactors

It is not possible to change the operating mechanism or contacts.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

- 3RT23 contactors
 - 3RT231 contactor:
 - An auxiliary contact is integrated in the basic unit.
 - 3RT232 to 3RT234 contactors:
 - The basic units contain two integrated auxiliary contacts (1 NO + 1 NC).
- 3RT13 contactors
 - These contactors are supplied with two laterally mounted auxiliary switches.

Expansion possibilities

All basic units can be expanded using auxiliary switches; the permissible configuration must be observed.

For detailed information about the fitting of auxiliary switches for 3RT23 contactors, see pages 3/81 to 3/86.

Accessories and spare parts

- 3RT231 to 3RT234 contactors, see page 3/69 onwards
- 3RT135 to 3RT137 contactors, see page 4/35

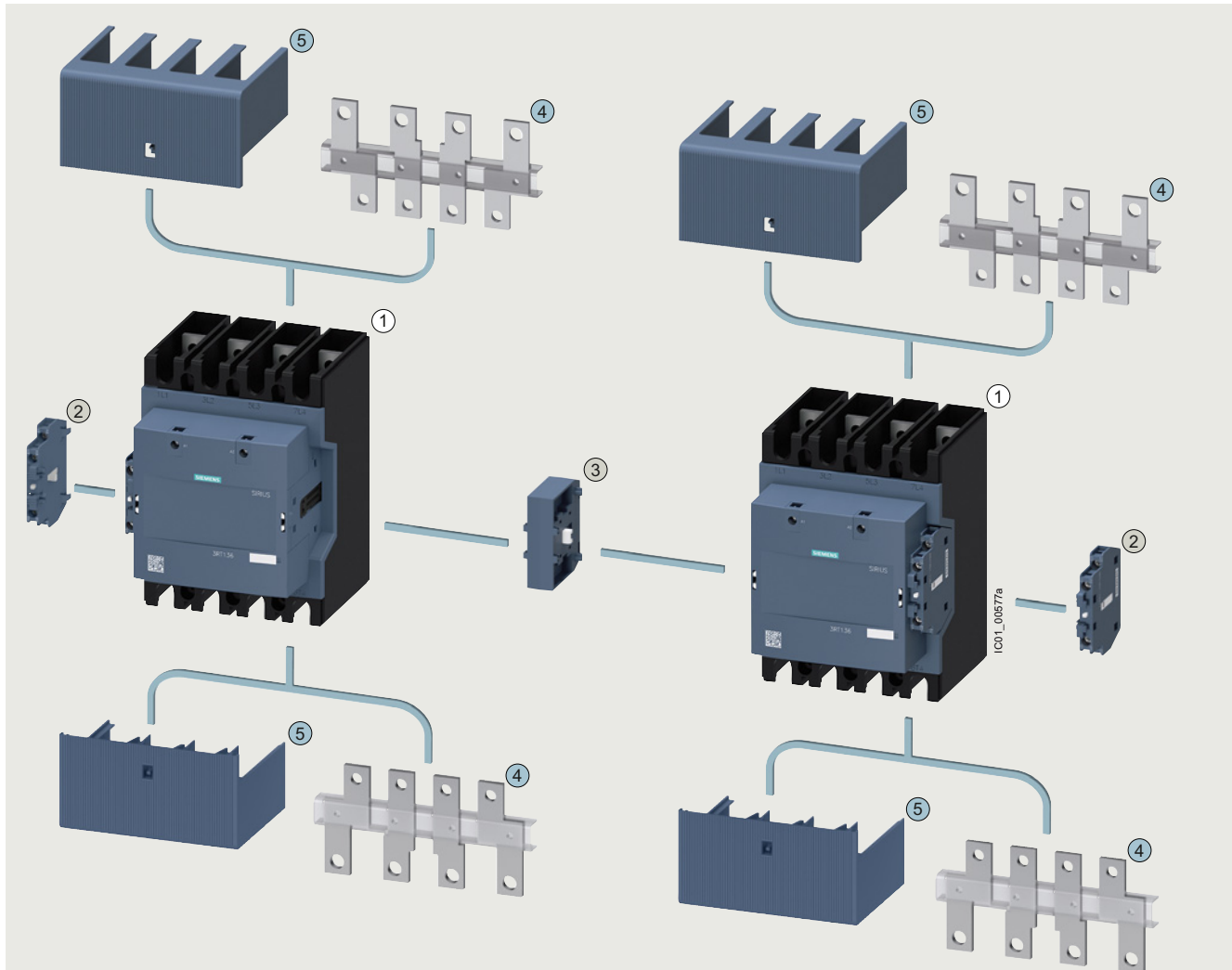
Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

Overview graphic with mountable accessories

- 3RT23 contactors, [see page 3/8 onwards](#)
- 3RT135 to 3RT137 contactors, [see following graphic](#)



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 ($I_o = 200$ A) | 3RT1363 ($I_o = 275$ A) | 3RT1364 ($I_o = 350$ A) | 3RT1373 ($I_o = 400$ A) | 3RT1374 ($I_o = 500$ A) | 3RT1375 ($I_o = 525$ 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

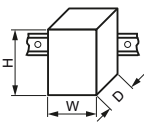
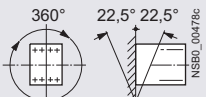

We additionally offer special versions of the 3RT23 contactors for switching motor-driven loads (AC-3).

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 | | | | | | |
| <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 | 45 x 58 x 73 | 60 x 85 x 97 (107) | 75 x 114 x 130 | 96 x 140 x 152 |
| | | mm | 45 x 70 x 73 | 61 x 102 x 97 (107) | -- | -- |
| | | mm | 45 x 58 x 117 | 60 x 85 x 141 (151) | 75 x 114 x 174 | 96 x 140 x 196 |
| | | mm | 45 x 70 x 121 | 61 x 102 x 145 (155) | -- | -- |
| <ul style="list-style-type: none"> • 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 | 45 x 58 x 147 | 60 x 85 x 171 (181) | 75 x 114 x 204 | 96 x 140 x 226 | |
| | | mm | 45 x 70 x 147 | 61 x 102 x 171 (181) | -- | -- |
| Permissible mounting position | | | | | | |
| The contactors are designed for operation on a vertical mounting surface. | | | | | | |
|  | | | | | | |
| Upright mounting position | | | | | | |
|  NSB0_00477a 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 according to IEC 60947-1, Annex N | | | | | | |
| | V | 400 | | | 690 | |
| Permissible ambient temperature | | | | | | |
| | °C | -25 ... +60 | | | | |
| | °C | -55 ... +80 | | | | |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

| Type Size | 3RT2316, 3RT2317 S00 | 3RT2325, 3RT2326 S0 | 3RT2326-1...0-4AA0 | 3RT2327 |
|--|---|-----------------------------|---|-----------------------------|
| Short-circuit protection | | | | |
| Main circuit | | | | |
| <ul style="list-style-type: none"> Version of the fuse link required for short-circuit protection of the main circuit <ul style="list-style-type: none"> For type of coordination 1 For type of coordination 2 | gG: 35 A (690 V, 100 kA) | gG: 63 A (690 V, 100 kA) | gG: 100 A (690 V, 100 kA), aM: 50 A (690 V, 100 kA), BS88: 100 A (415 V, 80 kA) | gG: 63 A (690 V, 100 kA) |
| | gG: 20 A (690 V, 100 kA) | | gG: 35 A (690 V, 100 kA), aM: 20 A (690 V, 100 kA), BS88: 35 A (415 V, 80 kA) | gG: 20 A (690 V, 100 kA) |
| Auxiliary circuit | <ul style="list-style-type: none"> Version of the fuse link required for short-circuit protection of the auxiliary switch Miniature circuit breaker version required for short-circuit protection of the auxiliary switch | | | |
| | Fuse gG: 10 A (690 V, 1 kA) 6 A (230 V, 400 A, C characteristic) | | | |

| Type Size | 3RT2336, 3RT2337 S2 | 3RT2344, 3RT2346 S3 | 3RT2346-1...0-4AA0 | 3RT2348 |
|--|---|--------------------------------|--|------------------------------|
| Short-circuit protection | | | | |
| Main circuit | | | | |
| <ul style="list-style-type: none"> Version of the fuse link required for short-circuit protection of the main circuit <ul style="list-style-type: none"> For type of coordination 1 For type of coordination 2 | gG: 160 A (690 V, 100 kA) | gG: 250 A (690 V, 100 kA) | gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA) | gG: 250 A (690 V, 100 kA) |
| | gG: 63 A (690 V, 100 kA) | gR: 80 A (690 V, 100 kA) | gR: 250 A (690 V, 100 kA) | 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 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) | | | |

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 × U_s | | 0.8 ... 1.1 × U_s | | | |
| | At 60 Hz | 0.85 ... 1.1 × U_s | | | | | |
| • DC operation | At 50 °C | 0.8 ... 1.1 × U_s | | | | -- | |
| | At 60 °C | 0.85 ... 1.1 × U_s | | | | -- | |
| • AC/DC operation | | -- | | | | 0.8 ... 1.1 × U_s | |
| Power consumption of the solenoid coils (for cold coil and 1.0 × U_s) | | | | | | | |
| • AC operation, 50 Hz, standard version | | | | | | | |
| - Closing | VA | -- | | 77 | | 190 | 296 |
| - P.f. φ | | -- | | 0.82 | | 0.72 | 0.61 |
| - Closed | VA | -- | | 9.8 | | 16 | 19 |
| - P.f. φ | | -- | | 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. φ | | 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. φ | | 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. φ | | 0.77 | | 0.76 | | 0.67 | 0.55 |
| - Closed | VA | 4.8 | 6.5 | 9.4 | | 16.5 | 22 |
| - P.f. φ | | 0.25 | | 0.28 | | 0.37 | 0.4 |
| • AC/DC operation | | | | | | | |
| - Closing for AC operation | VA | -- | | | | 40 | 151 |
| - P.f. φ | | -- | | | | 0.95 | 0.95 |
| - Closed for AC operation | VA | -- | | | | 2 | 3.5 |
| - P.f. φ | | -- | | | | 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⁾ |

¹⁾ In the case of AC/DC coils, increased pickup currents (6.5 A on average) arise during the first 200 ms.

| 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 | 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 |
| Power loss per main conducting path | | | | | | | | | | | | |
| • At I_e /AC-1 | At 40 °C | W | 1.1 | 1.6 | 1.8 | 2.4 | 3 | 3.2 | 9.7 | 7.3 | 11.8 | 15.4 |
| • At I_e /AC-3 | At 400 V | W | -- | -- | -- | (2.6) ¹⁾ | -- | (4.3) ¹⁾ | -- | -- | (6.8) ¹⁾ | -- |

¹⁾ The values in brackets apply for 3RT23.6-1...0-4AA0 versions.

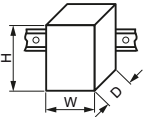
Data for North America

Technical specifications of 3RT contactors, [see page 3/45 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 | | | | 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 V 1 000 Of the auxiliary circuit V 690 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Impulse withstand voltage | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> 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 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> During operation $^\circ\text{C}$ -40 ... +60 During storage $^\circ\text{C}$ -40 ... +70 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 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 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 VA 225 170 130 205 165 175 220 185 165 175 220 185 At 60 Hz 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 VA 5.5 4 6 16 6 4 7 16 6 4 7 16 At 60 Hz VA 5.5 4 6 16 6 4 7 16 6 4 7 16 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Main circuit | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operational 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 $^\circ\text{C}$ A 200 275 350 At an ambient temperature of 60 $^\circ\text{C}$ A 175 250 300 Up to 1000 V <ul style="list-style-type: none"> At an ambient temperature of 40 $^\circ\text{C}$ A -- 250 275 At an ambient temperature of 60 $^\circ\text{C}$ A -- 225 250 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

| Type | 3RT1373- 6AE36 6AF36 6AP36 6AR36 | | | | 3RT1374- 6AE36 6AF36 6AP36 6AR36 | | | | 3RT1375- 6AE36 6AF36 6AP36 6AR36 | | | | | | | | | |
|---|-------------------------------------|----------------|-----|-------------------|-------------------------------------|--|-------------------|------|-------------------------------------|-------------------|-----|------|-------------------|--|--|-------------------|--|--|
| Size | S12 | | | | | | | | | | | | | | | | | |
| 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 | | | | | |
| Main circuit | | | | | | | | | | | | | | | | | | |
| Operational 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 1000 V | | | | | | | | | | | | | | | | | | |
| - At an ambient temperature of 40 °C | A | 350 | | | | 375 | | | | 400 | | | | | | | | |
| - At an ambient temperature of 60 °C | A | 300 | | | | 325 | | | | 350 | | | | | | | | |
| Type | 3RT1355- 6A.36 | | | 3RT1363- 6A.36 | | | 3RT1364- 6A.36 | | | 3RT1373- 6A.36 | | | 3RT1374- 6A.36 | | | 3RT1375- 6A.36 | | |
| Size | S6 | | | S10 | | | | | | S12 | | | | | | | | |
| 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

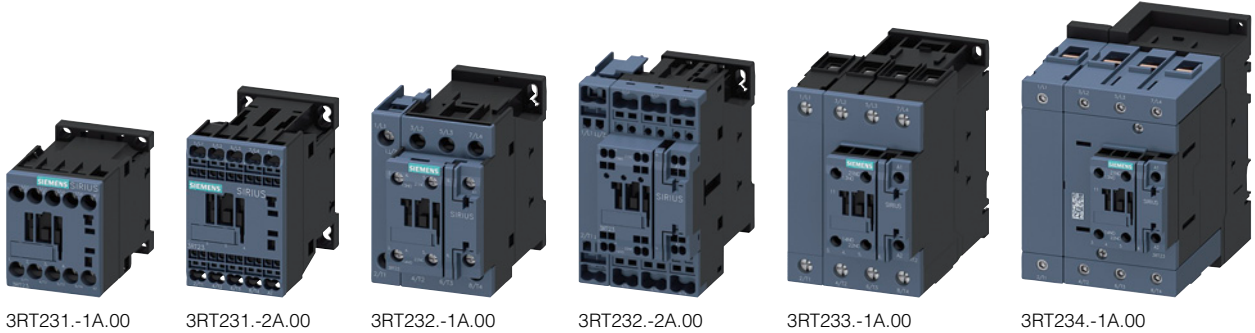
Contactors for special applications

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_{ij} : 40/60 °C Operational current I_e up to 690 V | Auxiliary contacts | | Rated control supply voltage U_s | | Screw terminals  | | Spring-loaded terminals  | |
|---|--------------------|---|---------------------------------------|----------|---|-----------------|---|-----------------|
| | Ident. No. | Version | 50/60 Hz AC | 50 Hz AC | Article No. | Price per PU | Article No. | Price per PU |
| A | |   | V | V | | | | |

For screw fixing and snap-on mounting on TH 35 DIN rail

Size S00

| | | | | | | | |
|-------|----|----|----|------------------|----|---|---|
| 18/16 | -- | -- | -- | 24 110 230 | -- | 3RT2316-1AB00 3RT2316-1AF00 3RT2316-1AP00 | 3RT2316-2AB00 3RT2316-2AF00 3RT2316-2AP00 |
| 22/20 | -- | -- | -- | 24 110 230 | -- | 3RT2317-1AB00 3RT2317-1AF00 3RT2317-1AP00 | 3RT2317-2AB00 3RT2317-2AF00 3RT2317-2AP00 |

Size S0

| | | | | | | | |
|---------------------|----|---|---|------------------------|----|---|---|
| 35/30 ¹⁾ | 11 | 1 | 1 | -- 24 110 230 | -- | 3RT2325-1AB00 3RT2325-1AF00 3RT2325-1AP00 | 3RT2325-2AB00 3RT2325-2AF00 3RT2325-2AP00 |
| 40/35 ¹⁾ | 11 | 1 | 1 | -- 24 110 230 | -- | 3RT2326-1AB00 3RT2326-1AF00 3RT2326-1AP00 | 3RT2326-2AB00 3RT2326-2AF00 3RT2326-2AP00 |
| 50/42 ¹⁾ | 11 | 1 | 1 | -- 24 110 230 | -- | 3RT2327-1AB00 3RT2327-1AF00 3RT2327-1AP00 | 3RT2327-2AB00 3RT2327-2AF00 3RT2327-2AP00 |

Size S2

| | | | | | | | |
|--------|----|---|---|------------------------|----|---|----------------|
| 60/55 | 11 | 1 | 1 | -- 24 110 230 | -- | 3RT2336-1AB00 3RT2336-1AF00 3RT2336-1AP00 | -- -- -- |
| 110/95 | 11 | 1 | 1 | -- 24 110 230 | -- | 3RT2337-1AB00 3RT2337-1AF00 3RT2337-1AP00 | -- -- -- |

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

Size S3

| | | | | | | | |
|---------|----|---|---|------------------------|----|---|----------------|
| 110/100 | 11 | 1 | 1 | -- 24 110 230 | -- | 3RT2344-1AB00 3RT2344-1AF00 3RT2344-1AP00 | -- -- -- |
| 140/130 | 11 | 1 | 1 | -- 24 110 230 | -- | 3RT2346-1AB00 3RT2346-1AF00 3RT2346-1AP00 | -- -- -- |
| 160/140 | 11 | 1 | 1 | -- 24 110 230 | -- | 3RT2348-1AB00 3RT2348-1AF00 3RT2348-1AP00 | -- -- -- |

¹⁾ Required conductor cross-section 10 mm².

Other voltages [according to page 4/52](#) on request.
 Accessories and spare parts, [see page 3/69 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT.3 contactors, 4-pole, up to 525 A **AC-3e**

AC operation

Version for AC-3 and AC-3e 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 | Screw terminals  | Spring-loaded terminals  |
|---------------------------------------|---------------------------------------|---|------------------------------------|---|---|
| AC-3/AC-3e, t_U : up to 60 °C | AC-1, t_U : 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 |   V | | | |
| A | A | | | | |

For screw fixing and snap-on mounting on TH 35 DIN rail

Size S0

32 40/35 **11** 1 1 230

3RT2326-1AP00-4AA0

--

Size S2

50 60/55 **11** 1 1 230

3RT2336-1AP00-4AA0

--

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

Size S3

95 110/100 **11** 1 1 230

3RT2346-1AP00-4AA0

--

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/69 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_c : 40/60 °C
 Operational current I_e
 up to 690 V

A

Auxiliary contacts

Ident. No. | Version



V

Rated control supply
 voltage U_s
 DCScrew terminals 

Article No.

Price
 per PUSpring-loaded terminals 

Article No.

Price
 per PU

For screw fixing and snap-on mounting on TH 35 DIN rail

Size S00

| | | | | | | |
|-------|----|----|----|-----------|--|--|
| 18/16 | -- | -- | -- | 24 220 | 3RT2316-1BB40 3RT2316-1BM40 | 3RT2316-2BB40 3RT2316-2BM40 |
| 22/20 | -- | -- | -- | 24 220 | 3RT2317-1BB40 3RT2317-1BM40 | 3RT2317-2BB40 3RT2317-2BM40 |

Size S0

| | | | | | | |
|---------------------|----|---|---|-----------|--|--|
| 35/30 ¹⁾ | 11 | 1 | 1 | 24 220 | 3RT2325-1BB40 3RT2325-1BM40 | 3RT2325-2BB40 3RT2325-2BM40 |
| 40/35 ¹⁾ | 11 | 1 | 1 | 24 220 | 3RT2326-1BB40 3RT2326-1BM40 | 3RT2326-2BB40 3RT2326-2BM40 |
| 50/42 ¹⁾ | 11 | 1 | 1 | 24 220 | 3RT2327-1BB40 3RT2327-1BM40 | 3RT2327-2BB40 3RT2327-2BM40 |

¹⁾ Required conductor cross-section 10 mm².

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/69 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_i : 40/60 °C Operational current I_e up to 690 V | Auxiliary contacts | | Rated control supply voltage U_c 50/60 Hz AC or DC | Screw terminals  | | Spring-loaded terminals  | |
|--|--------------------|---|--|---|-----------------|---|-----------------|
| | Ident. No. | Version | | Article No. | Price per PU | Article No. | Price per PU |
| A | |   | V | | | | |

For screw fixing and snap-on mounting on TH 35 DIN rail

Size S2

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

| | | | | | | | |
|--------|----|---|---|--------------------------|--------------------------------|----|----|
| 60/55 | 11 | 1 | 1 | 20 ... 33 175 ... 280 | 3RT2336-1NB30 3RT2336-1NP30 | -- | -- |
| 110/95 | 11 | 1 | 1 | 20 ... 33 175 ... 280 | 3RT2337-1NB30 3RT2337-1NP30 | -- | -- |

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

Size S3

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

| | | | | | | | |
|---------|----|---|---|--------------------------|--------------------------------|----|----|
| 110/100 | 11 | 1 | 1 | 20 ... 33 175 ... 280 | 3RT2344-1NB30 3RT2344-1NP30 | -- | -- |
| 140/130 | 11 | 1 | 1 | 20 ... 33 175 ... 280 | 3RT2346-1NB30 3RT2346-1NP30 | -- | -- |
| 160/140 | 11 | 1 | 1 | 20 ... 33 175 ... 280 | 3RT2348-1NB30 3RT2348-1NP30 | -- | -- |

Other voltages [according to page 4/52](#) on request.

Accessories and spare parts, [see page 3/69 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

AC-3e SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

AC/DC operation 





Version for AC-3 and AC-3e 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 50/60 Hz AC or DC | Screw terminals  | | Spring-loaded terminals  | |
|--|--|--------------------|---|---|---|-----------------|---|-----------------|
| AC-3/AC-3e, t_f : up to 60 °C | AC-1, t_f : 40/60 °C | Ident. No. | Version | | Article No. | Price per PU | Article No. | Price per PU |
| Operational current I_e up to 400 V | Operational current I_e up to 690 V | |   | | | | | |
| A | A | | NO NC V | | | | | |

For screw fixing and snap-on mounting on TH 35 DIN rail
Size S2
**With integrated coil circuit
(varistor integrated in electronics at the factory)**

50 60/55 11 1 1 20 ... 33

3RT2336-1NB30-4AA0

--

**For screw fixing and snap-on mounting on TH 35-15 and
TH 75-15 DIN rails**
Size S3
**With integrated coil circuit
(varistor integrated in electronics at the factory)**

95 110/100 11 1 1 20 ... 33

3RT2346-1NB30-4AA0

--

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/69 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 0.85 ... 1.1 x U_s | 0.8 ... 1.1 x U_s | Busbar connections  | PU (UNIT, SET, M) | PS* | PG |
|------|--|--|---|---------------------|--|-------------------------|-----|----|
| | Operational current I_e at 690 V | Version   | Rated control supply voltage U_s 50/60 Hz AC | DC | Article No. | Price per PU | | |
| A | | NO NC | V | V | | | | |

Solid-state operating mechanism

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

| | | | | | | | | | | |
|------------|-----|---|---|-------------|-------------|----------------------|---|--------|-----|----------------------|
| S6 | 200 | 2 | 2 | 24 ... 60 | 20 ... 60 | 3RT1355-6AE36 | 1 | 1 unit | 41B | |
| | | | | 48 ... 130 | 48 ... 130 | | | | | 3RT1355-6AF36 |
| | | | | 100 ... 250 | 100 ... 250 | | | | | 3RT1355-6AP36 |
| | | | | 250 ... 500 | 250 ... 500 | | | | | 3RT1355-6AR36 |
| S10 | 275 | 2 | 2 | 24 ... 60 | 20 ... 60 | 3RT1363-6AE36 | 1 | 1 unit | 41B | |
| | | | | 48 ... 130 | 48 ... 130 | | | | | 3RT1363-6AF36 |
| | | | | 100 ... 250 | 100 ... 250 | | | | | 3RT1363-6AP36 |
| | | | | 250 ... 500 | 250 ... 500 | | | | | 3RT1363-6AR36 |
| | 350 | 2 | 2 | 24 ... 60 | 20 ... 60 | 3RT1364-6AE36 | 1 | 1 unit | 41B | |
| | | | | 48 ... 130 | 48 ... 130 | | | | | 3RT1364-6AF36 |
| | | | | 100 ... 250 | 100 ... 250 | | | | | 3RT1364-6AP36 |
| | | | | 250 ... 500 | 250 ... 500 | | | | | 3RT1364-6AR36 |
| S12 | 400 | 2 | 2 | 24 ... 60 | 20 ... 60 | 3RT1373-6AE36 | 1 | 1 unit | 41B | |
| | | | | 48 ... 130 | 48 ... 130 | | | | | 3RT1373-6AF36 |
| | | | | 100 ... 250 | 100 ... 250 | | | | | 3RT1373-6AP36 |
| | | | | 250 ... 500 | 250 ... 500 | | | | | 3RT1373-6AR36 |
| | 500 | 2 | 2 | 24 ... 60 | 20 ... 60 | 3RT1374-6AE36 | 1 | 1 unit | 41B | |
| | | | | 48 ... 130 | 48 ... 130 | | | | | 3RT1374-6AF36 |
| | | | | 100 ... 250 | 100 ... 250 | | | | | 3RT1374-6AP36 |
| | | | | 250 ... 500 | 250 ... 500 | | | | | 3RT1374-6AR36 |
| | 525 | 2 | 2 | 24 ... 60 | 20 ... 60 | 3RT1375-6AE36 | 1 | 1 unit | 41B | |
| | | | | 48 ... 130 | 48 ... 130 | | | | | 3RT1375-6AF36 |
| | | | | 100 ... 250 | 100 ... 250 | | | | | 3RT1375-6AP36 |
| | | | | 250 ... 500 | 250 ... 500 | | | | | 3RT1375-6AR36 |

Depending on the operational current, bus connectors offset must be used for sizes S10 and S12, [see page 4/35](#):

- 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 4/35 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications


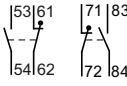






SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

Accessories



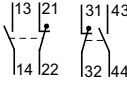
Overview graphic for 3RT135 to 3RT137 contactors with mountable accessories, [see page 4/23](#).

More information

Equipment Manual, [see https://support.industry.siemens.com/cs/ww/en/view/60306557](#)

| For contactors | Auxiliary contacts Version | | Left | | Right | | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|--|----------------------------|----|------|---|-------|--|----------------------|--------------|-------------------|--------|-----|
| | Type | NO | NC | | | | | | | | |
| Second auxiliary switch (1 NO + 1 NC) | | | | | | | | | | | |
| Lateral mounting on the right and/or the left, 2-pole | | | | | | | | | | | |
|  | 3RT135 ... 3RT137 | 1 | 1 |  | | | 3RH1951-1SA11 | | 1 | 1 unit | 41B |
| Terminal covers | | | | | | | | | | | |
| Two units required per contactor (1 set = 2 units) Either bus connectors offset or terminal covers can be used. | | | | | | | | | | | |
|  | 3RT135 | -- | -- | -- | -- | | 3RT1956-4EB10 | | 1 | 1 unit | 41B |
|  | 3RT136 | -- | -- | -- | -- | | 3RT1966-4EB10 | | 1 | 1 unit | 41B |
|  | 3RT137 | -- | -- | -- | -- | | 3RT1976-4EB10 | | 1 | 1 unit | 41B |
| Bus connectors offset | | | | | | | | | | | |
| (Two units required per contactor) Either terminal covers or bus connectors offset can be used. | | | | | | | | | | | |
|  | 3RT136 | -- | -- | -- | -- | | 3RT1966-4D | | 1 | 1 unit | 41B |
|  | 3RT137 | -- | -- | -- | -- | | 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 ... 3RT137 | -- | -- | -- | -- | | 3RA1954-3A | | 1 | 1 unit | 41B |

Spare parts

| For contactors | Auxiliary contacts Version | | Left | | Right | | Screw terminals  | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|----------------------------|----|------|---|-------|--|---|--------------|-------------------|--------|-----|
| | Type | NO | NC | | | | | | | | |
| First auxiliary switch (1 NO + 1 NC) | | | | | | | | | | | |
| Lateral mounting on the right and/or the left, 2-pole | | | | | | | | | | | |
|  | 3RT135 ... 3RT137 | 1 | 1 |  | | | 3RH1951-1TA11 | | 1 | 1 unit | 41B |

* 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 60947-1, IEC 60947-4-1, IEC 60947-5-1 (auxiliary switches)

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, see the [technical product data sheet](#).

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see [Configuration Manual for load feeders](#).

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the [technical product data sheet](#).

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see [Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably](#).

Protection against overvoltage at the control supply voltage connection

3RT25 contactors supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (combination of diode and Zener diode for short break times) for damping switching overvoltages in the coil and can be ordered separately as accessories, see [page 3/97 onwards](#).

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information about influencing the time response using damping, see [Equipment Manual](#).

Replacing solenoid coils or spare contacts

Solenoid coil or contact replacement is possible.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

The 3RT252 to 3RT254 basic units contain two integrated auxiliary contacts (1 NO + 1 NC).

Expansion possibilities

All basic units can be expanded using auxiliary switches; the permissible configuration must be observed.

For detailed information about the fitting of auxiliary switches for 3RT25 contactors, see [pages 3/81 to 3/86](#).

Accessories

The accessories for the 3-pole SIRIUS 3RT2 contactors can also be used for the 4-pole versions, see [page 3/69 onwards](#).

Use of 3RT contactors with IE3 and IE4 motors

Note:

For the use of 3RT25 contactors in conjunction with highly efficient IE3 and IE4 motors, please observe the information on dimensioning and configuring, see [Application Manual](#).

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 operation. 3RT25 contactors are not suitable for switching a load between two current sources.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16169/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16169/faq>

Manuals, see
<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 4/24

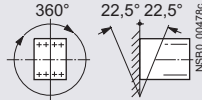
See 3RT232.,
page 4/24

See 3RT233.,
page 4/24

See 3RT234.,
page 4/24

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 according to IEC 60947-1, Annex N | V | 400 | 690 |
| Permissible ambient temperature | | | |
| • During operation | °C | -25 ... +60 | |
| • During storage | °C | -55 ... +80 | |

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: 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)

- For type of coordination 2

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

• Version of the fuse link required for short-circuit protection of the auxiliary switch

Fuse gG: 10 A (690 V, 1 kA)

• Version of the miniature circuit breaker 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 3RT25 contactors, 4-pole, 2 NO + 2 NC

| 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 | | | | | | | | | | |
| • AC operation | At 50 Hz | 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 | -- | |
| | At 60 Hz | 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 | -- | |
| • DC operation | Up to 50 °C | -- | 0.8 ... 1.1 x U_s | -- | 0.8 ... 1.1 x U_s | -- | -- | -- | -- | |
| | Up to 60 °C | -- | 0.85 ... 1.1 x U_s | -- | 0.8 ... 1.1 x U_s | -- | -- | -- | -- | |
| • AC/DC operation | | -- | -- | -- | -- | -- | 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) | | | | | | | | | | |
| • AC operation, 50/60 Hz, standard version | | | | | | | | | | |
| - Closing | VA | 27/24.3 | 37/33 | -- | 81/79 | -- | 210/188 | 110 | 348/296 | -- |
| - P.f. φ | | 0.8/0.75 | -- | -- | 0.72/0.74 | -- | 0.69/0.65 | 0.95 | 0.62/0.55 | -- |
| - Closed | VA | 4.2/3.3 | 5.7/4.4 | -- | 10.5/8.5 | -- | 17.2/16.5 | 2.5 | 25/18 | -- |
| - P.f. φ | | 0.25/0.25 | -- | -- | 0.25/0.28 | -- | 0.36/0.39 | 0.95 | 0.35/0.41 | -- |
| • DC operation | | | | | | | | | | |
| - Closing | W | -- | 4 | -- | 5.9 | 23 | 70 | -- | 76 | |
| - Closed | W | -- | 4 | -- | 5.9 | 1 | 1.5 | -- | 1.8 | |

| 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 |
| P.f. $\varphi = 0.95$ (at 60 °C) | 400 V | kW | 10.5 | 13 | 23 | 36 | 39 | 40 | 69 |
| • Minimum cross-section in the main circuit at maximum AC-1 rated value | | mm ² | 2.5 | 4 | 10 | 16 | 25 | 35 | 50 |
| Utilization category AC-3 | | | | | | | | | |
| • Rated operational currents I_e (at 60 °C) | NO up to 400 V | A | 9 | 12 | 16 | 25 | 35 | 41 | 65 |
| | NC up to 400 V | A | 9 | | | 25 | 20 | 35 | 41 |
| • Rated power for slip-ring or squirrel-cage motors at 50 and 60 Hz | NO at 230 V | kW | 2.2 | 3 | 4 | 5.5 | 11 | | 18.5 |
| | NC at 230 V | kW | 2.2 | | | 5.5 | 11 | | 18.5 |
| | NO at 400 V | kW | 4 | 5.5 | 7.5 | 11 | 18.5 | 22 | 30 |
| | NC at 400 V | kW | 4 | | | 11 | 7.5 | 18.5 | 22 |

¹⁾ Values for devices with AC and DC operation: For 3RT2526 with DC operation, different values apply to AC-3 for the NC.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

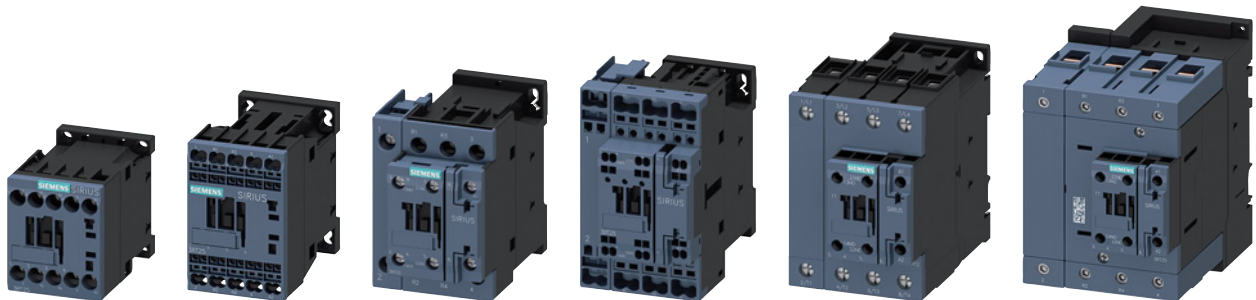
SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

Selection and ordering data

AC operation

Single device for pole reversal (not suitable for reversing operation)

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 | | Screw terminals  | | Spring-loaded terminals  | |
|--|---------------------------------------|--------------------|---|------------------------------------|----------|---|--------------|---|--------------|
| AC-3, t_f : up to 60 °C | AC-1, t_f : 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 | Operational current I_e up to 690 V | |  | | | | | | |
| Ratings of three-phase motors at 50 Hz and 400 V | | | | | | | | | |
| A | kW | A | NO NC V | | V | | | | |

For screw fixing and snap-on mounting on TH 35 DIN rail

Size S00

| | | | | | | | | | |
|--------------------|---------------------|-------|----|----|----|------------------|--|---|---|
| 9 | 4 | 18/16 | -- | -- | -- | 24 110 230 | | 3RT2516-1AB00 3RT2516-1AF00 3RT2516-1AP00 | 3RT2516-2AB00 3RT2516-2AF00 3RT2516-2AP00 |
| 12/9 ¹⁾ | 5.5/4 ¹⁾ | 22/20 | -- | -- | -- | 24 110 230 | | 3RT2517-1AB00 3RT2517-1AF00 3RT2517-1AP00 | 3RT2517-2AB00 3RT2517-2AF00 3RT2517-2AP00 |
| 16/9 ¹⁾ | 7.5/4 ¹⁾ | 22/20 | -- | -- | -- | 24 110 230 | | 3RT2518-1AB00 3RT2518-1AF00 3RT2518-1AP00 | 3RT2518-2AB00 3RT2518-2AF00 3RT2518-2AP00 |

Size S0

| | | | | | | | | | |
|----|----|-------|----|---|---|------------------------|--|---|---|
| 25 | 11 | 40/35 | 11 | 1 | 1 | -- 24 110 230 | | 3RT2526-1AB00 3RT2526-1AF00 3RT2526-1AP00 | 3RT2526-2AB00 3RT2526-2AF00 3RT2526-2AP00 |
|----|----|-------|----|---|---|------------------------|--|---|---|

Size S2

| | | | | | | | | | |
|----|------|-------|----|---|---|------------------------|--|---|----------------|
| 35 | 18.5 | 60/55 | 11 | 1 | 1 | -- 24 110 230 | | 3RT2535-1AB00 3RT2535-1AF00 3RT2535-1AP00 | -- -- -- |
| 41 | 22 | 70/60 | 11 | 1 | 1 | -- 24 110 230 | | 3RT2536-1AB00 3RT2536-1AF00 3RT2536-1AP00 | -- -- -- |

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

Size S3

| | | | | | | | | | |
|----|----|---------|----|---|---|------------------------|--|---|----------------|
| 65 | 30 | 100/90 | 11 | 1 | 1 | -- 24 110 230 | | 3RT2544-1AB00 3RT2544-1AF00 3RT2544-1AP00 | -- -- -- |
| 80 | 37 | 125/105 | 11 | 1 | 1 | -- 24 110 230 | | 3RT2545-1AB00 3RT2545-1AF00 3RT2545-1AP00 | -- -- -- |

¹⁾ Values for NO contact/NC contact. The NC contact can switch no more than 4 kW.

Other voltages according to page 4/52 on request.
 Accessories and spare parts, see page 3/69 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 operation)

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



3RT251.-1B.40






3RT251.-2B.40



3RT252.-1B.40



3RT252.-2B.40

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

For screw fixing and snap-on mounting on TH 35 DIN rail

Size S00

| | | | | | | | | |
|--------------------|---------------------------|-------|----|----|----|-----------|--|--|
| 9 | 4 | 18/16 | -- | -- | -- | 24 220 | 3RT2516-1BB40 3RT2516-1BM40 | 3RT2516-2BB40 3RT2516-2BM40 |
| 12/9 ¹⁾ | 5.5/4¹⁾ | 22/20 | -- | -- | -- | 24 220 | 3RT2517-1BB40 3RT2517-1BM40 | 3RT2517-2BB40 3RT2517-2BM40 |
| 16/9 ¹⁾ | 7.5/4¹⁾ | 22/20 | -- | -- | -- | 24 220 | 3RT2518-1BB40 3RT2518-1BM40 | 3RT2518-2BB40 3RT2518-2BM40 |

Size S0

| | | | | | | | | |
|-----------------------|------------------------------|-------|----|---|---|-----------|--|--|
| 25 (20) ²⁾ | 11 (7.5)²⁾ | 40/35 | 11 | 1 | 1 | 24 220 | 3RT2526-1BB40 3RT2526-1BM40 | 3RT2526-2BB40 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 4/52 on request.
 Accessories and spare parts, see page 3/69 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 operation)




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 | Screw terminals  | Spring-loaded terminals  |
|---------------------------------------|---------------------------------------|---|---------|------------------------------------|---|---|
| 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. | Article No. |
| Operational current I_e up to 400 V | Operational current I_e up to 690 V |  | | | Price per PU | Price per PU |
| A | A | NO NC V | | | | |

For screw fixing and snap-on mounting on TH 35 DIN rail

Size S2

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

| | | | | | | | | |
|----|------|-------|----|---|---|--|---|----------------|
| 35 | 18.5 | 60/55 | 11 | 1 | 1 | 20 ... 33 83 ... 155 175 ... 280 | 3RT2535-1NB30 3RT2535-1NF30 3RT2535-1NP30 | -- -- -- |
| 41 | 22 | 70/60 | 11 | 1 | 1 | 20 ... 33 83 ... 155 175 ... 280 | 3RT2536-1NB30 3RT2536-1NF30 3RT2536-1NP30 | -- -- -- |

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

Size S3

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

| | | | | | | | | |
|----|----|---------|----|---|---|--------------------------|--------------------------------|----------|
| 65 | 30 | 100/90 | 11 | 1 | 1 | 20 ... 33 175 ... 280 | 3RT2544-1NB30 3RT2544-1NP30 | -- -- |
| 80 | 37 | 125/105 | 11 | 1 | 1 | 20 ... 33 175 ... 280 | 3RT2545-1NB30 3RT2545-1NP30 | -- -- |

Other voltages [according to page 4/52](#) on request.

Accessories and spare parts, [see page 3/69 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 60947-1, IEC 60947-4-1, IEC 60947-5-1, IEC 60831-1, IEC 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.

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, see the [technical product data sheet](#).

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see [Configuration Manual for load feeders](#).

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the [technical product data sheet](#).

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see [Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably](#).

Protection against overvoltage at the control supply voltage connection

3RT26 contactors supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (combination of diode and Zener diode for short break times) for damping switching overvoltages in the coil and can be ordered separately as accessories, see [page 3/97 onwards](#).

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information about influencing the time response using damping, see [Equipment Manual](#).

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

- 3RT261 contactors:
The basic units are equipped with a 4-pole front-mounted auxiliary switch with one freely accessible contact. The other three contacts are assigned to the precharging resistors. Additional free auxiliary contacts are provided in the basic unit (depending on the version, 1 NO + 1 NC or 2 NO).
- 3RT262 contactors:
The basic units are equipped with a 4-pole front-mounted auxiliary switch with one freely accessible contact. The other three contacts are assigned to the precharging resistors. Two additional free auxiliary contacts are provided in the basic unit (1 NO + 1 NC).
- 3RT263 and 3RT264 contactors:
The auxiliary contacts for the resistors are already integrated in the basic units, which do not have any additional integrated and freely assignable auxiliary contacts. A 2-pole lateral auxiliary switch is already mounted on the left (depending on the version, 1 NO + 1 NC or 2 NC).

Expansion possibilities

All 3RT263 and 3RT264 contactors can be expanded using lateral auxiliary switches; the permissible configuration must be observed.

| Type | 3RT261 | 3RT262 | 3RT263, 3RT264 |
|---|--------|--------|----------------|
| Size | S00 | S0 | S2, S3 |
| Number of unassigned auxiliary contacts as delivered from the factory | 2 | 3 | 2 |
| Number of expansion auxiliary contacts that can be fitted | 0 | 0 | 2 |

Conductor cross-sections

In order to connect the required minimum cross-section, the use of 3RV2935-5A 3-phase infeed terminal may be necessary for 3RT263 contactors and of 3RA2943-3L 1-phase infeed terminal for 3RT264 contactors, see [page 3/110](#). These infeed terminals enable the clamping of larger cross-sections than the device connection itself actually allows.

For 3RT2628 contactors, this infeed terminal is included in the scope of supply and is mounted on the contactor.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

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

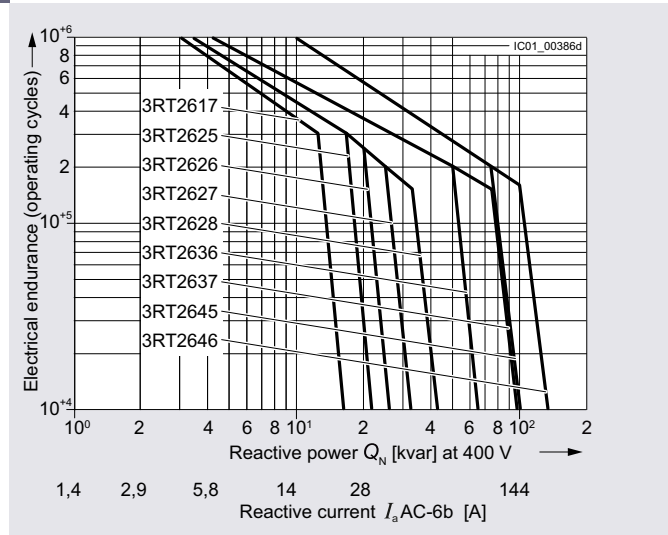
Size

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 the rated operational voltage.

The rated operational current I_b complies with utilization category AC-6b (breaking of 1.35 times the rated operational current) and is intended for a contact endurance of approximately 150 000 to 200 000 operating cycles.



Switching devices – Contactors and contactor assemblies – Special applications

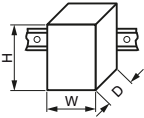
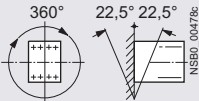
Contactors for special applications

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 3/25 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 |
| | 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 according to IEC 60947-1, Annex N | V | 400 | | | | | | | 690 | |
| Permissible ambient temperature | | | | | | | | | | |
| • During operation ¹⁾ | °C | -25 ... +60 | | | | | | | | |
| • During storage | °C | -55 ... +80 | | | | | | | | |
| Short-circuit protection | | | | | | | | | | |
| Main circuit | | | | | | | | | | |
| 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 ... 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 according 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 conducting 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 60 Hz | 0.8 ... 1.1 × U_s 0.85 ... 1.1 × U_s | 0.8 ... 1.1 × U_s | | | |
| • DC operation | At 50 °C At 60 °C | 0.8 ... 1.1 × U_s 0.85 ... 1.1 × U_s | 0.8 ... 1.1 × U_s | -- | -- | |
| Power consumption of the solenoid coils (for cold coil and 1.0 × U_s) | | | | | | |
| • AC operation, 50 Hz, standard version | | | | | | |
| - Closing | VA | -- | 77 | 190 | 296 | |
| - P.f. φ | | -- | 0.82 | 0.72 | 0.61 | |
| - Closed | VA | -- | 9.8 | 16 | 19 | |
| - P.f. φ | | -- | 0.25 | 0.37 | 0.38 | |
| • AC operation, 50/60 Hz, standard version | | | | | | |
| - Closing | VA | 49 | 81/79 | 210/188 | 348/296 | |
| - P.f. φ | | 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. φ | | 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 | -- | -- | |
| | | | | | | |
| 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 × U_s | | | 0.8 ... 1.1 × U_s | |
| Power consumption of the solenoid coils (for cold coil and 1.0 × 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. φ | | 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. φ | | 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 | |

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 3/25 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-6b | | | | | | | | | | | | |
| - 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 | | 144 | | |
| | 60 °C A | -- | | | | | | | 54 | 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 | | | | | | | | | | |
| Ⓢ 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 | | | | |

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 | | | | | | | |
| 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 mm) | M4 (for Pozidriv size 2; Ø 5 ... 6 mm) | M8 | M6 (for Pozidriv size 2; Ø 5 ... 6 mm) | | 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 mm) | | | | | |
| • 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

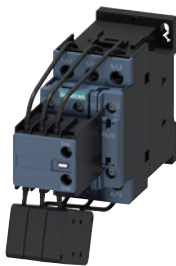
Selection and ordering data

AC operation

Main, auxiliary and control conductors: Screw terminals






3RT2617-1A.05



3RT262-1A.05

3RT2628-1A.05
with infeed terminal

| Utilization category AC-6b | | | | Auxiliary contacts, unassigned | | Rated control supply voltage U_s | | Screw terminals  | PU (UNIT, SET, M) | PS* | PG |
|--|-------------|----------|----------|---|---|------------------------------------|-------------|---|-------------------|--------|------|
| Switching AC capacitors at an ambient temperature of 60 °C | | | | Version | | 50 Hz AC | 50/60 Hz AC | | | | |
| Capacitor rating at operational voltage 50/60 Hz | | | | NO | NC | V | V | Article No. | Price per PU | | |
| at 230 V | at 400 V | at 500 V | at 690 V | | | | | | | kvar | kvar |
| | | | |  |  | | | | | | |
| For screw fixing and snap-on mounting on TH 35 DIN rail | | | | | | | | | | | |
| Size S00 | | | | | | | | | | | |
| 7.2 | 12.5 | 15 | 21 | 1 | 1 | -- | 24 | 3RT2617-1AB03 | 1 | 1 unit | 41B |
| | | | | | | | 110 | 3RT2617-1AF03 | 1 | 1 unit | 41B |
| | | | | | | | 230 | 3RT2617-1AP03 | 1 | 1 unit | 41B |
| 7.2 | 12.5 | 15 | 21 | 0 | 2 | -- | 24 | 3RT2617-1AB05 | 1 | 1 unit | 41B |
| | | | | | | | 110 | 3RT2617-1AF05 | 1 | 1 unit | 41B |
| | | | | | | | 230 | 3RT2617-1AP05 | 1 | 1 unit | 41B |
| Size S0 | | | | | | | | | | | |
| 9.6 | 16.7 | 21 | 29 | 1 | 2 | 24 | -- | 3RT2625-1AB05 | 1 | 1 unit | 41B |
| | | | | | | 110 | -- | 3RT2625-1AF05 | 1 | 1 unit | 41B |
| | | | | | | 230 | -- | 3RT2625-1AP05 | 1 | 1 unit | 41B |
| 11.5 | 20 | 25 | 34 | 1 | 2 | 24 | -- | 3RT2626-1AB05 | 1 | 1 unit | 41B |
| | | | | | | 110 | -- | 3RT2626-1AF05 | 1 | 1 unit | 41B |
| | | | | | | 230 | -- | 3RT2626-1AP05 | 1 | 1 unit | 41B |
| 14 | 25 | 31 | 43 | 1 | 2 | 24 | -- | 3RT2627-1AB05 | 1 | 1 unit | 41B |
| | | | | | | 110 | -- | 3RT2627-1AF05 | 1 | 1 unit | 41B |
| | | | | | | 230 | -- | 3RT2627-1AP05 | 1 | 1 unit | 41B |
| 19 | 33 | 41 | 57 | 1 | 2 | 24 | -- | 3RT2628-1AB05 | 1 | 1 unit | 41B |
| | | | | | | 110 | -- | 3RT2628-1AF05 | 1 | 1 unit | 41B |
| | | | | | | 230 | -- | 3RT2628-1AP05 | 1 | 1 unit | 41B |

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/69 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 | Screw terminals  | PU (UNIT, SET, M) | PS* | PG |
|---|----------|----------|----------|--------------------------------|----|------------------------------------|---|-------------------|----------------------------|-------------------|
| Switching AC capacitors at an ambient temperature of 60 °C | | | | Version | | 50 Hz AC | | | | |
| Capacitor rating at operational voltage 50/60 Hz | | | | NO | NC | V | Article No. | Price per PU | | |
| at 230 V | at 400 V | at 500 V | at 690 V | | | | | | | |
| kvar | kvar | kvar | kvar | | | | | | | |
| For screw fixing and snap-on mounting on TH 35 DIN rail | | | | | | | | | | |
| Size S2 | | | | | | | | | | |
| 29 | 50 | 63 | 86 | 1 | 1 | 24 110 230 | 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 | 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 | 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 | 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 on TH 35-15 and TH 75-15 DIN rails | | | | | | | | | | |
| Size S3 | | | | | | | | | | |
| 43 | 75 | 94 | 129 | 1 | 1 | 24 110 230 | 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 | 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 | 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 | 3RT2646-1AB05 3RT2646-1AF05 3RT2646-1AP05 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |

Other voltages according to page 4/52 on request.

Accessories, see page 3/69 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

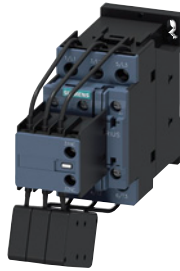
SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

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 | Screw terminals  | PU (UNIT, SET, M) | PS* | PG | |
|--|----------|----------|----------|--------------------------------|------------------------------------|---|-------------------|-----|--------|-----|
| Switching AC capacitors at an ambient temperature of 60 °C | | | | Version | DC | Article No. | Price per PU | | | |
| Capacitor rating at operational voltage 50/60 Hz at 230 V | | | | NO | NC | V | | | | |
| kvar | at 400 V | at 500 V | at 690 V | | | | | | | |
| For screw fixing and snap-on mounting on TH 35 DIN rail | | | | | | | | | | |
| Size S00 | | | | | | | | | | |
| 7.2 | 12.5 | 15 | 21 | 1 | 1 | 24 110 | 3RT2617-1BB43 | 1 | 1 unit | 41B |
| | | | | | | | 3RT2617-1BF43 | 1 | 1 unit | 41B |
| 7.2 | 12.5 | 15 | 21 | 0 | 2 | 24 110 | 3RT2617-1BB45 | 1 | 1 unit | 41B |
| | | | | | | | 3RT2617-1BF45 | 1 | 1 unit | 41B |
| Size S0 | | | | | | | | | | |
| 9.6 | 16.7 | 21 | 29 | 1 | 2 | 24 110 | 3RT2625-1BB45 | 1 | 1 unit | 41B |
| | | | | | | | 3RT2625-1BF45 | 1 | 1 unit | 41B |
| 11.5 | 20 | 25 | 34 | 1 | 2 | 24 110 | 3RT2626-1BB45 | 1 | 1 unit | 41B |
| | | | | | | | 3RT2626-1BF45 | 1 | 1 unit | 41B |
| 14 | 25 | 31 | 43 | 1 | 2 | 24 110 | 3RT2627-1BB45 | 1 | 1 unit | 41B |
| | | | | | | | 3RT2627-1BF45 | 1 | 1 unit | 41B |
| 19 | 33 | 41 | 57 | 1 | 2 | 24 110 | 3RT2628-1BB45 | 1 | 1 unit | 41B |
| | | | | | | | 3RT2628-1BF45 | 1 | 1 unit | 41B |

Other voltages according to page 4/52 on request.

Accessories, see page 3/69 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 Switching AC capacitors at an ambient temperature of 60 °C Capacitor rating at operational voltage 50/60 Hz at 230 V at 400 V at 500 V at 690 V kvar kvar kvar kvar | Auxiliary contacts, unassigned Version  NO NC V | Rated control supply voltage U_s 50/60 Hz AC or DC | Screw terminals |  PU (UNIT, SET, M) | PS* | PG |
| | | | Article No. | | | |

For screw fixing and snap-on mounting on TH 35 DIN rail

Size S0

| 9.6 | 16.7 | 21 | 29 | 1 | 2 | 21 ... 28 95 ... 130 200 ... 280 | 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 | 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 | 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 | 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 | 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 | 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 on TH 35-15 and TH 75-15 DIN rails

Size S3

| | | | | | | | | | | |
|----|-----|-----|-----|---|---|--|---|-------------|----------------------------|-------------------|
| 43 | 75 | 94 | 129 | 0 | 2 | 20 ... 33 83 ... 155 175 ... 280 | 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 | 3RT2646-1NB35 3RT2646-1NF35 3RT2646-1NP35 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |

Other voltages according to page 4/52 on request.

Accessories, see page 3/69 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 number)

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 230 V AC Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 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 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 | Contactor type | 3RT2.2.-N | Rated control supply voltage | Contactor type | 3RT2.3.-N | 3RT2.4.-N |
|--|----------------|-----------|--|----------------|-----------|-----------|
| $U_{s\min}$ to $U_{s\max}$ ¹⁾ | Size | S0 | $U_{s\min}$ to $U_{s\max}$ ¹⁾ | Size | S2 | S3 |

Sizes S0 to S3

AC/DC operation (50/60 Hz AC or DC)

| | | | | |
|---------------------|----|---------------------|----|----|
| 21 ... 28 V AC/DC | B3 | 20 ... 33 V AC/DC | B3 | B3 |
| 95 ... 130 V AC/DC | F3 | 48 ... 80 V AC/DC | E3 | E3 |
| 200 ... 280 V AC/DC | P3 | 83 ... 155 V AC/DC | F3 | F3 |
| | | 175 ... 280 V AC/DC | P3 | P3 |

¹⁾ Coil operating range: 0.8 x $U_{s\min}$ to 1.1 x $U_{s\max}$.

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 number)**

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 60947-4-1, IEC 60077-2, EN 50155

Performance range

Sizes S00 to S3

- 3RT20 contactors for motor loads (AC-3 and AC-3e) up to 110 A/55 kW

Sizes S6 to S12

- 3RT10 contactors for motor loads (AC-3 and AC-3e) 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.

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 $1.25 \times U_N$ in the temperature range -40 to 70 °C.

As from size S6, the operating mechanisms are equipped with an additional control input that can be operated between 24 DC and 110 V. This function can optionally be switched on or off via a selector switch.

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, see the [technical product data sheet](#).

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see [Configuration Manual for load feeders](#).

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the [technical product data sheet](#).

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see [Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably](#).

Short-circuit and overload protection of contactors with a digital input

A typical rated current of 20 mA applies to these inputs based on the PLC input types according to IEC 60947-4-1.

The inputs can be protected accordingly (for 3RT1...-X contactors, marked with IN+/IN-). The supply voltage connections A1 - A2 must be protected based on the load characteristics.

For information on power consumption, see the [technical product data sheet](#).

Protection against overvoltage at the control supply voltage connection

3RT contactors are already equipped with coil damping (varistor).

Note:

The break times of the contactor, the opening delay times of the NO contacts and the closing delay times of the NC contacts increase with damping.

For more information about influencing the time response using damping, see [Equipment Manual](#).

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

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

- 3RT20 contactors:
 - 3RT201 contactors:
 - An auxiliary contact is integrated in the basic unit.
 - Contactors 3RT202 to 3RT204:
 - The basic units contain two integrated auxiliary contacts (1 NO + 1 NC).
- 3RT10 and 3RT14 contactors:
 - These contactors are supplied with two laterally mounted auxiliary switches. The fitting of auxiliary switches is possible on the front and on the side.

Expansion possibilities

All basic units (with the exception of coupling contactors in size S00) can be expanded using auxiliary switches; the permissible configuration must be observed.

Detailed information about the fitting of auxiliary switches for 3RT20 contactors, [see pages 3/81 to 3/86](#).

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 Guide of use for contactors in safety applications, see https://support.industry.siemens.com/cs/ww/en/view/109807687 |

| 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 ... +70 ¹⁾ -40 ... +70 |
| • During storage | °C -55 ... +80 |
| Control | |
| Solenoid coil operating range | DC 0.7 ... 1.25 x U _s |
| Power consumption of the solenoid coils | |
| For cold coil and 1.0 x U _s | |
| • Contactors with series resistor | Closing W 13 -- |
| | Closed W 4.0 -- |
| • Contactors with conventional coil | Closing W 2.8 -- |
| | Closed W 2.8 -- |
| • 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 | mm ² 4 10 |
| • At maximum I _{th} rated value | mm ² -- 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 3/25 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 | mm ² 16 25 35 50 |
| • At maximum I _{th} rated value | mm ² 16 25 35 50 |

All details and technical specifications not mentioned here are identical to those of the basic units, see page 3/25 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 | | |

All details and technical specifications not mentioned here, see <https://support.industry.siemens.com/cs/ww/en/ps/16177/td>.

| Type | | 3RT1456-.X.46-0LA2 | 3RT1466-.X.46-0LA2 | 3RT1467-.X.46-0LA2 | 3RT1476-.X.46-0LA2 |
|---|-----------------|---|--------------------|--------------------|--------------------|
| Size | | S6 | | S10 | S12 |
| General data | | | | | |
| Ambient temperature | | | | | |
| • During operation | °C | -40 ... +70 | | | |
| • During storage | °C | -55 ... +80 | | | |
| Control | | | | | |
| • Solenoid coil closing for DC | | 320 | 580 | | 800 |
| • Solenoid coil closed for DC | | 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 |

All details and technical specifications not mentioned here, see <https://support.industry.siemens.com/cs/ww/en/ps/16177/td>.

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** **AC-3e**


Selection and ordering data

DC operation 


3RT201-2K.4.



3RT201-2K.42-0LA0

| Rated data according to IEC 60947-4-1 | | Auxiliary contacts | | Rated control supply voltage U_s | Spring-loaded terminals | PU (UNIT, SET, M) | PS* | PG |
|---------------------------------------|--------------------------------------|----------------------|----|------------------------------------|---|-------------------|-----|----|
| AC-3 and AC-3e, t_U : 70 °C | | Ident. No. Version | | V DC |  | | | |
| Operational current I_e up to | Rating of three-phase motors at | | | | | | | |
| 400 V | 230 V 400 V 500 V 690 V | | | | Article No. | Price per PU | | |
| A | kW kW kW kW | NO | NC | | | | | |

For screw fixing and snap-on mounting on TH 35 DIN rail

Size S00

Coupling contactors with integrated coil circuit

- Suppressor diode integrated at the factory

| | | | | | | | | | | | | |
|----|---|------------|-----|-----|------------------------|----|----|-----------|--|--------|------------------|------------|
| 12 | 3 | 5.5 | 5.5 | 5.5 | 10¹⁾ | 1 | -- | 24 110 | 3RT2017-2KB41 3RT2017-2KF41 | 1 1 | 1 unit 1 unit | 41B 41B |
| 12 | 3 | 5.5 | 5.5 | 5.5 | 01¹⁾ | -- | 1 | 24 110 | 3RT2017-2KB42 3RT2017-2KF42 | 1 1 | 1 unit 1 unit | 41B 41B |

- Varistor integrated at the factory

| | | | | | | | | | | | | |
|----|---|------------|-----|-----|------------------------|----|----|-----------|--|--------|------------------|------------|
| 12 | 3 | 5.5 | 5.5 | 5.5 | 10¹⁾ | 1 | -- | 24 110 | 3RT2017-2LB41 3RT2017-2LF41 | 1 1 | 1 unit 1 unit | 41B 41B |
| 12 | 3 | 5.5 | 5.5 | 5.5 | 01¹⁾ | -- | 1 | 24 110 | 3RT2017-2LB42 3RT2017-2LF42 | 1 1 | 1 unit 1 unit | 41B 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⁾ | 24 110 | 3RT2017-2KB42-0LA0 3RT2017-2KF42-0LA0 | 1 1 | 1 unit 1 unit | 41B 41B |
| 16 | 4 | 7.5 | 10 | 11 | --²⁾ | -- | 1 ³⁾ | 24 110 | 3RT2018-2KB42-0LA0 3RT2018-2KF42-0LA0 | 1 1 | 1 unit 1 unit | 41B 41B |

- Varistor integrated at the factory

| | | | | | | | | | | | | |
|----|---|------------|-----|-----|------------------------|----|-----------------|-----------|--|--------|------------------|------------|
| 12 | 3 | 5.5 | 5.5 | 5.5 | --²⁾ | -- | 1 ³⁾ | 24 110 | 3RT2017-2LB42-0LA0 3RT2017-2LF42-0LA0 | 1 1 | 1 unit 1 unit | 41B 41B |
| 16 | 4 | 7.5 | 10 | 11 | --²⁾ | -- | 1 ³⁾ | 24 110 | 3RT2018-2LB42-0LA0 3RT2018-2LF42-0LA0 | 1 1 | 1 unit 1 unit | 41B 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 3/69 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

AC-3e **IE3/IE4 ready** **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 according to IEC 60077-2 | Rated data according to IEC 60947-4-1 AC-3 and AC-3e | Auxiliary contacts, lateral | Rated control supply voltage U_s | 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 | Article No. | Price per PU | | |
| A | | A | | | | | | |

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 | Rated current I_{th} [A] | Rated current I_e [A] | NO contacts | NC contacts | Rated control supply voltage U_s [V DC] | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|------|----------------------------|-------------------------|-------------|-------------|---|--------------------|--------------|-------------------|-----|----|
| S6 | 120 | 115 | 2 | 2 | 24 | 3RT1054-2XB46-0LA2 | 1 | 1 unit | 41B | |
| | | | | | 72 | 3RT1054-2XJ46-0LA2 | 1 | 1 unit | 41B | |
| | | | | | 110 | 3RT1054-2XF46-0LA2 | 1 | 1 unit | 41B | |
| 140 | 150 | 2 | 2 | 24 | 3RT1055-2XB46-0LA2 | 1 | 1 unit | 41B | | |
| | | | | 72 | 3RT1055-2XJ46-0LA2 | 1 | 1 unit | 41B | | |
| | | | | 110 | 3RT1055-2XF46-0LA2 | 1 | 1 unit | 41B | | |
| 145 | 185 | 2 | 2 | 24 | 3RT1056-2XB46-0LA2 | 1 | 1 unit | 41B | | |
| | | | | 72 | 3RT1056-2XJ46-0LA2 | 1 | 1 unit | 41B | | |
| | | | | 110 | 3RT1056-2XF46-0LA2 | 1 | 1 unit | 41B | | |
| S10 | 215 | 225 | 2 | 2 | 24 | 3RT1064-2XB46-0LA2 | 1 | 1 unit | 41B | |
| | | | | | 72 | 3RT1064-2XJ46-0LA2 | 1 | 1 unit | 41B | |
| | | | | | 110 | 3RT1064-2XF46-0LA2 | 1 | 1 unit | 41B | |
| 265 | 265 | 2 | 2 | 24 | 3RT1065-2XB46-0LA2 | 1 | 1 unit | 41B | | |
| | | | | 72 | 3RT1065-2XJ46-0LA2 | 1 | 1 unit | 41B | | |
| | | | | 110 | 3RT1065-2XF46-0LA2 | 1 | 1 unit | 41B | | |
| 265 | 300 | 2 | 2 | 24 | 3RT1066-2XB46-0LA2 | 1 | 1 unit | 41B | | |
| | | | | 72 | 3RT1066-2XJ46-0LA2 | 1 | 1 unit | 41B | | |
| | | | | 110 | 3RT1066-2XF46-0LA2 | 1 | 1 unit | 41B | | |
| S12 | 350 | 400 | 2 | 2 | 24 | 3RT1075-2XB46-0LA2 | 1 | 1 unit | 41B | |
| | | | | | 72 | 3RT1075-2XJ46-0LA2 | 1 | 1 unit | 41B | |
| | | | | | 110 | 3RT1075-2XF46-0LA2 | 1 | 1 unit | 41B | |
| 475 | 500 | 2 | 2 | 24 | 3RT1076-2XB46-0LA2 | 1 | 1 unit | 41B | | |
| | | | | 72 | 3RT1076-2XJ46-0LA2 | 1 | 1 unit | 41B | | |
| | | | | 110 | 3RT1076-2XF46-0LA2 | 1 | 1 unit | 41B | | |

Accessories and spare parts, see page 3/69 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 according to IEC 60077-2 | Rated data according to IEC 60947-4-1 AC-1 | Auxiliary contacts, lateral | Rated control supply voltage U_s | Spring-loaded terminals  | PU (UNIT, SET, M) | PS* | PG |
|------|---|---|--|------------------------------------|---|-------------------|-----|----|
| A | 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 | 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 | 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 72 110 | 3RT1466-2XB46-0LA2 | 1 | 1 unit | 41B |
| | | | | | | 3RT1466-2XJ46-0LA2 | 1 | 1 unit | 41B |
| | | | | | | 3RT1466-2XF46-0LA2 | 1 | 1 unit | 41B |
| S12 | 520 | 690 | 2 | 2 | 24 72 110 | 3RT1476-2XB46-0LA2 | 1 | 1 unit | 41B |
| | | | | | | 3RT1476-2XJ46-0LA2 | 1 | 1 unit | 41B |
| | | | | | | 3RT1476-2XF46-0LA2 | 1 | 1 unit | 41B |

Accessories and spare parts, see page 3/69 onwards.

Overview**Standards**

IEC 60947-5-1

Ambient temperature

The permissible ambient temperature for operation of the contactor relays (across the full operating range of the operating mechanisms) 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.

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.

Operating mechanism typesContactor relays with conventional coil

These auxiliary contactors have an extended operating range of 0.7 to 1.25 x U_s . An additional auxiliary switch is not required.

Contactor relays with series resistor

These auxiliary contactors have an extended operating range of 0.7 to 1.25 x U_s .

The DC solenoid system is modified to holding operation by means of a series resistor. This is plugged on in a prewired module.

A 4-pole auxiliary switch can be fitted additionally.

Contactor relays with solid-state operating mechanism

Thanks to the integrated electronics, these auxiliary contactors have an extended operating range of 0.7 to 1.25 x U_s .

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, [see the technical product data sheet](#).

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor relay must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

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 time is consequently 2 to 5 ms longer than for standard contactors.

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the auxiliary contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, [see Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably](#).

Protection against overvoltage at the control supply voltage connection

- Contactor relays with conventional coil:
A surge suppressor (suppressor diode) is integrated.
- Contactor relays with series resistor:
A surge suppressor (a suppressor diode or varistor as preferred) is integrated.
- Contactor relays with solid-state operating mechanism:
A surge suppressor (varistor) is integrated.

Connection methods

The 3RH2 contactor relays are available with screw terminals.

Side-by-side mountingContactor relays with conventional coil

A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C ≤ 70 °C.

Contactor relays with series resistor

Side-by-side mounting is permissible at ambient temperatures up to 70 °C.

Contactor relays with solid-state operating mechanism

Side-by-side mounting is permissible at ambient temperatures up to 70 °C.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

SIRIUS 3RH2 contactor relays with extended operating range

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 Special version (on request)
- Contactors with conventional coil Special version (on request)

Ambient temperature

- During operation °C -40 ... +70¹⁾
- During storage °C -55 ... +80

Control

| Solenoid coil operating range | DC operation | 0.7 ... 1.25 x U_s |
|-------------------------------|--------------|----------------------|
|-------------------------------|--------------|----------------------|

Power consumption of the solenoid coils

| | | For cold coil and 1.0 x U_s | | |
|---|---------|-------------------------------|-----|------|
| • Contactors with series resistor | Closing | W | 13 | -- |
| | Closed | W | 4 | -- |
| • Contactors with conventional coil | Closing | W | 2.8 | -- |
| | Closed | W | 2.8 | -- |
| • Contactors with solid-state operating mechanism | Closing | W | -- | 4 |
| | Closed | W | -- | 0.95 |
| | | | | 4.5 |
| | | | | 0.75 |

¹⁾ 3RH21...K contactor relays without article number suffix "-0LA." are coupling contactor relays that are certified for the temperature range -25 to +60 °C. For railway applications, an additional certification approves these contactors with a minimum 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 5/5 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. according to EN 50011 | Version | Rated control supply voltage U_s | Spring-loaded terminals | | PU (UNIT, SET, M) | PS* | PG |
|--|-------|-------|-------|--|---------|--|----------------------------|-----------------|-------------------------|-----|----|
| I_{th} /AC-15/AC-14 t_{ij} : 70 °C at | 230 V | 400 V | 500 V | | | | | | | | |
| A | A | A | A | | | V DC | Article No. | Price per PU | | | |

For screw fixing and snap-on mounting on TH 35 DIN 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 3RH2122-2KF40 | 1 1 | 1 unit 1 unit | 41A 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 3RH2122-2LF40 | 1 1 | 1 unit 1 unit | 41A 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 3RH2122-2KF40-0LA0 | 1 1 | 1 unit 1 unit | 41A 41A |
|----|---|---|---|-----|---|-----------------|-----------|--|--------|------------------|------------|

- Varistor integrated at the factory

| | | | | | | | | | | | |
|----|---|---|---|-----|---|-----------------|-----------|--|--------|------------------|------------|
| 10 | 3 | 2 | 1 | 21X | 2 | 1 ²⁾ | 24 110 | 3RH2122-2LB40-0LA0 3RH2122-2LF40-0LA0 | 1 1 | 1 unit 1 unit | 41A 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 3RH2122-2XF40-0LA2 | 1 1 | 1 unit 1 unit | 41A 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 3/69 onwards.

Other voltages according to page 3/67 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 60947-5-1

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 solenoid 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 time 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>

Contactor relays

Type **3TH42**

General data

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 within operating range

Total break time = Opening delay time + Arcing time

| | | | |
|----------------|--------------------|----|------------|
| • DC operation | Closing delay | ms | 40 ... 200 |
| | Opening delay time | ms | 20 ... 30 |
| • Arcing time | | ms | 10 ... 20 |

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 5/14 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. according to EN 50011 | | Version | Rated control supply voltage U_s | 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 | Article No. | Price per PU | |
| For screw fixing and snap-on mounting on TH 35 DIN rail | | | | | | | | | | | | |
| With integrated coil circuit (varistor integrated at the factory) | | | | | | | | | | | | |
| 8 | 10 | 6 | 4 | 2 | 44E | 4 | 4 | 24 110 | 3TH4244-0LB4 3TH4244-0LF4 | 1 1 | 1 unit 1 unit | 41A 41A |
| 8 | 10 | 6 | 4 | 2 | 53E | 5 | 3 | 24 110 | 3TH4253-0LB4 3TH4253-0LF4 | 1 1 | 1 unit 1 unit | 41A 41A |
| 8 | 10 | 6 | 4 | 2 | 62E | 6 | 2 | 24 110 | 3TH4262-0LB4 3TH4262-0LF4 | 1 1 | 1 unit 1 unit | 41A 41A |

¹⁾ No expansion contacts can be fitted.Other voltages [according to page 5/19](#) on request.Accessories, [see page 5/20](#).

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 60947-4-1

Protecting connections against short circuit, overload and overvoltage

All connections must generally be protected against overload and short circuits using suitable measures. Different constraints must be considered depending on the type of connection:

Short-circuit and overload protection of main connections

For information on the protection of a free-standing contactor, see the [technical product data sheet](#).

For more information on complete units such as contactors with overload relays or contactors with motor starter protectors as the motor feeder, see [Configuration Manual for load feeders](#).

Short-circuit and overload protection of auxiliary connections

For information on the protection of auxiliary contacts, see the [technical product data sheet](#).

Short-circuit and overload protection of control supply voltage connections or supply voltage connections

First of all, the relevant standards and regulations for configuring control panels and the parts and components installed in them must be taken into account, for example for cable dimensioning.

One possible protection for these circuits could be the selection of a suitable power supply, i.e. one with a current-limiting function. In the selection of the source and the connecting cable, the load characteristics of the contactor must be considered (short-time inrush current peaks for solid-state operating mechanisms, switch-on power, holding power).

If there are further switching elements in the circuit, such as the auxiliary contact system of an overload relay that operates the contactor, the short-circuit protection necessary for this must also be considered.

For further recommendations, e.g. the use of miniature circuit breakers or circuit breakers for equipment in control circuits, see [Control panel tip – Selecting and dimensioning suitable power supplies quickly and reliably](#).

Protection against overvoltage at the control supply voltage connection

The 3TC contactors for railway applications are fitted as standard with varistors against overvoltage.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full solenoid 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.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

The 3TC contactors are equipped with two lateral auxiliary switches with four auxiliary contacts. Of those contacts, one NC contact is required if a series resistor is used (2 NO + 1 NC).

Expansion possibilities

Contactors with AC operation can be expanded using auxiliary switches; the permissible configuration must be observed.

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.

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 $1.25 \times U_s$.

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 | | | | | |
| • Closing | W | For cold coil and $1.0 \times U_s$ | | | |
| • Closed | W | 48 | 26 | 40 | 130 |
| | | 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 4/71.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

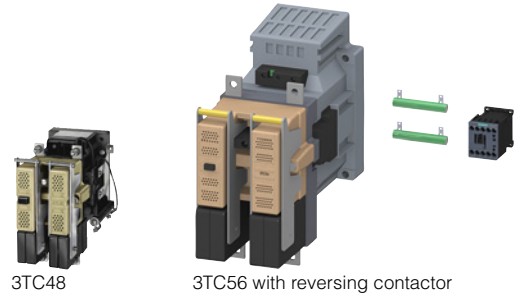
3TC contactors for switching DC voltage, 2-pole

Selection and ordering data

DC operation


3TC44: For screw fixing and snap-on mounting on 35 mm DIN rail

3TC48 to 3TC56: For screw fixing



3TC48

3TC56 with reversing contactor

| Size | Utilization category | Rated operational current I_e at | Rated power of loads at | | | | | Auxiliary contacts ¹⁾ | | Rated control supply voltage U_s | 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 | 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 | 3TC4417-0LB4 | | 1 | 1 unit | 41B |
| | DC-3/DC-5 | 7.5 | 5 | 9 | 9 | 4 | | | 110 | 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 | 3TC4817-0LB4 | | 1 | 1 unit | 41B |
| | DC-3/DC-5 | 75 | 13 | 27 | 38 | 45 | | | 110 | 3TC4817-0LF4 | | 1 | 1 unit | 41B |
| 8 | DC-1 | 170 | 48 | 97 | 132 | 165 | 2 | 1 ²⁾ | 24 | 3TC5217-0LB4 | | 1 | 1 unit | 41B |
| | DC-3/DC-5 | 170 | 41 | 82 | 110 | 110 | | | 110 | 3TC5217-0LF4 | | 1 | 1 unit | 41B |
| 12 | DC-1 | 400 | 88 | 176 | 240 | 300 | 2 | 1 ²⁾ | 24 | 3TC5617-0LB4 | | 1 | 1 unit | 41B |
| | DC-3/DC-5 | 400 | 70 | 140 | 200 | 250 | | | 110 | 3TC5617-0LF4 | | 1 | 1 unit | 41B |

¹⁾ No expansion auxiliary contacts can be fitted.

²⁾ One NC contact used for series resistor.

Other rated control supply voltages according to page 4/78 on request.

Accessories

Accessories, see basic units of the 3TC contactors, page 4/78 onwards.

Spare parts for contactors with extended operating range

| For contactors | Remarks | Rated control supply voltage U_s | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|-----------------------|--------------|--|-------------|---------------------|-------------------|-----|------------|
| Size | Type | V DC | | | | | |
| Arc chutes | | | | | | | |
| 2 | 3TC4417-0L.. | With recess for resistor mounting | -- | 3TY2442-0B | | 1 | 1 unit 41B |
| Solenoid coils | | | | | | | |
| 2 | 3TC44 | With series resistor, without varistor | 24 | 3TY6443-0LB4 | | 1 | 1 unit 41B |
| | | | 110 | 3TY6443-0LF4 | | 1 | 1 unit 41B |
| 4 | 3TC48 | | 24 | 3TY6483-0LB4 | | 1 | 1 unit 41B |
| | | | 110 | 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 60947-1, IEC 60947-4-1, IEC 60947-5-1 (auxiliary switches)

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 4/73](#).

Surge suppression

Contactors (not for railway applications) supplied without a coil circuit can be retrofitted with RC elements, varistors, diodes or diode assemblies (combination of diode and Zener diode for short break times) for damping switching overvoltages in the coil, [see page 4/79 onwards](#).

Fitting auxiliary contacts and mounting additional auxiliary switches

- Features in the delivery state:
The 3TC contactors are equipped with two lateral auxiliary switches with four auxiliary contacts. Of those contacts, one NC contact is required if a series resistor is used (2 NO + 1 NC).
- Expansion possibilities:
Contactors with AC operation can be expanded using auxiliary switches; the permissible configuration must be observed.

3TC7

IEC 60947-4-1

The contactors are suitable for switching and controlling DC motors as well as all other DC loads.

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 4/75](#).

Application

The contactors are suitable for switching and controlling DC motors as well as all other DC circuits.

A version with a particularly large solenoid coil operating range is available for operation in electrically driven vehicles and in switchgear subject to large fluctuations in actuating voltage ([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

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16181/td>
 FAQs, see
<https://support.industry.siemens.com/cs/ww/en/ps/16181/faq>

Manuals, see
<https://support.industry.siemens.com/cs/ww/en/ps/16181/man>

| 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 $I_e/AC-15/AC-14$ | | | |
| • At 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 $I_e/DC-12$ | | | |
| • At 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 $I_e/DC-13$ | | | |
| • At 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 |
| Ⓢ 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

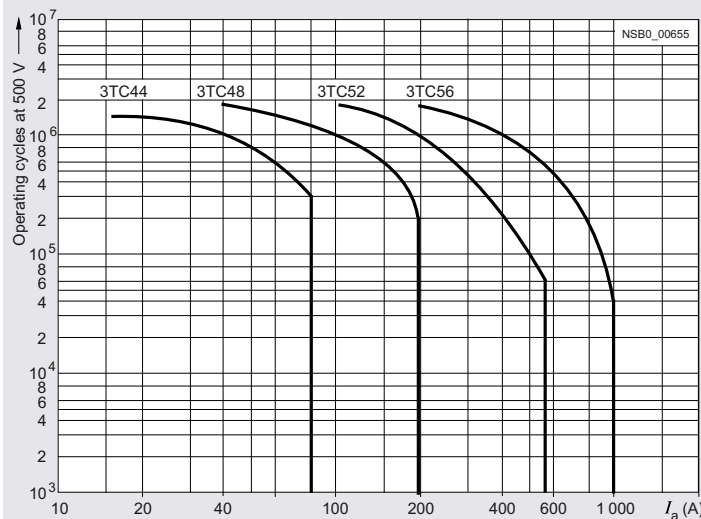
Contactors for special applications

3TC contactors for switching DC voltage, 1- and 2-pole

Type

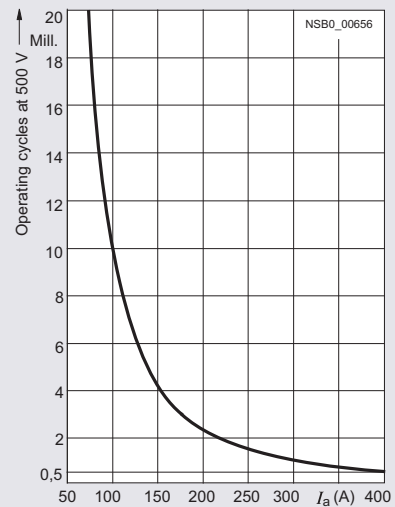
3TC44 to 3TC78

Contact endurance of the main contacts



3TC44 to 3TC56 contactors

Legend for the diagrams:

 I_a = Breaking current

3TC74 and 3TC78 contactors

Contactor

Type

3TC44

3TC48

3TC52

3TC56

Size

2

4

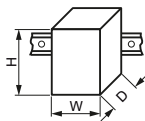
8

12

General data

Dimensions (W x H x D)

- DC operation
- AC operation



mm

70 x 85 x 141

100 x 183 x 180

135 x 238 x 232

160 x 279 x 310

mm

70 x 85 x 100

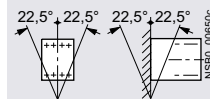
100 x 183 x 154

135 x 238 x 200

160 x 279 x 251

Permissible mounting position

The contactors are designed for operation on a vertical mounting surface.



Mechanical endurance

Operating cycles

10 million

Electrical endurance

See the endurance diagram above

Rated insulation voltage U_i (pollution degree 3)

V

800

1 000

Rated impulse withstand voltage U_{imp}

kV

8

Protective separation between the coil and the main contacts according to IEC 60947-1, Annex 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, according to IEC 60947-4-1, Annex F

Permissible ambient temperature

- During operation
- During storage

°C

-25 ... +55

°C

-50 ... +80

Short-circuit protection

Main circuit

- Type of coordination "1"
- Type of coordination "2"

2 x 3NA3020
(50 A) in series2 x 3NA31..
(160 A) in series3NE1332-4D
(400 A)2 x 3NE1330-4D
(315 A) parallel2 x 3NA3020
(50 A) in series2 x 3NA31..
(63 A) in series3NE1332-4D
(400 A)2 x 3NE1330-4D
(315 A) parallel

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 4/71.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

3TC contactors for switching DC voltage, 1- and 2-pole

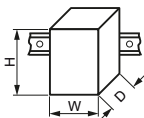
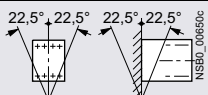
| Type | | | 3TC44 | 3TC48 | 3TC52 | 3TC56 |
|--|------------------------|-------------------|--|----------------|----------|--------------|
| Size | | | 2 | 4 | 8 | 12 |
| Control | | | | | | |
| Solenoid coil operating range | | | | | | |
| • DC operation | | | 0.7 ... 1.25 x U_s | | | |
| • AC operation | | | 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. φ | 68/0.86 | 300/0.5 | 640/0.48 | 1 780/0.3 |
| | Closed | VA/p.f. φ | 10/0.29 | 26/0.24 | 46/0.23 | 121/0.22 |
| • AC operation, 60 Hz coil | Closing | VA/p.f. φ | 95/0.79 | 365/0.45 | 730/0.38 | 2 140/0.3 |
| | Closed | VA/p.f. φ | 12/0.3 | 35/0.26 | 56/0.24 | 140/0.29 |
| • AC operation, 50/60 Hz coil | Closing at 50/60 Hz | VA/p.f. φ | 79/73/0.83/0.78 | -- | -- | -- |
| | Closed at 50/60 Hz | VA/p.f. φ | 11/9/0.28/0.27 | -- | -- | -- |
| 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 |
| | | | | | | |
| 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 cable lug according 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) | | | |

Rated data of the auxiliary contacts, see page 4/71.

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 4/72 | |
| 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 according to IEC 60947-1, Annex 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, Annex F | |
| Permissible ambient temperature | °C | -25 ... +55 | |
| Short-circuit protection | | | |
| Main circuit | | | |
| • Type of coordination "1" | A | 2 x 3NE1330-4D (315 A) parallel | 2 x 3NE1330-5E (315 A) parallel |
| • Type of coordination "2" | A | 2 x 3NE1330-4D (315 A) parallel | 2 x 3NE1330-5E (315 A) parallel |
| Auxiliary circuit (short-circuit current $I_k \leq 1$ kA) | | | |
| • Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE | A | 16 | |
| • Miniature circuit breaker with C characteristic | A | 10 | |
| Control | | | |
| Solenoid coil operating range | | | |
| • DC operation | At $U_c = 24$ V | 0.8 ... 1.2 x U_s | |
| | At $U_c > 24$ V | 0.7 ... 1.2 x U_s | |
| • AC operation | At $U_c = 24$ V | 0.7 ... 1.15 x U_s | |
| | At $U_c > 24$ V | 0.7 ... 1.14 x U_s | |
| Power consumption of the solenoid coils (for cold coil and $1.0 \times U_s$) | | | |
| • DC operation | Closing = Closed | W | 46 |
| | | | 92 |
| • AC operation, 50 Hz | Closing = Closed | VA | 80 |
| | | | 160 |
| | | P.f. φ | 0.95 |


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 4/71.

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 (≤ 750 V DC: one conducting path, > 750 V DC: two conducting paths in series) | At 220 V | kW | 110 | |
| | 440 V | kW | 220 | |
| | 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 (≤ 750 V DC: one conducting path, > 750 V DC: two conducting paths in series) | At 110 V | kW | 35 | |
| | 220 V | kW | 70 | |
| | 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 | | |
| 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 4/71](#).

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 | 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 | 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 on TH 35 DIN rail

| | | | | | | | | | | | | | | |
|---|---------------|----|-----|---|---|---|---|---|---|---------------------------|---|-------------|----------------------------|-------------------|
| 2 | DC-3, DC-5 | 32 | 2.5 | 5 | 9 | 9 | 4 | 2 | 2 | 24 DC 110 DC 220 DC | 3TC4417-0AB4 3TC4417-0AF4 3TC4417-0AM4 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
|---|---------------|----|-----|---|---|---|---|---|---|---------------------------|---|-------------|----------------------------|-------------------|

For screw fixing

| | | | | | | | | | | | | | | |
|----|---------------|-------------------|-----|----|-----|-----|-----|---|---|---------------------------|---|-------------|----------------------------|-------------------|
| 4 | DC-3, DC-5 | 75 | 6.5 | 13 | 27 | 38 | 45 | 2 | 2 | 24 DC 110 DC 220 DC | 3TC4817-0AB4 3TC4817-0AF4 3TC4817-0AM4 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| 8 | DC-3, DC-5 | 220 ⁴⁾ | 20 | 41 | 82 | 110 | 110 | 2 | 2 | 24 DC 110 DC 220 DC | 3TC5217-0AB4 3TC5217-0AF4 3TC5217-0AM4 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |
| 12 | DC-3, DC-5 | 400 | 35 | 70 | 140 | 200 | 250 | 2 | 2 | 24 DC 110 DC 220 DC | 3TC5617-0AB4 3TC5617-0AF4 3TC5617-0AM4 | 1 1 1 | 1 unit 1 unit 1 unit | 41B 41B 41B |

AC operation, 50 Hz

For screw fixing and snap-on mounting on TH 35 DIN rail

| | | | | | | | | | | | | | | |
|----|---------------|-------------------|-----|----|-----|-----|-----|---|---|--|--|--------|------------------|------------|
| 2 | DC-3, DC-5 | 32 | 2.5 | 5 | 9 | 9 | 4 | 2 | 2 | 220/230 AC ⁵⁾ 110/110 AC | 3TC4417-0BP0 3TC4417-0BF0 | 1 1 | 1 unit 1 unit | 41B 41B |
| 4 | DC-3, DC-5 | 75 | 6.5 | 13 | 27 | 38 | 45 | 2 | 2 | 220/230 AC ⁵⁾ 110 AC | 3TC4817-0BP0 3TC4817-0BF0 | 1 1 | 1 unit 1 unit | 41B 41B |
| 8 | DC-3, DC-5 | 220 ⁴⁾ | 20 | 41 | 82 | 110 | 110 | 2 | 2 | 220/230 AC ⁵⁾ 110 AC | 3TC5217-0BP0 3TC5217-0BF0 | 1 1 | 1 unit 1 unit | 41B 41B |
| 12 | DC-3, DC-5 | 400 | 35 | 70 | 140 | 200 | 250 | 2 | 2 | 220/230 AC ⁵⁾ 110 AC | 3TC5617-0BP0 3TC5617-0BF0 | 1 1 | 1 unit 1 unit | 41B 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 4/78 on request.

Accessories, see page 4/78 onwards.

Spare parts, see page 4/80.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

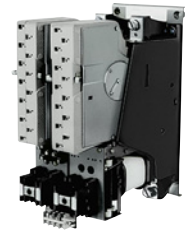
3TC contactors for switching DC voltage, 1- and 2-pole

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⁾ Version | Rated control supply voltage U_s | Screw terminals  | PU (UNIT, SET, M) | PS* | PG | |
|------|------------------------------------|---------------------------|-------------------------|-------|-------|-------|-------|--------|--------|----|---|------------------------------------|---|-------------------|-----|----|----|
| | | | 110 V | 220 V | 440 V | 600 V | 750 V | 1200 V | 1500 V | NO | | | | | | | NC |
| | A | kW | kW | kW | kW | kW | kW | kW | kW | | | | Article No. | Price per PU | | | |

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 | 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⁾ | 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 | 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⁾ | 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 4/78 on request.

Spare parts, see page 4/80.

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 number)**

Delivery time on request

| Rated control supply voltage U_c | 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 $1.15 \times U_{s1}$;
lower operating range limit according to IEC 60947.

²⁾ Upper operating range limit at 230 V AC: $1.14 \times U_{s1}$.

Accessories




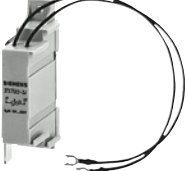
| For contactors | Version | Auxiliary switches | | Screw terminals | PU (UNIT, SET, M) | PS* | PG | | | | |
|--|-----------------|-----------------------------|--|-----------------|--|--------------|-------------------|----------------------|--------|--------|-----|
| | | Auxiliary contacts | Left | | | | | Right | | | |
| Size | Type | NO | NC | Article No. | Price per PU | | | | | | |
| Second auxiliary switch (for AC operation only) | | | | | | | | | | | |
| 4 | 3TC48 | 2nd auxiliary switch, left | 1 | 1 | | -- | 3TY6501-1K | 1 | 1 unit | 41B | |
| | | 2nd auxiliary switch, right | 1 | 1 | -- | | 3TY6501-1L | 1 | 1 unit | 41B | |
| 8 and 12 | 3TC52, 3TC56 | 2nd auxiliary switch, left | 1 | 1 | | -- | 3TY6561-1K | 1 | 1 unit | 41B | |
| | | 2nd auxiliary switch, right | 1 | 1 | -- | | 3TY6561-1L | 1 | 1 unit | 41B | |
| 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 | | 2nd auxiliary switch, left or right (replacement for 3TY6561-1U, 3TY6561-1V) | 1 CO contact | | 3TY7561-1UA00 | 1 | 1 unit | 41B |

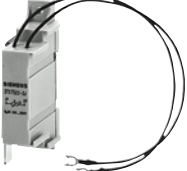
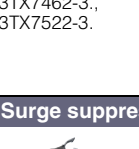
5TY7561-1.


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 | | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG | |
|---|----------|---------------------|---|-------------|-------------|-------------------|-------------------|-----|--------|-----|
| Size | Type | | V AC | V DC | | | | | | |
| Surge suppressors · Varistors | | | | | | | | | | |
|  | 2 | 3TC44 ¹⁾ | Varistors²⁾ | 24 ... 48 | 24 ... 70 | 3TX7402-3G | | 1 | 1 unit | 41B |
| | | | With line spacer, for mounting on the coil terminal | 48 ... 127 | 70 ... 150 | 3TX7402-3H | | 1 | 1 unit | 41B |
| | | | | 127 ... 240 | 150 ... 250 | 3TX7402-3J | | 1 | 1 unit | 41B |
| | | | | 240 ... 400 | -- | 3TX7402-3K | | 1 | 1 unit | 41B |
| | | | | 400 ... 600 | -- | 3TX7402-3L | | 1 | 1 unit | 41B |
|  | 4 | 3TC48 | Varistors²⁾ | 24 ... 48 | 24 ... 70 | 3TX7462-3G | | 1 | 1 unit | 41B |
| | | | For sticking onto the contactor base or for mounting separately | 48 ... 127 | 70 ... 150 | 3TX7462-3H | | 1 | 1 unit | 41B |
| | | | | 127 ... 240 | 150 ... 250 | 3TX7462-3J | | 1 | 1 unit | 41B |
| | | | | 240 ... 400 | -- | 3TX7462-3K | | 1 | 1 unit | 41B |
| | | | | 400 ... 600 | -- | 3TX7462-3L | | 1 | 1 unit | 41B |
|  | 8 and 12 | 3TC52, 3TC56 | Varistors | 24 ... 48 | -- | 3TX7462-3G | | 1 | 1 unit | 41B |
| | | | For sticking onto the contactor base or for mounting separately | 48 ... 127 | -- | 3TX7462-3H | | 1 | 1 unit | 41B |
| | | | | 127 ... 240 | -- | 3TX7462-3J | | 1 | 1 unit | 41B |
| | | | | 240 ... 400 | -- | 3TX7462-3K | | 1 | 1 unit | 41B |
| | | | | 400 ... 600 | -- | 3TX7462-3L | | 1 | 1 unit | 41B |
|  | 8 and 12 | 3TC52, 3TC56 | Varistors²⁾ | -- | 24 ... 70 | 3TX7522-3G | | 1 | 1 unit | 41B |
| | | | For separate screw fixing or snapping onto TH 35 DIN rail | -- | 70 ... 150 | 3TX7522-3H | | 1 | 1 unit | 41B |
| | | | | -- | 150 ... 250 | 3TX7522-3J | | 1 | 1 unit | 41B |


| Surge suppressors · RC elements | | | | | | | | | | | | | |
|---|-------------|-------|---|-------------|--------------|--|------------|----|-------------------|-----|---|--------|-----|
|  | 4 | 3TC48 | RC elements | 24 ... 48 | -- | 3TX7462-3R | | 1 | 1 unit | 41B | | | |
| | | | For lateral snapping onto auxiliary switch or TH 35 DIN rail | -- | 24 ... 70 | 3TX7522-3R | | 1 | 1 unit | 41B | | | |
| | | | | 48 ... 127 | -- | 3TX7462-3S | | 1 | 1 unit | 41B | | | |
| | | | | -- | 70 ... 150 | 3TX7522-3S | | 1 | 1 unit | 41B | | | |
| | | | | 127 ... 240 | -- | 3TX7462-3T | | 1 | 1 unit | 41B | | | |
| | | | | -- | 150 ... 250 | 3TX7522-3T | | 1 | 1 unit | 41B | | | |
| | | | | 240 ... 400 | -- | 3TX7462-3U | | 1 | 1 unit | 41B | | | |
| | | | | 400 ... 600 | -- | 3TX7462-3V | | 1 | 1 unit | 41B | | | |
| | | |  | 8 and 12 | 3TC52, 3TC56 | RC elements | 24 ... 48 | -- | 3TX7522-3R | | 1 | 1 unit | 41B |
| | | | | | | For lateral snapping onto auxiliary switch or TH 35 DIN rail | 48 ... 127 | -- | 3TX7522-3S | | 1 | 1 unit | 41B |
| | 127 ... 240 | -- | | | | 3TX7522-3T | | 1 | 1 unit | 41B | | | |
| | 240 ... 400 | -- | | | | 3TX7522-3U | | 1 | 1 unit | 41B | | | |
| | 400 ... 600 | -- | | | | 3TX7522-3V | | 1 | 1 unit | 41B | | | |

| 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 | 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 operation.

| For contactors | | Version | | | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|---|----------|--------------|--|-----|-------------------|--------------|-------------------|--------|-----|
| Size | Type | | | | | | | | |
| Terminal covers | | | | | | | | | |
|  | 2 | 3TC44 | For protection against inadvertent contact with exposed busbar connections (1 set = 2 units) | -- | 3TY2444-0B | | 1 | 1 unit | 41B |
| | 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 | Screw terminals | PU (UNIT, SET, M) | PS* | PG |
|----------------|---------|--------------------|----------------------------|-------|-----------------|-------------------|-----|----|
| Size | Type | NO | NC | | Article No. | Price per PU | | |

Auxiliary switches

For lateral mounting



3TY6561-1A

| | | | | | | | | | |
|----------|--------------|---|---|---|--|----------------------|---|--------|-----|
| 2 and 4 | 3TC44, 3TC48 | Auxiliary switch (replacement for 3TY6501-1A, 3TY6501-1B) | 1 | 1 | | 3TY6501-1AA00 | 1 | 1 unit | 41B |
| 8 and 12 | 3TC52, 3TC56 | Auxiliary switch, left | 1 | 1 | | 3TY6561-1A | 1 | 1 unit | 41B |
| | | Auxiliary switch, right | 1 | 1 | | 3TY6561-1B | 1 | 1 unit | 41B |
| 12 | 3TC74 | Auxiliary switches | 4 | 4 | | 3TY2741-2J | 1 | 1 unit | 41B |
| 12 | 3TC78 | Auxiliary switch, left | 2 | 2 | | 3TY2781-2C | 1 | 1 unit | 41B |
| | | Auxiliary switch, right | 2 | 2 | | 3TY2781-2D | 1 | 1 unit | 41B |

| For contactors | Version | Rated control supply voltage U_s | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|----------------|---------|------------------------------------|-------------|--------------|-------------------|-----|----|
| Size | Type | V AC/DC | | | | | |

Surge suppressors · Varistors

| | | | | | | | |
|----|------|--------------------------------------|-----------|--|--------|------------------|------------|
| 12 | 3TC7 | For sticking onto the contactor base | 24 110 | 3TX2746-2F 3TX2746-2G | 1 1 | 1 unit 1 unit | 41B 41B |
|----|------|--------------------------------------|-----------|--|--------|------------------|------------|

| For contactors | Version | Article No. | Price per PU | PU (UNIT, SET, M) | PS* | PG |
|----------------|---------|-------------|--------------|-------------------|-----|----|
| Size | Type | | | | | |

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 spare contacts** should be used.

| | | | | | | |
|----|-------|--|-------------------|---|--------|-----|
| 2 | 3TC44 | (1 set = 2 moving and 4 fixed contacts) | 3TY2440-0A | 1 | 1 unit | 41B |
| 4 | 3TC48 | | 3TY2480-0A | 1 | 1 unit | 41B |
| 8 | 3TC52 | | 3TY2520-0A | 1 | 1 unit | 41B |
| 12 | 3TC56 | | 3TY2560-0A | 1 | 1 unit | 41B |
| 12 | 3TC7 | Main contacts (1 set) For 3TC78: 2 units required per contactor | 3TY2740-0E | 1 | 1 unit | 41B |

Arc chutes



3TY2482-0A

| | | | | | | |
|----|-------|---|-------------------|---|--------|-----|
| 2 | 3TC44 | Arc chutes, 2-pole | 3TY2442-0A | 1 | 1 unit | 41B |
| 4 | 3TC48 | | 3TY2482-0A | 1 | 1 unit | 41B |
| 8 | 3TC52 | | 3TY2522-0A | 1 | 1 unit | 41B |
| 12 | 3TC56 | | 3TY2562-0A | 1 | 1 unit | 41B |
| 12 | 3TC7 | For 3TC78: 2 units required per contactor | 3TY2742-0C | 1 | 1 unit | 41B |

¹⁾ Rated control supply voltages, see page 4/78. The 10th and 11th digits of the article number must be supplemented accordingly.