

SIRIUS

Switching devices – Contactors and contactor assemblies – Special applications

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استعلام آئی (۱۰ خط) ۰۲۱-۹۲۰۰۶۶۱۷

**Price groups**

PG 41A, 41B

4/2

Introduction**Contactors for special applications**

- 4/7 SIRIUS 3RT.4 contactors for weak 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
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- 4/42 SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole
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- 4/68 - 3TC contactors for switching DC voltage, 2-pole
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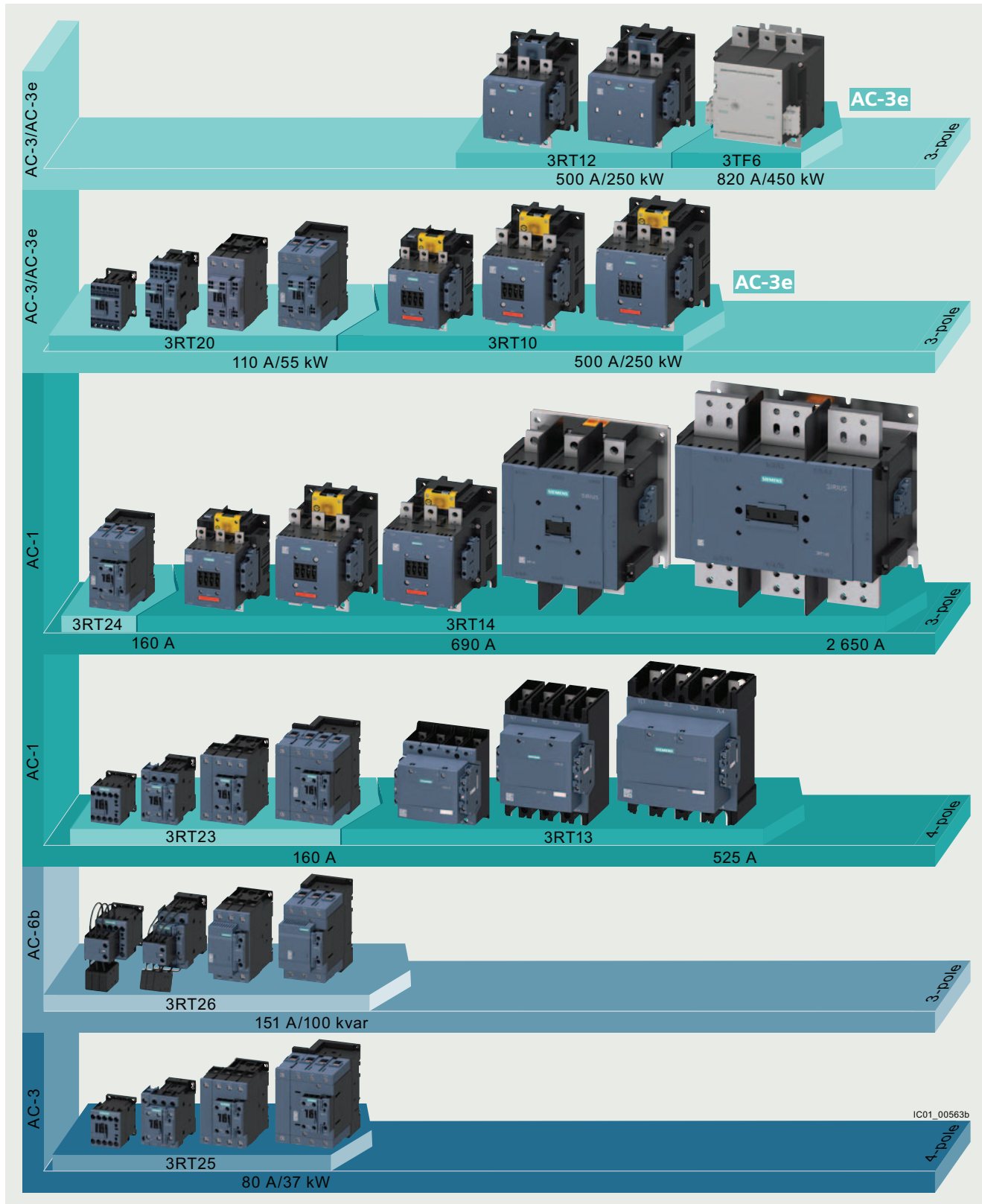
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3TG10 power relays/miniature contactors

Switching devices – Contactors and contactor assemblies – Special applications

Introduction

Overview



Overview of the 3RT and 3TF contactors

More information

Homepage, see www.siemens.com/sirius
 SiePortal, see www.siemens.com/product?3RT_3TK_3TC

Conversion tool, see www.siemens.com/conversion-tool
 TIA Selection Tool Cloud (TST Cloud), see
www.siemens.com/tstcloud/?node=Contactor



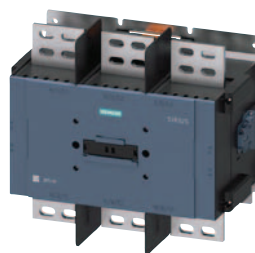
Size	S3	S6	S10	S12
Type	3RT244.	3RT1456	3RT146.	3RT1476

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		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
	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. 3/88 ... 3/97)	3RH19, 3RP25	(p. 3/91, 3/93, 3/96, 10/44)
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	3RA28	(p. 3/101)	--	
Terminal covers	3RT2946-4EA4	(p. 3/115)	3RT1956-4EA.	(p. 3/115)
Box terminal blocks	--		3RT1955-4G, 3RT19.6-4G	(p. 3/113)
Surge suppressors	3RT2936, 3RT2946	(p. 3/98, 3/99)	3RT1956-1C (RC element)	(p. 3/99)



Type	3RT1481, 3RT1482	3RT1483	3RT1485, 3RT1486	3RT1487
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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)
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Spare parts for contactors

First auxiliary switch, lateral	3RH1981-1DA11	(p. 4/20)
Phase barriers	3RT1983-4AA1	(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. 3/88 ... 3/97)					
Function modules (direct-on-line starting, star-delta (wye-delta) starting)		3RA28				(p. 3/101)					
Terminal covers		--				3RT2936-4EA4 (p. 3/115)		3RT2946-4EA4 (p. 3/115)			
Surge suppressors		3RT2916		(p. 3/98, 3/99)		3RT2936 (p. 3/98, 3/99)		3RT2936, 3RT2946 (p. 3/98, 3/99)			



Size		S6	S10	S12			
Type		3RT1355	3RT136.	3RT137.			
4-pole 3RT13 contactors							
Type		3RT1355	3RT1363 3RT1364	3RT1373 3RT1374 3RT1375			
Number of main contacts		4 NO	4 NO	4 NO			
AC/DC operation		(p. 4/34)	(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. 3/88 ... 3/97)	
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	3RA28								(p. 3/101)	
Terminal covers	--				3RT2936-4EA4 (p. 3/115)		3RT2946-4EA4 (p. 3/115)			
Surge suppressors	3RT2916 (p. 3/98, 3/99)		3RT2926 (p. 3/98, 3/99)		3RT2936 (p. 3/98, 3/99)		3RT2936, 3RT2946 (p. 3/98, 3/99)			

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 4/71 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 4/63 onwards](#)
 - 3TH4 contactor relays, 8-pole, [see page 4/66 onwards](#)
 - 3TC contactors for switching DC voltage, 2-pole, [see page 4/68 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 line system configurations:

Voltage U_e	Line system configurations	
	Three-phase four-wire systems	Three-phase three-wire systems
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

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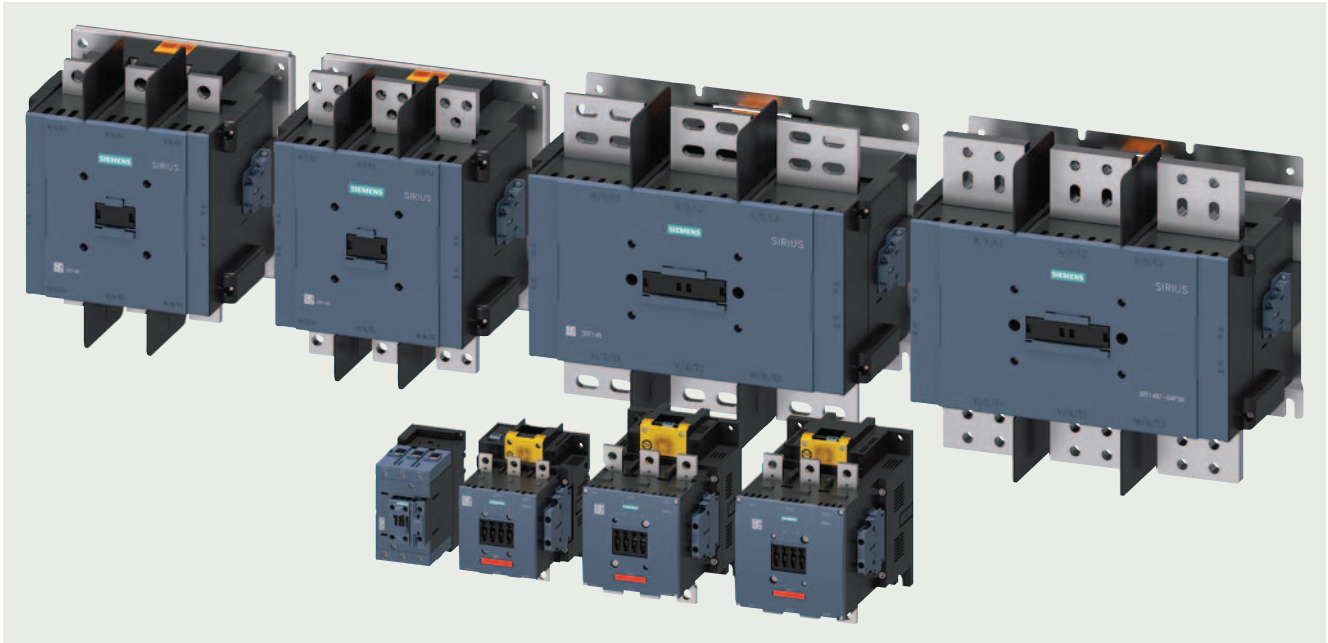
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Switching devices – Contactors and contactor assemblies – Special applications

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 3/115).

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 device combinations such as contactor with overload relay or contactor with circuit breaker as motor feeder, refer to

- [Digital Configuration Manual for load feeders](#)
- [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 or supply voltage connections

First of all, the relevant standards and regulations for configuring control cabinets 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 contactor operating mechanisms, switch-on power, holding power). The same applies to the selection of suitable protective devices.

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 cabinet tip – Selecting and dimensioning suitable power supplies quickly and reliably](#).

Short-circuit and overload protection of contactors with 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.

- 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 3/98 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 in the event of 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 power to holding power)
- 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 the delivery state

- 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 3/80 to 3/87](#).

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

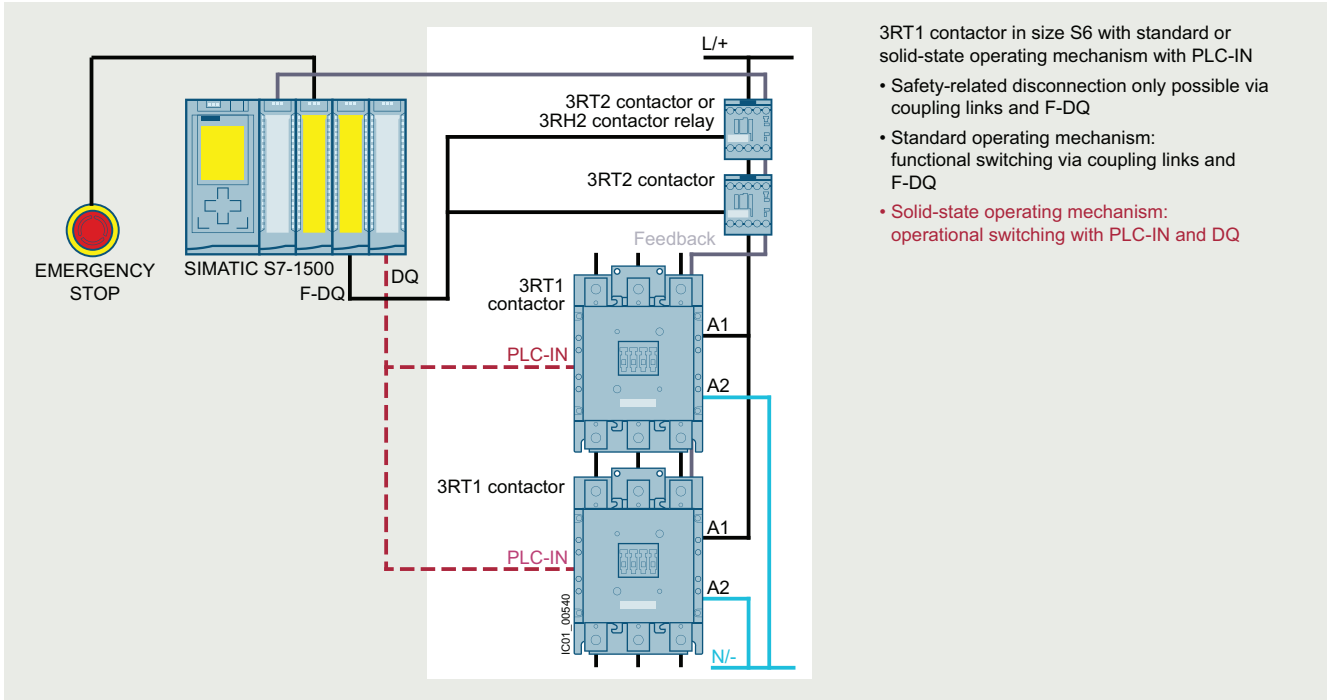
While contactors with smaller power ratings can be connected directly to the outputs of fail-safe controllers, implementing safety-related applications with standard contactors with higher power is much more complicated and elaborate because of the necessary coupling links.

Due to their fail-safe control input, the special versions from sizes S6 to S12 (3RT14...S) provide a much simpler way of doing this.

For more information, see

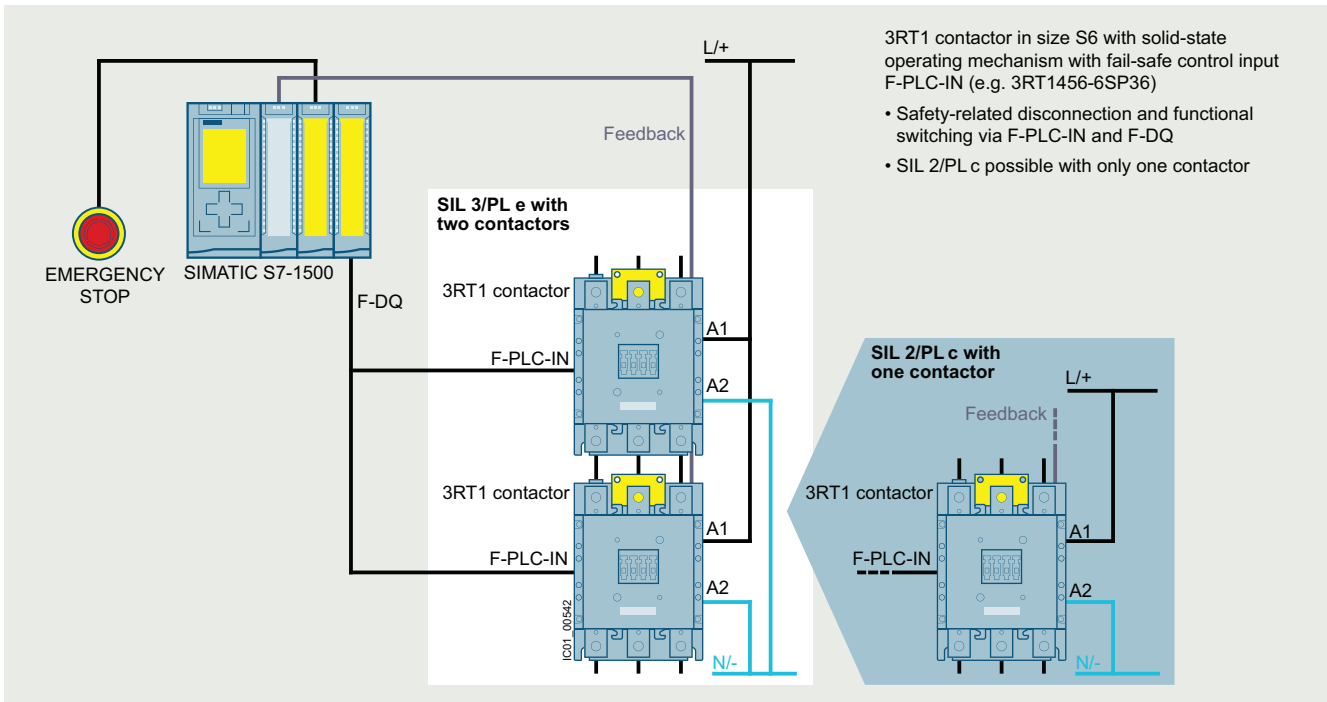
- Safety technology, page 11/1 onwards
- Guide of use for contactors in safety applications

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) and SIL 2/PL c (right-hand side) application – new:



Application with safety-related disconnection with contactors with fail-safe control using the example of a 3RT145 contactor

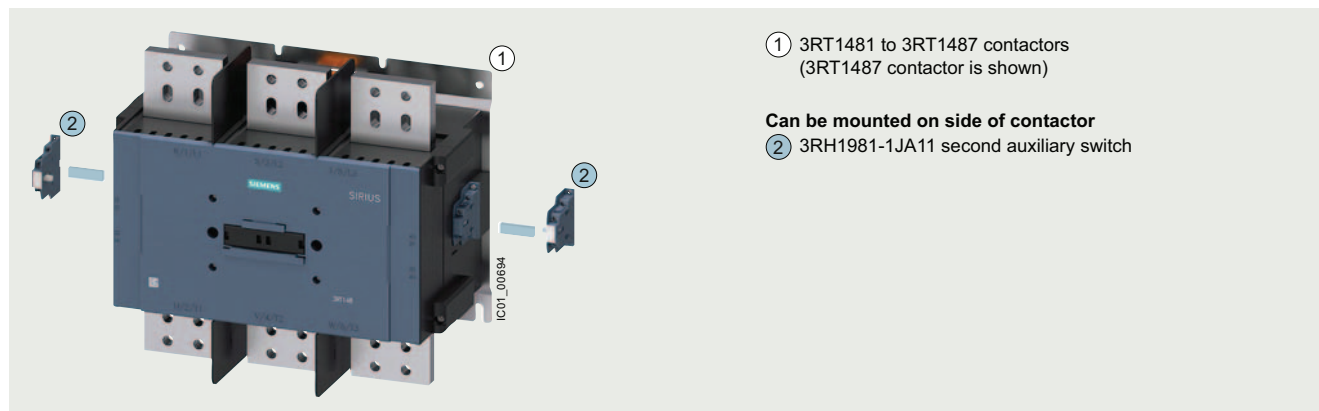
Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Graphic overviews with mountable accessories

- 3RT244 contactors, [see page 3/11](#)
- 3RT145 to 3RT147 contactors, [see page 3/12 onwards](#)
- 3RT148 contactors, [see following graphic](#)



- ① 3RT1481 to 3RT1487 contactors
(3RT1487 contactor is shown)

Can be mounted on side of contactor

- ② 3RH1981-1JA11 second auxiliary switch

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

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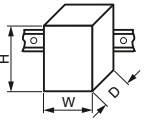
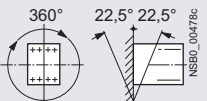
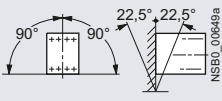

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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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


Technical specifications

More information						
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/24229/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/24229/faq		Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/24229/man 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	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 Screw/spring-loaded terminals Basic unit with mounted function module or solid-state time-delay auxiliary switch <ul style="list-style-type: none"> Screw/spring-loaded terminals 		mm	70 x 140 x 152	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 		Yes	--			
<ul style="list-style-type: none"> Removable auxiliary switches 		--	Yes			
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: 250 A (690 V, 100 kA)	gG: 355 A (690 V, 100 kA)	gG: 500 A (690 V, 100 kA)	gG: 800 A (690 V, 50 kA)
- For type of coordination "2"			gG: 250 A (690 V, 100 kA)	gG: 350 A (690 V, 100 kA)	gG: 500 A (690 V, 100 kA)	gG: 710 A (690 V, 100 kA)
Auxiliary circuit						
Version of the fuse link required for short-circuit protection of the auxiliary switch		A	Fuse gG: 10			
Version of the miniature circuit breaker required for short-circuit protection of the auxiliary switch		A	On request			
Short-circuit protection for contactors with overload relays			See	<ul style="list-style-type: none"> Digital Configuration Manual for load feeders Configuration Manual for load feeders 		
Short-circuit protection for fuseless load feeders			See	<ul style="list-style-type: none"> 3RA2 load feeders, page 8/6 onwards Digital Configuration Manual for load feeders 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	S3		S6		S10		S12			
Control										
Solenoid coil operating range (AC/DC)										
0.8 ... 1.1 x U_s 0.8 x $U_{s \min}$... 1.1 x $U_{s \max}$										
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)										
<ul style="list-style-type: none"> AC operation, 50 Hz, standard version AC operation, 50/60 Hz, standard version AC operation, 50/60 Hz, for USA/Canada AC/DC operation 	Closing	VA	296	--						
			P.f.	0.61	--					
	Closed	VA	19	--						
			P.f.	0.38	--					
	Closing	VA	348/296	--						
			P.f.	0.62/0.55	--					
			Closed	25/18	--					
	Closing	VA	326/326	--						
			P.f.	0.62/0.55	--					
			Closed	22/22	--					
	Closing for AC operation	VA	--	163	300	280	590	530	830	
			P.f.	--	0.9	0.8	0.9	0.8	0.9	0.8
			Closed for AC operation	VA	--	3.1	5.8	4.8	6.7	8.5
	Closing for DC operation	W	--	76	360	320	650	580	920	800
			P.f.	--	0.8	0.6	0.9	0.4	0.9	0.4
			Closed for DC operation	W	--	1.8	5.2	2.8	7.4	3.4
Type of PLC control input according to IEC 60947-1										
<ul style="list-style-type: none"> Solid-state operating mechanism Rated voltage Operating range Power consumption Recovery time after power failure, typical (applicable only for fail-safe version 3RT14...S) 	3RT14...-N/-P		--	Type 2						
	3RT14...-S		--	Type 1						
	V DC	--	24							
	V DC	--	17 ... 30							
	mA	--	≤ 30							
s	--	2								
Rated data of the main contacts										
Load rating with AC										
Utilization category AC-1										
<ul style="list-style-type: none"> Rated operational currents I_e Minimum cross-section in the main circuit at maximum AC-1 rated value 	At 40 °C up to 690 V A	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	
	At 40 °C up to 1 000 V A	A	60	80	--					
			At 60 °C up to 1 000 V A	60	80	--				
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		
Conductor cross-sections										
Main conductors (1 or 2 conductors can be connected)										
			 Screw terminals							
<ul style="list-style-type: none"> Solid Stranded Finely stranded with end sleeve (DIN 46228) AWG cables, solid or stranded Terminal screws Tightening torque 	mm ²		2 x (2.5 ... 16) ¹⁾							
	mm ²		2 x (6 ... 16) ¹⁾ ; 2 x (10 ... 50) ¹⁾ ; 1 x (10 ... 70) ¹⁾							
	mm ²		2 x (2.5 ... 35) ¹⁾ ; 1 x (2.5 ... 50) ¹⁾							
	AWG		2 x (10 ... 1/0) ¹⁾ ; 1 x (10 ... 2/0) ¹⁾							
	Nm		Hexagon socket, A/F 4 4.5 ... 6 (40 ... 53 lb.in)							
Auxiliary conductors and control conductors (1 or 2 conductors can be connected)										
<ul style="list-style-type: none"> Solid or stranded Finely stranded with end sleeve (DIN 46228) AWG cables, solid or stranded Terminal screws Tightening torque 	mm ²		2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾							
	mm ²		2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾							
	AWG		2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾							
	M3		(for Pozidriv size 2; Ø 5 ... 6 mm)							
	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 lb.in	10 ... 12 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
	• Finely stranded without end sleeve	mm ²	16 ... 70	16 ... 120
	• Stranded	mm ²	16 ... 70	16 ... 120
	• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil
• Flat ribbon cables (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	70 ... 240 70 ... 240 95 ... 300 3/0 ... 600 kcmil Min. 6 x 9 x 0,8, max. 20 x 24 x 0,5
Rear clamping point connected				
	• Finely stranded with end sleeve (DIN 46228)	mm ²	16 ... 70	16 ... 120
	• Finely stranded without end sleeve	mm ²	16 ... 70	16 ... 120
	• Stranded	mm ²	16 ... 70	16 ... 120
	• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil
• Flat ribbon cables (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	120 ... 185 120 ... 185 120 ... 240 250 ... 500 kcmil Min. 6 x 9 x 0,8, max. 20 x 24 x 0,5
Both clamping points connected (minimum cross-section 16 mm ²)				
	• Finely stranded with end sleeve (DIN 46228)	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120
	• Finely stranded without end sleeve	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120
	• Stranded	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120
	• AWG cables, solid or stranded	AWG	Max. 2 x 1/0	Max. 2 x 3/0
• Flat ribbon cables (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)	Min. 2 x 50, max. 2 x 185 Min. 2 x 50, max. 2 x 185 Min. 2 x 70, max. 2 x 240 Min. 2 x 2/0, max. 2 x 500 kcmil Max. 2 x (20 x 24 x 0,5)
Busbar connections				
• Connecting bar (max. width)	mm	17		25
- 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 lb.in	10 ... 14 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 lb.in	0,8 ... 1,2 7 ... 10,3		
Auxiliary conductors⁴⁾ (1 or 2 conductors can be connected)				
 Spring-loaded terminals				
• Operating tool		3,0 x 0,5; 3,5 x 0,5		
• Solid	mm ²	2 x (0,25 ... 2,5)		
• Finely stranded with end sleeve (DIN 46228)	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 3/115.

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 3/115.

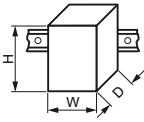
3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

4) Max. outer 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 3/118.

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

Article number		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)					

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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

Article number		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									
• At AC at 50 Hz		0.85 ... 1.1							
• At AC at 60 Hz		0.85 ... 1.1							
• At DC		0.85 ... 1.1							
Solenoid coil closing for DC	W	1 400	2 000	1 400	2 000	2 700	2 800		
Closing apparent power of the solenoid coil for AC									
• At 50 Hz	VA	1 000				1 700	1 800		
• At 60 Hz	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									
• At 50 Hz	VA	18	23	18	23	20	33		
• At 60 Hz	VA	18	23	18	23	20	33		
Main circuit									
Operational current at AC-1									
• 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
• Up to 1 000 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

Article number		3RT1481-6A.36, 3RT1482-6A.36	3RT1483-6AP36	3RT1485-6AP36, 3RT1486-6AP36	3RT1487-6AP36
Conductor cross-sections					
Control circuit/control					
Type of connectable conductor cross-sections for auxiliary contacts					
• Solid		2x (1 ... 2.5 mm ²)			
• Solid or stranded		2x (1 ... 2.5 mm ²)			
• 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

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استعلام آئی (خط) ۰۲۱-۹۲۰۰۶۶۱۷

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.) retrofitable
- 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	Ident. No. Version	50 Hz AC	50 Hz AC or DC	Article No.	Price per PU		
690 V	690 V	 	V	V				
A	A	NO NC	V	V				

For screw 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	--				
						230	--				
160	140	11	1	1	24	--	3RT2448-1AB00	1	1 unit	41B	
					110	--					
					230	--					

AC/DC operation

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

S3	140	130	11	1	1	--	20 ... 33	3RT2446-1NB30	1	1 unit	41B
						--	83 ... 155				
						--	175 ... 280				
160	140	11	1	1	--	20 ... 33	3RT2448-1NB30	1	1 unit	41B	
					--	83 ... 155					
					--	175 ... 280					

Other voltages according to page 4/52 on request.

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

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استعلام آنى (خط) ٠٢١-٩٢٠٠٦٦١٧ 

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 mechanisms
- Solid-state operating mechanisms
 - 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 terminal parts kit with screws, spring washers and nuts is enclosed.



3RT1456-6A.36



3RT1466-6A.36






3RT1476-6A.36



3RT1476-6N.36



3RT1476-6P.35

Size	Rated data AC-1, t_{ij} : 40 °C Operational current I_{e0} up to	Auxiliary contacts, lateral Version	Rated control supply voltage U_s 50/60 Hz AC or DC	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
690 V A	60 °C 690 V A	  V		Article No.	Price per PU		

Standard operating mechanisms for AC and DC operation
(power consumption reduced from closing power to holding power)

With integrated coil circuit (varistor integrated at factory)

S6	275	250	2	2	110 ... 127 220 ... 240	3RT1456-6AF36 3RT1456-6AP36	1 1	1 unit 1 unit	41B 41B
	S10	400	380	2	2	110 ... 127 220 ... 240	3RT1466-6AF36 3RT1466-6AP36	1 1	1 unit 1 unit
		500	450	2	2	110 ... 127 220 ... 240	3RT1467-6AF36 3RT1467-6AP36	1 1	1 unit 1 unit
	S12	690	650	2	2	110 ... 127 220 ... 240	3RT1476-6AF36 3RT1476-6AP36	1 1	1 unit 1 unit

Solid-state operating mechanisms

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

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

S6	275	250	2	2	96 ... 127 200 ... 277	3RT1456-6NF36 3RT1456-6NP36	1 1	1 unit 1 unit	41B 41B
	S10	400	380	2	2	96 ... 127 200 ... 277	3RT1466-6NF36 3RT1466-6NP36	1 1	1 unit 1 unit
		500	450	2	2	96 ... 127 200 ... 277	3RT1467-6NF36 3RT1467-6NP36	1 1	1 unit 1 unit
	S12	690	650	2	2	96 ... 127 200 ... 277	3RT1476-6NF36 3RT1476-6NP36	1 1	1 unit 1 unit

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 factory)

S6	275	250	1	1	96 ... 127 200 ... 277	3RT1456-6PF35 3RT1456-6PP35	1 1	1 unit 1 unit	41B 41B
	S10	400	380	1	1	96 ... 127 200 ... 277	3RT1466-6PF35 3RT1466-6PP35	1 1	1 unit 1 unit
		500	450	1	1	96 ... 127 200 ... 277	3RT1467-6PF35 3RT1467-6PP35	1 1	1 unit 1 unit
	S12	690	650	1	1	96 ... 127 200 ... 277	3RT1476-6PF35 3RT1476-6PP35	1 1	1 unit 1 unit

Other voltages according to page 4/53 on request.

Accessories and spare parts see page 3/69 onwards

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استعلام آنى (۱۰ خط) ۰۲۱-۹۲۰۰۶۶۱۷ 

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 or PL c
 - With two contactors in series: SIL 3 or 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 terminal parts kit with screws, spring washers and nuts is enclosed.

For 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 mechanisms

With two removable laterally mounted auxiliary switches

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

S6	275	250	2	2	96 ... 127 200 ... 277	3RT1456-6SF36 3RT1456-6SP36	1	1 unit	41B
S10	400	380	2	2	96 ... 127 200 ... 277	3RT1466-6SF36 3RT1466-6SP36	1	1 unit	41B
	500	450	2	2	96 ... 127 200 ... 277	3RT1467-6SF36 3RT1467-6SP36	1	1 unit	41B
S12	690	650	2	2	96 ... 127 200 ... 277	3RT1476-6SF36 3RT1476-6SP36	1	1 unit	41B

With two permanently laterally mounted auxiliary switches

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

S6	275	250	2	2	96 ... 127 200 ... 277	3RT1456-6SF36-3PA0 3RT1456-6SP36-3PA0	1	1 unit	41B
S10	400	380	2	2	96 ... 127 200 ... 277	3RT1466-6SF36-3PA0 3RT1466-6SP36-3PA0	1	1 unit	41B
	500	450	2	2	96 ... 127 200 ... 277	3RT1467-6SF36-3PA0 3RT1467-6SP36-3PA0	1	1 unit	41B
S12	690	650	2	2	96 ... 127 200 ... 277	3RT1476-6SF36-3PA0 3RT1476-6SP36-3PA0	1	1 unit	41B

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

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

Solid-state operating mechanisms

With integrated coil circuit

Rated current	NO	NC	50/60 Hz AC	DC	Article No.	PU	PS*	PG
900	2	2	100 ... 127 200 ... 240	100 ... 110 200 ... 220	3RT1481-6AF36 3RT1481-6AP36	1	1 unit	41B
1 050	2	2	100 ... 127 200 ... 240	100 ... 110 200 ... 220	3RT1482-6AF36 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 4/20.

Accessories

Graphic overviews 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>

For contactors	Auxiliary contacts Version				Screw terminals 	PU (UNIT, SET, M)	PS*	PG
Type	NO	NC	Left	Right				
					Article No.	Price per PU		

Second auxiliary switch (1 NO + 1 NC)

Lateral mounting on the right and/or the left

3RT148.

1

1

3RH1981-1JA11

1

1 unit

41B

3RH1981-1JA11

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

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


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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
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)									
 3RT1481	--	--	--	--	--	--	1	1 unit	41B
... 3RT1483									
 3RT1983-4AA1									
 3RT1485	--	--	--	--	--	--	1	1 unit	41B
... 3RT1487									
 3RT1987-4AA1									
Withdrawable coils - AC/DC operation									
 3RT1982-5A.31, 3RT1983-5AP31	--	--	--	--	100 ... 127	100 ... 110	1	1 unit	41B
	--	--	--	--	200 ... 240	200 ... 220	1	1 unit	41B
	--	--	--	--	100 ... 240	100 ... 220	1	1 unit	41B
 3RT1987-5AP31	--	--	--	--	100 ... 240	100 ... 220	1	1 unit	41B
... 3RT1487									

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Overview



3RT231 to 3RT234 and 3RT135 to 3RT137 contactors, with screw terminals

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 device combinations such as contactor with overload relay or contactor with circuit breaker as motor feeder, refer to

- [Digital Configuration Manual for load feeders](#)
- [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 or supply voltage connections

First of all, the relevant standards and regulations for configuring control cabinets 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 contactor operating mechanisms, switch-on power, holding power). The same applies to the selection of suitable protective devices.

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 see the use of miniature circuit breakers or circuit breakers for equipment in control circuits, [see Control cabinet 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 3/98 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 in the event of damping.

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

Connection methodsMain 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 7/87 onwards) or 3RB3 electronic overload relays (see pages 7/99, 7/101 and 7/103) can be mounted on the 3RT23 contactors.

3RT13 contactors

For protection against overload, 3RB2 electronic overload relays (see pages 7/100, 7/102 and 7/104) 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 the technical 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 with DC control is between $0.8 \times U_{s \text{ min}}$ and $1.1 \times U_{s \text{ max}}$, and with AC control between $0.85 \times U_{s \text{ min}}$ 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 3/80 to 3/87.

Accessories and spare parts

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

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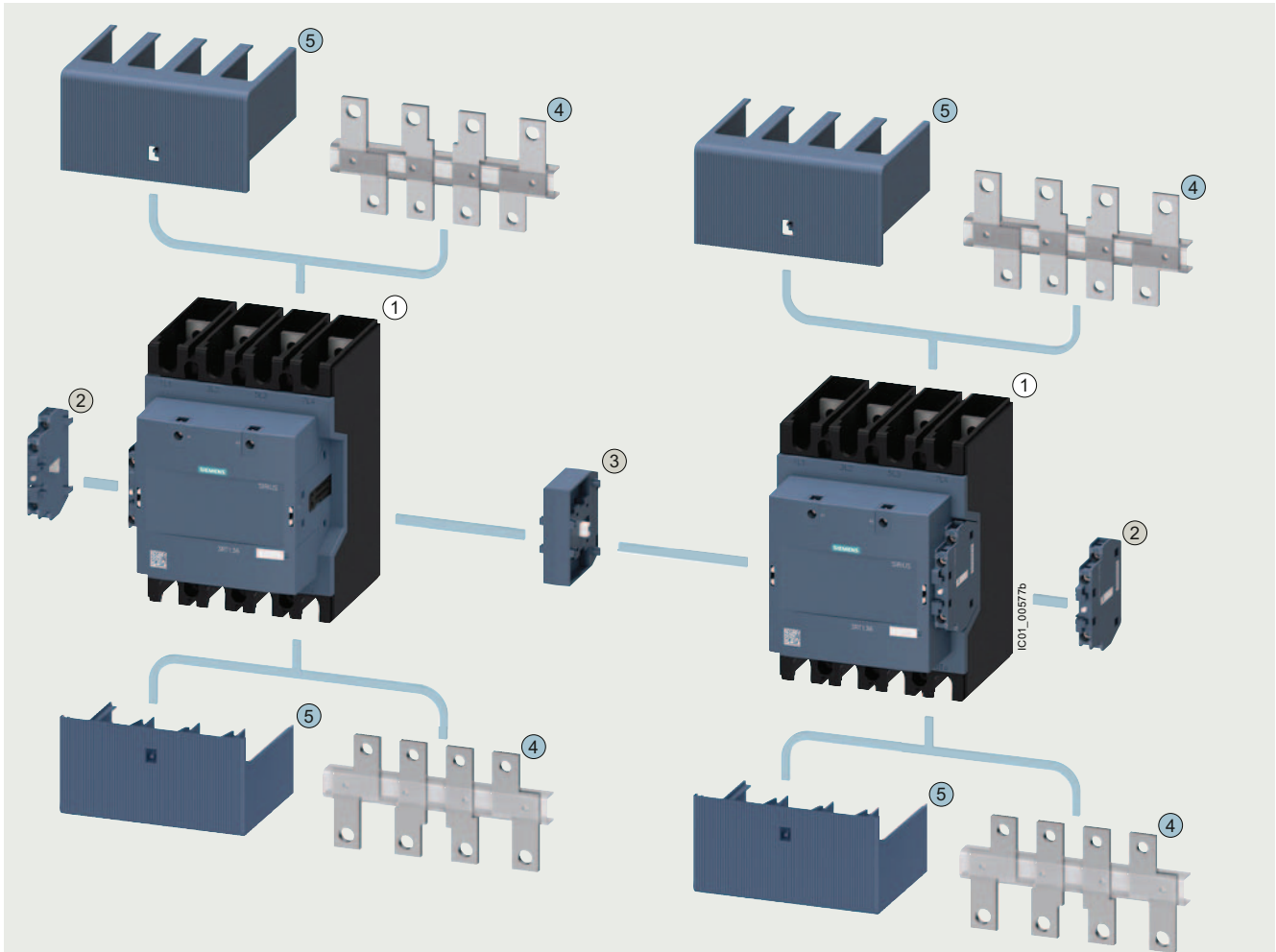
Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Graphic overview 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 switches)
- ② 3RH1951-1SA11 second auxiliary switch, 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 Contactors	3RT1355 ($I_e = 200$ A)	3RT1363 ($I_e = 275$ A)	3RT1364 ($I_e = 350$ A) 3RT1373 ($I_e = 400$ A) 3RT1374 ($I_e = 500$ A) 3RT1375 ($I_e = 525$ A)
② Second auxiliary switch	3RH1951-1SA11		
③ Mechanical interlock	3RA1954-3A		
④ Bus connectors offsets	--	3RT1966-4D (from $I > 275$ A)	3RT1976-4D (from $I > 450$ A)
⑤ Terminal covers	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

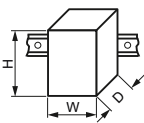
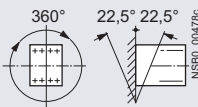

We additionally offer special versions of the 3RT23 contactors for switching motor-driven loads (AC-3).

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-delay auxiliary switch <ul style="list-style-type: none"> - Screw terminals - Spring-loaded terminals 		mm	mm	mm	mm
		mm	mm	mm	mm
		mm	mm	mm	mm
(The values in brackets apply for DC operation)					
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					
	°C	-25 ... +60			
	°C	-55 ... +80			

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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	Fuse gG: 10 A (690 V, 1 kA)			
<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 	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)	gG: 160 A (690 V, 100 kA), aM: 100 A (690 V, 100 kA), BS88: 125 A (415 V, 80 kA)	gR: 250 A (690 V, 100 kA)
Auxiliary circuit	Fuse gG: 10 A (690 V, 1 kA)			
<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 	6 A (230 V, 400 A, C characteristic)			

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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type		3RT2316	3RT2317	3RT2325	3RT2326, 3RT2327	3RT2336, 3RT2337	3RT2344, 3RT2346, 3RT2348
Size		S00		S0		S2	S3
Control							
Solenoid coil operating range							
• AC operation	At 50 Hz	0.8 ... 1.1 x U_s		0.8 ... 1.1 x U_s			
	At 60 Hz	0.85 ... 1.1 x U_s		0.8 ... 1.1 x U_s			
• DC operation	At 50 °C	0.8 ... 1.1 x U_s				--	
	At 60 °C	0.85 ... 1.1 x U_s				--	
• AC/DC operation		--				0.8 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)							
• AC operation, 50 Hz, standard version							
- Closing	VA	--	--	77	--	190	296
- P.f.		--	--	0.82	--	0.72	0.61
- Closed	VA	--	--	9.8	--	16	19
- P.f.		--	--	0.25	--	0.37	0.38
• AC operation, 50/60 Hz, standard version							
- Closing	VA	27/24.3	37/33	81/79	--	210/188	348/296
- P.f.		0.8/0.75	--	0.72/0.74	--	0.69/0.65	0.62/0.55
- Closed	VA	4.2/3.3	5.7/4.4	10.5/8.5	--	17.2/16.5	25/18
- P.f.		0.25/0.25	--	0.25/0.28	--	0.36/0.39	0.35/0.41
• AC operation, 60 Hz, USA, Canada							
- Closing	VA	31.7	43	87	--	188	326
- P.f.		0.77	--	0.76	--	0.67	0.55
- Closed	VA	4.8	6.5	9.4	--	16.5	22
- P.f.		0.25	--	0.28	--	0.37	0.4
• AC/DC operation							
- Closing for AC operation	VA	--	--	--	--	40	151
- P.f.		--	--	--	--	0.95	0.95
- Closed for AC operation	VA	--	--	--	--	2	3.5
- P.f.		--	--	--	--	0.95	0.95
- Closing for DC operation	W	--	--	--	--	23	76
- Closed for DC operation	W	--	--	--	--	1	2.7
• DC operation (closing = closed)	W	4	--	5.9	--	--	... ¹⁾

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 three-phase loads P.f. = 0.95 (at 60 °C)	at 230 V	kW	6	7.5	11	13	16	21	36	38	49	53
	400 V	kW	10.5	13	20	23	28	36	63	72	92	105
• Minimum cross-section in the main circuit at maximum AC-1 rated value		mm ²	2.5	4	10			16	35		50 (35) ¹⁾	70
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 3/44 onwards.

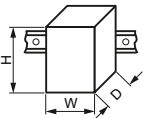
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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Article number		3RT1355-6A.36	3RT1363-6A.36	3RT1364-6A.36	3RT1373-6A.36, 3RT1374-6A.36, 3RT1375-6A.36
Size		S6	S10		S12
General data					
Dimensions					
<ul style="list-style-type: none"> • Width • Height • Depth 		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					
• Of the main circuit	V	1 000			
• Of the auxiliary circuit	V	690			
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	$^\circ\text{C}$	-40 ... +60			
• During storage	$^\circ\text{C}$	-40 ... +70			
Short-circuit protection					
Version of the fuse link required					
• For short-circuit protection of the main circuit for type of coordination 2		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)
• For short-circuit protection of the auxiliary switch		gG: 10 A (690 V, 1 kA)			

Article number		3RT1355-				3RT1363-				3RT1364-			
		6AE36	6AF36	6AP36	6AR36	6AE36	6AF36	6AP36	6AR36	6AE36	6AF36	6AP36	6AR36
Size		S6				S10							
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		210	130	135	205	130	190	205	130	190	205	130	190
Closing apparent power of the solenoid coil for AC													
• 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		4
Closed apparent power of the solenoid coil for AC													
• 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													
• Up to 690 V													
- 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 1 000 V													
- At an ambient temperature of 40 $^\circ\text{C}$	A	--				250				275			
- At an ambient temperature of 60 $^\circ\text{C}$	A	--				225				250			

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استعلام آنى (۱۰ خط) ۰۲۱-۹۲۰۰۶۶۱۷

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Article number	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 1 000 V													
- At an ambient temperature of 40 °C	A	350				375				400			
- At an ambient temperature of 60 °C	A	300				325				350			
Conductor cross-sections													
Type of electrical connection for the main circuit													
Connecting bar		Connecting bar		Connecting bar, bus connectors offset > 275 A required		Connecting bar		Connecting bar, bus connectors offset > 450 A required		Connecting bar, bus connectors offset > 450 A required		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	300	370	300	370	300	370	300

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Switching devices – Contactors and contactor assemblies – Special applications

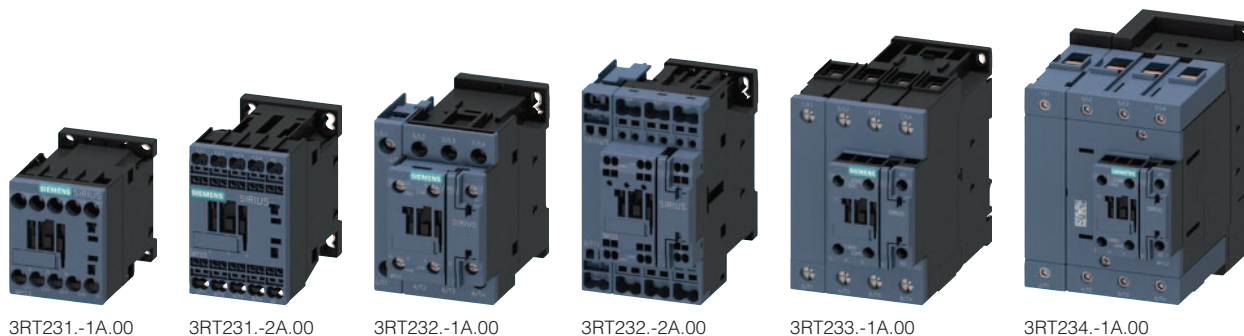
Contactors for special applications

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_i : 40/60 °C
 Operational current I_e
 up to 690 V

Auxiliary contacts

Ident. No. Version



NO

NC

Rated control supply
 voltage U_s
 50/60 Hz AC 50 Hz AC

V

V

Screw terminals 

Article No.

Price
per PUSpring-loaded terminals 

Article No.

Price
per PU

For screw 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 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 operation

Version for AC-3 motor loads

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







3RT2326-1AP00-4AA0



3RT2336-1AP00-4AA0



3RT2346-1AP00-4AA0

Rated data		Auxiliary contacts		Rated control supply voltage U_s	Screw terminals 	Spring-loaded terminals 
AC-3/AC-3e, t_{ij} : up to 60 °C	AC-1, t_{ij} : 40/60 °C	Ident. No.	Version	50 Hz AC	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 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 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.

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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

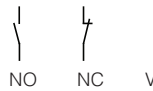


3RT232.-2B.40

Rated data
 AC-1, t_c : 40/60 °C
 Operational current I_e
 up to 690 V

Auxiliary contacts

Ident. No. | Version



Rated control supply
 voltage U_s
 DC

Screw terminals

Article No.

Price
 per PU

Spring-loaded terminals

Article No.

Price
 per PU

For screw 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	Auxiliary contacts	Rated control supply voltage U_c	Screw terminals 	Spring-loaded terminals 
AC-1, t_i : 40/60 °C Operational current I_e up to 690 V	Ident. No. Version 	50/60 Hz AC or DC	Article No. Price per PU	Article No. Price per PU
A				

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

Size S2

With integrated coil circuit
 (varistor integrated in electronics at 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 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 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.

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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC/DC operation 

Version for AC-3 motor loads





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



3RT2336-1NB30-4AA0



3RT2346-1NB30-4AA0

Rated data		Auxiliary contacts		Rated control supply voltage U_s 50/60 Hz AC or DC	Screw terminals 		Spring-loaded terminals 	
AC-3/AC-3e, t_i : up to 60 °C	AC-1, t_i : 40/60 °C	Ident. No.	Version		Article No.	Price per PU	Article No.	Price per PU
Operational current I_e up to 400 V	Operational current I_e up to 690 V		 					
A	A		NO NC V					

For screw and snap-on mounting on TH 35 DIN rail**Size S2**

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

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

3RT2336-1NB30-4AA0

--

For screw 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 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.

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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 mechanisms
- 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 terminal parts kit is enclosed.




3RT1355-6A.36



3RT1363-6A.36



3RT1373-6A.36

Size	Rated data AC-1, t_{ij} : 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 mechanisms

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

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

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

- 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.

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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

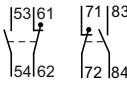
SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

Accessories


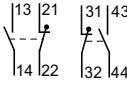
Graphic overview for 3RT135 to 3RT137 contactors with mountable accessories, see page 4/23.

More information

Equipment Manual, see <https://support.industry.siemens.com/cs/ww/en/view/60306557>

For contactors	Auxiliary contacts Version		Type		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	NO	NC	Left	Right					
Second auxiliary switch (1 NO + 1 NC)									
Lateral mounting on the right and/or the left, 2-pole									
	3RT135 ... 3RT137	1 1				Screw terminals 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 offsets									
(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									
	3RT135 ... 3RT137	--	--	--	--	3RA1954-3A	1	1 unit	41B

Spare parts

For contactors	Auxiliary contacts Version		Type		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	NO	NC	Left	Right					
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 device combinations such as contactor with overload relay or contactor with circuit breaker as motor feeder, refer to

- [Digital Configuration Manual for load feeders](#)
- [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 or supply voltage connections

First of all, the relevant standards and regulations for configuring control cabinets 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 contactor operating mechanisms, switch-on power, holding power). The same applies to the selection of suitable protective devices.

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 cabinet 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 3/98 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 in the event of 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 basic units 3RT252 to 3RT254 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 3/80 to 3/87](#).

Accessories

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

Application

The contactors are suitable:

- For pole-changing of hoisting gear motors
- For switching two separate loads

Note:

Single device for pole-changing; 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>

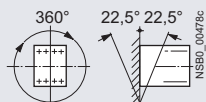
Type	3RT2516 to 3RT2518	3RT2526	3RT2535	3RT2536	3RT2544, 3RT2545
Size	S00	S0	S2		S3

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)

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استعلام آئی (خط) ۰۲۱-۹۲۰۰۶۶۱۷

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		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.		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.		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 three-phase loads	at 230 V	kW	6	7.5	13.3	21	23	34	59		
	400 V	kW	10.5	13	23	36	39	40	69		
	P.f. = 0.95 (at 60 °C)										
• Minimum cross-section in the main circuit at maximum AC-1 rated value		mm ²	2.5	4	10	16	25	35	50		
Utilization category AC-3											
• Rated operational currents I_e (at 60 °C)	NO up to 400 V	A	9	12	16	25	35	41	65	80	
	NC up to 400 V	A	9			25	20	35	41	65	80
• Rated power for slip-ring or squirrel-cage motors at 50 Hz and 60 Hz	NO at 230 V	kW	2.2	3	4	5.5	11		18.5	22	
	NC at 230 V	kW	2.2			5.5	11		18.5	22	
	NO at 400 V	kW	4	5.5	7.5	11	18.5	22	30	37	
	NC at 400 V	kW	4			11	7.5	18.5	22	30	37

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

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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

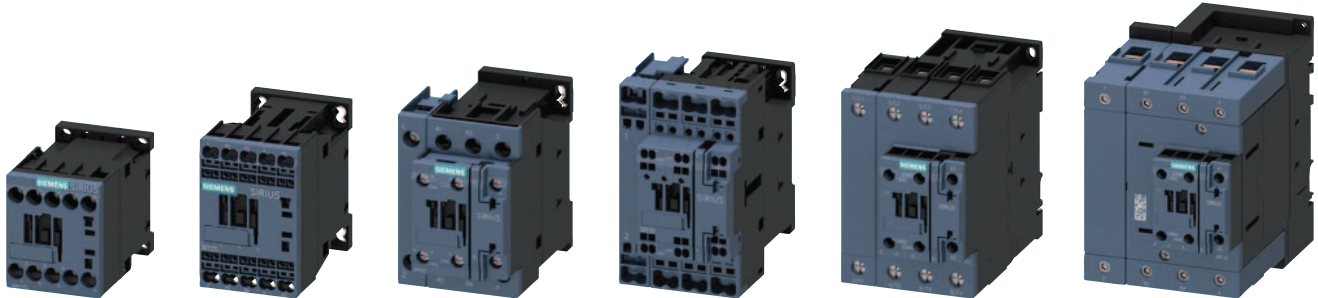
SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

Selection and ordering data



AC operation 

Single device for pole-changing (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_{θ} : up to 60 °C		AC-1, t_{θ} : 40/60 °C		Ident. No.	Version	50/60 Hz AC	50 Hz AC	Article No.	Price per PU	Article No.	Price per PU
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and 400 V	Operational current I_e up to 690 V									
A	kW	A		NO	NC	V	V				

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

Size S00

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

Size S0

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

Size S2

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

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

Size S3

65	30	100/90	11	1	1	--	24	3RT2544-1AB00	--
						--	110	3RT2544-1AF00	--
						--	230	3RT2544-1AP00	--
80	37	125/105	11	1	1	--	24	3RT2545-1AB00	--
						--	110	3RT2545-1AF00	--
						--	230	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-changing (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_c	Screw terminals 	Spring-loaded terminals 
AC-3, t_{cr} : up to 60 °C	AC-1, t_{cr} : 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 up to 400 V						
A	A		NO NC V			

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

Size S00

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

Size S0

25 (20) ²⁾	11 (7.5) ²⁾	40/35	11	1	1	24	3RT2526-1BB40	3RT2526-2BB40
						220	3RT2526-1BM40	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.

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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-changing (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_s	Screw terminals 	Spring-loaded terminals 
AC-3, t_{ij} : up to 60 °C		AC-1, t_{ij} : 40/60 °C	Ident. No.	50/60 Hz AC or DC	Article No.	Article No.
Operational current I_e up to 400 V	Ratings of three-phase motors at 50 Hz and	Operational current I_e up to	Version		Price per PU	Price per PU
A	400 V	A				
	kW		NO NC V			

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

Size S2

With integrated coil circuit (varistor integrated in electronics at 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 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 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 device combinations such as contactor with overload relay or contactor with circuit breaker as motor feeder, refer to

- [Digital Configuration Manual for load feeders](#)
- [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 or supply voltage connections

First of all, the relevant standards and regulations for configuring control cabinets 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 contactor operating mechanisms, switch-on power, holding power). The same applies to the selection of suitable protective devices.

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 cabinet 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 3/98 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 in the event of 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. The basic unit contains additional free auxiliary contacts (1 NO + 1 NC or 2 NO, depending on the version).
- 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. The basic unit contains two additional free auxiliary contacts (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 3/113](#). 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

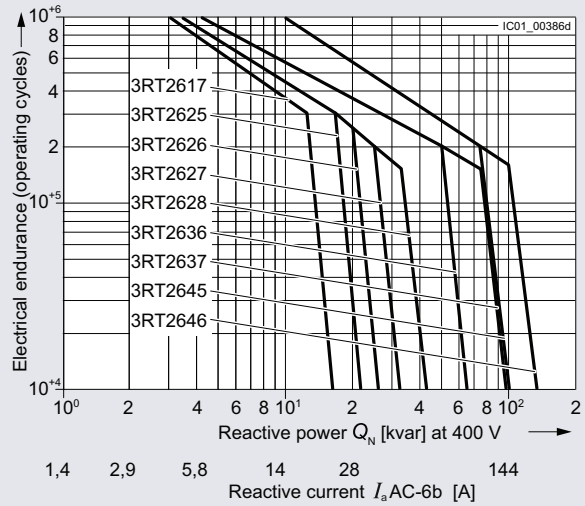
Size

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_a 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

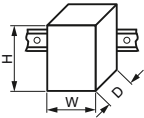
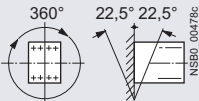
Contactors for special applications

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	0.8 ... 1.1 × U_s		0.8 ... 1.1 × U_s		
	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		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.		--	0.82	0.72	0.61	
- Closed	VA	--	9.8	16	19	
- P.f.		--	0.25	0.37	0.38	
• AC operation, 50/60 Hz, standard version						
- Closing	VA	49	81/79	210/188	348/296	
- P.f.		0.8	0.72/0.74	0.69/0.65	0.62/0.55	
- Closed	VA	7.8	10.5/8.5	17.2/16.5	25/18	
- P.f.		0.25	0.25/0.28	0.36/0.39	0.35/0.41	
• DC operation						
- Closing	W	4	5.9	--	--	
- Closed	W	4	5.9	--	--	
<hr/>						
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.		0.98/0.98			0.95	--
- Closed	VA	1.9/2.0	1.6/1.8	3.9/4.3	2.5	3.1
- P.f.		0.86/0.82	0.79/0.74	0.51/0.56	0.95	--
• DC operation						
- Closing	W	5.9	10.2	14.3	70	76
- Closed	W	1.4	1.3	1.9	1.5	1.8
Maximum permissible residual current of the electronics (with 0 signal)						
• AC operation (230 V/ U_s)	mA	7			< 20	
• DC operation (24 V/ U_s)	mA	16			< 20	

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												
<ul style="list-style-type: none"> Rated operational current I_e at AC-6b <ul style="list-style-type: none"> Up to 690 V at ambient temperature 40 °C A Up to 1 000 V at ambient temperature 60 °C A 												
		18.9	25.3	30.2	37.8	50	75.8	113.4	113	151		
		18	24	29	36	47.6	72.2	108		144		
		--							54	68		
<ul style="list-style-type: none"> Rated operational reactive power at rated operational voltage <ul style="list-style-type: none"> 230 V, 50/60 Hz kvar 400 V, 50/60 Hz kvar 500 V, 50/60 Hz kvar 690 V, 50/60 Hz kvar 1 000 V, 50/60 Hz kvar 												
		7.2	9.6	11.5	14	19	29	43		57		
		12.5	16.7	20	25	33	50	75		100		
		15	21	25	31	41	63	94		125		
		21	29	34	43	57	86	129		172		
		--							94	125		
<ul style="list-style-type: none"> Minimum cross-section in the main circuit for max. AC-6b rated value 												
<ul style="list-style-type: none"> See <ul style="list-style-type: none"> 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 												
cULus 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		Screw terminals					
Main conductors (1 or 2 conductors can be connected)		 Screw terminals					
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ ; max. 2 x 4	2 x (1 ... 2.5) ¹⁾ ; 2 x (2.5 ... 10) ¹⁾		2 x (2.5 ... 35); 1 x (2.5 ... 50)		2 x (10 ... 70); 1 x (10 ... 70)
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾	2 x (1 ... 2.5) ¹⁾ ; 2 x (2.5 ... 6) ¹⁾ ; 1 x 10	1 x (2.5 ... 16)	2 x (1 ... 25); 1 x (1 ... 35)	--	2 x (10 ... 50); 1 x (10 ... 50)
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾ ; 2 x 12	2 x (16 ... 12) ¹⁾ ; 2 x (14 ... 8) ¹⁾	1 x (10 ... 4)	2 x (18 ... 2); 1 x (18 ... 0)		2 x (8 ... 3/0); 1 x (8 ... 3/0)
• Terminal screw		M3 (for Pozidriv size 2; Ø 5 ... 6 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

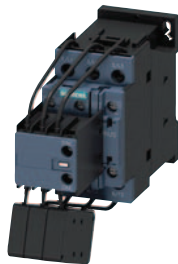
Selection and ordering data

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

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

Rated control supply
voltage U_s

50 Hz AC 50/60 Hz AC

V V

Screw terminals



PU
(UNIT,
SET, M)

PS*

PG

Article No.

Price
per PU

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

Size S00

7.2	12.5	15	21	1	1	--	24					
						--	110	3RT2617-1AB03	1	1 unit	41B	
						--	230	3RT2617-1AF03	1	1 unit	41B	
						--		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	--					
						110	--	3RT2625-1AB05	1	1 unit	41B	
						230	--	3RT2625-1AF05	1	1 unit	41B	
							--	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 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 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 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  	Rated control supply voltage U_s DC V	Screw terminals 	PU (UNIT, SET, M)	PS*	PG

For screw 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

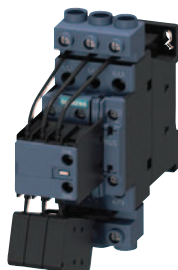
SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole

AC/DC operation 

Main, auxiliary and control conductors: Screw terminals



3RT262.-1N.35

3RT2628-1N.35
with infeed terminal

3RT263.-1N.35



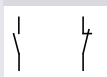
3RT264.-1N.35

Utilization category AC-6bSwitching AC capacitors
at an ambient temperature of 60 °CCapacitor rating at
operational voltage 50/60 Hzat 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

Article No.

Price
per PUPU
(UNIT,
SET, M)

PS*

PG

For screw 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 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 Hz 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 Hz and 60 Hz²⁾

24 V AC	B0	C2	C2	C2	C2
42 V AC	D0	D2	D2	D2	--
48 V AC	H0	H2	H2	H2	--
110 V AC	F0	G2	G2	G2	--
220 V AC	N2	N2	N2	N2	N2
230 V AC	P0	L2	L2	L2	L2

Solenoid coils (for USA and Canada³⁾)

50 Hz	60 Hz				
110 V AC	120 V AC	K6	K6	K6	--
220 V AC	240 V AC	P6	P6	P6	--

Solenoid coils (for Japan)

50/60 Hz ⁴⁾	60 Hz ⁵⁾				
100 V AC	110 V AC	G6	G6	G6	G6
200 V AC	220 V AC	N6	N6	N6	N6
400 V AC	440 V AC	R6	R6	R6	R6

DC operation¹⁾

12 V DC	A4	A4	--	--	--
24 V DC	B4	B4	--	--	B4
42 V DC	D4	D4	--	--	--
48 V DC	W4	W4	--	--	--
60 V DC	--	--	--	--	--
110 V DC	F4	F4	--	--	F4
125 V DC	G4	G4	--	--	--
220 V DC	M4	M4	--	--	--
230 V DC	P4	--	--	--	--

Examples

AC operation	3RT2325-1AP00 3RT2325-1AG20	Contactors with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC Contactors with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC
DC operation	3RT2526-2BB40 3RT2526-2BG40	Contactors with spring-loaded terminals; for rated control supply voltage 24 V DC Contactors with spring-loaded terminals; for rated control supply voltage 125 V DC

¹⁾ For deviating coil voltages and operating ranges of sizes S00 and S0, a SITOP 24 V DC power supply with wide-range input can be used for the coil control, see page 15/1 or Catalog KT 10.1.

²⁾ Coil operating range
- At 50 Hz: 0.8 to $1.1 \times U_s$,
- At 60 Hz: 0.85 to $1.1 \times U_s$.

³⁾ Coil operating range
- Size S00:
At 50 Hz: 0.85 to $1.1 \times U_s$,
At 60 Hz: 0.8 to $1.1 \times U_s$,
- Sizes S0 to S3: at 50 Hz and 60 Hz: 0.8 to $1.1 \times U_s$.

⁴⁾ Coil operating range
- Size S00:
at 50/60 Hz: 0.85 to $1.1 \times U_s$,
- Sizes S0 to S3:
At 50 Hz: 0.8 to $1.1 \times U_s$,
At 60 Hz: 0.85 to $1.1 \times U_s$.

⁵⁾ Coil operating range at 60 Hz: 0.8 to $1.1 \times U_s$.

Rated control supply voltage $U_{s \min}$ to $U_{s \max}$ ¹⁾	Contactor type	3RT2.2.-N	Rated control supply voltage $U_{s \min}$ to $U_{s \max}$ ¹⁾	Contactor type	3RT2.3.-N	3RT2.4.-N
	Size	S0		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: $0.8 \times U_{s \min}$ to $1.1 \times U_{s \max}$.

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 mechanisms

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 mechanisms

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 x U_s 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 and 110 V DC. 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 device combinations such as contactor with overload relay or contactor with circuit breaker as motor feeder, refer to

- [Digital Configuration Manual for load feeders](#)
- [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 or supply voltage connections

First of all, the relevant standards and regulations for configuring control cabinets 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 contactor operating mechanisms, switch-on power, holding power). The same applies to the selection of suitable protective devices.

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 cabinet tip – Selecting and dimensioning suitable power supplies quickly and reliably](#).

Short-circuit and overload protection of contactors with 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 in the event of 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.
 - 3RT202 to 3RT204 contactors:
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 3/80 to 3/87.

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⁾
• 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 --
	Closed W --
	4.0 4.5 4.0 4.5 4.5 6.7 13.2
	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
• At maximum I _{th} rated value	mm ² --
	4 10 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									
	Closed W 1									
	76 64									
	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									
• At maximum I _{th} rated value	mm ² 16									
	25 35 50									
	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		

For 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

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

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

Size S00

Coupling contactors with integrated coil circuit

- Suppressor diode integrated at factory

12	3	5.5	5.5	5.5	10 ¹⁾	1	--	24 110	3RT2017-2KB41 3RT2017-2KF41	1 1	1 unit 1 unit	41B 41B
12	3	5.5	5.5	5.5	01 ¹⁾	--	1	24 110	3RT2017-2KB42 3RT2017-2KF42	1 1	1 unit 1 unit	41B 41B

- Varistor integrated at factory

12	3	5.5	5.5	5.5	10 ¹⁾	1	--	24 110	3RT2017-2LB41 3RT2017-2LF41	1 1	1 unit 1 unit	41B 41B
12	3	5.5	5.5	5.5	01 ¹⁾	--	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 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 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



3RT201.-2X.41-0LA2






3RT201.-2X.42-0LA2



3RT202.-2K.40



3RT202.-2X.40-0LA2

Rated data according to		Auxiliary contacts		Rated control supply voltage U_s	Spring-loaded terminals 	PU (UNIT, SET, M)	PS*	PG
IEC 60077-2	IEC 60947-4-1	Ident. No.	Version					
t_u : 70 °C	AC-3 and AC-3e							
Conventional thermal current I_{th} up to	t_u : 60 °C	Rating of three-phase motors at			Article No.	Price per PU		
690 V	400 V	230 V 400 V 500 V 690 V	 	V DC				
A	A	kW kW kW kW						

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

Size S00

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

18	12	3	5.5	5.5	5.5	10	1	--	24 ... 34 72 ... 125	3RT2017-2XB41-0LA2 3RT2017-2XF41-0LA2	1 1	1 unit 1 unit	41B 41B
18	12	3	5.5	5.5	5.5	01	--	1	24 ... 34 72 ... 125	3RT2017-2XB42-0LA2 3RT2017-2XF42-0LA2	1 1	1 unit 1 unit	41B 41B
18	16	4	7.5	10	11	10	1	--	24 ... 34 72 ... 125	3RT2018-2XB41-0LA2 3RT2018-2XF41-0LA2	1 1	1 unit 1 unit	41B 41B
18	16	4	7.5	10	11	01	--	1	24 ... 34 72 ... 125	3RT2018-2XB42-0LA2 3RT2018-2XF42-0LA2	1 1	1 unit 1 unit	41B 41B

Size S0

With integrated coil circuit

• Coupling contactors with varistor integrated at factory

--	17	4	7.5	10	11	11 ¹⁾	1	1	24 110	3RT2025-2KB40 3RT2025-2KF40	1 1	1 unit 1 unit	41B 41B
--	25	5.5	11	11	11	11 ¹⁾	1	1	24 110	3RT2026-2KB40 3RT2026-2KF40	1 1	1 unit 1 unit	41B 41B
--	32	7.5	15	18.5	18.5	11 ¹⁾	1	1	24 110	3RT2027-2KB40 3RT2027-2KF40	1 1	1 unit 1 unit	41B 41B

• Varistor integrated in electronics at factory

30	17	4	7.5	10	11	11	1	1	24 110	3RT2025-2XB40-0LA2 3RT2025-2XF40-0LA2	1 1	1 unit 1 unit	41B 41B
30	25	5.5	11	11	11	11	1	1	24 110	3RT2026-2XB40-0LA2 3RT2026-2XF40-0LA2	1 1	1 unit 1 unit	41B 41B
36	32	7.5	15	18.5	18.5	11	1	1	24 110	3RT2027-2XB40-0LA2 3RT2027-2XF40-0LA2	1 1	1 unit 1 unit	41B 41B
38	38	7.5	18.5	18.5	18.5	11	1	1	24 110	3RT2028-2XB40-0LA2 3RT2028-2XF40-0LA2	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.

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 **IE3/IE4 ready** **AC-3e**




DC operation 



3RT203.-3X.40-0LA2



3RT204.-3X.40-0LA2

Rated data according to IEC 60077-2 IEC 60947-4-1		Auxiliary contacts		Rated control supply voltage U_s	Spring-loaded terminals for auxiliary and control circuits 	PU (UNIT, SET, M)	PS*	PG
t_u : 70 °C	AC-3 and AC-3e	Ident. No. Version						
Conventional thermal current I_{th} up to	t_u : 60 °C	Rating of three-phase motors at	 		Article No.	Price per PU		
690 V	400 V	230 V 400 V 500 V 690 V	NO NC					
A	A	kW kW kW kW	V DC					

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

Size S2

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

50	40	11	18.5	22	22	11	1	1	24	3RT2035-3XB40-0LA2	1	1 unit	41B
									110		3RT2035-3XF40-0LA2	1	1 unit
55	50	15	22	30	22	11	1	1	24	3RT2036-3XB40-0LA2	1	1 unit	41B
									110		3RT2036-3XF40-0LA2	1	1 unit
60	65	18.5	30	37	37	11	1	1	24	3RT2037-3XB40-0LA2	1	1 unit	41B
									110		3RT2037-3XF40-0LA2	1	1 unit
75	80	22	37	37	45	11	1	1	24	3RT2038-3XB40-0LA2	1	1 unit	41B
									110		3RT2038-3XF40-0LA2	1	1 unit

For screw 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 factory)

90	80	22	37	45	55	11	1	1	24	3RT2045-3XB40-0LA2	1	1 unit	41B
									110		3RT2045-3XF40-0LA2	1	1 unit
95	95	22	45	55	75	11	1	1	24	3RT2046-3XB40-0LA2	1	1 unit	41B
									110		3RT2046-3XF40-0LA2	1	1 unit
95	110	30	55	75	75	11	1	1	24	3RT2047-3XB40-0LA2	1	1 unit	41B
									110		3RT2047-3XF40-0LA2	1	1 unit

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 mechanisms with 24 to 110 V DC control signal input
- For screw fixing
- Auxiliary and control conductors: Spring-loaded terminals
- Main conductors: Busbar connections; a terminal parts 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 		Article No.	Price per PU		
A	A	A	NO NC	V DC				

Solid-state operating mechanisms

With control signal input 24 ... 110 V DC
e. g. for control by PLC

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

Size	Rated current I_{th} [A]	Rated current I_e [A]	NO	NC	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 72 110	3RT1054-2XB46-0LA2	1	1 unit	41B	
						3RT1054-2XJ46-0LA2	1	1 unit	41B	
						3RT1054-2XF46-0LA2	1	1 unit	41B	
	140	150	2	2	24 72 110	3RT1055-2XB46-0LA2	1	1 unit	41B	
						3RT1055-2XJ46-0LA2	1	1 unit	41B	
						3RT1055-2XF46-0LA2	1	1 unit	41B	
	145	185	2	2	24 72 110	3RT1056-2XB46-0LA2	1	1 unit	41B	
						3RT1056-2XJ46-0LA2	1	1 unit	41B	
						3RT1056-2XF46-0LA2	1	1 unit	41B	
S10	215	225	2	2	24 72 110	3RT1064-2XB46-0LA2	1	1 unit	41B	
						3RT1064-2XJ46-0LA2	1	1 unit	41B	
						3RT1064-2XF46-0LA2	1	1 unit	41B	
	265	265	2	2	24 72 110	3RT1065-2XB46-0LA2	1	1 unit	41B	
						3RT1065-2XJ46-0LA2	1	1 unit	41B	
						3RT1065-2XF46-0LA2	1	1 unit	41B	
	265	300	2	2	24 72 110	3RT1066-2XB46-0LA2	1	1 unit	41B	
						3RT1066-2XJ46-0LA2	1	1 unit	41B	
						3RT1066-2XF46-0LA2	1	1 unit	41B	
S12	350	400	2	2	24 72 110	3RT1075-2XB46-0LA2	1	1 unit	41B	
						3RT1075-2XJ46-0LA2	1	1 unit	41B	
						3RT1075-2XF46-0LA2	1	1 unit	41B	
	475	500	2	2	24 72 110	3RT1076-2XB46-0LA2	1	1 unit	41B	
						3RT1076-2XJ46-0LA2	1	1 unit	41B	
						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 mechanisms with 24 to 110 V DC control signal input
- For screw fixing
- Auxiliary and control conductors: Spring-loaded terminals
- Main conductors: Busbar connections; a terminal parts 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 mechanisms

With control signal input 24 ... 110 V DC
e. g. for control by PLC

With integrated coil circuit (varistor integrated in electronics at 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.	PU	PS*	PG
S6	190	275	2	2	24	3RT1456-2XB46-0LA2	1	1 unit	41B
					72	3RT1456-2XJ46-0LA2	1	1 unit	41B
					110	3RT1456-2XF46-0LA2	1	1 unit	41B
S10	330	400	2	2	24	3RT1466-2XB46-0LA2	1	1 unit	41B
					72	3RT1466-2XJ46-0LA2	1	1 unit	41B
					110	3RT1466-2XF46-0LA2	1	1 unit	41B
	330	500	2	2	24	3RT1467-2XB46-0LA2	1	1 unit	41B
					72	3RT1467-2XJ46-0LA2	1	1 unit	41B
					110	3RT1467-2XF46-0LA2	1	1 unit	41B
S12	520	690	2	2	24	3RT1476-2XB46-0LA2	1	1 unit	41B
					72	3RT1476-2XJ46-0LA2	1	1 unit	41B
					110	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 types

Contactor relays with conventional coil

These contactor relays 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 contactor relays 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 contactor relays 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 or supply voltage connections

First of all, the relevant standards and regulations for configuring control cabinets 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 contactor operating mechanisms, switch-on power, holding power). The same applies to the selection of suitable protective devices.

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 times are 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 cabinet 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 (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 mounting

Contactor 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			
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 ... +70 ¹⁾		
• 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	4.5
	Closed	W	--	0.95	0.75

¹⁾ 3RH21...K contactor relays without article number suffix "-0LA." are coupling contactor relays that are certified for the temperature range -25 to +60 °C. For railway applications, an additional certification approves these contactors with a minimum clearance of 10 mm for the extended temperature range from -40 to +70 °C.

All details and technical specifications not mentioned here are identical to those of the 3RH2 basic units, see page 5/5 onwards.

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استعلام آنى (خط) ٠٢١-٩٢٠٠٦٦١٧

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

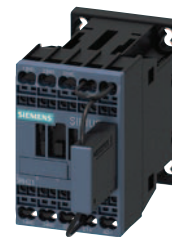
Contactors for railway applications

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_e /AC-15 t_{ij} : 70 °C at	230 V	400 V	500 V							
A	A	A	A		 	V DC	Article No.	Price per PU		

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

Size S00

With integrated coil circuit

- Suppressor diode integrated at 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⁾	24 110	3RH2131-2KB40 3RH2131-2KF40	1 1	1 unit 1 unit	41A 41A
				40E	4	0 ¹⁾	24 110	3RH2140-2KB40 3RH2140-2KF40	1 1	1 unit 1 unit	41A 41A

- Varistor integrated at factory

10	3	2	1	22E	2	2 ¹⁾	24 110	3RH2122-2LB40 3RH2122-2LF40	1 1	1 unit 1 unit	41A 41A
				31E	3	1 ¹⁾	24 110	3RH2131-2LB40 3RH2131-2LF40	1 1	1 unit 1 unit	41A 41A
				40E	4	0 ¹⁾	24 110	3RH2140-2LB40 3RH2140-2LF40	1 1	1 unit 1 unit	41A 41A

With plug-on series resistor and integrated coil circuit

- Suppressor diode integrated at 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 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 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
				31E	3	1 ²⁾	24 ... 34 72 ... 125	3RH2131-2XB40-0LA2 3RH2131-2XF40-0LA2	1 1	1 unit 1 unit	41A 41A
				40E	4	0 ²⁾	24 ... 34 72 ... 125	3RH2140-2XB40-0LA2 3RH2140-2XF40-0LA2	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.

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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 times are 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
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 + Arcing time	
• DC operation	Closing delay ms 40 ... 200
	Opening delay 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.

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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				Contacts ¹⁾		Rated control supply voltage U_s	Screw terminals 	PU (UNIT, SET, M)	PS*	PG	
	$I_e/AC-15$				Ident. No. according to EN 50011	Version						
	230 V	400 V	500 V	690 V								
Number	A	A	A	A			V DC	Article No.	Price per PU			
					NO	NC						
For screw and snap-on mounting on TH 35 DIN rail												
With integrated coil circuit (varistor integrated at 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.

Accessories, see page 5/20.

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استعلام آنى (٥ خط) ٠٢١-٩٢٠٠٦٦١٧ 

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 device combinations such as contactor with overload relay or contactor with circuit breaker as motor feeder, refer to

- [Digital Configuration Manual for load feeders](#)
- [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 or supply voltage connections

First of all, the relevant standards and regulations for configuring control cabinets 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 contactor operating mechanisms, switch-on power, holding power). The same applies to the selection of suitable protective devices.

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 cabinet 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 $1.25 \times U_s$.

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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

3TC contactors for switching DC voltage, 2-pole

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16180/td>

Manuals, see
<https://support.industry.siemens.com/cs/ww/en/ps/16180/man>

Type		3TC44	3TC48	3TC52	3TC56
Size		2	4	8	12
General data					
Ambient temperature					
• During operation	°C	-40 ... +70			
Control					
Solenoid coil operating range					
0.7 ... 1.25 x U_s					
Power consumption of the solenoid coils					
For cold coil and 1.0 x U_s					
• Closing	W	48	26	40	130
• Closed	W	13	14	21	59

All details and technical specifications not mentioned here are identical to those of the basic units of the 3TC contactors, see page 4/72.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

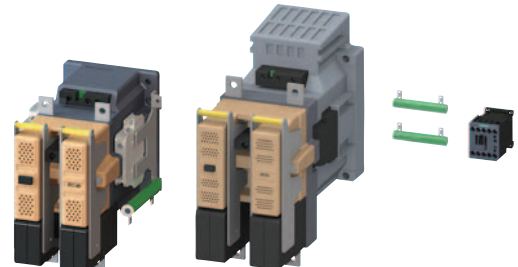
Contactors for railway applications

3TC contactors for switching DC voltage, 2-pole

Selection and ordering data


DC operation

3TC44: for screw and snap-on mounting on TH 35 DIN rail,
3TC48 to 3TC56: For screw fixing



3TC4817-0L.4

3TC5617-0L.4 with reversing contactor

Size	Utilization category	Rated operational current I_o 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	NO					
		A	kW	kW	kW	kW				Article No.	Price per PU			

Contactors for switching DC voltage

With integrated coil circuit (varistor integrated at factory)

2	DC-1	32	7	14	--	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	--	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	--	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	--	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 in auxiliary contacts can be made.

2) Only NO contact used for series resistor.

Other rated control supply voltages according to data sheet on request.

Accessories

For contactor	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,	24	3TY6443-0LB4	1	1 unit	41B
		without varistor	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 4/79.

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 4/74](#).

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 4/80 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 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 4/76](#).

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Application

The DC

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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 $I_e/AC-15$			
• 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
cULus rated data of the auxiliary contacts			
Rated voltage, max.	V AC	600	
Switching capacity		A 600, P 600	

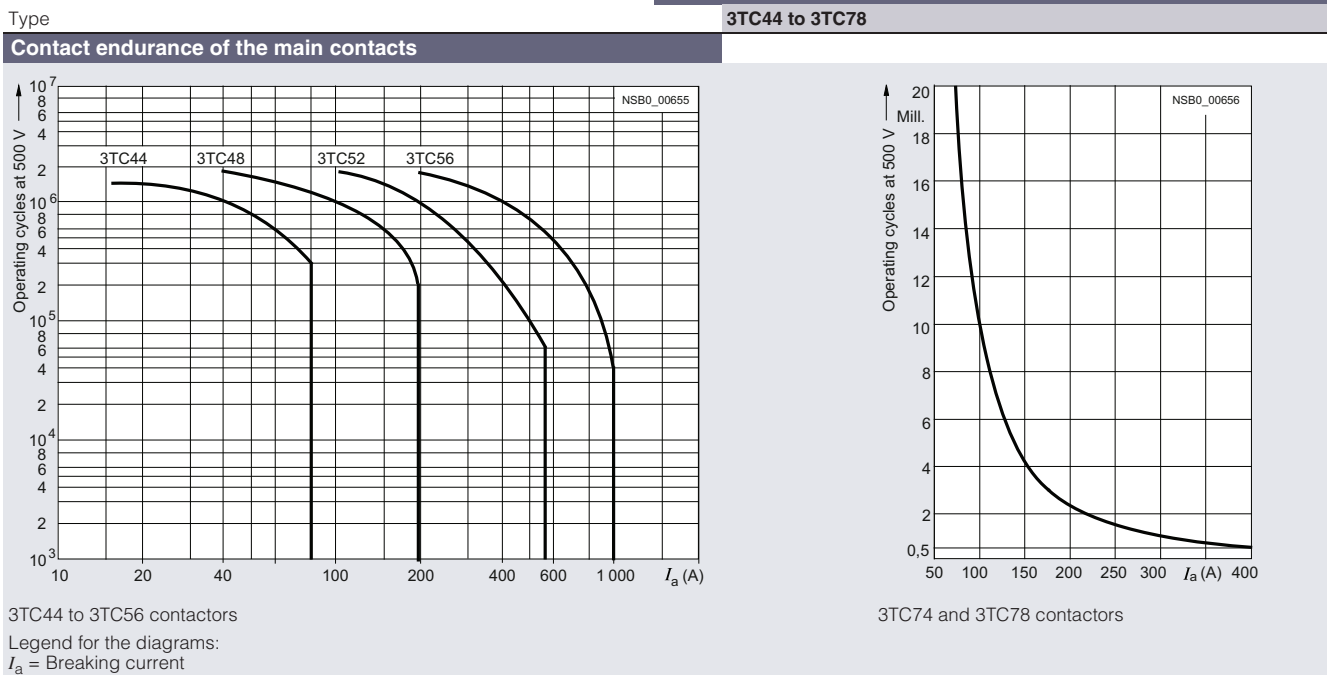
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Switching devices – Contactors and contactor assemblies – Special applications

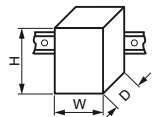
Contactors for special applications

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



Type	3TC44	3TC48	3TC52	3TC56
Size	2	4	8	12

General data		3TC44	3TC48	3TC52	3TC56
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
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
Mirror contacts¹⁾ A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.		Up to 660
Permissible ambient temperature		
• During operation	°C	-25 ... +55
• During storage	°C	-50 ... +80

Short-circuit protection		3TC44	3TC48	3TC52	3TC56
Main circuit					
• Type of coordination "1"		2 x 3NA3020 (50 A) in series	2 x 3NA31.. (160 A) in series	3NE1332-4D (400 A)	2 x 3NE1330-4D (315 A) parallel
• Type of coordination "2"		2 x 3NA3020 (50 A) in series	2 x 3NA31.. (63 A) in series	3NE1332-4D (400 A)	2 x 3NE1330-4D (315 A) parallel

Auxiliary circuit		3TC44	3TC48	3TC52	3TC56
(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 G characteristic	A	10			

¹⁾ For 3TC44 the NC contact pair must be connected in series for the right and left auxiliary switch respectively. For details of the auxiliary contacts, see page 4/7.

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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

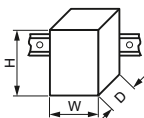
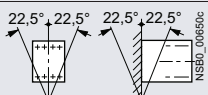
Type		3TC44	3TC48	3TC52	3TC56	
Size		2	4	8	12	
Control						
Solenoid coil operating range						
• DC operation		0.7 ... 1.25 x U_s				
• AC operation		0.8 ... 1.1 x U_s				
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
• DC operation	Closing = Closed	W	10	19	30	86
• AC operation, 50 Hz coil	Closing	VA/p.f.	68/0.86	300/0.5	640/0.48	1 780/0.3
	Closed	VA/p.f.	10/0.29	26/0.24	46/0.23	121/0.22
• AC operation, 60 Hz coil	Closing	VA/p.f.	95/0.79	365/0.45	730/0.38	2 140/0.3
	Closed	VA/p.f.	12/0.3	35/0.26	56/0.24	140/0.29
• AC operation, 50/60 Hz coil	Closing at 50/60 Hz	VA/p.f.	79/73/0.83/0.78	--	--	--
	Closed at 50/60 Hz	VA/p.f.	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 4/72.

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 4/73	
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 x U_s)			
• DC operation	Closing = Closed	W	46
			92
• AC operation, 50 Hz	Closing = Closed	VA	80
		P.f.	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 4/72.

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,	At 220 V kW	110		
> 750 V DC: two conducting paths in series)	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,	At 110 V kW	35		
> 750 V DC: two conducting paths in series)	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 4/72.

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 



3TC4817-0A.4



3TC4817-0B.0

Size	Utilization category ¹⁾	Operational current I_e ²⁾	Ratings of DC motors at					Auxiliary contacts ³⁾ 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	NO	NC					
	A	kW	kW	kW	kW	kW				Article No.	Price per PU			

3TC44 to 3TC56 2-pole contactors · Operational voltage up to 750 V

DC operation

For screw 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 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
For screw fixing														
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 4/79 on request.

Accessories, see page 4/79 onwards.

Spare parts, see page 4/81.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

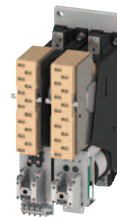
3TC contactors for switching DC voltage, 1- and 2-pole

DC operation  or **AC operation, 50 Hz** 


For screw fixing



3TC7414-...



3TC7814-1CM

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						Article No.
A		kW	kW	kW	kW	kW	kW	kW			V						

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
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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
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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
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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
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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 4/79 on request.

Spare parts, see page 4/81.



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_s	Contactor type	3TC44	3TC48	3TC52/3TC56	3TC74/3TC78
DC operation					
24 V DC		B4	B4	B4	B
48 V DC		W4	W4	--	--
60 V DC		E4	E4	--	--
110 V DC		F4	F4	F4	F
125 V DC		G4	G4	--	--
220 V DC		M4	M4	M4	M
230 V DC		P4	P4	--	--
AC operation					
Solenoid coils for 50 Hz					
24 V AC		B0	B0	--	--
110 V AC		F0	F0	F0	--
230/220 V AC		P0 ¹⁾	P0 ¹⁾	P0 ¹⁾	M ²⁾
240 V AC		U0	U0	--	--
Solenoid coils for 50/60 Hz					
24 V AC		C2	--	--	--
110 V AC		G2	--	--	--
120 V AC		K2	--	--	--
220 V AC		N2	--	--	--
230 V AC		L2	--	--	--

¹⁾ Operating range at 220 V AC: 0.85 to 1.15 x U_s ; lower operating range limit according to IEC 60947.

²⁾ Upper operating range limit at 230 V AC: 1.14 x U_s .

Accessories

For contactor		Version	Auxiliary switches		Screw terminals	PU (UNIT, SET, M)	PS*	PG
Size	Type	Auxiliary contacts	Left	Right				
Second auxiliary switches (for AC operation only)								
	4	3TC48	2nd auxiliary switch, left			1	1 unit	41B
			1	1				
	8 and 12	3TC52, 3TC56	2nd auxiliary switch, left			1	1 unit	41B
			1	1				

Solid-state compatible auxiliary switches

For operation in dusty atmospheres and in solid-state circuits with rated operational currents I_e /DC-13 of 1 ... 300 mA at 3 ... 60 V

2 and 4	3TC44, 3TC48	2nd auxiliary switch, left or right (replacement for 3TY6561-1L, 3TY6561-1V)	1	1		1	1 unit	41B
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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

For contactor		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
				127 ... 240	150 ... 250						3TX7402-3J
				240 ... 400	--						3TX7402-3K
				400 ... 600	--						3TX7402-3L
3TX7462-3. 	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
				127 ... 240	150 ... 250						3TX7462-3J
				240 ... 400	--						3TX7462-3K
				400 ... 600	--						3TX7462-3L
3TX7522-3. 	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
				127 ... 240	--						3TX7462-3J
				240 ... 400	--						3TX7462-3K
				400 ... 600	--						3TX7462-3L
3TX7522-3. 	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
				--	150 ... 250						3TX7522-3J


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							
				48 ... 127	--						3TX7462-3S							
				--	70 ... 150						3TX7522-3S							
				127 ... 240	--						3TX7462-3T							
				--	150 ... 250						3TX7522-3T							
				240 ... 400	--						3TX7462-3U							
				400 ... 600	--						3TX7462-3V							
			3TX7522-3. 	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	--					
	127 ... 240	--				3TX7522-3T												
	240 ... 400	--				3TX7522-3U												
	400 ... 600	--				3TX7522-3V												

Surge suppressor - Diode assembly										
	4 to 12	3TC48, 3TC52, 3TC56	Diode assembly³⁾	--	24 ... 250	3TX7462-3D		1	1 unit	41B
			(Diode and Zener diode) for DC solenoid system, for sticking onto the contactor base or for mounting separately							

1) The connection piece for mounting the surge suppressor must be bent slightly.

2) Includes the peak value of the superimposed alternating voltage on the DC side.

3) Not for DC operation.

For contactor		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	For protection against inadvertent contact with exposed busbar connections	M10	3TX6546-3B		1	1 unit	41B

3TX6546-3B

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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications


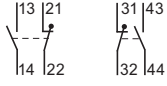



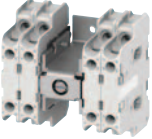
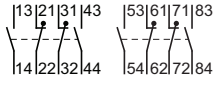


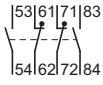
3TC contactors for switching DC voltage, 1- and 2-pole

Spare parts

For contactor	Version	Auxiliary contacts	Auxiliary switches Left	Auxiliary switches Right	Screw terminals	⊕	PU (UNIT, SET, M)	PS*	PG
Size	Type		NO	NC	Article No.		Price per PU		

Auxiliary switches

For lateral mounting

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

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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

For contactor		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 contactor		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



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



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

3TY2482-0A

¹⁾ Rated control supply voltages, see page 4/79.

The 10th and 11th digits of the article number must be supplemented accordingly.

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