

Switching devices – Contactors and contactor assemblies – Special applications

**Price groups**

PG 41A, 41B

4/2

Introduction**Contactors for special applications**

- 4/6 SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A
- 4/22 SIRIUS 3RT.3 contactors, 4-pole, up to 525 A
- 4/37 SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC
- 4/43 SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole
- 4/52 SIRIUS 3RT23 to 3RT26, 3RT14 contactors
- 4/54 Contactors for railway applications
- SIRIUS 3RT contactors with extended operating range, 3-pole
- 4/62 - SIRIUS 3RH2 contactor relays with extended operating range
- 4/64 - 3TH4 contactor relays, 8-pole
- 4/66 - 3TC contactors for switching DC voltage, 2-pole
- 4/68 3TC contactors for switching DC voltage, 1- and 2-pole

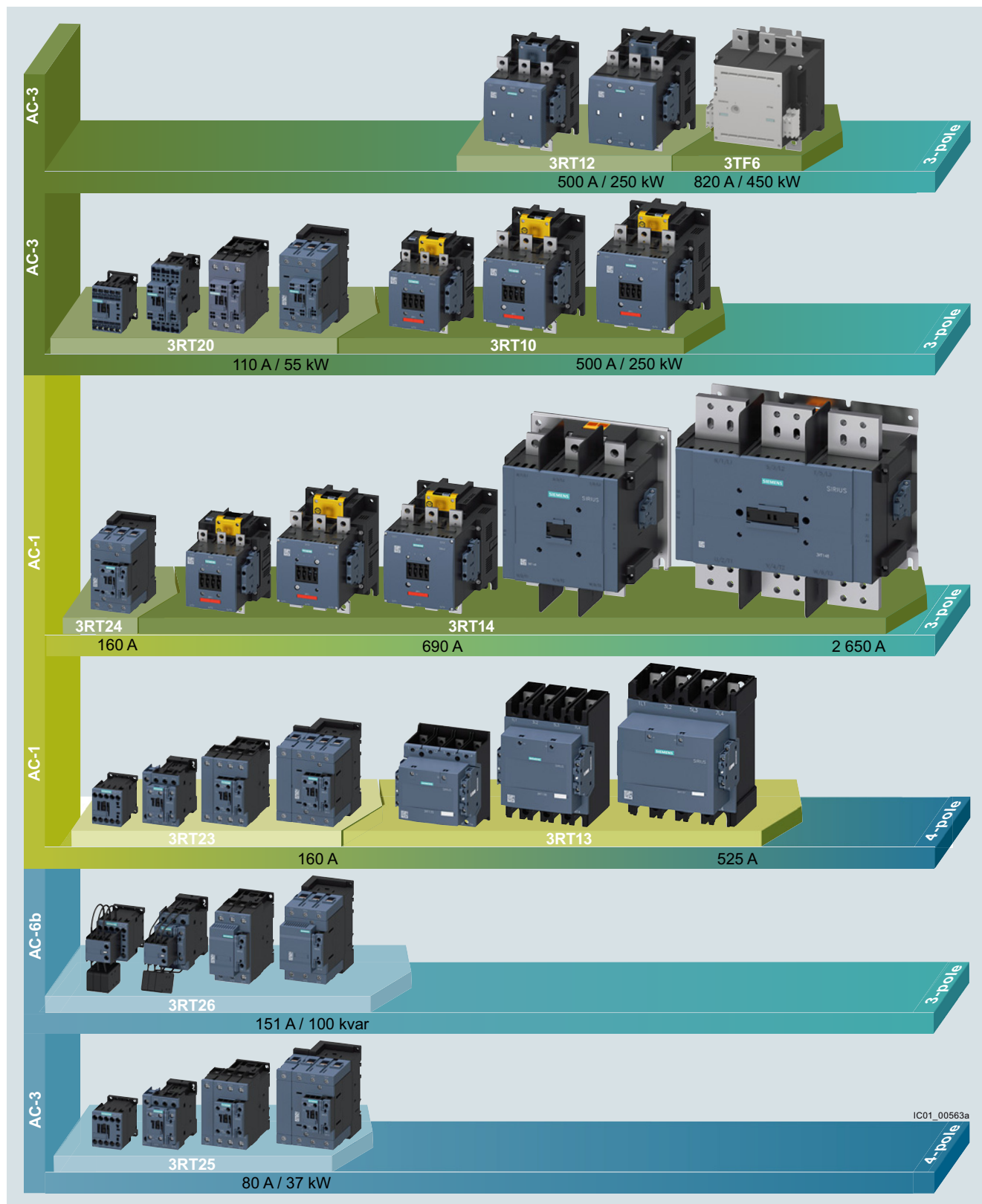
3/147

3TG10 power relays/miniature contactors

Switching devices – Contactors and contactor assemblies – Special applications

Introduction

Overview



Overview of the 3RT and 3TF contactors

Switching devices – Contactors and contactor assemblies – Special applications

Introduction

More information

Homepage, see www.siemens.com/siriusIndustry Mall, see www.siemens.com/product?3RT_3TK_3TCConversion tool, see www.siemens.com/conversion-toolTIA Selection Tool Cloud (TST Cloud), see www.siemens.com/tstcloud/?node=Contactor

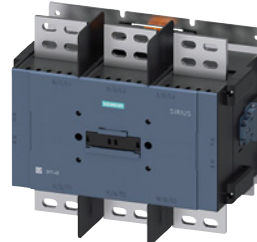
Size	S3	S6	S10	S12
Type	3RT244.	3RT1456	3RT146.	3RT1476

3-pole 3RT244 and 3RT145 to 3RT147 contactors

Type	3RT2446	3RT2448	3RT1456	3RT1466	3RT1467	3RT1476
Number of main contacts	3 NO		3 NO	3 NO		3 NO
AC, AC/DC operation	(p. 4/17)		(p. 4/18, 4/19)	(p. 4/18, 4/19)		(p. 4/18, 4/19)
AC-1						
U_i	V	1 000				
U_e	V	690				
I_e up to 690 V	40 °C A 60 °C A	140 130	160 140	275 250	400 380	500 450
						690 Standard operating mechanism: 650, solid-state operating mechanism: 600

Accessories for contactors

Auxiliary switches	3RH29, 3RA28	(p. 3/97 ... 3/104)	3RH19, 3RT1926	(p. 3/100, 3/102, 3/103, 3/105)
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	3RA281.	(p. 3/109)	--	
Terminal covers	3RT2946-4EA4	(p. 3/121)	3RT1956-4EA.	(p. 3/121)
Box terminal blocks	--		3RT1955/56-4G	(p. 3/119)
Surge suppressors	3RT2936, 3RT2946	(p. 3/106, 3/107)	3RT1956-1C (RC element)	(p. 3/107)



Type	3RT1481, 3RT1482	3RT1483	3RT1485, 3RT1486	3RT1487
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3-pole 3RT148 contactors

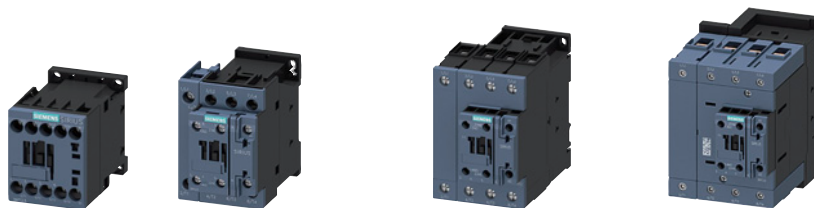
Type	3RT1481	3RT1482	3RT1483	3RT1485	3RT1486	3RT1487
Number of main contacts	3 NO					
AC/DC operation	(p. 4/20)					
AC-1						
U_i	V	1 000				
U_e	V	1 000				
I_e	40 °C A	900	1 050	1 260	1 700	2 100
					2 650	

Accessories for contactors

Second auxiliary switch, lateral	3RH1981-1JA11	(p. 4/20)		
Spare parts for contactors				
First auxiliary switch, lateral	3RH1981-1DA11	(p. 4/21)		
Phase barriers	3RT1983-4AA1	(p. 4/21)	3RT1987-4AA1	(p. 4/21)
Withdrawable coils	3RT1982-5A.31 (p. 4/21)	3RT1983-5AP31 (p. 4/21)	3RT1987-5AP31	(p. 4/21)

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. 4/30, 4/32)		(p. 4/30 ... 4/32)		(p. 4/30 ... 4/34)		(p. 4/30 ... 4/34)				
AC-1											
U _i	V	690									
U _e	V	690									
I _e up to 690 V	40 °C A	18	22	35	40	50	60	110	110	140	160
	60 °C A	16	20	30	35	42	55	95	100	130	140
AC-2 and AC-3											
I _e up to 400 V	A	9	12	15.5	15.5	15.5	--	--	--	--	--
P at 400 V	kW	4	5.5	7.5	7.5	7.5	--	--	--	--	--
Accessories for contactors											
Auxiliary switches	3RH29, 3RA28 (p. 3/97 ... 3/104)										
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	3RA281. (p. 3/109)										
Terminal covers	--					3RT2936-4EA4 (p. 3/121)		3RT2946-4EA4 (p. 3/121)			
Surge suppressors	3RT2916 (p. 3/106, 3/107)		3RT2936 (p. 3/106, 3/107)		3RT2936, 3RT2946 (p. 3/106, 3/107)						



Size	S6		S10		S12	
Type	3RT1355		3RT136.		3RT137.	
4-pole 3RT13 contactors						
Type	3RT1355		3RT1363		3RT1373	
Number of main contacts	4 NO		3RT1364		3RT1374	
AC/DC operation	(p. 4/35)		(p. 4/35)		(p. 4/35)	
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. 4/36)
Terminal covers	3RT1956-4EB10	(p. 4/36)	3RT1966-4EB10	(p. 4/36)	3RT1976-4EB10	
Mechanical interlocks	3RA1954-3A					(p. 4/36)
Bus connectors offset	--		3RT1966-4D	(p. 4/36)	3RT1976-4D	
Spare parts for contactors						
First auxiliary switch, lateral	3RH1951-1TA11					(p. 4/36)

Switching devices – Contactors and contactor assemblies – Special applications

Introduction



Size	S00					S0		S2		S3	
Type	3RT251.					3RT252.		3RT253.		3RT254.	
4-pole 3RT25 contactors											
Type	3RT2516 3RT2517 3RT2518					3RT2526		3RT2535 3RT2536		3RT2544 3RT2545	
Number of main contacts	2 NO + 2 NC					2 NO + 2 NC		2 NO + 2 NC		2 NO + 2 NC	
AC, DC and AC/DC operation	(p. 4/40, 4/41)					(p. 4/40, 4/41)		(p. 4/40, 4/42)		(p. 4/40, 4/42)	
AC-1											
U_i	V	690									
U_e	V	690									
I_e up to 690 V	40 °C	A	18	22	22	40	60	70	100	125	
	60 °C	A	16	20	20	35	55	60	90	105	
AC-2 and AC-3											
I_e up to 400 V	NO	A	9	12	16	25	35	41	65	80	
	NC	A	9	9	9	25 (20) ¹⁾	35	41	65	80	
P											
at 400 V	NO	kW	4	5.5	7.5	11	18.5	22	30	37	
	NC	kW	4	4	4	11 (7.5)¹⁾	18.5	22	30	37	
At 230 V	NO	kW	2.2	3 / 2.2	4 / 2.2	5.5	11	11	18.5	22	
	NC	kW	2.2	3 / 2.2	4 / 2.2	5.5	11	11	18.5	22	
Accessories for contactors											
Auxiliary switches	3RH29, 3RA28 (p. 3/97 ... 3/104)										
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	3RA281. (p. 3/109)										
Terminal covers	--						3RT2936-4EA4 (p. 3/121)		3RT2946-4EA4 (p. 3/121)		
Surge suppressors	3RT2916 (p. 3/106, 3/107)					3RT2926 (p. 3/106, 3/107)		3RT2936 (p. 3/106, 3/107)		3RT2936, 3RT2946 (p. 3/106, 3/107)	

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

Connection methods

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

- 3RT2 contactors
 - Sizes S00 and S0: screw terminals or spring-loaded terminals both for the main as well as for the auxiliary and control circuits
 - Sizes S2 and S3: screw terminals (complete devices) or spring-loaded terminals (auxiliary circuit only)
- 3RT13 contactors, sizes S6 to S12: Busbar connections (partly with bus connectors offset), auxiliary and control circuits with screw terminals
- 3RT14 contactors: Busbar connections



Screw terminals



Spring-loaded terminals



Busbar connections

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

Further contactors

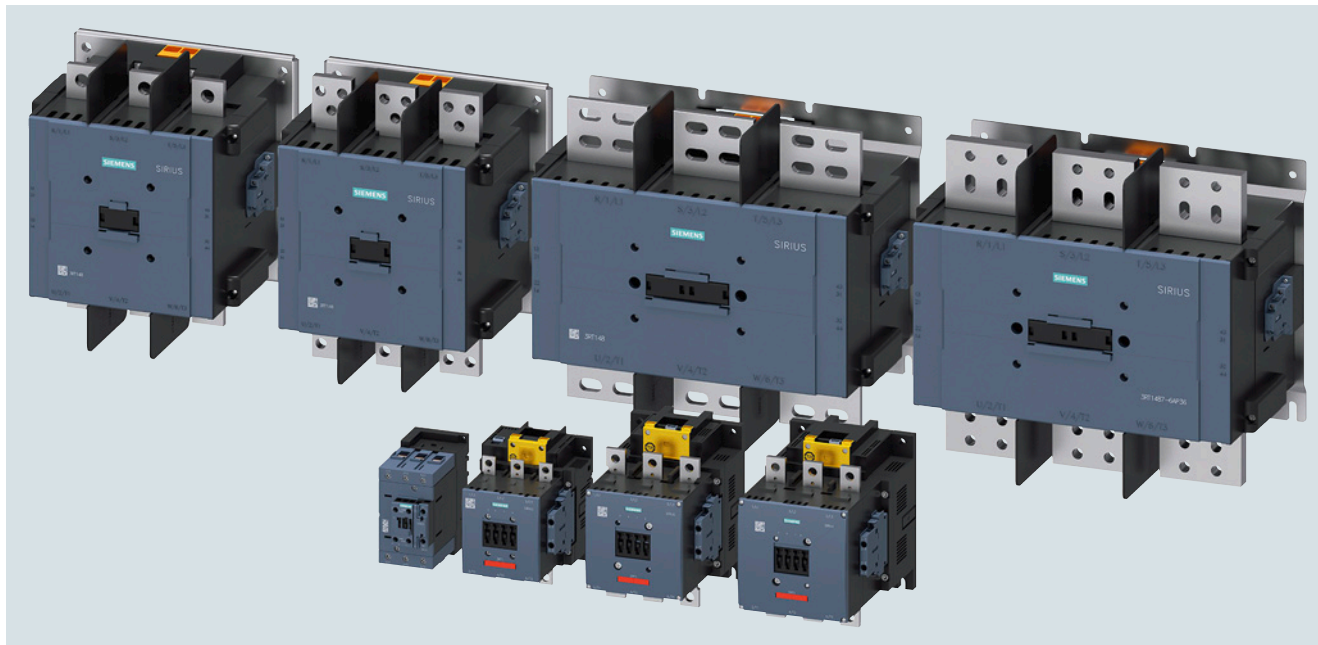
- For SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole, [see page 4/43](#)
- For 3TC contactors for switching DC voltage, 1- and 2-pole, [see page 4/68](#)
- Contactors for railway applications
 - For SIRIUS 3RT contactors with extended operating range, 3-pole, [see page 4/54](#)
 - For SIRIUS 3RH2 contactor relays with extended operating range, [see page 4/62](#)
 - For 3TH4 contactor relays, 8-pole, [see page 4/64](#)

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

3RT.4 power contactors

Standards

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

Ambient conditions

If the devices are used in ambient conditions which deviate from common industrial conditions (IEC 60721-3-3 "Stationary Use, Weather-Protected"), information must be obtained about possible restrictions with regard to the reliability and endurance of the device and possible protective measures. In this case, contact our Technical Support:

www.siemens.com/support-request

Contactors in safety-related applications

Contactors are a significant part of safety-related applications. They are generally the actuators that perform the switching operation leading to the safe disconnection of the corresponding application or system.

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

Contactors with increased tamper protection

Increased tamper protection is ensured either by using our contactor versions with factory-installed, permanently mounted auxiliary switches which are protected against mechanical external actuation (e.g. 3RT14...-.....3PA0), or by using the 3RT1926-4MA10 sealable cover as an accessory, (see page 3/121).

Surge suppression

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 opening surges in the coil, see page 3/106 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 if the contactor coils are damped against voltage peaks. Different accessories are available for the contactors (time change with: interference suppression diode 6x to 10x; diode assembly 2x to 6x; suppressor diode +1 to 5 ms; varistor +2 to 5 ms).

For details, see [Equipment Manual](#).

Accessories and spare parts

- 3RT244 and 3RT145 to 3RT147 contactors, see also [basic units](#), page 3/79 onwards
- For 3RT148 contactors, see page 4/20 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

3RT244 contactors

Main circuit

Connection methods

Screw terminals with box terminal; direct connection to the connecting bar possible with cable lugs when the box terminal is removed.

Surge suppression

The varistors and diode assemblies are plugged into the front of the contactors. The RC element is plugged into the two recesses on the front of the contactor to the left of the terminal block for the auxiliary switches.

Short-circuit protection

For short-circuit protection without overload relays, see page 4/11.

Control circuit

Operating mechanism types

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

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

Solenoid coils/operating mechanisms

Coil replacement is possible.

Auxiliary circuit

Auxiliary contact complement

The contactors contain two integrated auxiliary contacts (1 NO + 1 NC).

For detailed information about the fitting of auxiliary switches, see pages 3/91 to 3/96.

3RT14 contactors

Main circuit

Connection methods

- 3RT145 to 3RT147 contactors:
Screw terminals with connecting bars that the cables can be connected to using either cable lugs or flexible or rigid busbars. Alternatively, box terminals are available as accessories.
- 3RT148 contactors:
Busbar connections

Short-circuit protection

Short-circuit protection of contactors without overload relays

- For 3RT145 to 3RT147 contactors, see page 4/11
- For 3RT148 contactors, see page 4/15

Control circuit

Operating mechanism types

The operating mechanisms for contactors 3RT145 to 3RT147 are powered via a supply voltage with an operating range from 0.8 to 1.1 x U_s , optionally also controlled depending on the chosen mode of operation. Alternatively, control is via the separate 24 V DC control signal input. Various rated voltage ranges for AC/DC control are available.

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

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

The 3RT148 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 x U_s .

Solenoid coils/operating mechanisms

- 3RT145 to 3RT147 contactors:
The 3RT14...-A/-N/-P operating mechanisms are removable and can be replaced simply by unlocking and pulling them out.

NOTICE: Removal or changing of the operating mechanism is not permitted for 3RT14...-S contactors with fail-safe control.
- 3RT148 contactors:
The operating mechanisms are removable and can be replaced simply by unlocking and pulling them out.

Surge suppression

Exchangeable operating mechanisms with integrated coil circuit (varistor) are available.

Auxiliary circuit

Auxiliary contact complement

These contactors are supplied with two laterally mounted auxiliary switches. The fitting of auxiliary switches is possible on the front and on the side.

Switching devices – Contactors and contactor assemblies – Special applications

Contactor for special applications

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

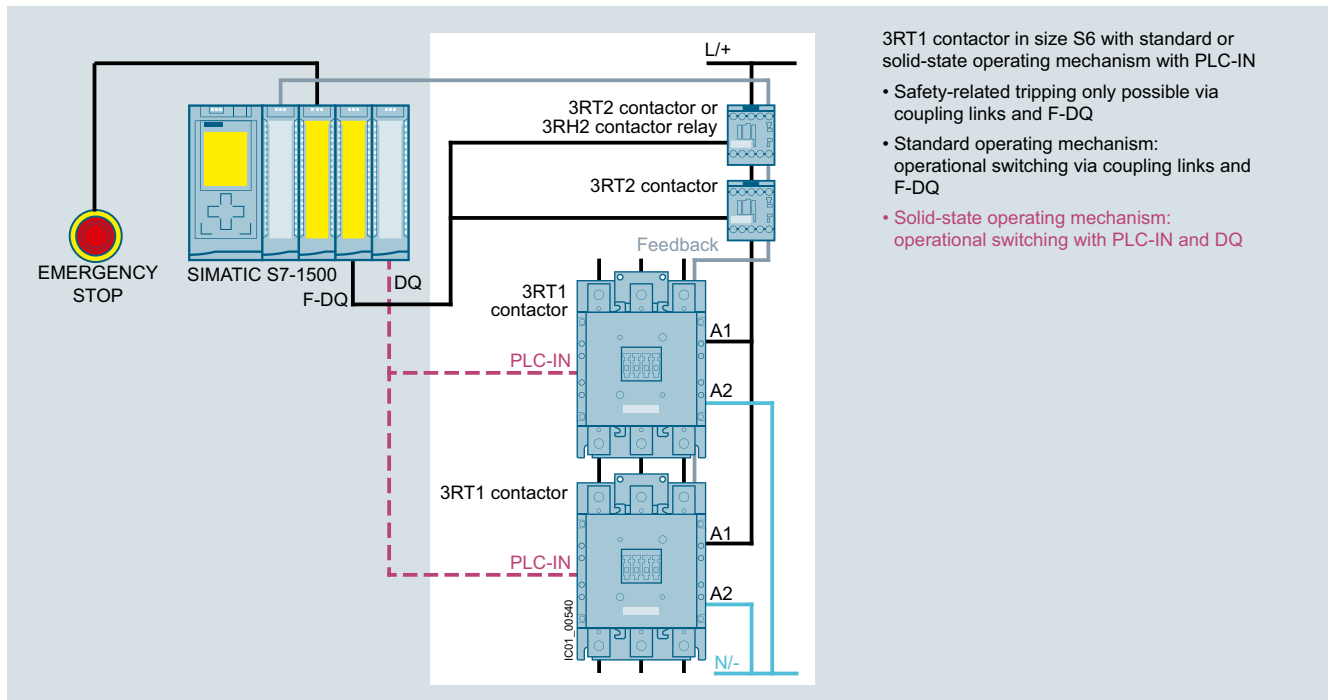
Connection of contactors to fail-safe control modules

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

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

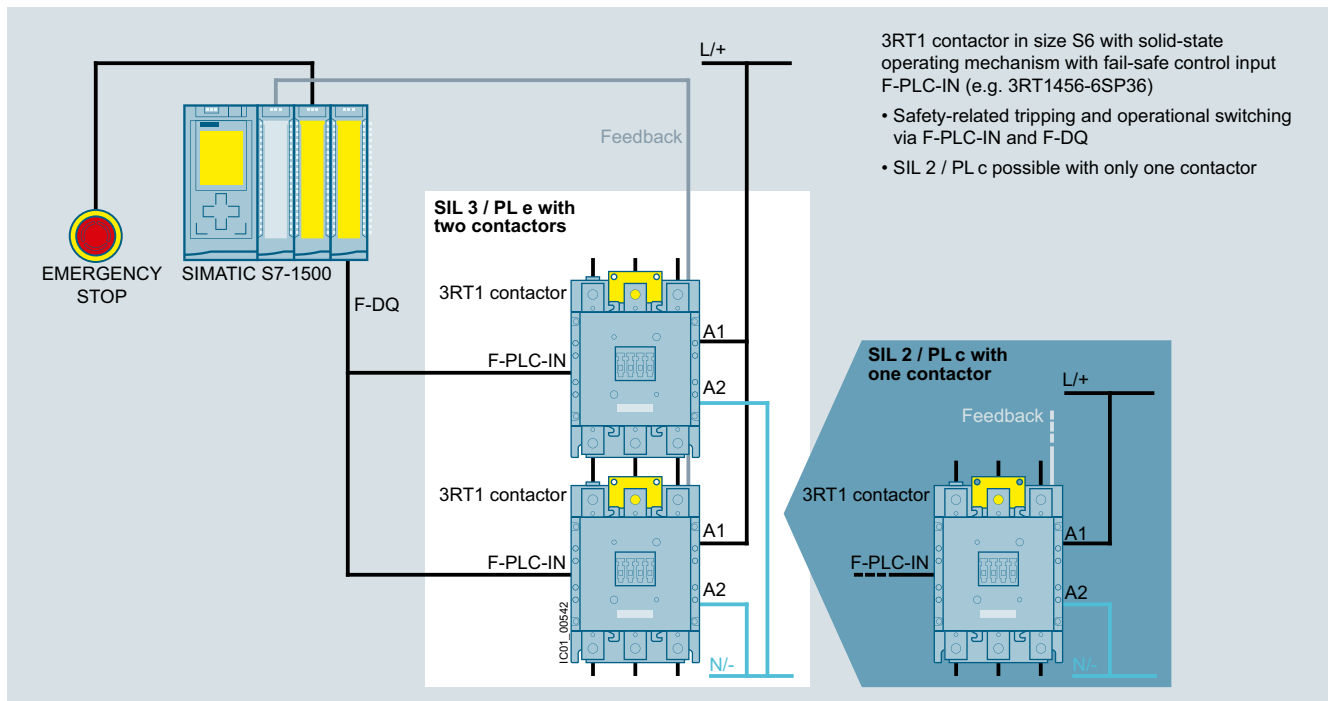
For more information on safety systems, see page 11/1 onwards.

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



Application with safety-related disconnection with standard contactors

Example for SIL 3 / PL e (left-hand side) and SIL 2 / PL c (right-hand side) Application - new:



Application with safety-related disconnection with contactors with fail-safe control

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Overview graphics with mountable accessories

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



3RT1481 to 3RT1487 contactors with mountable accessories

Application

The 3RT.4 contactors can be used for the following applications:

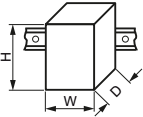
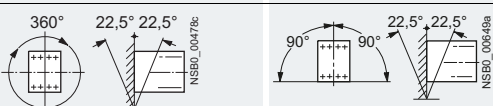
- For switching weak or non-inductive loads (AC-1)
- Disconnecting loads or power generation plants from the grid (e.g. wind turbines or photovoltaic systems)
- Disconnecting frequency converters from the grid

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Technical specifications

More information						
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/24229/td		Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/24229/man				
FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/24229/faq						
Type		3RT2446, 3RT2448	3RT1456	3RT1466	3RT1467	3RT1476
Size		S3	S6	S10	S12	S12
General data						
Dimensions (W x H x D)						
- Basic units - 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
- Basic unit with mounted auxiliary switch - Screw terminals - Spring-loaded terminals		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	--	--	--
- Basic unit with mounted function module or solid-state time-delayed auxiliary switch - Screw/spring-loaded terminals		mm	70 x 140 x 226	--	--	--
Permissible mounting position						
The contactors are designed for operation on a vertical mounting surface.						
Upright mounting position		 Special version required				
Mechanical service life						
Basic units and basic units with mounted auxiliary switch	Operating cycles	10 million				
Basic units with solid-state compatible auxiliary switch	Operating cycles	5 million	--			
Electrical endurance for utilization category AC-1, at $U_e = 400$ V		Operating cycles	0.5 million			On request 0.5 million
Rated insulation voltage U_i (pollution degree 3)		V	1 000			
Rated impulse withstand voltage U_{imp}		kV	6	8		
Protective separation between the coil and the main contacts acc. to IEC 60947-1, 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.						
- Integrated auxiliary switches - Removable auxiliary switch		Yes --	-- Yes			
Permissible ambient temperature						
During operation	°C	-25 ... +60				
During storage	°C	-55 ... +80				
Degree of protection IP on the front acc. to IEC 60529		IP20 (screw terminals and spring-loaded terminals with box terminal/cover)		IP00 (IP20 with box terminal/cover)		
Touch protection on the front acc. to IEC 60529		Finger-safe for vertical touching from the front (screw terminals and spring-loaded terminals with box terminal/cover)		Finger-safe for vertical touching from the front with box terminal/cover		
Shock resistance						
- Rectangular pulse - AC operation - DC operation	g/ms g/ms	10.3/5 and 10.5/10 6.7/5 and 4.0/10	8.5/5 and 4.2/10 8.5/5 and 4.2/10			
- Sine pulse - AC operation - DC operation	g/ms g/ms	16.3/5 and 10.5/10 10.6/5 and 6.3/10	13.4/5 and 6.5/10 13.4/5 and 6.5/10			

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3RT2446, 3RT2448	3RT1456	3RT1466	3RT1467	3RT1476
Size	S3	S6	S10	S10	S12
Short-circuit protection					
Main circuit					
• Version of the fuse link required for short-circuit protection of the main circuit					
- for type of coordination 1	gG: 250 A (690 V, 100 kA)	gG: 355 A (690 V, 100 kA)	gG: 500 A (690 V, 100 kA)		gG: 800 A (690 V, 50 kA)
- for type of coordination 2	gG: 250 A (690 V, 100 kA)	gG: 350 A (690 V, 100 kA)	gG: 500 A (690 V, 100 kA)		gG: 710 A (690 V, 100 kA)
Auxiliary circuit					
• Version of the fuse link required for short-circuit protection of the auxiliary switch	A	Fuse gG: 10			
• Miniature circuit breaker version required for short-circuit protection of the auxiliary switch	A	On request			
Short-circuit protection for contactors with overload relays	See Configuration Manual for load feeders				
Short-circuit protection for fuseless load feeders	See • 3RA2 load feeders, page 8/4 onwards • Configuration Manual for load feeders				

Type			3RT2446, 3RT2448		3RT1456		3RT1466, 3RT1467		3RT1476	
Size			-A	-N	-A	-N/-P/-S	-A	-N/-P/-S	-A	-N/-P/-S
Control			S3		S6		S10		S12	
Solenoid coil operating range (AC/DC)			0.8 ... 1.1 x U _s	0.8 x U _{s min} ... 1.1 x U _{s max}						
Power consumption of the solenoid coils (for cold coil and 1.0 x U _s)										
• AC operation, 50 Hz, standard version	Closing	VA	296	--						
	P.f.		0.61	--						
• AC operation, 50/60 Hz, standard version	Closing	VA	348/296	--						
	P.f.		0.62/0.55	--						
	Closing	VA	25/18	--						
	P.f.		0.35/0.41	--						
• AC operation, 50/60 Hz, for USA/Canada	Closing	VA	326/326	--						
	P.f.		0.62/0.55	--						
	Closing	VA	22/22	--						
	P.f.		0.38/0.4	--						
• AC/DC operation	Closing for AC operation	VA	--	163	300	280	590	530	830	750
	P.f.		--		0.9	0.8	0.9	0.8	0.9	0.8
	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
	Closing for AC operation	VA	--	3.1	5.8	4.8	6.7	8.5	9.2	9
	P.f.		--		0.8	0.6	0.9	0.4	0.9	0.4
	Closing for DC operation	W	--	1.8	5.2	2.8	7.4	3.4	10	3.6
	P.f.		--							
Type of PLC control input according to IEC 60947-1										
• Solid-state operating mechanism	3RT14...-N/-P 3RT14...-S		--	Type 2 Type 1						
• Rated voltage	V DC		--	24						
• Operating range	V DC		--	17 ... 30						
• Power consumption	mA		--	≤ 30						
• Recovery time after mains failure, typical (applicable only for fail-safe version 3RT14...-S)	s		--	2						

Operating times within operating range						
Total break time = Opening delay + Arcing time						
• Standard operating mechanism for AC operation (3RT.4...-A)	Closing delay	ms	13 ... 50	20 ... 95	30 ... 95	45 ... 100
	Opening delay	ms	10 ... 21	40 ... 60	40 ... 80	60 ... 100
• Solid-state operating mechanism for AC/DC operation						
- Actuated via A1/A2 (3RT.4...-N/-P)	Closing delay	ms	50 ... 70	95 ... 135	105 ... 145	120 ... 150
	Opening delay	ms	38 ... 57	80 ... 90	80 ... 100	
- Actuated via PLC input (3RT14...-N/-P)	Closing delay	ms	--	35 ... 75	45 ... 80	60 ... 90
	Opening delay	ms	--	80 ... 90	80 ... 100	
- Actuated via F-PLC input (3RT14...-S)	Closing delay	ms	--	60 ... 75		
	Opening delay	ms	--	115 ... 130		
• Arcing time		ms	10 ... 20			

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type		3RT2446	3RT2448	3RT1456	3RT1466	3RT1467	3RT1476
Size		S3		S6	S10		S12
Rated data of the main contacts							
Load rating with AC							
Utilization category AC-1							
• Rated operational currents I_e	At 40 °C up to 690 V A	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	60	80	--	--	--	--
	At 60 °C up to 1 000 V A	60	80	--	--	--	--
• Minimum cross-section in the main circuit at maximum AC-1 rated value	mm ²	50	70	140	240	300	480
Utilization categories AC-2 and AC-3							
With an electrical endurance of 1.3 million operating cycles							
• Rated operational currents I_e	Up to 400 V A	44		97	138		170
	Up to 690 V A	44		97	138		170
• Rated power for slip-ring or squirrel-cage motors at 50 and 60 Hz	At 230 V kW	12.7		30	37		55
	400 V kW	22		55	75		90
	500 V kW	29.9		55	90		110
	690 V kW	38.2		90	132		160
Power loss per conducting path	At I_e /AC-1 W	--		20	27	42	55
Load rating with DC							
Utilization category DC-1, ($L/R \leq 1$ ms)							
• Rated operational currents I_e (at 60 °C)							
- 1 conducting path	Up to 24 V A	130	140	250	380		500
	60 V A	80		250	380		500
	110 V A	12		18	33		
	220 V A	2.5		3.4	3.8		
	440 V A	0.8		0.8	0.9		
	600 V A	0.48		0.5	0.6		
- 2 conducting paths in series	Up to 24 V A	130	140	250	380		500
	60 V A	130	140	250	380		500
	110 V A	130	140	250	380		500
	220 V A	13		20	380		500
	440 V A	2.4		3.2	4		
	600 V A	1.3		1.6	2		
- 3 conducting paths in series	Up to 24 V A	130	140	250	380		500
	60 V A	130	140	250	380		500
	110 V A	130	140	250	380		500
	220 V A	130	140	250	380		500
	440 V A	6		11.5	11		
	600 V A	3.4		4	5.2		
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)							
• Rated operational currents I_e (at 60 °C)							
- 1 conducting path	Up to 24 V A	6		250	380		500
	60 V A	3		7.5	11		
	110 V A	1.25		2.5	3		
	220 V A	0.35		0.6			
	440 V A	0.15		0.17	0.18		
	600 V A	0.1		0.12	0.125		
- 2 conducting paths in series	Up to 24 V A	130	140	250	380		500
	60 V A	130	140	250	380		500
	110 V A	130	140	250	380		500
	220 V A	1.75		2.5			
	440 V A	0.42		0.65			
	600 V A	0.27		0.37			
- 3 conducting paths in series	Up to 24 V A	130	140	250	380		500
	60 V A	130	140	250	380		500
	110 V A	130	140	250	380		500
	220 V A	4		250	380		500
	440 V A	0.8		1.4			
	600 V A	0.45		0.75			

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3RT2446	3RT2448	3RT1456	3RT1466, 3RT1467	3RT1476
Size	S3		S6	S10	S12

Rated data of main contacts (continued)

Switching frequency

Switching frequency z in operating cycles/hour

Contactors without overload relays

• No-load switching frequency

- Standard operating mechanism	3RT244...A	1/h	5 000	1 000	--	
	3RT14...A	1/h	--		2 000	
- Solid-state operating mechanism	3RT14...N/-P	1/h	--	1 000		
	3RT14...S	1/h	--	1 000		500

• Switching frequency z during rated operation

(Dependence of the switching frequency z' on operational current I' and operational voltage U' : $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$)

- Standard operating mechanism	$I_e/AC-1$ at 400 V	1/h	650	--		
	3RT244...A					
- Standard operating mechanism	$I_e/AC-1$ at 400 V	1/h	--	600		
	3RT14...A and solid-state operating mechanism 3RT14...N/-P					
- Solid-state operating mechanism	$I_e/AC-1$ at 400 V	1/h	--	350		
	3RT14...S					

Type	3RT2446, 3RT2448
Size	S3

Conductor cross-sections

Main conductors

(1 or 2 conductors can be connected)

• Solid	mm ²	2 x (2.5 ... 16) ¹⁾
• Stranded	mm ²	2 x (6 ... 16) ¹⁾ ; 2 x (10 ... 50) ¹⁾ ; 1 x (10 ... 70) ¹⁾
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (2.5 ... 35) ¹⁾ ; 1 x (2.5 ... 50) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (10 ... 1/0) ¹⁾ ; 1 x (10 ... 2/0) ¹⁾
• Terminal screws		Hexagon socket, A/F 4
- Tightening torque	Nm	4.5 ... 6 (40 ... 53 lb.in)

Auxiliary conductors and control conductors

(1 or 2 conductors can be connected)

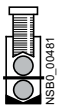
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾
• Terminal screws		M3 (for Pozidriv size 2; Ø 5 ... 6)
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3RT1456			3RT1466, 3RT1467	3RT1476
Size	S6			S10	S12
Conductor cross-sections					
Main conductors (1 or 2 conductors can be connected)		 Screw terminals			
With mounted box terminals		Type	3RT1955-4G	3RT1956-4G	3RT1966-4G
Terminal screws			M10 (hexagon socket, A/F 4)	M10 (hexagon socket, A/F 4)	M12 (hexagon socket, A/F 5)
• Tightening torque		Nm	10 ... 12	10 ... 12	20 ... 22
		lb.in	90 ... 110	90 ... 110	180 ... 195
Front clamping point connected					
	• Finely stranded with end sleeve (DIN 46228)	mm ²	16 ... 70	16 ... 120	70 ... 240
	• Finely stranded without end sleeve	mm ²	16 ... 70	16 ... 120	70 ... 240
	• Stranded	mm ²	16 ... 70	16 ... 120	95 ... 300
	• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	3/0 ... 600 kcmil
	• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5
Rear clamping point connected					
	• Finely stranded with end sleeve (DIN 46228)	mm ²	16 ... 70	16 ... 120	120 ... 185
	• Finely stranded without end sleeve	mm ²	16 ... 70	16 ... 120	120 ... 185
	• Stranded	mm ²	16 ... 70	16 ... 120	120 ... 240
	• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	250 ... 500 kcmil
	• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5
Both clamping points connected (minimum cross-section 16 mm ²)					
	• Finely stranded with end sleeve (DIN 46228)	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185
	• Finely stranded without end sleeve	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185
	• Stranded	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 70, max. 2 x 240
	• AWG cables, solid or stranded	AWG	Max. 2 x 1/0	Max. 2 x 3/0	Min. 2 x 2/0, max. 2 x 500 kcmil
	• Ribbon cable conductors (Number x Width x Thickness)	mm	Max. 2 x (6 x 15.5 x 0.8)	Max. 2 x (10 x 15.5 x 0.8)	Max. 2 x (20 x 24 x 0.5)
Busbar connections					
• Connecting bar (max. width)		mm	17		25
- Bore diameter		mm	9		11
Cable lug connection					
• Finely stranded with cable lug		mm ²	16 ... 95		50 ... 240
• Stranded with cable lug		mm ²	25 ... 120		70 ... 240
• AWG cables, solid or stranded		AWG	4 ... 250 kcmil		2/0 ... 500 kcmil
• Terminal screws			M8 x 25 (A/F 13)		M10 x 30 (A/F 17)
- Tightening torque		Nm	10 ... 14		14 ... 24
		lb.in	90 ... 124		124 ... 210
Auxiliary conductors (1 or 2 conductors can be connected)					
• Solid		mm ²	2 x (0.5 ... 1.5) ³⁾ ; 2 x (0.75 ... 2.5) ³⁾ acc. to IEC 60947; max. 2 x (0.75 ... 4) ³⁾		
• Finely stranded with end sleeve (DIN 46228)		mm ²	2 x (0.5 ... 1.5) ³⁾ ; 2 x (0.75 ... 2.5) ³⁾		
• AWG cables, solid or stranded		AWG	2 x (18 ... 14)		
• Terminal screws			M3 (Pozidriv size 2)		
- Tightening torque		Nm	0.8 ... 1.2		
		lb.in	7 ... 10.3		
Auxiliary conductors ⁴⁾ (1 or 2 conductors can be connected)		 Spring-loaded terminals			
• Operating devices			3.0 x 0.5; 3.5 x 0.5		
• Solid		mm ²	2 x (0.25 ... 2.5)		
• Finely stranded with end sleeve (DIN 46228)		mm ²	2 x (0.25 ... 1.5)		
• Finely stranded without end sleeve		mm ²	2 x (0.25 ... 2.5)		
• AWG cables, solid or stranded		AWG	2 x (24 ... 14)		

¹⁾ 3RT1456: When connecting cable lugs according to DIN 46235, the 3RT1956-4EA1 terminal cover is required for conductor cross-sections larger than 95 mm² to maintain the phase clearance, [see page 3/121](#).

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 3/121](#).

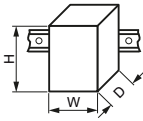
³⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

⁴⁾ Max. external diameter of the conductor insulation: 3.6 mm. On spring-loaded terminals with conductor cross-sections ≤ 1 mm² an insulation stop is recommended, [see page 3/124](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type			3RT1481-6A.36	3RT1482-6A.36	3RT1483-6AP36	3RT1485-6AP36	3RT1486-6AP36	3RT1487-6AP36
General data								
Dimensions				mm				
• Width								
• Height								
• Depth								
				285		431		
				352		403		
				250		246		
Mounting position			For vertical mounting surface can be rotated ± 30°, for vertical mounting surface can be tilted ± 30° forward or backward					
Installation altitude at height above sea level, maximum			m	2 000				
Insulation voltage at pollution degree 3								
• Of the main circuit	V	1 000						
• Of the auxiliary circuit	V	600						
Impulse withstand voltage								
• Of the main circuit	kV	8						
• Of the auxiliary circuit	kV	6						
Product function, mirror contact according to IEC 60947-4-1			Yes					
Ambient temperature								
• During operation	°C	-25 ... +55						
• During storage	°C	-40 ... +80						
Degree of protection IP on the front according to IEC 60529			IP00					
Short-circuit protection								
Version of the fuse link required								
• For short-circuit protection of the main circuit for type of coordination 2		aR: 1 000 A (1 000 V, 30 kA)		aR: 1 100 A (1 000 V, 42 kA)	aR: 1 400 A (1 000 V, 42 kA)	aR: 2 200 A (1 000 V, 42 kA)	aR: 2 500 A (1 000 V, 42 kA)	aR: 2 800 A (1 000 V, 50 kA)
• For short-circuit protection of the auxiliary switch		gG: 16 A (600 V, 1 kA)						

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type		3RT1481- 6AF36	6AP36	3RT1482- 6AF36	6AP36	3RT1483- 6AP36	3RT1485- 6AP36	3RT1486- 6AP36	3RT1487- 6AP36
Control circuit/control									
Operating range factor of the control supply voltage, rated value of the solenoid coil									
• 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 power for DC	W	1 400	2 000	1 400	2 000	2 700	2 800		
Closing apparent power of the solenoid coil for AC									
• At 50 Hz		1 000				1 700	1 800		
• At 60 Hz		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		18	23	18	23	20	33		
• At 60 Hz		18	23	18	23	20	33		
Closing delay									
• AC		ms	80						
• DC		ms	80						
Opening delay									
• AC		ms	70						
• DC		ms	70						
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
No-load switching frequency									
• At AC		1/h	600			300			
• At DC		1/h	600			300			
Type of electrical connection for the main circuit		Busbar connections							
Minimum cross-section in the main circuit for max. AC-1 rated value	mm ²	600		800		1 000	1 500	2 000	3 000

Type		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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Selection and ordering data

Size S3: AC operation  **or AC/DC operation** 

- Coil circuits (varistors, diodes, etc.) retrofittable
- Auxiliary switches can be retrofitted
- Main and control conductors: Screw terminals



3RT244.-1...0

Size	Rated data	Auxiliary contacts	Rated control supply voltage U_s		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	AC-1, t_d : 40 °C 60 °C								
	Operational current I_e up to	Ident. No. Version	50 Hz AC	50 Hz AC or DC					
	690 V					Article No.	Price per PU		
A	690 V	NO NC	V	V	d				

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

AC operation

S3	140	130	11	1	1	24	--	5	3RT2446-1AB00	1	1 unit	41B
						110	--	5	3RT2446-1AF00	1	1 unit	41B
						230	--	2	3RT2446-1AP00	1	1 unit	41B
	160	140	11	1	1	24	--	5	3RT2448-1AB00	1	1 unit	41B
						110	--	10	3RT2448-1AF00	1	1 unit	41B
						230	--	5	3RT2448-1AP00	1	1 unit	41B

AC/DC operation

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

S3	140	130	11	1	1	--	20 ... 33	►	3RT2446-1NB30	1	1 unit	41B
						--	83 ... 155	5	3RT2446-1NF30	1	1 unit	41B
						--	175 ... 280	5	3RT2446-1NP30	1	1 unit	41B
	160	140	11	1	1	--	20 ... 33	5	3RT2448-1NB30	1	1 unit	41B
						--	83 ... 155	5	3RT2448-1NF30	1	1 unit	41B
						--	175 ... 280	5	3RT2448-1NP30	1	1 unit	41B

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

Accessories and spare parts, [see page 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Sizes S6 to S12: AC/DC operation

- 3RT14...-A standard operating mechanism
- Solid-state operating mechanism
 - 3RT14...-N with 24 V DC control signal input
 - 3RT14...-P with 24 V DC control signal input and remaining lifetime indicator (RLT)
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.



3RT1456-6A.36



3RT1466-6A.36



3RT1476-6A.36



3RT1476-6N.36



3RT1476-6P.35

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

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

With integrated coil circuit (varistor integrated at the factory)

S6	275	250	2	2	110 ... 127 220 ... 240	1 1	3RT1456-6AF36 3RT1456-6AP36	1 1	1 unit 1 unit	41B 41B
S10	400	380	2	2	110 ... 127 220 ... 240	5 1	3RT1466-6AF36 3RT1466-6AP36	1 1	1 unit 1 unit	41B 41B
	500	450	2	2	110 ... 127 220 ... 240	5 5	3RT1467-6AF36 3RT1467-6AP36	1 1	1 unit 1 unit	41B 41B
S12	690	650	2	2	110 ... 127 220 ... 240	▶ 1	3RT1476-6AF36 3RT1476-6AP36	1 1	1 unit 1 unit	41B 41B

Solid-state operating mechanism

With 24 V DC control signal input

e.g. for control by PLC

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

S6	275	250	2	2	96 ... 127 200 ... 277	5 5	3RT1456-6NF36 3RT1456-6NP36	1 1	1 unit 1 unit	41B 41B
S10	400	380	2	2	96 ... 127 200 ... 277	5 5	3RT1466-6NF36 3RT1466-6NP36	1 1	1 unit 1 unit	41B 41B
	500	450	2	2	96 ... 127 200 ... 277	5 5	3RT1467-6NF36 3RT1467-6NP36	1 1	1 unit 1 unit	41B 41B
S12	690	650	2	2	96 ... 127 200 ... 277	5 2	3RT1476-6NF36 3RT1476-6NP36	1 1	1 unit 1 unit	41B 41B

With 24 V DC control signal input · with remaining lifetime indicator (RLT)

e.g. for control by PLC

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

S6	275	250	1	1	96 ... 127 200 ... 277	20 20	3RT1456-6PF35 3RT1456-6PP35	1 1	1 unit 1 unit	41B 41B
S10	400	380	1	1	96 ... 127 200 ... 277	20 5	3RT1466-6PF35 3RT1466-6PP35	1 1	1 unit 1 unit	41B 41B
	500	450	1	1	96 ... 127 200 ... 277	5 5	3RT1467-6PF35 3RT1467-6PP35	1 1	1 unit 1 unit	41B 41B
S12	690	650	1	1	96 ... 127 200 ... 277	5 20	3RT1476-6PF35 3RT1476-6PP35	1 1	1 unit 1 unit	41B 41B

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

Accessories and spare parts, [see page 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Sizes S6 to S12: AC/DC operation

- Certified and fail-safe 24 V DC control input with max. 20 mA, e.g. for control via the fail-safe output module of a controller (F-PLC) or safety relay
- Achievable Safety Integrity Level (SIL) according to IEC 62061 and Performance Level (PL) according to ISO 13849-1 with corresponding fault diagnostics:
 - With one contactor: SIL 2 / PL c
 - With two contactors in series: SIL 3 / PL e
 - Fail-safe applications can be implemented using this contactor
- Version with removable lateral auxiliary switches or permanently mounted auxiliary switches
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.

For more information on safety systems, [see page 11/1 onwards](#).



3RT1456-6S.36



3RT1466-6S.36



3RT1476-6S.36



3RT1456-6S.36-3PA0



3RT1476-6S.36-3PA0

Size	Rated data according to IEC 60947-4-1 AC-1, t_u : 40 °C Operational current I_e up to	Auxiliary contacts, lateral Version	Rated control supply voltage U_s 50/60 Hz AC or DC	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	690 V A	NO NC V		d	Article No.	Price per PU		

Solid-state operating mechanism

With two removable laterally mounted auxiliary switches

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

S6	275	250	2	2	96 ... 127 200 ... 277	5 5	3RT1456-6SF36 3RT1456-6SP36	1 1	1 unit 1 unit	41B 41B
S10	400	380	2	2	96 ... 127 200 ... 277	20 5	3RT1466-6SF36 3RT1466-6SP36	1 1	1 unit 1 unit	41B 41B
	500	450	2	2	96 ... 127 200 ... 277	5 5	3RT1467-6SF36 3RT1467-6SP36	1 1	1 unit 1 unit	41B 41B
S12	690	650	2	2	96 ... 127 200 ... 277	5 5	3RT1476-6SF36 3RT1476-6SP36	1 1	1 unit 1 unit	41B 41B

With two permanently laterally mounted auxiliary switches

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

S6	275	250	2	2	96 ... 127 200 ... 277	20 5	3RT1456-6SF36-3PA0 3RT1456-6SP36-3PA0	1 1	1 unit 1 unit	41B 41B
S10	400	380	2	2	96 ... 127 200 ... 277	20 20	3RT1466-6SF36-3PA0 3RT1466-6SP36-3PA0	1 1	1 unit 1 unit	41B 41B
	500	450	2	2	96 ... 127 200 ... 277	5 5	3RT1467-6SF36-3PA0 3RT1467-6SP36-3PA0	1 1	1 unit 1 unit	41B 41B
S12	690	650	2	2	96 ... 127 200 ... 277	20 20	3RT1476-6SF36-3PA0 3RT1476-6SP36-3PA0	1 1	1 unit 1 unit	41B 41B

Accessories and spare parts, [see page 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC/DC operation

- Solid-state operating mechanism
- Version with two laterally mounted auxiliary switches (2 NO + 2 NC each)
- For screw fixing
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections



3RT1481-6A.36, 3RT1482-6A.36



3RT1483-6AP36



3RT1485-6AP36, 3RT1486-6AP36



3RT1487-6AP36

Rated data according to IEC 60947-4-1		Auxiliary contacts, lateral		Rated control supply voltage U_s		Busbar connections 	PU (UNIT, SET, M)	PS*	PG
AC-1, t_{ij} : 40 °C		Version		50/60 Hz AC	DC				
Operational current I_e up to		 				Article No.	Price per PU		
1 000 V									
A		NO	NC	V	V	d			

Solid-state operating mechanism

With integrated coil circuit

900	2	2	100 ... 127 200 ... 240	100 ... 110 200 ... 220	5 5	3RT1481-6AF36 3RT1481-6AP36	1 1	1 unit 1 unit	41B 41B
1 050	2	2	100 ... 127 200 ... 240	100 ... 110 200 ... 220	5 5	3RT1482-6AF36 3RT1482-6AP36	1 1	1 unit 1 unit	41B 41B
1 260	2	2	100 ... 240	100 ... 220	5	3RT1483-6AP36	1	1 unit	41B
1 700	2	2	100 ... 240	100 ... 220	5	3RT1485-6AP36	1	1 unit	41B
2 100	2	2	100 ... 240	100 ... 220	5	3RT1486-6AP36	1	1 unit	41B
2 650	2	2	100 ... 240	100 ... 220	5	3RT1487-6AP36	1	1 unit	41B

Accessories, [see next table](#); spare parts, [see page 4/20](#).

Accessories

Overviews graphics for 3RT148 contactors with mountable accessories, [see page 4/9](#).

More information

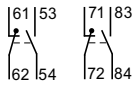
Manuals, [see https://support.industry.siemens.com/cs/ww/en/ps/24229/man](https://support.industry.siemens.com/cs/ww/en/ps/24229/man)

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

Second auxiliary switch (1 NO + 1 NC)



3RH1981-1JA11

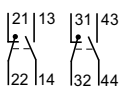
Lateral mounting on the right and/or the left				5	3RH1981-1JA11	1	1 unit	41B
3RT148.	1	1						

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		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Version	50/60 Hz AC		DC							
Type			Left	Right	V	V	d				
First auxiliary switch (1 NO + 1 NC)											
	Lateral mounting on the right and/or the left							Screw terminals			
	3RT148.	1	1		--	--	5	3RH1981-1DA11		1	1 unit 41B
3RH1981-1DA11											
Phase barriers											
(1 set = 4 units)											
	3RT1481	--	--	--	--	--	5	3RT1983-4AA1		1	1 unit 41B
	...										
	3RT1483										
	3RT1483										
	...										
	3RT1485	--	--	--	--	--	5	3RT1987-4AA1		1	1 unit 41B
	...										
	3RT1487										
	...										
	3RT1487										
	...										
	3RT1987-4AA1										
3RT1987-4AA1											
Withdrawable coils · AC/DC operation											
	3RT1481,	--	--	--	--	100 ... 127	100 ... 110	5	3RT1982-5AF31	1	1 unit 41B
	3RT1482	--	--	--	--	200 ... 240	200 ... 220	5	3RT1982-5AP31	1	1 unit 41B
	3RT1483	--	--	--	--	100 ... 240	100 ... 220	5	3RT1983-5AP31	1	1 unit 41B
3RT1982-5A.31, 3RT1983-5AP31											
	3RT1485	--	--	--	--	100 ... 240	100 ... 220	5	3RT1987-5AP31	1	1 unit 41B
	...										
	3RT1487										
3RT1987-5AP31											

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Overview



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

3RT.3 contactors, 4-pole

Standards

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

Surge suppression

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 opening surges in the coil, [see page 3/106 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 if the contactor coils are damped against voltage peaks. Different accessories are available for the contactors (time change with: Interference suppression diode 6x to 10x; diode assembly 2x to 6x; suppressor diode +1 to 5 ms; varistor +2 to 5 ms).

For details, [see Equipment Manual](#).

Accessories and spare parts

- 3RT231 to 3RT234 contactors, [see page 3/79 onwards](#)
- 3RT135 to 3RT137 contactors, [see page 4/36](#)

3RT23 contactors

Main circuit

Connection methods

- 3RT231 and 3RT232 contactors:
Screw 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.

Short-circuit protection

For short-circuit protection of 3RT23 contactors without overload relays, [see page 4/25](#).

Surge suppression

- 3RT231 contactor:
The surge suppressors are plugged onto the front of the contactors here. Space is provided for them next to a snap-on auxiliary switch.

- 3RT232 and 3RT233 contactors:
The surge suppressors (varistors, RC elements or diode combinations) can be plugged into the front of the contactors.
- 3RT234 contactors:
The varistors and diode assemblies are plugged into the front of the contactors. The RC element is plugged into the two recesses on the front of the contactor to the left of the terminal block for the auxiliary switches.

Control circuit

Connection methods

Screw or spring-loaded terminals

Operating mechanism types

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

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

Auxiliary circuit

Auxiliary contact complement

- 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).

All basic units can be expanded with auxiliary switches.

For detailed information about the fitting of auxiliary switches, [see pages 3/91 to 3/96](#).

3RT13 contactors

Main circuit

Connection methods

- 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 4/36](#).

Short-circuit protection

For short-circuit protection of 3RT13 contactors, [see page 4/28](#).

Control circuit

Connection methods

Screw terminals

Operating mechanism types

The contactors are fitted with a wide-range solid-state operating mechanism that can be controlled with both 50/60 Hz AC and DC.

The operating range of the DC control is $0.8 \times U_{s \min}$ and $1.1 \times U_{s \max}$, and for AC operation $0.85 \times U_{s \min}$ and $1.1 \times U_{s \max}$.

It is not possible to change the operating mechanism.

Auxiliary circuit

Auxiliary contact complement

The contactors have two auxiliary contacts with 2 NO + 2 NC.

One additional auxiliary switch with 1 NO + 1 NC can be mounted on each side.

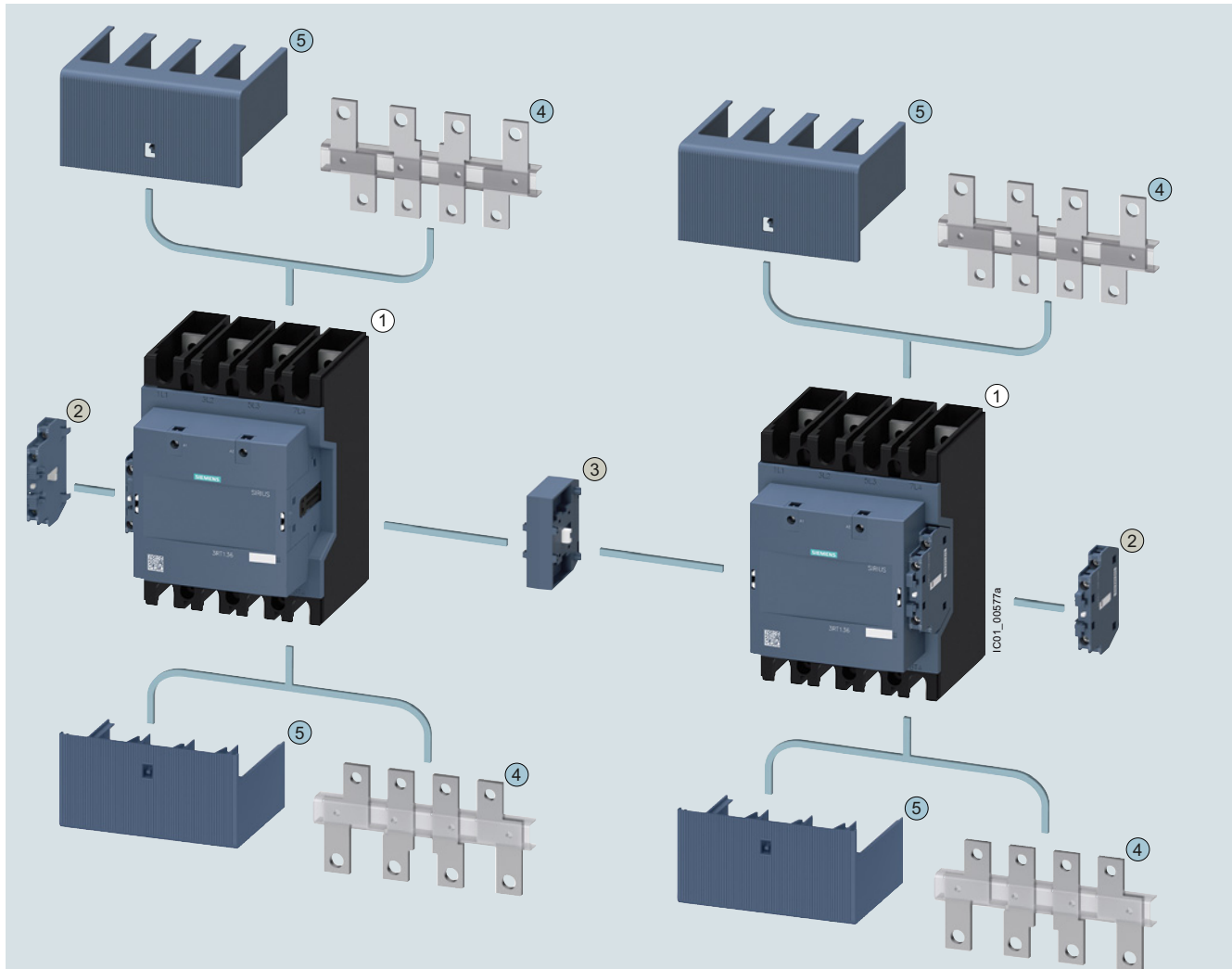
Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Overview graphics with mountable accessories

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



- ① 4-pole 3RT13 contactors, sizes S6 to S12 (scope of supply: The contactors are supplied with two laterally mounted auxiliary switch blocks)
- ② 3RH1951-1SA11 second auxiliary switch block, can be laterally mounted on the left or right
- ③ 3RA1954-3A mechanical interlock for configuring contactor assemblies:
Two 3RT13 contactors of the same size (S6, S10 and S12) can be interlocked with each other. The laterally mounted auxiliary switches of the contactors must be removed beforehand. The mechanical interlock cannot be used in conjunction with the bus connectors offset ④.

- ④ 3RT19.6-4D bus connectors offsets, can be mounted on the top or bottom (providing no terminal cover ⑤ is mounted)
- ⑤ 3RT19.6-4EB10 terminal covers, can be mounted on the top or bottom (providing no bus connectors offset ④ is mounted)

- Same accessories for sizes S6 to S12
- Different accessories depending on size

	Size	S6	S10	S12			
①	Contactor	3RT1355 ($I_e = 200$ A)	3RT1363 ($I_e = 275$ A)	3RT1364 ($I_e = 350$ A)	3RT1373 ($I_e = 400$ A)	3RT1374 ($I_e = 500$ A)	3RT1375 ($I_e = 525$ A)
②	Second auxiliary switch block	3RH1951-1SA11					
③	Mechanical interlock	3RA1954-3A					
④	Bus connectors offset	--	3RT1966-4D (from $I > 275$ A)		3RT1976-4D (from $I > 450$ A)		
⑤	Terminal cover	3RT1956-4EB10	3RT1966-4EB10		3RT1976-4EB10		

3RT135 to 3RT137 contactors with mountable accessories

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Application

The 3RT.3 contactors can be used for the following applications:

- 4-pole switching of weak or non-inductive loads (AC-1)
- Disconnecting loads or power generation plants from the grid
- For system transfers

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

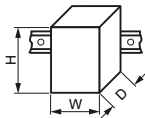
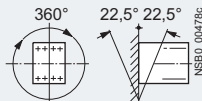
Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16165/td>

FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16165/faq>

Manuals, see <https://support.industry.siemens.com/cs/ww/en/ps/16165/man>

Type			3RT2316, 3RT2317	3RT2325 to 3RT2327	3RT2336, 3RT2337	3RT2344, 3RT2346, 3RT2348
Size			S00	S0	S2	S3
General data						
Dimensions (W x H x D)						
<u>AC or DC operation</u>						
• Basic units - Screw terminals - Spring-loaded terminals • Basic unit with mounted auxiliary switch - Screw terminals - Spring-loaded terminals • Basic unit with mounted function module or solid-state time-delayed auxiliary switch - Screw terminals - Spring-loaded terminals		mm	45 x 58 x 73	(The values in brackets apply for DC operation) 60 x 85 x 97 (107)	75 x 114 x 130	96 x 140 x 152
		mm	45 x 70 x 73	61 x 102 x 97 (107)	--	--
		mm	45 x 58 x 117	60 x 85 x 141 (151)	75 x 114 x 174	96 x 140 x 196
		mm	45 x 70 x 121	61 x 102 x 145 (155)	--	--
		mm	45 x 58 x 147	60 x 85 x 171 (181)	75 x 114 x 204	96 x 140 x 226
		mm	45 x 70 x 147	61 x 102 x 171 (181)	--	--
Permissible mounting position						
The contactors are designed for operation on a vertical mounting surface.						
Upright mounting position						
						
			Special version required			
Mechanical service life		Operating cycles	30 million	10 million		
Electrical endurance at I_e/AC-1		Operating cycles	Approx. 0.5 million			
Rated insulation voltage U_i (pollution degree 3)		V	690			
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Annex N		V	400			690
Permissible ambient temperature						
• During operation		°C	-25 ... +60			
• During storage		°C	-55 ... +80			
Degree of protection IP on the front according to IEC 60529			IP20 (screw terminals and spring-loaded terminals)			
Touch protection on the front acc. to IEC 60529			Finger-safe for vertical touching from the front (screw terminals and spring-loaded terminals)			

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3RT2316, 3RT2317	3RT2325, 3RT2326	3RT2326-1...0-4AA0	3RT2327
Size	S00	S0		
Short-circuit protection				
Main circuit				
- Version of the fuse link required for short-circuit protection of the main circuit - for type of coordination 1	gG: 35 A (690 V, 100 kA)	gG: 63 A (690 V, 100 kA)	gG: 100 A (690 V, 100 kA), aM: 50 A (690 V, 100 kA), BS88: 100 A (415 V, 80 kA)	gG: 63 A (690 V, 100 kA)
- for type of coordination 2	gG: 20 A (690 V, 100 kA)		gG: 35 A (690 V, 100 kA), aM: 20 A (690 V, 100 kA), BS88: 35 A (415 V, 80 kA)	gG: 20 A (690 V, 100 kA)
Auxiliary circuit				
Version of the fuse link required for short-circuit protection of the auxiliary switch	Fuse gG: 10 A (690 V, 1 kA)			
Miniature circuit breaker version required for short-circuit protection of the auxiliary switch	6 A (230 V, 400 A, C characteristic)			

Type	3RT2336, 3RT2337	3RT2344, 3RT2346	3RT2346-1...0-4AA0	3RT2348
Size	S2	S3		
Short-circuit protection				
Main circuit				
- Version of the fuse link required for short-circuit protection of the main circuit - for type of coordination 1	gG: 160 A (690 V, 100 kA)	gG: 250 A (690 V, 100 kA)	gG: 250 A (690 V, 100 kA), aM: 160 A (690 V, 100 kA), BS88: 200 A (415 V, 80 kA)	gG: 250 A (690 V, 100 kA)
- for type of coordination 2	gG: 63 A (690 V, 100 kA)	gR: 80 A (690 V, 100 kA)	gR: 250 A (690 V, 100 kA)	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)			
Miniature circuit breaker version required for short-circuit protection of the auxiliary switch	6 A (230 V, 400 A, C characteristic)			

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type		3RT2316	3RT2317	3RT2325	3RT2326, 3RT2327	3RT2336, 3RT2337	3RT2344, 3RT2346, 3RT2348
Size		S00		S0		S2	S3
Control							
Solenoid coil operating range							
• AC operation	At 50 Hz At 60 Hz	0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s		0.8 ... 1.1 x U_s			
• DC operation	At 50 °C At 60 °C	0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s				-- --	
• AC/DC operation		--				0.8 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)							
• AC operation, 50 Hz, standard version							
- Closing	VA	--		77		190	296
- P.f.		--		0.82		0.72	0.61
- Closed	VA	--		9.8		16	19
- P.f.		--		0.25		0.37	0.38
• AC operation, 50/60 Hz, standard version							
- Closing	VA	27/24.3	37/33	81/79		210/188	348/296
- P.f.		0.8/0.75		0.72/0.74		0.69/0.65	0.62/0.55
- Closed	VA	4.2/3.3	5.7/4.4	10.5/8.5		17.2/16.5	25/18
- P.f.		0.25/0.25		0.25/0.28		0.36/0.39	0.35/0.41
• AC operation, 60 Hz, USA, Canada							
- Closing	VA	31.7	43	87		188	326
- P.f.		0.77		0.76		0.67	0.55
- Closed	VA	4.8	6.5	9.4		16.5	22
- P.f.		0.25		0.28		0.37	0.4
• AC/DC operation							
- Closing for AC operation	VA	--				40	151
- P.f.		--				0.95	0.95
- Closed for AC operation	VA	--				2	3.5
- P.f.		--				0.95	0.95
- Closing for DC operation	W	--				23	76
- Closed for DC operation	W	--				1	2.7
• DC operation (closing = closed)	W	4		5.9		--	... ¹⁾
Operating times within operating range							
Total break time = Opening delay + Arcing time							
• AC operation							
- Closing delay	ms	9 ... 35		8 ... 40		10 ... 80	13 ... 50
- Opening delay	ms	4 ... 15		4 ... 16		10 ... 18	10 ... 21
• DC operation							
- Closing delay	ms	30 ... 100		50 ... 170		--	
- Opening delay	ms	7 ... 13		15 ... 18		--	
• AC/DC operation							
- Closing delay	ms	--				35 ... 110	50 ... 70
- Opening delay	ms	--				30 ... 55	38 ... 57
• Arcing time	ms	10 ... 15		10		10 ... 20	

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type			3RT2316	3RT2317	3RT2325	3RT2326	3RT2327	3RT2336	3RT2337	3RT2344	3RT2346	3RT2348
Size			S00		S0			S2		S3		
Rated data of the main contacts												
Load rating with AC												
Utilization category AC-1												
• Rated operational currents I_e	At 40 °C, up to 690 V	A	18	22	35	40	50	60	110	110	140 (110) ²⁾	160
	At 60 °C, up to 690 V	A	16	20	30	35	42	55	95	100	130 (100) ²⁾	140
• Rated power for AC loads P.f. = 0.95 (at 60 °C)	At 230 V	kW	6	7.5	11	13	16	21	36	38	49	53
	400 V	kW	10.5	13	20	23	28	36	63	72	92	105
• Minimum cross-section in the main circuit at maximum AC-1 rated value		mm ²	2.5	4	10			16	35		50 (35) ²⁾	70
Utilization categories AC-2 and AC-3												
• Rated operational currents I_e (at 60 °C)	At 400 V	A	9	12	15.5	15.5 (32) ¹⁾	15.5	38 (51) ¹⁾	38		-- (95) ¹⁾	--
	At 690 V	A	--	--	--	-- (21) ¹⁾	--	-- (24) ¹⁾	--		-- (58) ¹⁾	--
• Rated power for slip-ring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	2.2	3	4	4 (7.5) ¹⁾	4	-- (15) ¹⁾	--		-- (22) ¹⁾	--
	400 V	kW	4	5.5	7.5	7.5 (15) ¹⁾	7.5	-- (22) ¹⁾	--		-- (45) ¹⁾	--
	690 V	kW	--	--	--	-- (18.5) ¹⁾	--	-- (22) ¹⁾	--		-- (55) ¹⁾	--
Load rating with DC												
Utilization category DC-1 ($L/R \leq 1$ ms)												
• Rated operational currents I_e (at 60 °C)												
- 1 conducting path	Up to 24 V	A	16	20	30	35	42	55		70	80	
	60 V	A	16	20				23			60	
	110 V	A	2.1		4.5						9	
	220 V	A	0.8		1						2	
	440 V	A	0.6		0.4						0.6	
- 2 conducting paths in series	Up to 24 V	A	16	20	30	35	42	55		70	80	
	60 V	A	16	20	30	35	42	55		70	80	
	110 V	A	12		30	35	42	45		70	80	
	220 V	A	1.6		1			5			10	
	440 V	A	0.8		1						1.8	
- 3 conducting paths in series	Up to 24 V	A	16	20	30	35	42	55		70	80	
	60 V	A	16	20	30	35	42	55		70	80	
	110 V	A	16	20	30	35	42	55		70	80	
	220 V	A	16	20	30	35	42	45		70	80	
	440 V	A	1.3		2.9						4.5	
- 4 conducting paths in series	Up to 24 V	A	16	20	30	35	42	55	65	70	80	
	60 V	A	16	20	30	35	42	55	65	70	80	
	110 V	A	16	20	30	35	42	55		70	80	
	220 V	A	16	20	30	35	42	45	55	70	80	
	440 V	A	1.3		2.9			3.5	2.9	4.5		
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)												
• Rated operational currents I_e (at 60 °C)												
- 1 conducting path	Up to 24 V	A	16	20								
	60 V	A	0.5		5					6	6.5	
	110 V	A	0.15		2.5							
	220 V	A	--		1							
	440 V	A	--		0.09			0.1		0.15		
- 2 conducting paths in series	Up to 24 V	A	16	20	30	35	42	45		70	80	
	60 V	A	5		30	35	42	45		70	80	
	110 V	A	0.35		15			25		70	80	
	220 V	A	--		3			5		7		
	440 V	A	--		0.27					0.42		
- 3 conducting paths in series	Up to 24 V	A	16	20	30	35	42	45		70	80	
	60 V	A	16	20	30	35	42	45		70	80	
	110 V	A	16	20	30	35	42	45		70	80	
	220 V	A	1.5		10			25		35		
	440 V	A	0.2		0.6					0.8		
- 4 conducting paths in series	Up to 24 V	A	16	20	30	35	42	45		70	80	
	60 V	A	16	20	30	35	42	45		70	80	
	110 V	A	16	20	30	35	42	45		70	80	
	220 V	A	1.5		30	35	42	25		70	80	
	440 V	A	0.2		0.6					0.8		

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

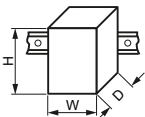
Data for North America

For technical specifications of 3RT contactors, [see page 3/55 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type			3RT1355-6A.36		3RT1363-6A.36		3RT1364-6A.36		3RT1373-6A.36, 3RT1374-6A.36, 3RT1375-6A.36			
Size			S6		S10				S12			
General data												
Dimensions												
• Width • Height • Depth		mm	120		140				184			
			150		196				225			
			128		153				180			
Mounting position			For vertical mounting surface can be rotated ± 180°, and with 0° rotation can be tilted forward or backward ± 30°, or standing									
Installation altitude at height above sea level, maximum			m	2 000								
Insulation voltage at pollution degree 3												
• Of the main circuit • Of the auxiliary circuit	V	1 000										
	V	690										
Impulse withstand voltage												
• Of the main circuit • Of the auxiliary circuit	kV	8										
	kV	6										
Product function, mirror contact according to IEC 60947-4-1			Yes									
Ambient temperature												
• During operation • During storage	°C	-40 ... +60										
	°C	-40 ... +70										
Degree of protection IP on the front according to IEC 60529			IP00 (IP20 with cover)									
Touch protection on the front acc. to IEC 60529			Finger-safe for vertical touching from the front with cover									
Short-circuit protection												
Version of the fuse link required												
• For short-circuit protection of the main circuit for type of coordination 2 • For short-circuit protection of the auxiliary switch			gG: 250 A (500 V, 100 kA) gG: 10 A (690 V, 1 kA)		gG: 355 A (500 V, 100 kA)		gG: 400 A (500 V, 100 kA)		gG: 630 A (500 V, 100 kA)			

Type	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 • At AC at 60 Hz • At DC	0.85 ... 1.1												
	0.85 ... 1.1												
	0.8 ... 1.1												
Solenoid coil closing for DC	W	210	130	135	205		130	190		205	130	190	
Closing apparent power of the solenoid coil for AC													
• At 50 Hz • At 60 Hz	VA	225	170	130	205	165	175	220	185	165	175	220	185
	VA	225	170	130	205	165	175	220	185	165	175	220	185
Solenoid coil closed for DC	W	2.5		3	4	2.5		4	2.5			4	
Closed apparent power of the solenoid coil for AC													
• At 50 Hz • At 60 Hz	VA	5.5	4	6	16	6	4	7	16	6	4	7	16
	VA	5.5	4	6	16	6	4	7	16	6	4	7	16
Closing delay													
• At AC • At DC	ms	20 ... 55				25 ... 60							
	ms	20 ... 55				25 ... 60							
Opening delay													
• At AC • At DC	ms	40 ... 70				45 ... 80							
	ms	40 ... 70				45 ... 80							
Main circuit													
Operational current at AC-1													
• Up to 690 V													
	- At an ambient temperature of 40 °C	A	200				275				350		
- At an ambient temperature of 60 °C	A	175				250				300			
• Up to 1 000 V													
	- At an ambient temperature of 40 °C	A	--				250				275		
- At an ambient temperature of 60 °C	A	--				225				250			
No-load switching frequency													
• At AC • At DC													
	1/h	300											
	1/h	300											

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type		3RT1373- 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
Closing delay														
• At AC		ms	30 ... 60											
• At DC		ms	30 ... 60											
Opening delay														
• At AC		ms	45 ... 80											
• At DC		ms	45 ... 80											
Main circuit														
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			
No-load switching frequency														
• At AC		1/h	300											
• At DC		1/h	300											

Type		3RT1355- 6A.36		3RT1363- 6A.36		3RT1364- 6A.36		3RT1373- 6A.36		3RT1374- 6A.36		3RT1375- 6A.36	
Size		S8		S10				S12					
Conductor cross-sections													
Type of electrical connection for the main circuit		Connecting bar				Connecting bar, bus connectors offset > 275 A required		Connecting bar		Connecting bar, bus connectors offset > 450 A required			
Minimum cross-section in the main circuit at maximum AC-1 rated value	mm ²	95		150		240				300		370	

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Selection and ordering data

AC operation

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



Rated data AC-1, t_b : 40 / 60 °C Operational current I_e up to	Auxiliary contacts		Rated control supply voltage U_s		SD	Screw terminals 		SD	Spring-loaded terminals 	
690 V A	Ident. No.	Version	50/60 Hz AC	50 Hz AC		Article No.	Price per PU		Article No.	Price per PU
		 	V	V	d					

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

Size S00

18 / 16	--	--	--	24	--	2	3RT2316-1AB00	5	3RT2316-2AB00
				110	--	5	3RT2316-1AF00	5	3RT2316-2AF00
				230	--	2	3RT2316-1AP00	5	3RT2316-2AP00
22 / 20	--	--	--	24	--	2	3RT2317-1AB00	5	3RT2317-2AB00
				110	--	5	3RT2317-1AF00	5	3RT2317-2AF00
				230	--	2	3RT2317-1AP00	5	3RT2317-2AP00

Size S0

35 / 30 ¹⁾	11	1	1	--	24	5	3RT2325-1AB00	5	3RT2325-2AB00
				--	110	5	3RT2325-1AF00	X	3RT2325-2AF00
				--	230	5	3RT2325-1AP00	2	3RT2325-2AP00
40 / 35 ¹⁾	11	1	1	--	24	5	3RT2326-1AB00	5	3RT2326-2AB00
				--	110	5	3RT2326-1AF00	X	3RT2326-2AF00
				--	230	2	3RT2326-1AP00	2	3RT2326-2AP00
50 / 42 ¹⁾	11	1	1	--	24	5	3RT2327-1AB00	5	3RT2327-2AB00
				--	110	5	3RT2327-1AF00	5	3RT2327-2AF00
				--	230	2	3RT2327-1AP00	2	3RT2327-2AP00

Size S2

60 / 55	11	1	1	--	24	5	3RT2336-1AB00	--	
				--	110	5	3RT2336-1AF00	--	
				--	230	1	3RT2336-1AP00	--	
110 / 95	11	1	1	--	24	5	3RT2337-1AB00	--	
				--	110	5	3RT2337-1AF00	--	
				--	230	1	3RT2337-1AP00	--	

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

Size S3

110 / 100	11	1	1	--	24	5	3RT2344-1AB00	--	
				--	110	5	3RT2344-1AF00	--	
				--	230	2	3RT2344-1AP00	--	
140 / 130	11	1	1	--	24	5	3RT2346-1AB00	--	
				--	110	5	3RT2346-1AF00	--	
				--	230	2	3RT2346-1AP00	--	
160 / 140	11	1	1	--	24	5	3RT2348-1AB00	--	
				--	110	5	3RT2348-1AF00	--	
				--	230	5	3RT2348-1AP00	--	

¹⁾ Required conductor cross-section 10 mm².

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/79 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC operation

Version for AC-3 motor loads

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



3RT2326-1AP00-4AA0



3RT2336-1AP00-4AA0



3RT2346-1AP00-4AA0

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

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

Size S0

32	40 / 35	11	1	1	230	5	3RT2326-1AP00-4AA0	--
----	---------	----	---	---	-----	---	--------------------	----

Size S2

50	60 / 55	11	1	1	230	5	3RT2336-1AP00-4AA0	--
----	---------	----	---	---	-----	---	--------------------	----

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

Size S3

95	110 / 100	11	1	1	230	5	3RT2346-1AP00-4AA0	--
----	-----------	----	---	---	-----	---	--------------------	----

Other voltages [according to page 4/52](#) on request.Accessories and spare parts, [see page 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

DC operation

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



3RT231.-1B.40



3RT231.-2B.40



3RT232.-1B.40



3RT232.-2B.40

Rated data AC-1,
 t_{th} : 40 / 60 °C

Operational current I_{e}
 up to

690 V

A

Auxiliary contacts

Ident. No.

Version

Rated control
 supply voltage U_{s}
 DC

SD

NO

NC

V

d

Screw terminals 

Article No.

Price
 per PU

SD

d

Spring-loaded terminals 

Article No.

Price
 per PU

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

Size S00

18 / 16

--

--

--

24
 220

2
 5

3RT2316-1BB40
3RT2316-1BM40

▶
 5

3RT2316-2BB40
3RT2316-2BM40

22 / 20

--

--

--

24
 220

▶
 5

3RT2317-1BB40
3RT2317-1BM40

▶
 5

3RT2317-2BB40
3RT2317-2BM40

Size S0

35 / 30¹⁾

11

1

1

24
 220

2
 5

3RT2325-1BB40
3RT2325-1BM40

2
 5

3RT2325-2BB40
3RT2325-2BM40

40 / 35¹⁾

11

1

1

24
 220

2
 5

3RT2326-1BB40
3RT2326-1BM40

2
 X

3RT2326-2BB40
3RT2326-2BM40

50 / 42¹⁾

11

1

1

24
 220

2
 5

3RT2327-1BB40
3RT2327-1BM40

2
 X

3RT2327-2BB40
3RT2327-2BM40

¹⁾ Required conductor cross-section 10 mm².

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

Accessories and spare parts, [see page 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC/DC operation

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



3RT233.-1N.30



3RT234.-1N.30

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

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

Size S2

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

60 / 55	11	1	1	20 ... 33 175 ... 280	2 5	3RT2336-1NB30 3RT2336-1NP30	-- --
110 / 95	11	1	1	20 ... 33 175 ... 280	5	3RT2337-1NB30 3RT2337-1NP30	-- --

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

Size S3

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

110 / 100	11	1	1	20 ... 33 175 ... 280	X 5	3RT2344-1NB30 3RT2344-1NP30	-- --
140 / 130	11	1	1	20 ... 33 175 ... 280	2 5	3RT2346-1NB30 3RT2346-1NP30	-- --
160 / 140	11	1	1	20 ... 33 175 ... 280	5 5	3RT2348-1NB30 3RT2348-1NP30	-- --

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

Accessories and spare parts, [see page 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC/DC operation

Version for AC-3 motor loads

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



3RT2336-1NB30-4AA0



3RT2346-1NB30-4AA0

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

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

Size S2

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

50 60 / 55 11 1 1 20 ... 33 2

3RT2336-1NB30-4AA0

--

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

Size S3

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

95 110 / 100 11 1 1 20 ... 33 5

3RT2346-1NB30-4AA0

--

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

Accessories and spare parts, [see page 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Sizes S6 to S12: AC/DC operation

- Solid-state operating mechanism
- Version with two laterally mounted auxiliary switches (2 NO + 2 NC each)
- For screw fixing
- Auxiliary and control circuits: Screw terminals
- Main conductors: Busbar connections; a connection kit is enclosed.



3RT1355-6A.36



3RT1363-6A.36



3RT1373-6A.36

Size	Rated data AC-1, t_{ij} : 40 °C	Auxiliary contacts, lateral	Operating range $0.85 \dots 1.1 \times U_s$	$0.8 \dots 1.1 \times U_s$	SD	Busbar connections 	PU (UNIT, SET, M)	PS*	PG
	Operational current I_e at 690 V	Version	Rated control supply voltage U_s			Article No.	Price per PU		
A		NO NC	V V		d				

Solid-state operating mechanism

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

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

Depending on the operational current, bus connectors offset must be used for sizes S10 and S12, [see page 4/36](#):

- 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 4/36 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

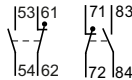
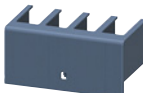
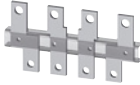
SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

Accessories

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

More information

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

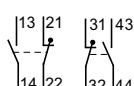
	For contactors	Auxiliary contacts Version				SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	Type	NO	NC	Left	Right	d					
Second auxiliary switch (1 NO + 1 NC)											
	Lateral mounting on the right and/or the left, 2-pole						Screw terminals 				
	3RT135	1	1			20		3RH1951-1SA11	1	1 unit	41B
	... 3RT137										
3RH1951-1SA11											
Terminal covers											
	Two units required per contactor (1 set = 2 units) Either bus connectors offset or terminal covers can be used.										
	3RT135	--	--	--	--	20	3RT1956-4EB10	1	1 unit	41B	
	3RT136	--	--	--	--	20	3RT1966-4EB10	1	1 unit	41B	
	3RT137	--	--	--	--	20	3RT1976-4EB10	1	1 unit	41B	
3RT1966-4EB10											
											
3RT1976-4EB10											
Bus connectors offset											
	(Two units required per contactor) Either terminal covers or bus connectors offset can be used.										
	3RT136	--	--	--	--	20	3RT1966-4D	1	1 unit	41B	
	3RT137	--	--	--	--	20	3RT1976-4D	1	1 unit	41B	
											
3RT1976-4D											
Mechanical interlocks for contactor assemblies											
	Enables two 3RT13 contactors of the same size (S6, S10 and S12) to be interlocked with each other. The laterally mounted auxiliary switches of the contactor must be removed beforehand. The mechanical interlock cannot be used in conjunction with the bus connectors offset.										
	3RT135 ...	--	--	--	--	20	3RA1954-3A	1	1 unit	41B	
	3RT137	--	--	--	--	20					

Spare parts

For contactors		Auxiliary contacts Version		SD		Screw terminals		PU (UNIT, SET, M)		PS*		PG	
Type	NO	NC	Left	Right	d	Article No.	Price per PU						
First auxiliary switch (1 NO + 1 NC)													
Lateral mounting on the right and/or the left, 2-pole													
3RT135	1	1			20	3RH1951-1TA11		1	1 unit	41B			
...													
3RT137													



3RH1951-1TA11



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)

The contactors are suitable for use in any climate. They are finger-safe according to IEC 60529.

Surge suppression

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 opening surges in the coil, [see page 3/106 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 if the contactor coils are damped against voltage peaks. Different accessories are available for the contactors (time change with: Interference suppression diode 6x to 10x; diode assembly 2x to 6x; suppressor diode +1 to 5 ms; varistor +2 to 5 ms).

For details, [see Equipment Manual](#).

Auxiliary contacts

Size S0 to S3 contactors have two auxiliary contacts 1 NO + 1 NC integrated in the basic version.

With sizes S00 to S3, four additional auxiliary contacts can be fitted, including no more than two NC contacts.

For a general description of sizes S00 to S3 of 3RT2 contactors, [see page 3/18 onwards](#).

Accessories

The accessories for the 3-pole SIRIUS 3RT2 contactors can also be used for the 4-pole versions, [see page 3/79 onwards](#).

Use of 3RT contactors with IE3/IE4 motors

Note:

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

For more information, [see page 1/8](#).

Application

The contactors are suitable:

- For changing the polarity of hoisting gear motors
- For switching two separate loads

Note:

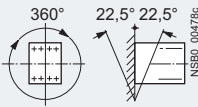
Single device for pole reversal; not suitable for reversing duty. 3RT25 contactors are not suitable for switching a load between two current sources.

Technical specifications

More information

Technical specifications, [see https://support.industry.siemens.com/cs/ww/en/ps/16169/td](https://support.industry.siemens.com/cs/ww/en/ps/16169/td)
FAQs, [see https://support.industry.siemens.com/cs/ww/en/ps/16169/faq](https://support.industry.siemens.com/cs/ww/en/ps/16169/faq)

Manuals, [see https://support.industry.siemens.com/cs/ww/en/ps/16169/man](https://support.industry.siemens.com/cs/ww/en/ps/16169/man)

Type	3RT2516 to 3RT2518	3RT2526	3RT2535	3RT2536	3RT2544, 3RT2545
Size	S00	S0	S2		S3
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					
Upright mounting position	 Special version required				
Mechanical service life	Operating cycles	30 million	10 million		
Electrical endurance at $I_e/AC-1$	Operating cycles	Approx. 0.5 million			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Annex N	V	400			690
Permissible ambient temperature					
• During operation	°C	-25 ... +60			
• During storage	°C	-55 ... +80			
Degree of protection IP on the front according to IEC 60529		IP20 (screw terminals and spring-loaded terminals)			
Touch protection on the front acc. to IEC 60529		Finger-safe for vertical touching from the front (screw terminals and spring-loaded terminals)			

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3RT2516 to 3RT2518	3RT2526	3RT2535	3RT2536	3RT2544, 3RT2545
Size	S00	S0	S2	S3	S3
Short-circuit protection					
Main circuit					
- Version of the fuse link required for short-circuit protection of the main circuit - for type of coordination 1 - for type of coordination 2	gG: 35 A (690 V, 100 kA) gG: 20 A (690 V, 100 kA)	gG: 63 A (690 V, 100 kA) gG: 35 A (690 V, 50 kA)	gG: 125 A (690 V, 100 kA) gG: 63 A (690 V, 100 kA)	gG: 160 A (690 V, 100 kA) gG: 80 A (690 V, 100 kA)	gG: 250 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 - Miniature circuit breaker version required for short-circuit protection of the auxiliary switch	Fuse gG: 10 A (690 V, 1 kA) 6 A (230 V, 400 A, C characteristic)				

Type	3RT2516-1A	3RT2517-1A, 3RT2518-1A	3RT2516-1B, 3RT2517-1B, 3RT2518-1B	3RT2526-1A	3RT2526-1B	3RT253-1A	3RT253-1N	3RT254-1A	3RT254-1N
Size	S00			S0		S2		S3	
Control									
Type of operating mechanism	AC		DC	AC	DC	AC	AC/DC	AC	AC/DC
Solenoid coil operating range									
- AC operation - DC operation - AC/DC operation	At 50 Hz At 60 Hz Up to 50 °C Up to 60 °C	0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s -- -- --	-- -- 0.8 ... 1.1 x U_s 0.85 ... 1.1 x U_s --	0.8 ... 1.1 x U_s 0.8 ... 1.1 x U_s -- -- --	-- -- 0.8 ... 1.1 x U_s 0.8 ... 1.1 x U_s --	0.8 ... 1.1 x U_s 0.8 ... 1.1 x U_s -- -- 0.8 x $U_{s \min}$... 1.1 x $U_{s \max}$	-- -- 0.8 ... 1.1 x U_s -- -- --	0.8 ... 1.1 x U_s 0.8 ... 1.1 x U_s -- -- 0.8 x $U_{s \min}$... 1.1 x $U_{s \max}$	-- -- -- -- -- -- --
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)									
- AC operation, 50/60 Hz, standard version - DC operation	VA W W	27/24.3 0.8/0.75 4.2/3.3 0.25/0.25 -- --	37/33 -- 5.7/4.4 -- 4 4	81/79 0.72/0.74 10.5/8.5 0.25/0.28 -- --	-- -- -- -- 5.9 5.9	210/188 0.69/0.65 17.2/16.5 0.36/0.39 23 1	110 0.95 2.5 0.95 70 1.5	348/296 0.62/0.55 25/18 0.35/0.41 -- --	-- -- -- -- 76 1.8
Operating times within operating range									
Total break time = Opening delay + Arcing time									
- AC operation - DC operation	ms ms ms ms ms	9 ... 35 4 ... 15 30 ... 100 38 ... 65 10 ... 15	-- -- 7 ... 13 -- 10	8 ... 40 4 ... 16 -- -- 10	-- -- 50 ... 170 15 ... 18 --	10 ... 80 10 ... 18 -- -- 10 ... 20	30 ... 110 30 ... 55 30 ... 110 30 ... 55 --	13 ... 50 10 ... 21 -- -- --	50 ... 70 38 ... 57 50 ... 70 38 ... 57 --

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type			3RT2516	3RT2517	3RT2518	3RT2526	3RT2535	3RT2536	3RT2544	3RT2545
Size			S00			S0	S2		S3	
Rated data of the main contacts										
Load rating with AC										
Utilization category AC-1										
• Rated operational currents I_e	At 40 °C up to 690 V	A	18	22		40	60	70	100	125
	At 60 °C up to 690 V	A	16	20		35	55	60	90	105
• Rated power for AC loads	At 230 V	kW	6	7.5		13.3	21	23	34	59
	P.f. = 0.95 (at 60 °C)	400 V	10.5	13		23	36	39	40	69
• Minimum cross-section in the main circuit at maximum AC-1 rated value		mm ²	2.5	4		10	16	25	35	50
Utilization categories AC-2 and AC-3										
• Rated operational currents I_e (at 60 °C)	NO up to 400 V	A	9	12	16	AC ¹⁾ 25	DC ¹⁾ 35	41	65	80
	NC up to 400 V	A	9			25	20	35	41	65
• Rated power for slip-ring or squirrel-cage motors at 50 and 60 Hz	NO at 230 V	kW	2.2	3	4	5.5	11		18.5	22
	NC at 230 V	kW	2.2			5.5	11		18.5	22
	NO at 400 V	kW	4	5.5	7.5	11	18.5	22	30	37
	NC at 400 V	kW	4			11	7.5	18.5	22	30
Load rating with DC										
Utilization category DC-1, ($L/R \leq 1$ ms)										
• Rated operational currents I_e (at 60 °C)										
	- 1 conducting path									
	Up to 24 V	A	16	20		35	55	60	100	
	60 V	A	16	20		20	23		60	
	110 V	A	2.1			4.5			9	
	220 V	A	0.8			1			2	
	440 V	A	0.6			0.4			0.6	
	- 2 conducting paths in series									
	Up to 24 V	A	16	20		35	55		100	
	60 V	A	16	20		35	45		100	
	110 V	A	12			35	45		100	
	220 V	A	1.6			5			10	
	440 V	A	0.8			1			1.8	
Utilization category DC-3/DC-5²⁾, shunt-wound and series-wound motors ($L/R \leq 15$ ms)										
• Rated operational currents I_e (at 60 °C)										
	- 1 conducting path									
	Up to 24 V	A	16	20			35		40	
	60 V	A	0.5			5	6			
	110 V	A	0.15			2.5				
	220 V	A	0.75			1				
	440 V	A	--			0.09	0.1		0.15	
	- 2 conducting paths in series									
	Up to 24 V	A	16	20		35	55		100	
	60 V	A	5			35	45		100	
	110 V	A	0.35			15	25		100	
	220 V	A	--			3	5		7	
	440 V	A	--			0.27			0.42	
Switching frequency										
Switching frequency z in operating cycles/hour										
Contactors without overload relays										
• No-load switching frequency	AC	1/h	--			5 000	--	5 000		
	DC	1/h	--			--	1 500	--		
	AC/DC	1/h	10 000			1 500		500		1 000
• Switching frequency z during rated operation (Dependence of the switching frequency z' on operational current I' and operational voltage U' : $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5}$ 1/h)	$I_e/AC-1$ at 400 V	1/h	1 000					1 200 (350) ³⁾	1 000 (350) ³⁾	900

¹⁾ Values for devices with AC and DC operation: For 3RT2526 with DC operation, different values apply to AC-2 and AC-3 for the NC.

²⁾ For $U_e > 24$ V, the rated operational currents I_e for the NC contact conducting paths are equal to 50% of the values for the NO contact conducting paths.

³⁾ The values in brackets apply for 3RT253.-N.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Selection and ordering data

AC operation

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

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



3RT251.-1A.00

3RT251.-2A.00

3RT252.-1A.00

3RT252.-2A.00

3RT253.-1A.00

3RT254.-1A.00

Rated data		Auxiliary contacts		Rated control supply voltage U_s		SD	Screw terminals 		SD	Spring-loaded terminals 	
AC-2/AC-3, t_{ij} : up to 60 °C		AC-1, t_{ij} : 40 / 60 °C		Ident. No.	Version	50/60 Hz AC	50 Hz AC				
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						Article No.	Price per PU	Article No.	Price per PU
A	kW	A			NO NC V	V	d				

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

Size S00

9	4	18 / 16	--	--	--	24	--	5	3RT2516-1AB00	5	3RT2516-2AB00
						110	--	5	3RT2516-1AF00	5	3RT2516-2AF00
						230	--	2	3RT2516-1AP00	5	3RT2516-2AP00
12/9 ¹⁾	5.5/4 ¹⁾	22 / 20	--	--	--	24	--	5	3RT2517-1AB00	5	3RT2517-2AB00
						110	--	5	3RT2517-1AF00	5	3RT2517-2AF00
						230	--	▶ 5	3RT2517-1AP00	5	3RT2517-2AP00
16/9 ¹⁾	7.5/4 ¹⁾	22 / 20	--	--	--	24	--	5	3RT2518-1AB00	5	3RT2518-2AB00
						110	--	5	3RT2518-1AF00	5	3RT2518-2AF00
						230	--	5	3RT2518-1AP00	5	3RT2518-2AP00

Size S0

25	11	40 / 35	11	1	1	--	24	5	3RT2526-1AB00	5	3RT2526-2AB00
						--	110	5	3RT2526-1AF00	5	3RT2526-2AF00
						--	230	2	3RT2526-1AP00	2	3RT2526-2AP00

Size S2

35	18.5	60 / 55	11	1	1	--	24	2	3RT2535-1AB00		--
						--	110	2	3RT2535-1AF00		--
						--	230	2	3RT2535-1AP00		--
41	22	70 / 60	11	1	1	--	24	5	3RT2536-1AB00		--
						--	110	5	3RT2536-1AF00		--
						--	230	2	3RT2536-1AP00		--

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

Size S3

65	30	100 / 90	11	1	1	--	24	5	3RT2544-1AB00		--
						--	110	5	3RT2544-1AF00		--
						--	230	5	3RT2544-1AP00		--
80	37	125 / 105	11	1	1	--	24	5	3RT2545-1AB00		--
						--	110	5	3RT2545-1AF00		--
						--	230	5	3RT2545-1AP00		--

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

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/79 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC/DC operation

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

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



3RT253.-1N.30



3RT254.-1N.30

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

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

Size S2

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

35	18.5	60 / 55	11	1	1	20 ... 33	2	3RT2535-1NB30	--
						83 ... 155	5	3RT2535-1NF30	--
						175 ... 280	5	3RT2535-1NP30	--
41	22	70 / 60	11	1	1	20 ... 33	2	3RT2536-1NB30	--
						83 ... 155	5	3RT2536-1NF30	--
						175 ... 280	5	3RT2536-1NP30	--

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

Size S3

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

65	30	100 / 90	11	1	1	20 ... 33	5	3RT2544-1NB30	--
						175 ... 280	5	3RT2544-1NP30	--
80	37	125 / 105	11	1	1	20 ... 33	5	3RT2545-1NB30	--
						175 ... 280	5	3RT2545-1NP30	--

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

Accessories and spare parts, [see page 3/79 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.

Surge suppression

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 opening surges in the coil, [see page 3/106 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 if the contactor coils are damped against voltage peaks. Different accessories are available for the contactors (time change with: Interference suppression diode 6x to 10x; diode assembly 2x to 6x; suppressor diode +1 to 5 ms; varistor +2 to 5 ms).

For details, [see Equipment Manual](#).

Auxiliary contacts

All 3RT26 contactors for capacitive loads are equipped with auxiliary contacts at the factory.

The 3RT261 and 3RT262 contactors are equipped with a front-mounted auxiliary switch with integrated leading auxiliary contacts for the precharging resistors. A further fourth auxiliary contact in the auxiliary switch is unassigned.

A further freely assignable auxiliary contact is integrated in the basic unit of 3RT261; two of these are integrated in 3RT262.

In the case of the 3RT263 and 3RT264 contactors, the precharging resistors and their leading auxiliary contacts are integrated in the basic unit. These devices are supplied with an auxiliary switch mounted on the left, the auxiliary contacts of which are freely assignable.

Expansion is possible by means of an auxiliary switch with two auxiliary contacts on the right-hand side of the device.

Type	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 3/119](#). 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.

Technical specifications

More information

Technical specifications, [see https://support.industry.siemens.com/cs/ww/en/ps/16171/td](https://support.industry.siemens.com/cs/ww/en/ps/16171/td)

Manuals, [see https://support.industry.siemens.com/cs/ww/en/ps/16171/man](https://support.industry.siemens.com/cs/ww/en/ps/16171/man)

Type

3RT26

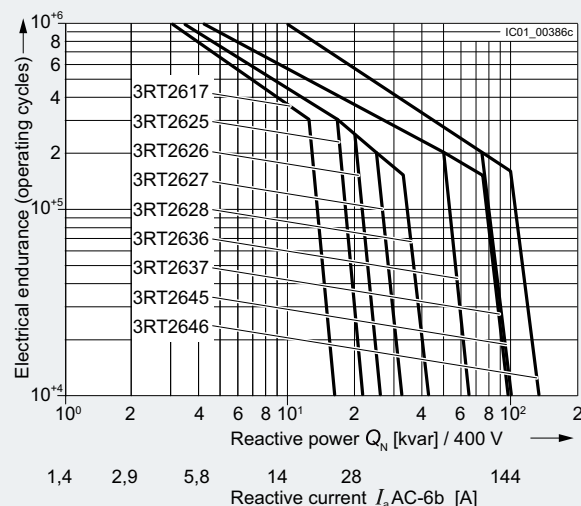
Size

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_e 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

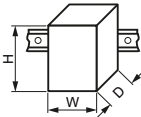
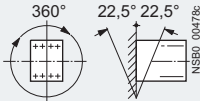
Contactors for special applications

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 service life Basic units with mounted auxiliary switch		Operat- ing cycles	3 million							
Electrical endurance For apparent power at 400 V		kvar Operat- ing cycles	12.5 300 000	16.7 200 000	20	25	33 150 000	50 200 000	75 150 000	100 200 000
Rated insulation voltage U_i (pollution degree 3)		V	690						1 000 ²⁾	
Rated impulse withstand voltage U_{imp}		kV	6						8 ²⁾	
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Annex N		V	400						690	
Permissible ambient temperature										
• During operation ¹⁾	°C	-25 ... +60								
• During storage	°C	-55 ... +80								
Degree of protection IP on the front according to IEC 60529			IP20							
Touch protection on the front acc. to IEC 60529			Finger-safe for vertical touching from the front							
Shock resistance										
• Rectangular pulse	g/ms	6.7/5 and 4.2/10	7.5/5 and 4.7/10	8.3/5 and 5.3/10			6.8/5 and 4/10		10.3/5 and 6.7/10	
• Sine pulse	g/ms	10.5/5 and 6.6/10	11.8/5 and 7.4/10	13.5/5 and 8.3/10			10.6/5 and 6.2/10		16.3/5 and 10.5/10	
Short-circuit protection										
Main circuit Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE 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 acc. to IEC 60947-5-1	A	10								
• With miniature circuit breakers with C characteristic with short-circuit current I_k = 400 A	A	10								

¹⁾ A clearance of 10 mm is required for side-by-side mounting.

²⁾ Only applies for main 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 x U_s	0.8 ... 1.1 x U_s		
	60 Hz	0.85 ... 1.1 x U_s			
• DC operation	At 50 °C	0.8 ... 1.1 x U_s		--	
	At 60 °C	0.85 ... 1.1 x U_s	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	49	81/79	210/188	348/296
- P.f.		0.8	0.72/0.74	0.69/0.65	0.62/0.55
- Closed	VA	7.8	10.5/8.5	17.2/16.5	25/18
- P.f.		0.25	0.25/0.28	0.36/0.39	0.35/0.41
• DC operation					
- Closing	W	4	5.9	--	
- Closed	W	4	5.9	--	
Operating times within operating range					
Total break time = Opening delay + Arcing time					
• AC operation					
- Closing delay	ms	9 ... 35	8 ... 40	10 ... 80	13 ... 50
- Opening delay	ms	4 ... 15	4 ... 16	10 ... 18	10 ... 21
• DC operation					
- Closing delay	ms	30 ... 100	50 ... 170		
- Opening delay	ms	7 ... 13	15 ... 18		
• Arcing time	ms	10 ... 15	10	10 ... 20	

Type		3RT262.-1NB35	3RT262.-1NF35	3RT262.-1NP35	3RT263.-1N.35	3RT264.-1N.35
Size		S0			S2	S3
Control						
Solenoid coil operating range						
• AC/DC operation (50/60 Hz AC or DC)		0.7 ... 1.3 x U_s			0.8 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
• AC operation, 50/60 Hz, standard version						
- Closing	VA	6.6/6.7	11.9/12.0	12.7/14.7	110	163
- P.f.		0.98/0.98			0.95	--
- Closed	VA	1.9/2.0	1.6/1.8	3.9/4.3	2.5	3.1
- P.f.		0.86/0.82	0.79/0.74	0.51/0.56	0.95	--
• DC operation						
- Closing	W	5.9	10.2	14.3	70	76
- Closed	W	1.4	1.3	1.9	1.5	1.8
Maximum permissible residual current of the electronics (with 0 signal)						
• AC operation (230 V/ U_s)	mA	7			< 20	
• DC operation (24 V/ U_s)	mA	16			< 20	
Operating times within operating range						
Total break time = Opening delay + Arcing time						
• AC/DC operation						
- Closing delay	ms	50 ... 80			30 ... 110	50 ... 70
- Opening delay	ms	30 ... 50			30 ... 55	38 ... 57
• Arcing time	ms	10			10 ... 20	

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3RT2617	3RT2625	3RT2626	3RT2627	3RT2628	3RT2636	3RT2637	3RT2645	3RT2646
Size	S00	S0				S2		S3	
Auxiliary circuit									
Auxiliary contacts (unassigned)	1 NO + 1 NC, 2 NC	1 NO + 2 NC				1 NO + 1 NC, 2 NC			
Further auxiliary switches, laterally mountable	--					No more than one lateral auxiliary switch can be mounted.			
Technical specifications including CSA and UL rated data of the auxiliary contacts, see "3RT20 contactors", page 3/25 onwards.									
Rated data of the main contacts									
Load rating with AC									
Utilization category AC-6b									
Switching of AC capacitors									
- Rated operational current I_e at AC - Up to 690 V at ambient temperature 40 °C A - Up to 1 000 V at ambient temperature 60 °C A - Rated operational reactive power at rated operational voltage 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 - Minimum cross-section in the main circuit for max. AC-6b rated value									
	18.9 18 --	25.3 24 --	30.2 29 --	37.8 36 --	50 47.6 --	75.8 72.2 --	113.4 108 --	113 54 94	151 144 68 57 100 125 172 125
	7.2 12.5 15 21 --	9.6 16.7 21 29 --	11.5 20 25 34 --	14 25 31 43 --	19 33 41 57 --	29 50 63 86 --	43 75 94 129 --		
See • Product data sheets of the relevant capacitor contactors and capacitors • Operating instructions and manuals, https://support.industry.siemens.com/cs/ww/en/ps/16171/man									
Switching frequency									
No-load switching frequency									
AC operation	1/h	500				500 ¹⁾			
DC operation	1/h	500				500 ¹⁾			
Max. switching frequency z									
at $T_U = 60\text{ °C}^{2)}$ in operating cycles/hour									
• At I_e /AC-6b and at									
230 V, 50/60 Hz	1/h	180		100				200	150
400 V, 50/60 Hz	1/h	180		100			100 / 80 ³⁾	100 / 80 ³⁾	80 / 60 ⁴⁾
480 V, 50/60 Hz	1/h	180		100	70	60	50	53	40
500 V, 50/60 Hz	1/h	180		100	65	55	45	53	40
600 V, 50/60 Hz	1/h	180		100	45	40	32	30	20
690 V, 50/60 Hz	1/h	180	150	100	72	36	30	25	20
1 000 V, 50/60 Hz	1/h	--						30	20
Ⓢ and Ⓢ rated data									
Rated insulation voltage									
	V AC	600							
Operational reactive power at AC-6b, 3-phase, at operational voltage									
110 ... 120 V	kvar	3.4	4.6	5.5	6.3	8.3	14	19	20
200 ... 208 V	kvar	6.2	8.3	10	11	15	25	34	37
220 ... 230 V	kvar	6.9	9.2	11	13	17	27	38	41
460 ... 480 V	kvar	14	18	22	25	33	55	75	82
575 ... 600 V	kvar	17	23	27	31	41	69	94	103
Short-circuit protection									
At 600 V	kA	5					10		
Fuse for main circuit									
Class RK5	A	40	80			100	250		

¹⁾ In case of AC/DC operation (UC operating mechanisms): max. 300/h.

²⁾ Specifications for worst case scenario, higher switching frequency possible.

³⁾ Operating cycles/h: 100 with AC operation; 80 with AC/DC operation.

⁴⁾ Operating cycles/h: 80 with AC operation; 60 with AC/DC operation.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type		3RT2617	3RT2625, 3RT2626, 3RT2627	3RT2628	3RT2636	3RT2637	3RT2645, 3RT2646
Size		S00	S0		S2		S3
Conductor cross-sections							
Main conductors (1 or 2 conductors can be connected)		 Screw terminals					
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ ; max. 2 x 4	2 x (1 ... 2.5) ¹⁾ ; 2 x (2.5 ... 10) ¹⁾		2 x (2.5 ... 35); 1 x (2.5 ... 50)		2 x (10 ... 70); 1 x (10 ... 70)
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾	2 x (1 ... 2.5) ¹⁾ ; 2 x (2.5 ... 6) ¹⁾ ; 1 x 10	1 x (2.5 ... 16)	2 x (1 ... 25); 1 x (1 ... 35)	--	2 x (10 ... 50); 1 x (10 ... 50)
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾ ; 2 x 12	2 x (16 ... 12) ¹⁾ ; 2 x (14 ... 8) ¹⁾	1 x (10 ... 4)	2 x (18 ... 2); 1 x (18 ... 0)		2 x (8 ... 3/0); 1 x (8 ... 3/0)
• Terminal screw		M3 (for Pozidriv size 2; Ø 5 ... 6)	M4 (for Pozidriv size 2; Ø 5 ... 6)	M8	M6 (for Pozidriv size 2; Ø 5 ... 6)		M8 (hexagon socket, A/F 4)
• Tightening torque	Nm lb.in	0.8 ... 1.2 7 ... 10.3	2 ... 2.5 18 ... 22	3 ... 4 27 ... 36	3 ... 4.5 27 ... 40		4.5 ... 6 40 ... 53
Auxiliary conductors (1 or 2 conductors can be connected)							
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ ; max. 2 x 4					
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾					
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾ ; 2 x 12					
• Terminal screw		M3 (for Pozidriv size 2; Ø 5 ... 6)					
• Tightening torque	Nm lb.in	0.8 ... 1.2 7 ... 10.3					

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

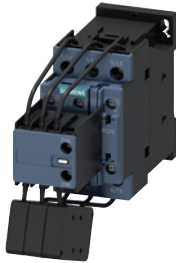
Selection and ordering data

AC operation

Main, auxiliary and control conductors: Screw terminals



3RT2617-1A.05



3RT262-1A.05



3RT2628-1A.05
with infeed terminal

Utilization category AC-6b				Auxiliary contacts, unassigned		Rated control supply voltage U_s		SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
Switching AC capacitors at an ambient temperature of 60 °C				Version		50 Hz AC	50/60 Hz AC					
Capacitor rating at operational voltage 50/60 Hz				 		V	V	d	Article No.	Price per PU		
At 230 V	At 400 V	At 500 V	At 690 V	NO	NC	V	V	d				
kvar	kvar	kvar	kvar									
For screw fixing and snap-on mounting on TH 35 standard mounting rail												
Size S00												
7.2	12.5	15	21	1	1	--	24	5	3RT2617-1AB03	1	1 unit	41B
						--	110	5	3RT2617-1AF03	1	1 unit	41B
						--	230	5	3RT2617-1AP03	1	1 unit	41B
7.2	12.5	15	21	0	2	--	24	5	3RT2617-1AB05	1	1 unit	41B
						--	110	5	3RT2617-1AF05	1	1 unit	41B
						--	230	5	3RT2617-1AP05	1	1 unit	41B
Size S0												
9.6	16.7	21	29	1	2	24	--	5	3RT2625-1AB05	1	1 unit	41B
						110	--	5	3RT2625-1AF05	1	1 unit	41B
						230	--	5	3RT2625-1AP05	1	1 unit	41B
11.5	20	25	34	1	2	24	--	5	3RT2626-1AB05	1	1 unit	41B
						110	--	5	3RT2626-1AF05	1	1 unit	41B
						230	--	5	3RT2626-1AP05	1	1 unit	41B
14	25	31	43	1	2	24	--	5	3RT2627-1AB05	1	1 unit	41B
						110	--	5	3RT2627-1AF05	1	1 unit	41B
						230	--	5	3RT2627-1AP05	1	1 unit	41B
19	33	41	57	1	2	24	--	5	3RT2628-1AB05	1	1 unit	41B
						110	--	5	3RT2628-1AF05	1	1 unit	41B
						230	--	5	3RT2628-1AP05	1	1 unit	41B

Other voltages according to page 4/52 on request.

Accessories and spare parts, see page 3/79 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC operation

Main, auxiliary and control conductors: Screw terminals



3RT263.-1A.05



3RT264.-1A.05

Utilization category AC-6b				Auxiliary contacts, unassigned		Rated control supply voltage U_s	SD	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
Switching AC capacitors at an ambient temperature of 60 °C				Version		50 Hz AC		Article No.	Price per PU		
Capacitor rating at operational voltage 50/60 Hz				 		V	d				
At 230 V	At 400 V	At 500 V	At 690 V	NO	NC						
kvar	kvar	kvar	kvar								
For screw fixing and snap-on mounting on TH 35 standard mounting rail											
Size S2											
29	50	63	86	1	1	24 110 230	5 2 1	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	20 5 5	3RT2636-1AB05 3RT2636-1AF05 3RT2636-1AP05	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
43	75	94	129	1	1	24 110 230	5 5 ▶	3RT2637-1AB03 3RT2637-1AF03 3RT2637-1AP03	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
43	75	94	129	0	2	24 110 230	20 5 5	3RT2637-1AB05 3RT2637-1AF05 3RT2637-1AP05	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 standard mounting rails											
Size S3											
43	75	94	129	1	1	24 110 230	5 20 5	3RT2645-1AB03 3RT2645-1AF03 3RT2645-1AP03	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
43	75	94	129	0	2	24 110 230	20 5 5	3RT2645-1AB05 3RT2645-1AF05 3RT2645-1AP05	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
57	100	125	172	1	1	24 110 230	20 5 2	3RT2646-1AB03 3RT2646-1AF03 3RT2646-1AP03	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
57	100	125	172	0	2	24 110 230	20 20 5	3RT2646-1AB05 3RT2646-1AF05 3RT2646-1AP05	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

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

Accessories, [see page 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

DC operation

Main, auxiliary and control conductors: Screw terminals



3RT2617-1B.45



3RT262-1B.45



3RT2628-1B.45
with infeed terminal

Utilization category AC-6b				Auxiliary contacts, unassigned		Rated control supply voltage U_s		SD	Screw terminals			PU (UNIT, SET, M)	PS*	PG
Switching AC capacitors at an ambient temperature of 60 °C				Version		DC								
Capacitor rating at operational voltage 50/60 Hz									Article No.		Price per PU			
At 230 V	At 400 V	At 500 V	At 690 V											
kvar	kvar	kvar	kvar	NO	NC	V		d						
For screw fixing and snap-on mounting on TH 35 standard mounting rail														
Size S00														
7.2	12.5	15	21	1	1	24		5	3RT2617-1BB43			1	1 unit	41B
						110		5	3RT2617-1BF43			1	1 unit	41B
7.2	12.5	15	21	0	2	24		5	3RT2617-1BB45			1	1 unit	41B
						110		5	3RT2617-1BF45			1	1 unit	41B
Size S0														
9.6	16.7	21	29	1	2	24		5	3RT2625-1BB45			1	1 unit	41B
						110		5	3RT2625-1BF45			1	1 unit	41B
11.5	20	25	34	1	2	24		5	3RT2626-1BB45			1	1 unit	41B
						110		5	3RT2626-1BF45			1	1 unit	41B
14	25	31	43	1	2	24		5	3RT2627-1BB45			1	1 unit	41B
						110		5	3RT2627-1BF45			1	1 unit	41B
19	33	41	57	1	2	24		5	3RT2628-1BB45			1	1 unit	41B
						110		5	3RT2628-1BF45			1	1 unit	41B

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

Accessories, [see page 3/79 onwards](#).

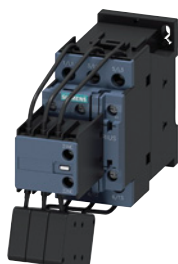
Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC/DC operation

Main, auxiliary and control conductors: Screw terminals



3RT262.-1N.35



3RT2628-1N.35
with infeed terminal



3RT263.-1N.35



3RT264.-1N.35

Utilization category AC-6b				Auxiliary contacts, unassigned		Rated control supply voltage U_s	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Switching AC capacitors at an ambient temperature of 60 °C				Version		50/60 Hz AC or DC					
Capacitor rating at operational voltage 50/60 Hz				 				Article No.	Price per PU		
At 230 V	At 400 V	At 500 V	At 690 V	NO	NC	V	d				
kvar	kvar	kvar	kvar								
For screw fixing and snap-on mounting on TH 35 standard mounting rail											
Size S0											
9.6	16.7	21	29	1	2	21 ... 28 95 ... 130 200 ... 280	5 5 5	3RT2625-1NB35 3RT2625-1NF35 3RT2625-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
11.5	20	25	34	1	2	21 ... 28 95 ... 130 200 ... 280	5 5 5	3RT2626-1NB35 3RT2626-1NF35 3RT2626-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
14	25	31	43	1	2	21 ... 28 95 ... 130 200 ... 280	5 5 5	3RT2627-1NB35 3RT2627-1NF35 3RT2627-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
19	33	41	57	1	2	21 ... 28 95 ... 130 200 ... 280	5 5 5	3RT2628-1NB35 3RT2628-1NF35 3RT2628-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
Size S2											
29	50	63	86	0	2	20 ... 33 83 ... 155 175 ... 280	5 2 5	3RT2636-1NB35 3RT2636-1NF35 3RT2636-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
43	75	94	129	0	2	20 ... 33 83 ... 155 175 ... 280	5 5 5	3RT2637-1NB35 3RT2637-1NF35 3RT2637-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 standard mounting rails											
Size S3											
43	75	94	129	0	2	20 ... 33 83 ... 155 175 ... 280	5 5 5	3RT2645-1NB35 3RT2645-1NF35 3RT2645-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
57	100	125	172	0	2	20 ... 33 83 ... 155 175 ... 280	5 5 5	3RT2646-1NB35 3RT2646-1NF35 3RT2646-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

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

For accessories, [see page 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT23 to 3RT26, 3RT14 contactors

Options

**Rated control supply voltages for 3RT2 contactors, possible on request
(change of the 10th and 11th digits of the Article No.)**

Delivery time on request

Rated control supply voltage U_s	Contactor type	3RT231, 3RT251	3RT232, 3RT252	3RT233, 3RT253	3RT234, 3RT244, 3RT254	3RT2617, 3RT262, 3RT263, 3RT264
	Size	S00	S0	S2	S3	S00 to S3
Sizes S00 to S3						
AC operation¹⁾						
Solenoid coils for 50 Hz (exception: Size S00: 50 and 60 Hz ²⁾)						
24 V AC		B0	B0	B0	B0	B0
42 V AC		D0	D0	D0	D0	--
48 V AC		H0	--	--	H0	--
110 V AC		F0	F0	F0	F0	F0
230 V AC		P0	P0	P0	P0	P0
240 V AC		--	--	U0	U0	--
400 V AC		V0	V0	V0	V0	--
Solenoid coils for 50 and 60 Hz²⁾						
24 V AC		B0	C2	C2	C2	C2
42 V AC		D0	D2	D2	D2	--
48 V AC		H0	H2	H2	H2	--
110 V AC		F0	G2	G2	G2	--
220 V AC		N2	N2	N2	N2	N2
230 V AC		P0	L2	L2	L2	L2
Solenoid coils (for USA and Canada³⁾)						
50 Hz	60 Hz					
110 V AC	120 V AC	K6	K6	K6	K6	--
220 V AC	240 V AC	P6	P6	P6	P6	--
Solenoid coils (for Japan)						
50/60 Hz⁴⁾	60 Hz⁵⁾					
100 V AC	110 V AC	G6	G6	G6	G6	G6
200 V AC	220 V AC	N6	N6	N6	N6	N6
400 V AC	440 V AC	R6	R6	R6	R6	R6
DC operation¹⁾						
12 V DC		A4	A4	--	--	--
24 V DC		B4	B4	--	--	B4
42 V DC		D4	D4	--	--	--
48 V DC		W4	W4	--	--	--
60 V DC		--	--	--	--	--
110 V DC		F4	F4	--	--	F4
125 V DC		G4	G4	--	--	--
220 V DC		M4	M4	--	--	--
230 V DC		P4	--	--	--	--

Examples

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

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

²⁾ Coil operating range
- At 50 Hz: 0.8 to $1.1 \times U_s$,
- 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 Size S0	3RT2.2.-.N	Rated control supply voltage $U_{s \min}$ to $U_{s \max}$ ¹⁾	Contactor type Size S2	3RT2.3.-.N	3RT2.4.-.N Size S3
Sizes S0 to S3						
AC/DC operation (50/60 Hz AC or DC)						
21 ... 28 V AC/DC	B3		20 ... 33 V AC/DC	B3		B3
95 ... 130 V AC/DC	F3		48 ... 80 V AC/DC	E3		E3
200 ... 280 V AC/DC	P3		83 ... 155 V AC/DC	F3		F3
			175 ... 280 V AC/DC	P3		P3

¹⁾ Coil operating range: $0.8 \times U_{s \min}$ 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 No.)**

Delivery time on request

Rated control supply voltage	Contactor type	3RT145.-A, 3RT146.-A, 3RT147.-A	Rated control supply voltage	Contactor type	3RT145.-N, 3RT146.-N, 3RT147.-N	3RT145.-P, 3RT145.-S, 3RT146.-P, 3RT146.-S, 3RT147.-P, 3RT147.-S
$U_{s \min}$ to $U_{s \max}$	Sizes	S6 to S12	$U_{s \min}$ to $U_{s \max}$	Sizes	S6 to S12	
Sizes S6 to S12						

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

Standard operating mechanism

23 ... 26 V AC/DC	B3
42 ... 48 V AC/DC	D3
110 ... 127 V AC/DC	F3
200 ... 220 V AC/DC	M3
220 ... 240 V AC/DC	P3
240 ... 277 V AC/DC	U3
380 ... 420 V AC/DC	V3
440 ... 480 V AC/DC	R3
500 ... 550 V AC/DC	S3
575 ... 600 V AC/DC	T3

Solid-state operating mechanism

21 ... 27.3 V AC/DC	B3	--
96 ... 127 V AC/DC	F3	F3
200 ... 277 V AC/DC	P3	P3

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

Overview

Standards

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

Performance range

Sizes S00 to S3

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

Sizes S6 to S12

- 3RT10 contactors for motor loads (AC-3) from 55 kW to 500 A / 250 kW
- 3RT14 contactors for weak or non-inductive loads (AC-1) up to 690 A

Application

Besides standard approval in compliance with IEC 60947-4-1, the contactors with an extended operating range are also approved in compliance with the relevant parts of IEC 60077-2, thus fulfilling the requirement for use in railway applications.

Thus, their suitability for increased requirements such as an

- extended temperature range compared to the IEC 60947-4-1 product standard or
- extended operating range of the contactor operating mechanisms or also
- increased resistance to mechanical oscillations and vibrations is warranted. The design of the terminals in the spring-loaded connection system also contributes toward vibration resistance.

Versions

In addition to the complete motor contactor series (AC-3) up to 250 kW of sizes S00 to S12 (3RT.0), as from size S6, new variants of the 3RT14 contactors optimized for AC-1 operation up to 525 kW with extended operating conditions are also available.

Operating range of contactor operating mechanisms

The contactors with extended operating range and railway approval are available with a solid-state DC operating mechanism in all sizes from S00 to S12.

This operating mechanism version has an operating range from 0.7 to $1.25 \times U_s$ in the temperature range -40 to 70 °C. Overvoltage damping of the contactor coil with a varistor circuit is already integrated.

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

Auxiliary switches

These devices can be equipped with auxiliary switches in the same way as their corresponding versions of the standard motor contactors ([see overview diagrams of the contactors, page 3/8 onwards](#)).

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full operating range of the operating mechanisms) is -40 to $+70$ °C.

Side-by-side mounting

Contactors with conventional operating mechanism

- Sizes S00 and S0:
Side-by-side mounting is permissible at ambient temperatures up to 60 °C. At > 60 to 70 °C, a clearance of at least 10 mm shall be provided.

Contactors with series resistor

- Size S00:
Side-by-side mounting is permissible at ambient temperatures up to 70 °C.

Contactors with solid-state operating mechanism (version: 3RT.....-.....-0LA2)

- Sizes S00 to S3:
Side-by-side mounting is permissible at ambient temperatures up to 70 °C.
- Sizes S6 to S12:
Side-by-side mounting is permissible at ambient temperatures up to 60 °C. At > 60 to 70 °C, a clearance of at least 10 mm shall be provided.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16177/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16177/faq>

Manuals, see
<https://support.industry.siemens.com/cs/ww/en/ps/16177/man>

Type	3RT2017	3RT2017- 2XB4- 0LA2	2XF4- 0LA2	3RT2018- 2XB4- 0LA2	2XF4- 0LA2	3RT202.	3RT202.- 2XB40- 0LA2	2XF40- 0LA2
Size	S00					S0		

General data

Upright mounting position

- Contactors with series resistor
- Contactors with conventional coil

Special version (on request)
 Special version (on request)

Ambient temperature

- During operation °C -40 ... +70¹⁾ -40 ... +70
- During storage °C -55 ... +80

Control

Solenoid coil operating range	DC		0.7 ... 1.25 x U_s					
Power consumption of the solenoid coils			For cold coil and 1.0 x U_s					
• Contactors with series resistor	Closing	W	13	--				
	Closed	W	4.0	--				
• Contactors with conventional coil	Closing	W	2.8	--		4.5	--	
	Closed	W	2.8	--		4.5	--	
• Contactors with solid-state operating mechanism	Closing	W	--	4.0	4.5	4.0	4.5	--
	Closed	W	--	0.95	0.75	0.95	0.75	--
							6.7	13.2
							1.4	1.3

Rated data of the main contacts

Load rating with AC

Minimum cross-section in the main circuit

- At maximum AC-1 rated value mm² 4 10
- At maximum I_{th} rated value mm² -- 4 -- 10

¹⁾ 3RT20...-K contactors without the article number suffix "-0LA2" are coupling contactors that are certified for the -25 to +60 °C standard temperature range. For railway applications, an additional certification approves these contactors with a minimum clearance of 10 mm for the extended temperature range from -40 to +70 °C.

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

Type	3RT2035- 3XB40- 0LA2	3XF40- 0LA2	3RT2036- 3XB40- 0LA2	3XF40- 0LA2	3RT2037- 3XB40- 0LA2	3XF40- 0LA2	3RT2038- 3XB40- 0LA2	3XF40- 0LA2	3RT204.- 3XB40- 0LA2	3XF40- 0LA2
Size	S2								S3	

General data

Ambient temperature

- During operation °C -40 ... +70
- During storage °C -55 ... +80

Control

Solenoid coil operating range			DC	0.7 ... 1.25 x U_s				
Power consumption of the solenoid coils				For cold coil and 1.0 x U_s				
• Contactors with solid-state operating mechanism	Closing	W	23				76	64
	Closed	W	1				1.8	1.0

Rated data of the main contacts

Load rating with AC

Minimum cross-section in the main circuit

- At maximum AC-1 rated value mm² 16 25 35 50
- At maximum I_{th} rated value mm² 16 25 35 50

All details and technical specifications not mentioned here are identical to those of the basic units, see page 3/25 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)							
Actuated via A1/A2										
• Rated control supply voltage	V DC		24, 72 or 110							
• Operating range			0.7 ... 1.25							
Actuated via PLC input										
• Rated voltage	V DC		24 ... 110							
• Operating range			0.7 ... 1.25							
• Consumed current at PLC control input according to IEC 60947-1, maximum	mA		2							
Rated data of the main contacts										
Load rating with AC										
Minimum cross-section in the main circuit										
• At maximum AC-1 rated value	mm ²		70	95		150	185		300	370
• At maximum I _{th} rated value	mm ²		70	95		150	185		300	370
Switching frequency										
Switching frequency z in operating cycles/hour										
Contactors without overload relays										
• No-load switching frequency										
- Contactors with solid-state operating mechanism	1/h		1 000			700			500	
• Switching frequency z during rated operation (Dependence of the switching frequency z' on operational current I' and operational voltage U': z' = z · (I _e /I) · (U _e /U) ^{1.5} · 1/h)										
- Contactors with solid-state operating mechanism			I _e /AC-1 at 400 V h ⁻¹ I _e /AC-2 at 400 V h ⁻¹ I _e /AC-3 at 400 V h ⁻¹ I _e /AC-4 at 400 V h ⁻¹			700 250 500 130			500 200 170 420	

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

IE3/IE4 ready

Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

Selection and ordering data**DC operation** 

3RT201-2K.4.



3RT201-2K.42-0LA0

Rated data according to IEC 60947-4-1					Auxiliary contacts		Rated control supply voltage U_s	SD	Spring-loaded terminals		PU (UNIT, SET, M)	PS*	PG
AC-2 and AC-3, t_{ij} : 70 °C		Ratings of three-phase motors at			Ident. No.	Version							
Operational current I_e up to	400 V	230 V	400 V	500 V	690 V				Article No.	Price per PU			
A	kW	kW	kW	kW	kW	NO	NC	V DC	d				

For screw fixing and snap-on mounting on TH 35 standard mounting rail**Size S00****Coupling contactors with integrated coil circuit**

- Suppressor diode integrated at the factory

12	3	5.5	5.5	5.5	10 ¹⁾	1	--	24	5	3RT2017-2KB41 3RT2017-2KF41	1	1 unit	41B
								110			1	1 unit	41B
12	3	5.5	5.5	5.5	01 ¹⁾	--	1	24	5	3RT2017-2KB42 3RT2017-2KF42	1	1 unit	41B
								110			1	1 unit	41B

- Varistor integrated at the factory

12	3	5.5	5.5	5.5	10 ¹⁾	1	--	24	5	3RT2017-2LB41 3RT2017-2LF41	1	1 unit	41B
								110			1	1 unit	41B
12	3	5.5	5.5	5.5	01 ¹⁾	--	1	24	5	3RT2017-2LB42 3RT2017-2LF42	1	1 unit	41B
								110			1	1 unit	41B

With plug-on series resistor and integrated coil circuit

- Suppressor diode integrated at the factory

12	3	5.5	5.5	5.5	-- ²⁾	--	1 ³⁾	24	5	3RT2017-2KB42-0LA0 3RT2017-2KF42-0LA0	1	1 unit	41B
								110			1	1 unit	41B
16	4	7.5	10	11	-- ²⁾	--	1 ³⁾	24	5	3RT2018-2KB42-0LA0 3RT2018-2KF42-0LA0	1	1 unit	41B
								110			1	1 unit	41B

- Varistor integrated at the factory

12	3	5.5	5.5	5.5	-- ²⁾	--	1 ³⁾	24	5	3RT2017-2LB42-0LA0 3RT2017-2LF42-0LA0	1	1 unit	41B
								110			1	1 unit	41B
16	4	7.5	10	11	-- ²⁾	--	1 ³⁾	24	5	3RT2018-2LB42-0LA0 3RT2018-2LF42-0LA0	1	1 unit	41B
								110			1	1 unit	41B

¹⁾ It is not possible to mount an auxiliary switch. A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 60 °C.

²⁾ One 4-pole auxiliary switch according to EN 50005 can be mounted from -40 to 70 °C; no clearance required.

³⁾ NC contact cannot be used because it is used for switching of the series resistor.

Accessories and spare parts, [see page 3/79 onwards](#).

Contactors for special applications

IE3/IE4 ready

A black Siemens SIRIUS 3RW30 terminal block, a type of surge protector. It features a DIN rail mounting bracket on top and a series of screw terminals on the front and bottom. The Siemens logo and 'SIRIUS' branding are visible on the front face.

3RT201.-2X.41-0LA2



3RT201.-2X.42-0LA2



3RT202.-2K.40



3RT202.-2X.40-0LA2

Rated data acc. to IEC 60077-2		IEC 60947-4-1 AC-3		Auxiliary contacts		Rated control supply voltage U_s	SD	Spring-loaded terminals 	PU (UNIT, SET, M)	PS*	PG
t_{ij} : 70 °C Conven- tional thermal current I_{th} up to	t_{ij} : 60 °C Opera- tional current I_e up to	Ratings of three-phase motors at		Ident. No.	Version						
690 V	400 V	230 V	400 V	500 V	690 V			Article No.	Price per PU		
A	A	kW	kW	kW	kW	 NO	 NC	V DC	d		

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

Size S00

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

18	12	3	5.5	5.5	5.5	10	1	--	24 ... 34 72 ... 125	5 5	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	5 5	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	5 5	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	5 5	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 the factory

--	17	4	7.5	10	11	11 ¹⁾	1	1	24 110	▶ 5	3RT2025-2KB40 3RT2025-2KF40	1 1	1 unit 1 unit	41B 41B
--	25	5.5	11	11	11	11 ¹⁾	1	1	24 110	▶ 5	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	5 5	3RT2027-2KB40 3RT2027-2KF40	1 1	1 unit 1 unit	41B 41B
• Varistor integrated in electronics at the factory														
30	17	4	7.5	10	11	11	1	1	24 110	5 5	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	5 5	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	5 5	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	5 5	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 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

IE3/IE4 ready

Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

DC operation



3RT203.-3X.40-0LA2



3RT204.-3X.40-0LA2

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

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

Size S2

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

50	40	11	18.5	22	22	11	1	1	24	2	3RT2035-3XB40-0LA2	1	1 unit	41B
									110	2	3RT2035-3XF40-0LA2	1	1 unit	41B
55	50	15	22	30	22	11	1	1	24	5	3RT2036-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2036-3XF40-0LA2	1	1 unit	41B
60	65	18.5	30	37	37	11	1	1	24	5	3RT2037-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2037-3XF40-0LA2	1	1 unit	41B
75	80	22	37	37	45	11	1	1	24	5	3RT2038-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2038-3XF40-0LA2	1	1 unit	41B

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

Size S3

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

90	80	22	37	45	55	11	1	1	24	5	3RT2045-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2045-3XF40-0LA2	1	1 unit	41B
95	95	22	45	55	75	11	1	1	24	5	3RT2046-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2046-3XF40-0LA2	1	1 unit	41B
95	110	30	55	75	75	11	1	1	24	5	3RT2047-3XB40-0LA2	1	1 unit	41B
									110	5	3RT2047-3XF40-0LA2	1	1 unit	41B

Accessories and spare parts, [see page 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

IE3/IE4 ready

DC operation

- Solid-state operating mechanism with 24 to 110 V DC control signal input
- For screw fixing
- Auxiliary and control conductors: Spring-loaded terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.



3RT105.-2X.46-0LA2



3RT106.-2X.46-0LA2



3RT107.-2X.46-0LA2

Size	Rated data acc. to IEC 60077-2	IEC 60947-4-1 AC-3	Auxiliary contacts, lateral	Rated control supply voltage U_s	SD	Spring-loaded terminals 	PU (UNIT, SET, M)	PS*	PG
	t_u : 70 °C Conventional thermal current I_{th} up to 690 V	t_u : 60 °C Operational current I_e up to 400 V	Version  	V DC	d	Article No.	Price per PU		
A	A	A	NO NC	V DC	d				

Solid-state operating mechanism

With control signal input 24 ... 110 V DC

e. g. for control by PLC

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

S6	120	115	2	2	24 72 110	5 5 5	3RT1054-2XB46-0LA2 3RT1054-2XJ46-0LA2 3RT1054-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
	140	150	2	2	24 72 110	5 5 5	3RT1055-2XB46-0LA2 3RT1055-2XJ46-0LA2 3RT1055-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
	145	185	2	2	24 72 110	5 5 5	3RT1056-2XB46-0LA2 3RT1056-2XJ46-0LA2 3RT1056-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
S10	215	225	2	2	24 72 110	5 20 5	3RT1064-2XB46-0LA2 3RT1064-2XJ46-0LA2 3RT1064-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
	265	265	2	2	24 72 110	5 5 5	3RT1065-2XB46-0LA2 3RT1065-2XJ46-0LA2 3RT1065-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
	265	300	2	2	24 72 110	20 20 5	3RT1066-2XB46-0LA2 3RT1066-2XJ46-0LA2 3RT1066-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
S12	350	400	2	2	24 72 110	5 5 5	3RT1075-2XB46-0LA2 3RT1075-2XJ46-0LA2 3RT1075-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
	475	500	2	2	24 72 110	5 20 5	3RT1076-2XB46-0LA2 3RT1076-2XJ46-0LA2 3RT1076-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

Accessories and spare parts, see page 3/79 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RT contactors with extended operating range, 3-pole

DC operation

- Solid-state operating mechanism with 24 to 110 V DC control signal input
- For screw fixing
- Auxiliary and control conductors: Spring-loaded terminals
- Main conductors: Busbar connections; a connection kit with screws, spring washers and nuts is enclosed.



3RT1456-2X.46-0LA2



3RT146-2X.46-0LA2



3RT1476-2X.46-0LA2

Size	Rated data acc. to IEC 60077-2	IEC 60947-4-1 AC-1	Auxiliary contacts, lateral	Rated control supply voltage U_s	SD	Spring-loaded terminals 	PU (UNIT, SET, M)	PS*	PG
	t_U : 70 °C Conventional thermal current I_{th} up to 690 V	t_U : 40 °C Operational current I_e up to 400 V	Version  	V DC	d	Article No.	Price per PU		
A		A	NO NC						

Solid-state operating mechanism

With control signal input 24 ... 110 V DC

e. g. for control by PLC

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

S6	190	275	2	2	24 72 110	5 20 5	3RT1456-2XB46-0LA2 3RT1456-2XJ46-0LA2 3RT1456-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
S10	330	400	2	2	24 72 110	5 20 20	3RT1466-2XB46-0LA2 3RT1466-2XJ46-0LA2 3RT1466-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
	330	500	2	2	24 72 110	5 5 5	3RT1467-2XB46-0LA2 3RT1467-2XJ46-0LA2 3RT1467-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
S12	520	690	2	2	24 72 110	5 20 20	3RT1476-2XB46-0LA2 3RT1476-2XJ46-0LA2 3RT1476-2XF46-0LA2	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

Accessories and spare parts, [see page 3/79 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RH2 contactor relays with extended operating range

Overview

Standards

IEC 60947-5-1

The contactor relays are finger-safe according to IEC 60529. The size S00 contactor relays have spring-loaded connections for all terminals.

Ambient temperature

The permissible ambient temperature for operation of the contactor relays (across the full coil operating range) is -40 to +70 °C.

Uninterrupted duty at temperatures > +60 °C reduces the mechanical service life, the current carrying capacity of the conducting paths and the switching frequency.

Control and auxiliary circuits

The solenoid coils of the contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with surge suppressors. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Application

For operation in installations that are subject both to considerable variations in the control voltage and to high ambient temperatures, e. g. railway applications under extreme climatic conditions, rolling mills, etc.

Also for control supply voltages with battery buffering to extend the operating time in the event of battery charge failure.

Contactor relays with conventional coil

Control and auxiliary circuits

These contactor relays have an extended operating range from 0.7 to 1.25 x U_s ; the solenoid coils are fitted with suppressor diodes as standard. An additional series resistor is not required.

Note:

An additional auxiliary switch cannot be mounted.

Side-by-side mounting

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

Contactor relays with series resistor

Control and auxiliary circuits

The DC solenoid systems of the contactor relays are modified (to holding coil) by means of a series resistor.

The size S00 contactor relays are supplied prewired with a plug-on module containing the series resistor. A surge suppressor (a suppressor diode or varistor as preferred) is integrated.

A 4-pole auxiliary switch (according to EN 50005) can be mounted additionally.

Side-by-side mounting

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

Contactor relays with solid-state operating mechanism

Control and auxiliary circuits

The solenoid coils of these contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage.

The contactor relays are energized via upstream control electronics which ensure the coil operating range of 0.7 to 1.25 x U_s at an ambient temperature of 70 °C. They are supplied as complete units with integrated coil electronics. A varistor is integrated for damping opening surges in the coil.

Side-by-side mounting

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

Technical specifications

More information						
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16174/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16174/faq			Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16174/man			
Contactor relays			Type	3RH21...-2K, -2L	3RH2122-2XB40-0LA2	3RH2122-2XF40-0LA2
General data						
Upright mounting position						
• Contactors with series resistor • Contactors with conventional coil			Special version (on request) Special version (on request)			
Ambient temperature						
• During operation • During storage			°C	-40 ... +70 ¹⁾		
			°C	-55 ... +80		
Control						
Solenoid coil operating range			DC	0.7 ... 1.25 x U _s		
Power consumption of the solenoid coils			For cold coil and 1.0 x U _s			
• Contactors with series resistor	- Closing	W	13	--	--	
	- Closed	W	4	--	--	
• Contactors with conventional coil	- Closing	W	2.8	--	--	
	- Closed	W	2.8	--	--	
• Contactors with solid-state operating mechanism	- Closing	W	--	4	4.5	
	- Closed	W	--	0.95	0.75	

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

All details and technical specifications not mentioned here are identical to those of the 3RH2 basic units, see page 5/4 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > SIRIUS 3RH2 contactor relays with extended operating range

Selection and ordering data

DC operation



3RH2122-2K.40



3RH2122-2K.40-0LA0

Rated operational current				Contacts Ident. No. acc. to EN 50011	Version	Rated control supply voltage U_s	SD	Spring-loaded terminals 	PU (UNIT, SET, M)	PS*	PG
I_e /AC-15/AC-14 t_U : 70 °C at											
230 V	400 V	500 V	690 V								
A	A	A	A		NO NC	V DC	d	Article No.	Price per PU		

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

Size S00

With integrated coil circuit

- Suppressor diode integrated at the factory

10	3	2	1	22E	2	2 ¹⁾	24 110	2	3RH2122-2KB40 3RH2122-2KF40	1 1	1 unit 1 unit	41A 41A
				31E	3	1 ¹⁾	24	2	3RH2131-2KB40	1	1 unit	41A
				40E	4	0 ¹⁾	24	5	3RH2140-2KB40	1	1 unit	41A

- Varistor integrated at the factory

10	3	2	1	22E	2	2 ¹⁾	24 110	5 2	3RH2122-2LB40 3RH2122-2LF40	1 1	1 unit 1 unit	41A 41A
----	---	---	---	-----	---	-----------------	-----------	--------	--------------------------------	--------	------------------	------------

With plug-on series resistor and integrated coil circuit

- Suppressor diode integrated at the factory

10	3	2	1	21X	2	1 ²⁾	24 110	5 5	3RH2122-2KB40-0LA0 3RH2122-2KF40-0LA0	1 1	1 unit 1 unit	41A 41A
----	---	---	---	-----	---	-----------------	-----------	--------	--	--------	------------------	------------

- Varistor integrated at the factory

10	3	2	1	21X	2	1 ²⁾	24 110	2 2	3RH2122-2LB40-0LA0 3RH2122-2LF40-0LA0	1 1	1 unit 1 unit	41A 41A
----	---	---	---	-----	---	-----------------	-----------	--------	--	--------	------------------	------------

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

10	3	2	1	22E	2	2 ²⁾	24 ... 34 72 ... 125	5 5	3RH2122-2XB40-0LA2 3RH2122-2XF40-0LA2	1 1	1 unit 1 unit	41A 41A
----	---	---	---	-----	---	-----------------	-------------------------	--------	--	--------	------------------	------------

¹⁾ It is not possible to mount an auxiliary switch.

²⁾ 4-pole auxiliary switch according to EN 50005 can be mounted.

Accessories, [see page 3/79 onwards](#).

Other voltages [according to page 3/77](#) on request.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > 3TH4 contactor relays, 8-pole

Overview

Standards

IEC 60947-5-1

The contactor relays are finger-safe according to IEC 60529. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full coil operating range) is -50 to +70 °C. Uninterrupted duty at temperatures < -25 °C and > +55 °C reduces the mechanical service life, the current carrying capacity of the conducting paths and the switching frequency.

A clearance of 10 mm is required for side-by-side mounting at ambient temperatures > 55 °C. There is no need to reduce the technical specifications.

Application

For operation in installations which are subject both to considerable variations in the control voltage and to high ambient temperatures, e.g. in railway applications.

Control and auxiliary circuits

The solenoid coils of the contactor relays have an extended coil operating range from 0.7 to 1.25 x U_s and are fitted as standard with varistors to provide protection against overvoltage. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Technical specifications

More information			
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16176/td		Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16176/man	
FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16176/faq			
Contactor relays		Type	3TH42
General data			
Permissible ambient temperature			
• During operation	°C	-50 ... +70 ¹⁾	
• During storage	°C	-55 ... +80	
Control			
Solenoid coil operating range		0.7 ... 1.25 x U _S	
Power consumption of the solenoid coils (for cold coil and 1.0 x U _S) For cold coil: Closing = Closed		W	5.2
Permissible residual current of the electronics (with 0 signal)			
• DC operation		≤ 10 mA x (24 V/U _S)	
Operating times within operating range			
Total break time = Opening delay + 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 5/16 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > 3TH4 contactor relays, 8-pole

Selection and ordering data

DC operation 

3TH4244-0L..

Contacts	Rated operational current I_e /AC-15/AC-14				Contacts ¹⁾		Rated control supply voltage U_s	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
	230 V	400 V	500 V	690 V	Ident. No. acc. to EN 50011	Version						
						NO NC	V DC	d	Article No.	Price per PU		
For screw fixing and snap-on mounting on TH 35 standard mounting rail												
With integrated coil circuit (varistor integrated at the factory)												
8	10	6	4	2	44E	4 4	24 110	X X	3TH4244-0LB4 3TH4244-0LF4	1 1	1 unit 1 unit	41A 41A
8	10	6	4	2	53E	5 3	24 110	X X	3TH4253-0LB4 3TH4253-0LF4	1 1	1 unit 1 unit	41A 41A
8	10	6	4	2	62E	6 2	24 110	X X	3TH4262-0LB4 3TH4262-0LF4	1 1	1 unit 1 unit	41A 41A

¹⁾ No expansion contacts can be fitted.Other voltages [according to page 5/22](#) on request.Accessories, [see page 5/23](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications > 3TC contactors for switching DC voltage, 2-pole

Overview

Standards

IEC 60947-4-1

The contactors are finger-safe according to IEC 60529 (exception: series resistor). Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

All details and technical specifications not mentioned here are identical to those of the standard 3TC contactors, [see page 4/69](#).

Ambient temperature

The permissible ambient temperature for operation of the contactors (across the full coil operating range) is -50 to +70 °C. Uninterrupted duty at temperatures < -25 °C and > +55 °C reduces the mechanical service life, the current carrying capacity of the conducting paths and the switching frequency.

A clearance of 10 mm is required for side-by-side mounting of size 2 contactors at ambient temperatures > 55 °C. There is no need to reduce the technical specifications.

Series resistor

The DC solenoid systems of the 3TC contactors must be modified (to holding coil) by means of a series resistor. This series resistor is supplied separately packed with the contactors.

With types 3TC48, the series resistor must be attached onto the right-hand side of the auxiliary switch by means of the enclosed mounting parts and sets of links provided, while in the case of the 3TC44 it must be mounted and wired between the contactor poles. With types 3TC52 and 3TC56, the series resistor must be attached separately next to the contactors.

Auxiliary contacts

The contactors are equipped with two lateral auxiliary switches each with 1 NO + 1 NC contact. Further auxiliary switches cannot be mounted on the DC-operated contactors.

One NC contact is required for the series resistor function. Two NO contacts and one NC contact are thus unassigned.

Reversing contactors

With the 3TC52 and 3TC56 contactors, the series resistor must be connected using an additional K2 reversing contactor. This contactor is automatically included in the scope of supply.

Dimensions

Attaching resistors and varistors increases the width of the contactors.

Application

For operation in installations which are subject both to considerable variations in the control voltage and to high ambient temperatures, e.g. in railway applications.

Control and auxiliary circuits

The solenoid coils of the contactors have an extended coil operating range from 0.7 to $1.25 \times U_s$ and are fitted as standard with varistors to provide protection against overvoltage. The opening delay is consequently 2 to 5 ms longer than for standard contactors.

Technical specifications

More information				
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16180/td		Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16180/man		
Type		3TC44	3TC48	3TC52
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
• Closed	W	13	14	21
				130
				59

All details and technical specifications not mentioned here are identical to those of the basic units of the 3TC contactors, [see page 4/69](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

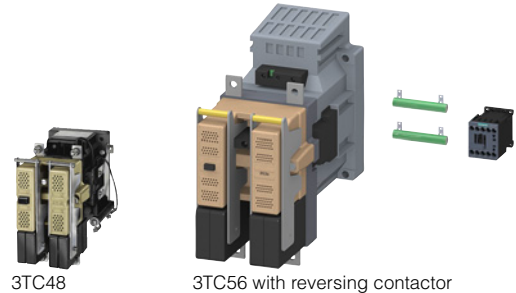
Contactors for railway applications > 3TC contactors for switching DC voltage, 2-pole

Selection and ordering data

DC operation

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

3TC48 to 3TC56: For screw fixing



Size	Utilization category	Rated operational current I_e at	Rated power of loads at					Auxiliary contacts ¹⁾		Rated control supply voltage U_s	SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		750 V	220 V	440 V	600 V	750 V	Version					Article No.	Price per PU		
		A	kW	kW	kW	kW	NO	NC	V DC	d					

Contactors for switching DC voltage

With integrated coil circuit (varistor integrated at the factory)

2	DC-1	32	7	14	19.2	24	2	1 ²⁾	24	5	3TC4417-0LB4	1	1 unit	41B
	DC-3/DC-5	7.5	5	9	9	4			110	10	3TC4417-0LF4	1	1 unit	41B

With laterally mounted coil circuit (varistor mounted externally in additional auxiliary switch enclosure on the contactor)

4	DC-1	75	16.5	33	45	56	2	1 ²⁾	24	15	3TC4817-0LB4	1	1 unit	41B
	DC-3/DC-5	75	13	27	38	45			110	15	3TC4817-0LF4	1	1 unit	41B
8	DC-1	170	48	97	132	165	2	1 ²⁾	24	15	3TC5217-0LB4	1	1 unit	41B
	DC-3/DC-5	170	41	82	110	110			110	15	3TC5217-0LF4	1	1 unit	41B
12	DC-1	400	88	176	240	300	2	1 ²⁾	24	15	3TC5617-0LB4	1	1 unit	41B
	DC-3/DC-5	400	70	140	200	250			110	15	3TC5617-0LF4	1	1 unit	41B

¹⁾ No expansion auxiliary contacts can be fitted.

²⁾ One NC contact used for series resistor.

Other rated control supply voltages according to page 4/76 on request.

Accessories

Accessories, see basic units of the 3TC contactors, page 4/76 onwards.

Spare parts for contactors with extended operating range

For contactors	Remarks	Rated control supply voltage U_s	SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type	V DC	d					
Arc chutes								
2	3TC4417-0L...	With cutout for resistor mounting	--	X	3TY2442-0B	1	1 unit	41B
Solenoid coils								
2	3TC44	With series resistor, without varistor	24	15	3TY6443-0LB4	1	1 unit	41B
			110	X	3TY6443-0LF4	1	1 unit	41B
4	3TC48		24	X	3TY6483-0LB4	1	1 unit	41B
			110	X	3TY6483-0LF4	1	1 unit	41B

All spare parts not mentioned here are identical to those of the basic units of the 3TC contactors, see page 4/78.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Overview

3TC4 and 3TC5

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

The contactors are finger-safe according to IEC 60529. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

The DC motor ratings given in the tables are applicable to the DC-3 and DC-5 utilization categories with 2-pole switching of the load or with the two conducting paths of the contactor connected in series.

One contactor conducting path can switch full power up to 220 V. For voltages over 220 V, the two conducting paths are to be switched in series, [see rated data of the main contacts, page 4/71](#).

Surge suppression

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 opening surges in the coil, [see page 4/77 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 if the contactor coils are damped against voltage peaks. Different accessories are available for the contactors (time change with: Interference suppression diode 6x to 10x; diode assembly 2x to 6x; suppressor diode +1 to 5 ms; varistor +2 to 5 ms).

For details, [see Equipment Manual](#).

Auxiliary contacts

The contactors are equipped with two lateral auxiliary switches each with 1 NO + 1 NC contact. On the 3TC48 to 3TC56 contactors with AC operation, a second auxiliary switch can be mounted on the right and left. On contactors with DC operation, expansion of the auxiliary contacts is not possible.

3TC7

IEC 60947-4-1

The contactors are suitable for use in any climate. They are suitable for switching and controlling DC motors as well as all other DC circuits.

The solenoid excitation is configured for a particularly large operating range. It is between 0.7 or 0.8 and $1.2 \times U_s$.

3TC74 contactors can be used at up to 750 V/400 A and 50 Hz in AC-1 operation. For voltages over 750 V, the two conducting paths (3TC74: two contactors) are to be switched in series, [see rated data of the main contacts, page 4/73](#).

Application

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

A version with a particularly large coil operating range is available for operation in electrically driven vehicles and in switchgear subject to large fluctuations in actuating voltage ([see page 4/67](#)).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Technical specifications

More information

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

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

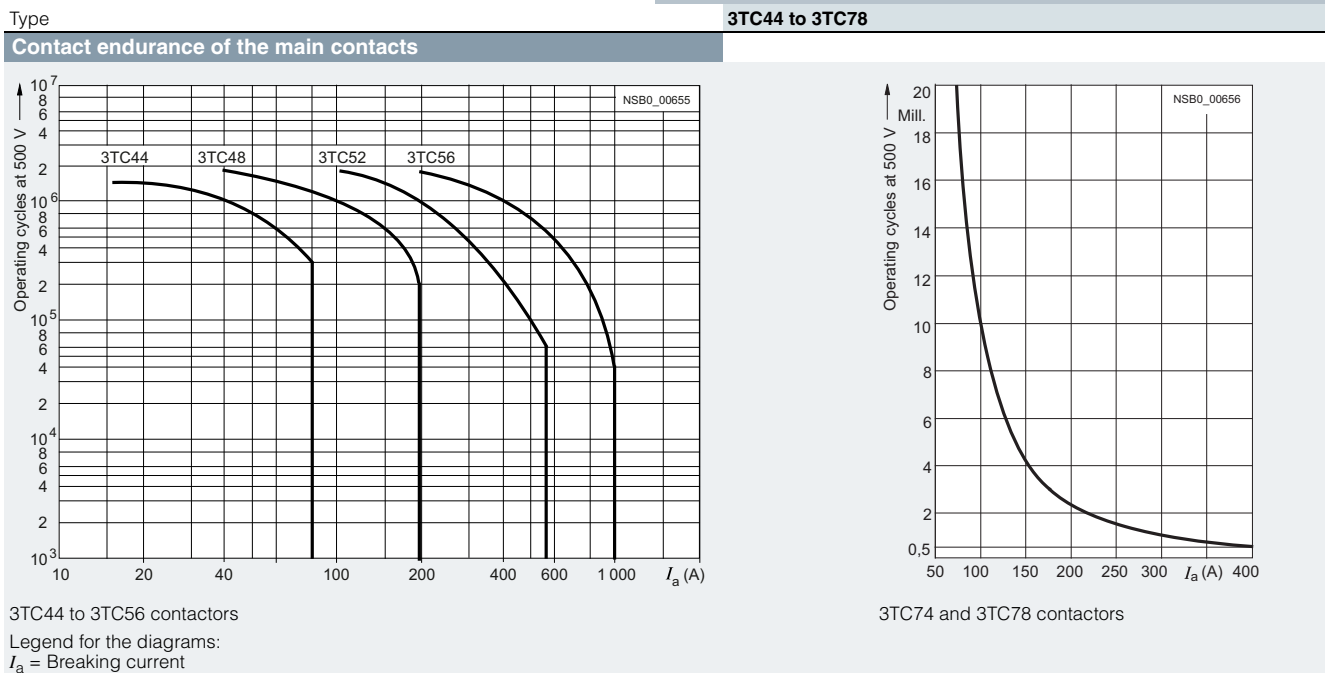
Type			3TC4 and 3TC7	3TC5
Rated data of the auxiliary contacts				
Rated insulation voltage U_i (pollution degree 3)	V		690	
Conventional thermal current I_{th} = rated operational current I_e/AC-12	A		10	10
AC load				
Rated operational current I_e/AC-15/AC-14				
• At rated operational voltage U_e	24 V	A	10	10
	110 V	A	10	10
	125 V	A	10	10
	220 V	A	6	6
	230 V	A	5.6	5.6
	380 V	A	4	4
	400 V	A	3.6	3.6
	500 V	A	2.5	2.5
	660 V	A	2.5	2.5
	690 V	A	--	--
DC load				
Rated operational current I_e/DC-12				
• At rated operational voltage U_e	24 V	A	10	10
	60 V	A	10	10
	110 V	A	3.2	8
	125 V	A	2.5	6
	220 V	A	0.9	2
	440 V	A	0.33	0.6
	600 V	A	0.22	0.4
Rated operational current I_e/DC-13				
• At rated operational voltage U_e	24 V	A	10	10
	48 V	A	5	5
	110 V	A	1.14	2.4
	125 V	A	0.98	2.1
	220 V	A	0.48	1.1
	440 V	A	0.13	0.32
	600 V	A	0.07	0.21

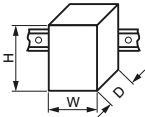
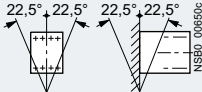
Type			3TC44 to 3TC56
Ⓔ and Ⓐ rated data of the auxiliary contacts			
Rated voltage, max.	V AC		600
Switching capacity			A 600, P 600

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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



Contactor	Type Size	3TC44 2	3TC48 4	3TC52 8	3TC56 12	
General data						
Dimensions (W x H x D) - DC operation - AC operation		 mm mm	70 x 85 x 141 70 x 85 x 100	100 x 183 x 180 100 x 183 x 154	135 x 238 x 232 135 x 238 x 200	160 x 279 x 310 160 x 279 x 251
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.						
Mechanical service life	Operating cycles	10 million				
Electrical endurance		See the endurance diagram above				
Rated insulation voltage U_i (pollution degree 3)	V	800	1 000			
Rated impulse withstand voltage U_{imp}	kV	8				
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Annex N	V	Up to 300	Up to 660			
Mirror contacts ¹⁾ A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.		Yes, acc. to IEC 60947-4-1, Annex F				
Permissible ambient temperature						
- During operation - During storage	°C °C	-25 ... +55 -50 ... +80				
Degree of protection IP on the front according to IEC 60529		IP00	IP00 (IP20 with cover)			
Touch protection on the front acc. to IEC 60529		--	Finger-safe for vertical touching from the front with cover			
Shock resistance	Rectangular pulse	g/ms	7.5/5 and 3.4/10	10/5 and 5/10	12/5 and 5.5/10	12/5 and 5.6/10
Short-circuit protection						
Main circuit						
- Type of coordination "1" - Type of coordination "2"		2 x 3NA3020 (50 A) in series 2 x 3NA3020 (50 A) in series	2 x 3NA31.. (160 A) in series 2 x 3NA31.. (63 A) in series	3NE1332-4D (400 A) 3NE1332-4D (400 A)	2 x 3NE1330-4D (315 A) parallel 2 x 3NE1330-4D (315 A) parallel	
Auxiliary circuit (short-circuit current $I_k \leq 1$ kA)						
- Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE - Miniature circuit breaker with C characteristic	A A	16 10				

¹⁾ For 3TC44, one NC contact each must be connected in series for the right and left auxiliary switch respectively.

Rated data of the auxiliary contacts, see page 4/69.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

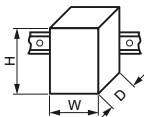
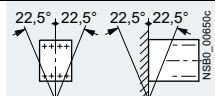
Type			3TC44	3TC48	3TC52	3TC56
Size			2	4	8	12
Control						
Solenoid coil operating range						
• DC operation			0.7 ... 1.25 x U_s			
• AC operation			0.8 ... 1.1 x U_s			
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
• DC operation	Closing = Closed	W	10	19	30	86
• AC 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	--		
Operating times within operating range						
Total break time = Opening delay + Arcing time						
• DC operation	Closing delay	ms	35 ... 190	90 ... 380	120 ... 400	110 ... 400
	Opening delay	ms	10 ... 25	17 ... 28	22 ... 35	40 ... 110
• AC operation	Closing delay	ms	10 ... 40	20 ... 50		
	Opening delay	ms	5 ... 25	5 ... 30	10 ... 30	
• Arcing time	DC-1	ms	20			
	DC-3/DC-5	ms	30			
Rated data of the main contacts						
Load rating with DC						
Utilization category DC-1, ($L/R \leq 1$ ms)						
• Rated operational currents I_e (at 55 °C)	Up to U_e 750 V	A	32	75	220	400
• Minimum conductor cross-section		mm ²	6	25	95	240
• Rated power at U_e (≤ 220 V DC: one conducting path, > 220 V DC: two conducting paths in series)	At 220 V	kW	7	16.5	48	88
	440 V	kW	14	33	97	176
	600 V	kW	19.2	45	132	240
	750 V	kW	24	56	165	300
Utilization category DC-3 and DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)						
• Rated operational currents I_e (at 55 °C)	Up to 220 V	A	32	75	220	400
	440 V	A	29	75	220	400
	600 V	A	21	75	220	400
	750 V	A	7.5	75	170	400
• Rated power at U_e (≤ 220 V DC: one conducting path, > 220 V DC: two conducting paths in series)	At 110 V	kW	2.5	6.5	20	35
	220 V	kW	5	13	41	70
	440 V	kW	9	27	82	140
	600 V	kW	9	38	110	200
	750 V	kW	4	45	110	250
Switching frequency						
Switching frequency z in operating cycles/hour						
AC/DC operation						
• For weak or non-inductive load DC-1	h^{-1}		1 500	1 000		
• For inductive load DC-3/DC-5	h^{-1}		750	600		
Conductor cross-sections						
Main conductors (1 or 2 conductors can be connected)			 Screw terminals			
• Solid	mm ²		2 x (2.5 ... 10)	2 x (6 ... 16)	--	
• Finely stranded with end sleeve	mm ²		2 x (1.5 ... 4)	--		
• Stranded with cable lug	mm ²		2 x 16	2 x 35	2 x 120	2 x 150
• Pin-end connector to DIN 46231	mm ²		2 x (1 ... 6)	--		
• Busbars	mm		--	15 x 2.5	25 x 4	2 x (25 x 3)
• Terminal screw			M5	M6	M10	
Auxiliary conductors (1 or 2 conductors can be connected)						
• Solid	mm ²		2 x (1 ... 2.5)			
• Finely stranded with end sleeve	mm ²		2 x (0.75 ... 1.5)			

Rated data of the auxiliary contacts, [see page 4/69](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type			3TC74	3TC78
Design			1-pole contactors	2-pole contactors
General data				
Dimensions (W x H x D)				
		mm	78 x 352 x 276	160 x 366 x 290
Permissible mounting position				
The contactors are designed for operation on a vertical mounting surface.				
Mechanical service life			Operating cycles	30 million
Electrical endurance			See page 4/70	
Rated insulation voltage U_i (pollution degree 3)			V	1 500
Rated impulse withstand voltage U_{imp}			kV	8
Protective separation between the coil and the main contacts acc. to IEC 60947-1, 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
Degree of protection IP on the front according to IEC 60529			IP00	
Short-circuit protection				
Main circuit				
• Type of coordination "1"			A	2 x 3NE1330-4D (315 A) parallel
• Type of coordination "2"			A	2 x 3NE1330-4D (315 A) parallel
Auxiliary circuit (Short-circuit current $I_k \leq 1$ kA)			2 x 3NE1330-5E (315 A) parallel	
• 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	46
			W	92
• AC operation, 50 Hz			Closing = Closed	80
			VA	160
			P.f.	0.95
Operating times within operating range				
Total break time = Opening delay + Arcing time				
• AC and DC operation			Closing delay	ms
			ms	60 ... 100
			Opening delay	ms
			ms	20 ... 35
• Arcing time at 0.06 ... 4 x I_e			ms	40 ... 70

¹⁾ For 3TC78, one auxiliary NC contact each of the right and left conducting paths must be connected in series.

Rated data of the auxiliary contacts, see page 4/69.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3TC74		3TC78	
Design	1-pole contactors		2-pole contactors	
Rated data of the main contacts				
Load rating with DC				
Utilization category DC-1, ($L/R \leq 1$ ms)				
• Rated operational current I_g /DC-1 (at 55 °C)	A	500		
• Minimum conductor cross-section	mm ²	2 x 150		
• Rated power (≤ 750 V DC: one conducting path, > 750 V DC: two conducting paths in series)	At 220 V	kW	110	
	440 V	kW	220	
	600 V	kW	300	
	750 V	kW	375	
	1 200 V	kW	--	600
	1 500 V	kW	--	750
• Critical currents, without arc extinction	At 440 V	A	≤ 7	--
	600 V	A	≤ 13	--
	750 V	A	≤ 15	--
	≤ 800 V	A	--	≤ 7
	1 200 V	A	--	≤ 13
	1 500 V	A	--	≤ 15
Utilization category DC-3 and DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)				
• Rated operational current I_g (at 55 °C)	A	400		
• Rated power at U_g (≤ 750 V DC: one conducting path, > 750 V DC: two conducting paths in series)	At 110 V	kW	35	
	220 V	kW	70	
	440 V	kW	140	
	600 V	kW	200	
	750 V	kW	250	
	1 200 V	kW	--	400
	1 500 V	kW	--	500
Permissible rated current for regenerative braking				
At 110 ... 600 V	A	400		
Switching frequency				
Switching frequency z in operating cycles/hour				
AC/DC operation				
• For weak or non-inductive load DC-1	h ⁻¹	750	1 000	
• For inductive load DC-3/DC-5	h ⁻¹	500		
Conductor cross-sections				
Main conductors (1 or 2 conductors can be connected)		 Screw terminals		
• Stranded with cable lug	mm ²	2 x ... 150		
• Busbars	mm	2 x (30 x 4)		
Auxiliary conductors (1 or 2 conductors can be connected)				
• Solid	mm ²	1 ... 2.5		
• Finely stranded with end sleeve	mm ²	0.75 ... 1.5		

Rated data of the auxiliary contacts, [see page 4/69](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Selection and ordering data

DC operation  or AC operation, 50 Hz 



3TC44



3TC48

Size	Utilization category ¹⁾	Operational current I_e ²⁾	Ratings of DC motors at					Auxiliary contacts ³⁾ Version		Rated control supply voltage U_s	SD	Screw terminals 	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
			110 V	220 V	440 V	600 V	750 V	NO	NC	V							
		A	kW	kW	kW	kW	kW				d						

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

DC operation

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

2	DC-3, DC-5	32	2.5	5	9	9	4	2	2	24 DC 110 DC 220 DC	2 2 2	3TC4417-0AB4 3TC4417-0AF4 3TC4417-0AM4			1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
4	DC-3, DC-5	75	6.5	13	27	38	45	2	2	24 DC 110 DC 220 DC	2 2 5	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	15 15 5	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	15 15 15	3TC5617-0AB4 3TC5617-0AF4 3TC5617-0AM4			1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

AC operation, 50 Hz

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

2	DC-3, DC-5	32	2.5	5	9	9	4	2	2	220/230 AC ⁵⁾ 110/110 AC	2 2	3TC4417-0BP0 3TC4417-0BF0			1 1	1 unit 1 unit	41B 41B
4	DC-3, DC-5	75	6.5	13	27	38	45	2	2	220/230 AC ⁵⁾ 110 AC	5 5	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	5 5	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	15 15	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 $1.15 \times U_s$; lower operating range limit according to IEC 60947.

Other rated control supply voltages according to page 4/76 on request.

Accessories, see page 4/76 onwards.

For spare parts, see page 4/78.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

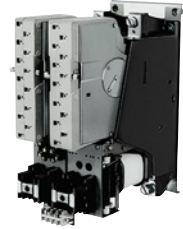
3TC contactors for switching DC voltage, 1- and 2-pole

DC operation  or AC operation, 50 Hz 

For screw fixing



3TC74



3TC78

Size	Utilization category ¹⁾	Operational current I_e	Ratings of DC motors at							Auxiliary contacts ²⁾		Rated control supply voltage U_s	SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG	
			110 V	220 V	440 V	600 V	750 V	1 200 V	1 500 V	Version									
			A	kW	kW	kW	kW	kW	kW	kW	NO	NC	V	d	Article No.	Price per PU			
3TC74 1-pole contactors · Operational voltage up to 750 V																			
DC operation																			
12	DC-3, DC-5	400	35	70	140	200	250	--	--	4	4	24 DC 110 DC	15 15	3TC7414-0EB 3TC7414-0EF		1 1	1 unit 1 unit	41B 41B	
AC operation, 50 Hz																			
12	DC-3, DC-5	400	35	70	140	200	250	--	--	4	4	230/220 AC ³⁾	15	3TC7414-1CM		1	1 unit	41B	
3TC78 2-pole contactors · Operational voltage up to 1 500 V																			
DC operation																			
12	DC-3, DC-5	400	35	70	140	200	250	400	500	4	4	24 DC 110 DC	15 15	3TC7814-0EB 3TC7814-0EF		1 1	1 unit 1 unit	41B 41B	
AC operation, 50 Hz																			
12	DC-3, DC-5	400	35	70	140	200	250	400	500	4	4	230/220 AC ³⁾	15	3TC7814-1CM		1	1 unit	41B	

¹⁾ Permissible load for DC-1 utilization category, see detailed technical specifications in the Reference Manual.

²⁾ The fitting of auxiliary switches cannot be altered on DC-operated contactors.

³⁾ Upper operating range limit at 230 V AC: $1.14 \times U_s$.

Other rated control supply voltages according to page 4/76 on request.

For spare parts, see page 4/78.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Options

**Rated control supply voltages,
possible on request (change of the 10th and 11th digits of the Article No.)**

Delivery time on request

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

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

²⁾ Upper operating range limit at 230 V AC: $1.14 \times U_s$.

Accessories

For contactors		Version	Auxiliary switches		SD	Screw terminals	PU (UNIT, SET, M)	PS*	PG
		Auxiliary contacts	Left	Right		Article No.	Price per PU		
Size	Type	NO	NC		d				
Second auxiliary switch (for AC operation only)									
4	3TC48	2nd auxiliary switch, left		--	20	3TY6501-1K	1	1 unit	41B
		1	1						
		2nd auxiliary switch, right		--	20	3TY6501-1L	1	1 unit	41B
		1	1						
8 and 12	3TC52, 3TC56	2nd auxiliary switch, left		--	20	3TY6561-1K	1	1 unit	41B
		1	1						
		2nd auxiliary switch, right		--	20	3TY6561-1L	1	1 unit	41B
		1	1						
Solid-state compatible auxiliary switches									
		For operation in dusty atmospheres and in solid-state circuits with rated operational currents I_e AC-14 and DC-13 of 1 ... 300 mA at 3 ... 60 V							
2 and 4	3TC44, 3TC48	2nd auxiliary switch, left or right (replacement for 3TY6561-1U, 3TY6561-1V)		--	5	3TY7561-1UA00	1	1 unit	41B
		1 CO contact							

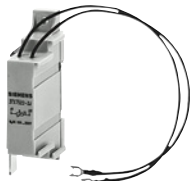
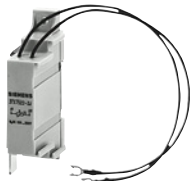


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Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

For contactors		Version	Rated control supply voltage U_s		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type		V AC	V DC	d					
Surge suppressors · Varistors										
 3TX7402-3.	2	3TC44 ¹⁾	Varistors²⁾	24 ... 48	24 ... 70	2	3TX7402-3G	1	1 unit	41B
			With line spacer, for mounting on the coil terminal	48 ... 127	70 ... 150	2	3TX7402-3H	1	1 unit	41B
				127 ... 240	150 ... 250	2	3TX7402-3J	1	1 unit	41B
				240 ... 400	--	20	3TX7402-3K	1	1 unit	41B
				400 ... 600	--	20	3TX7402-3L	1	1 unit	41B
 3TX7462-3.	4	3TC48	Varistors²⁾	24 ... 48	24 ... 70	2	3TX7462-3G	1	1 unit	41B
			For sticking onto the contactor base or for mounting separately	48 ... 127	70 ... 150	2	3TX7462-3H	1	1 unit	41B
				127 ... 240	150 ... 250	2	3TX7462-3J	1	1 unit	41B
				240 ... 400	--	2	3TX7462-3K	1	1 unit	41B
				400 ... 600	--	2	3TX7462-3L	1	1 unit	41B
 3TX7522-3.	8 and 12	3TC52, 3TC56	Varistors	24 ... 48	--	2	3TX7462-3G	1	1 unit	41B
			For sticking onto the contactor base or for mounting separately	48 ... 127	--	2	3TX7462-3H	1	1 unit	41B
				127 ... 240	--	2	3TX7462-3J	1	1 unit	41B
				240 ... 400	--	2	3TX7462-3K	1	1 unit	41B
				400 ... 600	--	2	3TX7462-3L	1	1 unit	41B
	8 and 12	3TC52, 3TC56	Varistors²⁾	--	24 ... 70	2	3TX7522-3G	1	1 unit	41B
			For separate screw fixing or snapping onto TH 35 standard mounting rail	--	70 ... 150	2	3TX7522-3H	1	1 unit	41B
				--	150 ... 250	2	3TX7522-3J	1	1 unit	41B
Surge suppressors · RC elements										
 3TX7462-3., 3TX7522-3.	4	3TC48	RC elements	24 ... 48	--	20	3TX7462-3R	1	1 unit	41B
			For lateral snapping onto auxiliary switch or TH 35 standard mounting rail	--	24 ... 70	2	3TX7522-3R	1	1 unit	41B
				48 ... 127	--	2	3TX7462-3S	1	1 unit	41B
				--	70 ... 150	2	3TX7522-3S	1	1 unit	41B
				127 ... 240	--	2	3TX7462-3T	1	1 unit	41B
				--	150 ... 250	2	3TX7522-3T	1	1 unit	41B
				240 ... 400	--	2	3TX7462-3U	1	1 unit	41B
				400 ... 600	--	2	3TX7462-3V	1	1 unit	41B
	8 and 12	3TC52, 3TC56	RC elements	24 ... 48	--	2	3TX7522-3R	1	1 unit	41B
			For lateral snapping onto auxiliary switch or TH 35 standard mounting rail	48 ... 127	--	2	3TX7522-3S	1	1 unit	41B
				127 ... 240	--	2	3TX7522-3T	1	1 unit	41B
				240 ... 400	--	2	3TX7522-3U	1	1 unit	41B
				400 ... 600	--	2	3TX7522-3V	1	1 unit	41B
Surge suppressors · Diodes										
 3TX7462-3.	4 to 12	3TC48, 3TC52, 3TC56	Diode assemblies³⁾ (Diode and Zener diode) for DC solenoid system, for sticking onto the contactor base or for mounting separately	--	24 ... 250	2	3TX7462-3D	1	1 unit	41B

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

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

³⁾ Not for DC operation.

For contactors		Version	Rated control supply voltage U_s		SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type		V AC	V DC	d					
Terminal covers										
 3TX6546-3B	2	3TC44	For protection against inadvertent contact with exposed busbar connections (1 set = 2 units)	--	5	3TY2444-0B		1	1 unit	41B
	6	3TC48	For protection against inadvertent contact with exposed busbar connections	M6	5	3TX6506-3B		1	1 unit	41B
	8 and 12	3TC52, 3TC56	Can be screwed on free screw end; covers one busbar connection (1 set = 6 units)	M10	2	3TX6546-3B		1	1 unit	41B

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Spare parts

For contactors		Version	Auxiliary contacts		Auxiliary switches		SD	Screw terminals		PU (UNIT, SET, M)	PS*	PG	
Size		Type			Left	Right	d	Article No.	Price per PU				
					NO	NC							
Auxiliary switches													
	For lateral mounting												
	2 and 4	3TC44, 3TC48	Auxiliary switch (replacement for 3TY6501-1A, 3TY6501-1B)	1	1			20	3TY6501-1AA00		1	1 unit	41B
	8 and 12	3TC52, 3TC56	Auxiliary switch, left	1	1		--	20	3TY6561-1A		1	1 unit	41B
			Auxiliary switch, right	1	1	--		20	3TY6561-1B		1	1 unit	41B
	12	3TC74	Auxiliary switch	4	4			5	3TY2741-2J		1	1 unit	41B
12	3TC78	Auxiliary switch, left	2	2		--	20	3TY2781-2C		1	1 unit	41B	
		Auxiliary switch, right	2	2	--		15	3TY2781-2D		1	1 unit	41B	
For contactors		Version	Rated control supply voltage U_s				SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Size		Type					d						
Surge suppressors · Varistors													
12	3TC7	For sticking onto the contactor base		24	110		15	3TX2746-2F		1	1 unit	41B	
							10	3TX2746-2G		1	1 unit	41B	
For contactors		Version					SD	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG	
Size		Type					d						
Solenoid coils													
DC operation ¹⁾													
2	3TC44	--						3TY6443-0B..					
4	3TC48							3TY6483-0B..					
8	3TC52							3TY6523-0B..					
12	3TC56							3TY6563-0B..					
AC operation ¹⁾													
2	3TC44	--						3TY7403-0A..					
4	3TC48							3TY6483-0A..					
8	3TC52							3TY6523-0A..					
12	3TC56							3TY6566-0A..					
Contacts with fixing parts													
	In order to ensure reliable operation of the contactors, only original replacement contacts should be used.												
2	3TC44	(1 set = 2 moving and 4 fixed switching elements)				5		3TY2440-0A		1	1 unit	41B	
4	3TC48					5		3TY2480-0A		1	1 unit	41B	
8	3TC52					5		3TY2520-0A		1	1 unit	41B	
12	3TC56					5		3TY2560-0A		1	1 unit	41B	
12	3TC7	Main contacts (1 set) For 3TC78: 2 units required per contactor				5		3TY2740-0E		1	1 unit	41B	
Arc chutes													
	2	3TC44	Arc chutes, 2-pole				15	3TY2442-0A		1	1 unit	41B	
	4	3TC48					15	3TY2482-0A		1	1 unit	41B	
	8	3TC52					15	3TY2522-0A		1	1 unit	41B	
	12	3TC56					15	3TY2562-0A		1	1 unit	41B	
	12	3TC7	For 3TC78: 2 units required per contactor				15	3TY2742-0C		1	1 unit	41B	

¹⁾ For rated control supply voltages, see page 4/76.
The 10th and 11th digits of the article number must be supplemented accordingly.