

Switching devices – Contactors and contactor assemblies – Special applications



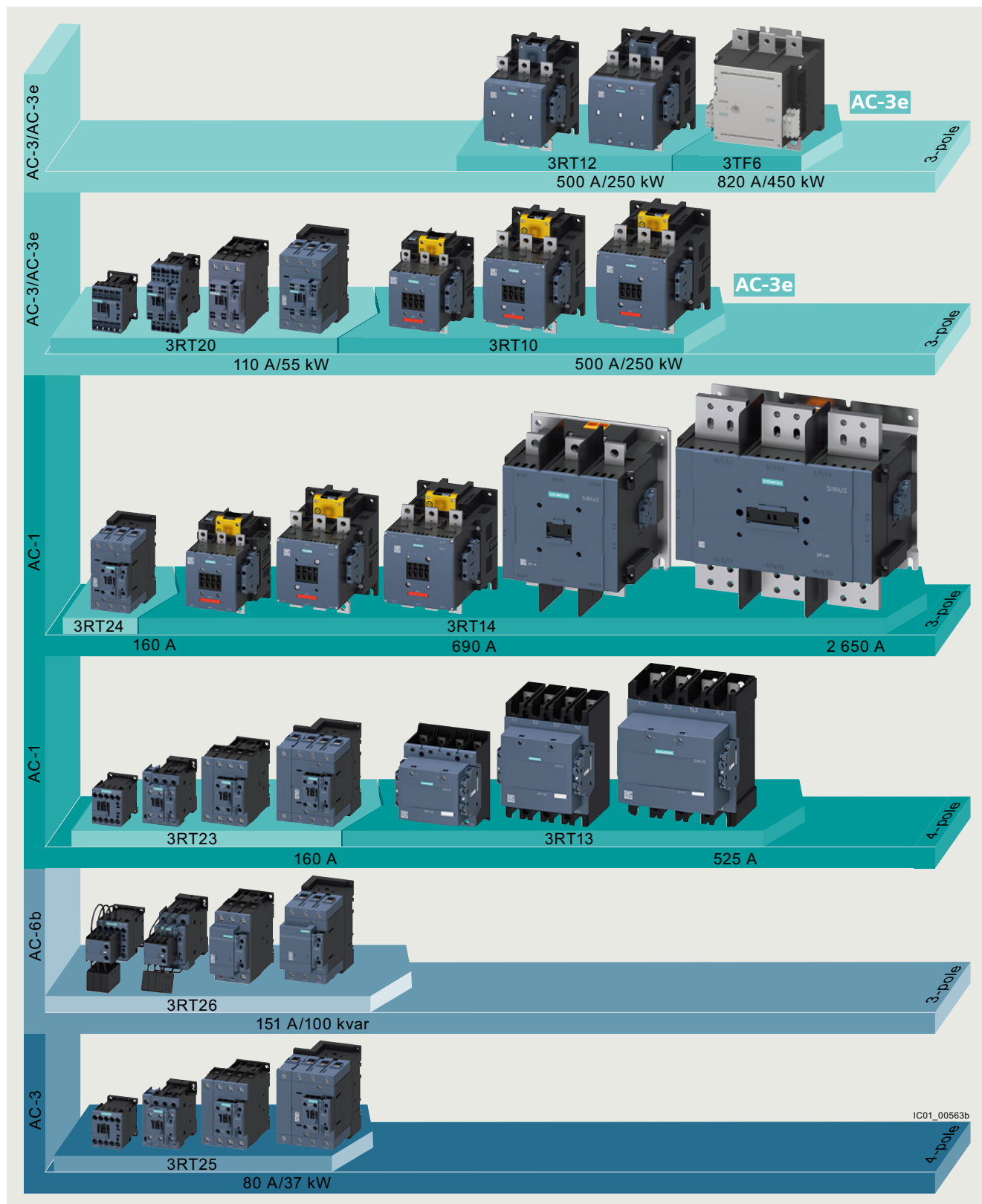
	Price groups PG 41A, 41B
4/2	Introduction
	Contactors for special applications
4/7	SIRIUS 3RT.4 contactors for low or non-inductive loads (AC-1), 3-pole up to 2 650 A
4/21	SIRIUS 3RT.3 contactors, 4-pole, up to 525 A
4/36	SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC
4/42	SIRIUS 3RT26 contactors for capacitive loads (AC-6b), 3-pole
4/52	SIRIUS 3RT23 to 3RT26, 3RT14 contactors
4/54	Contactors for railway applications - SIRIUS 3RT contactors with extended operating range, 3-pole
4/63	- SIRIUS 3RH2 contactor relays with extended operating range
4/66	- 3TH4 contactor relays, 8-pole
4/68	- 3TC contactors for switching DC voltage, 2-pole
4/70	3TC contactors for switching DC voltage, 1- and 2-pole

3/138	3TG10 power relays/miniature contactors
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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. 4/16)		(p. 4/17, 4/18)	(p. 4/17, 4/18)		(p. 4/17, 4/18)
AC-1						
U_i	V	1 000				
U_e	V	690				
I_e up to 690 V	40 °C A	140	160	275	400	500
	60 °C A	130	140	250	380	450
						690
						Standard operating mechanism: 650, solid-state operating mechanism: 600

Accessories for contactors

Auxiliary switches	3RH29, 3RA28	(p. 3/87 ... 3/95)	3RH19, 3RT1926	(p. 3/90, 3/92, 3/94, 3/96)
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	3RA281.	(p. 3/100)	--	
Terminal covers	3RT2946-4EA4	(p. 3/112)	3RT1956-4EA.	(p. 3/112)
Box terminal blocks	--		3RT1955/56-4G	(p. 3/110)
Surge suppressors	3RT2936, 3RT2946	(p. 3/97, 3/98)	3RT1956-1C (RC element)	(p. 3/98)



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

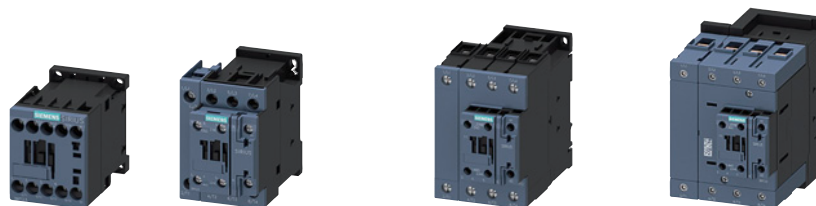
Type	3RT1481	3RT1482	3RT1483	3RT1485	3RT1486	3RT1487
Number of main contacts	3 NO					
AC/DC operation	(p. 4/19)					
AC-1						
U_i	V	1 000				
U_e	V	1 000				
I_e	40 °C A	900	1 050	1 260	1 700	2 100
					2 100	2 650

Accessories for contactors

Second auxiliary switch, lateral	3RH1981-1JA11	(p. 4/19)
Spare parts for contactors		
First auxiliary switch, lateral	3RH1981-1DA11	(p. 4/20)
Phase barriers	3RT1983-4AA1	(p. 4/20)
Withdrawable coils	3RT1982-5A.31 (p. 4/20)	3RT1983-5AP31 (p. 4/20)
		3RT1987-5AP31 (p. 4/20)

Switching devices – Contactors and contactor assemblies – Special applications

Introduction



Size	S00	S0	S2	S3
Type	3RT231.	3RT232.	3RT233.	3RT234.

4-pole 3RT23 contactors

Type	3RT2316 3RT2317		3RT2325 3RT2326 3RT2327			3RT2336 3RT2337		3RT2344 3RT2346 3RT2348			
Number of main contacts	4 NO		4 NO			4 NO		4 NO			
AC, DC and AC/DC operation	(p. 4/29, 4/31)		(p. 4/29 ... 4/31)			(p. 4/29 ... 4/33)		(p. 4/29 ... 4/33)			
AC-1											
U_i	V	690									
U_e	V	690									
I_e up to 690 V	40 °C A	18	22	35	40	50	60	110	110	140	160
	60 °C A	16	20	30	35	42	55	95	100	130	140
AC-3											
I_e up to 400 V	A	9	12	15.5	15.5	15.5	--	--	--	--	--
P at 400 V	kW	4	5.5	7.5	7.5	7.5	--	--	--	--	--

Accessories for contactors

Auxiliary switches	3RH29, 3RA28			(p. 3/87 ... 3/95)
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	3RA281.			(p. 3/100)
Terminal covers	--	3RT2936-4EA4	(p. 3/112)	3RT2946-4EA4 (p. 3/112)
Surge suppressors	3RT2916	(p. 3/97, 3/98)	3RT2936 (p. 3/97, 3/98)	3RT2936, 3RT2946 (p. 3/97, 3/98)



Size	S6	S10	S12
Type	3RT1355	3RT136.	3RT137.

4-pole 3RT13 contactors

Type	3RT1355		3RT1363		3RT1364		3RT1373		3RT1374		3RT1375		
Number of main contacts	4 NO		4 NO				4 NO						
AC/DC operation	(p. 4/34)		(p. 4/34)				(p. 4/34)						
AC-1													
U_i	V	1 000											
U_e	V	690		1 000									
I_e	40 °C A	200		275		350		400		500		525	

Accessories for contactors

Second auxiliary switch, lateral	3RH1951-1SA11			(p. 4/35)
Terminal covers	3RT1956-4EB10	(p. 4/35)	3RT1966-4EB10	(p. 4/35)
Mechanical interlocks	3RA1954-3A			(p. 4/35)
Bus connectors offset	--		3RT1966-4D	(p. 4/35)
			3RT1976-4D	(p. 4/35)

Spare parts for contactors

First auxiliary switch, lateral	3RH1951-1TA11	(p. 4/35)
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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. 4/39, 4/40)					(p. 4/39, 4/40)		(p. 4/39, 4/41)		(p. 4/39, 4/41)		
AC-1												
U_i	V	690										
U_e	V	690										
I_e up to 690 V	40 °C	A	18	22	22	40	60	70	100	125		
	60 °C	A	16	20	20	35	55	60	90	105		
AC-3												
I_e up to 400 V	NO	A	9	12	16	25	35	41	65	80		
	NC	A	9	9	9	25 (20) ¹⁾	35	41	65	80		
P												
At 400 V	NO	kW	4	5.5	7.5	11	18.5	22	30	37		
	NC	kW	4	4	4	11 (7.5) ¹⁾	18.5	22	30	37		
At 230 V	NO	kW	2.2	3/2.2	4/2.2	5.5	11	11	18.5	22		
	NC	kW	2.2	3/2.2	4/2.2	5.5	11	11	18.5	22		
Accessories for contactors												
Auxiliary switches	3RH29, 3RA28											(p. 3/87 ... 3/95)
Function modules (direct-on-line starting, star-delta (wye-delta) starting)	3RA281.											(p. 3/100)
Terminal covers	--						3RT2936-4EA4 (p. 3/112)		3RT2946-4EA4 (p. 3/112)			
Surge suppressors	3RT2916 (p. 3/97, 3/98)					3RT2926 (p. 3/97, 3/98)		3RT2936 (p. 3/97, 3/98)		3RT2936, 3RT2946 (p. 3/97, 3/98)		

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

Further contactors

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

Switching devices – Contactors and contactor assemblies – Special applications

Introduction

Connection methods

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

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



Screw terminals



Spring-loaded terminals

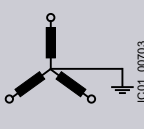
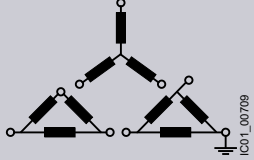


Busbar connections

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

Voltage data

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

Voltage data U_e	Line system configurations	
	Three-phase four-wire systems	Three-phase three-wire systems
		
V	V	V
230	--	230
400	230/400	400
440	260/440	440
500	--	500
690	400/690	690 (only from size S3)
1 000	--	1 000

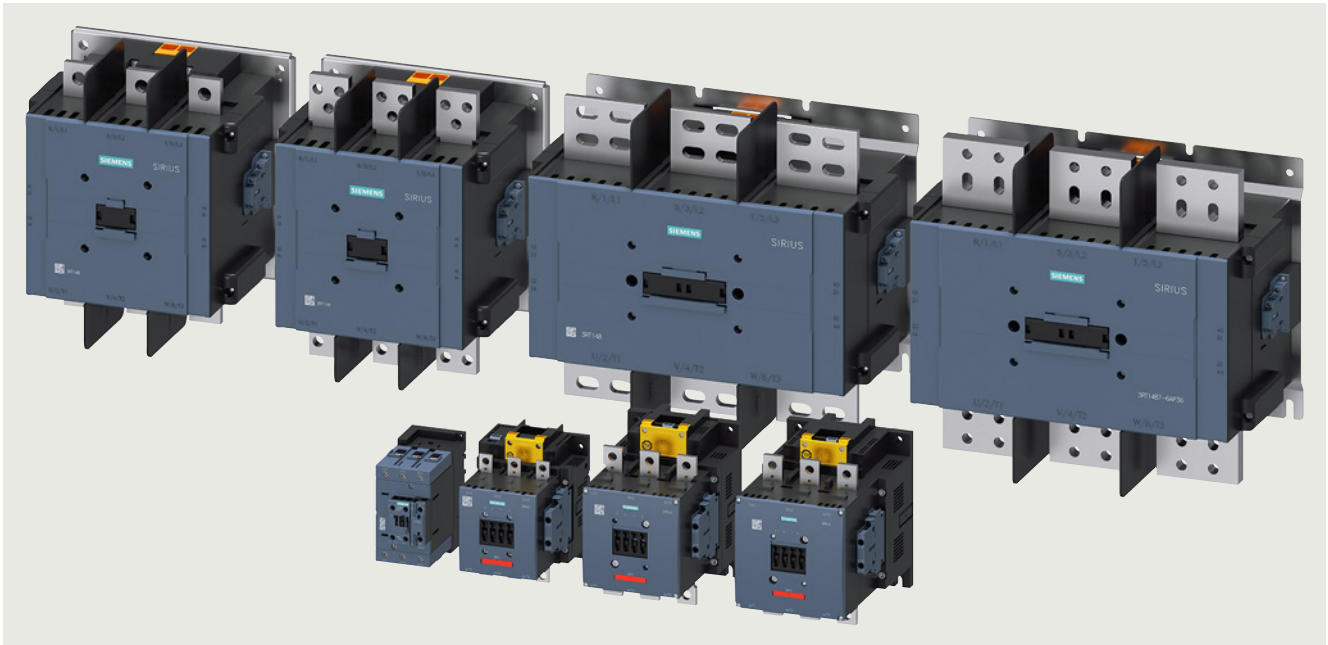
-- Not specified

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Overview



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

Standards

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

Contactors with increased tamper protection

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

Protecting connections against short circuit, overload and overvoltage

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

Short-circuit and overload protection of main connections

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

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

Short-circuit and overload protection of auxiliary connections

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

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

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

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

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

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

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

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

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

Short-circuit and overload protection of other connections

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Protection against overvoltage at the control supply voltage connection

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

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

Note:

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

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

Connection methods

Main circuit

- 3RT244 contactors:
Screw terminals with box terminal;
direct connection to the connecting bar possible with cable lugs when the box terminal is removed.
- 3RT145 to 3RT147 contactors:
Screw terminals with connecting bars that the cables can be connected to using either cable lugs or flexible or rigid busbars. Alternatively, box terminals are available as accessories.
- 3RT148 contactors:
Screw terminals with connecting bars

Auxiliary and control circuits

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

Electromagnetic compatibility (EMC)

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

Note:

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

Contact reliability of the auxiliary contacts

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT contactors or 3RH contactor relays should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Operating mechanism types

3RT244 contactors

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

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

3RT145 to 3RT147 contactors

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

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

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

3RT148 contactors

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

Replacing solenoid coils, operating mechanisms or spare contacts

3RT244 contactors

Solenoid coil or spare contact replacement is possible.

3RT145 to 3RT147 contactors

The operating mechanisms for 3RT14...-A/-N/-P contactors are removable and can be replaced simply by unlocking and pulling them out. The spare contacts can also be replaced.

NOTICE:

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

3RT148 contactors

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

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in delivery condition

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

Expansion possibilities

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

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

Accessories and spare parts

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Connection of contactors to fail-safe control modules

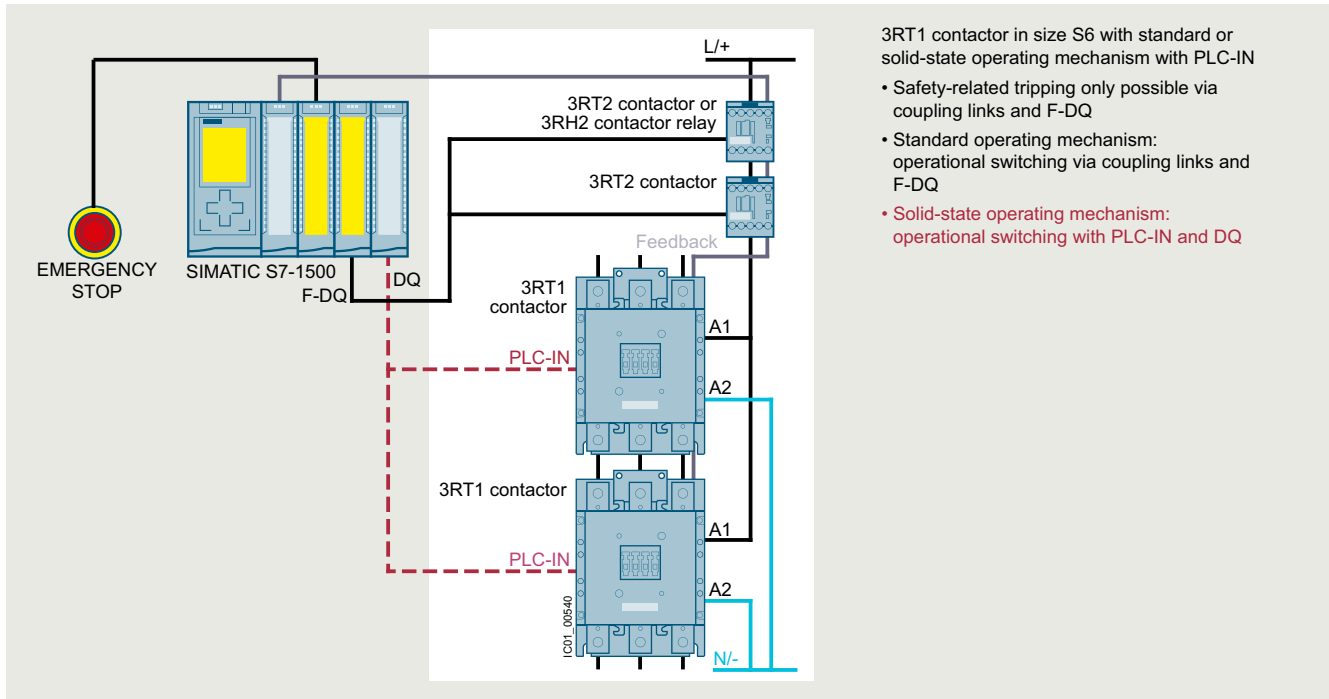
While contactors with smaller power ratings can be connected directly to the outputs of fail-safe controllers, implementing safety-related applications with standard contactors with higher power is much more complicated and elaborate because of the necessary coupling links.

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

More information, see

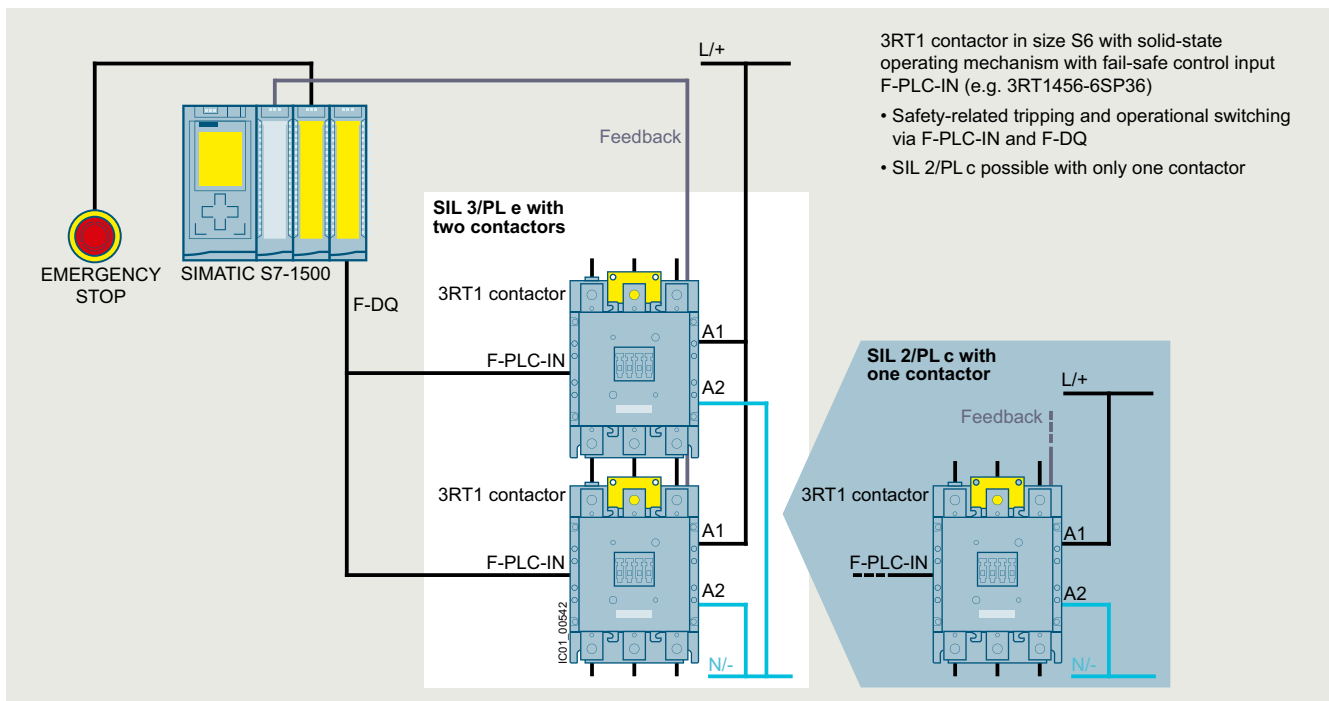
- Safety technology, page 11/1 onwards
- Guide of use for contactors in safety applications

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



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

Example for SIL 3/PL e (left-hand side) or SIL 2/PL c (right-hand side) application – new:



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

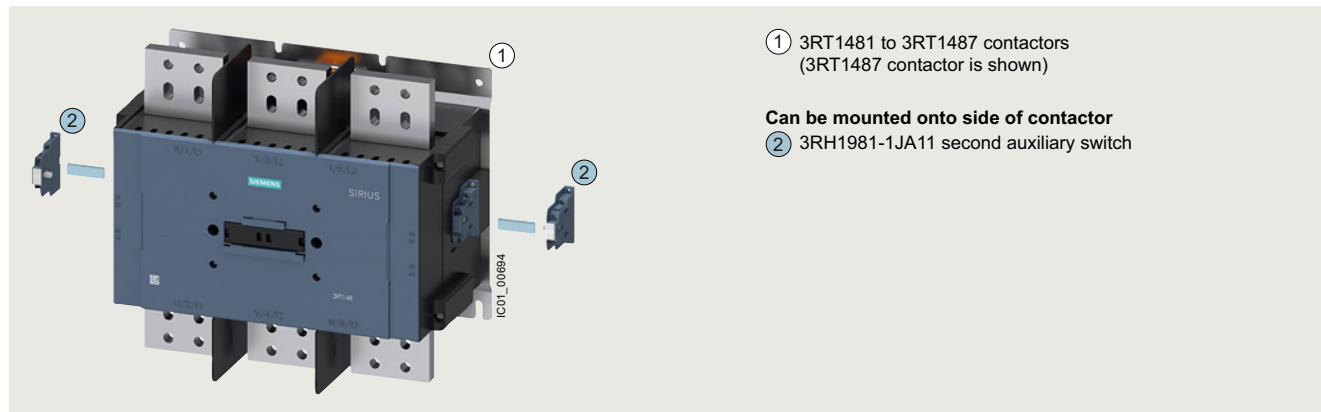
Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Overview graphics with mountable accessories

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



3RT1481 to 3RT1487 contactors with mountable accessories

Application

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

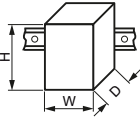
SIRIUS 3RT.4 contactors for weak or non-inductive loads (AC-1), 3-pole up to 2 650 A

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/24229/td>
 For FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/24229/faq>

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

Type	3RT2446, 3RT2448		3RT1456	3RT1466	3RT1467	3RT1476	
Size	S3		S6	S10		S12	
General data							
Dimensions (W x H x D)							
- Basic units - Screw/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/spring-loaded terminals		mm	70 x 140 x 152	120 x 172 x 170	145 x 210 x 202	160 x 214 x 225	
		mm	70 x 140 x 196	120 x 172 x 217	145 x 210 x 251	160 x 214 x 271	
		mm	70 x 140 x 200	--	--	--	
		mm	70 x 140 x 226	--	--	--	
Permissible mounting position							
The contactors are designed for operation on a vertical mounting surface.							
Upright mounting position			 Special version required				
Mechanical endurance							
Basic units and basic units with mounted auxiliary switch	Operating cycles	10 million					
Basic units with solid-state compatible auxiliary switch	Operating cycles	5 million					
Electrical endurance for utilization category AC-1, at $U_e = 400\text{ V}$							
	Operating cycles	0.5 million				0.35 million	0.5 million
Rated insulation voltage U_i (pollution degree 3)	V	1 000					
Rated impulse withstand voltage U_{imp}	kV	6		8			
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N	V	690					
Mirror contacts according to IEC 60947-4-1, Annex F							
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.							
- Integrated auxiliary switches - Removable auxiliary switches	Yes	--					
	--	Yes					
Permissible ambient temperature							
During operation	°C	-25 ... +60					
During storage	°C	-55 ... +80					
Short-circuit protection							
Main circuit							
Version of the fuse link required for short-circuit protection of the main circuit							
- For type of coordination 1		gG: 250 A (690 V, 100 kA)					
- For type of coordination 2		gG: 250 A (690 V, 100 kA)					
Auxiliary circuit							
Version of the fuse link required for short-circuit protection of the auxiliary switch	A	Fuse gG: 10					
Version of the miniature circuit breaker required for short-circuit protection of the auxiliary switch	A	On request					
Short-circuit protection for contactors with overload relays			See Configuration Manual for load feeders				
Short-circuit protection for fuseless load feeders			See 3RA2 load feeders, page 8/5 onwards - Configuration Manual for load feeders				

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3RT2446, 3RT2448		3RT1456		3RT1466, 3RT1467		3RT1476			
Size	-A -N		-A -N/-P/-S		-A -N/-P/-S		-A -N/-P/-S			
Control	S3		S6		S10		S12			
Solenoid coil operating range (AC/DC)			0.8 ... 1.1 x U _s		0.8 x U _{s 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. φ		0.61	--						
• AC operation, 50/60 Hz, standard version	Closed	VA	19	--						
	P.f. φ		0.38	--						
• AC operation, 50/60 Hz, standard version	Closing	VA	348/296	--						
	P.f. φ		0.62/0.55	--						
• AC operation, 50/60 Hz, for USA/Canada	Closed	VA	25/18	--						
	P.f. φ		0.35/0.41	--						
• AC operation, 50/60 Hz, for USA/Canada	Closing	VA	326/326	--						
	P.f. φ		0.62/0.55	--						
• AC operation, 50/60 Hz, for USA/Canada	Closed	VA	22/22	--						
	P.f. φ		0.38/0.4	--						
• AC/DC operation	Closing for AC operation	VA	--	163	300	280	590	530	830	750
	P.f. φ		--	--	0.9	0.8	0.9	0.8	0.9	0.8
• AC/DC operation	Closed for AC operation	VA	--	3.1	5.8	4.8	6.7	8.5	9.2	9
	P.f. φ		--	--	0.8	0.6	0.9	0.4	0.9	0.4
• AC/DC operation	Closing for DC operation	W	--	76	360	320	650	580	920	800
	Closed for DC operation	W	--	1.8	5.2	2.8	7.4	3.4	10	3.6
Type of PLC control input according to IEC 60947-1										
• Solid-state operating mechanism	3RT14...-N/-P		--	Type 2						
	3RT14...-S		--	Type 1						
• Rated voltage	V DC		--	24						
• Operating range	V DC		--	17 ... 30						
• Power consumption	mA		--	≤ 30						
• Recovery time after mains failure, typical (applicable only for fail-safe version 3RT14...-S)	s		--	2						

Type	3RT2446	3RT2448	3RT1456	3RT1466	3RT1467	3RT1476	
Size	S3	S6	S10	S10	S12	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	
	At 60 °C up to 690 V A	130	140	250	380	450	
	At 40 °C up to 1 000 V A	60	80	--	--	--	
	At 60 °C up to 1 000 V A	60	80	--	--	--	
• Minimum cross-section in the main circuit at maximum AC-1 rated value	mm ²	50	70	140	240	300	480
Power loss per main conducting path	At I _e /AC-1/40 °C W	9.8	12.8	28.8	35.2	35.2	61.9

Type	3RT2446, 3RT2448	
Size	S3	
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		
• Solid	mm ²	2 x (2.5 ... 16) ¹⁾
• Stranded	mm ²	2 x (6 ... 16) ¹⁾ ; 2 x (10 ... 50) ¹⁾ ; 1 x (10 ... 70) ¹⁾
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (2.5 ... 35) ¹⁾ ; 1 x (2.5 ... 50) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (10 ... 1/0) ¹⁾ ; 1 x (10 ... 2/0) ¹⁾
• Terminal screws		Hexagon socket, size 4
- Tightening torque	Nm	4.5 ... 6 (40 ... 53 lb.in)
Auxiliary conductors and control conductors (1 or 2 conductors can be connected)		
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• Finely stranded with end sleeve (DIN 46228)	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾
• Terminal screws		M3 (for Pozidriv size 2; Ø 5 ... 6 mm)
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3RT1456		3RT1466, 3RT1467	3RT1476	
Size	S6		S10	S12	
Conductor cross-sections					
Main conductors (1 or 2 conductors can be connected)		Screw terminals			
With mounted box terminals		Type	3RT1955-4G	3RT1956-4G	3RT1966-4G
Terminal screws			M10 (hexagon socket, A/F 4)	M10 (hexagon socket, A/F 4)	M12 (hexagon socket, A/F 5)
• Tightening torque		Nm lb.in	10 ... 12 90 ... 110	10 ... 12 90 ... 110	20 ... 22 180 ... 195
Front clamping point connected					
 NSBD_00479	• 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					
 NSBD_00480	• 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)					
 NSBD_00481	• Finely stranded with end sleeve (DIN 46228)	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185
	• Finely stranded without end sleeve	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185
	• Stranded	mm ²	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 70, max. 2 x 240
	• AWG cables, solid or stranded	AWG	Max. 2 x 1/0	Max. 2 x 3/0	Min. 2 x 2/0, max. 2 x 500 kcmil
	• Ribbon cable conductors (Number x Width x Thickness)	mm	Max. 2 x (6 x 15.5 x 0.8)	Max. 2 x (10 x 15.5 x 0.8)	Max. 2 x (20 x 24 x 0.5)
Busbar connections					
• Connecting bar (max. width)		mm	17		25
- Bore diameter		mm	9		11
Cable lug connection			1)		2)
• Finely stranded with cable lug		mm ²	16 ... 95		50 ... 240
• Stranded with cable lug		mm ²	25 ... 120		70 ... 240
• AWG cables, solid or stranded		AWG	4 ... 250 kcmil		2/0 ... 500 kcmil
• Terminal screws			M8 x 25 (A/F 13)		M10 x 30 (A/F 17)
- Tightening torque		Nm lb.in	10 ... 14 90 ... 124		14 ... 24 124 ... 210
Auxiliary conductors (1 or 2 conductors can be connected)					
• Solid		mm ²	2 x (0.5 ... 1.5) ³⁾ , 2 x (0.75 ... 2.5) ³⁾ according to IEC 60947; max. 2 x (0.75 ... 4) ³⁾		
• Finely stranded with end sleeve (DIN 46228)		mm ²	2 x (0.5 ... 1.5) ³⁾ ; 2 x (0.75 ... 2.5) ³⁾		
• AWG cables, solid or stranded		AWG	2 x (18 ... 14)		
• Terminal screws			M3 (Pozidriv size 2)		
- Tightening torque		Nm lb.in	0.8 ... 1.2 7 ... 10.3		
Auxiliary 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, use the 3RT1956-4EA1 terminal cover for conductor cross-sections from 95 mm² to maintain the phase clearance, [see page 3/112](#).

2) 3RT1466, 3RT1467 and 3RT1476: When connecting cable lugs according to DIN 46234 for conductor cross-sections larger than 240 mm² and according to DIN 46235 for conductor cross-sections larger than 185 mm², the 3RT1966-4EA1 terminal cover is required to maintain the phase clearance, [see page 3/112](#).

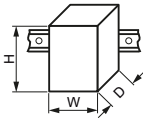
3) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

4) Max. external diameter of the conductor insulation: 3.6 mm.
On spring-loaded terminals with conductor cross-sections ≤ 1 mm² an insulation stop is recommended, [see page 3/115](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type			3RT1481-6A.36	3RT1482-6A.36	3RT1483-6AP36	3RT1485-6AP36	3RT1486-6AP36	3RT1487-6AP36
General data								
Dimensions								
- Width - Height - Depth		mm mm mm	285 352 250			431 403 246		
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 - Of the auxiliary circuit	V V	1 000 600						
Impulse withstand voltage								
- Of the main circuit - Of the auxiliary circuit	kV kV	8 6						
Product function, mirror contact according to IEC 60947-4-1			Yes					
Ambient temperature								
- During operation - During storage	°C °C	-25 ... +55 -40 ... +80						
Short-circuit protection								
Version of the fuse link required								
For short-circuit protection of the main circuit for type of coordination 2		aR: 1 000 A (1 000 V, 30 kA)	aR: 1 100 A (1 000 V, 42 kA)	aR: 1 400 A (1 000 V, 42 kA)	aR: 2 200 A (1 000 V, 42 kA)	aR: 2 500 A (1 000 V, 42 kA)	aR: 2 800 A (1 000 V, 50 kA)	
For short-circuit protection of the auxiliary switch		gG: 16 A (600 V, 1 kA)						

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type		3RT1481-6AF36	6AP36	3RT1482-6AF36	6AP36	3RT1483-6AP36	3RT1485-6AP36	3RT1486-6AP36	3RT1487-6AP36
Control circuit/control									
Operating range factor of the control supply voltage, rated value of the solenoid coil									
- At AC at 50 Hz - At AC at 60 Hz - At DC		0.85 ... 1.1 0.85 ... 1.1 0.85 ... 1.1							
Solenoid coil closing power for DC	W	1 400	2 000	1 400	2 000	2 700	2 800		
Closing apparent power of the solenoid coil for AC									
- At 50 Hz - At 60 Hz		VA					1 700	1 800	
		VA	1 000					1 700	1 800
Solenoid coil closed for DC	W	6	7	6	7	8	11		
Closed apparent power of the solenoid coil for AC									
- At 50 Hz - At 60 Hz		VA	18	23	18	23	20	33	
		VA	18	23	18	23	20	33	
Main circuit									
Operational current at AC-1									
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 1000 V									
- At an ambient temperature of 40 °C		A	900	1 050		1 260	1 700	2 100	2 650
- At an ambient temperature of 55 °C		A	900	1 050		1 260	1 700	2 100	2 650
Type of electrical connection for the main circuit		Busbar connections							
Minimum cross-section in the main circuit for max. AC-1 rated value	mm ²	600	800		1 000		1 500	2 000	3 000

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		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	Article No.	Price per PU		
	690 V 690 V	 	V	V				
	A A	NO NC	V	V				

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

AC operation

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

AC/DC operation

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

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Sizes S6 to S12: AC/DC operation

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



3RT1456-6A.36



3RT1466-6A.36



3RT1476-6A.36



3RT1476-6N.36



3RT1476-6P.35

Size	Rated data	Auxiliary contacts, lateral	Rated control supply voltage U_s	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	AC-1, t_{ij} : 40 °C Operational current I_e up to	Version	50/60 Hz AC or DC	Article No.	Price per PU		
	690 V A	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	3RT1456-6AF36 3RT1456-6AP36	1 1	1 unit 1 unit	41B 41B
S10	400	380	2	2	110 ... 127 220 ... 240	3RT1466-6AF36 3RT1466-6AP36	1 1	1 unit 1 unit	41B 41B
	500	450	2	2	110 ... 127 220 ... 240	3RT1467-6AF36 3RT1467-6AP36	1 1	1 unit 1 unit	41B 41B
S12	690	650	2	2	110 ... 127 220 ... 240	3RT1476-6AF36 3RT1476-6AP36	1 1	1 unit 1 unit	41B 41B

Solid-state operating mechanism

With 24 V DC control signal input

e.g. for control by PLC

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

S6	275	250	2	2	96 ... 127 200 ... 277	3RT1456-6NF36 3RT1456-6NP36	1 1	1 unit 1 unit	41B 41B
S10	400	380	2	2	96 ... 127 200 ... 277	3RT1466-6NF36 3RT1466-6NP36	1 1	1 unit 1 unit	41B 41B
	500	450	2	2	96 ... 127 200 ... 277	3RT1467-6NF36 3RT1467-6NP36	1 1	1 unit 1 unit	41B 41B
S12	690	650	2	2	96 ... 127 200 ... 277	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	3RT1456-6PF35 3RT1456-6PP35	1 1	1 unit 1 unit	41B 41B
S10	400	380	1	1	96 ... 127 200 ... 277	3RT1466-6PF35 3RT1466-6PP35	1 1	1 unit 1 unit	41B 41B
	500	450	1	1	96 ... 127 200 ... 277	3RT1467-6PF35 3RT1467-6PP35	1 1	1 unit 1 unit	41B 41B
S12	690	650	1	1	96 ... 127 200 ... 277	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 3/69 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Sizes S6 to S12: AC/DC operation

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

More information, see

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



3RT1456-6S.36



3RT1466-6S.36



3RT1476-6S.36



3RT1456-6S.36-3PA0



3RT1476-6S.36-3PA0

Size	Rated data according to IEC 60947-4-1	Auxiliary contacts, lateral	Rated control supply voltage U_s	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
	AC-1, t_u : 40 °C 60 °C Operational current I_e up to	Version	50/60 Hz AC or DC	Article No.	Price per PU		
S6	275 A 250 A	2 NO 2 NC 2 V	96 ... 127 V 200 ... 277 V	3RT1456-6SF36 3RT1456-6SP36	1 1 unit	41B	41B
S10	400 A 380 A	2 NO 2 NC 2 V	96 ... 127 V 200 ... 277 V	3RT1466-6SF36 3RT1466-6SP36	1 1 unit	41B	41B
S10	500 A 450 A	2 NO 2 NC 2 V	96 ... 127 V 200 ... 277 V	3RT1467-6SF36 3RT1467-6SP36	1 1 unit	41B	41B
S12	690 A 650 A	2 NO 2 NC 2 V	96 ... 127 V 200 ... 277 V	3RT1476-6SF36 3RT1476-6SP36	1 1 unit	41B	41B

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC/DC operation

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



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



3RT1483-6AP36



3RT1485-6AP36, 3RT1486-6AP36



3RT1487-6AP36

Rated data according to IEC 60947-4-1 AC-1, t_u : 40 °C Operational current I_e up to 1 000 V	Auxiliary contacts, lateral		Rated control supply voltage U_s		Busbar connections 	PU (UNIT, SET, M)	PS*	PG
	Version		50/60 Hz AC	DC				
			V	V	Article No.	Price per PU		
Solid-state operating mechanism								
With integrated coil circuit								
900	2	2	100 ... 127 200 ... 240	100 ... 110 200 ... 220	3RT1481-6AF36 3RT1481-6AP36	1	1 unit	41B
1 050	2	2	100 ... 127 200 ... 240	100 ... 110 200 ... 220	3RT1482-6AF36 3RT1482-6AP36	1	1 unit	41B
1 260	2	2	100 ... 240	100 ... 220	3RT1483-6AP36	1	1 unit	41B
1 700	2	2	100 ... 240	100 ... 220	3RT1485-6AP36	1	1 unit	41B
2 100	2	2	100 ... 240	100 ... 220	3RT1486-6AP36	1	1 unit	41B
2 650	2	2	100 ... 240	100 ... 220	3RT1487-6AP36	1	1 unit	41B

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

Accessories

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

More information

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

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

Second auxiliary switch (1 NO + 1 NC)



3RH1981-1JA11

Lateral mounting on the right and/or the left

3RT148.

1

1

61 | 53
62 | 54
71 | 83
72 | 84

3RH1981-1JA11

1

1 unit

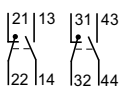
41B

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Spare parts

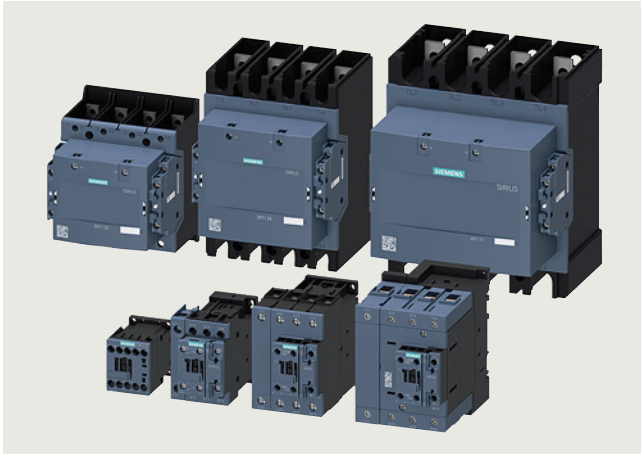
For contactors		Auxiliary contacts		Rated control supply voltage U_s		Article No.		Price per PU		PU (UNIT, SET, M)		PS*		PG	
		Version		50/60 Hz AC		DC									
Type	NO	NC	Left	Right	V		V								
First auxiliary switch (1 NO + 1 NC)															
	Lateral mounting on the right and/or the left						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

Standards

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

Protecting connections against short circuit, overload and overvoltage

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

Short-circuit and overload protection of main connections

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

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

Short-circuit and overload protection of auxiliary connections

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

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

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

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

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

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

Protection against overvoltage at the control supply voltage connection

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

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

Note:

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

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

Connection methods

Main circuit

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

Auxiliary and control circuits

Screw terminals

Electromagnetic compatibility

The contactors fulfill the requirements for environment category A.

Note:

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Contact reliability of the auxiliary contacts

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT contactors or 3RH contactor relays should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are particularly suitable for solid-state circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Motor protection

3RT23 contactors

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

3RT13 contactors

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

Operating mechanism types

3RT23 contactors

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

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

3RT13 contactors

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

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

Replacing solenoid coils, operating mechanisms or spare contacts

3RT23 contactors

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

3RT13 contactors

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

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

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

Expansion possibilities

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

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

Accessories and spare parts

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

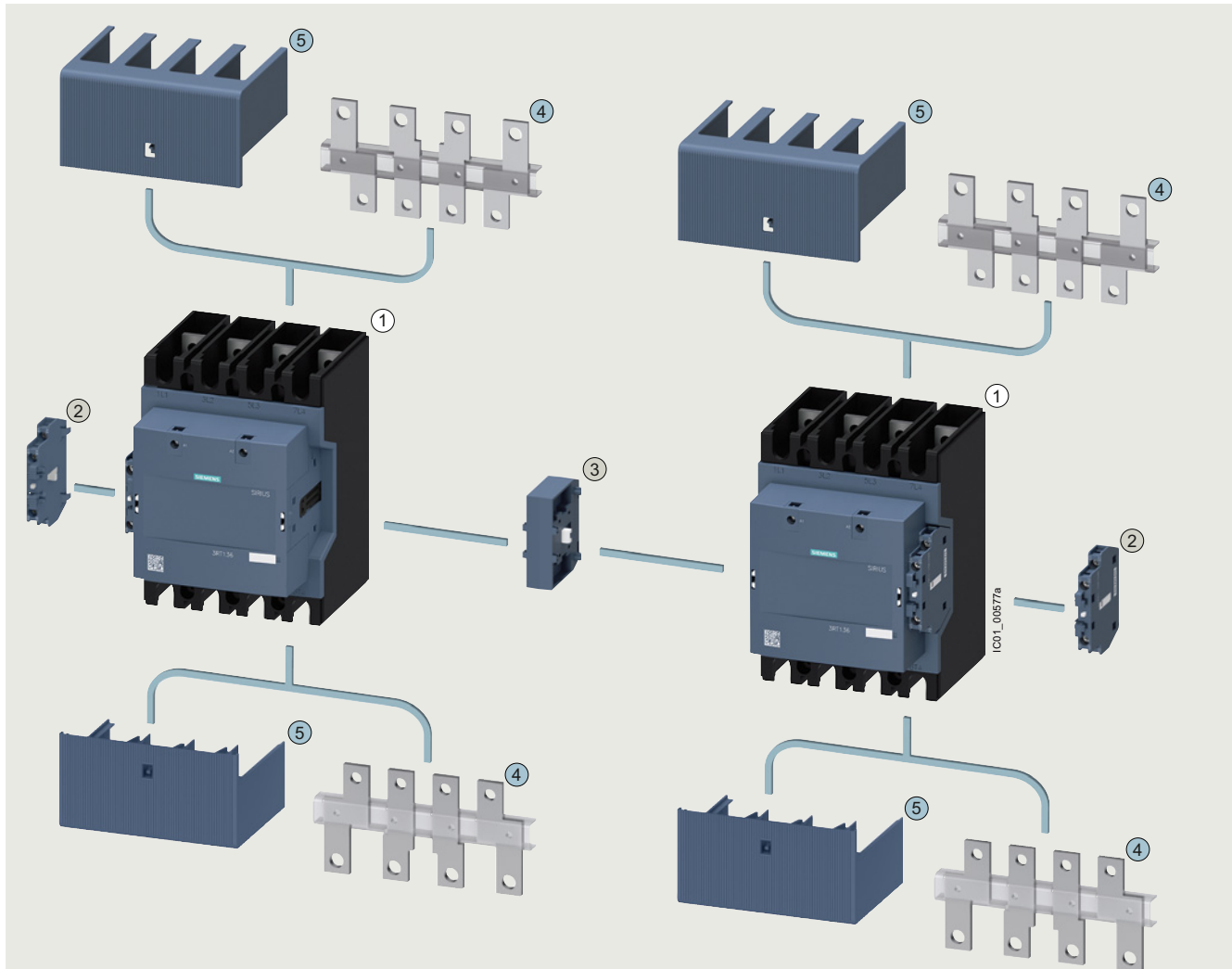
Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Overview graphic with mountable accessories

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



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

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

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

	Size	S6	S10	S12
①	Contactor	3RT1355 ($I_e = 200$ A)	3RT1363 ($I_e = 275$ A)	3RT1364 ($I_e = 350$ 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

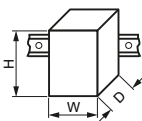
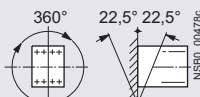
We additionally offer special versions of the 3RT23 contactors for switching motor-driven loads (AC-3).

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>		(The values in brackets apply for DC operation)				
• 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	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 endurance	Operating cycles	30 million	10 million			
Electrical endurance at I_e/AC-1	Operating cycles	Approx. 0.5 million				
Rated insulation voltage U_i (pollution degree 3)	V	690				
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N	V	400			690	
Permissible ambient temperature						
• During operation	°C	-25 ... +60				
• During storage	°C	-55 ... +80				

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 - 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	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 - Miniature circuit breaker version required for short-circuit protection of the auxiliary switch	Fuse gG: 10 A (690 V, 1 kA) 6 A (230 V, 400 A, C characteristic)			

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

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

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

Type		3RT2316	3RT2317	3RT2325	3RT2326	3RT2327	3RT2336	3RT2337	3RT2344	3RT2346	3RT2348
Size		S00		S0			S2		S3		
Rated data of the main contacts											
Load rating with AC											
Utilization category AC-1											
• Rated operational currents I_e	At 40 °C, up to 690 V A	18	22	35	40	50	60	110	110	140 (110) ¹⁾	160
	At 60 °C, up to 690 V A	16	20	30	35	42	55	95	100	130 (100) ¹⁾	140
• Rated power for AC loads	At 230 V kW	6	7.5	11	13	16	21	36	38	49	53
	At 400 V kW	10.5	13	20	23	28	36	63	72	92	105
	P.f. $\varphi = 0.95$ (at 60 °C)										
• Minimum cross-section in the main circuit at maximum AC-1 rated value	mm ²	2.5	4	10			16	35		50 (35) ¹⁾	70
Power loss per main conducting path											
• At I_e /AC-1	At 40 °C W	1.1	1.6	1.8	2.4	3	3.2	9.7	7.3	11.8	15.4
• At I_e /AC-3	At 400 V W	--	--	--	(2.6) ¹⁾	--	(4.3) ¹⁾	--	--	(6.8) ¹⁾	--

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

Data for North America

Technical specifications of 3RT contactors, [see page 3/45 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3RT1355-6A.36			3RT1363-6A.36			3RT1364-6A.36			3RT1373-6A.36, 3RT1374-6A.36, 3RT1375-6A.36		
Size	S6			S10						S12		
General data												
Dimensions												

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type		3RT1373- 6AE36 6AF36 6AP36 6AR36				3RT1374- 6AE36 6AF36 6AP36 6AR36				3RT1375- 6AE36 6AF36 6AP36 6AR36				
Size		S12												
Control circuit/control														
Operating range factor of the control supply voltage, rated value of the solenoid coil														
• At AC at 50 Hz		0.85 ... 1.1												
• At AC at 60 Hz		0.85 ... 1.1												
• At DC		0.8 ... 1.1												
Solenoid coil closing for DC	W	400	360	410	600	400	360	410	600	400	360	410	600	
Closing apparent power of the solenoid coil for AC														
• At 50 Hz		VA	475	340	385	420	475	340	385	420	475	340	385	420
• At 60 Hz		VA	475	340	385	420	475	340	385	420	475	340	385	420
Solenoid coil closed for DC	W	3.5	2.5	4.5	4.7	3.5	2.5	4.5	4.7	3.5	2.5	4.5	4.7	
Closed apparent power of the solenoid coil for AC														
• At 50 Hz		VA	8.5	17	17.5	21	8.5	17	17.5	21	8.5	17	17.5	21
• At 60 Hz		VA	8.5	17	17.5	21	8.5	17	17.5	21	8.5	17	17.5	21
Main circuit														
Operational current at AC-1														
• Up to 690 V														
- At an ambient temperature of 40 °C		A	400				500				525			
- At an ambient temperature of 60 °C		A	350				400				425			
• Up to 1000 V														
- At an ambient temperature of 40 °C		A	350				375				400			
- At an ambient temperature of 60 °C		A	300				325				350			

Type		3RT1355- 6A.36		3RT1363- 6A.36		3RT1364- 6A.36		3RT1373- 6A.36		3RT1374- 6A.36		3RT1375- 6A.36		
Size		S6		S10				S12						
Conductor cross-sections														
Type of electrical connection for the main circuit		Connecting bar				Connecting bar, bus connectors offset > 275 A required		Connecting bar		Connecting bar, bus connectors offset > 450 A required				
Minimum cross-section in the main circuit at maximum AC-1 rated value		mm ²	95		150		240				300		370	

Switching devices – Contactors and contactor assemblies – Special applications

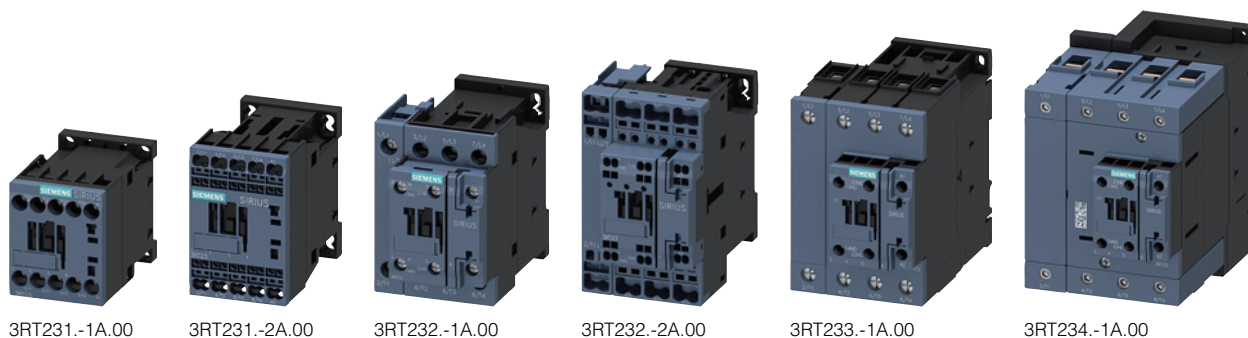
Contactors for special applications

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

Selection and ordering data

AC operation

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



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

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

Size S00

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

Size S0

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

Size S2

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

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

Size S3

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

¹⁾ Required conductor cross-section 10 mm².

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC operation

Version for AC-3 and AC-3e motor loads

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



3RT2326-1AP00-4AA0



3RT2336-1AP00-4AA0



3RT2346-1AP00-4AA0

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

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

Size S0

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

Size S2

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

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

Size S3

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

DC operation

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



3RT231.-1B.40



3RT231.-2B.40



3RT232.-1B.40



3RT232.-2B.40

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

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

Size S00

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

Size S0

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

¹⁾ Required conductor cross-section 10 mm².

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC/DC operation

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



3RT233.-1N.30



3RT234.-1N.30

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

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

Size S2

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

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

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

Size S3

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

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Version for AC-3 and AC-3e motor loads

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



3RT2336-1NB30-4AA0



3RT2346-1NB30-4AA0

Rated data		Auxiliary contacts		Rated control supply voltage U_s 50/60 Hz AC or DC	Screw terminals		Spring-loaded terminals	
AC-3/AC-3e, t_{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					

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

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

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

3RT2336-1NB30-4AA0

--

For screw fixing and snap-on mounting on TH 35-15 and TH 75-15 DIN rails**Size S3**

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

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

3RT2346-1NB30-4AA0

--

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Sizes S6 to S12: AC/DC operation

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



3RT1355-6A.36



3RT1363-6A.36



3RT1373-6A.36

Size	Rated data AC-1, t_{ij} : 40 °C	Auxiliary contacts, lateral	Operating range $0.85 \dots 1.1 \times U_s$	$0.8 \dots 1.1 \times U_s$	Rated control supply voltage U_s	Busbar connections 	PU (UNIT, SET, M)	PS*	PG
	Operational current I_e at 690 V	Version	50/60 Hz AC	DC		Article No.	Price per PU		
A		NO NC	V	V					

Solid-state operating mechanism

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

S6	200	2	2	24 ... 60 48 ... 130 100 ... 250 250 ... 500	20 ... 60 48 ... 130 100 ... 250 250 ... 500	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	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	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	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	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	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 4/35](#):

- 3RT136: For more than 275 A, the 3RT1966-4D bus connectors offset must be used.
- 3RT137: For more than 450 A, the 3RT1976-4D bus connectors offset must be used.

Accessories and spare parts, [see page 4/35 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

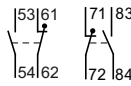
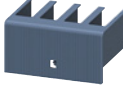
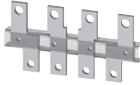
SIRIUS 3RT.3 contactors, 4-pole, up to 525 A

Accessories

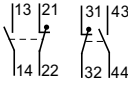
Overview graphic for 3RT135 to 3RT137 contactors with mountable accessories, [see page 4/23](#).

More information

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

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

Spare parts

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Overview

Standards

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

Protecting connections against short circuit, overload and overvoltage

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

Short-circuit and overload protection of main connections

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

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

Short-circuit and overload protection of auxiliary connections

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

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

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

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

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

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

Protection against overvoltage at the control supply voltage connection

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

Note:

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

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

Replacing solenoid coils or spare contacts

Solenoid coil or contact replacement is possible.

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

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

Expansion possibilities

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

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

Accessories

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

Use of 3RT contactors with IE3 and IE4 motors

Note:

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

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

Application

The contactors are suitable:

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

Note:

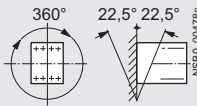
Single device for pole reversal; not suitable for reversing operation. 3RT25 contactors are not suitable for switching a load between two current sources.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Technical specifications

More information						
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16169/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16169/faq			Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16169/man			
Type		3RT2516 to 3RT2518	3RT2526	3RT2535	3RT2536	3RT2544, 3RT2545
Size		S00	S0	S2		S3
General data						
Dimensions (W x H x D)		See 3RT231., page 4/24	See 3RT232., page 4/24	See 3RT233., page 4/24	See 3RT234., page 4/24	
Permissible mounting position						
The contactors are designed for operation on a vertical mounting surface.						
Upright mounting position		 Special version required				
Mechanical endurance	Operating cycles	30 million	10 million			
Electrical endurance at $I_e/AC-1$	Operating cycles	Approx. 0.5 million				
Rated insulation voltage U_i (pollution degree 3)	V	690				
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N	V	400				690
Permissible ambient temperature						
• During operation	°C	-25 ... +60				
• During storage	°C	-55 ... +80				
Short-circuit protection						
Main circuit						
• Version of the fuse link required for short-circuit protection of the main circuit						
- For type of coordination 1		gG: 35 A (690 V, 100 kA)	gG: 63 A (690 V, 100 kA)	gG: 125 A (690 V, 100 kA)	gG: 160 A (690 V, 100 kA)	gG: 250 A (690 V, 100 kA)
- For type of coordination 2		gG: 20 A (690 V, 100 kA)	gG: 35 A (690 V, 50 kA)	gG: 63 A (690 V, 100 kA)	gG: 80 A (690 V, 100 kA)	gR: 250 A (690 V, 100 kA)
Auxiliary circuit						
• Version of the fuse link required for short-circuit protection of the auxiliary switch		Fuse gG: 10 A (690 V, 1 kA)				
• Version of the miniature circuit breaker required for short-circuit protection of the auxiliary switch		6 A (230 V, 400 A, C characteristic)				

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3RT2516-1A		3RT2517-1A, 3RT2518-1A		3RT2516-1B, 3RT2517-1B, 3RT2518-1B		3RT2526-1A		3RT2526-1B		3RT253.-1A		3RT253.-1N		3RT254.-1A		3RT254.-1N	
Size	S00						S0				S2				S3			
Control																		
Type of operating mechanism			AC		DC		AC		DC		AC		AC/DC		AC		AC/DC	
Solenoid coil operating range																		
• AC operation	At 50 Hz	0.8 ... 1.1 x U_s			--		0.8 ... 1.1 x U_s		--		0.8 ... 1.1 x U_s		--		0.8 ... 1.1 x U_s		--	
	At 60 Hz	0.85 ... 1.1 x U_s			--		0.8 ... 1.1 x U_s		--		0.8 ... 1.1 x U_s		--		0.8 ... 1.1 x U_s		--	
• DC operation	Up to 50 °C	--			0.8 ... 1.1 x U_s		--		0.8 ... 1.1 x U_s		--							
	Up to 60 °C	--			0.85 ... 1.1 x U_s		--		0.8 ... 1.1 x U_s		--							
• AC/DC operation		--											0.8 x $U_{s\ min}$... 1.1 x $U_{s\ max}$		--		0.8 x $U_{s\ min}$... 1.1 x $U_{s\ max}$	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)																		
• AC operation, 50/60 Hz, standard version																		
- Closing	VA	27/24.3 0.8/0.75	37/33		--		81/79 0.72/0.74		--		210/188 0.69/0.65		110 0.95		348/296 0.62/0.55		--	
	VA	4.2/3.3 0.25/0.25	5.7/4.4		--		10.5/8.5 0.25/0.28		--		17.2/16.5 0.36/0.39		2.5 0.95		25/18 0.35/0.41		--	
• DC operation																		
	- Closing	W	--	4		--		5.9		23		70		--		76		
- Closed	W	--	4		--		5.9		1		1.5		--		1.8			

Type	3RT2516		3RT2517		3RT2518		3RT2526		3RT2535		3RT2536		3RT2544		3RT2545		
Size	S00						S0		S2				S3				
Rated data of the main contacts																	
Load rating with AC																	
Utilization category AC-1																	
• Rated operational currents I_e	At 40 °C up to 690 V	A	18	22		40		60		70		100		125			
	At 60 °C up to 690 V	A	16	20		35		55		60		90		105			
• Rated power for AC loads P.f. φ = 0.95 (at 60 °C)	At 230 V	kW	6	7.5		13.3		21		23		34		59			
	400 V	kW	10.5	13		23		36		39		40		69			
• Minimum cross-section in the main circuit at maximum AC-1 rated value		mm ²	2.5	4		10		16		25		35		50			
Utilization category AC-3																	
• Rated operational currents I_e (at 60 °C)	NO up to 400 V	A	9	12		16		25		35		41		65		80	
	NC up to 400 V	A	9					25		20		35		41		65	
• 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	

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

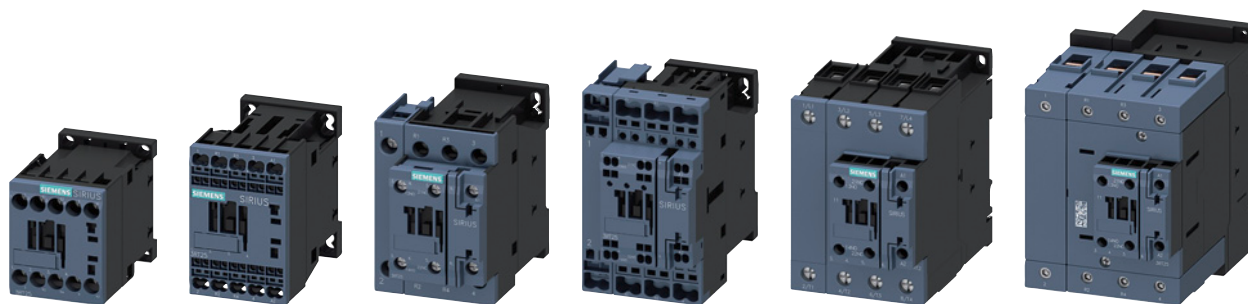
SIRIUS 3RT25 contactors, 4-pole, 2 NO + 2 NC

Selection and ordering data

AC operation

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

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



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

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

Size S00

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

Size S0

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

Size S2

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

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

Size S3

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

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

Other voltages according to page 4/52 on request.

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

DC operation

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

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



3RT251.-1B.40



3RT251.-2B.40



3RT252.-1B.40



3RT252.-2B.40

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

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

Size S00

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

Size S0

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

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

²⁾ Value in brackets for NC contact (the deviating value for the NC contact applies only for devices with DC operation).

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC/DC operation

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

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



3RT253.-1N.30



3RT254.-1N.30

Rated data		Auxiliary contacts		Rated control supply voltage U_s 50/60 Hz AC or DC	Screw terminals 		Spring-loaded terminals 	
AC-3, t_u : up to 60 °C	AC-1, t_u : 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 400 V							
A	A							

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

Size S2

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

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

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

Size S3

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

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Overview

Standards

IEC 60947-1, IEC 60947-4-1, IEC 60947-5-1, IEC 60831-1, IEC 61921

Function

The 3RT26 contactors are special versions of the 3RT2, designed for switching capacitive loads (AC-6b) up to 100 kvar at 400 V.

Characteristic components of the 3RT26 contactors are the precharging resistors switched on via leading auxiliary contacts, which are closed before the main contacts. This limits the peak charging current of capacitive loads and thus minimizes negative impacts on the power supply network.

The 3RT26 contactors are suitable for switching choked or unchoked capacitors in reactive current compensation systems and are also used to switch converters.

Protecting connections against short circuit, overload and overvoltage

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

Short-circuit and overload protection of main connections

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

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

Short-circuit and overload protection of auxiliary connections

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

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

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

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

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

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

Protection against overvoltage at the control supply voltage connection

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

Note:

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

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

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

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

Expansion possibilities

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

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

Conductor cross-sections

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16171/td>

Manuals, see
<https://support.industry.siemens.com/cs/ww/en/ps/16171/man>

Type

Size

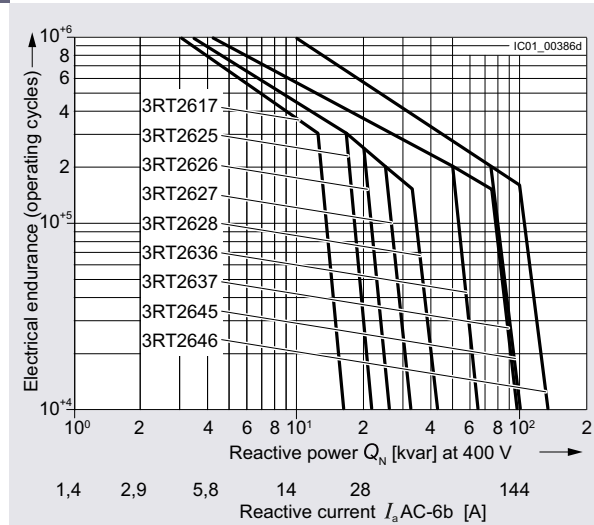
3RT26

S00 to S3

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching capacitive loads (AC-6b) depending on the reactive power Q_N and the rated operational voltage.

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



Switching devices – Contactors and contactor assemblies – Special applications

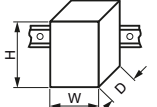
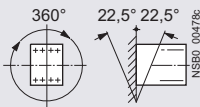
Contactors for special applications

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

All technical specifications not mentioned in the table below are identical to those of the 3RT20 contactors:

- For size S00 as for the 3RT201 contactors
- For size S0 as for the 3RT202 contactors
- For size S2 as for the 3RT203 contactors
- For size S3 as for the 3RT204 contactors

See page 3/25 onwards.

Type		3RT2617	3RT2625	3RT2626	3RT2627	3RT2628	3RT2636	3RT2637	3RT2645	3RT2646
Size		S00	S0				S2		S3	
General data										
Dimensions (W x H x D) Including auxiliary switches and connecting cables										
	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	
• AC 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	
• DC operation, AC/DC operation										
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.										
Mechanical endurance 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 according to IEC 60947-1, Annex N		V	400							690
Permissible ambient temperature										
• During operation ¹⁾	°C	-25 ... +60								
• During storage	°C	-55 ... +80								
Short-circuit protection										
Main circuit Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1										
• Type of coordination "1"	A	25 ... 40	32 ... 80	40 ... 80	50 ... 100	63 ... 100	100 ... 160	160 ... 200		200 ... 250
Auxiliary circuit										
• With fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE With short-circuit current I_k = 1 kA according to IEC 60947-5-1	A	10								
• With miniature circuit breakers with C characteristic with short-circuit current I_k = 400 A	A	10								

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

²⁾ Only applies for main conducting paths, otherwise $U_i = 690$ V; $U_{imp} = 6$ kV.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type		3RT2617-1A, -1B	3RT2625-1A, -1B, 3RT2626-1A, -1B, 3RT2627-1A, -1B, 3RT2628-1A, -1B	3RT2636-1A, 3RT2637-1A	3RT2645-1A, 3RT2646-1A
Size		S00	S0	S2	S3
Control					
Solenoid coil operating range					
• AC operation	50 Hz 60 Hz	0.8 ... 1.1 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	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. φ		--	0.82	0.72	0.61
- Closed	VA	--	9.8	16	19
- P.f. φ		--	0.25	0.37	0.38
• AC operation, 50/60 Hz, standard version					
- Closing	VA	49	81/79	210/188	348/296
- P.f. φ		0.8	0.72/0.74	0.69/0.65	0.62/0.55
- Closed	VA	7.8	10.5/8.5	17.2/16.5	25/18
- P.f. φ		0.25	0.25/0.28	0.36/0.39	0.35/0.41
• DC operation					
- Closing	W	4	5.9	--	--
- Closed	W	4	5.9	--	--

Type		3RT262.-1NB35	3RT262.-1NF35	3RT262.-1NP35	3RT263.-1N.35	3RT264.-1N.35
Size		S0			S2	S3
Control						
Solenoid coil operating range						
• AC/DC operation (50/60 Hz AC or DC)		0.7 ... 1.3 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. φ		0.98/0.98			0.95	--
- Closed	VA	1.9/2.0	1.6/1.8	3.9/4.3	2.5	3.1
- P.f. φ		0.86/0.82	0.79/0.74	0.51/0.56	0.95	--
• DC operation						
- Closing	W	5.9	10.2	14.3	70	76
- Closed	W	1.4	1.3	1.9	1.5	1.8
Maximum permissible residual current of the electronics (with 0 signal)						
• AC operation (230 V/ U_s)	mA	7			< 20	
• DC operation (24 V/ U_s)	mA	16			< 20	

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

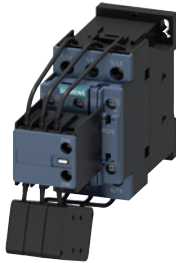
Selection and ordering data

AC operation

Main, auxiliary and control conductors: Screw terminals



3RT2617-1A.05



3RT262-1A.05



3RT2628-1A.05
with infeed terminal

Utilization category AC-6b

Switching AC capacitors
at an ambient temperature of 60 °C

Capacitor rating at
operational voltage 50/60 Hz
at 230 V at **400 V** at 500 V at 690 V

kvar **kvar** kvar kvar

Auxiliary
contacts,
unassigned

Version

NO NC

V V

Rated control supply
voltage U_s

50 Hz AC 50/60 Hz AC

V V

Screw terminals



PU
(UNIT,
SET, M)

PS*

PG

Article No.

Price
per PU

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

Size S00

7.2	12.5	15	21	1	1	--	24	3RT2617-1AB03	1	1 unit	41B
						--	110	3RT2617-1AF03	1	1 unit	41B
						--	230	3RT2617-1AP03	1	1 unit	41B
7.2	12.5	15	21	0	2	--	24	3RT2617-1AB05	1	1 unit	41B
						--	110	3RT2617-1AF05	1	1 unit	41B
						--	230	3RT2617-1AP05	1	1 unit	41B

Size S0

9.6	16.7	21	29	1	2	24	--	3RT2625-1AB05	1	1 unit	41B
						110	--	3RT2625-1AF05	1	1 unit	41B
						230	--	3RT2625-1AP05	1	1 unit	41B
11.5	20	25	34	1	2	24	--	3RT2626-1AB05	1	1 unit	41B
						110	--	3RT2626-1AF05	1	1 unit	41B
						230	--	3RT2626-1AP05	1	1 unit	41B
14	25	31	43	1	2	24	--	3RT2627-1AB05	1	1 unit	41B
						110	--	3RT2627-1AF05	1	1 unit	41B
						230	--	3RT2627-1AP05	1	1 unit	41B
19	33	41	57	1	2	24	--	3RT2628-1AB05	1	1 unit	41B
						110	--	3RT2628-1AF05	1	1 unit	41B
						230	--	3RT2628-1AP05	1	1 unit	41B

Other voltages according to page 4/52 on request.

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC operation

Main, auxiliary and control conductors: Screw terminals



3RT263.-1A.05



3RT264.-1A.05

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

Other voltages according to page 4/52 on request.

Accessories, see page 3/69 onwards.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

DC operation

Main, auxiliary and control conductors: Screw terminals



3RT2617-1B.45



3RT262-1B.45



3RT2628-1B.45
with infeed terminal

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

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

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

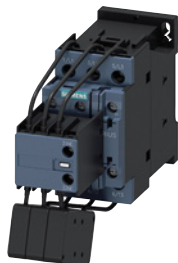
Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

AC/DC operation

Main, auxiliary and control conductors: Screw terminals



3RT262.-1N.35



3RT2628-1N.35
with infeed terminal



3RT263.-1N.35



3RT264.-1N.35

Utilization category AC-6b

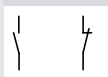
Switching AC capacitors
at an ambient temperature of 60 °C

Capacitor rating at
operational voltage 50/60 Hz

at 230 V at **400 V** at 500 V at 690 V

kvar **kvar** kvar kvar

Auxiliary
contacts,
unassigned
Version



NO NC V

Rated control supply
voltage U_s

50/60 Hz AC or DC

Screw terminals



PU
(UNIT,
SET, M)

PS*

PG

Article No.

Price
per PU

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

Size S0

9.6	16.7	21	29	1	2	21 ... 28 95 ... 130 200 ... 280	3RT2625-1NB35 3RT2625-1NF35 3RT2625-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
11.5	20	25	34	1	2	21 ... 28 95 ... 130 200 ... 280	3RT2626-1NB35 3RT2626-1NF35 3RT2626-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
14	25	31	43	1	2	21 ... 28 95 ... 130 200 ... 280	3RT2627-1NB35 3RT2627-1NF35 3RT2627-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
19	33	41	57	1	2	21 ... 28 95 ... 130 200 ... 280	3RT2628-1NB35 3RT2628-1NF35 3RT2628-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

Size S2

29	50	63	86	0	2	20 ... 33 83 ... 155 175 ... 280	3RT2636-1NB35 3RT2636-1NF35 3RT2636-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
43	75	94	129	0	2	20 ... 33 83 ... 155 175 ... 280	3RT2637-1NB35 3RT2637-1NF35 3RT2637-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

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

Size S3

43	75	94	129	0	2	20 ... 33 83 ... 155 175 ... 280	3RT2645-1NB35 3RT2645-1NF35 3RT2645-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
57	100	125	172	0	2	20 ... 33 83 ... 155 175 ... 280	3RT2646-1NB35 3RT2646-1NF35 3RT2646-1NP35	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT23 to 3RT26, 3RT14 contactors

Options

**Rated control supply voltages for 3RT2 contactors, possible on request
(change of the 10th and 11th digits of the article number)**

Delivery time on request

Rated control supply voltage U_s	Contactor type	3RT231, 3RT251	3RT232, 3RT252	3RT233, 3RT253	3RT234, 3RT244, 3RT254	3RT2617, 3RT262, 3RT263, 3RT264
	Size	S00	S0	S2	S3	S00 to S3

Sizes S00 to S3

AC operation¹⁾

Solenoid coils for 50 Hz

(exception: Size S00: 50 and 60 Hz²⁾)

24 V AC	B0	B0	B0	B0	B0
42 V AC	D0	D0	D0	D0	--
48 V AC	H0	--	--	H0	--
110 V AC	F0	F0	F0	F0	F0
230 V AC	P0	P0	P0	P0	P0
240 V AC	--	--	U0	U0	--
400 V AC	V0	V0	V0	V0	--

Solenoid coils for 50 and 60 Hz²⁾

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

Solenoid coils (for USA and Canada³⁾)

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

Solenoid coils (for Japan)

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

DC operation¹⁾

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

Examples

AC operation	3RT2325-1A P00 3RT2325-1A G20	Contactors with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC Contactors with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC
DC operation	3RT2526-2B B40 3RT2526-2B G40	Contactors with spring-loaded terminals; for rated control supply voltage of 24 V DC Contactors with spring-loaded terminals; for rated control supply voltage 125 V DC

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

²⁾ Coil operating range
- at 50 Hz: 0.8 to 1.1 x U_s ,
- at 60 Hz: 0.85 to 1.1 x U_s .

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

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

⁵⁾ Coil operating range at 60 Hz: 0.8 to 1.1 x U_s .

Rated control supply voltage	Contactor type	3RT2.2.-N	Rated control supply voltage	Contactor type	3RT2.3.-N	3RT2.4.-N
$U_{s \min}$ to $U_{s \max}$ ¹⁾	Size	S0	$U_{s \min}$ to $U_{s \max}$ ¹⁾	Size	S2	S3

Sizes S0 to S3

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

SIRIUS 3RT23 to 3RT26, 3RT14 contactors

**Rated control supply voltages for 3RT14 contactors,
possible on request (change of the 10th and 11th digits of the article number)**

Delivery time on request

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

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

Standard operating mechanism

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

Solid-state operating mechanism

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

SIRIUS 3RT contactors with extended operating range, 3-pole

Overview

Standards

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

Performance range

Sizes S00 to S3

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

Sizes S6 to S12

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

Application

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

Thus, their suitability for increased requirements such as an

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

Operating range of contactor operating mechanisms

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

This operating mechanism version has an operating range from 0.7 to $1.25 \times U_N$ in the temperature range -40 to 70 °C.

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

Protecting connections against short circuit, overload and overvoltage

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

Short-circuit and overload protection of main connections

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

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

Short-circuit and overload protection of auxiliary connections

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

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

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

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

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

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

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

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

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

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

Protection against overvoltage at the control supply voltage connection

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

Note:

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

SIRIUS 3RT contactors with extended operating range, 3-pole

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

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

Expansion possibilities

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

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

Ambient temperature

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

Side-by-side mounting

Contactors with conventional operating mechanism

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

Contactors with series resistor

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

SIRIUS 3RT contactors with extended operating range, 3-pole

Technical specifications

More information											
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16177/td FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/16177/faq					Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16177/man Guide of use for contactors in safety applications, see https://support.industry.siemens.com/cs/ww/en/view/109807687						
Type			3RT2017	3RT2017-2XB4.-0LA2	2XF4.-0LA2	3RT2018-2XB4.-0LA2	2XF4.-0LA2	3RT202.	3RT202.-2XB40-0LA2	2XF40-0LA2	
Size			S00						S0		
General data											
Upright mounting position											
• Contactors with series resistor			Special version (on request)								
• Contactors with conventional coil			Special version (on request)								
Ambient temperature											
• During operation			°C	-40 ... +70 ¹⁾		-40 ... +70					
• During storage			°C	-55 ... +80							
Control											
Solenoid coil operating range			DC	0.7 ... 1.25 x U _s							
Power consumption of the solenoid coils			For cold coil and 1.0 x U _s								
• Contactors with series resistor			Closing	W	13	--					
			Closed	W	4.0	--					
• Contactors with conventional coil			Closing	W	2.8	--			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			mm ²	4					10		
• At maximum I _{th} rated value			mm ²	--	4					--	10

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

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

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

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

Type			3RT2035-3XB40-0LA2		3XF40-0LA2		3RT2036-3XB40-0LA2		3XF40-0LA2		3RT2037-3XB40-0LA2		3XF40-0LA2		3RT2038-3XB40-0LA2		3XF40-0LA2		3RT204.-3XB40-0LA2		3XF40-0LA2	
Size			S2																		S3	
General data																						
Ambient temperature																						
• During operation		°C	-40 ... +70																			
• During storage		°C	-55 ... +80																			
Control																						
Solenoid coil operating range		DC	0.7 ... 1.25 x U _s																			
Power consumption of the solenoid coils			For cold coil and 1.0 x U _s																			
• Contactors with solid-state operating mechanism	Closing	W	23																76		64	
	Closed	W	1																1.8		1.0	
Rated data of the main contacts																						
Load rating with AC																						
Minimum cross-section in the main circuit																						
• At maximum AC-1 rated value		mm ²	16				25				35				50							
• At maximum I _{th} rated value		mm ²	16				25				35				50							

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

SIRIUS 3RT contactors with extended operating range, 3-pole

Type		3RT1054- .X.46- 0LA2	3RT1055- .X.46- 0LA2	3RT1056- .X.46- 0LA2	3RT1064- .X.46- 0LA2	3RT1065- .X.46- 0LA2	3RT1066- .X.46- 0LA2	3RT1075- .X.46- 0LA2	3RT1076- .X.46- 0LA2
Size		S6			S10			S12	
General data									
Ambient temperature									
• During operation	°C	-40 ... +70							
• During storage	°C	-55 ... +80							
Control									
• Solenoid coil closing for DC	W	320			580			800	
• Solenoid coil closed for DC	W	2.8			3.4			3.6	
• Control version of the switch operating mechanism		PLC-IN or standard A1 - A2 (can be set)							
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		

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

Type		3RT1456-.X.46-0LA2	3RT1466-.X.46-0LA2	3RT1467-.X.46-0LA2	3RT1476-.X.46-0LA2
Size		S6	S10		S12
General data					
Ambient temperature					
• During operation	°C	-40 ... +70			
• During storage	°C	-55 ... +80			
Control					
• Solenoid coil closing for DC		320	580		800
• Solenoid coil closed for DC		2.8	3.4		3.6
• Control version of the switch operating mechanism		PLC-IN or standard A1 - A2 (can be set)			
<u>Actuated via A1/A2</u>					
• Rated control supply voltage	V DC	24, 72 or 110			
• Operating range		0.7 ... 1.25			
<u>Actuated via PLC input</u>					
• Rated voltage	V DC	24 ... 110			
• Operating range		0.7 ... 1.25			
• Consumed current at PLC control input according to IEC 60947-1, maximum	mA	2			
Rated data of the main contacts					
Load rating with AC					
Minimum cross-section in the main circuit					
• At maximum AC-1 rated value	mm ²	140	240	300	480
• At maximum I _{th} rated value	mm ²	140	240		480

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

SIRIUS 3RT contactors with extended operating range, 3-pole

IE3/IE4 ready

AC-3e

Selection and ordering data

DC operation



3RT201-2K.4.



3RT201-2K.42-0LA0

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

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

Size S00

Coupling contactors with integrated coil circuit

• Suppressor diode integrated at the factory

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

• Varistor integrated at the factory

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

With plug-on series resistor and integrated coil circuit

• Suppressor diode integrated at the factory

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

• Varistor integrated at the factory

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

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

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

AC-3e

IE3/IE4 ready

SIRIUS 3RT contactors with extended operating range, 3-pole

DC operation 

3RT201.-2X.41-0LA2



3RT201.-2X.42-0LA2



3RT202.-2K.40



3RT202.-2X.40-0LA2

Rated data according to

IEC 60077-2 IEC 60947-4-1
AC-3 and AC-3e t_u : 70 °CConventional
thermal
current I_{th}
up to

690 V

A

 t_u : 60 °COperational
current I_e
up to

400 V

A

Rating of three-phase
motors
at

230 V

kW

400 V

kW

500 V

kW

690 V

kW

Auxiliary contacts

Ident.
No.

Version

Rated control
supply
voltage U_s

NO

NC

V DC

Spring-loaded
terminalsPU
(UNIT,
SET, M)

PS*

PG

Article No.

Price
per PU

For screw fixing and snap-on mounting on TH 35 DIN 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	3RT2017-2XB41-0LA2 3RT2017-2XF41-0LA2	1 1	1 unit 1 unit	41B 41B
18	12	3	5.5	5.5	5.5	01	--	1	24 ... 34 72 ... 125	3RT2017-2XB42-0LA2 3RT2017-2XF42-0LA2	1 1	1 unit 1 unit	41B 41B
18	16	4	7.5	10	11	10	1	--	24 ... 34 72 ... 125	3RT2018-2XB41-0LA2 3RT2018-2XF41-0LA2	1 1	1 unit 1 unit	41B 41B
18	16	4	7.5	10	11	01	--	1	24 ... 34 72 ... 125	3RT2018-2XB42-0LA2 3RT2018-2XF42-0LA2	1 1	1 unit 1 unit	41B 41B

Size S0

With integrated coil circuit

• Coupling contactors with varistor integrated at the factory

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

• Varistor integrated in electronics at the factory

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

SIRIUS 3RT contactors with extended operating range, 3-pole

IE3/IE4 ready

AC-3e

DC operation



3RT203.-3X.40-0LA2



3RT204.-3X.40-0LA2

Rated data according to IEC 60077-2 IEC 60947-4-1						Auxiliary contacts	Rated control supply voltage U_s	Spring-loaded terminals for auxiliary and control circuits	PU (UNIT, SET, M)	PS*	PG
t_{ij} : 70 °C	t_{ij} : 60 °C	Rating of three-phase motors at				Ident. No.	Version				
Conventional thermal current I_{th} up to	Operational current I_e up to										
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			

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

Size S2

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

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

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

Size S3

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

AC-3e

IE3/IE4 ready

SIRIUS 3RT contactors with extended operating range, 3-pole

DC operation

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



3RT105-2X.46-0LA2



3RT106-2X.46-0LA2



3RT107-2X.46-0LA2

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

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	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	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	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	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	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	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	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	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 3/69 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

SIRIUS 3RT contactors with extended operating range, 3-pole

DC operation

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



3RT1456-2X.46-0LA2



3RT146-2X.46-0LA2



3RT1476-2X.46-0LA2

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

Solid-state operating mechanism

With control signal input 24 ... 110 V DC

e. g. for control by PLC

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

SIRIUS 3RH2 contactor relays with extended operating range

Overview

Standards

IEC 60947-5-1

Ambient temperature

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

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

Application

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

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

Operating mechanism types

Contactor relays with conventional coil

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

Contactor relays with series resistor

These auxiliary contactors have an extended operating range of 0.7 to $1.25 \times U_s$.

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

A 4-pole auxiliary switch can be fitted additionally.

Contactor relays with solid-state operating mechanism

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

Protecting connections against short circuit, overload and overvoltage

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

Short-circuit and overload protection of auxiliary connections

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

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

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

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

Control and auxiliary circuits

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

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

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

Protection against overvoltage at the control supply voltage connection

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

Connection methods

The 3RH2 contactor relays are available with screw terminals.

Side-by-side mounting

Contactor relays with conventional coil

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

Contactor relays with series resistor

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

Contactor relays with solid-state operating mechanism

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

SIRIUS 3RH2 contactor relays with extended operating range

Technical specifications

More information

Technical specifications, see
<https://support.industry.siemens.com/cs/ww/en/ps/16174/td>
 FAQs, see <https://support.industry.siemens.com/cs/ww/en/ps/16174/faq>

Manuals, see
<https://support.industry.siemens.com/cs/ww/en/ps/16174/man>

Contactor relays		Type	3RH21...2K, -2L	3RH2122-2XB40-0LA2	3RH2122-2XF40-0LA2
General data					
Upright mounting position					
• Contactors with series resistor			Special version (on request)		
• Contactors with conventional coil			Special version (on request)		
Ambient temperature					
• During operation		°C	-40 ... +70 ¹⁾		
• During storage		°C	-55 ... +80		
Control					
Solenoid coil operating range		DC operation	0.7 ... 1.25 x U _s		
Power consumption of the solenoid coils			For cold coil and 1.0 x U _s		
• Contactors with series resistor	Closing	W	13	--	--
	Closed	W	4	--	--
• Contactors with conventional coil	Closing	W	2.8	--	--
	Closed	W	2.8	--	--
• Contactors with solid-state operating mechanism	Closing	W	--	4	4.5
	Closed	W	--	0.95	0.75

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

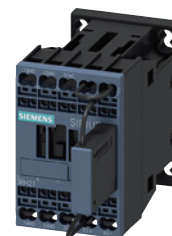
Contactors for railway applications

SIRIUS 3RH2 contactor relays with extended operating range

Selection and ordering data

DC operation 

3RH2122-2K.40



3RH2122-2K.40-0LA0

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

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

Size S00

With integrated coil circuit

- Suppressor diode integrated at the factory

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

- Varistor integrated at the factory

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

With plug-on series resistor and integrated coil circuit

- Suppressor diode integrated at the factory

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

- Varistor integrated at the factory

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

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

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

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

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

Accessories, see page 3/69 onwards.

Other voltages according to page 3/67 on request.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

3TH4 contactor relays, 8-pole

Overview

Standards

IEC 60947-5-1

Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices.

Ambient temperature

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

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

Application

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

Control and auxiliary circuits

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

Technical specifications

More information			
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16176/td		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 time + Arcing time			
• DC operation	Closing delay	ms	40 ... 200
	Opening delay time	ms	20 ... 30
• Arcing time		ms	10 ... 20

¹⁾ Side-by-side mounting with 10 mm clearance.

All details and technical specifications not mentioned here are identical to those of the 3TH4 basic units, see [page 5/14 onwards](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

3TH4 contactor relays, 8-pole

Selection and ordering data

DC operation 

3TH4244-0L..

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

3TC contactors for switching DC voltage, 2-pole

Overview

Standards

IEC 60947-4-1

Protecting connections against short circuit, overload and overvoltage

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

Short-circuit and overload protection of main connections

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

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

Short-circuit and overload protection of auxiliary connections

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

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

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

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

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

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

Protection against overvoltage at the control supply voltage connection

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

Ambient temperature

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

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

Series resistor

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

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

Fitting auxiliary contacts and mounting additional auxiliary switches

Features in the delivery state

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

Expansion possibilities

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

Reversing contactors

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

Application

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

Control and auxiliary circuits

The solenoid coils of the contactors have an extended coil operating range from 0.7 to 1.25 x U_s .

Technical specifications

More information				
Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/16180/td		Manuals, see https://support.industry.siemens.com/cs/ww/en/ps/16180/man		
Type		3TC44	3TC48	3TC52
Size		2	4	8
General data		12		
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 4/71.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

Contactors for railway applications

3TC contactors for switching DC voltage, 2-pole

Selection and ordering data

DC operation

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

3TC48 to 3TC56: For screw fixing



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

Contactors for switching DC voltage

With integrated coil circuit (varistor integrated at the factory)

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

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

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

¹⁾ No expansion auxiliary contacts can be fitted.²⁾ One NC contact used for series resistor.Other rated control supply voltages [according to page 4/78](#) on request.

Accessories

Accessories, [see basic units of the 3TC contactors, page 4/78 onwards](#).

Spare parts for contactors with extended operating range

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Overview

3TC4 and 3TC5

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

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

One contactor conducting path can switch full power up to 220 V. For voltages over 220 V, the two conducting paths are to be switched in series, [see Rated data of the main contacts, page 4/73](#).

Surge suppression

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

Fitting auxiliary contacts and mounting additional auxiliary switches

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

3TC7

IEC 60947-4-1

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

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

3TC74 contactors can be used at up to 750 V/400 A and 50 Hz in AC-1 operation. For voltages over 750 V, the two conducting paths (3TC74: two contactors) are to be switched in series, [see Rated data of the main contacts, page 4/75](#).

Application

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

A version with a particularly large solenoid coil operating range is available for operation in electrically driven vehicles and in switchgear subject to large fluctuations in actuating voltage ([see page 4/69](#)).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Technical specifications

More information

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

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

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

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

Switching devices – Contactors and contactor assemblies – Special applications

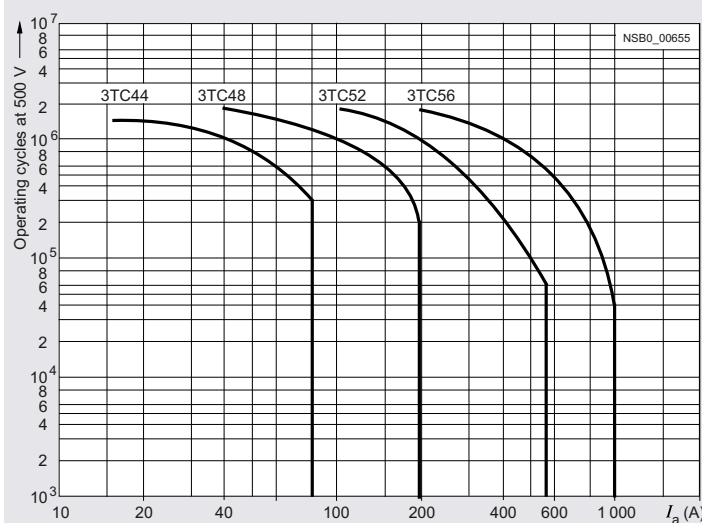
Contactors for special applications

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

Type

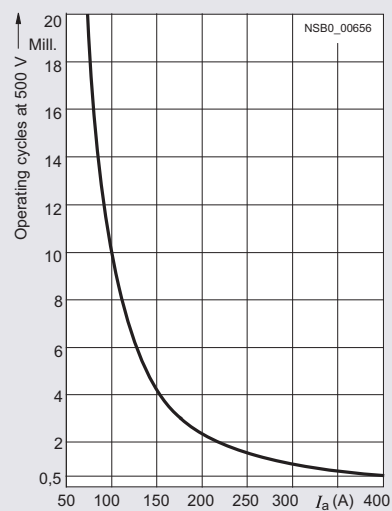
3TC44 to 3TC78

Contact endurance of the main contacts



3TC44 to 3TC56 contactors

Legend for the diagrams:

 I_a = Breaking current

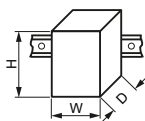
Contactor

Type
Size3TC44
23TC48
43TC52
83TC56
12

General data

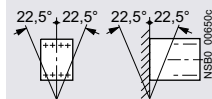
Dimensions (W x H x D)

- DC operation
- AC operation

mm
mm70 x 85 x 141
70 x 85 x 100100 x 183 x 180
100 x 183 x 154135 x 238 x 232
135 x 238 x 200160 x 279 x 310
160 x 279 x 251

Permissible mounting position

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



Mechanical endurance

Operating cycles

10 million

Electrical endurance

[See the endurance diagram above](#)Rated insulation voltage U_i (pollution degree 3)

V

800

1 000

Rated impulse withstand voltage U_{imp}

kV

8

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

V

Up to 300

Up to 660

Mirror contacts¹⁾

A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.

Yes, according to IEC 60947-4-1, Annex F

Permissible ambient temperature

- During operation
- During storage

°C
°C-25 ... +55
-50 ... +80

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 series2 x 3NA31..
(160 A) in series
2 x 3NA31..
(63 A) in series3NE1332-4D
(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
A16
10

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

Rated data of the auxiliary contacts, [see page 4/71](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

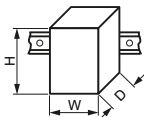
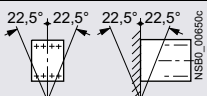
Type			3TC44	3TC48	3TC52	3TC56
Size			2	4	8	12
Control						
Solenoid coil operating range						
• DC operation			0.7 ... 1.25 x U_s			
• AC operation			0.8 ... 1.1 x U_s			
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
• DC operation	Closing = Closed	W	10	19	30	86
• AC operation, 50 Hz coil	Closing	VA/p.f. φ	68/0.86	300/0.5	640/0.48	1 780/0.3
	Closed	VA/p.f. φ	10/0.29	26/0.24	46/0.23	121/0.22
• AC operation, 60 Hz coil	Closing	VA/p.f. φ	95/0.79	365/0.45	730/0.38	2 140/0.3
	Closed	VA/p.f. φ	12/0.3	35/0.26	56/0.24	140/0.29
• AC operation, 50/60 Hz coil	Closing	VA/p.f. φ	79/73/0.83/0.78	--		
	at 50/60 Hz					
	Closed	VA/p.f. φ	11/9/0.28/0.27	--		
	at 50/60 Hz					
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	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	At 110 V	kW	2.5	6.5	20	35
	220 V	kW	5	13	41	70
	440 V	kW	9	27	82	140
	600 V	kW	9	38	110	200
	750 V	kW	4	45	110	250
Conductor cross-sections						
Main conductors (1 or 2 conductors can be connected)						
• Solid	mm ²		2 x (2.5 ... 10)	2 x (6 ... 16)	--	
• Finely stranded with end sleeve	mm ²		2 x (1.5 ... 4)	--		
• Stranded with cable lug	mm ²		2 x 16	2 x 35	2 x 120	2 x 150
• Pin cable lug according to DIN 46231	mm ²		2 x (1 ... 6)	--		
• Busbars	mm		--	15 x 2.5	25 x 4	2 x (25 x 3)
• Terminal screw			M5	M6	M10	
Auxiliary conductors (1 or 2 conductors can be connected)						
• Solid	mm ²		2 x (1 ... 2.5)			
• Finely stranded with end sleeve	mm ²		2 x (0.75 ... 1.5)			

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type			3TC74	3TC78
Design			1-pole contactors	2-pole contactors
General data				
Dimensions (W x H x D)				
			mm	
			78 x 352 x 276	160 x 366 x 290
Permissible mounting position				
The contactors are designed for operation on a vertical mounting surface.				
Mechanical endurance			Operating cycles	30 million
Electrical endurance			See page 4/72	
Rated insulation voltage U_i (pollution degree 3)			V	1 500
Rated impulse withstand voltage U_{imp}			kV	8
Protective separation between the coil and the main contacts according to IEC 60947-1, Annex N			V	630
Mirror contacts¹⁾ A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			Yes, according to IEC 60947-4-1, Annex F	
Permissible ambient temperature			°C	-25 ... +55
Short-circuit protection				
Main circuit				
• Type of coordination "1"			A	2 x 3NE1330-4D (315 A) parallel
• Type of coordination "2"			A	2 x 3NE1330-4D (315 A) parallel
Auxiliary circuit (short-circuit current $I_k \leq 1$ kA)				
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE			A	16
• Miniature circuit breaker with C characteristic			A	10
Control				
Solenoid coil operating range				
• DC operation			At $U_c = 24$ V	0.8 ... 1.2 x U_s
			At $U_c > 24$ V	0.7 ... 1.2 x U_s
• AC operation			At $U_c = 24$ V	0.7 ... 1.15 x U_s
			At $U_c > 24$ V	0.7 ... 1.14 x U_s
Power consumption of the solenoid coils (for cold coil and $1.0 \times U_s$)				
• DC operation			Closing = Closed W	46
				92
• AC operation, 50 Hz			Closing = Closed VA	80
				160
			P.f. φ	0.95

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

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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Type	3TC74			3TC78	
Design	1-pole contactors			2-pole contactors	
Rated data of the main contacts					
Load rating with DC					
Utilization category DC-1 ($L/R \leq 1$ ms)					
• Rated operational current I_e /DC-1 (at 55 °C)	A	500			
• Minimum conductor cross-section	mm ²	2 x 150			
• Rated power	At 220 V	kW	110		
(≤ 750 V DC: one conducting path,	440 V	kW	220		
> 750 V DC: two conducting paths in series)	600 V	kW	300		
	750 V	kW	375		
	1 200 V	kW	--	600	
	1 500 V	kW	--	750	
• Critical currents, without arc extinction	At 440 V	A	≤ 7	--	
	600 V	A	≤ 13	--	
	750 V	A	≤ 15	--	
	≤ 800 V	A	--	≤ 7	
	1 200 V	A	--	≤ 13	
	1 500 V	A	--	≤ 15	
Utilization category DC-3 and DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)					
• Rated operational current I_e (at 55 °C)	A	400			
• Rated power at U_e	At 110 V	kW	35		
(≤ 750 V DC: one conducting path,	220 V	kW	70		
> 750 V DC: two conducting paths in series)	440 V	kW	140		
	600 V	kW	200		
	750 V	kW	250		
	1 200 V	kW	--	400	
	1 500 V	kW	--	500	
Permissible rated current for regenerative braking					
At 110 ... 600 V	A	400			
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 4/71](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Selection and ordering data

DC operation  or AC operation, 50 Hz 



3TC44



3TC48

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

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

DC operation

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

2	DC-3, DC-5	32	2.5	5	9	9	4	2	2	24 DC 110 DC 220 DC	3TC4417-0AB4 3TC4417-0AF4 3TC4417-0AM4	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
For screw fixing														
4	DC-3, DC-5	75	6.5	13	27	38	45	2	2	24 DC 110 DC 220 DC	3TC4817-0AB4 3TC4817-0AF4 3TC4817-0AM4	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
8	DC-3, DC-5	220 ⁴⁾	20	41	82	110	110	2	2	24 DC 110 DC 220 DC	3TC5217-0AB4 3TC5217-0AF4 3TC5217-0AM4	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B
12	DC-3, DC-5	400	35	70	140	200	250	2	2	24 DC 110 DC 220 DC	3TC5617-0AB4 3TC5617-0AF4 3TC5617-0AM4	1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

AC operation, 50 Hz

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

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

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

²⁾ The following rated operational currents are permitted for reversing duty with 3TC44 to 3TC56 contactors:

Contactors	Rated operational voltage	
Type	110 V, 220 V	440 V
3TC44	32 A	7 A
3TC48	75 A	75 A
3TC52	170 A	170 A
3TC56	400 A	400 A

³⁾ The fitting of auxiliary switches cannot be altered on DC-operated contactors.

⁴⁾ At > 600 V: $I_e = 170$ A.

⁵⁾ Operating range at 220 V AC: 0.85 to $1.15 \times U_s$; lower operating range limit according to IEC 60947.

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

Accessories, see page 4/78 onwards.

Spare parts, see page 4/80.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

DC operation  or AC operation, 50 Hz 

For screw fixing



3TC74



3TC78

Size	Utilization category ¹⁾	Operational current I_e	Ratings of DC motors at								Auxiliary contacts ²⁾ Version	Rated control supply voltage U_s	Screw terminals 	PU (UNIT, SET, M)	PS*	PG
			110 V	220 V	440 V	600 V	750 V	1 200 V	1 500 V				Article No.	Price per PU		
		A	kW	kW	kW	kW	kW	kW	kW		NO NC V					

3TC74 1-pole contactors · Operational voltage up to 750 V

DC operation

12	DC-3, DC-5	400	35	70	140	200	250	--	--	4	4	24 DC 110 DC	3TC7414-0EB 3TC7414-0EF	1 1	1 unit 1 unit	41B 41B
----	------------	-----	----	----	-----	-----	-----	----	----	---	---	--------------	----------------------------	--------	------------------	------------

AC operation, 50 Hz

12	DC-3, DC-5	400	35	70	140	200	250	--	--	4	4	230/220 AC ³⁾	3TC7414-1CM	1	1 unit	41B
----	------------	-----	----	----	-----	-----	-----	----	----	---	---	--------------------------	-------------	---	--------	-----

3TC78 2-pole contactors · Operational voltage up to 1 500 V

DC operation

12	DC-3, DC-5	400	35	70	140	200	250	400	500	4	4	24 DC 110 DC	3TC7814-0EB 3TC7814-0EF	1 1	1 unit 1 unit	41B 41B
----	------------	-----	----	----	-----	-----	-----	-----	-----	---	---	--------------	----------------------------	--------	------------------	------------

AC operation, 50 Hz

12	DC-3, DC-5	400	35	70	140	200	250	400	500	4	4	230/220 AC ³⁾	3TC7814-1CM	1	1 unit	41B
----	------------	-----	----	----	-----	-----	-----	-----	-----	---	---	--------------------------	-------------	---	--------	-----

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

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

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

Other rated control supply voltages [according to page 4/78](#) on request.

Spare parts, [see page 4/80](#).

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Options

**Rated control supply voltages,
possible on request (change of the 10th and 11th digits of the article number)**

Delivery time on request

Rated control supply voltage U_g	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 $1.15 \times U_g$;
lower operating range limit according to IEC 60947.

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

Accessories

For contactors		Version	Auxiliary switches		Screw terminals	PU (UNIT, SET, M)	PS*	PG	
		Auxiliary contacts	Left	Right					
Size	Type	NO	NC		Article No.	Price per PU			
Second auxiliary switch (for AC operation only)									
4	3TC48	2nd auxiliary switch, left			3TY6501-1K		1	1 unit	41B
		1	1						
		2nd auxiliary switch, right			3TY6501-1L		1	1 unit	41B
		1	1	--					
8 and 12	3TC52, 3TC56	2nd auxiliary switch, left			3TY6561-1K		1	1 unit	41B
		1	1						
		2nd auxiliary switch, right			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			3TY7561-1UA00		1	1 unit	41B
2 and 4	3TC44, 3TC48	2nd auxiliary switch, left or right (replacement for 3TY6561-1U, 3TY6561-1V)							
		1 CO contact							



5TY7561-1.

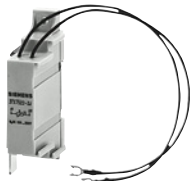


5TY7561-1.

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

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

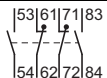
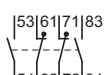
For contactors		Version	Rated control supply voltage U_s		Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type		V AC	V DC					
Terminal covers									
 3TX6546-3B	2	3TC44	For protection against inadvertent contact with exposed busbar connections (1 set = 2 units)	--	3TY2444-0B		1	1 unit	41B
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

Switching devices – Contactors and contactor assemblies – Special applications

Contactors for special applications

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

Spare parts

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

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