

Switching Devices – Contactors and Contactor Assemblies

Power Contactors for Switching Motors

Introduction



Size
Type

S00
3RT201

S0
3RT202

3RT20 contactors

Type	3RT2015	3RT2016	3RT2017	3RT2018	3RT2023	3RT2024	3RT2025	3RT2026	3RT2027	3RT2028
AC, DC operation	(p. 3/55, 3/60 ... 3/63)				(p. 3/56, 3/57, 3/64 ... 3/66, 3/68)					

AC-3

I_e /AC-3/400 V	A	7	9	12	16	9	12	17	25	32	38
400 V	kW	3	4	5.5	7.5	4	5.5	7.5	11	15	18.5
230 V	kW	1.5	2.2	3	4	2.2	3	4	5.5	7.5	11
690 V	kW	4	5.5	5.5	7.5	7.5	7.5	11	11	18.5	18.5
1 000 V	kW	--	--	--	--	--	--	--	--	--	--

AC-4 (at $I_a = 6 \times I_e$)

400 V	kW	3	4	4	5.5	4	5.5	7.5	7.5	11	11
400 V (200 000 operating cycles)	kW	1.15	2	2	2.5	2	2.6	3.5	4.4	6	6

AC-1 (40 °C, ≤ 690 V)

I_e	A	18	22	22	22	40	40	40	40	50	50
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Accessories for contactors

Auxiliary switch blocks	• On front	3RH29, 3RA28	(p. 3/94 ... 3/101)	3RH29, 3RA28	(p. 3/94 ... 3/101)
	• Lateral	3RH29	(p. 3/98)	3RH29	(p. 3/98)
Function modules	• Direct-on-line starting, star-delta (wye-delta) starting	3RA281.	(p. 3/106)	3RA281.	(p. 3/106)
	• IO-Link, AS-Interface	3RA271.-.AA00	(p. 3/107, 3/108)	3RA271.-.AA00	(p. 3/107, 3/108)
Surge suppressors		3RT2916	(p. 3/103, 3/104)	3RT2926	(p. 3/103, 3/104)

3RU2 and 3RB3 overload relays

3RU thermal overload relays	3RU2116	0.11 ... 16 A	(p. 7/92)	3RU2126	1.8 ... 40 A	(p. 7/92)
3RB electronic overload relays						
• For standard applications	3RB3016, 3RB3113	0.1 ... 16 A	(p. 7/105 ... 7/107)	3RB3026, 3RB3123	0.1 ... 40 A	(p. 7/105 ... 7/107)
• For High-Feature applications	3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1	0.3 ... 25 A	(p. 7/128, 7/136) (p. 7/140)	3RB22, 3RB23 and 3RB24 with current measuring module 3RB2906-2.G1	0.3 ... 25 A	(p. 7/128, 7/136) (p. 7/140)

3RV20 motor starter protectors

Motor starter protectors	3RV2011	0.11 ... 16 A	(p. 7/28)	3RV2021	0.45 ... 40 A	(p. 7/29)
Link modules	3RA1921, 3RA2911		(p. 7/56)	3RA2921		(p. 7/56)

3RA23 reversing contactor assemblies

Complete units	Type	3RA2315	3RA2316	3RA2317	3RA2318	--	3RA2324	3RA2325	3RA2326	3RA2327	3RA2328
		(p. 3/163)					(p. 3/164)				
400 V	kW	3	4	5.5	7.5		5.5	7.5	11	15	18.5
Assembly kits, etc.		3RA2913-2AA.			(p. 3/110)	--	3RA2923-2AA.				(p. 3/110)
Function modules		3RA271.-.BA00			(p. 3/107)	--	3RA271.-.BA00				(p. 3/107)

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

Complete units	Type	3RA2415	3RA2416	3RA2417	3RA2423	3RA2425	3RA2426
		(p. 3/180)			(p. 3/181)		
400 V	kW	5.5	7.5	11	11	15/18.5	22
Assembly kits/wiring modules		3RA2913-2BB.		(p. 3/111)	3RA2923-2BB.		(p. 3/111)
Function modules		3RA271.-.CA00		(p. 3/107)	3RA271.-.CA00		(p. 3/107)

Note:

Safety characteristics for contactors, see "Standards and approvals", page 16/6.

Power Contactors for Switching Motors

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



Contactors with screw terminals: 3RT2 (sizes S00 to S3) and 3RT1 (sizes S6 to S12)

3RT contactors, sizes S00 to S12

Our power range:

- Contactors for switching motors:
 - Size S00: 3RT201 up to 7.5 kW
 - Size S0: 3RT202 up to 18.5 kW
 - Size S2: 3RT203 up to 37 kW
 - Size S3: 3RT204 up to 55 kW
 - Sizes S6 to S12: 3RT10 up to 250 kW
- For vacuum contactors for switching motors, [see page 3/126 onwards](#):
 - Sizes S10 and S12: 3RT12 up to 250 kW
 - Size 14: 3TF6 up to 450 kW

Standards

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

Ambient conditions

If the devices are in ambient conditions which deviate from common industrial conditions (IEC 60721-3-3 "Stationary Use, Weather-Protected"), information must be obtained about possible restrictions with regard to the reliability and endurance of the device and possible protective measures. In this case contact our Technical Support:
<https://support.industry.siemens.com/My/ww/en/requests>

Auxiliary contact complement

- Size S00: an auxiliary contact is integrated in the basic device.
- Sizes S0 to S3: the basic units contain two integrated auxiliary contacts (1 NO + 1 NC).
All basic units, with the exception of coupling relays in sizes S00 and S0, can be expanded using auxiliary switch blocks, [see page 3/88 for the permitted selection of auxiliary switches](#).
- Sizes S6 to S12: These contactors are supplied with two laterally mounted auxiliary switch blocks. The fitting of auxiliary switches is possible on the front and on the side (the 3RT12 vacuum contactor is an exception: only lateral fitting of auxiliary switches is possible here).

For detailed information about the fitting of auxiliary switches, [see pages 3/88 to 3/93](#).

Contact reliability

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

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

Power Contactors for Switching Motors

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

Contactors for special applications

- SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole, [see from page 4/6 onwards](#)
- SIRIUS 3RT20 and 3RT10 contactors with an extended application range, 3-pole (for rail applications), [see from page 4/52 onwards](#)

Article No. scheme

Product versions		Article number											
SIRIUS power contactors		3RT2 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>											
Device type	e.g. 0 = 3-pole motor contactor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Size of the contactor	e.g. 4 = S3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Power dependent on size	e.g. 5 = 37 kW in the case of S3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type of electrical connection	e.g. 1 = screw terminals (main and auxiliary circuits)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operating range/solenoid coil circuit	e.g. A = AC standard/without coil circuit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rated control supply voltage	e.g. P0 = 230 V AC, 50 Hz	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Auxiliary switches	e.g. 0 = in the case of S3: 1 NO + 1 NC integrated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Special version		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Example		3RT2 0 4 5 - 1 A P 0 0											

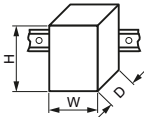
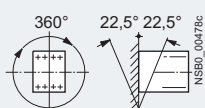

Note:

The Article No. scheme shows an overview of product versions for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the selection and ordering data.

Power Contactors for Switching Motors

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

Type		Contactors												
Size		3RT2015, 3RT2016	3RT2017, 3RT2018											
S00														
General data														
Dimensions (W x H x D)														
<ul style="list-style-type: none">Basic unit<ul style="list-style-type: none">Screw terminalsSpring-type terminalsBasic unit with mounted auxiliary switch block<ul style="list-style-type: none">Screw terminalsSpring-type terminalsBasic unit with mounted function module or solid-state time-delayed auxiliary switch block<ul style="list-style-type: none">Screw terminalsSpring-type terminals		<table><tr><td>mm</td><td>45 x 58 x 73</td></tr><tr><td>mm</td><td>45 x 70 x 73</td></tr><tr><td>mm</td><td>45 x 58 x 117</td></tr><tr><td>mm</td><td>45 x 70 x 121</td></tr><tr><td>mm</td><td>45 x 58 x 147</td></tr><tr><td>mm</td><td>45 x 70 x 147</td></tr></table>	mm	45 x 58 x 73	mm	45 x 70 x 73	mm	45 x 58 x 117	mm	45 x 70 x 121	mm	45 x 58 x 147	mm	45 x 70 x 147
mm	45 x 58 x 73													
mm	45 x 70 x 73													
mm	45 x 58 x 117													
mm	45 x 70 x 121													
mm	45 x 58 x 147													
mm	45 x 70 x 147													
Permissible mounting position														
The contactors are designed for operation on a vertical mounting surface.														
Upright mounting position		 Special version required												
Mechanical endurance														
<ul style="list-style-type: none">Basic unit- With mounted auxiliary switch block- with solid-state compatible auxiliary switch block	<table><tr><td>Operating cycles</td><td>30 million</td></tr><tr><td>Operating cycles</td><td>10 million</td></tr><tr><td>Operating cycles</td><td>5 million</td></tr></table>	Operating cycles	30 million	Operating cycles	10 million	Operating cycles	5 million							
Operating cycles	30 million													
Operating cycles	10 million													
Operating cycles	5 million													
Electrical endurance		For contact endurance of the main contacts, see page 3/25 .												
Rated insulation voltage U_i (pollution degree 3)		V	690											
Rated impulse withstand voltage U_{imp}														
<ul style="list-style-type: none">Auxiliary circuitMain circuit	<table><tr><td>kV</td><td>6</td></tr><tr><td>kV</td><td>6</td></tr></table>	kV	6	kV	6									
kV	6													
kV	6													
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		V	400											
Mirror contacts														
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.														
<ul style="list-style-type: none">3RT2.1. (removable auxiliary switch block)3RH2919-.NF.. solid-state compatible auxiliary switch blocks	<table><tr><td>Yes, this applies to both the basic unit as well as to between the basic unit and the mounted auxiliary switch block according to IEC 60947-4-1, Appendix F</td></tr><tr><td>No mirror contact for size S00</td></tr></table>			Yes, this applies to both the basic unit as well as to between the basic unit and the mounted auxiliary switch block according to IEC 60947-4-1, Appendix F	No mirror contact for size S00									
Yes, this applies to both the basic unit as well as to between the basic unit and the mounted auxiliary switch block according to IEC 60947-4-1, Appendix F														
No mirror contact for size S00														
Ambient temperature														
<ul style="list-style-type: none">During operationDuring storage	<table><tr><td>°C</td><td>-25 ... +60</td></tr><tr><td>°C</td><td>-55 ... +80</td></tr></table>	°C	-25 ... +60	°C	-55 ... +80									
°C	-25 ... +60													
°C	-55 ... +80													
Degree of protection acc. to IEC 60529														
<ul style="list-style-type: none">On frontConnecting terminal	<table><tr><td>IP20 (screw terminals and spring-type terminals)</td></tr><tr><td>IP20 (screw terminals and spring-type terminals)</td></tr></table>			IP20 (screw terminals and spring-type terminals)	IP20 (screw terminals and spring-type terminals)									
IP20 (screw terminals and spring-type terminals)														
IP20 (screw terminals and spring-type terminals)														
Touch protection acc. to IEC 60529		Finger-safe (screw terminals and spring-type terminals)												
Shock resistance														
<ul style="list-style-type: none">Rectangular pulse<ul style="list-style-type: none">AC operationDC operationSine pulse<ul style="list-style-type: none">AC operationDC operation	<table><tr><td>g/ms</td><td>6.7/5 and 4.2/10</td></tr><tr><td>g/ms</td><td>6.7/5 and 4.2/10</td></tr><tr><td>g/ms</td><td>10.5/5 and 6.6/10</td></tr><tr><td>g/ms</td><td>10.5/5 and 6.6/10</td></tr></table>	g/ms	6.7/5 and 4.2/10	g/ms	6.7/5 and 4.2/10	g/ms	10.5/5 and 6.6/10	g/ms	10.5/5 and 6.6/10	<table><tr><td>7.3/5 and 4.7/10</td></tr><tr><td>7.3/5 and 4.7/10</td></tr><tr><td>11.4/5 and 7.3/10</td></tr><tr><td>11.4/5 and 7.3/10</td></tr></table>	7.3/5 and 4.7/10	7.3/5 and 4.7/10	11.4/5 and 7.3/10	11.4/5 and 7.3/10
g/ms	6.7/5 and 4.2/10													
g/ms	6.7/5 and 4.2/10													
g/ms	10.5/5 and 6.6/10													
g/ms	10.5/5 and 6.6/10													
7.3/5 and 4.7/10														
7.3/5 and 4.7/10														
11.4/5 and 7.3/10														
11.4/5 and 7.3/10														

Power Contactors for Switching Motors

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




		Contactors	
Type		3RT2015, 3RT2016	3RT2017, 3RT2018
Size		S00	
Short-circuit protection			
Main circuit			
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC/EN 60947-4-1			
- Type of coordination "1"	A	35	50
- Type of coordination "2"	A	20	25
- Weld-free (test conditions acc. to IEC 60947-4-1)	A	10	
• Miniature circuit breaker (up to 230 V) with C characteristic Short-circuit current 1 kA, type of coordination "1"	A	10	
Auxiliary circuit			
Short-circuit test according to IEC/EN 60947-5-1			
• With fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current $I_k = 1$ kA	A	10	
• With 230 V miniature circuit breaker, C characteristic with short-circuit current $I_k = 400$ A	A	6	
Short-circuit protection for contactors with overload relays		See Configuration Manual for load feeders	
Short-circuit protection for fuseless load feeders		See 3RA2 load feeders on page 8/4 onwards	
Control			
Solenoid coil operating range			
• AC operation	50 Hz	0.8 ... 1.1 x U_s	
	60 Hz	0.85 ... 1.1 x U_s	
• DC operation	Up to 50 °C	0.8 ... 1.1 x U_s	
	Up to 60 °C	0.85 ... 1.1 x U_s	
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)			
• AC operation, 50/60 Hz, standard version			
- Closing	VA	27/24.3	37/33
- P.f.		0.8/0.75	
- Closed	VA	4.2/3.3	5.7/4.4
- P.f.		0.25/0.25	
• AC operation, 50 Hz, for USA/Canada			
- Closing	VA	26.4	36
- P.f. for closing		0.81	0.8
- Closed	VA	4.4	5.9
- P.f. for closed		0.24	
• AC operation, 60 Hz, for USA/Canada			
- Closing	VA	31.7	43
- P.f. for closing		0.81	0.8
- Closed	VA	4.8	6.5
- P.f. for closed		0.25	
• DC operation (closing = closed)	W	4	
Permissible residual current of the electronics (with 0 signal)			
• AC operation		< 3 mA x (230 V/ U_s) ¹⁾	< 4 mA x (230 V/ U_s) ¹⁾
• DC operation		< 10 mA x (24 V/ U_s) ¹⁾	
Operating times for 1.0 x U_s ²⁾			
Total break time = Opening delay + Arcing time			
• AC operation			
- Closing delay	ms	9.5 ... 24	9 ... 22
- Opening delay	ms	4 ... 14	4.5 ... 15
• DC operation			
- Closing delay	ms	35 ... 50	
- Opening delay	ms	7 ... 12	
• Arcing time	ms	10 ... 15	




¹⁾ The 3RT2916-1GA00 additional load module is recommended for higher residual currents, see page 3/120.

²⁾ The OFF-delay times of the NO contacts and the ON-delay times of the NC contacts increase if the contactor coils are attenuated against voltage peaks (suppression diode 6x to 10x; diode assembly 2x to 6x; suppression diode +1 to 5 ms; varistor +2 to 5 ms).

Power Contactors for Switching Motors

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

		Coupling contactors		
Type		3RT201.-.HB4.	3RT201.-.JB4.	3RT201.-.KB4.
Size		S00		
Control				
Solenoid coil operating range		0.7 ... 1.25 x U _s		
Power consumption of the solenoid coils (for cold coil) Closing = Closed		At U _s 24 V DC W	2.8	
Permissible residual current of the electronics (with 0 signal)		< 6 mA x (24 V/U _s)		
Upright mounting position		On request		
Overvoltage configuration of the solenoid coil		No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times				
• Closing delay				
- ON-delay NO		ms	35 ... 60	
- OFF-delay NC		ms	25 ... 40	
• Opening delay				
- ON-delay NO		ms	7 ... 20	38 ... 65
- OFF-delay NC		ms	20 ... 30	55 ... 75
				7 ... 20
				20 ... 30

		Coupling contactors		
Type		3RT201.-1MB4.-0KT0	3RT201.-1VB4.	3RT201.-1SB4.
Size		S00		
Control				
Solenoid coil operating range		0.85 ... 1.85 x U _s		
Power consumption of the solenoid coils (for cold coil) Closing = Closed		At U _s 24 V DC W	1.6	
Permissible residual current, upright mounting position		On request		
Overvoltage configuration of the solenoid coil		No overvoltage damping 	Built-in diode 	Built-in suppressor diode 
Operating times				
• Closing delay				
- ON-delay NO		ms	25 ... 90	
- OFF-delay NC		ms	15 ... 80	
• Opening delay				
- ON-delay NO		ms	5 ... 20	20 ... 80
- OFF-delay NC		ms	10 ... 30	30 ... 90
				5 ... 20
				10 ... 30

Power Contactors for Switching Motors

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

		Contactors			
Type		3RT2015	3RT2016	3RT2017	3RT2018
Size		S00			
Rated data of the main contacts					
Load rating with AC					
Utilization category AC-1, switching resistive loads					
• Rated operational currents I_e	At 40 °C up to 690 V	A	18	22	
	At 60 °C up to 690 V	A	16	20	
• Rated power for AC loads ¹⁾ P.f. = 0.95 (at 60 °C)	230 V	kW	6	7.5	
	400 V	kW	10.5	13	
	690 V	kW	18	22	
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm ²	2.5	4	
	At 60 °C	mm ²	2.5		
Utilization categories AC-2 and AC-3					
• Rated operational currents I_e	Up to 400 V	A	7	9	16
	440 V	A	7	9	14
	500 V	A	6	7.7	12.4
	690 V	A	4.9	6.7	8.9
• Rated power for slipring or squirrel-cage motors at 50 Hz and 60 Hz	At 230 V	kW	1.5	2.2	4
	400 V	kW	3	4	7.5
	690 V	kW	4	5.5	7.5
Thermal load capacity	10 s current	A	56	72	96
Power loss per conducting path	At I_e /AC-3	W	0.42	0.7	1.24
Utilization category AC-4 (at $I_a = 6 \times I_e$)²⁾					
• Maximum values					
- Rated operational current I_e	Up to 400 V	A	6.5	8.5	11.5
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	Up to 400 V	kW	3	4	5.5
• The following applies to a contact endurance of about 200 000 operating cycles:					
- Rated operational currents I_e	Up to 400 V	A	2.6	4.1	5.5
	690 V	A	1.8	3.3	4.4
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 230 V	kW	0.67	1.1	1.5
	400 V	kW	1.15	2	2.5
	690 V	kW	1.15	2.5	3.5

¹⁾ Industrial furnaces and electric heaters with resistance heating, etc.
(increased power consumption on heating up has been taken into account).

²⁾ The data applies to 3RT2516 and 3RT2517 contactors (2 NO + 2 NC)
up to a rated operational voltage of 400 V only.

Power Contactors for Switching Motors



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

Type	Contactors			
Size	3RT2015		3RT2016 to 3RT2018	
		S00		
Rated data of the main contacts (continued)				
Load rating with DC				
Utilization category DC-1, switching resistive loads ($L/R \leq 1\text{ ms}$)				
• Rated operational currents I_e (at 60 °C)				
- 1 conducting path	Up to 24 V	A	15	20
	60 V	A	15	20
	110 V	A	1.5	2.1
	220 V	A	0.6	0.8
	440 V	A	0.42	0.6
	600 V	A	0.42	0.6
- 2 conducting paths in series	Up to 24 V	A	15	20
	60 V	A	15	20
	110 V	A	8.4	12
	220 V	A	1.2	1.6
	440 V	A	0.6	0.8
	600 V	A	0.5	0.7
- 3 conducting paths in series	Up to 24 V	A	15	20
	60 V	A	15	20
	110 V	A	15	20
	220 V	A	15	20
	440 V	A	0.9	1.3
	600 V	A	0.7	1
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15\text{ ms}$)				
• Rated operational currents I_e (at 60 °C)				
- 1 conducting path	Up to 24 V	A	15	20
	60 V	A	0.35	0.5
	110 V	A	0.1	0.15
	220 V	A	--	
	440 V	A	--	
	600 V	A	--	
- 2 conducting paths in series	Up to 24 V	A	15	20
	60 V	A	3.5	5
	110 V	A	0.25	0.35
	220 V	A	--	
	440 V	A	--	
	600 V	A	--	
- 3 conducting paths in series	Up to 24 V	A	15	20
	60 V	A	15	20
	110 V	A	15	20
	220 V	A	1.2	1.5
	440 V	A	0.14	0.2
	600 V	A	0.14	0.2
Switching frequency				
Switching frequency z in operating cycles/hour				
Contactors without overload relays				
• No-load switching frequency	AC/DC	1/h	10 000	
• Switching frequency z during rated operation ¹⁾				
- $I_e/AC-1$	At 400 V	1/h	1 000	
- $I_e/AC-2$	At 400 V	1/h	750	
- $I_e/AC-3$	At 400 V	1/h	750	
- $I_e/AC-4$	At 400 V	1/h	250	
Contactors with overload relays				
• Mean value		1/h	15	

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

Power Contactors for Switching Motors

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

Type Size		Contactors 3RT2015 to 3RT2018 S00	
Conductor cross-sections			
Main conductors, auxiliary conductors and coil terminals (1 or 2 conductors can be connected)		 Screw terminals	
• Solid or stranded	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾ ; max. 2 x 4	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5) ¹⁾ ; 2 x (0.75 ... 2.5) ¹⁾	
• AWG cables, solid or stranded	AWG	2 x (20 ... 16) ¹⁾ ; 2 x (18 ... 14) ¹⁾ ; 2 x 12	
• Terminal screw		M3 (for Pozidriv size 2; Ø 5 ... 6)	
• Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)	
Main conductors, auxiliary conductors and coil terminals²⁾ (1 or 2 conductors can be connected)		 Spring-type terminals	
• Operating devices	mm	3.0 x 0.5	
• Solid or stranded	mm ²	2 x (0.5 ... 4)	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 2.5)	
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 12)	
Auxiliary conductors for front and laterally mounted auxiliary switches²⁾ (1 or 2 conductors can be connected)			
• Operating devices	mm	3.0 x 0.5	
• Solid or stranded	mm ²	2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve (DIN 46228-1)	mm ²	2 x (0.5 ... 1.5)	
• Finely stranded without end sleeve	mm ²	2 x (0.5 ... 2.5)	
• AWG cables, solid or stranded	AWG	2 x (20 ... 14)	
¹⁾ If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.		²⁾ Max. external diameter of the conductor insulation: 3.6 mm. On spring-type terminals with conductor cross-sections ≤ 1 mm ² an insulation stop must be used, see page 3/121 .	

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

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



3RT201.-1BB44-3MA0





3RT201.-2BB44-3MA0



3RT201.-1BB4.-0CC0



3RT201.-2BB4.-0CC0

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

Size S00

7	3	18	22	2	2	24
9	4	22	22	2	2	24
12	5.5	22	22	2	2	24
16	7.5	22	22	2	2	24

7	3	18	22	2	2	24
9	4	22	22	2	2	24
12	5.5	22	22	2	2	24
16	7.5	22	22	2	2	24

7	3	18	10	1	--	24
			01	--	1	24
9	4	22	10	1	--	24
			01	--	1	24
12	5.5	22	10	1	--	24
			01	--	1	24
16	7.5	22	10	1	--	24
			01	--	1	24

Other voltages according to page 3/74 on request.

Accessories and spare parts, [see pages 3/76 to 3/125](#).

Power Contactors for Switching Motors

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

Options

Rated control supply voltages for 3RT20 contactors, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage U_s	Contactor type	3RT201, 3RH2	3RT202	3RT203	3RT204
	Size	S00	S0	S2	S3
Sizes S00 to S3					
AC operation¹⁾					
Solenoid coils for 50 Hz (exception: Size S00: 50 Hz and 60 Hz ²⁾)					
24 V AC		B0	B0	B0	B0
42 V AC		D0	D0	D0	D0
48 V AC		H0	H0	H0	H0
110 V AC		F0	F0	F0	F0
230 V AC		P0	P0	P0	P0
240 V AC		U0	U0	U0	U0
400 V AC		V0	V0	V0	V0
Solenoid coils for 50 Hz and 60 Hz²⁾					
24 V AC		B0	C2	C2	C2
42 V AC		D0	D2	D2	D2
48 V AC		H0	H2	H2	H2
110 V AC		F0	G2	G2	G2
220 V AC		N2	N2	N2	N2
230 V AC		P0	L2	L2	L2
Solenoid coils (for USA and Canada³⁾)					
50 Hz	60 Hz				
110 V AC	120 V AC	K6	K6	K6	K6
220 V AC	240 V AC	P6	P6	P6	P6
Solenoid coils (for Japan)					
50/60 Hz⁴⁾	60 Hz⁵⁾				
100 V AC	110 V AC	G6	G6	G6	G6
200 V AC	220 V AC	N6	N6	N6	N6
400 V AC	440 V AC	R6	R6	R6	R6
DC operation¹⁾					
12 V DC		A4	A4	--	--
24 V DC		B4	B4	--	--
42 V DC		D4	D4	--	--
48 V DC		W4	W4	--	--
60 V DC		E4	E4	--	--
110 V DC		F4	F4	--	--
125 V DC		G4	G4	--	--
220 V DC		M4	M4	--	--
230 V DC		P4	P4	--	--

Examples

AC operation	3RT203-1AP00	Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC.
	3RT2023-1AG20	Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC.
DC operation	3RT2025-2BB40	Contactor with spring-type terminals; for rated control supply voltage 24 V DC.
	3RT2025-2BG40	Contactor with spring-type 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 onwards](#).

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
- Size S0:
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	3RT202.-N	Rated control supply voltage	Contactor type	3RT203.-N	3RT204.-N
$U_{s \min} \dots U_{s \max}^{1)}$	Size	S0	$U_{s \min} \dots U_{s \max}^{1)}$	Size	S2	S3
Sizes S00 to S3						
AC/DC operation (50/60 Hz AC or DC)						
21 ... 28 V AC/DC		B3	20 ... 33 V AC/DC		B3	B3
95 ... 130 V AC/DC		F3	48 ... 80 V AC/DC		E3	E3
200 ... 280 V AC/DC ²⁾		P3	83 ... 155 V AC/DC		F3	F3
			175 ... 280 V AC/DC		P3	P3

¹⁾ Coil operating range
- Size S0: 0.7 x $U_{s \min}$ to 1.3 x $U_{s \max}$
- Sizes S2 and S3: 0.8 x $U_{s \min}$ to 1.1 x $U_{s \max}$.

²⁾ The following applies to S0 and $U_{s \max} = 280$ V: Upper limit = 1.1 x $U_{s \max}$.