Notes:

3RT1 contactors in sizes S00/S0 to S12 and 3RA1 contactor assemblies in sizes S00/S0 to S3 can be found

- -in the catalog Add-On IC 10 AO · 2015 at the Information and Download Center
- - in the interactive catalog CA 01
- - in the Industry Mall

Conversion tool, e.g. from 3RT10 to 3RT20 see www.siemens.com/sirius/conversion-tool

NEW

Click on the Article No. in the catalog PDF to access it in the Industry Mall and get all related information.

Article-No.
3RA1943-2C
3RA1943-2B
3RA1953-2B
3RA1953-2N

Or directly in the Internet, e. g. www.siemens.com/product?3RA1943-2C

Introduction

Overview

Size			S00				S0					
Type			3RT201				3RT202					
3RT20 contactors												
Type			**3RT2015**	**3RT2016**	**3RT2017**	**3RT2018**	**3RT2023**	**3RT2024**	**3RT2025**	**3RT2026**	**3RT2027**	**3RT2028**
AC, DC operation			(p. 3/35, 3/37)				(p. 3/42, 3/44, 3/47)					
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 (for I_a = 6 x 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	3RT20	**A**	**18**	**22**	**22**	**22**	**40**	**40**	**40**	**40**	**50**	**50**
Accessories for contactors												
Auxiliary switch blocks	On front		**3RH2911**		(p. 3/64)		**3RH2911**		(p. 3/64)			
	Lateral		**3RH2911**		(p. 3/66)		**3RH2921**		(p. 3/66)			
Function modules (timing relays)			**3RA281.**		(p. 3/196)		**3RA281.**		(p. 3/196)			
Function modules (IO-Link, AS-i)			**3RA271.-. AA00**		(p. 3/201, 3/206)		**3RA271.-. AA00**		(p. 3/201, 3/206)			
Surge suppressors			**3RT2916**		(p. 3/71)		**3RT2926**		(p. 3/71)			
3RU2 and 3RB3 overload relays (Chapter 7, "Protection Equipment" → "Overload Relays")												
3RU thermal overload relays			**3RU2116**	0.11 ... 16 A			**3RU2126**	1.8 ... 40 A				
3RB electronic overload relays												
• **For standard applications**			**3RB3016 3RB3113**	0.1 ... 16 A			**3RB3026 3RB3123**	0.1 ... 40 A				
• **For High-Feature applications**			**3RB22, 3RB23 and 3RB24 with 3RB2906-2.G1 current measuring module**	0.3 ... 100 A			**3RB22, 3RB23 and 3RB24 with 3RB2906-2.G1 current measuring module**	0.3 ... 100 A				
3RV20 motor starter protectors (Chapter 7, "Protection Equipment" → "Motor Starter Protectors")												
Type			**3RV2011**	0.11 ... 16 A			**3RV2021**	0.45 ... 40 A				
Link modules			**3RA2911**				**3RA2921**					
3RA23 reversing contactor assemblies												
Complete units	Type		**3RA2315**	**3RA2316**	**3RA2317**	**3RA2318**	**--**	**3RA2324**	**3RA2325**	**3RA2326**	**3RA2327**	**3RA2328**
			(p. 3/163)					(p. 3/165)				
400 V		**kW**	**3**	**4**	**5.5**	**7.5**		**5.5**	**7.5**	**11**	**15**	**18.5**
Assembly kits/wiring modules			**3RA2913-2AA.**		(p. 3/168)		**--**	**3RA2923-2AA.**		(p. 3/168)		
Function modules			**3RA271.-. BA00**		(p. 3/169)		**--**	**3RA271.-. BA0**		(p. 3/169)		
3RA24 contactor assemblies for wye-delta starting												
Complete units	Type		**3RA2415**	**3RA2416**	**3RA2417**		**3RA2423**		**3RA2425**	**3RA2426**		
			(p. 3/180)				(p. 3/182)					
400 V		**kW**	**5.5**	**7.5**	**11**		**11**		**15/18.5**	**22**		
Assembly kits/wiring modules			**3RA2913-2BB.**		(p. 3/185)		**3RA2923-2BB.**		(p. 3/185)			
Function modules			**3RA271.-. CA00**		(p. 3/187)		**3RA271.-. CA00**		(p. 3/187)			

Note:

Safety characteristics for contactors, see Chap. 16, "Appendix" → "Standards and Approvals" → "Overview".

Size		**S2**				**S3**			**S6**		
Type		3RT203				3RT104			3RT105		
3RT10 contactors											
Type		**3RT2035**	**3RT2036**	**3RT2037**	**3RT2038**	**3RT1044**	**3RT1045**	**3RT1046**	**3RT1054**	**3RT1055**	**3RT1056**
AC, DC operation		(p. 3/40, 3/48)				(p. 3/97, 3/98)			(p. 3/99)		
AC-3											
I_e/AC-3/400 V	A	40	50	65	80	65	80	95	115	150	185
400 V	**kW**	**18.5**	**22**	**30**	**37**	**30**	**37**	**45**	**55**	**75**	**90**
230 V	kW	11	15	18.5	22	18.5	22	22	37	45	55
500 V	kW	22	30	37	37	37	45	55	75	90	110
690 V	kW	22	22	37	45	45	55	55	110	132	160
1 000 V	kW	--	--	--	--	30	37	37	75	90	90
AC-4 (for $I_a = 6 \times I_e$)											
400 V	**kW**	**18.5**	**22**	**30**	**37**	**30**	**37**	**45**	**55**	**75**	**90**
400 V (200 000 operating cycles)	kW	11.6	12.6	14.7	15.8	15.1	17.9	22	29	38	45
AC-1 (40 °C, ≤ 690 V)											
I_e	**A**	**60**	**70**	**80**	**90**	**100**	**120**	**120**	**160**	**185**	**215**
3RT14 AC-1 contactors											
Type		**--**				**3RT1446**		(Chap. 4)	**3RT1456**		(Chap. 4)
I_e/AC-1/40 °C/≤ 690 V	**A**	**--**				**140**			**275**		
Accessories for contactors											
Auxiliary switch blocks	On front	**3RH2911**		(p. 3/64)		**3RH1921**		(p. 3/114)	**3RH1921**		(p. 3/114)
	Lateral	**3RH2921**		(p. 3/66)		**3RH1921**		(p. 3/116)	**3RH1921**		(p. 3/116)
Function modules (timing relays)		**3RA283.**		(p. 3/196)		**--**			**--**		
Function modules (IO-Link, AS-i)		**3RA271.-. AA00**		(p. 3/201, 3/206)		**--**			**--**		
Surge suppressors		**3RT2936**		(p. 3/71)		**3RT1926/36**		(p. 3/119)	**3RT1956-1C** (RC element) (p. 3/119)		
Terminal covers		**--**				**3RT1946-4EA1/2**		(p. 3/121)	**3RT1956-4EA1/2/3**		(p. 3/121)
Box terminal blocks		**--**				**--**			**3RT1955/56-4G**		(p. 3/121)
3RU and 3RB overload relays (Chapter 7, "Protection Equipment" → "Overload Relays")											
3RU thermal overload relays		**3RU2136**	11 ... 80 A			**3RU1146**	18 ... 100 A		**--**		
3RB electronic overload relays											
• For standard applications		**3RB3036** **3RB3133**	12 ... 80 A			**3RB2046** **3RB2143**	12.5 ... 100 A		**3RB2056** **3RB2153**	50 ... 200 A	
• For High-Feature applications		**3RB22, 3RB23 and 3RB24 with 3RB2906-2JG1 current measuring module**	10 ... 100 A			**3RB22, 3RB23 and 3RB24 with 3RB2906-2JG1 current measuring module**	10 ... 100 A		**3RB22, 3RB23 and 3RB24 with 3RB2956-2TH2 current measuring module**	20 ... 200 A	
3RV2031/3RV1041 motor starter protectors and 3RV1063 molded case circuit breakers (Chapter 7, "Protection Equipment" → "Motor Starter Protectors")											
Type		**3RV2031**	9.5 ... 80 A			**3RV1041**	45 ... 100 A		**3RV1063**	40 ... 200 A	
Link modules		**3RA2931**				**3RA1941**			**--**		
3RA.3 reversing contactor assemblies											
Complete units	Type	**3RA2335** (p. 3/167)	**3RA2336**	**3RA2337**	**3RA2338**	**3RA1344** (p. 3/171)	**3RA1345**	**3RA1346**	**--**		
400 V	**kW**	**18.5**	**22**	**30**	**37**	**30**	**37**	**45**	**55**	**75**	**90**
Assembly kits/wiring modules		**3RA2933-2AA.**			(p. 3/168)	**3RA1943-2A**		(p. 3/173)	**3RA1953-2A**		(p. 3/173)
Mechanical interlocks		**3RA2934-2B**			(p. 3/169)	**3RA2924-1A/-2B**		(p. 3/172)	**3RA1954-2A**		(p. 3/172)
3RA.4 contactor assemblies for wye-delta starting											
Complete units	Type	**3RA2434** (p. 3/184)	**3RA2435**	**3RA2436**	**3RA2437**	**3RA1444** (p. 3/191)	**3RA145**		**--**		
400 V	**kW**	**22/30**	**37**	**45**	**55**	**55**	**75**		**--**		
Assembly kits/wiring modules		**3RA2933-2BB./-2C**			(p. 3/185)	**3RA1943-2B/-2C**		(p. 3/192)	**3RA1953-2B**		(p. 3/192)
Function modules		**3RA271.-. CA00**			(p. 3/187)	**--**			**--**		

Introduction

Size			**S10**			**S12**		**14**	
Type			3RT1. 6			3RT1. 7		3TF6	
3RT10 contactors · 3RT12 and 3TF68/69 vacuum contactors									
Type AC, DC operation			**3RT1064** (p. 3/99)	**3RT1065**	**3RT1066**	**3RT1075** (p. 3/99)	**3RT1076**	**--**	
Type			**3RT1264** (p. 3/107)	**3RT1265**	**3RT1266**	**3RT1275** (p. 3/107)	**3RT1276**	**3TF68** (p. 3/133)	**3TF69**
AC-3									
I_e/AC-3/400 V		A	225	265	300	400	500	630	820
400 V		**kW**	**110**	**132**	**160**	**200**	**250**	**335**	**450**
230 V		kW	55	75	90	132	160	200	260
500 V		kW	160	160	200	250	355	434	600
690 V	3RT10/3RT12	kW	200	250	250	400	400/500	600	800
1 000 V	3RT10/3RT12	kW	90/315	132/355	132/400	250/560	250/710	600	800
AC-4 (for I_a = 6 x I_e)									
400 V		**kW**	**110**	**132**	**160**	**200**	**250**	**355**	**400**
400 V (200 000 operating cycles)	3RT10/3RT12	kW	54/78	66/93	71/112	84/140	98/161	168	191
AC-1 (40 °C, ≤ 690 V)									
I_e	3RT10/3RT12	**A**	**275/330**	**330**	**330**	**430/610**	**610**	**700**	**910**
3RT14 AC-1 contactors									
Type			**3RT1466**		(Chap. 4)	**3RT1476**	(Chap. 4)	**--**	
I_e/AC-1/40 °C/≤ 690 V		**A**	**400**			**690**		**--**	
Accessories for contactors									
Auxiliary switch blocks	On front Lateral		**3RH1921** **3RH1921**		(p. 3/114) (p. 3/116)			**--** **3TY7561**	(p. 3/135)
Surge suppressors			**3RT1956-1C** (RC element)		(p. 3/119)			**3TX7572**	(p. 3/135)
Terminal covers			**3RT1966-4EA1/-4EA2/-4EA3**		(p. 3/121)			**3TX7686/696**	(p. 3/135)
Box terminal blocks			**3RT1966-4G**		(p. 3/121)			**--**	
3RB2 overload relays (Chapter 7, "Protection Equipment" → "Overload Relays")									
3RB electronic overload relays									
• For standard applications			**3RB2066** **3RB2163**	55 ... 250 A or 160 ... 630 A					
• For High-Feature applications			**3RB22, 3RB23 and 3RB24 with 3RB2966-2WH2 current measuring module**	63 ... 630 A					
3RV10 molded case circuit breakers (Chapter 7, "Protection Equipment" → "Motor Starter Protectors")									
Type			**3RV1073**	160 ... 400 A		**3RV1083**	252 ... 630 A	**3RV1083**	252 ... 630 A
Link modules			**--**			**--**		**--**	
3RA13 reversing contactor assemblies									
Complete units		Type	**--**			**--**		**--**	
400 V		**kW**	**110**	**132**	**160**	**200**	**250**	**335**	
Assembly kits/wiring modules			**3RA1963-2A**		(p. 3/173)	**3RA1973-2A**	(p. 3/173)	**3TX7680-1A**	(Industry Mall)
Mechanical interlocks			**3RA1954-2A**		(p. 3/172)			**3TX7686-1A**	(Industry Mall)
3RA14 contactor assemblies for wye-delta starting									
Complete units		Type	**--**			**--**		**--**	
400 V		**kW**	**--**			**--**		**630**	
Assembly kits/wiring modules			**3RA1963-2B**		(p. 3/192)	**3RA1973-2B**	(p. 3/192)	**3TX7680-1B**	(Industry Mall)

Note:

Safety characteristics for contactors, see Chap. 16, "Appendix" → "Standards and Approvals" → "Overview".

Connection methods

The contactors are available with screw terminals (box terminals or flat connectors) or with spring-type terminals.

Devices of the 3TF2 series are also available for connection with flat connectors and solder pin connectors.

As an option the devices of the 3RT2 series are also available for connection with ring terminal lugs, particularly versions for North America and Japan.

	Screw terminals
	Spring-type terminals
	Flat connectors
	Solder pin connections
	Ring terminal lug connections
	The terminals are indicated in the corresponding tables by the symbols shown on orange backgrounds.

Support function

The 3RT20 contactors can also be ordered via an online configurator.

	Configurator available in the Industry Mall
	The online configurator is indicated in the corresponding tables by the symbol shown on an orange background.

Use of 3RT2 contactors with IE3 motors

Note:

For the use of 3RT2 contactors in conjunction with highly energy-efficient IE3 motors, please observe the information on dimensioning and configuring, see
" SIRIUS Industrial controls with IE3 motors",
http://support.automation.siemens.com/WW/view/en/94770820

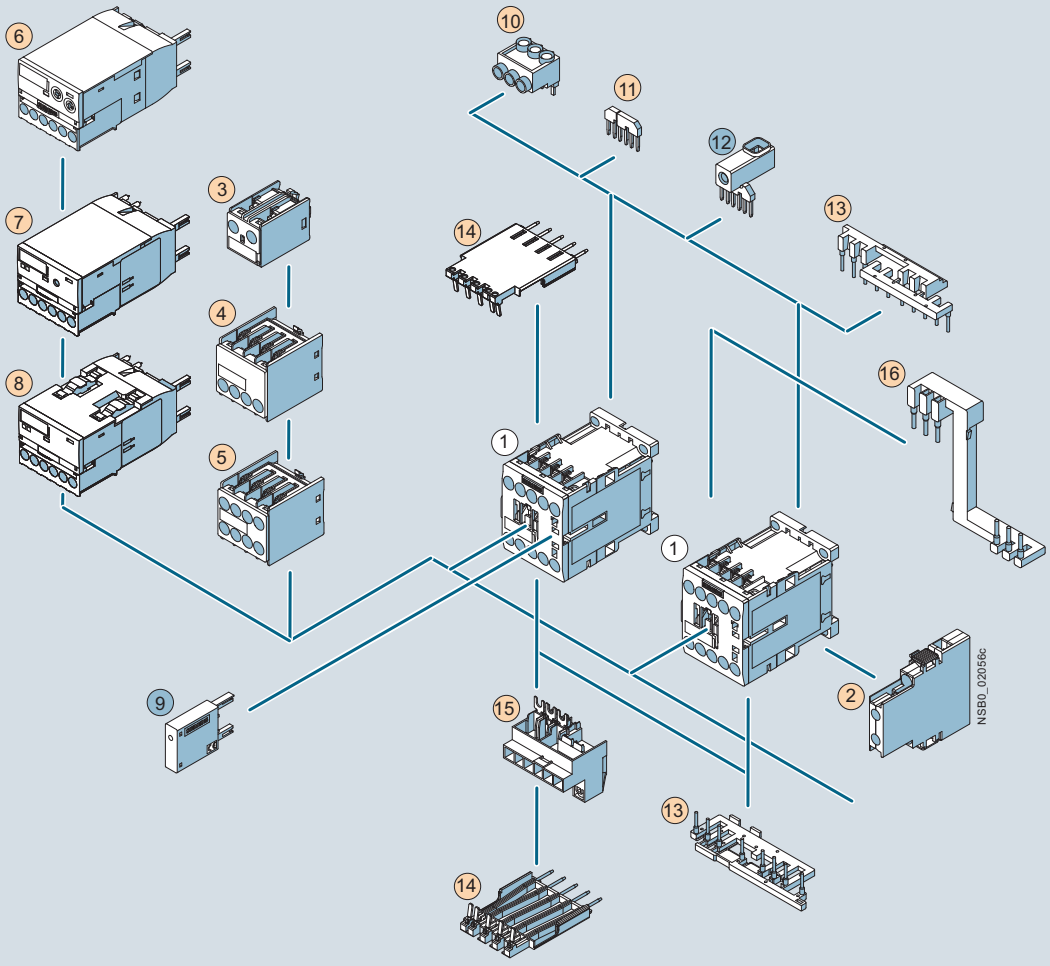
More information, see page 3.

Overview

The SIRIUS family of controls

The SIRIUS modular system with its components for the switching, starting, protection and monitoring of motors and industrial systems stands for the fast, flexible and space-saving construction of control cabinets.

3RT2 contactors and coupling contactors Size S00 with mountable accessories



(1) Contactor size S00

(2) 2-pole auxiliary switch block, laterally mountable
(3) 1-pole auxiliary switch block, for snapping onto the front cable entry from the top
(4) 2-pole auxiliary switch block, for snapping onto the front cable entry from the bottom
(5) 4-pole auxiliary switch block, for snapping onto the front
(6) 3RA28 function module
(7) 3RA27 function module for AS-Interface, direct starting
(8) 3RA27 function module for IO-Link, direct starting
(9) Surge suppressor with/without LED
(10) Three-phase feeder terminal
(11) Star jumper, 3-pole, without connecting terminal
(12) Link for paralleling, 3-pole, with connecting terminal
(13) Wiring modules, on the top and bottom (reversing duty)
(14) Solder pin adapter
(15) Connection module (adapter and connector) for contactors with screw-type connection
(16) Safety main current connector for two contactors

○ For contactors
● For contactors and coupling contactors (interface)

Accessories, see pages 3/59 to 3/76.

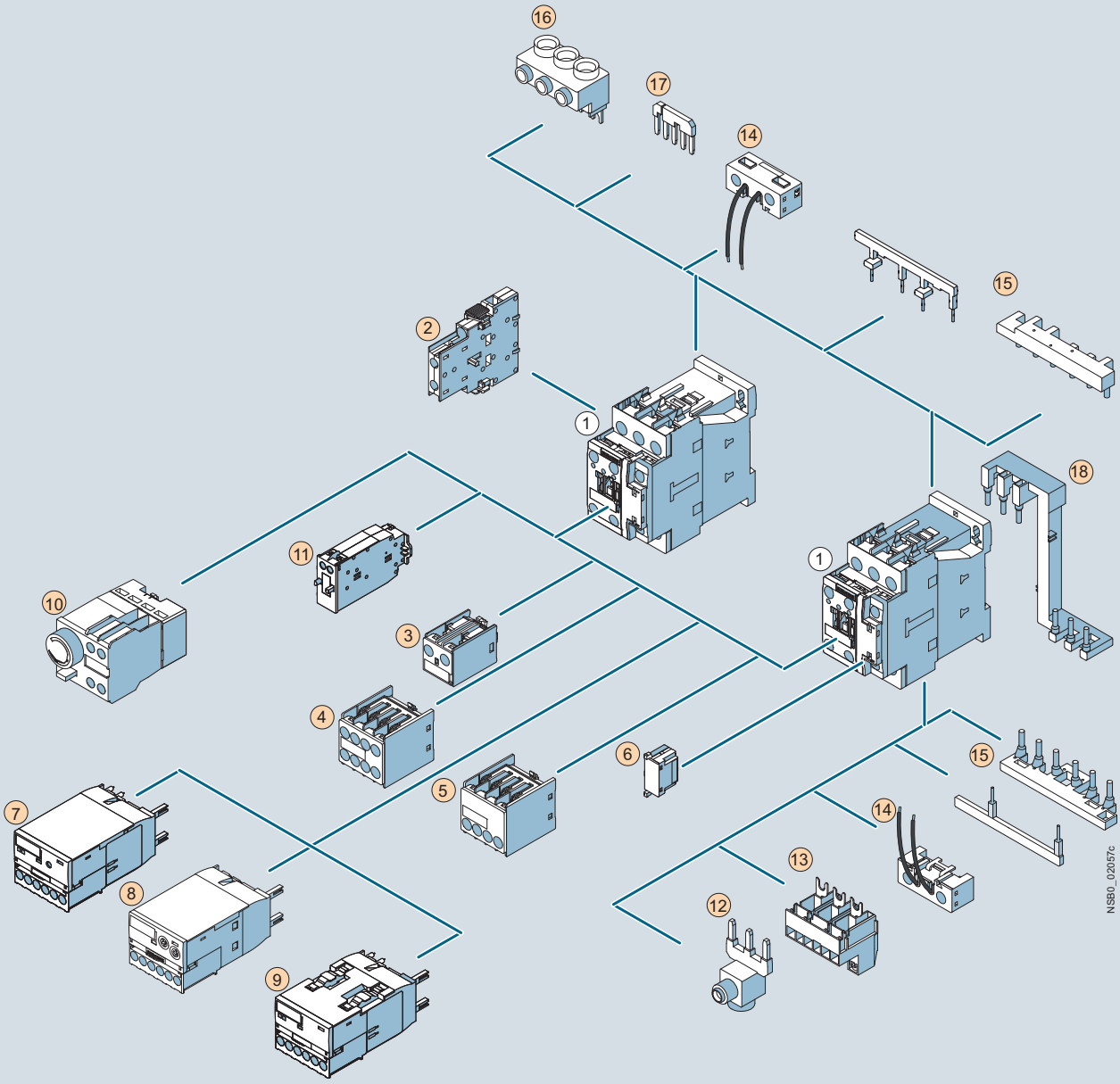
Contactor assemblies, see pages 3/163 to 3/165.

Assembly kit for reversing contactor assemblies (mech. interlocking, wiring modules), see page 3/168.

Mountable overload relays, see Chapter 7, "Protection Equipment" → "Overload Relays".

Fuseless load feeders, see Chapter 8, "Load Feeders and Motor Starters" → "SIRIUS 3RA2 Load Feeders".

3RT2 contactors and coupling contactors
Size S0 with mountable accessories



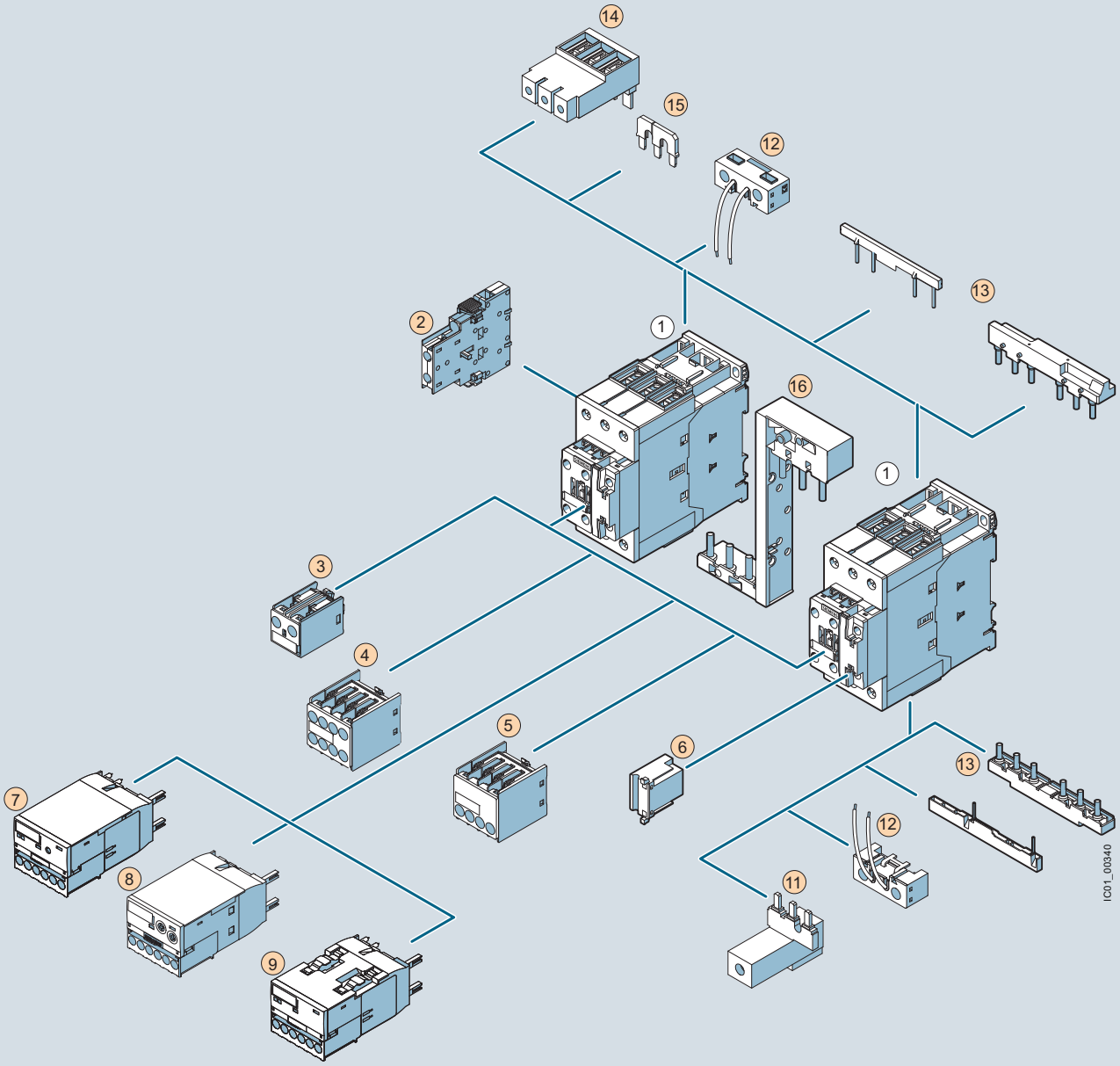
1 Contactor size S0

2 2-pole auxiliary switch block, laterally mountable
3 1-pole auxiliary switch block, for snapping onto the front cable entry from the top
4 4-pole auxiliary switch block, for snapping onto the front
5 2-pole auxiliary switch block, for snapping onto the front cable entry from the bottom
6 Surge suppressor with/without LED
7 3RA27 function module for AS-Interface, direct starting
8 3RA28 function module
9 3RA27 function module for IO-Link, direct starting
10 Pneumatic delay block
11 Mechanical latching block
12 Link for paralleling, 3-pole, with connecting terminal
13 Connection module (adapter and plug) for contactors with screw-type connection
14 Coil terminal module, on the top and bottom
15 Wiring modules, on the top and bottom (reversing duty)
16 Three-phase feeder terminal
17 Link for paralleling (star jumper), 3-pole, without connecting terminal
18 Safety main current connector for two contactors

Accessories, see pages 3/59 to 3/76.

General data

3RT2 contactors
Size S2 with mountable accessories

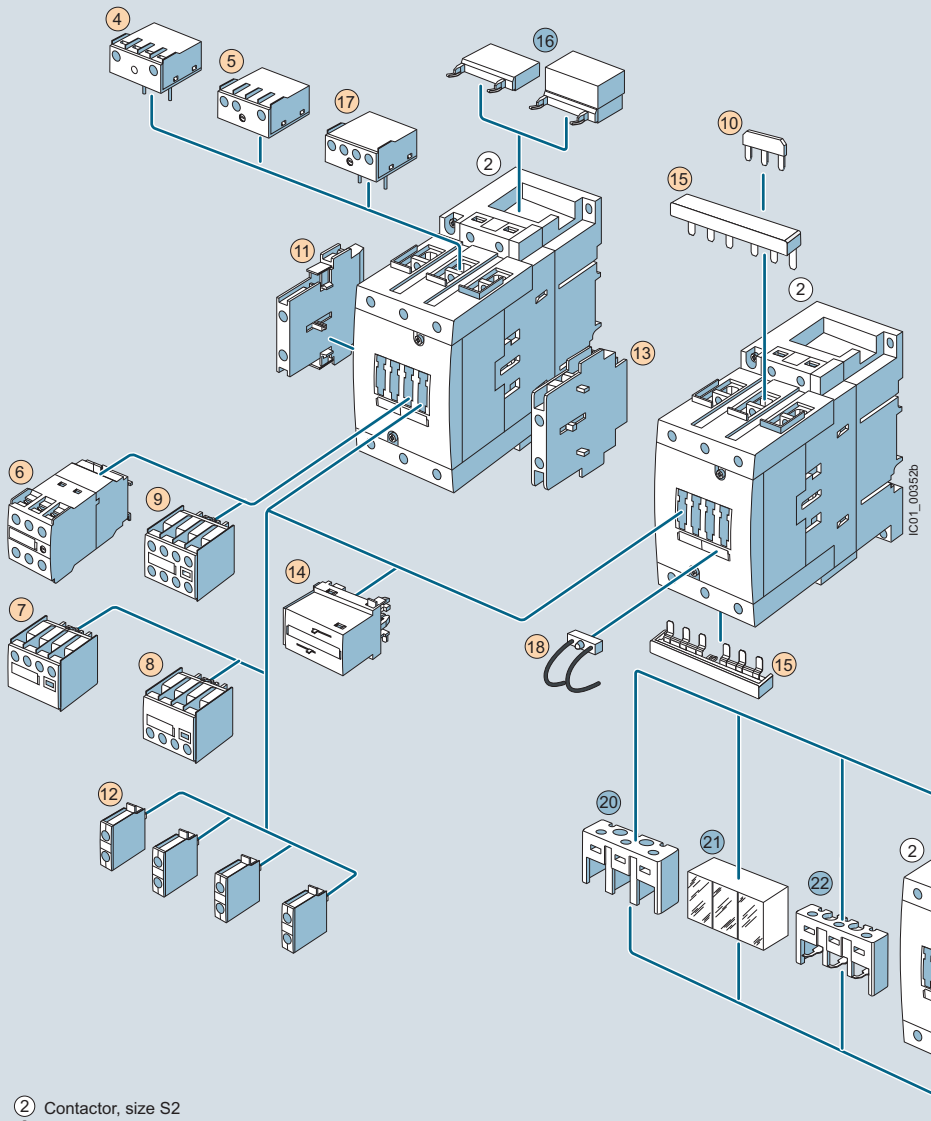


(1) Contactor, size S2

(2) 2-pole auxiliary switch block, laterally mountable
(3) 1-pole auxiliary switch block, for snapping onto the front, cable entry from above
(4) 4-pole auxiliary switch block, for snapping onto the front
(5) 2-pole auxiliary switch block, for snapping onto the front, cable entry from below
(6) Surge suppressor with/without LED
(7) 3RA27 function modules for AS-Interface, direct start
(8) 3RA28 function modules
(9) 3RA27 function modules for IO-Link, direct start
(11) Link for paralleling, 3-pole, with connection terminal
(12) Coil terminal module, top and bottom
(13) Wiring modules, top and bottom (reversing duty)
(14) 3-phase feeder terminal
(15) Link for paralleling (star jumper), 3-pole, without connection terminal
(16) Safety main current connector for two contactors

Accessories, see pages 3/59 to 3/76.

3RT1 contactors
Size S3 with mountable accessories



② Contactor, size S2
③ Contactor, size S3

For sizes S2 and S3:

④ Electronic timing relay block, ON-delay
⑤ Electronic timing relay block, OFF-delay
⑥ Auxiliary switch block, solid-state time-delay (ON or OFF-delay or wye-delta function)
⑦ 2-pole auxiliary switch block, cable entry from above
⑧ 2-pole auxiliary switch block, cable entry from below
⑨ 4-pole auxiliary switch block (terminal designations according to EN 50012 or EN 50005)
⑩ Link for paralleling (star jumper), 3-pole, without connecting terminal
⑪ Link for paralleling, 3-pole, with connecting terminal
⑫ 2-pole auxiliary switch block, laterally mountable left or right (terminal designations according to EN 50012 or EN 50005)
⑬ Single-pole auxiliary switch block (up to 4 can be snapped on)
⑭ Mechanical interlock, laterally mountable
⑮ Mechanical interlock, mountable to the front
⑯ Wiring connectors on the top and bottom (reversing duty)
⑰ Surge suppressor (varistor, RC element, diode assembly), can be mounted on the top or bottom
⑱ Mechanical latching interface for mounting directly onto contactor coil
⑲ LED module for indicating contactor operation

Only for size S2:

⑳ Mechanical latching

Only for sizes S2 and S3:

㉑ Coil repeat terminal for making contactor assemblies
㉒ Terminal cover for box terminal

Only for size S3:

㉓ Terminal cover for cable lug and bar connection
㉔ Auxiliary conductor terminal, 3-pole

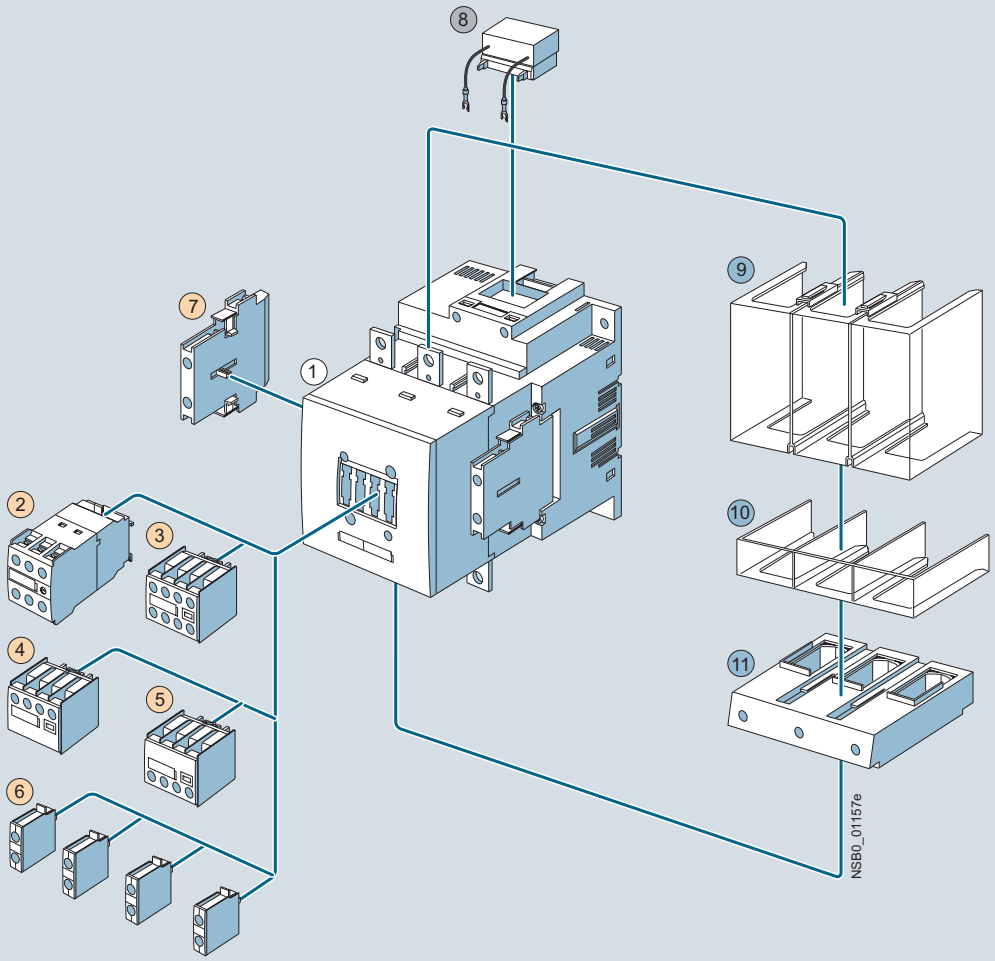
Accessories identical for sizes S2 and S3
Accessories differ according to size

Accessories, see pages 3/114 to 3/122.

Fuseless load feeders, see Chapter 8, "Load Feeders and Motor Starters" → "SIRIUS 3RA1 Load Feeders".

General data

3RT1 contactors
Sizes S6 to S12 with mountable accessories
(illustration for basic unit)



(1) 3RT10 and 3RT14 air-break contactors, sizes S6, S10 and S12

(2) Auxiliary switch block, solid-state time-delay (ON or OFF-delay or wye-delta function)
(3) 4-pole auxiliary switch block (terminal designations according to EN 50012 or EN 50005)
(4) 2-pole auxiliary switch block, cable entry from above
(5) 2-pole auxiliary switch block, cable entry from below
(6) Single-pole auxiliary switch block (up to 4 can be snapped on)
(7) 2-pole auxiliary switch block, laterally mountable left or right (terminal designations according to EN 50012 or EN 50005) (identical for S0 to S12)
(8) Surge suppressor (RC element) for plugging into top of withdrawable coil

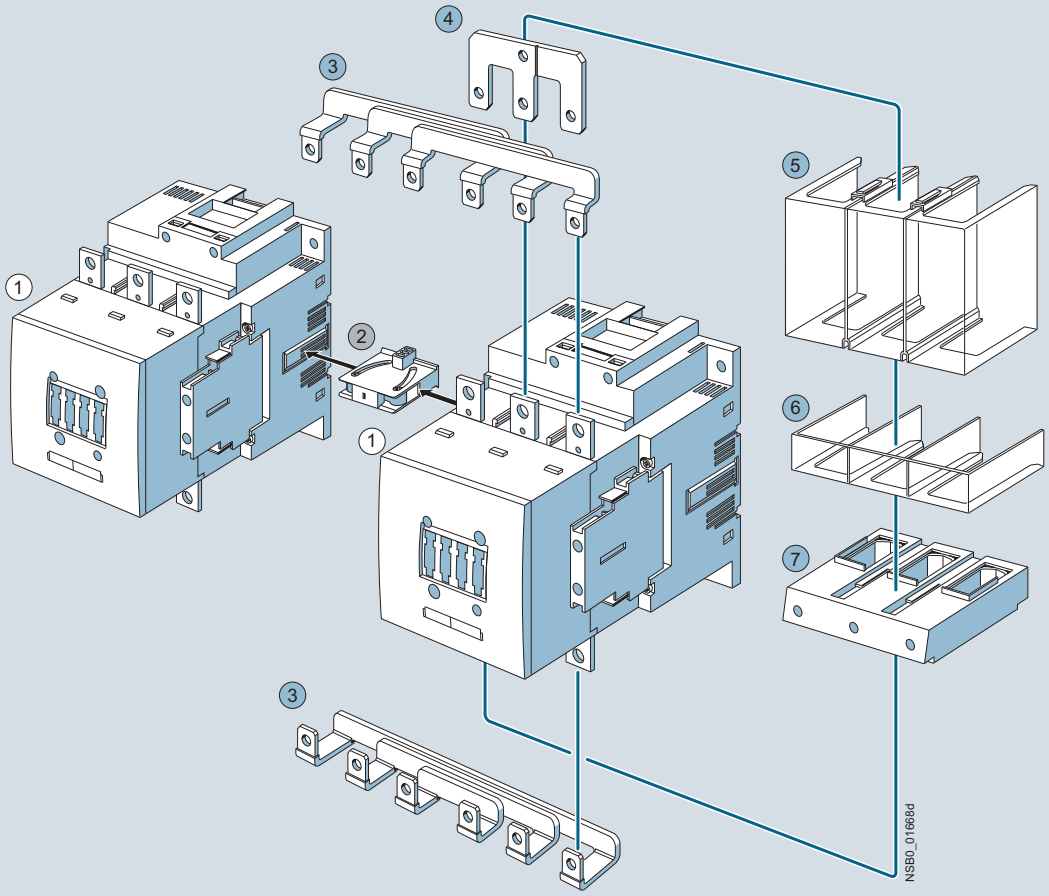
(9) Terminal cover for cable lug and busbar connection, different for sizes S6 and S10/S12
(10) Terminal cover for box terminal, different for sizes S6 and S10/S12
(11) Box terminal block, different for sizes S6 and S10/S12

Accessories identical for sizes S0 to S12
Accessories identical for sizes S6 to S12
Accessories differ according to size

Accessories, see pages 3/114 to 3/122.

Mountable overload relays, see Chapter 7 "Protection Equipment" → "Overload Relays".

3RA1 contactor assemblies, 3RT1 contactors
Size S6 with accessories



① 3RT10 and 3RT14 air-break contactor, size S6

② Mechanical interlock, laterally mountable
③ Wiring modules on the top and bottom, 3RA1953-2A
④ Link for paralleling (star jumper), 3-pole, with through-hole, 3RT1956-4BA31
⑤ Terminal cover for cable lug and bar connection different for sizes S6 and S10/S12
⑥ Terminal cover for box terminal different for sizes S6 and S10/S12
⑦ Box terminal block, different for sizes S6 and S10/S12

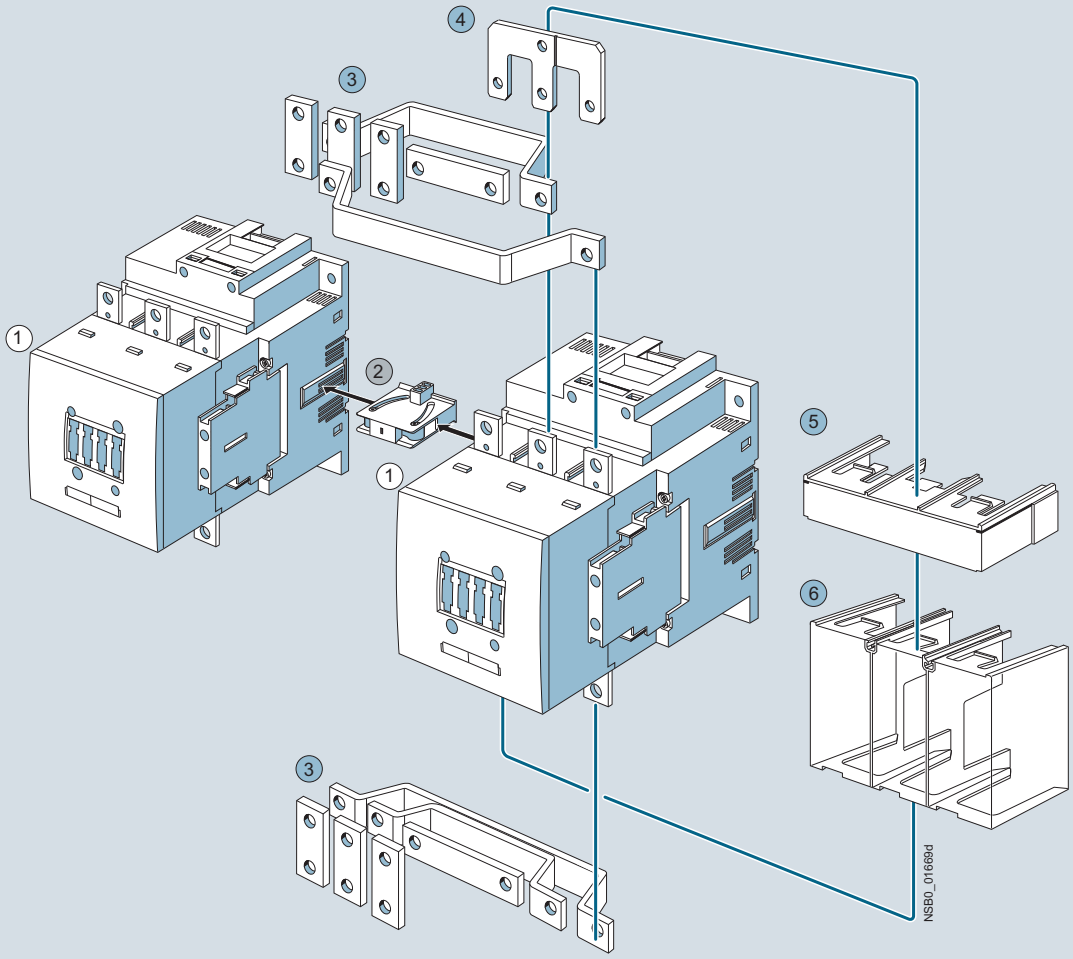
Accessories identical for sizes S6 to S12
Accessories differ according to size

Accessories, see pages 3/172, 3/173 and 3/114 to 3/122.

Mountable overload relays, see Chapter 7, "Protection Equipment" → "Overload Relays".

General data

3RA1 contactor assemblies, 3RT1 contactors
Sizes S6, S10 and S12 with accessories



(1) 3RT10 and 3RT14 air-break contactor, sizes S6, S10 and S12 or 3RT12 vacuum contactor, sizes S10 and S12

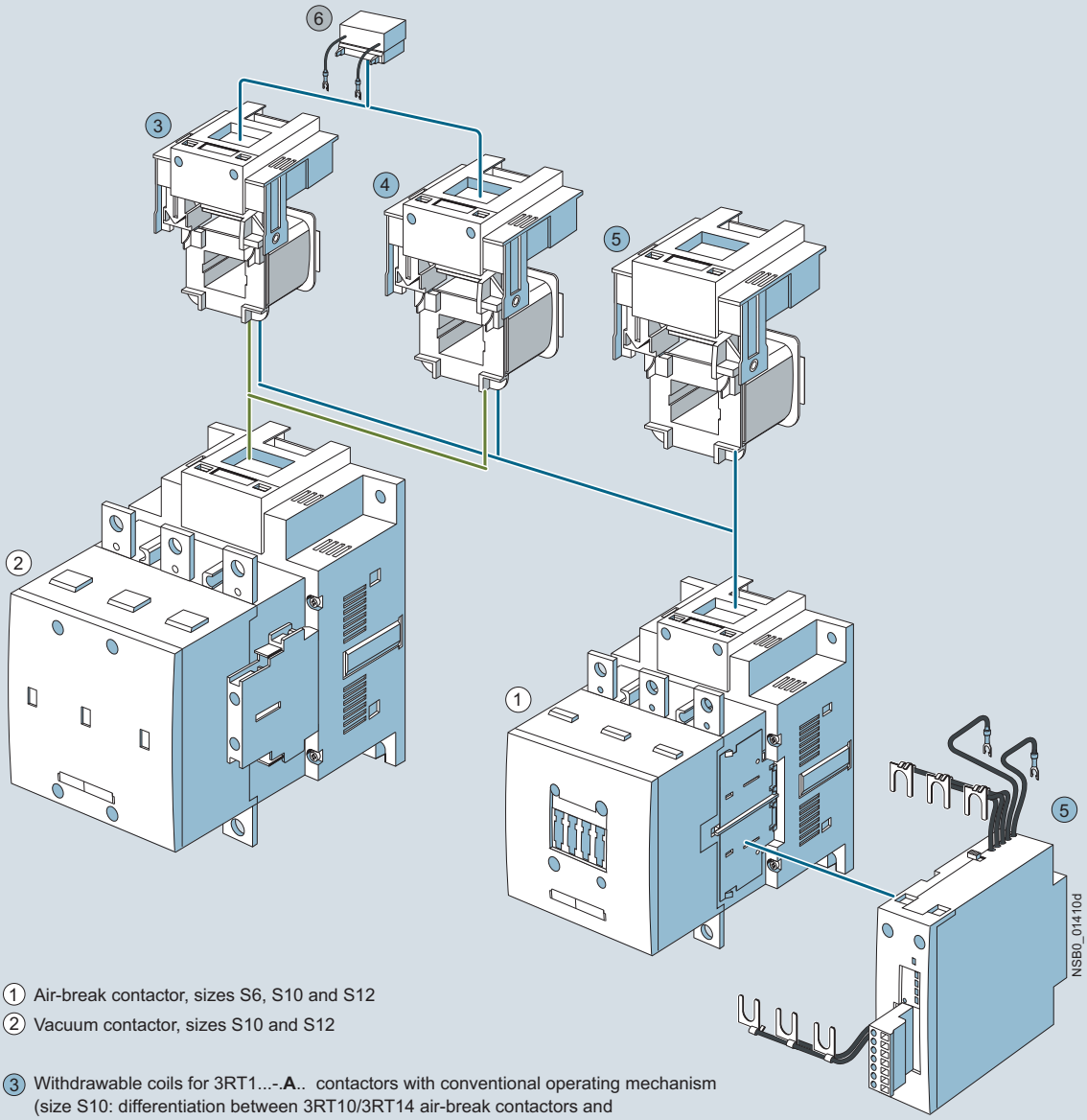
(2) Mechanical interlock, laterally mountable
(3) Wiring modules on the top and bottom, 3RA19
(4) Link for paralleling (star jumper), 3-pole, with through-hole, 3RT1956-4BA31
(5) Terminal cover for box terminal, different for sizes S6 and S10/S12
(6) Terminal cover for cable lug and busbar connection, different for sizes S6 and S10/S12

Accessories identical for sizes S6 to S12
Accessories different according to size

Accessories, see pages 3/172, 3/173 and 3/114 to 3/122.

Mountable overload relays, see Chapter 7, "Protection Equipment" → "Overload Relays".

3RT1 contactors
Sizes S6 to S12 with accessories



(1) Air-break contactor, sizes S6, S10 and S12
(2) Vacuum contactor, sizes S10 and S12

(3) Withdrawable coils for 3RT1...-.**A**.. contactors with conventional operating mechanism
(size S10: differentiation between 3RT10/3RT14 air-break contactors and 3RT12 vacuum contactors)
(size S12: the same for air-break and vacuum contactors)

(4) Withdrawable coils for 3RT1...-.**N**.. contactors with solid-state operating mechanism.
(size S10: differentiation between 3RT10/3RT14 air-break contactors and 3RT12 vacuum contactors)
(size S12: the same for air-break and vacuum contactors)

(5) Withdrawable coils and laterally mountable module (plug-on) for 3RT1...-.**P**.. air-break contactors with solid-state operating mechanism and remaining lifetime indicator

(6) Surge suppressor (RC element), plug-mountable on withdrawable coils
- 3RT1...-.**A**.. with conventional operating mechanism
- 3RT1...-.**N**.. with solid-state operating mechanism

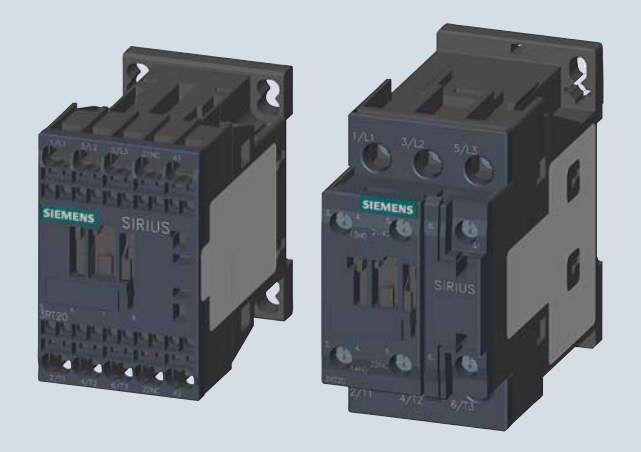
Identical for sizes S6 to S12
Different according to size

For surge suppressors, see page 3/119,
for withdrawable coils, see pages 3/124 and 3/125.

Mountable overload relays, see Chapter 7,
"Protection Equipment" → "Overload Relays".

Overview

Sizes S00 to S2, up to 37 kW



Contactor size S00 with spring-type terminals and contactor size S0 with screw terminals

Compared to the former 3RT1 series, the 3RT2 series is notable for its higher rating:
- Size S00, up to 7.5 kW
- Size S0, up to 18.5 kW
- Size S2, up to 37 kW

Standards

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

The 3RT2 contactors are climate-proof and are suitable and tested for use worldwide.

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

3RT2 contactors are finger-safe according to EN 50274. The devices with ring terminal lug connection comply with degree of protection IP20 when fitted with the related terminal cover.

Auxiliary contact complement

Size S00 contactors have an auxiliary contact integrated in the basic unit. The basic units sizes S0 and S2 contain two integrated auxiliary contacts (1 NO + 1 NC).

All basic units (except coupling contactors) can be extended with auxiliary switch blocks:
- Additional auxiliary switches with a maximum of four auxiliary contacts can be mounted. The combination of a 2-pole auxiliary switch for mounting on the front and an auxiliary switch for mounting on the side is not permitted.
- Of the maximum number of auxiliary contacts (integrated plus mountable) possible on the device, no more than four NC contacts are permitted for both sizes.

In addition, complete units with permanently mounted auxiliary switch block (2 NO + 2 NC) are offered for sizes S00 to S2.

Contact reliability

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT2 contactor or 3RH21 contactor relay should be used as they guarantee a high level of contact reliability.

These auxiliary contacts are suitable for electronic circuits with currents ≥ 1 mA at a voltage ≥ 17 V.

Connection methods

The 3RT2 contactors are available with screw terminals, spring-type terminals (up to size S2 only for control circuit) or ring terminal lug connections (not for size S2).

Short-circuit protection of the contactors

For short-circuit protection of contactors without overload relays, see "Technical specifications" on pages 3/19 and 3/24.
For short-circuit protection of the contactors with overload relay, see Configuration Manual "Configuring SIRIUS Innovations", http://support.automation.siemens.com/WW/view/en/39714188.

To assemble fuseless motor feeders, you must select combinations of motor starter protector and contactor as explained in "SIRIUS 3RA2 Load Feeders" (see Chapter 8 "Load Feeders and Motor Starters").

Motor protection

3RU21 thermal overload relays or 3RB30 electronic overload relays can be fitted to the 3RT2 contactors for protection against overload. The overload relays must be ordered separately (see Chapter 7, "Protection Equipment" → "Overload relays").

Ratings of three-phase motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

Control supply voltage

The contactors are available in various basic versions depending on the size:
- AC operation for sizes S00 to S2
- DC operation for sizes S00 and S0
- AC/DC operating mechanism for sizes S0 and S2, which can be operated with AC (50 to 60 Hz) as well as DC

Surge suppression

3RT2 contactors can be retrofitted with RC elements, varistors, diodes or diode assemblies (assembly of diode and Zener diode for short break times) for damping opening surges in the coil.

The surge suppressors are plugged onto the front of size S00 contactors. Space is provided for them next to a snap-on auxiliary switch block.

The surge suppressors can be plugged onto the front of size S0 and S2 contactors.

Note:

The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assembly 2 to 6 times, varistor and suppressor diode +2 to 5 ms).

S00 to S2 contactors with voltage tap-off

The S00 to S2 contactors with voltage tap-off are special versions for mounting the SIRIUS function modules for connection to the control system through IO-Link or AS-Interface (see page 3/198 and 3/203).

Without a function module, the contactors can be used like the standard versions.

Further information on IO-Link and AS-Interface, see Chapter 2 "Industrial Communication".

Article No. scheme

Digit of the article No.	1st - 3rd	4th	5th	6th	7th		8th	9th	10th	11th	12th		13th	14th	15th	16th
	□□□	□	□	□	□	–	□	□	□	□	□	–	□	□	□	□
SIRIUS power contactors	**3 R T**															
2nd generation		**2**														
Device type (e.g. 0 = 3-pole motor contactor, 3 = 4-pole AC-1 contactor)			□													
Contactor size (1 = S00, 2 = S0, 3 = S2)				□												
Power dependent on size (e.g. 27 = 15 kW)					□											
Connection type (1 = screw, 2 = spring)							□									
Operating range / solenoid coil circuit (e.g. A = AC standard / without)								□								
Rated control supply voltage (e.g. P0 = 230 V, 50 Hz)									□	□						
Auxiliary switches (e.g. S0: 0 = 1 NO + 1 NC integrated)											□					
Special version													□	□	□	□
Example	**3 R T**	**2**	**0**	**2**	**7**	**–**	**1**	**A**	**P**	**0**	**0**					

Note:

The article No. scheme is presented here merely for information purposes and for better understanding of the logic behind the article numbers.

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

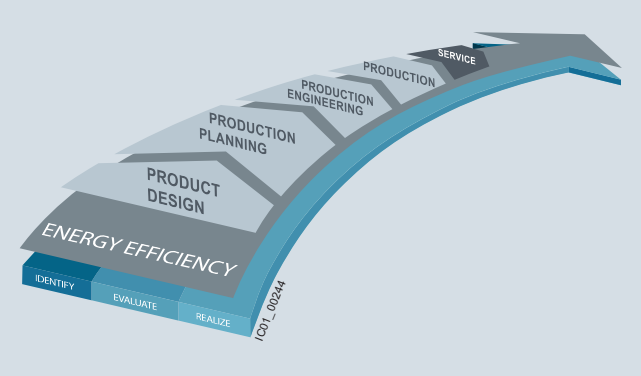
Manuals

For more information, see

- System manual "SIRIUS Innovations – System Overview", http://support.automation.siemens.com/WW/view/en/60311318
- Manual "SIRIUS Innovations – SIRIUS 3RT2 Contactors/ Contactor Assemblies", http://support.automation.siemens.com/WW/view/en/60306557

Benefits

Advantages through energy efficiency



Overview of the energy management process

We offer you a unique portfolio for industrial energy management, using an energy management system that helps to optimally define your energy needs. We split up our industrial energy management into three phases – identify, evaluate, and realize – and we support you with the appropriate hardware and software solutions in every process phase.

The innovative products of the SIRIUS industrial controls portfolio can also make a substantial contribution to a plant's energy efficiency (see www.siemens.com/sirius/energysaving).

3RT20 contactors contribute to energy efficiency throughout the plant as follows:

- UC coils with electric control for reduced power consumption when closing and in the closed state
- Smaller power supply units in the control circuit through lower power consumption in the closed state with 24 V DC
- Reduced heating of control cabinet: Technology-reduced inherent power loss of the contactors, resulting in lower cooling costs and a more compact design

Accessories

Auxiliary switch blocks

Terminal designations according to EN 50012 or EN 50005.

Size S00 contactors have an auxiliary contact (NO or NC) integrated in the basic unit. Size S0 and S2 contactors have 2 auxiliary contacts (1 NO and 1 NC) integrated in the basic unit.

The contactors can be expanded with front-mounting 3RH2911 auxiliary switch blocks to form contactors with up to 5 auxiliary contacts (S00) or up to 6 auxiliary contacts (S0 and S2). Of the auxiliary contacts (integrated plus mountable) possible on the device, no more than four NC contacts are permitted.

Single- or 2-pole auxiliary switch blocks with connection options from above or below enable easy and clearly arranged wiring especially for the installation of feeders. These auxiliary switch blocks are offered only with screw terminals.

All the previously mentioned auxiliary switch variants can be snap-fitted onto the front of the contactor. The auxiliary switch block has a centrally positioned release lever for disassembly.

If the installation space is limited in depth, 2-pole auxiliary switch blocks can be attached laterally on the left or on the right. These auxiliary switch blocks can be used only when no 4-pole auxiliary switch blocks are snapped onto the front.

The solid-state compatible 3RH2911-.NF. . auxiliary switch blocks include 2 enclosed contacts. They are suitable in particular for switching small voltages and currents (hard gold-plated contacts) and for operation in dusty atmospheres. The front NC auxiliary contacts are not mirror contacts. There are also versions for mounting on the side.

For details of selecting the auxiliary switches, see pages 3/58 to 3/63.

Technical specifications

Type			3RT2
Size			S00 to S2
Rated data of the auxiliary contacts			
Acc. to IEC 60947-5-1/EN 60947-5-1 The data apply to integrated auxiliary contacts and contacts in the auxiliary switch blocks for contactor sizes S00 to S0			
Rated insulation voltage U_i (pollution degree 3)		V	690
Conventional thermal current I_{th} = **Rated operational current I_e/AC-12**		A	10
AC load			
Rated operational current I_e/AC-15/AC-14			
• For rated operational voltage U_e	Up to 230 V	A	10[1]
	380 V	A	3
	400 V	A	3
	500 V	A	2
	660 V	A	1
	690 V	A	1
DC load			
Rated operational current I_e/DC-12			
• For rated operational voltage U_e	24 V	A	10
	60 V	A	6
	110 V	A	3
	125 V	A	2
	220 V	A	1
	440 V	A	0.3
	600 V	A	0.15
Rated operational current I_e/DC-13			
• For rated operational voltage U_e	24 V	A	10[1]
	60 V	A	2
	110 V	A	1
	125 V	A	0.9
	220 V	A	0.3
	440 V	A	0.14
	600 V	A	0.1
Contact reliability at 17 V, 1 mA according to IEC 60947-5-4/EN 60947-5-4			Frequency of contact faults < 10^{-8} i.e. < 1 fault per 100 million operating cycles

Endurance of the auxiliary contacts

It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The contact endurance is mainly dependent on the breaking current.

The characteristic curves apply to:
- Integrated auxiliary contacts on 3RT20
- 3RH2911, 3RH2921 auxiliary switch blocks[1]

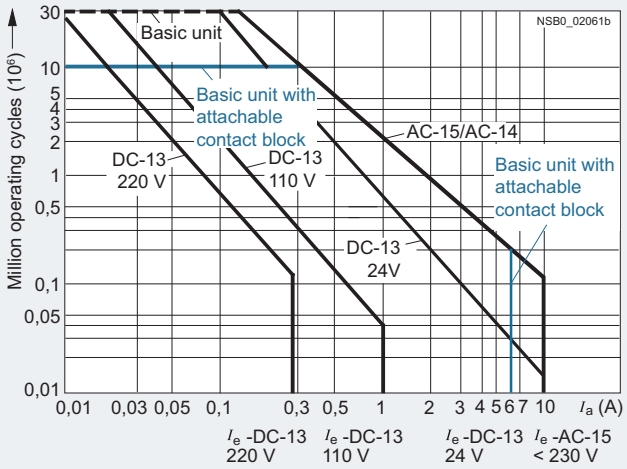


Diagram legend:
I_a = Breaking current
I_e = Rated operational current

[1] 3RH22, 3RH29, 3RT2. ...-....4: I_e = 6 A for AC-15/AC-14 and DC-13.

Type	3RT2
Size	S00 to S0

Endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching resistive and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking six times the rated operational current) and is intended for a contact endurance of at least 200 000 operating cycles.

If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:

- *X* Contact endurance for mixed operation in operating cycles
- *A* Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- *B* Contact endurance for inching (I_a = multiple of I_e) in operating cycles
- *C* Inching operations as a percentage of total switching operations

Size S00

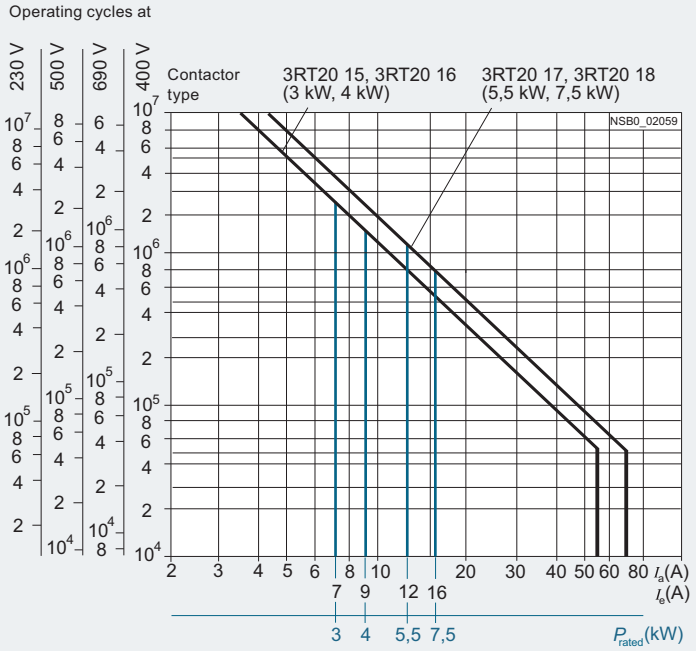


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

3

Type	3RT2
Size	S00 to S0

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching resistive and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking six times the rated operational current) and is intended for a contact endurance of at least 200 000 operating cycles.

If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:

- *X* Contact endurance for mixed operation in operating cycles
- *A* Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- *B* Contact endurance for inching (I_a = multiple of I_e) in operating cycles
- *C* Inching operations as a percentage of total switching operations

Size S0

Operating cycles at

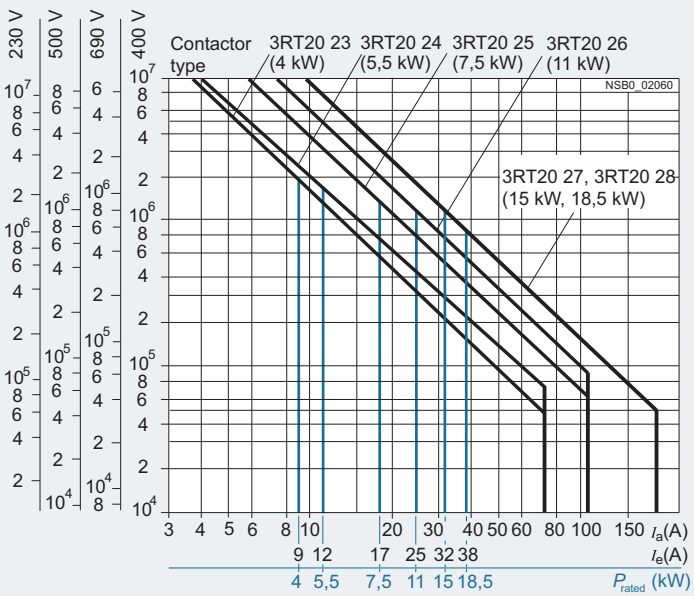
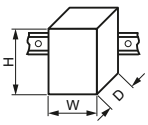
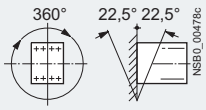


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

Type			**3RT2015, 3RT2016**	**3RT2017, 3RT2018**
Size			**S00**	**S00**
Dimensions (W x H x D)[1]		mm	45 x 57.5 x 73 / 45 x 70 x 73	
• With mounted auxiliary switch block		mm	45 x 57.5 x 116 / 45 x 70 x 121	
• With mounted function module		mm	45 x 57.5 x 142 / 45 x 70 x 142	
General technical specifications				
Permissible mounting position				
The contactors are designed for operation on a vertical mounting surface.				
Upright mounting position			Special version required	
Mechanical endurance				
• Basic units		Operating cycles	30 million	
• Basic units with snap-on auxiliary switch block		Operating cycles	10 million	
• Solid-state compatible auxiliary switch block		Operating cycles	5 million	
Electrical endurance			For contact endurance of the main contacts, see page 3/17.	
Rated insulation voltage U_i (pollution degree 3)		V	690	
Rated impulse withstand voltage U_{imp}		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.				
• 3RT201., 3RT231. (removable auxiliary switch block)			Yes, this applies to both the basic unit as well as to between the basic unit and the mounted auxiliary switch block acc. to IEC 60947-4-1, Appendix F	
• 3RT201., 3RT231. (permanently mounted auxiliary switch block)			Yes, acc. to IEC 60947-4-1, Appendix F, and SUVA	
• 3RH2919-.NF.. solid-state compatible auxiliary switch blocks			Have no mirror contact for size S00	
Ambient temperature				
• During operation		°C	-25 ... +60	
• During storage		°C	-55 ... +80	
Degree of protection acc. to IEC 60947-1, Appendix C			IP20	
Touch protection acc. to EN 50274			Finger-safe	
Shock resistance rectangular pulse				
• AC operation		*g*/ms	6.7/5 and 4.2/10	7.3/5 and 4.7/10
• DC operation		*g*/ms	6.7/5 and 4.2/10	7.3/5 and 4.7/10
Shock resistance sine pulse				
• AC operation		*g*/ms	10.5/5 and 6.6/10	11.4/5 and 7.3/10
• DC operation		*g*/ms	10.5/5 and 6.6/10	11.4/5 and 7.3/10
Conductor cross-sections			For conductor cross-sections, see page 3/23.	
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/EN 60947-4-1				
- Type of coordination "1"		A	35	50
- Type of coordination "2"		A	20	25
- Weld-free[2]		A	10	10
• Miniature circuit breakers (up to 230 V) with C characteristic Short-circuit current 1 kA, type of coordination "1"		A	10	10
Auxiliary circuit				
Short-circuit test acc. to IEC 60947-5-1/EN 60947-5-1				
• with fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA		A	10	
• with 230 V miniature circuit breakers, C characteristic with short-circuit current I_k = 400 A		A	6	
Short-circuit protection for contactors with overload relays			See Configuration Manual "Configuring SIRIUS Innovations", http://support.automation.siemens.com/WW/view/en/39714188.	
Short-circuit protection for fuseless load feeders			See Chapter 8 "Load Feeders and Motor Starters for Use in the Control Cabinet" → "SIRIUS 3RA2 Load Feeders"	

[1] Dimensions for devices with screw terminals / spring-type terminals.

[2] Test conditions according to IEC 60947-4-1.

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

Type			3RT2015, 3RT2016	3RT2017, 3RT2018
Size			S00	S00
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	0.8/0.75
- Closed		VA	4.2/3.3	5.7/4.4
- P.f.			0.25/0.25	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	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	0.25
• DC operation (closing = closed)		W	4	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[2]				
Total break time = Opening delay + Arcing time				
• AC operation for 0.8 ... 1.1 x U_s	Closing delay	ms	9 ... 35	8 ... 33
	Opening delay	ms	3.5 ... 14	4 ... 15
• DC operation for 0.85 ... 1.1 × U_s	Closing delay	ms	30 ... 100	30 ... 100
	Opening delay	ms	7 ... 13	7 ... 13
• Arcing time		ms	10 ... 15	10 ... 15
Operating times for 1.0 x U_s[2]				
• 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	35 ... 50
	Opening delay	ms	7 ... 12	7 ... 12

[1] The 3RT2916-1GA00 additional load module is recommended for higher residual currents.

[2] The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assembly 2 to 6 times, suppressor diode +1 ms to 5 ms; varistor +2 ms to 5 ms).

Type			3RT2015	3RT2016	3RT2017	3RT2018
Size			S00	S00	S00	S00
Main circuit						
Load rating with AC						
Utilization category AC-1, Switching resistive loads						
• Rated operational current I_e	At 40 °C up to 690 V	A	18	22	22	22
	At 60 °C up to 690 V	A	16	20	20	20
• Rated power for AC loads[1] P.f.= 0.95 (at 60 °C)	230 V	kW	6	7.5	7.5	7.5
	400 V	kW	10.5	13	13	13
	690 V	kW	18	22	22	22
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm^2	2.5	4	4	4
	At 60 °C	mm^2	2.5	2.5	2.5	2.5
Utilization categories AC-2 and AC-3						
• Rated operational currents I_e	Up to 400 V	A	7	9	12	16
	440 V	A	7	9	11	14
	500 V	A	6	7.7	9.2	12.4
	690 V	A	4.9	6.7	6.7	8.9
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	1.5	2.2	3	4
	400 V	kW	3	4	5.5	7.5
	690 V	kW	4	5.5	5.5	7.5
Thermal load capacity	10 s current[2]	A	56	72	96	128
Power loss per conducting path	At I_e/AC-3	W	0.42	0.7	*1.24*	2.2
Utilization category AC-4 (for $I_a = 6 \times I_e$)[3]						
• Maximum values:						
- Rated operational current I_e	Up to 400 V	A	6.5	8.5	8.5	11.5
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	Up to 400 V	A	3	4	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	4.1	5.5
	690 V	A	1.8	3.3	3.3	4.4
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 230 V	kW	0.67	1.1	1.1	1.5
	400 V	kW	1.15	2	2	2.5
	690 V	kW	1.15	2.5	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) According to IEC 60947-4-1.
Rated values for various start-up conditions,
see Chapter 7, "Protection Equipment" → "Overload Relays".

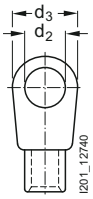
3) These data also apply to 3RT2516 and 3RT2517 (2 NO + 2 NC) up to a rated operational voltage of 400 V.

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

Type				3RT2015	3RT2016	3RT2017	3RT2018
Size				S00	S00	S00	S00
Main circuit							
Load rating with DC							
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 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* ≤ 15 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	h^{-1}		10 000			
• Switching frequency *z* during rated operation[1)]							
- I_e/AC-1	At 400 V	h^{-1}		1 000			
- I_e/AC-2	At 400 V	h^{-1}		750			
- I_e/AC-3	At 400 V	h^{-1}		750			
- I_e/AC-4	At 400 V	h^{-1}		250			
Contactors with overload relays							
• Mean value		h^{-1}		15			

[1)] Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*: $z' = z \times (I_e/I') \times (400\ V/U')^{1.5} \times 1/h$

Type		3RT2015	3RT2016	3RT2017	3RT2018
Size		S00	S00	S00	S00
Conductor cross-sections					
Main and auxiliary 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			
• Finely stranded with end sleeves (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 terminals[2] (1 or 2 conductors can be connected)		**Spring-type terminals**			
• Operating devices[3]	mm	3.0 x 0.5			
• Solid or stranded	mm^2	2 x (0.5 ... 4)			
• Finely stranded with end sleeves (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 switches[2] (1 or 2 conductors can be connected)					
• Operating devices[3]	mm	3.0 x 0.5			
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)			
• Finely stranded with end sleeves (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)			
Main conductors and auxiliary conductors		**Ring terminal lug connections**			
• Terminal screw		M3, Pozidriv 2			
• Operating devices	mm	Ø 5 ... 6			
• Tightening torque	Nm	0.8 ... 1.2			
• Usable ring terminal lugs	mm	d_2 = min. 3.2			
- DIN 46234 without insulation sleeve	mm	d_3 = max. 7.5			
- DIN 46225 without insulation sleeve					
- DIN 46237 with insulation sleeve					
- JIS C2805 Type R without insulation sleeve					
- JIS C2805 Type RAV with insulation sleeve					
- JIS C2805 Type RAP with insulation sleeve					

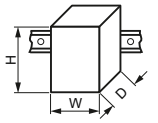
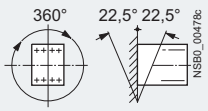


1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

2) Max. external diameter of the cable insulation: 3.6 mm. On spring-type terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop must be used, see Accessories, page 3/76.

3) Tool for opening the spring-type terminals, see "Accessories", page 3/76.

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

Type			3RT2023	3RT2024	3RT2025	3RT2026	3RT2027	3RT2028
Size			S0	S0	S0	S0	S0	S0
Dimensions (W x H x D) for AC operation[1]		mm	45 x 85 x 97 / 45 x 101.5 x 97					
• With mounted auxiliary switch block		mm	45 x 85 x 141 / 45 x 101.5 x 144					
• With mounted function module		mm	45 x 85 x 166 / 45 x 101.5 x 166					
Dimensions (W x H x D) for DC operation[1]		mm	45 x 85 x 107 / 45 x 101.5 x 107					
• With mounted auxiliary switch block		mm	45 x 85 x 151 / 45 x 101.5 x 154					
• With mounted function module		mm	45 x 85 x 176 / 45 x 101.5 x 176					
General data								
Permissible mounting position								
The contactors are designed for operation on a vertical mounting surface.								
Upright mounting position			Special version required, also applies to 3RT202.-.K.40. coupling contactors					
Mechanical endurance								
• Basic units		Operating cycles	10 million					
• Basic units with snap-on auxiliary switch block		Operating cycles	10 million					
• Solid-state compatible auxiliary switch block		Operating cycles	5 million					
Electrical endurance			[2]					
Rated insulation voltage U_i (pollution degree 3)		V	690					
Rated impulse withstand voltage U_{imp}		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.								
• Integrated auxiliary switches			Yes, acc. to IEC 60947-4-1, Appendix F					
• 3RT202., 3RT232. (removable auxiliary switch block)			Yes, acc. to IEC 60947-4-1, Appendix F					
• 3RT202., 3RT232. (permanently mounted auxiliary switch block)			Yes, acc. to IEC 60947-4-1, Appendix F					
Permissible ambient temperature								
• During operation		°C	-25 ... +60					
• During storage		°C	-55 ... +80					
Degree of protection acc. to IEC 60947-1, Appendix C			IP20					
Touch protection acc. to EN 50274			Finger-safe					
Shock resistance rectangular pulse								
• AC operation		*g*/ms	7.5/5 and 4.7/10			8.3/5 and 5.310		
• DC operation		*g*/ms	10/5 and 7.5/10			10/5 and 7.5/10		
Shock resistance sine pulse								
• AC operation		*g*/ms	11.8/5 and 7.4/10			13.5/5 and 8.3/10		
• DC operation		*g*/ms	15/5 and 10/10			15/5 and 10/10		
Conductor cross-sections			[3]					
Short-circuit protection								
Main circuit			Short-circuit protection for contactors with overload relays See Configuration Manual "Configuring SIRIUS Innovations" [4] Short-circuit protection for fuseless load feeders See Chapter 8, "Load Feeders and Motor Starters for Use in the Control Cabinet" → "SIRIUS 3RA2 Load Feeders"					
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1/EN 60947-4-1								
- Type of coordination "1"		A	63			100	125	
- Type of coordination "2"		A	25			35	50	
- Weld-free[5]		A	10			16	16	
• Miniature circuit breakers with C characteristic (short-circuit current 3 kA, type of coordination "1")		A	25			32	40	
Auxiliary circuit								
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection $I_k \leq 1$ kA)		A	10					
• Miniature circuit breakers 230 V, C characteristic (short-circuit current $I_k < 400$ A)		A	10					

[1] Dimensions for devices with screw terminals / spring-type terminals.

[2] For contact endurance of the main contacts, see page 3/17.

[3] For conductor cross-sections, see page 3/28.

[4] See http://support.automation.siemens.com/WW/view/en/39714188

[5] Test conditions according to IEC 60947-4-1.

Type			3RT2023 ... 3RT2025	3RT2026 ... 3RT2028	3RT202. -.NB3	3RT202. -.NF3..	3RT202. -.NP3
Size			S0	S0	S0	S0	S0
Control							
Type of operating mechanism			AC or DC		UC (AC/DC)		
Solenoid coil operating range	AC/DC		0.8 ... 1.1 x U_s		0.7 ... 1.3 x U_s [1]		
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)							
• AC operation, 50 Hz, standard version							
- Closing		VA	65	77	6.6	11.9	12.7
- P.f.			0.82	0.82	0.98	0.98	0.98
- Closed		VA	7.6	9.8	1.9	1.6	3.9
- P.f.			0.25	0.25	0.86	0.79	0.51
• AC operation, 50/60 Hz, standard version							
- Closing		VA	68/67	81/79	6.6/6.7	11.9/12.0	12.7/14.7
- P.f.			0.72/0.74	0.72/0.74	0.98/0.98	0.98/0.98	0.98/0.98
- Closed		VA	7.9/6.5	10.5/8.5	1.9/2.0	1.6/1.8	3.9/4.3
- P.f.			0.25/0.28	0.25/0.28	0.86/0.82	0.79/0.74	0.51/0.56
• AC operation, 50 Hz, for USA/Canada							
- Closing		VA	65	77	--	--	--
- P.f.			0.82	0.82	--	--	--
- Closed		VA	7.6	9.8	--	--	--
- P.f.			0.25	0.28	--	--	--
• AC operation, 60 Hz, for USA/Canada							
- Closing		VA	73	87	--	--	--
- P.f.			0.76	0.76	--	--	--
- Closed		VA	7.2	9.4	--	--	--
- P.f.			0.28	0.28	--	--	--
• DC operation (closing = closed)		W	5.9/5.9	5.9/5.9	5.9/1.4	10.2/1.3	14.3/1.9
Permissible residual current of the electronics (with 0 signal)							
• AC operation		mA	<6 mA x (230 V/U_s)	<7 mA x (230 V/U_s)			
• DC operation		mA	<16 mA x (24 V/U_s)				
Operating times for 0.8 ... 1.1 x U_s [2]							
Total break time = Opening delay + Arcing time							
• AC operation							
- Closing delay		ms	9 ... 38	8 ... 40	60 ... 80	50 ... 70	60 ... 80
- Opening delay		ms	4 ... 16	4 ... 16	30 ... 45	35 ... 45	35 ... 45
• DC operation							
- Closing delay		ms	50 ... 170	50 ... 170	60 ... 75	50 ... 70	50 ... 75
- Opening delay		ms	15 ... 17.5	15 ... 17.5	30 ... 45	35 ... 45	40 ... 50
• Arcing time		ms	10	10	10	10	10
Operating times for 1.0 x U_s [2]							
• AC operation							
- Closing delay		ms	10 ... 18	10 ... 17	65 ... 80	50 ... 70	60 ... 80
- Opening delay		ms	4 ... 16	4 ... 16	30 ... 45	35 ... 45	30 ... 50
• DC operation							
- Closing delay		ms	55 ... 80	55 ... 80	60 ... 80	56 ... 70	60 ... 80
- Opening delay		ms	16 ... 17	16 ... 17	30 ... 45	35 ... 45	30 ... 50

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

2) The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2 to 6 times).

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

Type			3RT2023	3RT2024	3RT2025	3RT2026	3RT2027	3RT2028
Size			S0	S0	S0	S0	S0	S0
Main circuit								
Load rating with AC								
Utilization category AC-1, Switching resistive loads								
• Rated operational current I_e	At 40 °C up to 690 V	A	40				50	
	At 60 °C up to 690 V	A	35				42	
• Rated power for AC loads[1] P.f. = 0.95 (at 60 °C)	230 V	kW	13.3				15.5	
	400 V	kW	23				27.5	
	690 V	kW	40				47.5	
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm^2	10				10	
	At 60 °C	mm^2	10				10	
Utilization categories AC-2 and AC-3								
• Rated operational currents I_e	Up to 400 V	A	9	12	17	25	32	38
	440 V	A	9	12	17	22	32	35
	500 V	A	9	12	17	18	32	32
	690 V	A	9	9	13	13	21	21
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	2.2	3	4	5.5	7.5	11
	400 V	kW	4	5.5	7.5	11	15	18.5
	690 V	kW	7.5	7.5	11	11	18.5	18.5
Thermal load capacity	10 s current[2]	A	80	110	150	200	260	300
Power loss per conducting path	At I_e/AC-3	W	0.4	0.5	0.9	1.6	2.7	3.8
Utilization category AC-4 (for $I_a = 6 \times I_e$)								
• Maximum values:								
- Rated operational current I_e	Up to 400 V	A	8.5	12.5	15.5	15.5	22	
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 400 V	kW	4	5.5	7.5	7.5	11	
• The following applies to a contact endurance of about 200 000 operating cycles:								
- Rated operational currents I_e	Up to 400 V	A	4.1	5.5	7.7	9	12	
	690 V	A	3.3	5.5	7.7	9	12	
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 110 V	kW	0.5	0.73	1	1.2	1.6	
	230 V	kW	1.1	1.5	2	2.5	3.4	
	400 V	kW	2	2.6	3.5	4.4	6	
	690 V	kW	2.5	4.6	6	7.7	10.3	

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

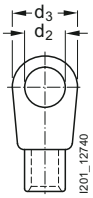
[2] According to IEC 60947-4-1. Rated values for various start-up conditions, see Chapter 7, "Protection Equipment" → "Overload Relays".

Type			3RT2023	3RT2024	3RT2025	3RT2026	3RT2027	3RT2028
Size			S0	S0	S0	S0	S0	S0
Main circuit								
Load rating with DC								
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)								
• Rated operational currents I_e (at 60 °C)								
- 1 conducting path	Up to 24 V	A	35					
	60 V	A	20					
	110 V	A	4.5					
	220 V	A	1					
	440 V	A	0.4					
	600 V	A	0.25					
- 2 conducting paths in series	Up to 24 V	A	35					
	60 V	A	35					
	110 V	A	35					
	220 V	A	5					
	440 V	A	1					
	600 V	A	0.8					
- 3 conducting paths in series	Up to 24 V	A	35					
	60 V	A	35					
	110 V	A	35					
	220 V	A	35					
	440 V	A	2.9					
	600 V	A	1.4					
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)								
• Rated operational currents I_e (at 60 °C)								
- 1 conducting path	Up to 24 V	A	20					
	60 V	A	5					
	110 V	A	2.5					
	220 V	A	1					
	440 V	A	0.09					
	600 V	A	0.06					
- 2 conducting paths in series	Up to 24 V	A	35					
	60 V	A	35					
	110 V	A	15					
	220 V	A	3					
	440 V	A	0.27					
	600 V	A	0.16					
- 3 conducting paths in series	Up to 24 V	A	35					
	60 V	A	35					
	110 V	A	35					
	220 V	A	10					
	440 V	A	0.6					
	600 V	A	0.6					
Switching frequency								
Switching frequency *z* in operating cycles/hour								
Contactors without overload relays								
• No-load switching frequency	AC	h^{-1}	5 000					
	DC	h^{-1}	1 500					
• Switching frequency *z* during rated operation[1)]								
- I_e/AC-1	At 400 V	h^{-1}	1 000					
- I_e/AC-2	At 400 V	h^{-1}	1 000			750		
- I_e/AC-3	At 400 V	h^{-1}	1 000			750		
- I_e/AC-4	At 400 V	h^{-1}	300			250		
Contactors with overload relays								
• Mean value		h^{-1}	15					

1) Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*: $z' = z \times (I_e/I') \times (400\ V/U')^{1.5} \times 1/h$

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

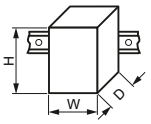
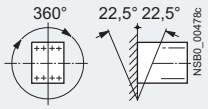
Type		3RT2023	3RT2024	3RT2025	3RT2026	3RT2027	3RT2028
Size		S0	S0	S0	S0	S0	S0
Conductor cross-sections (1 or 2 conductors connectable)							
Main conductors		**Screw terminals**					
• Solid or stranded	mm^2	2 x (1 ... 2.5)[1], 2 x (2.5 ... 10)[1]					
• Finely stranded with end sleeves (DIN 46228-1)	mm^2	2 x (1 ... 2.5)[1]; 2 x (2.5 ... 6)[1]; 1 x 10					
• AWG cables, solid or stranded	AWG	2 x (16 ... 12)[1]; 2 x (14 ... 8)[1]					
• Terminal screws		M4 (for Pozidriv size 2, Ø 5 ... 6)					
- Tightening torque	Nm	2 ... 2.5 (18 ... 22 lb.in)					
Auxiliary conductors							
• Solid or stranded	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]; 2 x 4					
• Finely stranded with end sleeves (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]					
• Solid or stranded AWG (2 x)	AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]; 2 x 12					
• Terminal screws		M3 (for Pozidriv size 2, Ø 5 ... 6)					
- Tightening torque	Nm	0.8 ... 1.2 (7 ... 10.3 lb.in)					
Main conductors[2]		**Spring-type terminals**					
• Operating devices[3]	mm	3.0 x 0.5					
• Solid or stranded	mm^2	2 x (1 ... 10)					
• Finely stranded with end sleeves (DIN 46228-1)	mm^2	2 x (1 ... 6)					
• Finely stranded without end sleeve	mm^2	2 x (1 ... 6)					
• AWG cables, solid or stranded	AWG	2 x (18 ... 8)					
Auxiliary conductors[2]							
• Operating devices[3]		3.0 x 0.5					
• Solid or stranded	mm^2	2 x (0.5 ... 2.5)					
• Finely stranded with end sleeves (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)					
Main conductors		**Ring terminal lug connections**					
• Terminal screw	mm	M4, Pozidriv size 2					
• Operating devices	mm	Ø 5 ... 6					
• Tightening torque	Nm	2 ... 2.5					
• Usable ring terminal lugs	mm	d_2 = min. 4.3					
- DIN 46234 without insulation sleeve - DIN 46225 without insulation sleeve - DIN 46237 with insulation sleeve - JIS C2805 Type R without insulation sleeve - JIS C2805 Type RAV with insulation sleeve - JIS C2805 Type RAP with insulation sleeve	mm	d_3 = max. 12.2					
Auxiliary conductors							
• Terminal screw		M3, Pozidriv size 2					
• Operating devices	mm	Ø 5 ... 6					
• Tightening torque	Nm	0.8 ... 1.2					
• Usable ring terminal lugs	mm	d_2 = min. 3.2					
	mm	d_3 = max. 7.5					



[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 cable insulation: 3.6 mm. On spring-type terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop must be used, see Accessories, page 3/76.

[3] Tool for opening the spring-type terminals; see "Accessories", page 3/76.

Type			3RT2035	3RT2036	3RT2037	3RT2038
Size			S2	S2	S2	S2
Dimensions (W x H x D)		mm	55 x 114 x 130			
• With mounted auxiliary switch block[1]		mm	55 x 114 x 174 / 55 x 114 x 178			
• With mounted function module[1]		mm	55 x 114 x 199 / 55 x 114 x 202			
General data						
Permissible mounting position						
The contactors are designed for operation on a vertical mounting surface.						
Upright mounting position			Special version required			
Mechanical endurance						
• Basic units		Operating cycles	10 million			
• Basic units with snap-on auxiliary switch block		Operating cycles	10 million			
• Solid-state compatible auxiliary switch block		Operating cycles	5 million			
Electrical endurance			2)			
Rated insulation voltage U_i (pollution degree 3)		V	690			
Rated impulse withstand voltage U_{imp}		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.						
• Integrated auxiliary switches			Yes, acc. to IEC 60947-4-1, Appendix F			
• 3RT202., 3RT232. (removable auxiliary switch block)			Yes, acc. to IEC 60947-4-1, Appendix F			
• 3RT202., 3RT232. (permanently mounted auxiliary switch block)			Yes, acc. to IEC 60947-4-1, Appendix F			
Permissible ambient temperature						
• During operation		°C	-25 ... +60			
• During storage		°C	-55 ... +80			
Degree of protection acc. to IEC 60947-1, Appendix C			IP20			
Connection range			IP00/open (where applicable, use additional terminal covers)			
Touch protection acc. to EN 50274			Finger-safe			
Shock resistance rectangular pulse						
• AC operation		*g*/ms	11.8/5 and 7.4/10			
• AC/DC operation		*g*/ms	7.7/5 and 4.5/10			
Shock resistance sine pulse						
• AC operation		*g*/ms	18.5/5 and 11.6/10			
• AC/DC operation		*g*/ms	12/5 and 7/10			
Conductor cross-sections			3)			
Short-circuit protection						
Main circuit			Short-circuit protection for contactors with overload relays See Configuration Manual "Configuring SIRIUS Innovations" 4) Short-circuit protection for fuseless load feeders See Chapter 8, "Load Feeders and Motor Starters for Use in the Control Cabinet" → "SIRIUS 3RA2 Load Feeders"			
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1/EN 60947-4-1						
- Type of coordination "1"		A	160	160	250	250
- Type of coordination "2"		A	80	80	125	160
- Weld-free[5]		A	On request			
Auxiliary circuit						
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection $I_k \leq 1$ kA)		A	10			
• Miniature circuit breakers 230 V, C characteristic (short-circuit current $I_k < 400$ A)		A	10			

1) Dimensions for devices with screw terminals / spring-type terminals.
2) For contact endurance of the main contacts, see page 3/17.
3) For conductor cross-sections, see page 3/28.
4) See http://support.automation.siemens.com/WW/view/en/39714188
5) Test conditions according to IEC 60947-4-1.

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

Type		3RT203.-.A0.	3RT203.-.A2.	3RT203.-.A6.	3RT203.-.N.3
Size		S2	S2	S2	S2
Control					
Type of operating mechanism		AC			AC/DC
Solenoid coil operating range					
• AC operation, 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
• AC operation, 60 Hz		--	0.85 ... 1.1 x U_s	0.8 ... 1.1 x U_s	0.8 ... 1.1 x U_s
• 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	190	--		
- P.f.		0.72	--		
- Closed	VA	16	--		
- P.f.		0.37	--		
• AC operation, 50/60 Hz, standard version					
- Closing	VA	--	210/188	--	
- P.f.		--	0.69/0.65	--	
- Closed	VA	--	17.2/16.5	--	
- P.f.		--	0.36/0.39	--	
• AC operation, 50/60 Hz, for USA/Canada					
- Closing	VA	--		212/188	--
- P.f.		--		0.67/0.65	--
- Closed	VA	--		18.516.5	--
- P.f.		--		0.37/0.39	--
• AC/DC operation					
- Closing for AC operation	VA	--			40
- P.f.		--			0.64/0.5
- Closed for AC operation	VA	--			2
- P.f.		--			0.36/0.39
- Closing for DC operation	W	--			23
- Closed for DC operation	W	--			1
Permissible residual current of the electronics (with 0 signal)					
• AC operation	mA	<20			
• DC operation	mA	<20			
Operating times for 0.8 ... 1.1 x U_s[1]					
Total break time = Opening delay + Arcing time					
• AC operation					
- Closing delay	ms	10 ... 80			45 ... 70
- Opening delay	ms	10 ... 18			35 ... 55
• DC operation					
- Closing delay	ms	--			45 ... 60
- Opening delay	ms	--			35 ... 55
• Arcing time	ms	10 ... 20			10 ... 20
Operating times for 1.0 x U_s[1]					
• AC operation					
- Closing delay	ms	12 ...22			50 ... 60
- Opening delay	ms	10 ...18			40 ... 50
• DC operation					
- Closing delay	ms	--			45 ... 55
- Opening delay	ms	--			40 ... 50

[1] The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2 to 6 times).

Type			3RT2035	3RT2036	3RT2037	3RT2038
Size			S2	S2	S2	S2
Main circuit						
Load rating with AC						
Utilization category AC-1, switching resistive loads						
• Rated operational current I_e	At 40 °C up to 690 V	A	60	70	80	90
	At 60 °C up to 690 V	A	55	60	70	80
• Rated power for AC loads[1] P.f. = 0.95 (at 60 °C)	230 V	kW	23	26	30	34
	400 V	kW	39	46	53	59
	690 V	kW	68	79	91	102
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm^2	16	25	25	35
	At 60 °C	mm^2	16	16	25	25
Utilization categories AC-2 and AC-3						
• Rated operational currents I_e	Up to 400 V	A	40	50	65	80
	440 V	A	40	50	65	80
	500 V	A	40	50	65	80
	690 V	A	24	24	47	58
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	11	15	18.5	22
	400 V	kW	18.5	22	30	37
	690 V	kW	22	22	37	45
Thermal load capacity	10 s current[2]	A	400	420	520	640
Power loss per conducting path	At I_e/AC-3	W	2.2	4	3.8	5.7
Utilization category AC-4 (for $I_a = 6 \times I_e$)						
• Maximum values:						
- Rated operational current I_e	Up to 400 V	A	35	41	55	55
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 400 V	kW	18.5	22	30	30
• The following applies to a contact endurance of about 200 000 operating cycles:						
- Rated operational currents I_e	Up to 400 V	A	22	24	28	30
	690 V	A	18.5	20	22	24
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 110 V	kW	3.2	3.5	4.1	4.3
	230 V	kW	6.7	7.3	8.5	9.1
	400 V	kW	11.6	12.6	14.7	15.8
	690 V	kW	16.8	18.2	20	21.8

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

[2] According to IEC 60947-4-1.
Rated values for various start-up conditions,
see Chapter 7, "Protection Equipment" → "Overload Relays".

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

Type			3RT2035	3RT2036	3RT2037	3RT2038
Size			S2	S2	S2	S2
Main circuit						
Load rating with DC						
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)						
• Rated operational currents I_e (at 60 °C)						
- 1 conducting path	Up to 24 V	A	55			
	60 V	A	23			
	110 V	A	4.5			
	220 V	A	1			
	440 V	A	0.4			
	600 V	A	0.25			
- 2 conducting paths in series	Up to 24 V	A	55			
	60 V	A	45			
	110 V	A	25			
	220 V	A	5			
	440 V	A	1			
	600 V	A	0.8			
- 3 conducting paths in series	Up to 24 V	A	55			
	60 V	A	55			
	110 V	A	55			
	220 V	A	45			
	440 V	A	2.9			
	600 V	A	1.4			
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)						
• Rated operational currents I_e (at 60 °C)						
- 1 conducting path	Up to 24 V	A	35			
	60 V	A	6			
	110 V	A	2.5			
	220 V	A	2			
	440 V	A	0.1			
	600 V	A	0.06			
- 2 conducting paths in series	Up to 24 V	A	55			
	60 V	A	45			
	110 V	A	25			
	220 V	A	5			
	440 V	A	0.27			
	600 V	A	0.16			
- 3 conducting paths in series	Up to 24 V	A	55			
	60 V	A	55			
	110 V	A	55			
	220 V	A	25			
	440 V	A	0.6			
	600 V	A	0.35			
Switching frequency						
Switching frequency *z* in operating cycles/hour						
Contactors without overload relays						
• No-load switching frequency	AC	h^{-1}	5 000			
	AC/DC	h^{-1}	1 500			
• Switching frequency *z* during rated operation[1)]						
- I_e/AC-1	At 400 V	h^{-1}	1 200	1 000	800	700
- I_e/AC-2	At 400 V	h^{-1}	750	600	400	350
- I_e/AC-3	At 400 V	h^{-1}	1 000	800	700	500
- I_e/AC-4	At 400 V	h^{-1}	300	250	200	150
Contactors with overload relays						
• Mean value		h^{-1}	15			

[1)] Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*: $z' = z \times (I_e/I') \times (400\ V/U')^{1.5} \times 1/h$

Type			3RT2035	3RT2036	3RT2037	3RT2038
Size			S2	S2	S2	S2
Conductor cross-sections (1 or 2 conductors connectable)						
Main conductors			Screw terminals			
• Solid or stranded		mm^2	2 x (1 ... 35)[1]; 1 x (1 ... 50)[1]			
• Finely stranded with end sleeve		mm^2	2 x (1 ... 25)[1]; 1 x (1 ... 35)[1]			
• AWG cables, solid or stranded		AWG	2 x (18 ... 2)[1]; 1 x (18 ... 1)[1]			
• Terminal screws - Tightening torque		Nm	Pozidriv size 2; Ø 5 ... 6 3 ... 4.5 (27 ... 40 lb.in)			
Auxiliary and control conductors						
• Solid or stranded		mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]			
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)[1]; 2 x (0.75 ... 2.5)[1]			
• Solid or stranded AWG (2 x)		AWG	2 x (20 ... 16)[1]; 2 x (18 ... 14)[1]			
• Terminal screws - Tightening torque		Nm	M3 (for Pozidriv size 2, Ø 5 ... 6) 0.8 ... 1.2 (7 ... 10.3 lb.in)			
Auxiliary and control conductors[2]			Spring-type terminals			
• Operating devices[3]		mm	3.0 x 0.5			
• Solid or stranded		mm^2	2 x (0.5 ... 2.5)			
• Finely stranded with end sleeve		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 cable insulation: 3.6 mm. On spring-type terminals with conductor cross-sections ≤ 1 mm^2, an insulation stop must be used, see Accessories, page 3/76.

3) Tool for opening the spring-type terminals; see "Accessories", page 3/76.

Data for North America

Type			3RT2015	3RT2016	3RT2017	3RT2018
Size			S00	S00	S00	S00
CSA and UL rated data						
Rated insulation voltage		V AC	600			
Uninterrupted current, at 40 °C, open and enclosed		A	20			
Maximum horsepower ratings (from CSA and UL approved values)						
• Rated power for three-phase motors at 60 Hz	At 200 V	hp	1.5	2	3	3
	230 V	hp	2	3	3	5
	460 V	hp	3	5	7.5	10
	575 V	hp	5	7.5	10	10
Short-circuit protection[1] (contactor or overload relay)	At 600 V	kA	5			
• Fuse CLASS J[2]		A	40			
• Circuit breakers with overload protection acc. to UL 489		A	50			
• Combination motor controllers type E according to UL 508 and UL 60947-4-1			Values on request.			
Overload relays						
• Type			3RU211	/ 3RB301		
• Setting range		A	0.11 ... 16	/ 0.1 ... 16		

1) For more information about short-circuit values, e.g. for protection against short-circuit currents, see the UL reports on the individual devices, www.siemens.com/sirius/manuals.

For the dimensioning of load feeders, see also the Configuration Manual "Configuring SIRIUS Innovations for UL", http://support.automation.siemens.com/WW/view/en/53433538.

2) Values for RK5 fuses on request.

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

Type			3RT2023	3RT2024	3RT2025	3RT2026	3RT2027	3RT2028
Size			S0	S0	S0	S0	S0	S0
CSA and UL rated data								
Rated insulation voltage		V AC	600				600	
Uninterrupted current, at 40 °C, open and enclosed		A	35				42	
Maximum horsepower ratings (from CSA and UL approved values)								
• Rated power for three-phase motors at 60 Hz	At 200 V	hp	2	3	3	5	10	10
	230 V	hp	3	3	5	7.5	10	10
	460 V	hp	5	7.5	10	15	20	25
	575 V	hp	7.5	10	15	20	25	25
Short-circuit protection[1] (contactor or overload relay)	At 600 V	kA	5					
• Fuse CLASS J[2]		A	125				150	
• Circuit breakers with overload protection acc. to UL 489		A	70				100	
• Combination motor controllers type E according to UL 508 and UL 60947-4-1	At 480 V	Type	3RV202 Values on request.					
	At 600 V	Type	3RV202 Values on request.					
Overload relays								
• Type			3RU212	/ 3RB302				
• Setting range		A	1.8 ... 40	/ 0.1 ... 40				

[1] For more information about short-circuit values, e.g. for protection against short-circuit currents, see the UL reports on the individual devices, www.siemens.com/sirius/manuals.

For the dimensioning of load feeders, see also the Configuration Manual "Configuring SIRIUS Innovations for UL", http://support.automation.siemens.com/WW/view/en/53433538.

[2] Values for RK5 fuses on request.

Type			3RT2035	3RT2036	3RT2037	3RT2038
Size			S2	S2	S2	S2
CSA and UL rated data						
Rated insulation voltage		V AC	600			
Uninterrupted current, at 40 °C, open and enclosed		A	55	60	80	90
Maximum horsepower ratings (from CSA and UL approved values)						
• Rated power for three-phase motors at 60 Hz	At 200/208 V	hp	10	15	20	20
	230/240 V	hp	15	15	20	25
	460/480 V	hp	30	40	50	50
	575/600 V	hp	40	50	50	60
Short-circuit protection[1] (contactor or overload relay)	At 600 V	kA	5	10	10	10
• RK5 fuse		A	150	200	250	250
• Circuit breakers with overload protection acc. to UL 489						
	At 480 V	Type	3RV1742			
		A	50	50	60	70
		kA	Values on request.			
	At 600 V	Type	3RV1742			
		A	40	50	50	60
		kA	Values on request.			
Overload relays			Thermal / electronic			
• Type			3RU213 / 3RB303			
• Setting range		A	11 ... 80 / 12 ... 80			

[1] For more information about short-circuit values, e.g. for protection against short-circuit currents, see the UL reports on the individual devices, www.siemens.com/sirius/manuals.

For the dimensioning of load feeders, see also the Configuration Manual "Configuring SIRIUS Innovations for UL", http://support.automation.siemens.com/WW/view/en/53433538.

Type			3RT201	3RT202, 3RT203	
Size			S00	S0, S2	
			Integrated or mountable auxiliary switch block	Integrated	Mountable auxiliary switch block
CSA and UL rated data of the auxiliary contacts					
Rated voltage		V AC	600	600	600
Switching capacity			A 600, Q 600	A 600, P 600	A 600, Q 600
Uninterrupted current	At 240 V AC	A	10	10	10

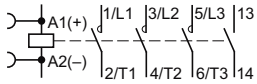
Selection and ordering data

AC operation

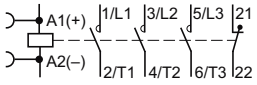
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1A...

3RT201.-2A...

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50/60 Hz	DT	Screw terminals		DT	Spring-type terminals	
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						Configurator			Configurator	
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V										
A	**kW**	A		NO	NC	V AC						
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S00[2)3)]												
• With auxiliary contact 1 NO, Ident. No. **10**												
												
7	**3**	18	**10**	1	--	24	▶	**3RT2015-1AB01**	▶		**3RT2015-2AB01**	
						110	▶	**3RT2015-1AF01**	▶		**3RT2015-2AF01**	
						230	▶	**3RT2015-1AP01**	▶		**3RT2015-2AP01**	
			01	--	1	24	▶	**3RT2015-1AB02**	▶		**3RT2015-2AB02**	
						110	▶	**3RT2015-1AF02**	▶		**3RT2015-2AF02**	
						230	▶	**3RT2015-1AP02**	▶		**3RT2015-2AP02**	
9	**4**	22	**10**	1	--	24	▶	**3RT2016-1AB01**	▶		**3RT2016-2AB01**	
						110	▶	**3RT2016-1AF01**	▶		**3RT2016-2AF01**	
						230	▶	**3RT2016-1AP01**	▶		**3RT2016-2AP01**	
			01	--	1	24	▶	**3RT2016-1AB02**	▶		**3RT2016-2AB02**	
						110	▶	**3RT2016-1AF02**	▶		**3RT2016-2AF02**	
						230	▶	**3RT2016-1AP02**	▶		**3RT2016-2AP02**	
12	**5.5**	22	**10**	1	--	24	▶	**3RT2017-1AB01**	▶		**3RT2017-2AB01**	
						110	▶	**3RT2017-1AF01**	▶		**3RT2017-2AF01**	
						230	▶	**3RT2017-1AP01**	▶		**3RT2017-2AP01**	
			01	--	1	24	▶	**3RT2017-1AB02**	▶		**3RT2017-2AB02**	
						110	▶	**3RT2017-1AF02**	▶		**3RT2017-2AF02**	
						230	▶	**3RT2017-1AP02**	▶		**3RT2017-2AP02**	
16	**7.5**	22	**10**	1	--	24	▶	**3RT2018-1AB01**	▶		**3RT2018-2AB01**	
						110	▶	**3RT2018-1AF01**	▶		**3RT2018-2AF01**	
						230	▶	**3RT2018-1AP01**	▶		**3RT2018-2AP01**	
			01	--	1	24	▶	**3RT2018-1AB02**	▶		**3RT2018-2AB02**	
						110	▶	**3RT2018-1AF02**	▶		**3RT2018-2AF02**	
						230	▶	**3RT2018-1AP02**	▶		**3RT2018-2AP02**	

• With auxiliary contact 1 NC, Ident. No. **01**



For online configurator, see www.siemens.com/sirius/configurators.

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

2) The 3RT20 contactors are also available with ring terminal lug connection. Please contact your local Siemens representative for information about these special versions.

3) For size S00: Coil operating range at 50 Hz: 0.8 ... 1.1 × U_s, at 60 Hz: 0.85 ... 1.1 × U_s.

Other voltages according to page 3/50 on request.

For accessories, see page 3/59.

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

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

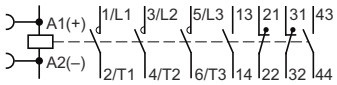
AC operation

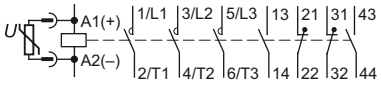
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1AP04-3MA0

3RT201.-2AP04-3MA0

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50/60 Hz	DT	Screw terminals		DT	Spring-type terminals	
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						Configurator			Configurator	
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V										
A	**kW**	A		NO	NC	V AC						
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S00[2]												
With permanently mounted auxiliary switch block												
7	**3**	18	**22**	2	2	230	B	**3RT2015-1AP04-3MA0**		B	**3RT2015-2AP04-3MA0**	
9	**4**	22	**22**	2	2	230	B	**3RT2016-1AP04-3MA0**		B	**3RT2016-2AP04-3MA0**	
12	**5.5**	22	**22**	2	2	230	B	**3RT2017-1AP04-3MA0**		B	**3RT2017-2AP04-3MA0**	
16	**7.5**	22	**22**	2	2	230	►	**3RT2018-1AP04-3MA0**		►	**3RT2018-2AP04-3MA0**	
With permanently mounted auxiliary switch block and varistor plugged onto the front side												
7	**3**	18	**22**	2	2	230	B	**3RT2015-1CP04-3MA0**		B	**3RT2015-2CP04-3MA0**	
9	**4**	22	**22**	2	2	230	B	**3RT2016-1CP04-3MA0**		B	**3RT2016-2CP04-3MA0**	
12	**5.5**	22	**22**	2	2	230	B	**3RT2017-1CP04-3MA0**		B	**3RT2017-2CP04-3MA0**	
16	**7.5**	22	**22**	2	2	230	B	**3RT2018-1CP04-3MA0**		B	**3RT2018-2CP04-3MA0**	





For online configurator, see www.siemens.com/sirius/configurators.

Other voltages according to page 3/50 on request.

For accessories, see page 3/59.

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

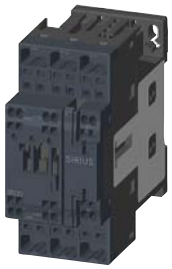
2) For size S00: Coil operating range
at 50 Hz: 0.8 ... 1.1 × U_s
at 60 Hz: 0.85 ... 1.1 × U_s

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

AC operation

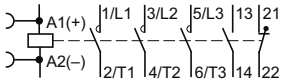
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT202.-1A.00



3RT202.-2A.00

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50 Hz	DT	Screw terminals		DT	Spring-type terminals	
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						Configurator			Configurator	
Operational current I_e up to 400 V	Rating[1] of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V	Ident. No.	Version NO	Version NC			Article No.	Price per PU		Article No.	Price per PU
A	**kW**	A				V AC						
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S0[2]												
9	**4**	40	**11**	1	1	24	▶	**3RT2023-1AB00**		A	**3RT2023-2AB00**	
						110	▶	**3RT2023-1AF00**		A	**3RT2023-2AF00**	
						230	▶	**3RT2023-1AP00**		▶	**3RT2023-2AP00**	
12	**5.5**	40	**11**	1	1	24	▶	**3RT2024-1AB00**		A	**3RT2024-2AB00**	
						110	▶	**3RT2024-1AF00**		A	**3RT2024-2AF00**	
						230	▶	**3RT2024-1AP00**		▶	**3RT2024-2AP00**	
17	**7.5**	40	**11**	1	1	24	▶	**3RT2025-1AB00**		A	**3RT2025-2AB00**	
						110	▶	**3RT2025-1AF00**		A	**3RT2025-2AF00**	
						230	▶	**3RT2025-1AP00**		▶	**3RT2025-2AP00**	
25	**11**	40	**11**	1	1	24	▶	**3RT2026-1AB00**		A	**3RT2026-2AB00**	
						110	▶	**3RT2026-1AF00**		A	**3RT2026-2AF00**	
						230	▶	**3RT2026-1AP00**		▶	**3RT2026-2AP00**	
32	**15**	50	**11**	1	1	24	▶	**3RT2027-1AB00**		A	**3RT2027-2AB00**	
						110	▶	**3RT2027-1AF00**		A	**3RT2027-2AF00**	
						230	▶	**3RT2027-1AP00**		▶	**3RT2027-2AP00**	
38	**18.5**	50	**11**	1	1	24	▶	**3RT2028-1AB00**		A	**3RT2028-2AB00**	
						110	▶	**3RT2028-1AF00**		A	**3RT2028-2AF00**	
						230	▶	**3RT2028-1AP00**		B	**3RT2028-2AP00**	



For online configurator, see www.siemens.com/sirius/configurators.

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

2) The 3RT20 contactors are also available with ring terminal lug connection. Please contact your local Siemens representative for information about these special versions.

Other voltages according to page 3/50 on request.

For accessories, see page 3/59.
For spare parts, see page 3/77.

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

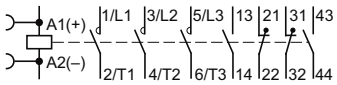
AC operation

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

3RT202.-1A.04

3RT202.-2A.04

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50 Hz	DT	Screw terminals		DT	Spring-type terminals	
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						Configurator			Configurator	
Operational current I_e up to 400 V	Rating[1] of three-phase motors at 50 Hz and **400 V**	Operational current I_e up to 690 V	Ident. No.	Version NO	Version NC			Article No.	Price per PU		Article No.	Price per PU
A	**kW**	A		NO	NC	V AC						
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S0[2]												
With mounted auxiliary switch block (removable)[3]												
9	**4**	40	**22**	2	2	24	B	**3RT2023-1AB04**		B	**3RT2023-2AB04**	
						230	►	**3RT2023-1AP04**		A	**3RT2023-2AP04**	
12	**5.5**	40	**22**	2	2	24	B	**3RT2024-1AB04**		B	**3RT2024-2AB04**	
						110	B	**3RT2024-1AF04**		B	**3RT2024-2AF04**	
						230	►	**3RT2024-1AP04**		A	**3RT2024-2AP04**	
17	**7.5**	40	**22**	2	2	24	B	**3RT2025-1AB04**		B	**3RT2025-2AB04**	
						110	B	**3RT2025-1AF04**		B	**3RT2025-2AF04**	
						230	►	**3RT2025-1AP04**		A	**3RT2025-2AP04**	
25	**11**	40	**22**	2	2	24	B	**3RT2026-1AB04**		B	**3RT2026-2AB04**	
						110	B	**3RT2026-1AF04**		B	**3RT2026-2AF04**	
						230	►	**3RT2026-1AP04**		A	**3RT2026-2AP04**	
32	**15**	50	**22**	2	2	24	B	**3RT2027-1AB04**		B	**3RT2027-2AB04**	
						110	B	**3RT2027-1AF04**		B	**3RT2027-2AF04**	
						230	►	**3RT2027-1AP04**		A	**3RT2027-2AP04**	
38	**18.5**	50	**22**	2	2	24	B	**3RT2028-1AB04**		B	**3RT2028-2AB04**	
						110	B	**3RT2028-1AF04**		B	**3RT2028-2AF04**	
						230	►	**3RT2028-1AP04**		A	**3RT2028-2AP04**	



For online configurator, see www.siemens.com/sirius/configurators.

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

[2] The 3RT20 contactors are also available with ring terminal lug connection. Please contact your local Siemens representative for information about these special versions.

[3] Article number for the auxiliary switch block (removable): 3RH2911-.HA11

Other voltages according to page 3/50 on request.

For accessories, see page 3/59.
For spare parts, see page 3/77.

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

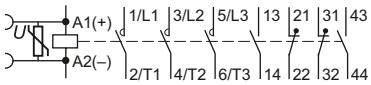
AC operation

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

3RT202.-1AL24-3MA0

3RT202.-2AL24-3MA0

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50/60 Hz	DT	Screw terminals		DT	Spring-type terminals	
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						Configurator			Configurator	
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V										
A	**kW**	A		NO	NC	V AC						
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S0												
With permanently mounted auxiliary switch block and varistor plugged into the front side[2]												
9	**4**	40	**22**	2	2	230	B	**3RT2023-1CL24-3MA0**		B	**3RT2023-2CL24-3MA0**	
12	**5.5**	40	**22**	2	2	230	B	**3RT2024-1CL24-3MA0**		B	**3RT2024-2CL24-3MA0**	
17	**7.5**	40	**22**	2	2	230	B	**3RT2025-1CL24-3MA0**		B	**3RT2025-2CL24-3MA0**	
25	**11**	40	**22**	2	2	230	B	**3RT2026-1CL24-3MA0**		B	**3RT2026-2CL24-3MA0**	
32	**15**	50	**22**	2	2	230	B	**3RT2027-1CL24-3MA0**		B	**3RT2027-2CL24-3MA0**	
38	**18.5**	50	**22**	2	2	230	B	**3RT2028-1CL24-3MA0**		B	**3RT2028-2CL24-3MA0**	



For online configurator, see www.siemens.com/sirius/configurators.

Other voltages according to page 3/50 on request.

For accessories, see page 3/59.
For spare parts, see page 3/77.

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

2) Varistor is permanently mounted.

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

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

AC operation

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

3RT203.-1A.04

3RT203.-1A.00

3RT203.-3A.00

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50 Hz	DT	Screw terminals Configurator	DT	Spring-type terminals Configurator
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C								
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No. Price per PU		Article No. Price per PU
400 V	**400 V**	690 V								
A	**kW**	A		NO	NC	V AC				
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S2 NEW										
40	**18.5**	60	**11**	1	1	24	▶	**3RT2035-1AB00**	A	**3RT2035-3AB00**
						110	▶	**3RT2035-1AF00**	B	**3RT2035-3AF00**
						230	▶	**3RT2035-1AP00**	▶	**3RT2035-3AP00**
50	**22**	70	**11**	1	1	24	▶	**3RT2036-1AB00**	B	**3RT2036-3AB00**
						110	▶	**3RT2036-1AF00**	B	**3RT2036-3AF00**
						230	▶	**3RT2036-1AP00**	▶	**3RT2036-3AP00**
65	**30**	80	**11**	1	1	24	▶	**3RT2037-1AB00**	B	**3RT2037-3AB00**
						110	▶	**3RT2037-1AF00**	B	**3RT2037-3AF00**
						230	▶	**3RT2037-1AP00**	▶	**3RT2037-3AP00**
80	**37**	90	**11**	1	1	24	▶	**3RT2038-1AB00**	B	**3RT2038-3AB00**
						110	▶	**3RT2038-1AF00**	B	**3RT2038-3AF00**
						230	▶	**3RT2038-1AP00**	▶	**3RT2038-3AP00**
With mounted auxiliary switch block (removable)[2]										
40	**18.5**	60	**22**	2	2	24	▶	**3RT2035-1AB04**		--
						110	▶	**3RT2035-1AF04**		--
						230	▶	**3RT2035-1AP04**		--
50	**22**	70	**22**	2	2	24	▶	**3RT2036-1AB04**		--
						110	▶	**3RT2036-1AF04**		--
						230	▶	**3RT2036-1AP04**		--
65	**30**	80	**22**	2	2	24	▶	**3RT2037-1AB04**		--
						110	▶	**3RT2037-1AF04**		--
						230	▶	**3RT2037-1AP04**		--
80	**37**	90	**22**	2	2	24	B	**3RT2038-1AB04**		--
						110	▶	**3RT2038-1AF04**		--
						230	▶	**3RT2038-1AP04**		--

For online configurator, see www.siemens.com/sirius/configurators.

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

2) Article number for the auxiliary switch block (removable): 3RH2911-.HA11.

Other voltages according to page 3/50 on request.

For accessories, see page 3/59.
For spare parts, see page 3/77.

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

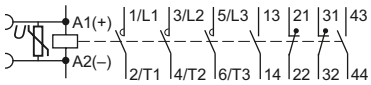
AC operation

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

3RT203.-1CL24-3MA0

3RT203.-3CL24-3MA0

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50/60 Hz	DT	Screw terminals		DT	Spring-type terminals	
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						Configurator			Configurator	
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V										
A	**kW**	A		NO	NC	V AC						
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S2 NEW												
With permanently mounted auxiliary switch block and varistor plugged into the front side[2]												
40	**18.5**	60	**22**	2	2	230	B	**3RT2035-1CL24-3MA0**		B	**3RT2035-3CL24-3MA0**	
50	**22**	70	**22**	2	2	230	B	**3RT2036-1CL24-3MA0**		B	**3RT2036-3CL24-3MA0**	
65	**30**	80	**22**	2	2	230	B	**3RT2037-1CL24-3MA0**		B	**3RT2037-3CL24-3MA0**	
80	**37**	90	**22**	2	2	230	B	**3RT2038-1CL24-3MA0**		B	**3RT2038-3CL24-3MA0**	



For online configurator, see www.siemens.com/sirius/configurators.

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

[2] Varistor is permanently mounted.

Other voltages according to page 3/50 on request.

For accessories, see page 3/59.
For spare parts, see page 3/77.

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

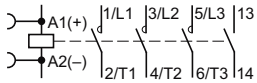
SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

DC operation

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

3RT201.-1B...

3RT201.-2B...

Rated data			Auxiliary contacts			Rated control supply voltage U_s	DT	Screw terminals		DT	Spring-type terminals	
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						Configurator			Configurator	
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V										
A	**kW**	A		NO	NC	V DC						
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S00[2]												
• With auxiliary contact 1 NO, Ident. No. **10**												
												
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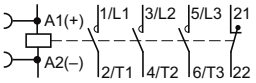
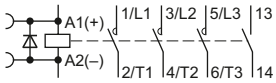
						220	A	**3RT2015-1BM41**	B		**3RT2015-2BM41**	B
			01	--	1	24	▶	**3RT2015-1BB42**	▶		**3RT2015-2BB42**	▶
						220	B	**3RT2015-1BM42**	B		**3RT2015-2BM42**	B
9	**4**	22	**10**	1	--	24	▶	**3RT2016-1BB41**	▶		**3RT2016-2BB41**	▶
						220	B	**3RT2016-1BM41**	B		**3RT2016-2BM41**	B
			01	--	1	24	▶	**3RT2016-1BB42**	▶		**3RT2016-2BB42**	▶
						220	B	**3RT2016-1BM42**	B		**3RT2016-2BM42**	B
12	**5.5**	22	**10**	1	--	24	▶	**3RT2017-1BB41**	▶		**3RT2017-2BB41**	▶
						220	B	**3RT2017-1BM41**	B		**3RT2017-2BM41**	B
			01	--	1	24	▶	**3RT2017-1BB42**	▶		**3RT2017-2BB42**	▶
						220	B	**3RT2017-1BM42**	B		**3RT2017-2BM42**	B
16	**7.5**	22	**10**	1	--	24	▶	**3RT2018-1BB41**	▶		**3RT2018-2BB41**	▶
						220	B	**3RT2018-1BM41**	B		**3RT2018-2BM41**	B
			01	--	1	24	▶	**3RT2018-1BB42**	▶		**3RT2018-2BB42**	▶
						220	B	**3RT2018-1BM42**	B		**3RT2018-2BM42**	B
• With auxiliary contact 1 NC, Ident. No. **01**												
												
With integrated coil circuit (diode)												
• With auxiliary contact 1 NO, Ident. No. **10**												
												
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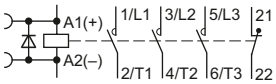
			01	--	1	24	▶	**3RT2015-1FB42**	▶		**3RT2015-2FB42**	▶
9	**4**	22	**10**	1	--	24	▶	**3RT2016-1FB41**	▶		**3RT2016-2FB41**	▶
			01	--	1	24	▶	**3RT2016-1FB42**	▶		**3RT2016-2FB42**	▶
12	**5.5**	22	**10**	1	--	24	▶	**3RT2017-1FB41**	▶		**3RT2017-2FB41**	▶
			01	--	1	24	▶	**3RT2017-1FB42**	▶		**3RT2017-2FB42**	▶
16	**7.5**	22	**10**	1	--	24	▶	**3RT2018-1FB41**	▶		**3RT2018-2FB41**	▶
			01	--	1	24	▶	**3RT2018-1FB42**	▶		**3RT2018-2FB42**	▶
• With auxiliary contact 1 NC, Ident. No. **01**												
												

For online configurator, see www.siemens.com/sirius/configurators.

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

[2] The 3RT20 contactors are also available with ring terminal lug connection. Please contact your local Siemens representative for information about these special contactor versions with ring terminal lug connection.

Other voltages according to page 3/50 on request.

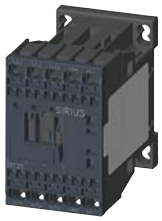
For accessories, see page 3/59.

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

DC operation

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


3RT201.-1BB4.-0CC0


3RT201.-2BB4.-0CC0


3RT201.-1BB44-3MA0

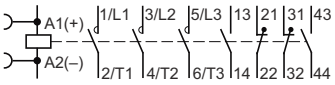

3RT201.-2BB44-3MA0

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

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

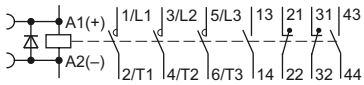
Size S00

With permanently mounted auxiliary switch block



7	**3**	18	**22**	2	2	24	▶	**3RT2015-1BB44-3MA0**	B	**3RT2015-2BB44-3MA0**
9	**4**	22	**22**	2	2	24	▶	**3RT2016-1BB44-3MA0**	B	**3RT2016-2BB44-3MA0**
12	**5.5**	22	**22**	2	2	24	B	**3RT2017-1BB44-3MA0**	B	**3RT2017-2BB44-3MA0**
16	**7.5**	22	**22**	2	2	24	B	**3RT2018-1BB44-3MA0**	B	**3RT2018-2BB44-3MA0**

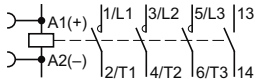
With permanently mounted auxiliary switch block and integrated coil circuit (diode)



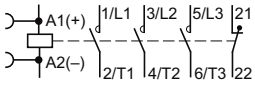
7	**3**	18	**22**	2	2	24	B	**3RT2015-1FB44-3MA0**	B	**3RT2015-2FB44-3MA0**
9	**4**	22	**22**	2	2	24	B	**3RT2016-1FB44-3MA0**	B	**3RT2016-2FB44-3MA0**
12	**5.5**	22	**22**	2	2	24	B	**3RT2017-1FB44-3MA0**	B	**3RT2017-2FB44-3MA0**
16	**7.5**	22	**22**	2	2	24	B	**3RT2018-1FB44-3MA0**	B	**3RT2018-2FB44-3MA0**

Contactor with voltage tap-off (only available with 24 V DC coils)

- With auxiliary contact 1 NO, Ident. No. **10**



- With auxiliary contact 1 NC, Ident. No. **01**



7	**3**	18	**10**	1	--	24	▶	**3RT2015-1BB41-0CC0**	▶	**3RT2015-2BB41-0CC0**
			01	--	1	24	▶	**3RT2015-1BB42-0CC0**	A	**3RT2015-2BB42-0CC0**
9	**4**	22	**10**	1	--	24	▶	**3RT2016-1BB41-0CC0**	A	**3RT2016-2BB41-0CC0**
			01	--	1	24	A	**3RT2016-1BB42-0CC0**	A	**3RT2016-2BB42-0CC0**
12	**5.5**	22	**10**	1	--	24	A	**3RT2017-1BB41-0CC0**	▶	**3RT2017-2BB41-0CC0**
			01	--	1	24	A	**3RT2017-1BB42-0CC0**	A	**3RT2017-2BB42-0CC0**
16	**7.5**	22	**10**	1	--	24	A	**3RT2018-1BB41-0CC0**	▶	**3RT2018-2BB41-0CC0**
			01	--	1	24	A	**3RT2018-1BB42-0CC0**	A	**3RT2018-2BB42-0CC0**

For online configurator, see www.siemens.com/sirius/configurators.

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

Other voltages according to page 3/50 on request.

For accessories, see page 3/59.

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

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

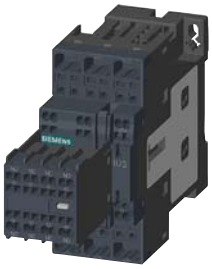
DC operation

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

3RT202.-1B.40

3RT202.-2B.40

3RT202.-1B.44



3RT202.-2B.44

Rated data			Auxiliary contacts			Rated control supply voltage U_s	DT	Screw terminals Configurator		DT	Spring-type terminals Configurator	
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C										
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V		NO	NC							
A	**kW**	A				V DC						
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S0[2]												
9	**4**	40	**11**	1	1	24	▶	**3RT2023-1BB40**		▶	**3RT2023-2BB40**	
12	**5.5**	40	**11**	1	1	24 220	▶ B	**3RT2024-1BB40** **3RT2024-1BM40**		▶ B	**3RT2024-2BB40** **3RT2024-2BM40**	
17	**7.5**	40	**11**	1	1	24 220	▶ B	**3RT2025-1BB40** **3RT2025-1BM40**		▶ B	**3RT2025-2BB40** **3RT2025-2BM40**	
25	**11**	40	**11**	1	1	24 220	▶ B	**3RT2026-1BB40** **3RT2026-1BM40**		▶ B	**3RT2026-2BB40** **3RT2026-2BM40**	
32	**15**	50	**11**	1	1	24 220	▶ B	**3RT2027-1BB40** **3RT2027-1BM40**		▶ B	**3RT2027-2BB40** **3RT2027-2BM40**	
38	**18.5**	50	**11**	1	1	24 220	▶ B	**3RT2028-1BB40** **3RT2028-1BM40**		▶ B	**3RT2028-2BB40** **3RT2028-2BM40**	
With coil circuit plugged in (diode assembly)												
9	**4**	40	**11**	1	1	24	B	**3RT2023-1FB40**		▶	**3RT2023-2FB40**	
12	**5.5**	40	**11**	1	1	24	▶	**3RT2024-1FB40**		▶	**3RT2024-2FB40**	
17	**7.5**	40	**11**	1	1	24	▶	**3RT2025-1FB40**		▶	**3RT2025-2FB40**	
25	**11**	40	**11**	1	1	24	▶	**3RT2026-1FB40**		▶	**3RT2026-2FB40**	
32	**15**	50	**11**	1	1	24	▶	**3RT2027-1FB40**		▶	**3RT2027-2FB40**	
38	**18.5**	50	**11**	1	1	24	▶	**3RT2028-1FB40**		▶	**3RT2028-2FB40**	
With mounted auxiliary switch block (removable)[3]												
9	**4**	40	**22**	2	2	24	▶	**3RT2023-1BB44**		▶	**3RT2023-2BB44**	
12	**5.5**	40	**22**	2	2	24	▶	**3RT2024-1BB44**		▶	**3RT2024-2BB44**	
17	**7.5**	40	**22**	2	2	24	▶	**3RT2025-1BB44**		▶	**3RT2025-2BB44**	
25	**11**	40	**22**	2	2	24	▶	**3RT2026-1BB44**		▶	**3RT2026-2BB44**	
32	**15**	50	**22**	2	2	24	▶	**3RT2027-1BB44**		▶	**3RT2027-2BB44**	
38	**18.5**	50	**22**	2	2	24	▶	**3RT2028-1BB44**		▶	**3RT2028-2BB44**	

For online configurator, see www.siemens.com/sirius/configurators.

Other voltages according to page 3/50 on request.

For accessories, see page 3/59.

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

2) The 3RT20 contactors are also available with ring terminal lug connection. Please contact your local Siemens representative for information about these special versions.

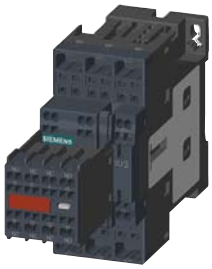
3) Article number for the auxiliary switch block (removable): 3RH2911-.HA11.

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

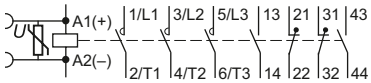
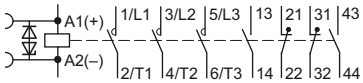
DC operation

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

3RT202.-1BB44-3MA0



3RT202.-2BB44-3MA0

Rated data			Auxiliary contacts			Rated control supply voltage U_s	DT	Screw terminals	DT	Spring-type terminals
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						Configurator		Configurator
Operational current I_e up to 400 V	Rating[1] of three-phase motors at 50 Hz and 400 V	Operational current I_e up to 690 V	Ident. No.	Version NO	Version NC			Article No. / Price per PU		Article No. / Price per PU
A	kW	A		NO	NC	V DC				
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S0										
With permanently mounted auxiliary switch block and varistor plugged in[2]										
										
12	**5.5**	40	**22**	2	2	24	B	**3RT2024-1DB44-3MA0**	X	**3RT2024-2DB44-3MA0**
17	**7.5**	40	**22**	2	2	24	B	**3RT2025-1DB44-3MA0**	X	**3RT2025-2DB44-3MA0**
25	**11**	40	**22**	2	2	24	B	**3RT2026-1DB44-3MA0**	X	**3RT2026-2DB44-3MA0**
32	**15**	50	**22**	2	2	24	B	**3RT2027-1DB44-3MA0**	X	**3RT2027-2DB44-3MA0**
With permanently mounted auxiliary switch block and diode assembly plugged in[2]										
										
9	**4**	40	**11**	1	1	24	B	**3RT2023-1FB44-3MA0**	B	**3RT2023-2FB44-3MA0**
12	**5.5**	40	**11**	1	1	24	B	**3RT2024-1FB44-3MA0**	B	**3RT2024-2FB44-3MA0**
17	**7.5**	40	**11**	1	1	24	B	**3RT2025-1FB44-3MA0**	B	**3RT2025-2FB44-3MA0**
25	**11**	40	**11**	1	1	24	B	**3RT2026-1FB44-3MA0**	B	**3RT2026-2FB44-3MA0**
32	**15**	50	**11**	1	1	24	B	**3RT2027-1FB44-3MA0**	B	**3RT2027-2FB44-3MA0**
38	**18.5**	50	**11**	1	1	24	B	**3RT2028-1FB44-3MA0**	B	**3RT2028-2FB44-3MA0**

For online configurator, see www.siemens.com/sirius/configurators.

Other voltages according to page 3/50 on request.

For accessories, see page 3/59.

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

2) Varistor or diode assembly is permanently mounted.

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

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

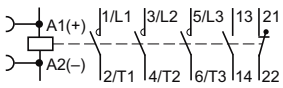
Contactors with voltage tap-off (DC operation)

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

3RT202.-1BB40-0CC0

3RT202.-2BB40-0CC0

Rated data			Auxiliary contacts			Rated control supply voltage U_s	DT	Screw terminals	DT	Spring-type terminals
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						Configurator		Configurator
Operational current I_e up to 400 V	Rating[1] of three-phase motors at 50 Hz and 400 V	Operational current I_e up to 690 V	Ident. No.	Version NO	Version NC			Article No. Price per PU		Article No. Price per PU
A	kW	A		NO	NC	V DC				
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S0										
Contactors with voltage tap-off										
9	**4**	40	**11**	1	1	24	A	**3RT2023-1BB40-0CC0**	A	**3RT2023-2BB40-0CC0**
12	**5.5**	40	**11**	1	1	24	A	**3RT2024-1BB40-0CC0**	A	**3RT2024-2BB40-0CC0**
17	**7.5**	40	**11**	1	1	24	A	**3RT2025-1BB40-0CC0**	A	**3RT2025-2BB40-0CC0**
25	**11**	40	**11**	1	1	24	A	**3RT2026-1BB40-0CC0**	A	**3RT2026-2BB40-0CC0**
32	**15**	50	**11**	1	1	24	A	**3RT2027-1BB40-0CC0**	A	**3RT2027-2BB40-0CC0**
38	**18.5**	50	**11**	1	1	24	A	**3RT2028-1BB40-0CC0**	A	**3RT2028-2BB40-0CC0**



For online configurator, see www.siemens.com/sirius/configurators.

For accessories, see page 3/59.

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

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

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

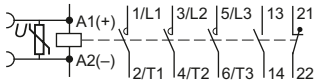
- Extended operating range of solenoid coil 0.7 ... 1.3 x U_S
- Reduced power consumption when closing and in the closed state

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

3RT202.-1N.30

3RT202.-2N.30

Rated data			Auxiliary contacts			Rated control supply voltage U_S[2]	DT	Screw terminals Configurator	DT	Spring-type terminals Configurator
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C								
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No. Price per PU		Article No. Price per PU
400 V	**400 V**	690 V								
A	**kW**	A		NO	NC	V AC/DC				
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S0										
With integrated coil circuit (varistor)										
9	**4**	40	**11**	1	1	21 ... 28 95 ... 130 200 ... 280[3]	X X X	**3RT2023-1NB30** **3RT2023-1NF30** **3RT2023-1NP30**	X X X	**3RT2023-2NB30** **3RT2023-2NF30** **3RT2023-2NP30**
12	**5.5**	40	**11**	1	1	21 ... 28 95 ... 130 200 ... 280[3]	► ► ►	**3RT2024-1NB30** **3RT2024-1NF30** **3RT2024-1NP30**	B B ►	**3RT2024-2NB30** **3RT2024-2NF30** **3RT2024-2NP30**
17	**7.5**	40	**11**	1	1	21 ... 28 95 ... 130 200 ... 280[3]	► ► ►	**3RT2025-1NB30** **3RT2025-1NF30** **3RT2025-1NP30**	B B ►	**3RT2025-2NB30** **3RT2025-2NF30** **3RT2025-2NP30**
25	**11**	40	**11**	1	1	21 ... 28 95 ... 130 200 ... 280[3]	► ► ►	**3RT2026-1NB30** **3RT2026-1NF30** **3RT2026-1NP30**	► ► ►	**3RT2026-2NB30** **3RT2026-2NF30** **3RT2026-2NP30**
32	**15**	50	**11**	1	1	21 ... 28 95 ... 130 200 ... 280[3]	► ► ►	**3RT2027-1NB30** **3RT2027-1NF30** **3RT2027-1NP30**	► B ►	**3RT2027-2NB30** **3RT2027-2NF30** **3RT2027-2NP30**
38	**18.5**	50	**11**	1	1	21 ... 28 95 ... 130 200 ... 280[3]	B B ►	**3RT2028-1NB30** **3RT2028-1NF30** **3RT2028-1NP30**	B B ►	**3RT2028-2NB30** **3RT2028-2NF30** **3RT2028-2NP30**



For online configurator, see www.siemens.com/sirius/configurators.

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

2) Coil operating range: 0.7 x $U_{s\,min}$ ...1.3 x $U_{s\,max}$.

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

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

SIRIUS 3RT20 contactors, 3-pole, up to 37 kW

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

- Extended operating range of solenoid coil 0.8 ... 1.1 x U_s
- Reduced power consumption when closing and in the closed state

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

3RT203.-1N.34

3RT203.-1N.30

3RT203.-3N.30

Rated data			Auxiliary contacts			Rated control supply voltage U_s [2]	DT	Screw terminals	DT	Spring-type terminals
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						Configurator		Configurator
Operational current I_e up to	Rating [1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No. Price per PU		Article No. Price per PU
400 V	**400 V**	690 V								
A	**kW**	A		NO	NC	V AC/DC				
For screw fixing and snap-on mounting onto TH 35 standard mounting rail										
Size S2 NEW										
With integrated coil circuit (varistor)										
40	**18.5**	60	**11**	1	1	20 ... 33	▶	**3RT2035-1NB30**	▶	**3RT2035-3NB30**
						83 ... 155	B	**3RT2035-1NF30**	B	**3RT2035-3NF30**
						175 ... 280	B	**3RT2035-1NP30**	B	**3RT2035-3NP30**
50	**22**	70	**11**	1	1	20 ... 33	▶	**3RT2036-1NB30**	B	**3RT2036-3NB30**
						83 ... 155	B	**3RT2036-1NF30**	B	**3RT2036-3NF30**
						175 ... 280	B	**3RT2036-1NP30**	B	**3RT2036-3NP30**
65	**30**	80	**11**	1	1	20 ... 33	▶	**3RT2037-1NB30**	B	**3RT2037-3NB30**
						83 ... 155	B	**3RT2037-1NF30**	B	**3RT2037-3NF30**
						175 ... 280	B	**3RT2037-1NP30**	B	**3RT2037-3NP30**
80	**37**	90	**11**	1	1	20 ... 33	▶	**3RT2038-1NB30**	▶	**3RT2038-3NB30**
						83 ... 155	B	**3RT2038-1NF30**	B	**3RT2038-3NF30**
						175 ... 280	B	**3RT2038-1NP30**	A	**3RT2038-3NP30**
With mounted auxiliary switch block (removable)[3] and integrated coil circuit										
40	**18.5**	60	**22**	2	2	20 ... 33	▶	**3RT2035-1NB34**		--
						83 ... 155	B	**3RT2035-1NF34**		--
						175 ... 280	B	**3RT2035-1NP34**		--
50	**22**	70	**22**	2	2	20 ... 33	▶	**3RT2036-1NB34**		--
						83 ... 155	B	**3RT2036-1NF34**		--
						175 ... 280	B	**3RT2036-1NP34**		--
65	**30**	80	**22**	2	2	20 ... 33	▶	**3RT2037-1NB34**		--
						83 ... 155	B	**3RT2037-1NF34**		--
						175 ... 280	B	**3RT2037-1NP34**		--
80	**37**	90	**22**	2	2	20 ... 33	▶	**3RT2038-1NB34**		--
						83 ... 155	B	**3RT2038-1NF34**		--
						175 ... 280	B	**3RT2038-1NP34**		--

For online configurator, see www.siemens.com/sirius/configurators.

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

[2] Coil operating range: 0.8 x $U_{s\,min}$ ...1.1 x $U_{s\,max}$.

[3] Article number for the auxiliary switch block (removable): 3RH2911-.HA11.

3

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

- Extended operating range of solenoid coil 0.8 ... 1.1 x U_s
- Reduced power consumption when closing and in the closed state

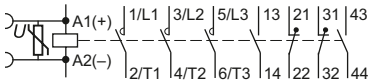
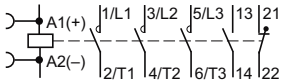
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT203.-1NB30-0CC0

3RT203.-3NB30-0CC0

3RT203.-1N.34-3MA0

3RT203.-3N.34-3MA0

Rated data			Auxiliary contacts			Rated control supply voltage U_s[2]	DT	Screw terminals		DT	Spring-type terminals	
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C						Configurator			Configurator	
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**	690 V										
A	**kW**	A		NO	NC	V AC/DC						
For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
Size S2 NEW												
With permanently mounted auxiliary switch block and integrated varistor[3]												
												
40	**18.5**	60	**22**	2	2	20 ... 33	B	**3RT2035-1NB34-3MA0**		B	**3RT2035-3NB34-3MA0**	
50	**22**	70	**22**	2	2	20 ... 33	A	**3RT2036-1NB34-3MA0**		B	**3RT2036-3NB34-3MA0**	
65	**30**	80	**22**	2	2	20 ... 33	▶	**3RT2037-1NB34-3MA0**		B	**3RT2037-3NB34-3MA0**	
80	**37**	90	**22**	2	2	20 ... 33	▶	**3RT2038-1NB34-3MA0**		A	**3RT2038-3NB34-3MA0**	
Contactors with voltage tap-off												
												
40	**18.5**	60	**11**	1	1	20 ... 33	A	**3RT2035-1NB30-0CC0**		A	**3RT2035-3NB30-0CC0**	
50	**22**	70	**11**	1	1	20 ... 33	A	**3RT2036-1NB30-0CC0**		A	**3RT2036-3NB30-0CC0**	
65	**30**	80	**11**	1	1	20 ... 33	A	**3RT2037-1NB30-0CC0**		A	**3RT2037-3NB30-0CC0**	
80	**37**	90	**11**	1	1	20 ... 33	A	**3RT2038-1NB30-0CC0**		A	**3RT2038-3NB30-0CC0**	

For online configurator, see www.siemens.com/sirius/configurators.

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

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

3) Varistor is permanently mounted.

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

3

Options

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

Rated control supply voltage U_s	Contactor type	3RT201	3RT202	3RT203	3RT231, 3RT251	3RT232, 3RT252	3RT233, 3RT253
	Size	S00	S0	S2	S00	S0	S2
Sizes S00 to S2							
AC operation[1]							
Solenoid coils for 50 Hz (exception: Size S00: 50 and 60 Hz[2])							
24 V AC		B0	B0	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	F0	F0
230 V AC		P0	P0	P0	P0	P0	P0
240 V AC		U0	U0	U0	--	--	--
400 V AC		V0	V0	V0	V0	V0	V0
Solenoid coils for 50 and 60 Hz[2]							
24 V AC		B0	C2	C2	B0	C2	C2
42 V AC		D0	D2	D2	D0	D2	D2
48 V AC		H0	H2	H2	H0	H2	H2
110 V AC		F0	G2	G2	F0	G2	G2
220 V AC		N2	N2	N2	N2	N2	N2
230 V AC		P0	L2	L2	P0	L2	L2
Solenoid coils (for USA and Canada[3]**)**							
50 Hz	**60 Hz**						
110 V AC	120 V AC	K6	K6	K6	K6	K6	K6
220 V AC	240 V AC	P6	P6	P6	P6	P6	P6
Solenoid coils (for Japan)							
50/60 Hz[4]	**60 Hz**[5]						
100 V AC	110 V AC	G6	G6	G6	G6	G6	G6
200 V AC	220 V AC	N6	N6	N6	N6	N6	N6
400 V AC	440 V AC	R6	R6	R6	R6	R6	R6
DC operation[1]							
12 V DC		A4	A4	--	A4	A4	--
24 V DC		B4	B4	--	B4	B4	--
42 V DC		D4	D4	--	D4	D4	--
48 V DC		W4	W4	--	W4	W4	--
60 V DC		E4	E4	--	--	--	--
110 V DC		F4	F4	--	F4	F4	--
125 V DC		G4	G4	--	G4	G4	--
220 V DC		M4	M4	--	M4	M4	--
230 V DC		P4	P4	--	P4	--	--

Examples

AC operation	3RT2023-1A**P0**0	Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC
	3RT2023-1A**G2**0	Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC
DC operation	3RT2025-2B**B4**0	Contactor with spring-type terminals; for rated control supply voltage 24 V DC
	3RT2025-2B**G4**0	Contactor with spring-type terminals; for rated control supply voltage 125 V DC

Rated control supply voltage	Contactor type	--	3RT2. 2.-.N	Rated control supply voltage	Contactor type	3RT2. 3.-.N
$U_{s\,min}$ ... $U_{s\,max}$[6]	Size	S00	S0	$U_{s\,min}$ ... $U_{s\,max}$[6]	Size	S2
Sizes S00 to S2						
AC/DC operation (50/60 Hz AC, DC)						
21 ... 28 V AC/DC		--	B3	20 ... 33 V AC/DC		B3
95 ... 130 V AC/DC		--	F3	83 ... 155 V AC/DC		F3
200 ... 280 V AC/DC[7]		--	P3	175 ... 280 V AC/DC		P3

1) For deviating coil voltages and coil operating ranges of sizes S00 and S0, the SITOP power 24 V DC power supply unit with wide range input (93 to 264 V AC; 30 to 264 V DC) can be used for coil excitation (see Chapter 15, "Products for Specific Requirements" → "SITOP Power Supplies").

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

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

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

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

6) Coil operating range for S0: 0.7 x $U_{s\,min}$ ... 1.3 x $U_{s\,max}$
Coil operating range for S2: 0.8 x $U_{s\,min}$ ...1.1 x $U_{s\,max}$

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

Overview

Auxiliary switches

See also pages 3/15 and 3/58.

Positively driven contacts (for contactor relays)

Definition according to IEC 60947-5-1, Appendix L:

Positively-driven contact elements are a combination of "n" NO contact and "m" NC contact which are designed in such a way that they cannot be closed simultaneously.

Mirror contacts (for power contactors)

Definition according to IEC 60947-4-1, Appendix F:

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

Solid-state time-delay auxiliary switches

The 3RA28 solid-state delayed auxiliary switches which can be mounted onto the contactor are designed for applications in the range from 24 to 240 V AC/DC (wide voltage range). Both the electrical and mechanical connection are made by simple snapping on and locking.

The time-delay auxiliary switch is supplied with power directly by two plug-in contacts through the coil terminals of the contactor, in parallel with A./A2.

A protection circuit (varistor) is integrated in each module.

A sealable cover is available to protect against careless adjustment of the set times.

Note:

Mounting more auxiliary switches to the contactor is not permitted.

OFF-delay devices for contactors

AC and DC operation

IEC 60947, EN 60947

For screw fixing and snap-on mounting onto TH 35 standard mounting rails. The OFF-delay devices have screw terminals.

The OFF-delay device prevents a contactor from dropping out unintentionally when there is a short-time voltage dip or voltage failure. It supplies a downstream, DC-operated contactor with the necessary energy during a voltage dip, ensuring that the contactor does not trip. The 3RA2916 OFF-delay devices are specifically designed for operation with the 3RT contactors and 3RH contactor relays in the SIRIUS series.

The OFF-delay device operates without external voltage on a capacitive basis, and can be energized with either AC or DC (24 V version only for DC operation). Voltage matching, which is only necessary with AC operation, is performed using a rectifier bridge.

A contactor opens after a delay when the capacitors of the solenoid coil, built into the OFF-delay device, are switched in parallel. In the event of voltage failures, the capacitors are discharged via the solenoid coil and thereby delay the opening of the contactor.

If the command devices are upstream of the OFF-delay device in the circuit, the OFF-delay takes effect with every opening operation. If the opening operation is downstream of the OFF-delay device, an OFF-delay only applies in the event of failure of the mains voltage.

Operation

In the case of the versions for rated control supply voltages of 110 and 230 V, either AC voltage or DC voltage can be applied on the line side, whereas the variant for 24 V is designed for DC operation only.

A DC-operated contactor is connected to the output according to the input voltage that is applied.

The mean value of the OFF-delay is approximately 1.5 times the specified minimum time.

Additional load module

Size S00 for plugging onto the front of the contactors with and without auxiliary switch block.

The module is used for increasing the permissible residual current and for limiting the residual voltage. It ensures the safe opening of contactors with direct control via 230 V AC semiconductor outputs of SIMATIC controllers. It acts simultaneously as a surge suppressor.

Surge suppressors

- Without LED (also for spring-type terminals)
  Sizes S00 to S2
- With LED (also for spring-type terminals)
  Sizes S00 to S2

All 3RT2 contactors and 3RH2 contactor relays can be retrofitted with RC elements or varistors for damping opening surges in the coil. Diodes or diode assemblies (comprising noise suppression diodes and Zener diodes for short break times) can be used.

The surge suppressors are plugged onto the front of size S00 contactors. Space is provided for them next to a snap-on auxiliary switch block.

Varistors, RC elements or diode assemblies can be plugged onto the front of size S0 and S2 contactors.

Coupling contactors are supplied either without overvoltage damping or with a suppressor diode, varistor or diode connected as standard, according to the version.

Note:

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

Coupling links for control by PLC

IEC 60947 and EN 60947

The coupling links are suitable for use in any climate. They are finger-safe according to EN 50274. The terminal designations comply with EN 50005.

System-compatible operation with 24 V DC,
operating range 17 to 30 V.

Low power consumption of 0.5 W in conformity with the technical specifications of the solid-state systems. An LED indicates the switching state.

Surge suppression

The 3RH2924-1GP11 coupling link has an integrated surge suppressor (varistor) for the contactor coil being switched.

Mounting

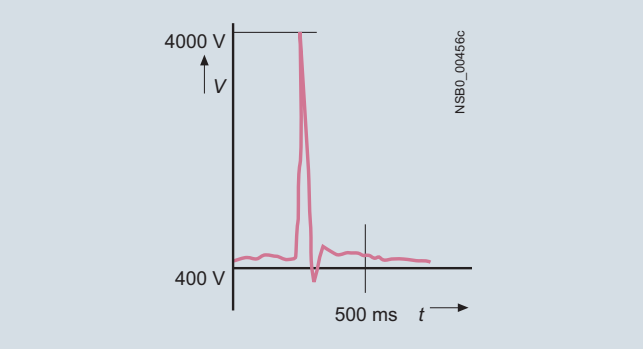
The 3RH2924-1GP11 coupling link is mounted on the contactor coil size S0 using a coil connection module.

General data

EMC suppression module, three-phase for size S00 contactors

EMC suppression modules

A so-called counter-e.m.f. (electromotive force) is produced when motors or various inductive loads are turned off. Voltage peaks of up to 4 000 V may occur as a result, with a frequency spectrum from 1 kHz to 10 MHz and a rate of voltage variation from 0.1 to 20 V/ns.



Voltage curve without suppression

Capacitive input to various analog and digital signals makes it necessary to suppress interference in the load circuit.

Reducing contact arcing

The connection between the main current path and the EMC suppression module enables contact arcing, which is responsible for contact erosion and the majority of clicking noises, to be reduced; this in turn is conducive to an electromagnetically compatible design.

Higher operational reliability

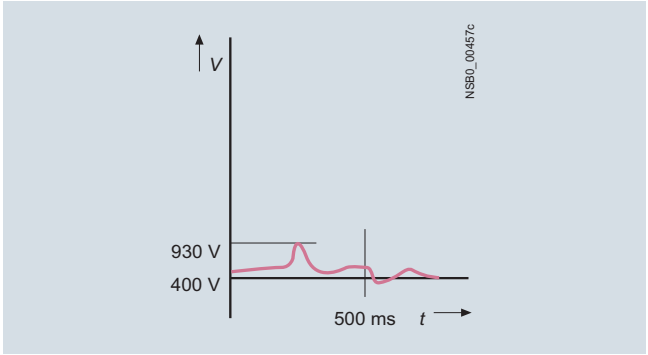
Since the EMC suppression module achieves a significant reduction in radio-frequency components and the voltage level in three phases, the contact endurance is also improved considerably. This makes an important contribution towards enhancing the reliability and availability of the system as a whole.

Dispensing with fine graduations

There is no need for fine graduations within each performance class, as smaller motors inherently have a higher inductance, so that one solution for all fixed-speed operating mechanisms up to 5.5 kW is adequate.

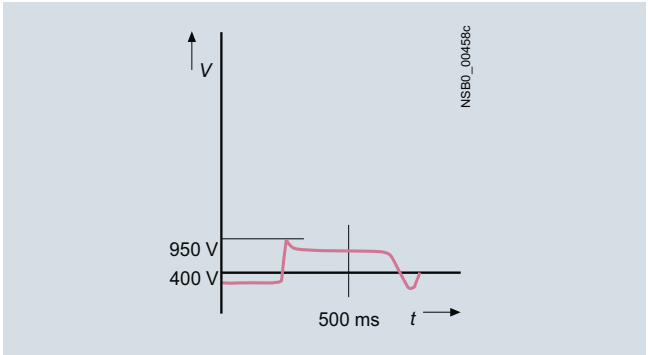
Two electrical versions are available:

- The advantages of the RC circuit lie mainly in the reduction in the rate of rise and in its RF damping ability. The selected values ensure effective interference suppression over a wide range.



Voltage curve with RC circuit

- The varistor circuit can absorb a high energy level and can also be used for frequencies ranging from 10 to 400 Hz (closed-loop controlled operating mechanisms). There is no limiting below the knee-point voltage, however.



Voltage curve with varistor circuit

Sealable covers

When contactors and contactor relays are used in safety-related applications, it must be ensured that it is impossible to operate the contactors manually.

For SIRIUS contactors there are sealable covers available for this purpose as accessories; these prevent accidental manual operation. These are transparent molded-plastic caps with a bracket that enables the contactor to be sealed.

Solder pin adapters

The solder pin adapters for the contactors size S00, up to 5.5 kW or 12 A (AC-1/AC-3), are available in two versions:

- Solder pin adapter for contactors with one integrated auxiliary contact
- Solder pin adapter for contactors with mounted 4-pole auxiliary switch block

3

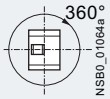
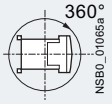
Technical specifications

Time-delay auxiliary switches

Version				3RA2813	3RA2814	3RA2815
		Type				
		Function		ON-delay	OFF-delay with control signal	OFF-delay without control signal
		Dimensions		[1]		
General data						
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III			V AC	300		
Rated impulse withstand voltage U_{imp}			kV AC	4		
Operating range of excitation				0.85 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency		
Rated power			W	1		
• Power consumption at 230 V AC, 50 Hz			VA	2		
Rated operational currents I_e				1		
• AC-15	At 24 ... 250 V, 50 Hz		A	3		
• DC-13	- At 24 V		A	1		
	- At 125 V		A	0.2		
	- At 250 V		A	0.1		
Short-circuit protection						
• Fuse links, gG operational class: DIAZED, type 5SB			A	4		
Switching frequency for load						
• With I_e at 230 V AC			h^{-1}	2 500		
• With 3RT2 contactor at 230 V AC			h^{-1}	2 500		
Recovery time			ms	150		--
Minimum ON period			ms	--	35	200
Residual current, max.			mA	--		
Voltage drop, max. with conducting output			VA	--		
Setting accuracy, typ. with reference to upper limit of scale				±15 %		
Repeat accuracy, max.				±1 %		
Electrical endurance at AC-15, 250 V, 3 A		Operating cycles		100 000		
Mechanical endurance		Operating cycles		10 x 10^6		
Permissible ambient temperature						
• During operation			°C	-25 ... +60		
• During storage			°C	-40 ... +80		
Degree of protection acc. to IEC 60947-1, Appendix C				IP20		
Shock resistance Half-sine acc. to IEC 60068-2-27			*g*/ms	15/11		
Vibration resistance according to IEC 60068-2-6			Hz/mm	10 ... 55/0.35		
Electromagnetic compatibility (EMC)				IEC 61000-6-2, IEC 61000-6-4, IEC 61812-1, IEC 60947-4-1		
Overvoltage protection				Varistor integrated		
Permissible mounting position				Any (see contactor)		
Conductor cross-sections						
Connection type				**Screw terminals**		
• Solid			mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)		
• Finely stranded with end sleeve			mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)		
• AWG cables, solid or stranded			AWG	2 x (20 ... 14)		
• Terminal screws				M3 (for standard screw driver size 2 or Pozidriv 2)		
• Tightening torque			Nm	0.8 ... 1.2		
Connection type				**Spring-type terminals**		
• Solid			mm^2	2 x (0.25 ... 1.5)		
• Finely stranded with end sleeve			mm^2	2 x (0.25 ... 1.5)		
• Finely stranded			mm^2	2 x (0.25 ... 1.5)		
• AWG cables, solid or stranded			AWG	2 x (24 ... 16)		
• Operating devices			mm	3.0 x 0.5		

[1] Dimensions with mounted function module, see 3RT20 contactors, pages 3/19 and 3/24.

General data

Version	Type	3RT2916-2BE01	3RT2916-2BK01	3RT2916-2BL01
	Function	OFF-delay devices		
General data				
Connectable contactor sizes Caution! Only contactors and contactor relays with DC operation can be connected.				
• DC supply		S00/S0/S2	S00/S0/S2	S00/S0/S2
• AC supply		--	S00/S0	S00/S0
	Type	3RT201.-1BB4., 3RT202.-1BB4., 3RT203.-1NB3., 3RH2...-1BB40	3RT201.-1BF4., 3RT202.-1BF4., 3RT203.-1NF3., 3RH2...-1BF40	3RT201.-1BM4./1BP4., 3RT202.-1BM4./1BP4., 3RT203.-1NP3., 3RH2...-1BM40/1BP40
Permissible mounting position				
Mechanical endurance	Operating cycles	30 million		
Endurance, electrical approx.	Operating cycles	>1 million		
Switching frequency z max. (at T_u = 60 °C)	h^{-1}	300		
Permissible ambient temperature T_u				
• During operation				
- Side-by-side mounting without distance	°C	-25 ... +50		
- Side-by-side mounting with 5 mm distance	°C	-25 ... +60		
• During storage	°C	-40 ... +80		
Conductor cross-sections		[2]		
U_{sp} = Coil voltage T_{sp} = Coil temperature				
Control				
Rated control supply voltage U_s Operating range	V	24 (DC) 0.9 ... 1.1 U_s	110 (AC/DC)	220/230 (AC/DC)
Rated frequency *f* with AC supply	Hz ±5 %	--	50/60	50/60
OFF-delay[1]				
(minimum times at U_{sp} = 0.9 x U_s, T_{sp} = 20 °C)		Notes: In practice the mean value is 1.5 times the minimum time.		
• S00	t_{off} > ms	200	100	500
• S0	t_{off} > ms	100	80	300
• S2 (only for DC supply)	t_{off} > ms	100	250	800
ON-delay		Notes: The total ON-delay = Contactor make-time + t_{on}		
(maximum at U_{sp} = 0.9 x U_s, T_{sp} = 20 °C)				
• S00	t_{on} < ms	10	60	200
• S0	t_{on} < ms	10	80	250
• S2 (only for DC supply)	t_{on} > ms	40	40	40
Installed capacity C				
3RT1916-2B.01	µF	2 000	68	68
Capacitor voltage	V	35	180	350
Power loss P_v max. approx.	W	0.4	0.5	1
Surge suppression		With varistor, integrated		

[1] Doubling the delay time can be achieved by doubling the capacitance. Commercially available capacitors can be used, which can be connected to terminals C+ and Z–.

[2] See 3RT201 contactors, page 3/19.

Version	Type		3RT2926-2P
	Function		Pneumatic delay block[1]
General data			
Rated insulation voltage U_i (pollution degree 3)		V	690
Mechanical endurance		Operating cycles	5 million
Electrical endurance at I_e		Operating cycles	1 million
Permissible ambient temperature			
• During operation		°C	-25 ... +60
• During storage		°C	-50 ... +80
Rated operational currents I_e According to IEC 60947 utilization categories			
• AC-12		A	10
• AC-15/AC-14 at U_e	Up to 230/220 V	A	6
	400/380 V	A	4
	500 V	A	2.5
	690/660 V	A	1.5
• DC-13 at U_e	At 24 V	A	4
	48 V	A	2
	110 V	A	0.7
	220 V	A	0.3
	440 V	A	0.15
Short-circuit test with fuse links of operational class gG with short-circuit current I_k = 1 kA according to IEC 60947-5-1		A	10
Time delay			
• Accuracy			±10 %
Conductor cross-sections			
• Solid, stranded		mm^2	2 x (0.5 ... 1.5)[2] or 2 x (0.75 ... 2.5)[2]
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)[2] or 2 x (0.75 ... 2.5)[2]
• AWG cables		AWG	2 x (20 ... 16)[2] or 2 x (18 ... 14)[2]
• Tightening torque of the terminal screws		Nm	0.8 ... 1.1
cULus rated data			
• Rated voltage		V AC	600
• Switching capacity			A 600, Q 600

[1] For sizes S0 and S2.
In addition to the pneumatic delay block, no other auxiliary contacts are permitted.

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

Version	Type		3RT2926-3A
	Function		Mechanical latching block for 3RT2.2. contactors
General data			
Standards			IEC 61812-1
Rated insulation voltage U_i (pollution degree 3)		V	690
Mechanical endurance			
• With contactor 3RT2.2.		Operating cycles	3 million
Permissible ambient temperature			
• During operation		°C	-25 ... +60
• During storage		°C	-50 ... +80
Degree of protection acc. to IEC 60947-1, Appendix C			IP20
Operating range of the solenoid coil At AC 50/60 Hz and DC			0.85 ... 1.1 x U_s
Power consumption of the solenoid coils of the unlocking magnet (for cold coil and 1.0 x U_s) AC and DC operation		W	Approx. 4
Command duration for de-energizing			
• AC operation		ms	18 ... 31
• DC operation		ms	18 ... 26
Conductor cross-sections			
• Solid		mm^2	2 x (0.5 ... 2.5); 1 x 4
• AWG cables, solid		AWG	2 x 14; 1 x 12
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 2.5); 1 x 2.5
• AWG cables, finely stranded with end sleeve		AWG	2 x 14; 1 x 12
Tightening torque of the terminal screws		Nm	0.8 ... 1.1
		lb.in	7 ... 9.5

General data

Version	Type		3RT1900-4RE01	3RT1916-4RD01	3RT1926-4RD01
Connection modules for contactors with screw terminals			S00, S0 connectors	S00 adapters	S0 adapters
General data					
Rated insulation voltage U_i (pollution degree 3)		V	690		
Rated impulse withstand voltage U_{imp} (pollution degree 3)		kV	6		
Rated operational voltage U_e		V	440		
Rated frequency f For AC operation		Hz	50/60		
Rated operational current I_e AC-3 at 400 V		A	25	20	25
Mechanical endurance	Operating cycles		10 million		
Electrical endurance at I_e	Operating cycles		1 million		
Protective separation according to IEC 60947-1 (pollution degree 3)		V	400		
Permissible ambient temperature					
• During operation		°C	-25 ... +60		
• During storage		°C	-50 ... +80		
Degree of protection acc. to IEC 60529			IP20		
Conductor cross-sections					
Connection type			**Screw terminals**		
• Solid		mm^2	1 x (0.5 ... 6)		
• Finely stranded without/with end sleeve		mm^2	1 x (0.5 ... 6)		
• Stranded		mm^2	1 x (0.5 ... 6)		
• AWG cables, solid or stranded		AWG	1 x (20 ... 10)		
• Tightening torque		Nm	0.6 ... 0.8		
• Corresponding opening tool			Short-slot screwdriver PZ2		
CSA and UL rated data					
Rated operational voltage U_e		V	480		
Rated insulation voltage U_i		V	600		
Uninterrupted current, at 40 °C		A	16/25	16	25
Short-circuit protection[1]					
• At 600 V		kA	5		
• CLASS RK5 fuse		A	100	60	100
• Circuit breakers with overload protection acc. to UL 489		A	100	60	100
Combination motor controllers type E according to UL 508					
	At 480 V	Type	3RV202		
		A	22	--	22
		kA	65	--	65
	At 600 V	Type	3RV202		
		A	22	--	22
		kA	10	--	10

[1] For more information about short-circuit values, e.g. for protection against short-circuit currents, see the UL reports on the individual devices, www.siemens.com/sirius/manuals.

For the dimensioning of load feeders, see Configuration Manual "Configuring SIRIUS Innovations for UL", http://support.automation.siemens.com/WW/view/en/53433538.

Version	Type		**3RH2924-1GP11**	**3RH2914-.GP11**
Coupling links			**Coupling links for PLC**	**Coupling links for PLC**
Mounting on contactors of size			**S0**	**S00 to S2**
General data				
Standards			IEC 60947	
Rated insulation voltage U_i (pollution degree 3)		V	300	
Protective separation between coil and contacts acc. to IEC 60947-1, Appendix N		V AC	Up to 300	
Degree of protection acc. to IEC 60947-1, Appendix C				
• Connections			IP20	IP 20
• Enclosure			IP40	IP 20
Permissible ambient temperature				
• During operation		°C	-25 ... +60	
• During storage		°C	-40 ... +80	
Control side				
Rated control supply voltage U_s		V DC	24	
Operating range		V DC	17 ... 30	
Power consumption at U_s		W	0.5	
Nominal current input		mA	20	
Release voltage		V	≥ 4	
Function display			Yellow LED	
Protection circuit			Varistor	
Load side				
Mechanical endurance	Operating cycles		20 million	10 million
Electrical endurance at I_e	Operating cycles		0.1 million	0.1 million
Switching frequency		h^{-1}	5 000 operating cycles	
Make-time		ms	Approx. 7	
Break-time		ms	Approx. 4	
Bounce time		ms	Approx. 2	
Contact material			$AgSnO_2$	
Switching voltage		V AC/DC	24 ... 250	
Rated operational current I_e				
• AC-15/AC-14 at 230 V		A	3	
• DC-13 at 230 V		A	0.1	
Permissible residual current of the electronics (with 0 signal)		mA	2.5	
Conductor cross-sections				
Connection type			**Screw terminals**	
• Solid		mm^2	2 x (0.5 ... 2.5)	
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)	
Terminal screws			M3	
Connection type			**Spring-type terminals**	
• Solid		mm^2	--	2 x (0.25 ... 1.5)
• Finely stranded with/without end sleeve		mm^2	--	2 x (0.25 ... 1.5)
• AWG cables, solid or stranded		AWG	--	2 x (24 ... 16)
• Operating devices		mm	--	3.0 x 0.5

Options

Auxiliary switch: Terminal designations and identification numbers for auxiliary contacts

Terminal designations

The terminal designations are 2-digit, e.g. 13, 14, 21, 22:

- Tens digit: Sequence digit
  - Related terminals have the same sequence digit
- Units digit: Function digit
  - 1-2 for normally closed contacts (NC)
  - 3-4 for normally open contacts (NO)

Identification numbers

The identification number indicates the number and type of the auxiliary contacts, e.g. 40, 31, 22, 13:

- 1. digit: number of normally open contacts (NO)
- 2. digit: number of normally closed contacts (NC)

Examples:

- 31 = 3 NO + 1 NC
- 40 = 4 NO

Selection aid for mountable auxiliary switch blocks for power contactors and contactor relays

The auxiliary switch blocks of the 3RH29 series for mounting on the front and side can be used for power contactors as well as for contactor relays.

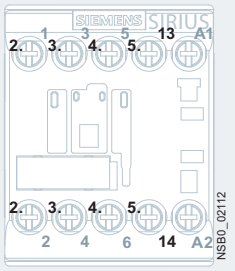
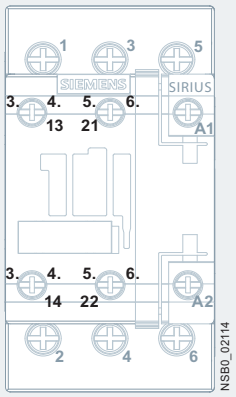
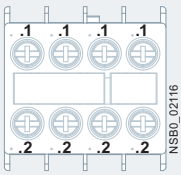
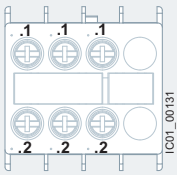
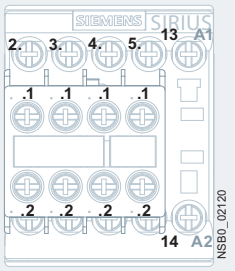
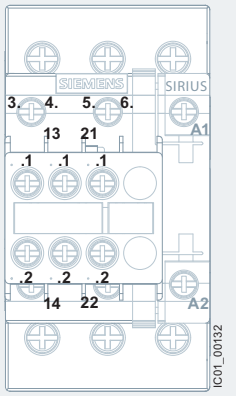
The possible combinations of basic unit and mounted auxiliary switch block can be found in the tables on pages 3/59 to 3/63.

Where the columns and lines intersect (blue and green in the example) you will find the identification number for the combination of basic unit (column) and auxiliary switch block (line).

Additional auxiliary switch blocks			3-pole contactors		
Article No.	Auxiliary contacts		3RT201	3RT201	3RT20.
	Version		S00	S00	S0/S2
	NO	NC	10	01	11
			13 14	21 22	13 21 14 22
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.
			According to EN 50012[1]		
Auxiliary switches without NO contact					
3RH2911-☐HA01	--	1	11	02	12
3RH2911-☐HA02	--	2	12	03	13
3RH2911-☐HA03	--	3	13	04	14
3RH2911-☐FA04	--	4	14	--	--
Auxiliary switch with 1 NO contact					
3RH2911-☐HA10	1	--	20	11	21

1 For screw terminals
2 For spring-type terminals

[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold print**. All combinations comply with EN 50005.

	Example 1	*Example 2*
Type	**3RT20 motor contactor, S00 with 1 NO**	**3RT20 motor contactor, S0 with 1 NO + 1 NC**
		
Sequence digit	2. 3. 4. 5.	3. 4. 5. 6.
Type	**Auxiliary switch with 4 NC, 3RH2911-.FA04**	**Auxiliary switch with 3 NC, 3RH2911-.HA03**
		
Function digit	.1 .1 .1 .1 .2 .2 .2 .2	.1 .1 .1 .2 .2 .2
Combination	**3RT20 motor contactor, S00 with aux. switch block**	**3RT20 motor contactor, S0 with aux. switch block**
		
Terminal designation	13 21 31 41 51 14 22 32 42 52	13 21 31 41 51 14 22 32 42 52
Result	**Ident. No. 14**	**Ident. No. 14**

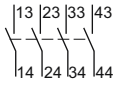
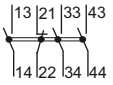
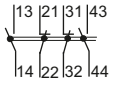
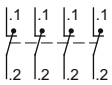
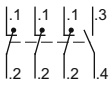
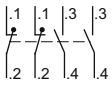
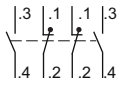
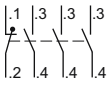
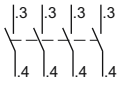
Example 1

Basic unit: 3-pole 3RT2017 motor contactor with 1 NO
Required: 1 NO + 4 NC (Ident. No. 14)
Result: 3RH2911-.FA04 auxiliary switch block

Example 2

Basic unit: 3-pole 3RT2023 motor contactor with 1 NO + 1 NC
Required: 1 NO + 4 NC (Ident. No. 14)
Result: Auxiliary switch block 3RH2911-.HA03

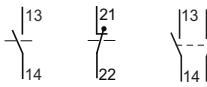
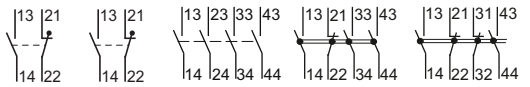
Selection and ordering data

Additional auxiliary switch blocks		3-pole contactors			4-pole contactors				Contactor relays		
Article No.	Auxiliary contacts	S00		S0/S2	S00		S0/S2		S00		
	Version	3RT201	3RT201	3RT20.	3RT231	3RT251	3RT23.	3RT25.	3RH21, 3RH24		
	NO NC	10	01	11	--	--	11	11	40E	31E	22E
											
		2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8	5. 6. 7. 8	5. 6. 7. 8
		According to EN 50012[1]			According to EN 50012[1]				According to EN 50011[1]		
Front auxiliary switches											
Without NO contact											
3RH2911-☐HA01	-- 1		**11**	02	**12**	01	01	**12**	**12**	**41X**	**32X**	**23X**
3RH2911-☐HA02	-- 2		**12**	03	**13**	02	02	**13**	--	**42E**	**33X**	24
3RH2911-☐HA03	-- 3		**13**	04	14	03	--	--	--	43	34	--
3RH2911-☐FA04	-- 4		14	--	--	--	--	--	--	**44E**	--	--
With 1 NO contact											
3RH2911-☐HA10	1 --		20	11	**21**	**10**	**10**	**21**	**21**	**50E**	**41E**	**32E**
3RH2911-☐HA11	1 1		**21**	12	**22**	11	11	**22**	**22**	**51X**	**42X**	**33X**
3RH2911-☐HA12	1 2		**22**	13	**23**	12	12	**23**	--	52	43	34
3RH2911-☐HA13	1 3		**23**	14	24	13	--	--	--	**53X**	**44X**	--
With 2 NO contacts											
3RH2911-☐HA20	2 --		30	21	**31**	20	20	**31**	**31**	**60E**	**51X**	**42X**
3RH2911-☐HA21	2 1		**31**	22	**32**	21	21	**32**	**32**	61	52	43
3RH2911-☐HA22	2 2		**32**	23	33	22	22	33	--	**62X**	53	**44X**
3RH2911-☐FA22	2 2		32	23	33	**22**	**22**	33	--	**62X**	53	**44X**
With 3 NO contacts											
3RH2911-☐HA30	3 --		40	31	**41**	30	30	**41**	**41**	70	61	52
3RH2911-☐HA31	3 1		**41**	32	42	31	31	42	42	**71X**	**62X**	**53X**
With 4 NO contacts											
3RH2911-☐FA40	4 --		50	41	51	40	40	51	51	**80E**	**71X**	**62X**

[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold print**. All combinations comply with EN 50005.

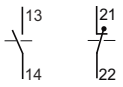
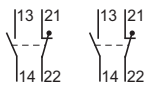
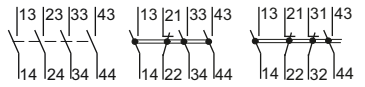
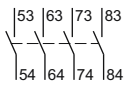
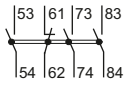
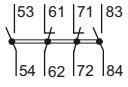
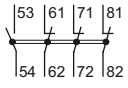
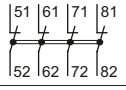
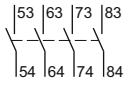
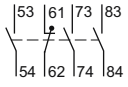
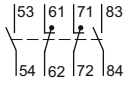
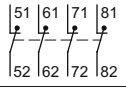
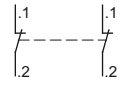
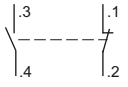
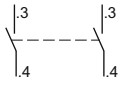
Power Contactors for Switching Motors
Accessories for 3RT2 Contactors

Auxiliary switch blocks

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article No.	Auxiliary contacts		S00		S0/S2	S00		S0/S2		S00		
	Version		3RT201	3RT201	3RT20.	3RT231	3RT251	3RT23.	3RT25.	3RH21, 3RH24		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
												
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8	5. 6. 7. 8	5. 6. 7. 8
			According to EN 50005			According to EN 50005				According to EN 50005		
Front auxiliary switches												
***With make-before-break*[1)]**												
3RH2911-□FB11	1	1	21	12	22	11	11	22	22	51	42	33
3RH2911-□FB22	2	2	32	23	33	22	22	33	--	62	53	44
3RH2911-□FC22	2	2	32	23	33	22	22	33	--	62	53	44
***With complete inscription*[2)]**												
3RH2911-1AA10	1	--	20	11	21	10	10	21	21	50	41	32
3RH2911-1BA10	1	--	20	11	21	10	10	21	21	50	41	32
3RH2911-1AA01	--	1	11	02	12	01	01	12	12	41	32	23
3RH2911-1BA01	--	1	11	02	12	01	01	12	12	41	32	23
3RH2911-1LA11	1	1	21	12	22	11	11	22	22	51	42	33
3RH2911-1MA11	1	1	21	12	22	11	11	22	22	51	42	33
3RH2911-1LA20	2	--	30	21	31	20	20	31	31	60	51	42
3RH2911-1MA20	2	--	30	21	31	20	20	31	31	60	51	42

[1)] Contacts with make-before-break do not have a mirror contact function.

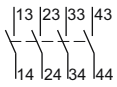
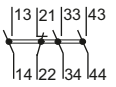
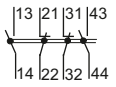
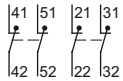
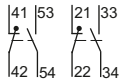
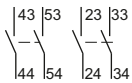
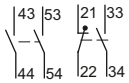
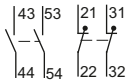
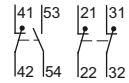
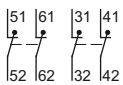
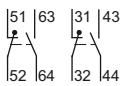
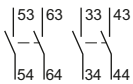
[2)] Terminals from the top or bottom; see page 3/65.

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article No.	Auxiliary contacts		S00		S0/S2	S00		S0/S2		S00		
	Version		3RT201	3RT201	3RT20.	3RT231	3RT251	3RT23.	3RT25.	3RH21, 3RH24		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
												
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8	5. 6. 7. 8	5. 6. 7. 8
			According to EN 50005			According to EN 50005				According to EN 50011[1]		
Front auxiliary switches												
With complete inscription (for contactor relays)[2]												
3RH2911-☐GA40	4	--		--	--	--	--	--	--	--	**80E**	--	--
3RH2911-☐GA31	3	1		--	--	--	--	--	--	--	**71E**	--	--
3RH2911-☐GA22	2	2		--	--	--	--	--	--	--	**62E**	--	--
3RH2911-☐GA13	1	3		--	--	--	--	--	--	--	**53E**	--	--
3RH2911-☐GA04	--	4		--	--	--	--	--	--	--	**44E**	--	--
With complete inscription; special version												
3RH2911-☐XA40 -0MA0	4	--		50	41	51	40	40	51	51	**80E**	**71X**	**62X**
3RH2911-☐XA31 -0MA0	3	1		41	32	42	31	31	42	42	**71E**	**62X**	53
3RH2911-☐XA22 -0MA0	2	2		32	23	33	22	22	33	--	**62E**	53	**44X**
3RH2911-☐XA04 -0MA0	--	4		14	--	--	--	--	--	--	**44E**	--	--
Solid-state compatible												
3RH2911-☐NF02	--	2		12	03	13	02	02	13	--	42	33	24
3RH2911-☐NF11	1	1		21	12	22	11	11	22	22	51	42	33
3RH2911-☐NF20	2	--		30	21	31	20	20	31	31	60	51	42

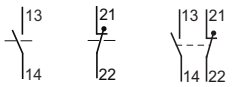
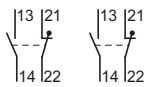
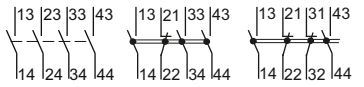
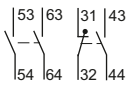
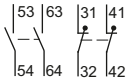
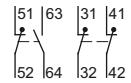
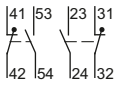
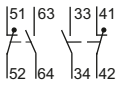
[1] Combinations according to EN 50011 and IEC 60947-5-1 are in **bold print**.
All combinations comply with EN 50005.

[2] Ordering data, see Accessories for 3RH2 Contactor Relays, Chapter 5.

Auxiliary switch blocks

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article No.	Auxiliary contacts		S00		S0/S2	S00		S0/S2		S00		
	Version		3RT201	3RT201	3RT20.	3RT231	3RT251	3RT23.	3RT25.	3RH21, 3RH24		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
												
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8	5. 6. 7. 8	5. 6. 7. 8
			According to EN 50012[1]			According to EN 50012[1]				According to EN 50011[1]		
Lateral auxiliary switches												
For size S00			Left	Right								
3RH2911-☐DA02	--	2			**12**	--	--	02	02	--	--	--	--	--
3RH2911-☐DA02	--	4			14	--	--	--	--	--	--	--	--	--
3RH2911-☐DA11	1	1			**21**	--	--	11	11	--	--	--	--	--
3RH2911-☐DA11	2	2			32	--	--	22	22	--	--	--	--	--
3RH2911-☐DA20	2	--			30	--	--	20	20	--	--	--	--	--
3RH2911-☐DA20	4	--			50	--	--	40	40	--	--	--	--	--
3RH2911-☐DA20 + **3RH2911-☐DA11**	2 1	-- 1			**41**	--	--	31	31	--	--	--	--	--
3RH2911-☐DA20 + **3RH2911-☐DA02**	2 --	-- 2			**32**	--	--	22	22	--	--	--	--	--
3RH2911-☐DA11 + **3RH2911-☐DA02**	1 --	1 2			**23**	--	--	13	--	--	--	--	--	--
For size S0/S2			Left	Right										
3RH2921-☐DA02	--	2			12	03	**13**	02	02	**13**	--	--	--	--
3RH2921-☐DA02	--	4			14	--	--	--	--	--	--	--	--	--
3RH2921-☐DA11	1	1			21	12	**22**	11	11	**22**	**22**	--	--	--
3RH2921-☐DA11	2	2			32	23	33	22	22	33	--	--	--	--
3RH2921-☐DA20	2	--			30	21	**31**	20	20	**31**	**31**	--	--	--
3RH2921-☐DA20	4	--			50	41	51	40	40	51	51	--	--	--

[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold print**. All combinations comply with EN 50005.

Additional auxiliary switch blocks			**3-pole contactors**			**4-pole contactors**				**Contactor relays**		
Article No.	Auxiliary contacts		**S00**		**S0/S2**	**S00**		**S0/S2**		**S00**		
	Version		**3RT201**	**3RT201**	**3RT20.**	**3RT231**	**3RT251**	**3RT23.**	**3RT25.**	**3RH21, 3RH24**		
	NO	NC	**10**	**01**	**11**	**--**	**--**	**11**	**11**	**40E**	**31E**	**22E**
												
			2. 3. 4. 5.	5. 6. 7. 8.	3. 4. 5. 6.	1. 2. 3. 4.	1. 2. 3. 4.	3. 4. 5. 6.	3. 4. 5. 6.	5. 6. 7. 8	5. 6. 7. 8	5. 6. 7. 8
			According to EN 50012[1)]			**According to EN 50012[1)]**				**According to EN 50011[1)]**		
Lateral auxiliary switches												
For size S0/S2			Left Right									
3RH2921-☐DA20 + **3RH2921-☐DA11**	2	--										
	1	1										
			41	32	42	31	31	42	42	--	--	--
3RH2921-☐DA20 + **3RH2921-☐DA02**	2	--										
	--	2										
			32	23	33	22	22	33	--	--	--	--
3RH2921-☐DA11 + **3RH2921-☐DA02**	1	1										
	--	2										
			23	14	24	13	--	--	--	--	--	--
For contactor relays			Left									
3RH2921-☐DA02	--	2										
			--	--	--	--	--	--	--	**42Z**	**33X**	24
3RH2921-☐DA11	1	1										
			--	--	--	--	--	--	--	**51X**	**42X**	**33X**
3RH2921-☐DA20	2	--										
			--	--	--	--	--	--	--	**60Z**	**51X**	**42X**
Solid-state compatible												
For size S00			Left Right									
3RH2911-2DE11	1	1										
			21	--	--	11	11	--	--	--	--	--
3RH2911-2DE11	2	2										
			32	--	--	22	22	--	--	--	--	--
For size S0/S2, S00			Left Right									
3RH2921-2DE11	1	1										
			21	12	22	11	11	22	22	--	--	--
3RH2921-2DE11	2	2										
			32	23	33	22	22	33	--	--	--	--
For contactor relays			Left									
3RH2921-☐DE11	1	1										
			--	--	--	--	--	--	--	**51X**	**42X**	**33X**

[1)] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold print**. All combinations comply with EN 50005.

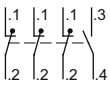
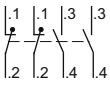
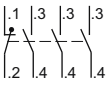
Power Contactors for Switching Motors
Accessories for 3RT2 Contactors

Auxiliary switch blocks

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


3RH2911-1HA22


3RH2911-2HA22

For contactors / contactor relays[1]	Auxiliary contacts Version			DT	Screw terminals		DT	Spring-type terminals	
					Article No.	Price per PU		Article No.	Price per PU
Type	NO	NC							
Auxiliary switch blocks for snapping onto the front									
Sizes S00 to S2[2]									
3RT2.1., 3RT2.2., 3RT2.3. 3RH21, 3RH24	--	1		►	**3RH2911-1HA01**		►	**3RH2911-2HA01**	
	--	2		►	**3RH2911-1HA02**		►	**3RH2911-2HA02**	
	--	3		B	**3RH2911-1HA03**		B	**3RH2911-2HA03**	
	1	--		B	**3RH2911-1HA10**		B	**3RH2911-2HA10**	
	1	1		►	**3RH2911-1HA11**		►	**3RH2911-2HA11**	
	1	2		►	**3RH2911-1HA12**		►	**3RH2911-2HA12**	
	1	3		►	**3RH2911-1HA13**		►	**3RH2911-2HA13**	
	2	--		►	**3RH2911-1HA20**		►	**3RH2911-2HA20**	
	2	1		B	**3RH2911-1HA21**		B	**3RH2911-2HA21**	
	2	2		►	**3RH2911-1HA22**		►	**3RH2911-2HA22**	
	3	--		B	**3RH2911-1HA30**		B	**3RH2911-2HA30**	
	3	1		►	**3RH2911-1HA31**		►	**3RH2911-2HA31**	

[1] For detailed information on use, see page 3/59.

[2] The 3RH29 auxiliary switches are also available with ring terminal lug connection. The 8th digit of the article number must be changed from a **"1"** to a **"4"**, e.g. 3RH2911-**1**HA22 ➞ 3RH2911-**4**HA22.

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

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


3RH2911-1FC22

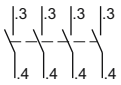
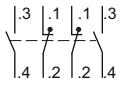
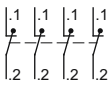
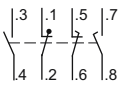
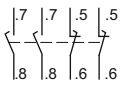

3RH2911-2FC22


3RH2911-1LA11


3RH2911-1MA11


3RH2911-1AA01


3RH2911-1BA01

For contactors / contactor relays[1]	Connections Position	Auxiliary contacts Version					DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Type		NO	NC	NO	NC							
Auxiliary switch blocks for snapping onto the front												
Sizes S00 to S2												
3RT2.1., 3RT2.2., 3RT2.3. 3RH21, 3RH24		4	--	--	--		▶	**3RH2911-1FA40**		▶	**3RH2911-2FA40**	
		2	2	--	--		B	**3RH2911-1FA22**		B	**3RH2911-2FA22**	
		--	4	--	--		B	**3RH2911-1FA04**		B	**3RH2911-2FA04**	
		--	--	1	1		▶	**3RH2911-1FB11**		▶	**3RH2911-2FB11**	
		1	1	1	1		▶	**3RH2911-1FB22**		▶	**3RH2911-2FB22**	
		--	--	2	2		▶	**3RH2911-1FC22**		▶	**3RH2911-2FC22**	
1- and 2-pole auxiliary switch blocks, cable entry from top or bottom												
3RT2.1., 3RT2.2., 3RT2.3. 3RH21, 3RH24	Top	1	--	--	--		▶	**3RH2911-1AA10**			--	
	Bottom	1	--	--	--		▶	**3RH2911-1BA10**			--	
	Top	--	1	--	--		▶	**3RH2911-1AA01**			--	
	Bottom	--	1	--	--		▶	**3RH2911-1BA01**			--	
	Top	1	1	--	--		▶	**3RH2911-1LA11**			--	
	Bottom	1	1	--	--		▶	**3RH2911-1MA11**			--	
	Top	2	--	--	--		▶	**3RH2911-1LA20**			--	
	Bottom	2	--	--	--		▶	**3RH2911-1MA20**			--	

[1] For detailed information on use, see pages 3/59 and 3/60.

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

Power Contactors for Switching Motors
Accessories for 3RT2 Contactors

Auxiliary switch blocks

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


3RH2911-1DA02


3RH2911-2DA02


3RH2911-1XA22-0MA0


3RH2911-2XA22-0MA0

For contactors / contactor relays	Auxiliary contacts Version			DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Type	NO	NC							
Auxiliary switch blocks for snapping onto the front									
Sizes S00 to S2									
3RT2.1., 3RT2.2., 3RT2.3.[1] 3RH21, 3RH24[1]	4	--	53 63 73 83 / 54 64 74 84	B	**3RH2911-1XA40-0MA0**		B	**3RH2911-2XA40-0MA0**	
	3	1	53 61 73 83 / 54 62 74 84	B	**3RH2911-1XA31-0MA0**		B	**3RH2911-2XA31-0MA0**	
	2	2	53 61 71 83 / 54 62 72 84	B	**3RH2911-1XA22-0MA0**		B	**3RH2911-2XA22-0MA0**	
	--	4	51 61 71 81 / 52 62 72 82	B	**3RH2911-1XA04-0MA0**		B	**3RH2911-2XA04-0MA0**	
Laterally mountable auxiliary switch blocks, mounting on the right and/or on the left									
Size S00			Left / Right						
3RT2.1.[2]	--	2	41 51 / 42 52 ; 21 31 / 22 32	A	**3RH2911-1DA02**		A	**3RH2911-2DA02**	
	1	1	41 53 / 42 54 ; 21 33 / 22 34	A	**3RH2911-1DA11**		A	**3RH2911-2DA11**	
	2	--	43 53 / 44 54 ; 23 33 / 24 34	A	**3RH2911-1DA20**		A	**3RH2911-2DA20**	
Sizes S0 and S2			Left / Right						
3RT2.2., 3RT2.3.[2][3]	--	2	51 61 / 52 62 ; 31 41 / 32 42	A	**3RH2921-1DA02**		A	**3RH2921-2DA02**	
	1	1	51 63 / 52 64 ; 31 43 / 32 44	A	**3RH2921-1DA11**		A	**3RH2921-2DA11**	
	2	--	53 63 / 54 64 ; 33 43 / 34 44	A	**3RH2921-1DA20**		A	**3RH2921-2DA20**	

[1] For detailed information on use, see page 3/61.
[2] For detailed information on use, see pages 3/62 and 3/63.
[3] With 3RT232., 3RT252., mountable only on the right.

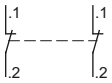
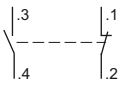
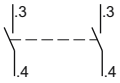
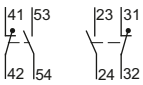
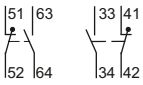
* You can order this quantity or a multiple thereof.
Illustrations are approximate

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

3RH2911-2DE11

3RH2911-1NF..

3RH2911-2NF..

For contactors / contactor relays[1]	Contacts Version			DT	Screw terminals		DT	Spring-type terminals	
					Article No.	Price per PU		Article No.	Price per PU
Type	NO	NC							
Electronic compatible auxiliary switch blocks									
• For operation in dusty atmospheres • For electronic circuits with rated operational currents I_e/AC-14 and DC-13 of 1 ... 300 mA at 3 ... 60 V • Hard gold-plated contacts • Mirror contacts acc. to IEC 60947-4-1, Appendix F, for auxiliary switches for mounting on the side (The following applies for auxiliary switch blocks with contactors of size S0 and S2: the NC contacts are mirror contacts)									
Auxiliary switch blocks for snapping onto the front[2]									
Sizes S00 to S2									
3RT2.1., 3RT2.2., 3RT2.3. 3RH21	--	2[3]		A	**3RH2911-1NF02**		A	**3RH2911-2NF02**	
	1	1[3]		▶	**3RH2911-1NF11**		▶	**3RH2911-2NF11**	
	2	--		▶	**3RH2911-1NF20**		▶	**3RH2911-2NF20**	
Laterally mountable auxiliary switch blocks, mounting on the right and/or on the left									
Size S00			Left / Right						
3RT2.1.	1	1			--		A	**3RH2911-2DE11**	
Sizes S0 and S2			Left / Right						
3RT2.2., 3RT2.3.	1	1			--		A	**3RH2921-2DE11**	

[1] For detailed information on use, see pages 3/61 and 3/63.

[2] The 3RH2911-.NF.. auxiliary switches are also available with ring terminal lug connection. In the 8th position of the article number, the **"1"** must be replaced with **"4"**, e.g.: 3RH2911-**1**NF11 ➞ 3RH2911-**4**NF11

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

Auxiliary switch blocks, delayed

Selection and ordering data

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


3RA2813-1FW10


3RA2813-2AW10

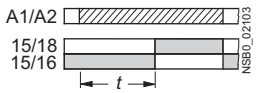
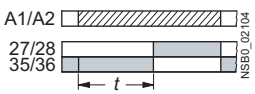
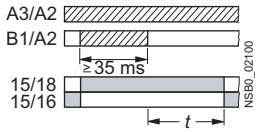
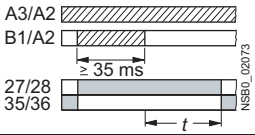
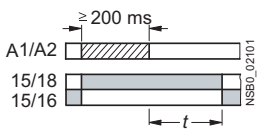
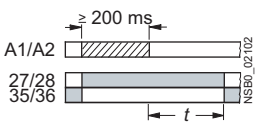
For contactors Type	Rated control supply voltage U_s [1] V	Time setting range t s	Output / auxiliary contacts	DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Solid-state time-delay auxiliary switches for mounting on 3RT2 contactors									
Sizes S00 to S2									
	The electrical connection between the solid-state time-delay auxiliary switch and the contactor underneath is established automatically when it is snapped on and locked.								
	ON-delay Varistor integrated								
3RT2., 3RH21[2] 3RH24	24 ... 240 AC/DC	0.05 ...100, (1, 10, 100 selectable)	1 CO	A	**3RA2813-1AW10**		A	**3RA2813-2AW10**	
			1 NO + 1 NC	A	**3RA2813-1FW10**		A	**3RA2813-2FW10**	
	OFF-delay with control signal Varistor integrated								
3RT2., 3RH21[2] 3RH24	24 ... 240 AC/DC	0.05 ...100, (1, 10, 100 selectable)	1 CO	A	**3RA2814-1AW10**		A	**3RA2814-2AW10**	
			1 NO + 1 NC	A	**3RA2814-1FW10**		A	**3RA2814-2FW10**	
	OFF-delay without control signal[3] Varistor integrated								
3RT2., 3RH21[2] 3RH24	24 ... 240 AC/DC	0.05 ...100, (1, 10, 100 selectable)	1 CO	A	**3RA2815-1AW10**		A	**3RA2815-2AW10**	
			1 NO + 1 NC	A	**3RA2815-1FW10**		A	**3RA2815-2FW10**	

[1] AC voltage values apply for 50 Hz and 60 Hz.
[2] Cannot be fitted onto coupling relays.
[3] Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact change-over to the correct setting.

For technical specifications, see page 3/53.

Operating travel diagrams

Function	Function charts
	Timing relay energized Contact closed Contact open

Solid-state time-delay auxiliary switches	With 1 CO contact	With 1 NO contact + 1 NC contact
ON-delay (varistor integrated)	3RA2813-.AW10 	3RA2813-.FW10 
OFF-delay with control signal (varistor integrated)	3RA2814-.AW10 	3RA2814-.FW10 
OFF-delay without control signal (varistor integrated)	3RA2815-.AW10 	3RA2815-.FW10 

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

For contactors	Rated control supply voltage U_s	Time setting range t	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Type	V	s		Article No. / Price per PU			
Pneumatic time-delay auxiliary switches for mounting on 3RT2 contactors							
Size S0							
Auxiliary contacts 1 NO and 1 NC[1]							
ON-delay							
3RT202.,	--	0.1 ... 30	C	**3RT2926-2PA01**	1	1 unit	41B
		0.1 ... 30[2]	C	**3RT2926-2PA01-0MT0**	1	1 unit	41B
		1 ... 60	C	**3RT2926-2PA11**	1	1 unit	41B
		1 ... 60[2]	C	**3RT2926-2PA11-0MT0**	1	1 unit	41B
OFF-delay							
3RT202.	--	0.1 ... 30	C	**3RT2926-2PR01**	1	1 unit	41B
		0.1 ... 30[2]	C	**3RT2926-2PR01-0MT0**	1	1 unit	41B
		1 ... 60	C	**3RT2926-2PR11**	1	1 unit	41B
		1 ... 60[2]	C	**3RT2926-2PR11-0MT0**	1	1 unit	41B

3RT2926-2P. . .

For technical specifications, see page 3/55.

1) In addition to these, no other auxiliary contacts are permitted.
2) Certificate for furnaces according to EN 50156-1 on request.

Delay and latching blocks

Selection and ordering data

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


3RA2812-1DW10


3RA2811-2CW10

For contactors	Rated control supply voltage U_s [1]	Time setting range *t*	DT	Screw terminals	DT	Spring-type terminals
Type	V AC/DC	s		Article No. / Price per PU		Article No. / Price per PU
Timing relays for mounting on 3RT2 contactors						
	Sizes S00 to S2					
	The electrical connection between the timing relay and the contactor underneath is established automatically when it is snapped on and locked.					
	ON-delay Two-wire design, varistor integrated					
3RT20.., 3RT23.., 3RT25.., 3RH21[2], 3RH24	24 ... 240	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2811-1CW10**	A	**3RA2811-2CW10**
3RT203.	24 ... 90	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2831-1DG10**	A	**3RA2831-2DG10**
	90 ... 240		A	**3RA2831-1DH10**	A	**3RA2831-2DH10**
	OFF-delay with control signal Varistor integrated					
3RT20.., 3RT23.., 3RT25.., 3RH21[2], 3RH24	24 ... 240	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2812-1DW10**	A	**3RA2812-2DW10**
3RT203.	24 ... 90	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2832-1DG10**	A	**3RA2832-2DG10**
	90 ... 240		A	**3RA2832-1DH10**	A	**3RA2832-2DH10**

[1] AC voltage values apply for 50 Hz and 60 Hz.
[2] Cannot be fitted onto coupling relays.

For technical specifications, see page 3/195.

For contactors	Rated control supply voltage U_s	Time setting range *t*	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Type	V	s		Article No. / Price per PU			
OFF-delay devices							
	Sizes S00 to S2						
	For contactors with DC operation Non-adjustable delay time						
3RT201.-1BF4., 3RT202.-1BF4., 3RT203.-1NF3., 3RH2...-1BF40	110 AC/DC	S00: > 0,1 S0: > 0,08 S2: > 0,25	B	**3RT2916-2BK01**	1	1 unit	41B
	110 DC						
3RT201.-1BM4./1BP4., 3RT202.-1BM4./1BP4., 3RT203.-1NP3., 3RH2...-1BM40/1BP40	220/230 AC/DC	S00: > 0,5 S0: > 0,3 S2: > 0,8	B	**3RT2916-2BL01**	1	1 unit	41B
	220/230 DC						
3RT201.-1BB4., 3RT202.-1BB4., 3RT203.-1NB3., 3RH2...-1BB40	24 DC	S00: > 0,2 S0: > 0,1 S2: > 0,1	A	**3RT2916-2BE01**	1	1 unit	41B


3RT2916-2B.01

Mechanical latching blocks

Size S0

For snapping onto the front of contactors

The contactor remains in the energized state after a voltage failure

3RT202.	24 AC/DC	--	B	**3RT2926-3AB31**	1	1 unit	41B
	110 AC/DC	--	B	**3RT2926-3AF31**	1	1 unit	41B
	230 AC/DC	--	B	**3RT2926-3AP31**	1	1 unit	41B


3RT2926-3A.31

For technical specifications, see page 3/54.

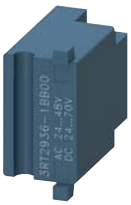
* You can order this quantity or a multiple thereof.
Illustrations are approximate

Selection and ordering data

For contactors Type	Version	Rated control supply voltage U_s[1)] AC operation V AC	Rated control supply voltage U_s[1)] DC operation V DC	DT	Article No.[2)]	Price per PU	PU (UNIT, SET, M)	PKG*[2)]	PG
Surge suppressors without LED (also for spring-type terminals)									
Size S00									
	For plugging onto the front side of the contactors (with and without auxiliary switch block)								
3RT2.1, 3RH2.	**Varistors**	24 ... 48	24 ... 70	▶	**3RT2916-1BB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2916-1BC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2916-1BD00**		1	1 unit	41B
		240 ... 400	--	▶	**3RT2916-1BE00**		1	1 unit	41B
		400 ... 600	--	A	**3RT2916-1BF00**		1	1 unit	41B
3RT2.1, 3RH2.	**RC elements**	24 ... 48	24 ... 70	▶	**3RT2916-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2916-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2916-1CD00**		1	1 unit	41B
		240 ... 400	--	A	**3RT2916-1CE00**		1	1 unit	41B
		400 ... 600	--	A	**3RT2916-1CF00**		1	1 unit	41B
3RT2.1, 3RH2.	**Noise suppression diodes**	--	12 ... 250	▶	**3RT2916-1DG00**		1	1 unit	41B
3RT2.1, 3RH2.	**Diode assemblies** (diode and Zener diode) for DC operation	--	12 ... 250	▶	**3RT2916-1EH00**		1	1 unit	41B
Size S0									
	For plugging onto the front side of the contactors (prior to mounting of the auxiliary switch block)								
3RT2.2	**Varistors**	24 ... 48	24 ... 70	▶	**3RT2926-1BB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2926-1BC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2926-1BD00**		1	1 unit	41B
		240 ... 400	--	▶	**3RT2926-1BE00**		1	1 unit	41B
		400 ... 600	--	A	**3RT2926-1BF00**		1	1 unit	41B
3RT2.2	**RC elements**	24 ... 48	24 ... 70	▶	**3RT2926-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2926-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2926-1CD00**		1	1 unit	41B
		240 ... 400	--	A	**3RT2926-1CE00**		1	1 unit	41B
		400 ... 600	--	A	**3RT2926-1CF00**		1	1 unit	41B
3RT2.2	**Diode assembly** for DC operation	--	24	▶	**3RT2926-1ER00**		1	1 unit	41B
		--	30 ... 250	▶	**3RT2926-1ES00**		1	1 unit	41B
Size S2 NEW									
	For plugging onto the front side of the contactors (prior to mounting of the auxiliary switch block)								
3RT2.3.	**Varistors**	24 ... 48	24 ... 70	▶	**3RT2936-1BB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2936-1BC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2936-1BD00**		1	1 unit	41B
		240 ... 400	--	B	**3RT2936-1BE00**		1	1 unit	41B
		400 ... 600	--	B	**3RT2936-1BF00**		1	1 unit	41B
3RT2.3.	**RC elements**	24 ... 48	24 ... 70	▶	**3RT2936-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT2936-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT2936-1CD00**		1	1 unit	41B
		240 ... 400	--	B	**3RT2936-1CE00**		1	1 unit	41B
		400 ... 600	--	B	**3RT2936-1CF00**		1	1 unit	41B
3RT2.3.	**Diode assembly** for DC operation	--	24	▶	**3RT2936-1ER00**		1	1 unit	41B
		--	30 ... 250	▶	**3RT2936-1ES00**		1	1 unit	41B


3RT2916-1B.00


3RT2926-1E.00


3RT2936-1B.00


3RT2936-1E.00

1) Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

2) For packs of 10 or 5 units, "**-Z**" and order code "**X90**" must be added to the article number.

Surge suppressors

Surge suppressors with LED (also for spring-type terminals)

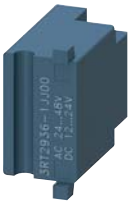
For contactors	Version	Rated control supply voltage U_s [1] AC operation	DC operation	Power consumption P of the LED at U_s	DT	Article No. [2]	Price per PU	PU (UNIT, SET, M)	PKG* [2]	PG
Type		V AC	V DC	mW						
Size S00										
	For plugging onto the front side of the contactors (with and without auxiliary switch block)									
3RT2.1., 3RH2.	**Varistors**	24 ... 48	12 ... 24	10 ... 120	►	**3RT2916-1JJ00**		1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	►	**3RT2916-1JK00**		1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	►	**3RT2916-1JL00**		1	1 unit	41B
		--	150 ... 250	160 ... 950	A	**3RT2916-1JP00**		1	1 unit	41B
3RT2.1., 3RH2.	**Noise suppression diodes**	--	24 ... 70	20 ... 470	►	**3RT2916-1LM00**		1	1 unit	41B
		--	50 ... 150	50 ... 700	A	**3RT2916-1LN00**		1	1 unit	41B
		--	150 ... 250	160 ... 950	►	**3RT2916-1LP00**		1	1 unit	41B

3RT2916-1J.00

Size S0										
	For plugging onto the front side of the contactors (prior to mounting of the auxiliary switch block)									
3RT2.2.	**Varistors**	24 ... 48	12 ... 24	10 ... 120	►	**3RT2926-1JJ00**		1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	►	**3RT2926-1JK00**		1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	►	**3RT2926-1JL00**		1	1 unit	41B
3RT2.2.	**Diode assembly**	--	24	20 ... 470	►	**3RT2926-1MR00**		1	1 unit	41B

3RT2926-1MR00

Size S2 NEW										
	For plugging onto the front side of the contactors (prior to mounting of the auxiliary switch block)									
3RT2.3.	**Varistors**	24 ... 48	12 ... 24	10 ... 120	B	**3RT2936-1JJ00**		1	1 unit	41B
		48 ... 127	24 ... 70	20 ... 470	B	**3RT2936-1JK00**		1	1 unit	41B
		127 ... 240	70 ... 150	50 ... 700	►	**3RT2936-1JL00**		1	1 unit	41B



3RT2936-1J.00

[1] Can be used for AC operation for 50/60 Hz.
Please inquire about further voltages.

[2] For packs of 10 or 5 units, "**-Z**" and order code "**X90**" must be added to the article number

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

Selection and ordering data

	For contactors Type	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMC suppression modules; 3-phase, up to 7.5 kW								
Size S00 (for contactors with AC or DC operation)[1]								
				Screw terminals				
 3RT2916-1PA.	3RT201	**RC elements** (3 x 220 Ω/0.22 µF)						
		Up to 400 V	►	**3RT2916-1PA1**		1	1 unit	41B
		Up to 575 V	A	**3RT2916-1PA2**		1	1 unit	41B
		Up to 690 V	C	**3RT2916-1PA3**		1	1 unit	41B
	3RT201	**Varistors**						
		Up to 400 V	A	**3RT2916-1PB1**		1	1 unit	41B
		Up to 575 V	A	**3RT2916-1PB2**		1	1 unit	41B
		Up to 690 V	C	**3RT2916-1PB3**		1	1 unit	41B
Coupling links for control by PLC								
Size S0								
 3RH2924-1GP11	3RT2. 2	**For mounting onto the coil terminals of the contactors (only for contactors with screw terminals)** With LED for indicating switching state. With integrated varistor for damping opening surges. 24 V DC control, 17 ... 30 V DC operating range	►	**3RH2924-1GP11**		1	1 unit	41B
Sizes S00 to S2 NEW								
 3RH2914-1GP11	3RT2. 1, 3RT2. 2, 3RT2. 3	**For mounting on the front side of contactors with AC, DC or AC/DC operation** 24 V DC control, 17 ... 30 V DC operating range	B	**3RH2914-1GP11**		1	1 unit	41B
				Spring-type terminals				
		24 V DC control, 17 ... 30 V DC operating range	B	**3RH2914-2GP11**		1	1 unit	41B
Additional load modules								
Size S00								
 3RT2916-1GA00	3RT2. 1, 3RH2.	**For plugging onto the front side of the contactors with or without auxiliary switch blocks[2]** For increasing the permissible residual current and for limiting the residual voltage. It ensures the safe opening of contactors with direct control via 230 V AC semiconductor outputs of SIMATIC controllers. It acts simultaneously as a surge suppressor. Rated voltage: 50/60 Hz, 180 to 255 V AC	►	**3RT2916-1GA00**		1	1 unit	41B
LED module for indicating contactor operation								
Sizes S00 to S2								
 3RT2926-1QT00	3RT2..	**For snapping into the location hole of an inscription label on the front of a contactor** either directly on the contactor or on the front auxiliary switch. The LED module is connected to coil terminals A1 and A2 of the contactor and indicates its energized state. Yellow LED. Rated voltage: 24 ... 240 V AC/DC, with reverse polarity protection.	B	**3RT2926-1QT00**		1	5 units	41B
Control kit								
Sizes S00 to S2								
 3RT2916-4MC00		**For manual operation of the contactor contacts** for start-up and service[3]						
	3RT2. 1, 3RH2.		A	**3RT2916-4MC00**		1	5 units	41B
	3RT2. 2		A	**3RT2926-4MC00**		1	5 units	41B
	3RT2. 3		A	**3RT2936-4MC00**		1	5 units	41B

Technical specifications for coupling links, see page 3/57.

1) See also description on page 3/52.

2) For packs of 10 units, the article number must be supplemented with "**-Z**" and order code "**X90**".

3) See also Chapter 8, "ET 200S Motor Starters and Safety Motor Starters" → "Accessories", Article No. 3RK1903-0CA00.

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

3

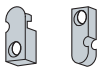
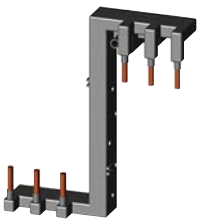
Selection and ordering data

For contactors Type	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Sealable covers							
Sizes S00 to S2							
 3RT2916-4MA10							
3RT2.1, 3RT2.2, 3RT2.3, 3RH2.[1]	Sealable covers for preventing manual operation (Not suitable for coupling relays)	A	**3RT2916-4MA10**		1	5 units	41B
Connection modules for contactors with screw terminals							
Sizes S00 and S0							
	Adapters for contactors Ambient temperature $T_{u\,max}$ = 60 °C		**Screw terminals**				
 3RT1926-4RD01							
3RT2.1, 3RH2.	Size S00, rated operational current I_e at AC-3/400 V: 20 A	B	**3RT1916-4RD01**		1	1 unit	41B
3RT2.2	Size S0, rated operational current I_e at AC-3/400 V: 25 A	B	**3RT1926-4RD01**		1	1 unit	41B
 3RT1900-4RE01							
3RT2.1, 3RT2.2, 3RH2.	**Plugs for contactors** Size S00, S0	B	**3RT1900-4RE01**		1	1 unit	41B
Terminal covers for contactors with box terminals							
Size S2 NEW							
 3RT2936-4EA2	**Covers for box terminals**						
3RT203	For 3-pole contactors	B	**3RT2936-4EA2**		1	1 unit	41B
3RT233, 3RT253	For 4-pole contactors (see Chapter 4)	B	**3RT2936-4EA4**		1	1 unit	41B
Coil connection modules							
Sizes S0 and S2							
 3RT2926-4RA11							
3RT2.2, 3RT2.3	Connection from top	A	**3RT2926-4RA11**		1	1 unit	41B
	Connection from below	A	**3RT2926-4RB11**		1	1 unit	41B
	Connection diagonally	A	**3RT2926-4RC11**		1	1 unit	41B
			Spring-type terminals				
 3RT2926-4RA12							
3RT2.2	Connection from top	A	**3RT2926-4RA12**		1	1 unit	41B
	Connection from below	A	**3RT2926-4RB12**		1	1 unit	41B
Covers for contactors with ring cable lug connections							
Size S00							
			Ring terminal lug connections				
 3RT2916-4EA13							
3RT2.1, 3RH2	**Covers for ring terminal lug connections** Single covers	B	**3RT2916-4EA13**		1	10 units	41B
Size S0							
 3RT2926-4EB13							
3RT2.2	**Covers for ring terminal lug connections** Set for one device, comprising 4 single covers: - 2 x 3RT2926-4EB13 - 2 x 3RV2928-4AA00	B	**3RT2926-4EB13**		1	1 unit	41B

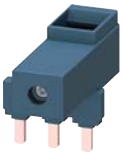
Technical specifications for connection modules, see page 3/56.

[1] Exception: contactors and contactor relays with auxiliary switch block mounted onto the front.

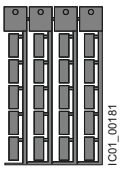
* You can order this quantity or a multiple thereof.
Illustrations are approximate

	For contactors Type	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Screw adapters for fixing the contactors								
	Sizes S0 and S2							
 NSB0_01470 3RT1926-4P	3RT2.2, 3RT2.3	Screw adapters for easier screw fixing 2 units required per contactor (1 pack contains 10 sets for 10 contactors)	C	**3RT1926-4P**		1	10 units	41B
Solder pin adapters for contactors up to 5.5 kW / 12 A								
	Size S00, up to 5.5 kW							
				Screw terminals				
  3RT1916-4KA1	3RT2.1, 3RH21	Assembly kit for soldering contactors onto a printed circuit board. For 1 contactor, 1 set is required.	A	**3RT1916-4KA1**		1	4 units	41B
Solder pin adapters for contactors up to 5.5 kW / 12 A with mounted 4-pole auxiliary switch block								
	Size S00, up to 5.5 kW							
   3RT1916-4KA2	3RT2.1, 3RH21	Assembly kit for soldering contactors with an auxiliary switch block onto a printed circuit board. For 1 contactor, 1 set is required.	B	**3RT1916-4KA2**		1	4 units	41B
Safety main current connectors for 2 contactors								
	Sizes S00 to S2							
		For series connection of 2 contactors						
 3RA2926-1A	3RT2.1		A	**3RA2916-1A**		1	1 unit	41B
	3RT2.2		A	**3RA2926-1A**		1	1 unit	41B
	3RT2.3 NEW		A	**3RA2936-1A**		1	1 unit	41B

Terminals, covers, adapters, connectors

	For contactors Type	Max. conductor cross-sections mm²	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Links for paralleling								
	Sizes S00 to S2							
 3RT1916-4BB31	**3-pole, with connection terminal**[1)2)]			**Screw terminals**				
	3RT201	25, stranded	▶	**3RT1916-4BB31**		1	1 unit	41B
 3RT2926-4BB31	3RT202	50, stranded	A	**3RT2926-4BB31**		1	1 unit	41B
 3RT2936-4BB31	3RT203 NEW	120, stranded	▶	**3RT1936-4BB31**		1	1 unit	41B
 3RT1916-4BB41	**4-pole, with connection terminal**[1)2)]							
	3RT231, 3RT251	25, stranded	C	**3RT1916-4BB41**		1	1 unit	41B

1) The links for paralleling can be reduced by one pole.
2) With sizes S00 to S2 the links for paralleling are insulated.

	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Insulation stop for securely holding back the conductor insulation on conductors up to 1 mm²							
			Spring-type terminals				
 3RT1916-4JA02	**Insulation stop strip** can be inserted in cable entry of the spring-type terminal (2 strips per contactor required)						
	• For basic units S00 (3RT2.1. or 3RH2.), removable individually	B	**3RT2916-4JA02**		1	20 units	41B
	• For auxiliary and control current on basic units size S0 and S2 (3RT2.2., 3RT2.3.) and for mountable 3RH29 auxiliary switches, removable in pairs	B	**3RT1916-4JA02**		1	20 units	41B
Tools for opening spring-type terminals							
 3RA29 08-1A	**Screwdrivers** for all SIRIUS devices with spring-type terminals Length: approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	A	**3RA2908-1A**		1	1 unit	41B
Blank labels							
 3RT2900-1SB20	**Unit labeling plates** for SIRIUS devices[1)]						
	• 10 mm × 7 mm, titanium gray	D	**3RT2900-1SB10**		100	816 units	41B
	• 20 mm × 7 mm, titanium gray	D	**3RT2900-1SB20**		100	340 units	41B
	Adhesive labels for SIRIUS devices						
	• 19 mm × 6 mm, titanium gray	D	**3RT2900-1SB60**		100	3060 units	41B

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH

(see Chapter 16, "Appendix" → "External Partners").

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

Selection and ordering data

For screw, spring-type and ring terminal lug connection

3RT2924-5A.01

For contactors		Rated control supply voltage U_s			DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type	50 Hz	50/60 Hz	60 Hz						
		V	V	V						
Solenoid coils · AC operation										
S0	3RT2023-.A, 3RT2024-.A, 3RT2025-.A	24	--	--	B	**3RT2924-5AB01**		1	1 unit	41B
		42	--	--	B	**3RT2924-5AD01**		1	1 unit	41B
		48	--	--	B	**3RT2924-5AH01**		1	1 unit	41B
		110	--	--	B	**3RT2924-5AF01**		1	1 unit	41B
		230	--	--	B	**3RT2924-5AP01**		1	1 unit	41B
		400	--	--	B	**3RT2924-5AV01**		1	1 unit	41B
		--	24	--	B	**3RT2924-5AC21**		1	1 unit	41B
		--	42	--	B	**3RT2924-5AD21**		1	1 unit	41B
		--	48	--	B	**3RT2924-5AH21**		1	1 unit	41B
		--	110	--	B	**3RT2924-5AG21**		1	1 unit	41B
		--	220	--	B	**3RT2924-5AN21**		1	1 unit	41B
		--	230	--	B	**3RT2924-5AL21**		1	1 unit	41B
		--	--	24	B	**3RT2924-5AC11**		1	1 unit	41B
		110	--	120	B	**3RT2924-5AK61**		1	1 unit	41B
		220	--	240	B	**3RT2924-5AP61**		1	1 unit	41B
		--	100	110	B	**3RT2924-5AG61**		1	1 unit	41B
		--	200	220	B	**3RT2924-5AN61**		1	1 unit	41B
		--	400	440	B	**3RT2924-5AR61**		1	1 unit	41B
S0	3RT2026-.A, 3RT2027-.A, 3RT2028-.A, 3RT2325-.A, 3RT2326-.A, 3RT2327-.A, 3RT2526-.A	24	--	--	B	**3RT2926-5AB01**		1	1 unit	41B
		42	--	--	B	**3RT2926-5AD01**		1	1 unit	41B
		48	--	--	B	**3RT2926-5AH01**		1	1 unit	41B
		110	--	--	B	**3RT2926-5AF01**		1	1 unit	41B
		230	--	--	B	**3RT2926-5AP01**		1	1 unit	41B
		400	--	--	B	**3RT2926-5AV01**		1	1 unit	41B
		--	24	--	B	**3RT2926-5AC21**		1	1 unit	41B
		--	42	--	B	**3RT2926-5AD21**		1	1 unit	41B
		--	48	--	B	**3RT2926-5AH21**		1	1 unit	41B
		--	110	--	B	**3RT2926-5AG21**		1	1 unit	41B
		--	220	--	B	**3RT2926-5AN21**		1	1 unit	41B
		--	230	--	B	**3RT2926-5AL21**		1	1 unit	41B
		--	--	24	B	**3RT2926-5AC11**		1	1 unit	41B
		110	--	120	B	**3RT2926-5AK61**		1	1 unit	41B
		220	--	240	B	**3RT2926-5AP61**		1	1 unit	41B
		--	100	110	B	**3RT2926-5AG61**		1	1 unit	41B
		--	200	220	B	**3RT2926-5AN61**		1	1 unit	41B
		--	400	440	B	**3RT2926-5AR61**		1	1 unit	41B

Note:

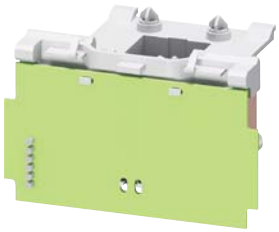
Contactors with AC and AC/DC coils have different depths. It is only possible to replace the coils on AC contactors with AC coils, and on AC/DC contactors with AC/DC coils. It is not possible to replace the coils on DC contactors.

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

Power Contactors for Switching Motors
Spare Parts for 3RT2 Contactors

Solenoid coils, contacts and arc chutes

For screw, spring-type and ring terminal lug connection



3RT2934-5N.31

3RT2934-5A.01

For contactors		Rated control supply voltage U_s				DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type	50 Hz	50/60 Hz	60 Hz	DC						
		V	V	V							
Solenoid coils · AC operation											
S2 NEW	3RT203.-.A	24	--	--	--	B	**3RT2934-5AB01**		1	1 unit	41B
	3RT233.-.A	42	--	--	--	B	**3RT2934-5AD01**		1	1 unit	41B
	3RT253.-.A	48	--	--	--	B	**3RT2934-5AH01**		1	1 unit	41B
		110	--	--	--	B	**3RT2934-5AF01**		1	1 unit	41B
		230	--	--	--	B	**3RT2934-5AP01**		1	1 unit	41B
		400	--	--	--	B	**3RT2934-5AV01**		1	1 unit	41B
		--	24	--	--	B	**3RT2934-5AC21**		1	1 unit	41B
		--	42	--	--	B	**3RT2934-5AD21**		1	1 unit	41B
		--	48	--	--	B	**3RT2934-5AH21**		1	1 unit	41B
		--	110	--	--	B	**3RT2934-5AG21**		1	1 unit	41B
		--	220	--	--	B	**3RT2934-5AN21**		1	1 unit	41B
		--	230	--	--	B	**3RT2934-5AL21**		1	1 unit	41B
		110	--	120	--	B	**3RT2934-5AK61**		1	1 unit	41B
		220	--	240	--	B	**3RT2934-5AP61**		1	1 unit	41B
		--	--	480	--	B	**3RT2934-5AV61**		1	1 unit	41B
		--	--	600	--	B	**3RT2934-5AT61**		1	1 unit	41B
		--	100	110	--	B	**3RT2934-5AG61**		1	1 unit	41B
		--	200	220	--	B	**3RT2934-5AN61**		1	1 unit	41B
		--	400	440	--	B	**3RT2934-5AR61**		1	1 unit	41B
Solenoid coils · AC/DC operation, with varistor											
S2 NEW	3RT203.-.N	--	20 ... 33	--	20 ... 33	B	**3RT2934-5NB31**		1	1 unit	41B
	3RT233.-.N	--	30 ... 42	--	30 ... 42	B	**3RT2934-5ND31**		1	1 unit	41B
	3RT253.-.N	--	48 ... 80	--	48 ... 80	B	**3RT2934-5NE31**		1	1 unit	41B
		--	83 ... 155	--	83 ... 155	B	**3RT2934-5NF31**		1	1 unit	41B
		--	175 ... 280	--	175 ... 280	B	**3RT2934-5NP31**		1	1 unit	41B

Note:

It is only possible to replace the coils on AC contactors with AC coils, and on AC/DC contactors with AC/DC coils.

For contactors		Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type							
Contacts with fixing parts								
For contactors with 3 main contacts								
S2 NEW	3RT2035	**Main contacts** (3 NO contacts)	B	**3RT2935-6A**		1	1 unit	41B
	3RT2036	for utilization category AC-3	B	**3RT2936-6A**		1	1 unit	41B
	3RT2037	(1 set = 3 movable and 6 fixed switching elements	B	**3RT2937-6A**		1	1 unit	41B
	3RT2038	with fixing parts)	B	**3RT2938-6A**		1	1 unit	41B
For contactors with 4 main contacts								
S2 NEW	3RT2336	**Main contacts** (4 NO contacts)	B	**3RT2936-6E**		1	1 unit	41B
	3RT2337	for utilization category AC-1	B	**3RT2937-6E**		1	1 unit	41B
		(1 set = 3 movable and 6 fixed switching elements and spare pole with fixing parts)						
Arc chutes								
For contactors with 3 main contacts								
S2 NEW		**Arc chutes**, 3-pole						
	3RT203.	Only for contactors with AC coil	B	**3RT2936-7A**		1	1 unit	41B
	3RT203.	Only for contactors with AC/DC coil	B	**3RT2936-7B**		1	1 unit	41B

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

Overview

Standards

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

The 3RT1 contactors are suitable for use in any climate. They are finger-safe according to EN 50274.

Connection methods

The 3RT1 contactors are available with screw terminals (box terminals) or spring-type terminals.

The size S3 contactors have removable box terminals for the main conductor connections. This permits connection of ring terminal lugs or busbars.

Contact reliability

If voltages ≤ 110 V and currents ≤ 100 mA are to be switched, the auxiliary contacts of the 3RT1 contactor or 3RH11 contactor relay 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.

Short-circuit protection of the contactors

Short-circuit protection of contactors without overload relay, see "Technical specifications", pages 3/85 and 3/90. For short-circuit protection of contactors with overload relay, see Configuration Manual "SIRIUS Configuration" http://support.automation.siemens.com/WW/view/en/40625241.

To assemble fuseless motor feeders, you must select combinations of motor starter protector/circuit breaker and contactor as explained in "SIRIUS 3RA1 Load Feeders" (see Chapter 8 "Load Feeders and Motor Starters").

Motor protection

3RU11 thermal overload relays or 3RB20/3RB21 electronic overload relays can be fitted to the 3RT1 contactors for protection against overload. The overload relays must be ordered separately, see Chapter 7, "Protection Equipment" --> "Overload Relays".

Ratings of three-phase motors

The quoted rating (in kW) refers to the output power on the motor shaft (according to the nameplate).

Surge suppression

3RT1 contactors can be retrofitted with RC elements, varistors, diodes or diode assemblies (assembly of diode and Zener diode for short break times) for damping opening surges in the coil.

Note:

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

Sizes S00 to S2, up to 22 kW

For 3RT1 devices in these sizes, see Catalog IC 10 AO.

Size S3, up to 45 kW

Auxiliary contact complement

The basic units of size S3 are delivered only with the main contacts and can be extended with auxiliary switch blocks.

For size S3, complete units with mounted auxiliary switch block 2 NO + 2 NC are available (terminal designation according to EN 50012); the auxiliary switch block can be removed. For more information, see Accessories, page 3/108.

Note:

Auxiliary contact complement according to SUVA: Contactors with permanently mounted auxiliary switch block 2 NO + 2 NC are available for safety applications according to SUVA.

Surge suppression

For size S3 contactors, varistors and RC elements can be snapped on either on the top or directly below the coil terminals. Diode assemblies are available in 2 different versions on account of their polarity. Depending on the application they can be connected either only at the bottom (assembly with motor starter protector/circuit breaker) or only at the top (assembly with overload relay).

The plug-in direction of the diodes and diode assemblies is specified by coding.
Exception: 3RT1936-1T.00,
in this case the plug-in direction is marked with "+" and "-".

Sizes S6 to S12, > 45 to 250 kW

- 3RT10, contactors for switching motors,
- 3RT12, vacuum contactors for switching motors,
- 3RT14, contactors for AC-1 applications (see Chapter 4 "Contactors for Special Applications").

Operating mechanism types

Two types of solenoid operation are available:

- Conventional operating mechanisms
- Solid-state operating mechanism (with two performance levels)

Control supply voltage

The contactors can be operated with an AC operating mechanism (50 to 60 Hz) as well as with DC.

Withdrawable coils

For simple coil replacement, e.g. if the application is replaced, the solenoid coil can be pulled out upwards after the release mechanism has been actuated and can be replaced by any other coil of the same size.

Auxiliary contact complement

Contactor sizes S6 to S12 are supplied with mounted auxiliary switch blocks.

For detailed information about the fitting of auxiliary switches, see Accessories, page 3/108.

- 3RT10 and 3RT14 contactors:
  Auxiliary contacts mounted laterally and on front
- 3RT12 vacuum contactors:
  Auxiliary contacts mounted laterally

Contactors with conventional operating mechanism

3RT1...-.A version

The solenoid coil is switched directly on and off with the control supply voltage U_s by way of terminals A1/A2.

Multi-voltage range for the control supply voltage U_s:

Only one coil covers several close-lying control supply voltages which are used worldwide, e.g. 110–115–120–127 V AC/DC or 220–230–240 V AC/DC. Allowance is made in addition for an operating range of 0.8 times the lower ($U_{s\,min}$) and 1.1 times the upper ($U_{s\,max}$) rated control supply voltage within which the contactor switches reliably and no thermal overload occurs.

Contactors with solid-state operating mechanism

The solenoid coil is supplied selectively with the power required for reliable switching and holding by upstream control electronics.

- Wide voltage range for the control supply voltage U_s: Compared with the conventional operating mechanism, the solid-state operating mechanism covers an even broader range of control supply voltages used worldwide within one coil version. For example, the coil for 200 to 277 V AC/DC ($U_{s\,min}$ to $U_{s\,max}$) covers the voltages 200-208-220-230-240-254-277 V used worldwide.
- Extended operating range 0.7 to 1.25 x U_s: The wide range for the rated control supply voltage and the additionally allowed coil operating range of 0.8 x $U_{s\,min}$ to 1.1 x $U_{s\,max}$ results in an extended coil operating range of at least 0.7 to 1.25 x U_s, within which the contactors will operate reliably, for the most common control supply voltages of 24, 110 and 230 V.
- Bridging temporary voltage dips: Control voltage failures dipping to 0 V (at A1/A2) are bridged for up to approx. 25 ms to avoid unintentional tripping.
- Defined ON and OFF thresholds: For voltages above 0.8 x $U_{s\,min}$ the electronics will reliably switch the contactor ON, and for voltages below the value 0.5 x $U_{s\,min}$ it is reliably switched OFF. The hysteresis in the switching thresholds prevents the main contacts from chattering as well as increased wear or welding when operated in weak, unstable networks. This also prevents thermal overloading of the contactor coil if the voltage applied is too low (contactor does not close properly and is continuously operated with overexcitation).
- Low control power consumption when closing and in the closed state.

Electromagnetic compatibility (EMC)

The contactors with solid-state operating mechanism conform to the requirements for operation in industrial plants:

- Interference immunity
  - Burst (IEC 61000-4-4): 4 kV
  - Surge (IEC 61000-4-5): 4 kV
  - Electrostatic discharge, ESD (IEC 61000-4-2): 8/15 kV
  - Electromagnetic field (IEC 61000-4-3): 10 V/m
- Emitted interference
  - Limit value class A according to EN 55011

Note:

In connection with converters, the control cables must be routed separately from the load cables to the converter.

Indication of remaining lifetime (RLT)

Main contactor contacts are working parts which therefore must be replaced in good time when the end of their service life has been reached. The degree of contact erosion and thus the electrical endurance (= number of operating cycles) depends on the loading, utilization category, operating mode, etc. Up to now, routine checks or visual inspections by the maintenance personnel were needed in order to gain an insight into the state of the main contacts.

The remaining lifetime indication function now takes over this task. It does not count the number of operating cycles – which does not provide information about contact erosion – but instead electronically identifies, evaluates and stores the actual progress of erosion of each one of the three main contacts, and outputs a warning when specified limits are reached. The stored data are not lost even if the control supply voltage for A1/A2 fails. After replacement of the main contacts, measurement of the remaining lifetime must be reset using the "RESET" button (hold down RESET button for about 2 s using a pen or similar tool).

Advantages:

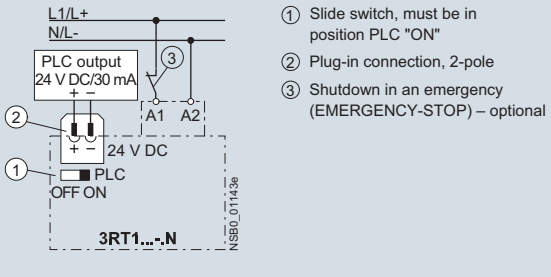
- Additional visual display of various levels of erosion by means of LEDs on the laterally mounted solid-state module when remaining lifetime is 60 % (green), 40 % (orange) and 20 % (red).

- Early warning to replace contacts
- Optimum utilization of contact material
- Visual inspection of the condition of contacts no longer necessary
- Reduction of ongoing operating costs
- Optimum planning of maintenance measures
- Avoidance of unforeseen plant downtimes

3RT1...-.N version: for 24 V DC PLC output

2 control options

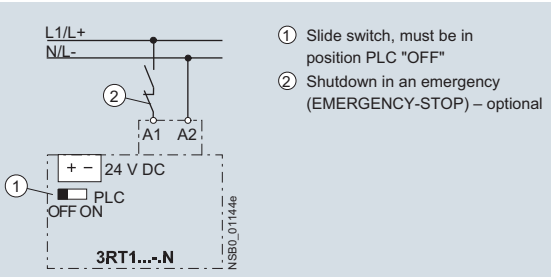
■ Control without a coupling link directly through a 24 V DC/≥ 30 mA PLC output (IEC 61131-2). Connection by means of 2-pole plug-in connection. The screwless spring-type connection is part of the scope of supply. The control supply voltage which supplies the solenoid operating mechanism must be connected to A1/A2.



Note:

Before start up, the slide switch for PLC operation must be moved to the "PLC ON" position (setting ex works: "PLC OFF").

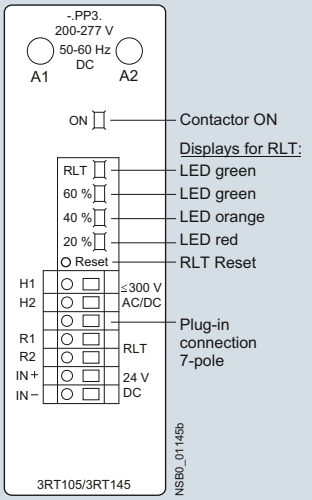
■ Conventional control by applying the control supply voltage at A1/A2 through a switching contact.



Note:

The slide switch must be in the "PLC OFF" position (= setting ex works).

3RT1...-.P version: for 24 V DC PLC output or PLC relay output, with remaining lifetime indicator (RLT)

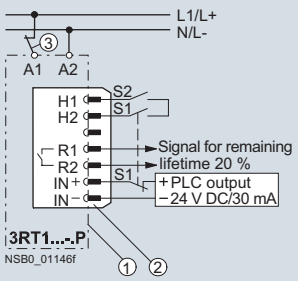


To supply the solenoid and the remaining lifetime indicator with power, the control supply voltage U_s must be connected to terminals A1/A2 of the laterally mounted electronic module. The control inputs of the contactor are connected to a 7-pole plug-in connection; the screwless spring-type connection is part of the scope of supply.

- The "Remaining Lifetime RLT" status signal is available at terminals R1/R2 through a floating relay contact (hard gold-plated, enclosed) and can be input to SIMOCODE, PLC or other devices for processing, for example. Permissible current-carrying capacity of the R1/R2 relay output:
  - I_e/AC-15/24 to 230 V: 3 A
  - I_e/DC-13/24 V: 1 A
- LED displays
  The following states are indicated by means of LEDs on the laterally mounted solid-state module:
  - Contactor ON (energized state): green LED ("ON")
  - Indication of remaining lifetime

2 control options:

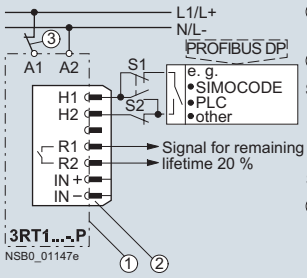
- Contactor control without a coupling link directly through a 24 V DC/≥ 30 mA PLC output (IEC 61131-2) by way of terminals IN+/IN-.



① Solid-state module of 3RT1...-.P contactor
② Plug-in connection, 7-pole
S1 Changeover switch from automatic control using PLC semiconductor output to local control
S2 Local control possibility
③ Shutdown in an emergency (EMERGENCY-STOP) – optional

Possibility of switching from automatic control to local control by way of terminals H1/H2, i.e. automatic control through PLC or SIMOCODE/PROFIBUS DP can be deactivated e.g. at start up or in the event of a fault and the contactor can be controlled manually.

- Contactor control through relay outputs at connections H1/H2, e.g. by
  - PLC or
  - SIMOCODE



① Solid-state module of 3RT1...-.P contactor
② Plug-in connection, 7-pole
S1 Changeover switch from automatic control e.g. using SIMOCODE or PLC relay output to local control
S2 Local control possibility
③ Shutdown in an emergency (EMERGENCY-STOP) – optional

Contact loading: U_s/approx. 5 mA

When operated through SIMOCODE, a communication link to PROFIBUS DP is also provided.

Article No. scheme

Digit of the article No.	1st - 3rd	4th	5th	6th	7th		8th	9th	10th	11th	12th		13th	14th	15th	16th
	□□□	□	□	□	□	–	□	□	□	□	□	–	□	□	□	□
SIRIUS power contactors	**3 R T**															
1st generation		**1**														
Device type (e.g. 0 = 3-pole motor contactor, 3 = 4-pole AC-1 contactor)			□													
Size of the contactor (4 = S3, 5 = S6, etc.)				□												
Power dependent on size (e.g. 45 = 37 kW)					□											
Connection type (1 = screw, 3 = spring)							□									
Operating range / solenoid coil circuit (e.g. A = AC standard / without)								□								
Rated control supply voltage (e.g. P0 = 230 V, 50 Hz)									□	□						
Auxiliary switches (e.g. 0 = without auxiliary switches)											□					
Special version													□	□	□	□
Example	**3 R T**	**1**	**0**	**4**	**5**	**–**	**1**	**A**	**P**	**0**	**0**					

The article No. scheme is presented here merely for information purposes and for better understanding of the logic behind the article numbers.

For your orders, please use the article numbers quoted in the catalog and in the Industry Mall.

3

Technical specifications

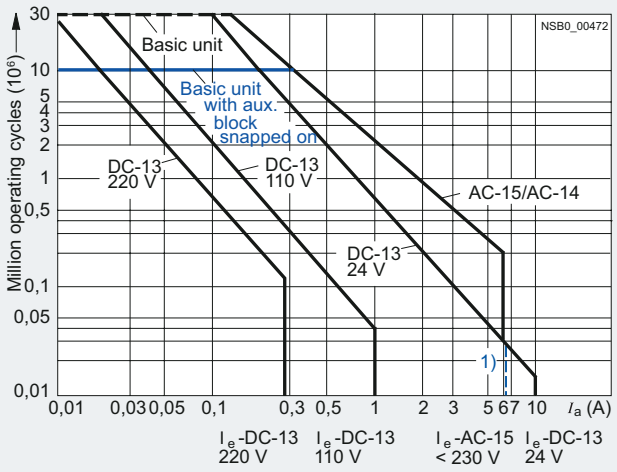
Type			3RT1
Size			S3 to S12
Rated data of the auxiliary contacts			
Acc. to IEC 60947-5-1/EN 60947-5-1 The data apply to integrated auxiliary contacts and contacts in the auxiliary switch blocks for contactor sizes S00 to S12			
Rated insulation voltage U_i (pollution degree 3)		V	690
• For laterally mountable auxiliary switch blocks		V	500
Conventional thermal current I_{th} = Rated operational current I_e/AC-12		A	10
AC load			
Rated operational current I_e/AC-15/AC-14			
• For rated operational voltage U_e	Up to 230 V	A	6
	380 V	A	3
	400 V	A	3
	500 V	A	2
	660 V[2]	A	1
	690 V[2]	A	1
DC load			
Rated operational current I_e/DC-12			
• For rated operational voltage U_e	24 V	A	10
	60 V	A	6
	110 V	A	3
	125 V	A	2
	220 V	A	1
	440 V	A	0.3
	600 V[2]	A	0.15
Rated operational current I_e/DC-13			
• For rated operational voltage U_e	24 V	A	10[1]
	60 V	A	2
	110 V	A	1
	125 V	A	0.9
	220 V	A	0.3
	440 V	A	0.14
	600 V[2]	A	0.1
Contact reliability at 17 V, 1 mA according to IEC 60947-5-4/EN 60947-5-4			Frequency of contact faults < 10^{-8} i.e. < 1 fault per 100 million operating cycles

Endurance of the auxiliary contacts

It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The contact endurance is mainly dependent on the breaking current.

The characteristic curves apply to:
- Integrated auxiliary contacts on 3RT10
- 3RH1911, 3RH1921 auxiliary switch blocks[1)]



I_a = Breaking current

I_e = Rated operational current

1) DC-13: for mountable auxiliary switch blocks size S00: 6 A

1) For mountable auxiliary switch blocks size S00 and laterally mountable auxiliary switch blocks size S0 to S12: DC-13 max. 6 A.

2) For laterally mountable auxiliary switch blocks, only the rated operational voltages up to 500 V apply.

Type	3RT1
Size	S3

Endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching resistive and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking six times the rated operational current) and is intended for a contact endurance of approx. 200 000 operating cycles.

If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:

- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching (I_a = multiple of I_e) in operating cycles
- C Inching operations as a percentage of total switching operations

Size S3

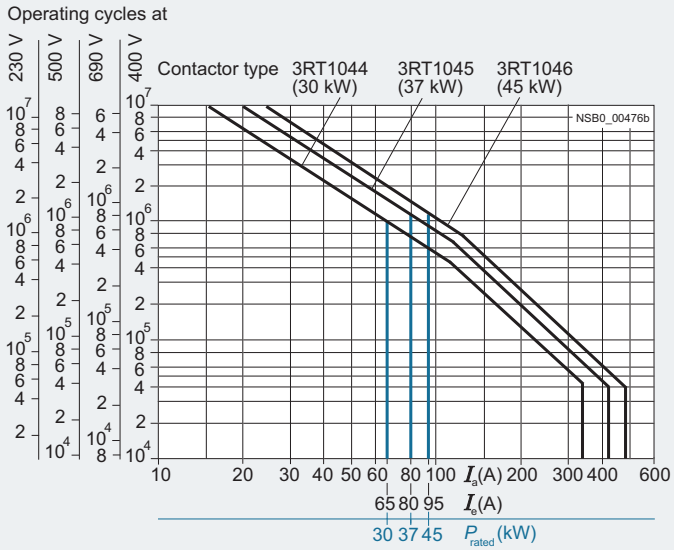


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

SIRIUS 3RT10 contactors, 3-pole, 30 ... 250 kW

Type	**3RT1**
Size	**S6 to S12**

Endurance of the main contacts

Sizes S6 to S12

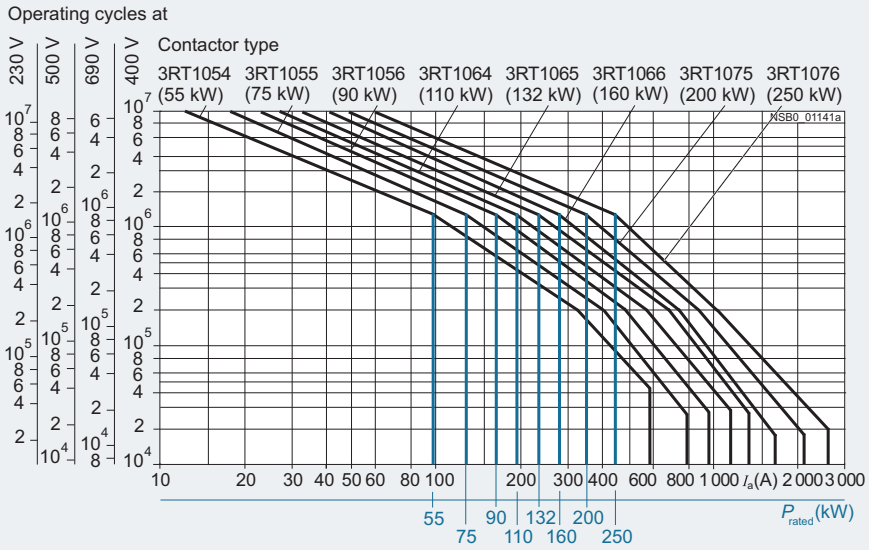


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

3RT12 vacuum contactors · Sizes S10 and S12

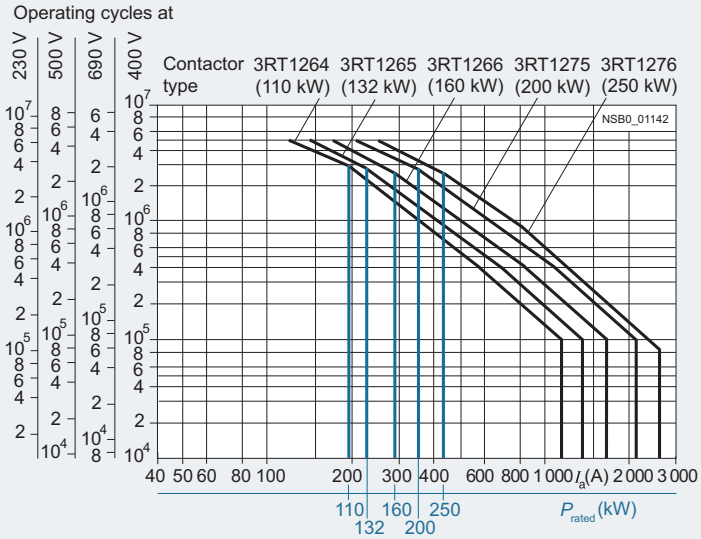
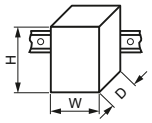
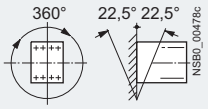


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

Type			**3RT1044**	**3RT1045**	**3RT1046**
Size			**S3**		
Dimensions (W x H x D), AC operation		mm	70 x 146 x 134		
• With mounted auxiliary switch block		mm	70 x 146 x 183		
Dimensions (W x H x D), DC operation		mm	70 x 146 x 147		
• With mounted auxiliary switch block		mm	70 x 146 x 196		
General data					
Permissible mounting position					
The contactors are designed for operation on a vertical mounting surface.					
For DC operation and up to 22.5° inclination in front, the coil operating range is reduced to 0.85 ... 1.1 x U_s					
Upright mounting position			 Special version required.		
Mechanical endurance					
• Basic units		Operating cycles	10 million		
• Basic units with snap-on auxiliary switch block		Operating cycles	10 million		
• Solid-state compatible auxiliary switch blocks		Operating cycles	5 million		
Electrical endurance			1)		
Rated insulation voltage U_i (pollution degree 3)		V	1000		
Rated impulse withstand voltage U_{imp}		kV	6		
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		V	690		
Mirror contacts					
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.					
• With removable auxiliary switch block			Yes, acc. to IEC 60947-4-1, Appendix F		
• With non-removable auxiliary switch block			Acc. to Swiss regulations (SUVA) on request		
Permissible ambient temperature					
• During operation		°C	-25 ... +60		
• During storage		°C	-55 ... +80		
Degree of protection acc. to IEC 60947-1, Appendix C			IP20		
• Connection range			IP00/open (where applicable, use additional terminal covers)		
Touch protection acc. to EN 50274			Finger-safe only for vertical contact from the front		
Shock resistance (AC and DC operation)					
• Rectangular pulse		*g*/ms	6.8/5 and 4/10		
• Sine pulse		*g*/ms	10.6/5 and 6.2/10		
Conductor cross-sections			2)		
Short-circuit protection for contactors without overload relays					
Main circuit					
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1/EN 60947-4-1					
• Type of coordination "1"		A	250	250	
• Type of coordination "2"		A	125	160	
• Weld-free[3]		A	63	100	
Auxiliary circuit					
Short-circuit test					
• with fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A	10		
• with miniature circuit breakers with C characteristic with short-circuit current I_k = 400 A		A	10		
Short-circuit protection for contactors with overload relays			See Configuration Manual "Configuring SIRIUS"[4]		
Short-circuit protection for fuseless load feeders			See Chapter 8 "Load Feeders and Motor Starters for Use in the Control Cabinet" → "SIRIUS 3RA1 Load Feeders"		

1) For contact endurance of the main contacts, see page 3/83.
2) For conductor cross-sections, see page 3/89.
3) Test conditions according to IEC 60947-4-1.
4) See http://support.automation.siemens.com/WW/view/en/40625241

SIRIUS 3RT10 contactors, 3-pole, 30 ... 250 kW

Type			3RT1044	3RT1045	3RT1046
Size			S3	S3	S3
Control					
Solenoid coil operating range	AC/DC[1]		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	218	270	
- P.f.			0.61	0.68	
- Closed		VA	21	22	
- P.f.			0.26	0.27	
• AC operation, 50/60 Hz, standard version					
- Closing		VA	247/211	298/274	
- P.f.			0.62/0.57	0.7/0.62	
- Closed		VA	25/18	27/20	
- P.f.			0.27/0.3	0.29/0.31	
• AC operation, 50 Hz, for USA/Canada					
- Closing		VA	218	270	
- P.f.			0.61	0.68	
- Closed		VA	21	22	
- P.f.			0.26	0.27	
• AC operation, 60 Hz, for USA/Canada					
- Closing		VA	232	300	
- P.f.			0.55	0.52	
- Closed		VA	20	21	
- P.f.			0.28	0.29	
• DC operation					
- Closing = Closed		W	15	15	
Permissible residual current of the electronics (with 0 signal)					
• AC operation		mA	< 25 mA x (230 V/U_s)		
• DC operation		mA	< 43 mA x (24 V/U_s)		
Operating times for 0.8 ... 1.1 x U_s[2]					
(Total break time = Opening delay + Arcing time)					
• AC operation					
- Closing delay		ms	16 ... 57	17 ... 90	
- Opening delay		ms	10 ... 19	10 ... 25	
• DC operation					
- Closing delay		ms	90 ... 230	90 ... 230	
- Opening delay		ms	14 ... 20	14 ... 20	
• Arcing time		ms	10 ... 15	10 ... 15	
Operating times for 1.0 x U_s[2]					
• AC operation					
- Closing delay		ms	18 ... 34	18 ... 30	
- Opening delay		ms	11 ... 18	11 ... 23	
• DC operation					
- Closing delay		ms	100 ... 120	100 ... 120	
- Opening delay		ms	16 ... 20	16 ... 20	

[1] For DC operation and up to 22.5° inclination in front, the coil operating range is reduced to 0.85 ... 1.1 x U_s (see also permissible mounting position, page 3/85).

[2] The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (varistor +2 ms to 5 ms, diode assembly: 2 to 6 times).

Type		3RT1044	3RT1045	3RT1046
Size		S3	S3	S3
Main circuit				
Load rating with AC				
Utilization category AC-1 Switching resistive loads				
• Rated operational currents I_e				
- At 40 °C up to 690 V	A	100	120	120
- At 40 °C up to 1 000 V	A	50	60	70
- At 60 °C up to 690 V	A	90	100	100
- At 60 °C up to 1 000 V	A	40	50	60
• Rated power for AC loads[1] with p.f. = 0.95 (at 60 °C)				
- At 230 V	kW	34	38	38
- At 400 V	kW	59	66	66
- At 500 V	kW	74	82	82
- At 690 V	kW	102	114	114
- At 1 000 V	kW	66	82	98
• Minimum conductor cross-section for loads with I_e				
- At 40 °C	mm^2	35	50	50
- At 60 °C	mm^2	35	35	35
Utilization categories AC-2 and AC-3				
• Rated operational currents I_e				
- Up to 500 V	A	65	80	95
- At 690 V	A	47	58	58
- At 1 000 V	A	25	30	30
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz				
- At 230 V	kW	18.5	22	22
- At 400 V	kW	30	37	45
- At 500 V	kW	37	45	55
- At 690 V	kW	45	55	55
- At 1 000 V	kW	30	37	37
Thermal load capacity, 10 s current[2]	A	600	760	760
Power loss per conducting path at I_e/AC-3	W	4.6	7.7	10.8
Utilization category AC-4 (for $I_a = 6 \times I_e$)				
Maximum values:				
• Rated operational current I_e				
- Up to 400 V	A	55	66	80
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz				
- At 400 V	kW	30	37	45
The following applies to a contact endurance of about 200 000 operating cycles:				
• Rated operational currents I_e				
- Up to 400 V	A	28	34	42
- Up to 690 V	A	20	22	27
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz				
- At 230 V	kW	8.7	10.4	12
- At 400 V	kW	15.1	17.9	22
- At 690 V	kW	18.6	21.1	25.4

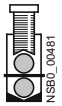
[1] Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

[2] According to IEC 60947-4-1.
Rated values for various start-up conditions, see Chapter 7, "Protection Equipment" ➞ "Overload Relays".

SIRIUS 3RT10 contactors, 3-pole, 30 ... 250 kW

Type			3RT1044	3RT1045	3RT1046
Size			S3	S3	S3
Main circuit					
Load rating with DC					
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)					
• Rated operational currents I_e (at 60 °C)					
- 1 conducting path	Up to 24 V	A	90	100	100
	60 V	A	23	60	60
	110 V	A	4.5	9	9
	220 V	A	1	2	2
	440 V	A	0.4	0.6	0.6
	600 V	A	0.26	0.4	0.4
- 2 conducting paths in series	Up to 24 V	A	90	100	100
	60 V	A	90	100	100
	110 V	A	90	100	100
	220 V	A	5	10	10
	440 V	A	1	1.8	1.8
	600 V	A	0.8	1	1
- 3 conducting paths in series	Up to 24 V	A	90	100	100
	60 V	A	90	100	100
	110 V	A	90	100	100
	220 V	A	70	80	80
	440 V	A	2.9	1.8	4.5
	600 V	A	1.4	1	2.6
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)					
• Rated operational currents I_e (at 60 °C)					
- 1 conducting path	Up to 24 V	A	40	40	40
	60 V	A	6	6.5	6.5
	110 V	A	2.5	2.5	2.5
	220 V	A	1	1	1
	440 V	A	0.15	0.15	0.15
	600 V	A	0.06	0.06	0.06
- 2 conducting paths in series	Up to 24 V	A	90	100	100
	60 V	A	90	100	100
	110 V	A	90	100	100
	220 V	A	7	7	7
	440 V	A	0.42	0.42	0.42
	600 V	A	0.16	0.16	0.16
- 3 conducting paths in series	Up to 24 V	A	90	100	100
	60 V	A	90	100	100
	110 V	A	90	100	100
	220 V	A	35	35	35
	440 V	A	0.8	0.8	0.8
	600 V	A	0.35	0.35	0.35
Switching frequency					
Switching frequency z in operating cycles/hour					
Contactors without overload relays					
• No-load switching frequency AC		h^{-1}	5 000		
• No-load switching frequency DC		h^{-1}	1 000		
• Switching frequency *z* during rated operation[1)]					
- I_e/AC-1	At 400 V	h^{-1}	1 000	900	900
- I_e/AC-2	At 400 V	h^{-1}	400	400	350
- I_e/AC-3	At 400 V	h^{-1}	1 000	1000	850
- I_e/AC-4	At 400 V	h^{-1}	300	300	250
Contactors with overload relays					
• Mean value		h^{-1}	15		

[1)] Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*: $z' = z \times (I_e/I') \times (400\ V/U')^{1.5} \times 1/h$

Type			**3RT104.**
Size			**S3**
Conductor cross-sections			
Main conductors (1 or 2 conductors can be connected)			**Screw terminals**
Box terminals			
• Terminal screws			
- Tightening torque		Nm	4 ... 6
		lb.in	36 ... 53
Front clamping point connected			
 NSB0_00479			
• Finely stranded with end sleeve		mm²	2.5 ... 35
• Finely stranded without end sleeve		mm²	10 ... 50
• Stranded		mm²	10 ... 70
• Solid		mm²	2.5 ... 16
• AWG cables, solid or stranded		AWG	10 ... 2/0
• Ribbon cable conductors (Number x Width x Thickness)		mm	6 x 9 x 0.8
Rear clamping point connected			
 NSB0_00480			
• Finely stranded with end sleeve		mm²	2.5 ... 50
• Finely stranded without end sleeve		mm²	10 ... 50
• Stranded		mm²	10 ... 70
• Solid		mm²	2.5 ... 16
• AWG cables, solid or stranded		AWG	10 ... 2/0
• Ribbon cable conductors (Number x Width x Thickness)		mm	6 x 9 x 0.8
Both clamping points connected			
 NSB0_00481			
• Finely stranded with end sleeve		mm²	2 x (2.5 ... 35)
• Finely stranded without end sleeve		mm²	2 x (10 ... 35)
• Stranded		mm²	2 x (10 ... 50)
• Solid		mm²	2 x (2.5 ... 16)
• AWG cables, solid or stranded		AWG	2 x (10 ... 1/0)
• Ribbon cable conductors (Number x Width x Thickness)		mm	2 x (6 x 9 x 0.8)
Busbar connection (bored copper bars)[1]			
Connecting bar (max. width)		mm	10
Cable lug connection (without box terminals)[2]			
• Finely stranded with cable lug		mm²	10 ... 50[3]
• Stranded with cable lug		mm²	10 ... 70[3]
• AWG cables, solid or stranded		AWG	7 ... 1/0
• Terminal screws			M6
Auxiliary conductors			
• Solid		mm²	2 x (0.5 ... 1.5)[4]; 2 x (0.75 ... 2.5)[4]; max. 2 x (0.75 ... 4)
• Finely stranded with end sleeve		mm²	2 x (0.5 ... 1.5)[4]; 2 x (0.75 ... 2.5)[4]
• AWG cables, solid or stranded		AWG	2 x (20 ... 16)[4]; 2 x (18 ... 14)[4]; 1 x 12
• Terminal screws			M3
- Tightening torque		Nm	0.8 ... 1.2
		lb.in	7 ... 10.3
Auxiliary conductors[5]			**Spring-type terminals**
• Operating devices[6]			3.0 x 0.5; 3.5 x 0.5
• Solid		mm²	2 x (0.25 ... 2.5)
• Finely stranded with end sleeve		mm²	2 x (0.25 ... 1.5)
• Finely stranded without end sleeve		mm²	2 x (0.25 ... 2.5)
• AWG cables, solid or stranded		AWG	2 x (24 ... 14)

1) If bars larger than 12 mm x 10 mm are connected, a 3RT1946-4EA1 terminal cover is needed to comply with the phase clearance.

2) When connecting conductors which are larger than 25 mm², the 3RT1946-4EA1 terminal cover must be used to keep the phase clearance.

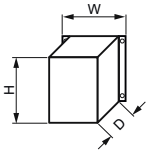
3) Only with crimped cable lugs according to DIN 46234, max. 20 mm wide.

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

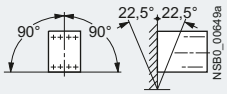
5) Max. external diameter of the cable insulation: 3.6 mm. An "insulation stop" must be used for conductor cross-sections ≤ 1 mm²; see "Accessories" on page 3/122.

6) Tool for opening the spring-type terminals; see "Accessories", page 3/122.

SIRIUS 3RT10 contactors, 3-pole, 30 ... 250 kW

Type			**3RT1054**	**3RT1055, 3RT1056**	**3RT1064, 3RT1065, 3RT1066**	**3RT1075**	**3RT1076**
Size			**S6**		**S10**	**S12**	
Dimensions (W x H x D)		mm	120 x 172 x 170		145 x 210 x 202	160 x 214 x 225	
• With mounted auxiliary switch block		mm	120 x 172 x 217		145 x 210 x 251	160 x 214 x 271	

General data

Permissible mounting position The contactors are designed for operation on a vertical mounting surface.		
Mechanical endurance	Operating cycles	10 million
Electrical endurance		1)
Rated insulation voltage U_i (pollution degree 3)	V	1 000
Rated impulse withstand voltage U_{imp}	kV	8
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N	V	690
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.		Yes, acc. to IEC 60947-4-1, Appendix F
Permissible ambient temperature		
• During operation	°C	-25 ... +60
• During operation, with AS-Interface interface	°C	-25 ... +55
• During storage	°C	-55 ... +80
Degree of protection acc. to IEC 60947-1, Appendix C		IP00/open (where applicable, use additional terminal covers)
Touch protection acc. to EN 50274		Finger-safe only for vertical contact from the front
Shock resistance		
• Rectangular pulse	*g*/ms	8.5/5 and 4.2/10
• Sine pulse	*g*/ms	13.4/5 and 6.5/10
Conductor cross-sections		2)
Electromagnetic compatibility (EMC)		3)

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/EN 60947-4-1							
• Type of coordination "1"	A	355	355	500		630	630
• Type of coordination "2"	A	315	315	400		500	500
• Weld-free[4]	A	80	160	250		250	315
Auxiliary circuit							
Short-circuit test							
• with fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1	A	10					
• with miniature circuit breakers with C characteristic with short-circuit current I_k = 400 A	A	10					
Short-circuit protection for contactors with overload relays		See Configuration Manual "Configuring SIRIUS"[5]					

1) For contact endurance of the main contacts, see page 3/84.
2) For conductor cross-sections, see page 3/94.
3) For electromagnetic compatibility (EMC), see page 3/80.
4) Test conditions according to IEC 60947-4-1.
5) See http://support.automation.siemens.com/WW/view/en/40625241

Type Size		3RT105. S6	3RT106. S10	3RT107. S12
Control				
Operating range of the solenoid AC/DC (UC)		0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$		
Power consumption of the solenoid operation (when coil is cold and rated range $U_{s\,min}$ ... $U_{s\,max}$)				
Conventional operating mechanisms				
• AC operation				
- Closing at $U_{s\,min}$	VA/p.f.	250/0.9	490/0.9	700/0.9
- Closing at $U_{s\,max}$	VA/p.f.	300/0.9	590/0.9	830/0.9
- Closed at $U_{s\,min}$	VA/p.f.	4.8/0.8	5.6/0.9	7.6/0.9
- Closed at $U_{s\,max}$	VA/p.f.	5.8/0.8	6.7/0.9	9.2/0.9
• DC operation				
- Closing at $U_{s\,min}$	W	300	540	770
- Closing at $U_{s\,max}$	W	360	650	920
- Closed at $U_{s\,min}$	W	4.3	6.1	8.5
- Closed at $U_{s\,max}$	W	5.2	7.4	10
Solid-state operating mechanisms				
• AC operation				
- Closing at $U_{s\,min}$	VA/p.f.	190/0.8	400/0.8	560/0.8
- Closing at $U_{s\,max}$	VA/p.f.	280/0.8	530/0.8	750/0.8
- Closed at $U_{s\,min}$	VA/p.f.	3.5/0.5	4/0.5	5.4/0.8
- Closed at $U_{s\,max}$	VA/p.f.	4.4/0.4	5/0.4	7/0.8
• DC operation				
- Closing at $U_{s\,min}$	W	250	440	600
- Closing at $U_{s\,max}$	W	320	580	800
- Closed at $U_{s\,min}$	W	2.3	3.2	4
- Closed at $U_{s\,max}$	W	2.8	3.8	5
PLC control input acc. to IEC 61131-2		Type 2		
• Rated voltage	V DC	24		
• Operating range	V DC	17 ... 30		
• Power consumption	mA	≤ 30		
Operating times (Total break time = Opening delay + Arcing time)				
Conventional operating mechanisms				
• For 0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$				
- Closing delay	ms	20 ... 95	30 ... 95	45 ... 100
- Opening delay	ms	40 ... 60	40 ... 80	60 ... 100
• For $U_{s\,min}$ ... $U_{s\,max}$				
- Closing delay	ms	25 ... 50	35 ... 50	50 ... 70
- Opening delay	ms	40 ... 60	50 ... 80	70 ... 100
Solid-state operating mechanism, actuated via A1/A2				
• For 0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$				
- Closing delay	ms	95 ... 135	105 ... 145	120 ... 150
- Opening delay	ms	80 ... 90	80 ... 100	80 ... 100
• For $U_{s\,min}$ ... $U_{s\,max}$				
- Closing delay	ms	100 ... 120	110 ... 130	125 ... 150
- Opening delay	ms	80 ... 90	80 ... 100	80 ... 100
Solid-state operating mechanism, actuated via PLC input				
• For 0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$				
- Closing delay	ms	35 ... 75	45 ... 80	60 ... 90
- Opening delay	ms	80 ... 90	80 ... 100	80 ... 100
• For $U_{s\,min}$ ... $U_{s\,max}$				
- Closing delay	ms	40 ... 60	50 ... 65	65 ... 80
- Opening delay	ms	80 ... 90	80 ... 100	80 ... 100
• Arcing time	ms	10 ... 15	10 ... 15	10 ... 15

SIRIUS 3RT10 contactors, 3-pole, 30 ... 250 kW

Type Size		3RT1054 S6	3RT1055 S6	3RT1056 S6	3RT1064 S10	3RT1065 S10	3RT1066 S10	3RT1075 S12	3RT1076 S12
Main circuit									
Load rating with AC									
Utilization category AC-1 **Switching resistive loads**									
• Rated operational currents I_e									
- At 40 °C up to 690 V	A	160	185	215	275	330		430	610
- At 60 °C up to 690 V	A	140	160	185	250	300		400	550
- At 60 °C up to 1 000 V	A	80	90	100	100	150		200	200
• Rated power for AC loads[1] with p.f. = 0.95 (at 60 °C)									
- At 230 V	kW	53	60	70	94	113		151	208
- At 400 V	kW	92	105	121	164	197		263	362
- At 500 V	kW	115	131	152	205	246		329	452
- At 690 V	kW	159	181	210	283	340		454	624
- At 1 000 V	kW	131	148	165	164	246		329	329
• Minimum conductor cross-section for loads with I_e									
- At 40 °C	mm^2	70	95	95	150	185		2 x 150	2 x 185
- At 60 °C	mm^2	50	70	95	120	185		240	2 x 185
Utilization categories AC-2 and AC-3									
• Rated operational currents I_e									
- Up to 500 V	A	115	150	185	225	265	300	400	500
- At 690 V	A	115	150	170	225	265	280	400	450
- At 1 000 V	A	53	65	65	68	95	95	180	180
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz									
- At 230 V	kW	37	50	61	73	85	97	132	164
- At 400 V	kW	64	84	104	128	151	171	231	291
- At 500 V	kW	81	105	132	160	189	215	291	363
- At 690 V	kW	113	146	167	223	265	280	400	453
- At 1 000 V	kW	75	90	90	90	132	132	250	250
Thermal load capacity, 10 s current[2]	A	1 100	1 300	1 480	1 800	2 400	2 400	3 200	4 000
Power loss per main conducting path at I_e/AC-3/500 V	W	7	9	13	17	18	22	35	55
Utilization category AC-4 (for $I_a = 6 \times I_e$)									
Maximum values:									
• Rated operational current I_e									
- Up to 400 V	A	97	132	160	195	230	280	350	430
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz									
- At 400 V	kW	55	75	90	110	132	160	200	250
The following applies to a contact endurance of about 200 000 operating cycles:									
• Rated operational currents I_e									
- Up to 500 V	A	54	68	81	96	117	125	150	175
- Up to 690 V	A	48	57	65	85	105	115	135	150
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz									
- At 230 V	kW	16	20	25	30	37	40	48	56
- At 400 V	kW	29	38	45	54	66	71	85	98
- At 500 V	kW	37	47	57	67	82	87	105	123
- At 690 V	kW	48	55	65	82	102	112	133	148

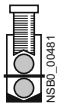
1) Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

2) According to IEC 60947-4-1.
Rated values for various start-up conditions, see Chapter 7, "Protection Equipment" ➞ "Overload Relays".

Type Size			3RT1054 S6	3RT1055 S6	3RT1056 S6	3RT1064 S10	3RT1065 S10	3RT1066 S10	3RT1075 S12	3RT1076 S12
Main circuit										
Load rating with DC										
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)										
• Rated operational currents I_e (at 60 °C)										
- 1 conducting path	Up to 24 V	A	160			200	300		400	
	60 V	A	160			200	300		330	
	110 V	A	18			18	33		33	
	220 V	A	3.4			3.4	3.8		3.8	
	440 V	A	0.8			0.8	0.9		0.9	
	600 V	A	0.5			0.5	0.6		0.6	
- 2 conducting paths in series	Up to 24 V	A	160			200	300		400	
	60 V	A	160			200	300		400	
	110 V	A	160			200	300		400	
	220 V	A	20			20	300		400	
	440 V	A	3.2			3.2	4		4	
	600 V	A	1.6			1.6	2		2	
- 3 conducting paths in series	Up to 24 V	A	160			200	300		400	
	60 V	A	160			200	300		400	
	110 V	A	160			200	300		400	
	220 V	A	160			200	300		400	
	440 V	A	11.5			11.5	11		11	
	600 V	A	4			4	5.2		5.2	
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)										
• Rated operational currents I_e (at 60 °C)										
- 1 conducting path	Up to 24 V	A	160			200	300		400	
	60 V	A	7.5			7.5	11		11	
	110 V	A	2.5			2.5	3		3	
	220 V	A	0.6			0.6	0.6		0.6	
	440 V	A	0.17			0.17	0.18		0.18	
	600 V	A	0.12			0.12	0.125		0.125	
- 2 conducting paths in series	Up to 24 V	A	160			200	300		400	
	60 V	A	160			200	300		400	
	110 V	A	160			200	300		400	
	220 V	A	2.5			2.5	2.5		2.5	
	440 V	A	0.65			0.65	0.65		0.65	
	600 V	A	0.37			0.37	0.37		0.37	
- 3 conducting paths in series	Up to 24 V	A	160			200	300		400	
	60 V	A	160			200	300		400	
	110 V	A	160			200	300		400	
	220 V	A	160			200	300		400	
	440 V	A	1.4			1.4	1.4		1.4	
	600 V	A	0.75			0.75	0.75		0.75	
Switching frequency										
Switching frequency z in operating cycles/hour										
Contactors without overload relays										
• No-load switching frequency		h^{-1}	2 000							
• Switching frequency *z* during rated operation[1)]										
- I_e/AC-1	At 400 V	h^{-1}	800	800		750	800	750	700	500
- I_e/AC-2	At 400 V	h^{-1}	400	300		250	300	250	200	170
- I_e/AC-3	At 400 V	h^{-1}	1 000	750		500	700	500	500	420
- I_e/AC-4	At 400 V	h^{-1}	130	130		130	130	130	130	130
Contactors with overload relays										
• Mean value		h^{-1}	60							

[1)] Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*:
$z' = z \times (I_e/I') \times (400\ V/U')^{1.5} \times 1/h$

SIRIUS 3RT10 contactors, 3-pole, 30 ... 250 kW

Type Size			3RT105. S6		3RT106. S10	3RT107. S12
Conductor cross-sections						
Main conductors (1 or 2 conductors can be connected)			**Screw terminals**			
With mounted box terminals		Type	3RT1955-4G (55 kW)	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						
 NSB0_00479						
• Finely stranded with end sleeve		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						
 NSB0_00480						
• Finely stranded with end sleeve		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[1]						
 NSB0_00481						
• Finely stranded with 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	
• 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	
Cable lug connection (without box terminals)						
• Finely stranded with cable lug[2)3)]		mm^2	16 ... 95		50 ... 240	
• Stranded with cable lug[2)3)]		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						
• Solid		mm^2	2 x (0.5 ... 1.5)[4)]; 2 x (0.75 ... 2.5)[4)]; max. 2 x (0.75 ... 4)			
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)[4)]; 2 x (0.75 ... 2.5)[4)]			
• 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[5)]			**Spring-type terminals**			
• Operating devices[6)]			3.0 x 0.5; 3.5 x 0.5			
• Solid		mm^2	2 x (0.25 ... 2.5)			
• Finely stranded with end sleeve		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) Minimum cross-section 16 mm^2.

2) 3RT105.: When connecting cable lugs to DIN 46235, use 3RT1956-4EA1 terminal cover for conductor cross-sections of 95 mm^2 and more to ensure phase spacing.

3) 3RT106. and 3RT107.: When connecting cable lugs to DIN 46234, the 3RT1966-4EA1 terminal cover must be used for conductor cross-sections of 240 mm^2 and more as well as DIN 46235 for conductor cross-sections of 185 mm^2 and more to keep the phase clearance.

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

5) Max. external diameter of the cable insulation: 3.6 mm. An "insulation stop" must be used for conductor cross-sections ≤ 1 mm^2; see "Accessories" on page 3/122.

6) Tool for opening the spring-type terminals; see "Accessories", page 3/122.

Size			S3 to S12 **Screw terminals and spring-type terminals** Snap-on auxiliary switch block (1- and 4-pole)	S3 to S12 **Screw terminals and spring-type terminals** Laterally mountable auxiliary switch block
CSA and UL rated data of the auxiliary contacts				
Rated voltage		V AC	600	600
Switching capacity			A 600, Q 600	A 300, Q 300
• Uninterrupted current at 240 V AC		A	10	10

Type Size			3RT1044 S3	3RT1045 S3	3RT1046 S3
CSA and UL rated data					
Rated insulation voltage		V AC	600		
Uninterrupted current, at 40 °C, open and enclosed		A	90	105	105
Maximum horsepower ratings (from CSA and UL approved values)					
• Rated power for three-phase motors at 60 Hz					
- At 200 V		hp	20	25	30
- At 230 V		hp	25	30	30
- At 460 V		hp	50	60	75
- At 575 V		hp	60	75	100
Short-circuit protection[1]					
• At 600 V (contactor or overload relay)		kA	10	10	10
• CLASS RK5 fuse		A	250	300	350
• Circuit breakers with overload protection acc. to UL 489		A	250	300	400
• Combination motor controllers type E according to UL 508 and UL 60947-4-1					
- At 480 V	Type		3RV104		
		A	63	75	100
		kA	65	65	65
- At 600 V	Type		3RV104		
		A	63	75	75
		kA	30	30	30
Overload relays	Type		3RU114		
• Setting range		A	18 ... 100		

[1] For more information about short-circuit values, e.g. for protection against short-circuit currents, see the UL reports on the individual devices, www.siemens.com/sirius/manuals.
For the dimensioning of load feeders, see also the UL guide "Industrial Control Panels for North America", www.siemens.com/sirius/ul-download.

SIRIUS 3RT10 contactors, 3-pole, 30 ... 250 kW

Type Size			3RT1054 S6	3RT1055 S6	3RT1056 S6	3RT1064 S10	3RT1065 S10	3RT1066 S10
SIRIUS and UL rated data								
Rated insulation voltage		V AC	600			600		
Uninterrupted current, at 40 °C, open and enclosed		A	140	195	195	250	330	330
Maximum horsepower ratings (from SIRIUS and UL approved values)								
• Rated power for three-phase motors at 60 Hz								
- At 200 V		hp	40	50	60	60	75	100
- At 230 V		hp	50	60	75	75	100	125
- At 460 V		hp	100	125	150	150	200	250
- At 575 V		hp	125	150	200	200	250	300
Short-circuit protection[1]								
• At 600 V		kA	10	10	10	10	18	18
• CLASS RK5/L fuse		A	450	500	500	700	800	800
• Circuit breakers with overload protection acc. to UL 489		A	350	450	500	500	700	800
Overload relays	Type		3RB2056			3RB2066		

Type Size			3RT1075 S12	3RT1076 S12
SIRIUS and UL rated data				
Rated insulation voltage		V AC	600	
Uninterrupted current, at 40 °C, open and enclosed		A	400	540
Maximum horsepower ratings (from SIRIUS and UL approved values)				
• Rated power for three-phase motors at 60 Hz				
- At 200 V		hp	125	150
- At 230 V		hp	150	200
- At 460 V		hp	300	400
- At 575 V		hp	400	500
Short-circuit protection[1]				
• At 600 V		kA	18	30
• CLASS RK5/L fuse		A	1000	1200
• Circuit breakers with overload protection acc. to UL 489		A	900	900
Overload relays	Type		3RB2066	

[1] For more information about short-circuit values, e.g. for protection against short-circuit currents, see the UL reports on the individual devices, www.siemens.com/sirius/manuals.

For the dimensioning of load feeders, see also the UL guide "Industrial Control Panels for North America", www.siemens.com/sirius/ul-download.

Selection and ordering data

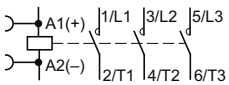
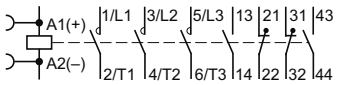
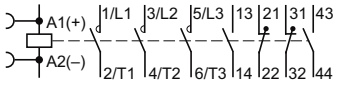
AC operation

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

3RT104.-1A.00

3RT104.-3A.00

3RT104.-1A.04

Rated data			Auxiliary contacts			Rated control supply voltage U_s at 50 Hz	DT	**Screw terminals**	DT	**Spring-type terminals** for coil terminals	
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C									
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No. / Price per PU		Article No. / Price per PU	
500 V	**400 V**	690 V		NO	NC						
A	**kW**	A				V AC					
For screw fixing and snap-on mounting onto TH 35 and TH 75 standard mounting rail											
Size S3											
											
65	**30**	100	--	--	--	24	▶	**3RT1044-1AB00**	B	**3RT1044-3AB00**	
						110	▶	**3RT1044-1AF00**	B	**3RT1044-3AF00**	
						230	▶	**3RT1044-1AP00**	▶	**3RT1044-3AP00**	
80	**37**	120	--	--	--	24	▶	**3RT1045-1AB00**	B	**3RT1045-3AB00**	
						110	▶	**3RT1045-1AF00**	B	**3RT1045-3AF00**	
						230	▶	**3RT1045-1AP00**	▶	**3RT1045-3AP00**	
95	**45**	120	--	--	--	24	▶	**3RT1046-1AB00**	B	**3RT1046-3AB00**	
						110	▶	**3RT1046-1AF00**	B	**3RT1046-3AF00**	
						230	▶	**3RT1046-1AP00**	▶	**3RT1046-3AP00**	
With mounted auxiliary switch block (removable)[2]											
											
65	**30**	100	**22**	2	2	24	▶	**3RT1044-1AB04**		--	
						110	▶	**3RT1044-1AF04**		--	
						230	▶	**3RT1044-1AP04**		--	
80	**37**	120	**22**	2	2	24	B	**3RT1045-1AB04**		--	
						110	▶	**3RT1045-1AF04**		--	
						230	▶	**3RT1045-1AP04**		--	
95	**45**	120	**22**	2	2	24	B	**3RT1046-1AB04**		--	
						110	▶	**3RT1046-1AF04**		--	
						230	▶	**3RT1046-1AP04**		--	
With permanently mounted auxiliary switch block for safety applications according to SUVA											
											
65	**30**	100	**22**	2	2	230	▶	**3RT1044-1AP04-3MA0**		--	
80	**37**	120	**22**	2	2	230	B	**3RT1045-1AP04-3MA0**		--	
95	**45**	120	**22**	2	2	230	▶	**3RT1046-1AP04-3MA0**		--	

Other voltages according to page 3/102 on request.
For accessories, see page 3/114.
For spare parts, see page 3/123.

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

[2] Article number for the auxiliary switch block (removable): 3RH1921-1HA22 (2 NO + 2 NC acc. to EN 50012; Ident. No. 22).

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

SIRIUS 3RT10 contactors, 3-pole, 30 ... 250 kW

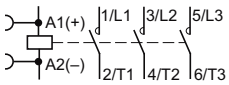
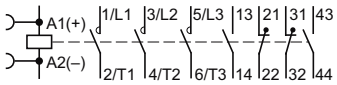
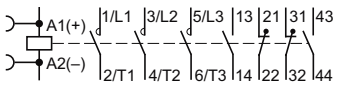
DC operation

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

3RT104.-1B.40

3RT104.-3B.40

3RT104.-1B.44

Rated data			Auxiliary contacts			Rated control supply voltage U_s	DT	Screw terminals	DT	Spring-type terminals for coil terminals
AC-2 and AC-3, T_u: Up to 60 °C		AC-1, T_u: 40 °C								
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Operational current I_e up to	Ident. No.	Version				Article No. / Price per PU		Article No. / Price per PU
500 V	**400 V**	690 V		NO	NC	V DC				
A	**kW**	A								
For screw fixing and snap-on mounting onto TH 35 and TH 75 standard mounting rail										
Size S3										
										
65	**30**	100	--	--	--	24 220	▶ B	**3RT1044-1BB40** **3RT1044-1BM40**	▶ B	**3RT1044-3BB40** **3RT1044-3BM40**
80	**37**	120	--	--	--	24 220	▶ B	**3RT1045-1BB40** **3RT1045-1BM40**	▶ B	**3RT1045-3BB40** **3RT1045-3BM40**
95	**45**	120	--	--	--	24 220	▶ B	**3RT1046-1BB40** **3RT1046-1BM40**	▶ B	**3RT1046-3BB40** **3RT1046-3BM40**
With mounted auxiliary switch block (removable)[2]										
										
65	**30**	100	**22**	2	2	24 220	▶ B	**3RT1044-1BB44** **3RT1044-1BM44**		**--** **--**
80	**37**	120	**22**	2	2	24 220	▶ B	**3RT1045-1BB44** **3RT1045-1BM44**		**--** **--**
95	**45**	120	**22**	2	2	24 220	▶ B	**3RT1046-1BB44** **3RT1046-1BM44**		**--** **--**
With permanently mounted auxiliary switch block for safety applications according to SUVA										
										
65	**30**	100	**22**	2	2	24	▶	**3RT1044-1BB44-3MA0**		**--**
80	**37**	120	**22**	2	2	24	▶	**3RT1045-1BB44-3MA0**		**--**
95	**45**	120	**22**	2	2	24	▶	**3RT1046-1BB44-3MA0**		**--**

Other voltages according to page 3/102 on request.
For accessories, see page 3/114.
For spare parts, see page 3/123.

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

2) Article number for the auxiliary switch block (removable): 3RH1921-1HA22 (2 NO + 2 NC acc. to EN 50012; Ident. No. 22).

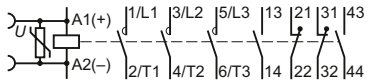
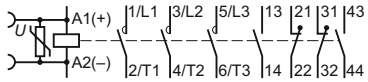
UC operating mechanism · AC/DC operation (50/60 Hz and DC)

- Withdrawable coils with integrated coil switch (varistor)
- Auxiliary and control conductors: Screw or spring-type terminals
- Main conductors: Busbar connections, for 3RT1054 (55 kW) box terminals[1)]

3RT105.

3RT106.

3RT107.

Size	Rated data AC-2 and AC-3, T_u: Up to 60 °C Operational current I_e up to 500 V	Ratings[2)] of three-phase motors at 50 Hz and 230 V	400 V	500 V	690 V	AC-1, T_u: 40 °C Operational current I_e up to 690 V	Auxiliary contacts, lateral Version NO	NC	Rated control supply voltage U_s V AC/DC	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	kW	**kW**	kW	kW	A									
Conventional operating mechanisms															
											**Screw terminals**				
S6	115	37	**55**	75	110	160	2	2	110 ... 127	▶	**3RT1054-1AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1054-1AP36**		1	1 unit	41B
	150	45	**75**	90	132	185	2	2	110 ... 127	▶	**3RT1055-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1055-6AP36**		1	1 unit	41B
	185	55	**90**	110	160	215	2	2	110 ... 127	▶	**3RT1056-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1056-6AP36**		1	1 unit	41B
S10	225	55	**110**	160	200	275	2	2	110 ... 127	▶	**3RT1064-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1064-6AP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	110 ... 127	▶	**3RT1065-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1065-6AP36**		1	1 unit	41B
	300	90	**160**	200	250	330	2	2	110 ... 127	▶	**3RT1066-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1066-6AP36**		1	1 unit	41B
S12	400	132	**200**	250	400	430	2	2	110 ... 127	▶	**3RT1075-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1075-6AP36**		1	1 unit	41B
	500	160	**250**	355	400	610	2	2	110 ... 127	▶	**3RT1076-6AF36**		1	1 unit	41B
									220 ... 240	▶	**3RT1076-6AP36**		1	1 unit	41B
											**Spring-type terminals** for coil and auxiliary switch terminals				
S6	115	37	**55**	75	110	160	2	2	110 ... 127	B	**3RT1054-3AF36**		1	1 unit	41B
									220 ... 240	B	**3RT1054-3AP36**		1	1 unit	41B
	150	45	**75**	90	132	185	2	2	110 ... 127	B	**3RT1055-2AF36**		1	1 unit	41B
									220 ... 240	B	**3RT1055-2AP36**		1	1 unit	41B
	185	55	**90**	110	160	215	2	2	110 ... 127	B	**3RT1056-2AF36**		1	1 unit	41B
									220 ... 240	B	**3RT1056-2AP36**		1	1 unit	41B
S10	225	55	**110**	160	200	275	2	2	110 ... 127	B	**3RT1064-2AF36**		1	1 unit	41B
									220 ... 240	B	**3RT1064-2AP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	110 ... 127	B	**3RT1065-2AF36**		1	1 unit	41B
									220 ... 240	B	**3RT1065-2AP36**		1	1 unit	41B
	300	90	**160**	200	250	330	2	2	110 ... 127	B	**3RT1066-2AF36**		1	1 unit	41B
									220 ... 240	B	**3RT1066-2AP36**		1	1 unit	41B
S12	400	132	**200**	250	400	430	2	2	110 ... 127	B	**3RT1075-2AF36**		1	1 unit	41B
									220 ... 240	B	**3RT1075-2AP36**		1	1 unit	41B
	500	160	**250**	355	400	610	2	2	110 ... 127	B	**3RT1076-2AF36**		1	1 unit	41B
									220 ... 240	B	**3RT1076-2AP36**		1	1 unit	41B

Other voltages according to page 3/102 on request.
For accessories, see page 3/114.
For spare parts, see page 3/124.

1) Alternatively the 3RT1054-1 contactor (55 kW) can be supplied with busbar connections instead of box terminals. Without additional price. In the 8th position of the article number, the **"1"** must be replaced with **"6"** for screw terminals, e.g. 3RT1054-**6**A.36; for spring-type terminals, the **"3"** must be replaced by **"2"**, e.g. 3RT1054-**2**A.36.

2) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

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

SIRIUS 3RT10 contactors, 3-pole, 30 ... 250 kW

UC operating mechanism · AC/DC operation (50/60 Hz and DC)

- Withdrawable coils with integrated coil switch (varistor)
- Auxiliary and control conductors: Screw or spring-type terminals
- Main conductors: Busbar connections, for 3RT1054 (55 kW) box terminals[1)]

3RT105.

3RT106.

3RT107.

Size	Rated data AC-2 and AC-3, T_u: Up to 60 °C Operational current I_e up to 500 V	Ratings[2)] of three-phase motors at 50 Hz and 230 V	400 V	500 V	690 V	AC-1, T_u: 40 °C Operational current I_e up to 690 V	Auxiliary contacts, lateral Version NO	NC	Rated control supply voltage U_s V AC/DC	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	kW	**kW**	kW	kW	A									
Solid-state operating mechanisms · for 24 V DC PLC output															
											Screw terminals				
S6	115	37	**55**	75	110	160	2	2	96 … 127	A	**3RT1054-1NF36**		1	1 unit	41B
									200 … 277	▶	**3RT1054-1NP36**		1	1 unit	41B
	150	45	**75**	90	132	185	2	2	96 … 127	A	**3RT1055-6NF36**		1	1 unit	41B
									200 … 277	▶	**3RT1055-6NP36**		1	1 unit	41B
	185	55	**90**	110	160	215	2	2	96 … 127	A	**3RT1056-6NF36**		1	1 unit	41B
									200 … 277	▶	**3RT1056-6NP36**		1	1 unit	41B
S10	225	55	**110**	160	200	275	2	2	96 … 127	A	**3RT1064-6NF36**		1	1 unit	41B
									200 … 277	A	**3RT1064-6NP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	96 … 127	A	**3RT1065-6NF36**		1	1 unit	41B
									200 … 277	A	**3RT1065-6NP36**		1	1 unit	41B
	300	90	**160**	200	250	330	2	2	96 … 127	B	**3RT1066-6NF36**		1	1 unit	41B
									200 … 277	A	**3RT1066-6NP36**		1	1 unit	41B
S12	400	132	**200**	250	400	430	2	2	96 … 127	A	**3RT1075-6NF36**		1	1 unit	41B
									200 … 277	A	**3RT1075-6NP36**		1	1 unit	41B
	500	160	**250**	355	400	610	2	2	96 … 127	A	**3RT1076-6NF36**		1	1 unit	41B
									200 … 277	A	**3RT1076-6NP36**		1	1 unit	41B
											Spring-type terminals for coil and auxiliary switch terminals				
S6	115	37	**55**	75	110	160	2	2	96 … 127	B	**3RT1054-3NF36**		1	1 unit	41B
									200 … 277	B	**3RT1054-3NP36**		1	1 unit	41B
	150	45	**75**	90	132	185	2	2	96 … 127	B	**3RT1055-2NF36**		1	1 unit	41B
									200 … 277	B	**3RT1055-2NP36**		1	1 unit	41B
	185	55	**90**	110	160	215	2	2	96 … 127	B	**3RT1056-2NF36**		1	1 unit	41B
									200 … 277	B	**3RT1056-2NP36**		1	1 unit	41B
S10	225	55	**110**	160	200	275	2	2	96 … 127	B	**3RT1064-2NF36**		1	1 unit	41B
									200 … 277	B	**3RT1064-2NP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	96 … 127	B	**3RT1065-2NF36**		1	1 unit	41B
									200 … 277	B	**3RT1065-2NP36**		1	1 unit	41B
	300	90	**160**	200	250	330	2	2	96 … 127	B	**3RT1066-2NF36**		1	1 unit	41B
									200 … 277	B	**3RT1066-2NP36**		1	1 unit	41B
S12	400	132	**200**	250	400	430	2	2	96 … 127	B	**3RT1075-2NF36**		1	1 unit	41B
									200 … 277	B	**3RT1075-2NP36**		1	1 unit	41B
	500	160	**250**	355	400	610	2	2	96 … 127	B	**3RT1076-2NF36**		1	1 unit	41B
									200 … 277	B	**3RT1076-2NP36**		1	1 unit	41B

Other voltages according to page 3/102 on request.
For accessories, see page 3/114.
For spare parts, see page 3/125.

[1)] Alternatively the 3RT1054-1 contactor (55 kW) can be supplied with busbar connections instead of box terminals. Without additional price. In the 8th position of the article number, the **"1"** must be replaced with **"6"** for screw terminals, e.g. 3RT1054-**6**A.36; for spring-type terminals, the **"3"** must be replaced by **"2"**, e.g. 3RT1054-**2**A.36.

[2)] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

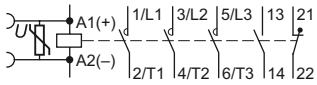
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

3

UC operating mechanism · AC/DC operation (50/60 Hz and DC)

- Withdrawable coils with integrated coil switch (varistor)
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections, for 3RT1054 (55 kW) box terminals[1)]
- Indication of remaining lifetime (RLT)

3RT1056-6P. .

Size	Rated data						Auxiliary contacts, lateral		Rated control supply voltage U_s	DT	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
	AC-2 and AC-3, T_u: Up to 60 °C					AC-1, T_u: 40 °C	Version				Article No.	Price per PU			
	Operational current I_e up to	Ratings[2)] of three-phase motors at 50 Hz and				Operational current I_e up to									
	500 V	230 V	**400 V**	500 V	690 V	690 V									
	A	kW	**kW**	kW	kW	A	NO	NC	V AC/DC						
Solid-state operating mechanisms · with 24 V DC PLC relay output · with RLT															
															
S6	115	37	**55**	75	110	160	1	1	96 … 127 200 … 277	B B	**3RT1054-1PF35** **3RT1054-1PP35**		1 1	1 unit 1 unit	41B 41B
	150	45	**75**	90	132	185	1	1	96 … 127 200 … 277	B B	**3RT1055-6PF35** **3RT1055-6PP35**		1 1	1 unit 1 unit	41B 41B
	185	55	**90**	110	160	215	1	1	96 … 127 200 … 277	B B	**3RT1056-6PF35** **3RT1056-6PP35**		1 1	1 unit 1 unit	41B 41B
S10	225	55	**110**	160	200	275	1	1	96 … 127 200 … 277	B B	**3RT1064-6PF35** **3RT1064-6PP35**		1 1	1 unit 1 unit	41B 41B
	265	75	**132**	160	250	330	1	1	96 … 127 200 … 277	B B	**3RT1065-6PF35** **3RT1065-6PP35**		1 1	1 unit 1 unit	41B 41B
	300	90	**160**	200	250	330	1	1	96 … 127 200 … 277	B B	**3RT1066-6PF35** **3RT1066-6PP35**		1 1	1 unit 1 unit	41B 41B
S12	400	132	**200**	250	400	430	1	1	96 … 127 200 … 277	B B	**3RT1075-6PF35** **3RT1075-6PP35**		1 1	1 unit 1 unit	41B 41B
	500	160	**250**	355	400	610	1	1	96 … 127 200 … 277	B B	**3RT1076-6PF35** **3RT1076-6PP35**		1 1	1 unit 1 unit	41B 41B

Other voltages according to page 3/102 on request.
For accessories, see page 3/114.
For spare parts, see page 3/125.

1) Alternatively the 3RT1054-1 contactor (55 kW) can be supplied with busbar connections instead of box terminals.
Without additional price. In the 8th position of the article number, the **"1"** must be replaced with **"6"**, e.g. 3RT1054-**6**. .35.

2) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

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

Options

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

Rated control supply voltage U_s	Contactor type	3RT104	3RT144	3RT134	3RT1617, 3RT1627, 3RT1647
	Size	S3	S3	S3	S00, S0, S3
Size S3					
AC operation					
Solenoid coils for 50 Hz[1]					
24 V AC		B0	B0	B0	B0
42 V AC		D0	D0	--	--
48 V AC		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 and 60 Hz[1]					
24 V AC		C2	C2	C2	C2
42 V AC		D2	D2	D2	--
48 V AC		H2	H2	H2	--
110 V AC		G2	G2	G2	G2
220 V AC		N2	N2	N2	N2
230 V AC		L2	L2	L2	L2
Solenoid coils (for USA and Canada[2]**)**					
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 Hz[3]	**60 Hz**[4]				
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 operation					
12 V DC		--	--	--	--
24 V DC		B4	B4	B4	--
42 V DC		D4	D4	D4	--
48 V DC		W4	W4	--	--
60 V DC		E4	E4	--	--
110 V DC		F4	F4	F4	--
125 V DC		G4	G4	G4	--
220 V DC		M4	M4	M4	--
230 V DC		P4	P4	--	--

Examples

AC operating mechanism	3RT1045-1A**P0**0	Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC
	3RT1045-1A**G2**0	Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC
DC operating mechanism	3RT1046-3B**B4**0	Contactor with spring-type terminals; for rated control supply voltage 24 V DC
	3RT1046-3B**G4**0	Contactor with spring-type terminals; for rated control supply voltage 125 V DC

Rated control supply voltage U_s	Contactor type	3RT1.5.-.A 3RT1.6.-.A 3RT1.7.-.A	Rated control supply voltage U_s	Contactor type	3RT1.5.-.N 3RT1.6.-.N 3RT1.7.-.N	3RT1.5.-.P 3RT1.6.-.P 3RT1.7.-.P
$U_{s\,min}$ ... $U_{s\,max}$[5]	Size	S6, S10, S12	$U_{s\,min}$ ... $U_{s\,max}$[5]	Size	S6, S10, S12	S6, S10, S12
Sizes S6 to S12						
UC operation (50/60 Hz AC, DC)						
Conventional operating mechanisms			**Solid-state operating mechanisms**			
23 ... 26 V AC/DC		B3	21 ... 27.3 V AC/DC		B3	--
42 ... 48 V AC/DC		D3	96 ... 127 V AC/DC		F3	F3
110 ... 127 V AC/DC		F3	200 ... 277 V AC/DC		P3	P3
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				

1) Coil operating range:
at 50 Hz: 0.8 to 1.1 x U_s
at 60 Hz: 0.85 to 1.1 × U_s.

2) Coil operating range (size S3):
at 50 Hz and 60 Hz: 0.8 to 1.1 × U_s.

3) Coil operating range (size S3):
at 50 Hz: 0.8 to 1.1 x U_s
at 60 Hz: 0.85 to 1.1 × U_s.

4) Coil operating range:
at 60 Hz: 0.8 to 1.1 × U_s.

5) Operating range:
0.8 x $U_{s\,min}$ to 1.1 × $U_{s\,max}$.

Overview

UC operation

The contactors can be operated with AC (50 to 60 Hz) as well as with DC.

Two types of solenoid operation are available:

- Conventional operating mechanism, version 3RT12. .-. A
- Solid-state operating mechanism, version 3RT12. .-. N

Withdrawable coils

For simple coil replacement, e.g. if the application is replaced, the solenoid coil can be pulled out upwards after the release mechanism has been actuated and can be replaced by any other coil of the same size.

Vacuum interrupters

In contrast with the 3RT10 contactors – the main contacts operate in air under atmospheric conditions – the contact gaps of the 3RT12 vacuum contactors are contained in hermetically enclosed vacuum interrupters. Neither arcs nor arcing gases are produced. The particular benefit of 3RT12 vacuum contactors, however, is that their electrical endurance is at least twice as long as that of 3RT10 contactors. They are therefore particularly well suited to frequent switching in jogging/mixed operation, e.g. in crane control systems.

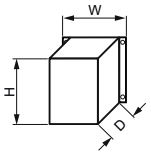
Note:

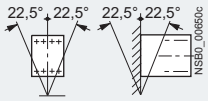
Vacuum contactors are basically unsuitable for switching DC voltage.

Auxiliary contact complement

The contacts can be fitted with up to 8 lateral auxiliary contacts (identical auxiliary switch blocks from S3 to S12). Of these, no more than 4 are permitted to be NC contacts.

Technical specifications

Type			**3RT1264**	**3RT1265**	**3RT1266**	**3RT1275**	**3RT1276**
Size			**S10**			**S12**	
Dimensions (W x H x D)		mm	145 x 210 x 206			160 x 214 x 225	

General data						
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.						
Mechanical endurance	Operating cycles		10 million			
Electrical endurance			1)			
Rated insulation voltage U_i (pollution degree 3)		V	1000			
Rated impulse withstand voltage U_{imp}		kV	8			
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		V	690			
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			Yes, acc. to IEC 60947-4-1, Appendix F			
Permissible ambient temperature						
• During operation		°C	-25 ... +60/+55 with AS-Interface			
• During storage		°C	-55 ... +80			
Degree of protection acc. to IEC 60947-1, Appendix C			IP00/open (where applicable, use additional terminal covers)			
Touch protection acc. to EN 50274			Finger-safe only for vertical contact from the front			
Shock resistance						
• Rectangular pulse		*g*/ms	8.5/5 and 4.2/10			
• Sine pulse		*g*/ms	13.4/5 and 6.5/10			
Conductor cross-sections			2)			
Electromagnetic compatibility (EMC)			3)			
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/EN 60947-4-1						
• Type of coordination "1"		A	500			800
• Type of coordination "2"		A	500			800
• Weld-free[4]		A	400			500
Auxiliary circuit						
• Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE (weld-free protection $I_k \leq 1$ kA)		A	10			
• Miniature circuit breakers with C characteristic (short-circuit current $I_k \leq 400$ A)						

1) For contact endurance of the main contacts, see page 3/84.

2) For conductor cross-sections, see page 3/106.

3) For electromagnetic compatibility (EMC), see page 3/80.

4) Test conditions according to IEC 60947-4-1.

SIRIUS 3RT12 vacuum contactors, 3-pole, 110 ... 250 kW

Type Size		3RT1264 S10	3RT1265 S10	3RT1266 S10	3RT1275 S12	3RT1276 S12
Control						
Operating range of the solenoid AC/DC (UC)		0.8 x $U_{s\ min}$ ... 1.1 x $U_{s\ max}$				
Power consumption of the solenoid operation (when coil is cold and rated range $U_{s\ min}$ ... $U_{s\ max}$)						
Conventional operating mechanisms						
• AC operation						
- Closing at $U_{s\ min}$	VA/p.f.	530/0.9			700/0.9	
- Closing at $U_{s\ max}$	VA/p.f.	630/0.9			830/0.9	
- Closed at $U_{s\ min}$	VA/p.f.	6.1/0.9			7.6/0.9	
- Closed at $U_{s\ max}$	VA/p.f.	7.4/0.9			9.2/0.9	
• DC operation						
- Closing at $U_{s\ min}$	W	580			770	
- Closing at $U_{s\ max}$	W	700			920	
- Closed at $U_{s\ min}$	W	6.8			8.5	
- Closed at $U_{s\ max}$	W	8.2			10	
Solid-state operating mechanisms						
• AC operation						
- Closing at $U_{s\ min}$	VA/p.f.	420/0.8			560/0.8	
- Closing at $U_{s\ max}$	VA/p.f.	570/0.8			750/0.8	
- Closed at $U_{s\ min}$	VA/p.f.	4.3/0.8			5.4/0.8	
- Closed at $U_{s\ max}$	VA/p.f.	5.6/0.8			7/0.8	
• DC operation						
- Closing at $U_{s\ min}$	W	460			600	
- Closing at $U_{s\ max}$	W	630			800	
- Closed at $U_{s\ min}$	W	3.4			4	
- Closed at $U_{s\ max}$	W	4.2			5	
PLC control input acc. to IEC 61131-2		Type 2				
• Rated voltage	V DC	24				
• Operating range	V DC	17 ... 30				
• Power consumption	mA	≤ 30				
Operating times (Total break time = Opening delay + Arcing time)						
Conventional operating mechanisms						
• For 0.8 x $U_{s\ min}$ ... 1.1 x $U_{s\ max}$						
- Closing delay	ms	30 ... 95			45 ... 100	
- Opening delay	ms	40 ... 80			60 ... 100	
• For $U_{s\ min}$ ... $U_{s\ max}$						
- Closing delay	ms	35 ... 50			50 ... 70	
- Opening delay	ms	50 ... 80			70 ... 100	
• Arcing time	ms	10 ... 15			10 ... 15	
Solid-state operating mechanism, actuated via A1/A2						
• For 0.8 x $U_{s\ min}$ ... 1.1 x $U_{s\ max}$						
- Closing delay	ms	105 ... 145			120 ... 150	
- Opening delay	ms	80 ... 100			80 ... 100	
• For $U_{s\ min}$ ... $U_{s\ max}$						
- Closing delay	ms	110 ... 130			125 ... 150	
- Opening delay	ms	80 ... 100			80 ... 100	
• Arcing time	ms	10 ... 15			10 ... 15	
Solid-state operating mechanism, actuated via PLC input						
• For 0.8 x $U_{s\ min}$ ... 1.1 x $U_{s\ max}$						
- Closing delay	ms	45 ... 80			60 ... 90	
- Opening delay	ms	80 ... 100			80 ... 100	
• For $U_{s\ min}$ ... $U_{s\ max}$						
- Closing delay	ms	50 ... 65			65 ... 80	
- Opening delay	ms	80 ... 100			80 ... 100	
• Arcing time	ms	10 ... 15			10 ... 15	

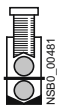
Type Size		3RT1264 S10	3RT1265 S10	3RT1266 S10	3RT1275 S12	3RT1276 S12
Main circuit						
Load rating with AC						
Utilization category AC-1 **Switching resistive loads**						
• Rated operational currents I_e						
- At 40 °C up to 1 000 V	A	330			610	
- At 60 °C up to 1 000 V	A	300			550	
• Rated power for AC loads[1] with p.f. = 0.95 (at 60 °C)						
- At 230 V	kW	113			208	
- At 400 V	kW	197			362	
- At 500 V	kW	246			452	
- At 690 V	kW	340			624	
- At 1 000 V	kW	492			905	
• Minimum conductor cross-section for loads with I_e						
- At 40 °C	mm^2	185			2 x 185	
- At 60 °C	mm^2	185			2 x 185	
Utilization categories AC-2 and AC-3						
• Rated operational currents I_e						
- Up to 1000 V	A	225	265	300	400	500
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz						
- At 230 V	kW	73	85	97	132	164
- At 400 V	kW	128	151	171	231	291
- At 500 V	kW	160	189	215	291	363
- At 690 V	kW	223	265	288	400	507
- At 1 000 V	kW	320	378	428	578	728
Thermal load capacity	A	1 800	2 120	2 400	3 200	4 000
Power loss per conducting path at I_e/AC-3	W	9	12	14	21	32
Utilization category AC-4 (for I_a = 6 x I_e)						
Maximum values:						
• Rated operational current I_e						
- Up to 690 V	A	195	230	280	350	430
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz						
- At 400 V	kW	110	132	160	200	250
The following applies to a contact endurance of about 200 000 operating cycles:						
• Rated operational currents I_e						
- Up to 690 V	A	97	115	140	175	215
- Up to 1 000 V	A	68	81	98	123	151
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz						
- At 230 V	kW	30	37	45	56	70
- At 400 V	kW	55	65	79	98	122
- At 500 V	kW	68	81	98	124	153
- At 690 V	kW	94	112	138	172	212
- At 1 000 V	kW	95	114	140	183	217
Switching frequency						
Switching frequency *z* in operating cycles/hour						
Contactors without overload relays						
• No-load switching frequency	h^{-1}	2 000				
• Switching frequency *z* during rated operation[3]						
- I_e/AC-1 at 400 V	h^{-1}	800	750		700	
- I_e/AC-2 at 400 V	h^{-1}	300	250		250	
- I_e/AC-3 at 400 V	h^{-1}	750	750		750	
- I_e/AC-4 at 400 V	h^{-1}	250	250		250	
Contactors with overload relays						
• Mean value	h^{-1}	60				

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

2) According to IEC 60947-4-1.
Rated values for various start-up conditions, see Chapter 7, "Protection Equipment" → "Overload Relays".

3) Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*:
$z' = z \times (I_e/I') \times (400\ V/U')^{1.5} \times 1/h$

SIRIUS 3RT12 vacuum contactors, 3-pole, 110 ... 250 kW

Type Size		3RT126. S10	3RT127. S12
Conductor cross-sections			
Main conductors		Screw terminals	
With mounted box terminals	Type	3RT19 66-4G	
• Terminal screws - Tightening torque	Nm	M12 (hexagon socket, A/F 5) 20 ... 22 (180 ... 195 lb.in)	
Front clamping point connected			
			
• Finely stranded with end sleeve	mm²	70 ... 240	
• Finely stranded without end sleeve	mm²	70 ... 240	
• Stranded	mm²	95 ... 300	
• AWG cables, solid or stranded	AWG	3/0 ... 600 kcmil	
• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 6 x 9 x 0.8; max. 20 x 24 x 0.5	
Rear clamping point connected			
			
• Finely stranded with end sleeve	mm²	120 ... 185	
• Finely stranded without end sleeve	mm²	120 ... 185	
• Stranded	mm²	120 ... 240	
• AWG cables, solid or stranded	AWG	250 ... 500 kcmil	
• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 6 x 9 x 0.8; max. 20 x 24 x 0.5	
Both clamping points connected			
			
• Finely stranded with end sleeve	mm²	Min. 2 x 50, max. 2 x 185	
• Finely stranded without end sleeve	mm²	Min. 2 x 50, max. 2 x 185	
• Stranded	mm²	Min. 2 x 70, max. 2 x 240	
• AWG cables, solid or stranded	AWG	Min. 2 x 2/0, max. 1 x 500 kcmil	
• Ribbon cable conductors (Number x Width x Thickness)	mm	Max. 2 x (20 x 24 x 0.5)	
Busbar connections			
• Connecting bars (max. width)	mm	25	
Cable lug connection			
• Finely stranded with cable lug[1]	mm²	50 ... 240	
• Stranded with cable lug[1]	mm²	70 ... 240	
• AWG cables, solid or stranded	AWG	2/0 ... 500 kcmil	
• Terminal screws - Tightening torque	Nm	M10 x 30 (A/F 17) 14 ... 24 (124 ... 210 lb.in)	
Auxiliary conductors			
• Solid	mm²	2 x (0.5 ... 1.5)[2]; 2 x (0.75 ... 2.5)[2] according to IEC 60947; max. 2 x (0.75 ... 4)	
• Finely stranded with end sleeve	mm²	2 x (0.5 ... 1.5)[2], 2 x (0.75 ... 2.5)[2]	
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)	
• Terminal screws - Tightening torque	Nm	M3 (Pozidriv size 2) 0.8 ... 1,2 (7 ... 10.3 lb.in)	

[1] When connecting cable lugs to DIN 46234, the 3RT1966-4EA1 terminal cover must be used for conductor cross-sections of 240 mm² and more as well as DIN 46235 for conductor cross-sections of 185 mm² and more to keep the phase clearance.

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

Type Size		3RT1264 S10	3RT1265 S10	3RT1266 S10	3RT1275 S12	3RT1276 S12
cULus rated data						
Rated insulation voltage	V AC	600			600	
Uninterrupted current, at 40 °C, open and enclosed	A	330			540	
Maximum horsepower ratings (cULus approved values)						
• Rated power for three-phase motors at 60 Hz						
- At 200 V	hp	60	75	100	125	150
- At 230 V	hp	75	100	125	150	200
- At 460 V	hp	150	200	250	300	400
- At 575 V	hp	200	250	300	400	500
Short-circuit protection[1]	kA	10	18	18	18	30
• CLASS L fuse	A	700	800	800	1200	1200
• Circuit breakers acc. to UL 489	A	500	700	900	1000	1200
Overload relays	Type	3RB2066			3RB2066	

[1] For more information about short-circuit values, e.g. for protection against short-circuit currents, see the UL reports on the individual devices, www.siemens.com/sirius/manuals, or the UL Guide "Industrial Control Panels for North America", www.siemens.com/sirius/ul-download.

3

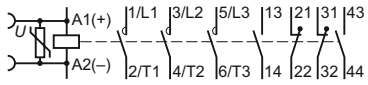
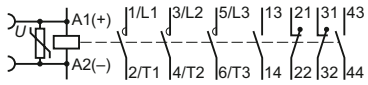
Selection and ordering data

UC operation (50/60 Hz AC, DC)

- Withdrawable coils with integrated coil switch (varistor)
- Auxiliary and control conductors: Screw terminals
- Main conductors: Busbar connections

3RT126.

3RT127.

Size	Rated data						Auxiliary contacts, lateral		Rated control supply voltage U_s	DT	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
	AC-2 and AC-3, T_u: Up to 60 °C					AC-1, T_u: 40 °C					Article No.	Price per PU			
	Operational current I_e up to	Ratings[1] of three-phase motors at 50 Hz and				Operational current I_e up to									
	1 000 V	230 V	**400 V**	500 V	690 V	1 000 V									
	A	kW	**kW**	kW	kW	A	NO	NC	V AC/DC						
Conventional operating mechanisms															
															
S10	225	55	**110**	160	200	330	2	2	110 ... 127	A	**3RT1264-6AF36**		1	1 unit	41B
									220 ... 240	A	**3RT1264-6AP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	110 ... 127	A	**3RT1265-6AF36**		1	1 unit	41B
									220 ... 240	A	**3RT1265-6AP36**		1	1 unit	41B
	300	90	**160**	200	250	330	2	2	110 ... 127	A	**3RT1266-6AF36**		1	1 unit	41B
									220 ... 240	A	**3RT1266-6AP36**		1	1 unit	41B
S12	400	132	**200**	250	400	610	2	2	110 ... 127	A	**3RT1275-6AF36**		1	1 unit	41B
									220 ... 240	A	**3RT1275-6AP36**		1	1 unit	41B
	500	160	**250**	355	500	610	2	2	110 ... 127	A	**3RT1276-6AF36**		1	1 unit	41B
									220 ... 240	A	**3RT1276-6AP36**		1	1 unit	41B
Solid-state operating mechanisms · For 24 V DC PLC output															
															
S10	225	55	**110**	160	200	330	2	2	96 ... 127	B	**3RT1264-6NF36**		1	1 unit	41B
									200 ... 277	B	**3RT1264-6NP36**		1	1 unit	41B
	265	75	**132**	160	250	330	2	2	96 ... 127	B	**3RT1265-6NF36**		1	1 unit	41B
									200 ... 277	B	**3RT1265-6NP36**		1	1 unit	41B
	300	90	**160**	200	250	330	2	2	96 ... 127	B	**3RT1266-6NF36**		1	1 unit	41B
									200 ... 277	B	**3RT1266-6NP36**		1	1 unit	41B
S12	400	132	**200**	250	400	610	2	2	96 ... 127	B	**3RT1275-6NF36**		1	1 unit	41B
									200 ... 277	B	**3RT1275-6NP36**		1	1 unit	41B
	500	160	**250**	355	500	610	2	2	96 ... 127	B	**3RT1276-6NF36**		1	1 unit	41B
									200 ... 277	B	**3RT1276-6NP36**		1	1 unit	41B

Other voltages according to page 3/102 on request.
For more 3TF68/3TF69 vacuum contactors (335 kW and 450 kW), see page 3/133.
For accessories, see page 3/116.

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

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

Overview

Snap-on auxiliary switch blocks

Various auxiliary switch blocks can be added to the 3RT1 basic units depending on the application:

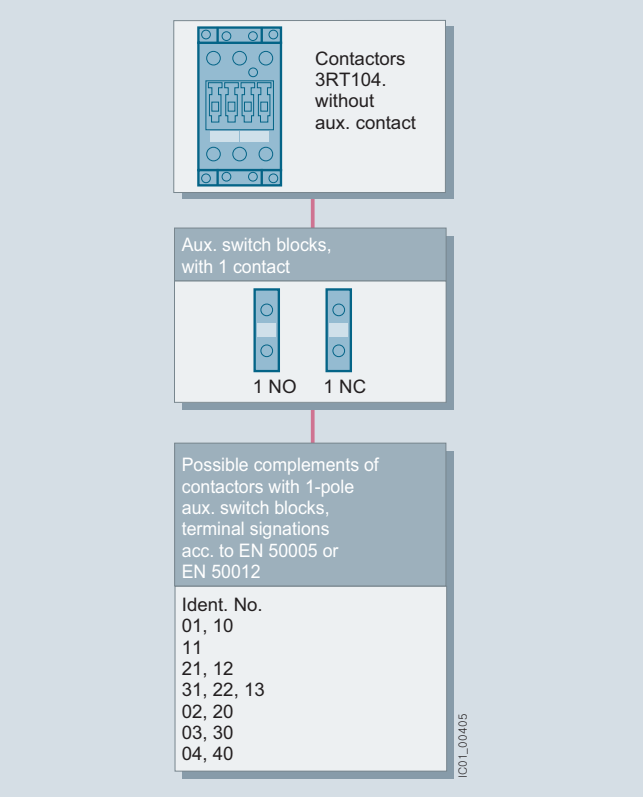
Sizes S3 to S12

Terminal designations according to EN 50005 or EN 50012.

One 4-pole or up to four single-pole auxiliary switch blocks (screw or spring-type connections) can be snapped on. When the contactors are switched on, the NC contacts are opened first and then the NO contacts are closed.

Also available are 2-pole auxiliary switch blocks (screw terminals) for cable entry from above or below in the design of a quad block (feeder auxiliary switch).

If the installation space is limited in depth, 2-pole auxiliary switch blocks (screw or spring-type connections) can be attached laterally (on the left or on the right).

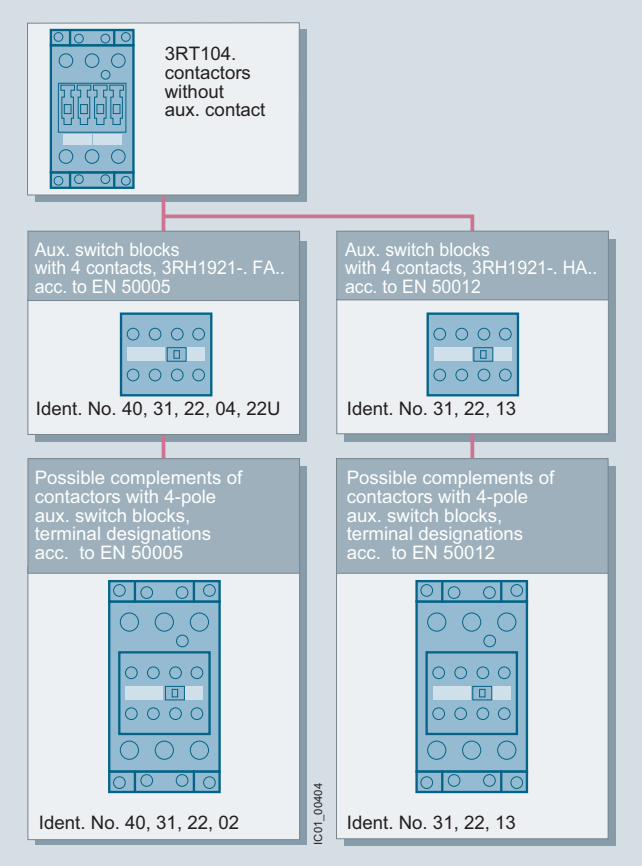


1-pole auxiliary switch blocks for 3RT1 contactors

The terminal designations of the single-pole auxiliary switch blocks are comprised of identification numbers (location identifiers) on the basic unit and of function numbers on the auxiliary switch blocks.

The terminal designations of the individual auxiliary switch blocks correspond to EN 50005 or EN 50012, those of the complete contactors with auxiliary switch block 2 NO + 2 NC correspond to EN 50012.

The auxiliary switch blocks attached to the front can be disassembled with the help of a centrally arranged release lever; the laterally attached auxiliary switch blocks are easy to remove by pressing on the checkered surfaces.



4-pole auxiliary switch blocks for 3RT1 contactors

The laterally mountable auxiliary switch blocks according to EN 50012 can be used only when no 4-pole auxiliary switch blocks are snapped onto the front. If single-pole auxiliary switch blocks are used in addition, the location identifiers on the contactor must be noted.

Two enclosed and two standard contacts are available with the 3RH1921-.FE22 solid-state compatible auxiliary switch block, which can be attached to the front. The laterally mountable, solid-state compatible 3RH1921-2DE11 auxiliary switch block contains two enclosed contacts (1 NO + 1 NC). The enclosed contacts are suitable in particular for switching small voltages and currents (hard gold-plated contacts) and for operation in dusty atmospheres. The NC auxiliary contacts are mirror contacts.

Sizes S3 to S12

A maximum of eight auxiliary contacts can be attached, please note the following:

- Of these eight auxiliary contacts, there must be no more than four NC contacts
- Ensure the symmetry of laterally mounted auxiliary switch blocks

Solid-state time-delay auxiliary switch blocks

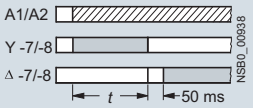
The solid-state, time-delay auxiliary switch block is fitted onto the front side of the contactor.

The timer module, which is available in the "ON-DELAY" and "OFF-DELAY" versions, allows time-delayed functions up to 100 s (three delay ranges).

It contains a relay with one NO contact and one NC contact; depending on the version, the relay is switched either after an ON-delay or after an OFF-delay.

The timer module with WYE-DELTA FUNCTION is equipped with one delayed and one instantaneous NO contact, with a dead time of 50 ms between the two. The delay time of the NO contact can be adjusted between 1.5 s and 30 s.

Wye-delta function



The contactor on which the solid-state time-delay auxiliary switch block is mounted operates without a delay.

Sizes S3 to S12

The timer module is supplied with power through two terminals (A1/A2); the time delay of the auxiliary switch block can be activated either by a parallel link to any contactor coil or by any power source.

The OFF-delay version operates without a control signal, the minimum ON period is 200 ms.

A single-pole auxiliary switch block can be snapped onto the front of the contactor in addition to the timer module.

The timer module has no integrated components for overvoltage damping.

Electronic timing relay blocks with semiconductor output

The timer module, which is available in the "ON-DELAY" and "OFF-DELAY" versions with control signal, allows time-delayed functions up to 100 s (three delay ranges). Contactors fitted with a timing relay block close or open after a delay according to the set time.

The ON-delay variant of the timing relay is connected in series with the contactor coil; terminal A1 of this coil must not be connected.

With the OFF-delay variant of the timing relay, the contactor coil is contacted directly through the relay; terminals A1 and A2 of the contactor coil must not be connected.

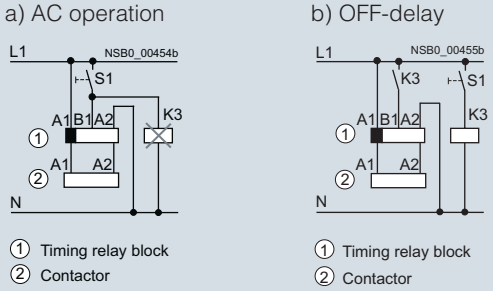
The timing relays are suitable for both AC and DC operation.

Size S3

The timing relay block for size S3 contactors is plugged into coil terminals A1 and A2 on top of each contactor; the timing relay is connected both electrically and mechanically by means of pins.

A varistor is integrated in the timer module in order to damp opening surges in the contactor coil.

Configuration



The activation of loads parallel to the start input is not permissible with AC operation (see (a) in the circuit diagram).

The 3RT1926-2D... OFF-delay timing relay blocks have a zero potential start input B1. This means that if there is a parallel load on terminal B1, activation can be simulated with AC voltage. In this case, the additional load (e.g. contactor K3) must be wired (see (b) in the drawing).

General data

OFF-delay device for size S3 contactors

AC and DC operation

IEC 60947, EN 60947

For screw fixing and snap-on mounting onto TH 35 standard mounting rails. The OFF-delay devices have screw terminals.

The OFF-delay device prevents a contactor from dropping out unintentionally when there is a short-time voltage dip or voltage failure. It supplies a downstream, DC-operated contactor with the necessary energy during a voltage dip, ensuring that the contactor does not trip. The 3RT1916 OFF-delay devices are specifically designed for operation with the 3RT1 contactors and 3RH1 contactor relays.

The OFF-delay device operates without external voltage on a capacitive basis and in size S3 can be energized only with DC.

A contactor opens after a delay when the capacitors of the solenoid coil, built into the OFF-delay device, are switched in parallel. In the event of voltage failures, the capacitors are discharged via the solenoid coil and thereby delay the opening of the contactor.

If the command devices are upstream of the OFF-delay device in the circuit, the OFF-delay takes effect with every opening operation. If the opening operation is downstream of the OFF-delay device, an OFF-delay only applies in the event of failure of the mains voltage.

Operation

For size S3, only one version with 24 V DC operation is available.

A DC-operated contactor is connected to the output according to the input voltage that is applied.

The mean value of the OFF-delay is approximately 1.5 times the specified minimum time.

Surge suppressors

- Without LED (also for spring-type terminals)
  Sizes S3, S6 to S12

All 3RT1 contactors and 3RH1 contactor relays can be retrofitted with RC elements or varistors for damping opening surges in the coil. Diodes or diode assemblies (comprising noise suppression diodes and Zener diodes for short break times) can be used.

With the size S3 contactors, varistors, RC elements and diode assemblies can be plugged on directly at the coil terminals, either on the top or underneath.

The plug-in direction of the diodes and diode assemblies is determined by a coding device.

Coupling contactors are supplied either without overvoltage damping or with a varistor or diode connected as standard, according to the version.

Note:

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

Coupling links for mounting on contactors of size S3

DC operation

IEC 60947 and EN 60947

The coupling link is suitable for use in any climate. It is finger-safe according to EN 50274. The terminal designations comply with EN 50005.

System-compatible operation with 24 V DC,
operating range 17 to 30 V.

Low power consumption in conformity with the technical specifications of the solid-state systems. An LED indicates the switching state.

Surge suppression

The 3RH1924-1GP11 coupling link has an integrated surge suppressor (varistor) for the contactor coil being switched.

Mounting

The 3RH1924-1GP11 coupling link is mounted directly on the contactor coil.

Sealable covers for sizes S3 to S12

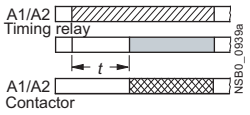
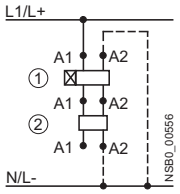
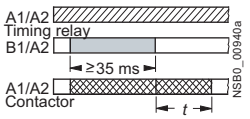
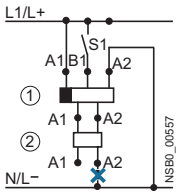
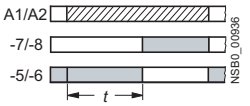
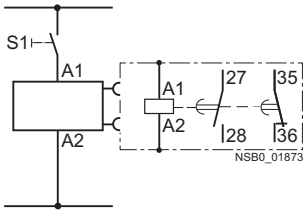
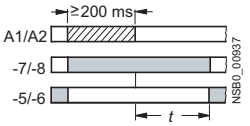
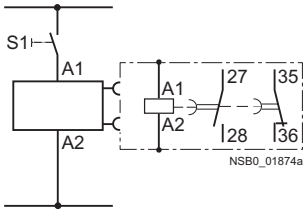
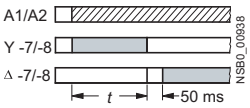
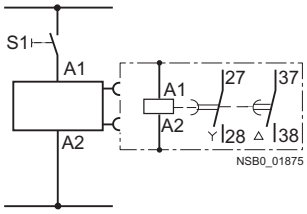
When contactors and contactor relays are used in safety-related applications, it must be ensured that it is impossible to operate the contactors manually.

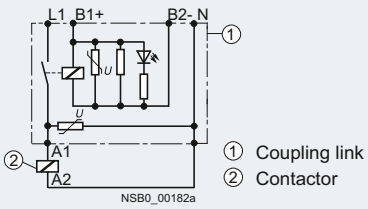
For SIRIUS contactors there are sealable covers available for this purpose as accessories; these prevent accidental manual operation. These are transparent molded-plastic caps with a bracket that enables the contactor to be sealed.

Technical specifications

Contactor	Type		3RT1926-2C	3RT1926-2D	3RT1926-2E	3RT1926-2F	3RT1926-2G
			Electronic timing relay blocks with semiconductor output		Solid-state time-delay auxiliary switch blocks		
General data							
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III according to IEC 60664-1		V AC	250				
Permissible ambient temperature							
• During operation		°C	-25 ... +60				
• During storage		°C	-40 ... +80				
Degree of protection acc. to IEC 60947-1, Appendix C • Cover • Terminals			 IP40 IP20				
Shock resistance Half-sine acc. to IEC 60068-2-27		*g*/ms	15/11				
Vibration resistance according to IEC 60068-2-6		Hz/mm	10 ... 55/0.35				
EMC tests	Basic specification		IEC 61000-6-4				
Conductor connections							
• Solid		mm^2	2 x (0.5 ... 1.5), 2 x (0.75 ... 4)				
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 2.5)				
• AWG cables, solid or stranded		AWG	2 x (18 ... 14)				
• Terminal screws			M3				
• Tightening torque		Nm lb.in	0.8 ... 1.2 7 ... 10.3				
Permissible mounting position			Any				
Control							
Operating range of excitation			0.8 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency		0.85 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency		
Rated power		W	1		2		
• Power consumption at 230 V AC, 50 Hz		VA	1		4		
Overvoltage protection			Varistor integrated in timing relay		--		
Recovery time		ms	50		150		
Minimum ON period		ms	35		200 (with OFF-delay)		
Setting accuracy With reference to upper limit of scale	Typ.	%	±15				
Repeat accuracy	Max.	%	±1				
Load side							
Rated operational currents I_e							
• Load current		A	0.3		--		
• AC-15, 230 V, 50 Hz		A	--		3		
• DC-13, 24 V		A	--		1		
• DC-13, 110 V		A	--		0.2		
• DC-13, 230 V		A	--		0.1		
Short-time loading capacity	Up to 10 ms	A	10		--		
DIAZED protection gG operational class		A	--		4		
Residual current	Max.	mA	5		--		
Voltage drop With conducting output	Max.	VA	3.5		--		
Mechanical endurance	Operating cycles		100×10^6		10×10^6		
Switching frequency for load							
• With I_e at 230 V AC		h^{-1}	2 00		2 500		
• With 3RT2016 contactor at 230 V AC		h^{-1}	2 500		5 000		

General data

Function	Function chart
	Timing relay energized Contact closed Contact open
Electronic timing relay blocks	**1 NO contact (semiconductor output)**
ON-delay, two-wire design (varistor integrated)	3RT1926-2C   A2 can be connected to N(L-) using either the contactor or the timing relay. – – – – To be connected optionally ① Timing relay block ② Contactor
OFF-delay with control signal (varistor integrated)	3RT1926-2D   A2 must only be connected to N(L--) from the timing relay. ✕ Do not connect ① Timing relay block ② Contactor
Solid-state time-delay auxiliary switch blocks	**1 NO + 1 NC**
ON-delay	3RT1926-2E  
OFF-delay without control signal	3RT1926-2F  
Solid-state time-delay auxiliary switch blocks	**2 NO**
Wye-delta function: 1 NO delayed, 1 NO instantaneous, dead time 50 ms (varistor integrated)	3RT1926-2G  

Contactor	Type		3RH1924, 3TX7090 Coupling links for mounting on contactors acc. to IEC 60947/EN 60947
General data			
Rated insulation voltage U_i (pollution degree 3)		V	300
Protective separation between coil and contacts acc. to IEC 60947-1, Appendix N		V AC	Up to 300
Permissible ambient temperature			
• During operation		°C	-25 ... +60
• During storage		°C	-40 ... +80
Degree of protection acc. to IEC 60947-1, Appendix C			
• Connections			IP20
• Enclosure			IP40
Circuit diagram			
Conductor cross-sections			
• Solid		mm^2	2 x (0.5 ... 2.5)
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5)
Terminal screws			M3
Control side			
Rated control supply voltage U_s		V DC	24
Operating range		V DC	17 ... 30
Power consumption at U_s		W	0.5
Nominal current input		mA	20
Release voltage		V	≥ 4
Function display			Yellow LED
Protection circuit			Varistor
Load side			
Mechanical endurance		Operating cycles	20 x 10^6
Electrical endurance at I_e		Operating cycles	1 x 10^5
Switching frequency		Operating cycles/h	5 000
Make-time		ms	Approx. 7
Break-time		ms	Approx. 4
Bounce time		ms	Approx. 2
Contact material			AgSnO
Switching voltage	AC/DC	V	24 ... 250
Permissible residual current of the electronics (with 0 signal)		mA	2.5

Auxiliary switches

Selection and ordering data

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

3RH1921-1HA..,
3RH1921-1FA..

3RH1921-2HA..,
3RH1921-2FA..

For contactors	Auxiliary contacts						DT	Screw terminals		DT	Spring-type terminals	
	Ident. No.	Version						Article No.	Price per PU		Article No.	Price per PU
Type		NO	NC	NO	NC							
Auxiliary switch blocks for snapping onto the front according to EN 50012												
***Size S3*[1)]**												
	4-pole auxiliary switch blocks											
3RT1.4	**31**	3	1	--	--	13 21 33 43 / 14 22 34 44	►	**3RH1921-1HA31**		►	**3RH1921-2HA31**	
	22	2	2	--	--	13 21 31 43 / 14 22 32 44	►	**3RH1921-1HA22**		►	**3RH1921-2HA22**	
	13	1	3	--	--	13 21 31 41 / 14 22 32 42	►	**3RH1921-1HA13**		►	**3RH1921-2HA13**	
***Sizes S3 to S12*[2)]**												
	4-pole auxiliary switch blocks											
3RT1.4 ... 3RT1.7	**22**	2	2	--	--	53 61 71 83 / 54 62 72 84	B	**3RH1921-1XA22-0MA0**		D	**3RH1921-2XA22-0MA0**	
Auxiliary switch blocks for snapping onto the front according to EN 50005												
***Sizes S3 to S12*[1)]**												
	4-pole auxiliary switch blocks											
3RT1.4 (3RT1.7)	**40**	4	--	--	--	13 23 33 43 / 14 24 34 44	►	**3RH1921-1FA40**		►	**3RH1921-2FA40**	
	31	3	1	--	--	13 23 33 41 / 14 24 34 42	►	**3RH1921-1FA31**		►	**3RH1921-2FA31**	
	22	2	2	--	--	13 23 31 41 / 14 24 32 42	►	**3RH1921-1FA22**		►	**3RH1921-2FA22**	
	04	--	4	--	--	11 21 31 41 / 12 22 32 42	►	**3RH1921-1FA04**		A	**3RH1921-2FA04**	
	22 U	--	--	2	2	17 27 35 45 / 18 28 36 46	►	**3RH1921-1FC22**		A	**3RH1921-2FC22**	

For multi-unit packing and reusable packaging, see Chapter 16, "Appendix" → "Ordering Notes".

[1)] Exception: 3RT16.
[2)] Exception: 3RT12, 3RT16.

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

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


3RH1921-1LA..


3RH1921-1MA..


3RH1921-1C..


3RH1921-2C..

For contactors	Auxiliary contacts						DT	Screw terminals		DT	Spring-type terminals	
	Ident. No.	Version						Article No.	Price per PU		Article No.	Price per PU
Type		NO	NC	NO	NC							
Auxiliary switch blocks for snapping onto the front according to EN 50005												
***Size S3*[1)]**												
	2-pole auxiliary switch blocks with cable entry on one side											
	• Cable entry from above											
3RT1.4	**11**	1	1	--	--		►	**3RH1921-1LA11**			**--**	
	20	2	--	--	--		►	**3RH1921-1LA20**			**--**	
	02	--	2	--	--		►	**3RH1921-1LA02**			**--**	
	• Cable entry from below											
3RT1.4	**11**	1	1	--	--		►	**3RH1921-1MA11**			**--**	
	20	2	--	--	--		►	**3RH1921-1MA20**			**--**	
	02	--	2	--	--		►	**3RH1921-1MA02**			**--**	
***Sizes S3 to S12*[2)]**												
	1-pole auxiliary switch blocks according to EN 50005 and EN 50012											
3RT1.4 ... 3RT1.7	**10**	1	--	--	--		►	**3RH1921-1CA10**		►	**3RH1921-2CA10**	
	01	--	1	--	--		►	**3RH1921-1CA01**		►	**3RH1921-2CA01**	
	10	--	--	1	--		►	**3RH1921-1CD10**			**--**	
	01	--	--	--	1		►	**3RH1921-1CD01**			**--**	

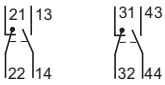
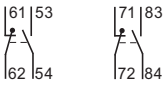
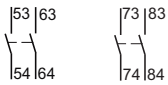
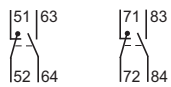
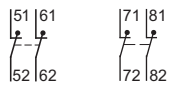
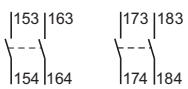
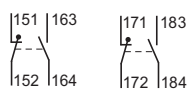
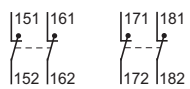
[1)] Exception: 3RT16.
[2)] Exception: 3RT12, 3RT16.

Auxiliary switches

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

3RH1921-1DA11
3RH1921-1JA11
3RH1921-1EA..
3RH1921-1KA..

3RH1921-2DA11
3RH1921-2JA11
3RH1921-2EA..
3RH1921-2KA..

For contactors Type	Auxiliary contacts Version NO	NC		DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Laterally mountable auxiliary switch blocks according to EN 50012									
Sizes S3 to S12			Left / Right						
	First laterally mountable auxiliary switch block (right or left), 2-pole								
3RT1.4 (3RT1.7)	1	1		►	**3RH1921-1DA11**		►	**3RH1921-2DA11**	
Sizes S3 to S12			Left / Right						
	Second laterally mountable auxiliary switch block (right or left), 2-pole								
3RT1.4 ... 3RT1.7	1	1		►	**3RH1921-1JA11**		►	**3RH1921-2JA11**	
Laterally mountable auxiliary switch blocks according to EN 50005									
Sizes S3 to S12			Left / Right						
	First laterally mountable auxiliary switch block (right or left), 2-pole								
3RT1.4 ... 3RT1.7	2	--		►	**3RH1921-1EA20**		►	**3RH1921-2EA20**	
	1	1		►	**3RH1921-1EA11**			--	
	--	2		►	**3RH1921-1EA02**		►	**3RH1921-2EA02**	
Sizes S3 to S12			Left / Right						
	Second laterally mountable auxiliary switch block (right or left), 2-pole								
3RT1.4 ... 3RT1.7	2	--		►	**3RH1921-1KA20**		D	**3RH1921-2KA20**	
	1	1		►	**3RH1921-1KA11**			--	
	--	2		►	**3RH1921-1KA02**		D	**3RH1921-2KA02**	

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

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

3RH1921-2DE11,
3RH1921-2JE11

3RH1921-1FE22

3RH1921-2JE22

For contactors	Contacts					DT	Screw terminals		DT	Spring-type terminals	
	Version						Article No.	Price per PU		Article No.	Price per PU
Type	NO	NO[1]	NC[1]	NC							
Solid-state compatible auxiliary switch blocks											
	• For operation in dusty atmospheres • For solid-state circuits with rated operational currents I_e/AC-14 and DC-13 of 1 ... 300 mA at 3 ...60 V • Hard gold-plated contacts • Mirror contacts according to IEC 60947-4-1, Appendix F										
Auxiliary switch blocks for snapping onto the front according to EN 50005											
Size S3											
3RT1.4	1	1	1	1	13 23 31 41 / 14 24 32 42	►	**3RH1921-1FE22**		B	**3RH1921-2FE22**	
Laterally mountable auxiliary switch blocks according to EN 50012											
Sizes S3 to S12					Left / Right						
	First laterally mountable auxiliary switch block (right or left), 2-pole										
3RT1.4 ... 3RT1.7	1	--	--	1	21 13 / 22 14 ; 31 43 / 32 44	►	**--**			**3RH1921-2DE11**	
Sizes S3 to S12					Left / Right						
	Second laterally mountable auxiliary switch block (right or left), 2-pole										
3RT1.4 ... 3RT1.7	1	--	--	1	61 53 / 62 54 ; 71 83 / 72 84	►	**--**			**3RH1921-2JE11**	

[1] 1 NO + 1 NC standard auxiliary switches:
See descriptions on page 3/108.

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

Solid-state time-delay auxiliary switch blocks and timing relay blocks

Selection and ordering data

For contactors Type	Auxiliary contacts	Rated control supply voltage U_s [1] V	Time setting range t s	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solid-state time-delay auxiliary switch blocks for snapping onto the front, terminal designations according to DIN 46199-5									
Sizes S3 to S12									
	With ON-delay [2]								
 3RT1926-2....									
3RT10, 3RT13, 3RT14, 3RT15	1 NO + 1 NC	24 AC/DC	0.05 ... 1	C	**3RT1926-2EJ11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2EJ21**		1	1 unit	41H
			5 ... 100	A	**3RT1926-2EJ31**		1	1 unit	41H
		100 ... 127 AC	0.05 ... 1	C	**3RT1926-2EC11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2EC21**		1	1 unit	41H
			5 ... 100	C	**3RT1926-2EC31**		1	1 unit	41H
		200 ... 240 AC	0.05 ... 1	B	**3RT1926-2ED11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2ED21**		1	1 unit	41H
			5 ... 100	B	**3RT1926-2ED31**		1	1 unit	41H
	OFF-delay without control signal [2)3)]								
3RT10, 3RT13, 3RT14, 3RT15	1 NO + 1 NC	24 AC/DC	0.05 ... 1	▶	**3RT1926-2FJ11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2FJ21**		1	1 unit	41H
			5 ... 100	▶	**3RT1926-2FJ31**		1	1 unit	41H
		100 ... 127 AC/DC	0.05 ... 1	B	**3RT1926-2FK11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2FK21**		1	1 unit	41H
			5 ... 100	B	**3RT1926-2FK31**		1	1 unit	41H
		200 ... 240 AC/DC	0.05 ... 1	B	**3RT1926-2FL11**		1	1 unit	41H
			0.5 ... 10	A	**3RT1926-2FL21**		1	1 unit	41H
			5 ... 100	A	**3RT1926-2FL31**		1	1 unit	41H
	Wye-delta function (varistor integrated) [2)]								
3RT10, 3RT13, 3RT14, 3RT15	1 NO delayed + 1 NO instantaneous, dead time 50 ms	24 AC/DC	1.5 ... 30	▶	**3RT1926-2GJ51**		1	1 unit	41H
		100 ... 127 AC	1.5 ... 30	▶	**3RT1926-2GC51**		1	1 unit	41H
		200 ... 240 AC	1.5 ... 30	▶	**3RT1926-2GD51**		1	1 unit	41H
Electronic timing relay blocks with semiconductor output									
Size S3									
	For mounting onto top-lying coil terminals, only for devices with screw terminals • ON-delay (varistor integrated)								
 3RT1926-2C...									
3RT104, 3RT134 [4)]	--	24 ... 66 AC/DC	0.05 ... 1	B	**3RT1926-2CG11**		1	1 unit	41H
			0.5 ... 10	B	**3RT1926-2CG21**		1	1 unit	41H
			5 ... 100	B	**3RT1926-2CG31**		1	1 unit	41H
	--	90 ... 240 AC/DC	0.05 ... 1	▶	**3RT1926-2CH11**		1	1 unit	41H
			0.5 ... 10	▶	**3RT1926-2CH21**		1	1 unit	41H
			5 ... 100	▶	**3RT1926-2CH31**		1	1 unit	41H
	• OFF-delay with control signal (varistor integrated)								
 3RT1926-2D...									
3RT104, 3RT134 [4)]	--	24 ... 66 AC/DC	0.05 ... 1	C	**3RT1926-2DG11**		1	1 unit	41H
			0.5 ... 10	B	**3RT1926-2DG21**		1	1 unit	41H
			5 ... 100	D	**3RT1926-2DG31**		1	1 unit	41H
	--	90 ... 240 AC/DC	0.05 ... 1	B	**3RT1926-2DH11**		1	1 unit	41H
			0.5 ... 10	B	**3RT1926-2DH21**		1	1 unit	41H
			5 ... 100	C	**3RT1926-2DH31**		1	1 unit	41H
OFF-delay devices									
Size S3									
 3RT1916-2BE01									
3RT104		24 DC Only for contactors with DC operation	S3: 70 fixed	B	**3RT1916-2BE01**		1	1 unit	41H

For technical specifications, operating travel diagrams and circuit diagrams, see pages 3/111 and 3/112.

1) The AC voltages are valid for 50 and 60 Hz.

2) Terminals A1 and A2 for the control supply voltage of the solid-state time-delay auxiliary switch must be connected to the associated contactor by means of connecting cables.

3) Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact change-over to the correct setting.

4) In addition to these, no other auxiliary contacts are permitted.

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

Selection and ordering data

For contactors Type	Version	Rated control supply voltage U_s [1] AC operation V AC	DC operation V DC	DT	Article No. [2]	Price per PU	PU (UNIT, SET, M)	PS*	PG
Surge suppressors without LED									
Size S3 (also for spring-type terminals)									
	For fitting onto the coil terminals at top or bottom								
 3RT1926-1B.00	3RT1.4 **Varistors** 	24 ... 48	24 ... 70	▶	**3RT1926-1BB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT1926-1BC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT1926-1BD00**		1	1 unit	41B
		240 ... 400	--	▶	**3RT1926-1BE00**		1	1 unit	41B
		400 ... 600		B	**3RT1926-1BF00**		1	1 unit	41B
 3RT1936-1C.00	3RT1.4 **RC elements** 	24 ... 48	24 ... 70	▶	**3RT1936-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT1936-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT1936-1CD00**		1	1 unit	41B
		240 ... 400	--	▶	**3RT1936-1CE00**		1	1 unit	41B
		400 ... 600	--	B	**3RT1936-1CF00**		1	1 unit	41B
	3RT1.4 **Diode assembly** for DC operation 								
	• Connectable at the top (e.g. for contactor with overload relay)	--	24	▶	**3RT1936-1ER00**		1	1 unit	41B
		--	30 ... 250	▶	**3RT1936-1ES00**		1	1 unit	41B
	• Connectable at the bottom (e.g. for fuseless load feeders)	--	24	▶	**3RT1936-1TR00**		1	1 unit	41B
		--	30 ... 250	B	**3RT1936-1TS00**		1	1 unit	41B
Sizes S6 to S12									
 3RT1956-1C.00	**For connecting to withdrawable coil for contactors with** **• conventional operating mechanism 3RT1. ..-.A...** **• solid-state operating mechanism 3RT1. ..-.N...**				**Screw terminals** 				
	3RT1.5, 3RT1.6, 3RT1.7 **RC elements** 	24 ... 48	24 ... 70	▶	**3RT1956-1CB00**		1	1 unit	41B
		48 ... 127	70 ... 150	▶	**3RT1956-1CC00**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT1956-1CD00**		1	1 unit	41B
		240 ... 400	--	▶	**3RT1956-1CE00**		1	1 unit	41B
		400 ... 600		C	**3RT1956-1CF00**		1	1 unit	41B
					Spring-type terminals 				
	3RT1.5, 3RT1.6, 3RT1.7 **RC elements** 	24 ... 48	24 ... 70	▶	**3RT1956-1CB02**		1	1 unit	41B
		48 ... 127	70 ... 150	A	**3RT1956-1CC02**		1	1 unit	41B
		127 ... 240	150 ... 250	▶	**3RT1956-1CD02**		1	1 unit	41B
		240 ... 400	--	A	**3RT1956-1CE02**		1	1 unit	41B
		400 ... 600		C	**3RT1956-1CF02**		1	1 unit	41B

[1] Can be used for AC operation for 50/60 Hz. Please inquire about further voltages.

[2] For packs of 10 or 5 units, "**-Z**" and order code "**X90**" must be added to the article number

[3] For 3RT1.3 with AC operation mountable only at the top.

For contactors Type	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Main current path surge suppression modules for 3RT12 vacuum contactors							
Sizes S10 and S12							
3RT12	For damping overvoltages and protecting motor windings against multiple re-ignition when switching off three-phase motors. For connection on the contactor feeder side (2-T1/4-T2/6-T3). For separate installation.						
	Rated operational voltage U_e = 690 V AC	C	**3RT1966-1PV3**		1	1 unit	41B
	Rated operational voltage U_e = 1 000 V AC	C	**3RT1966-1PV4**		1	1 unit	41B

Miscellaneous accessories

Selection and ordering data

For contactors Type	Version V	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Coupling links for control by PLC							
Size S3							
	For mounting onto the coil terminals of the contactors With LED for indicating switching state						
3RT1.4	Operating range: 17 ... 30 V DC Power consumption: 0.5 W at 24 V DC Permissible residual current of the electronics (with 0 signal): 2.5 mA Rated operational current I_e: • AC-15/AC-14 at 230 V: 3 A • DC-13 at 230 V: 0.1 A With integrated varistor for damping opening surges.	▶	**3RH1924-1GP11**		1	1 unit	41B


3RH1924-1GP11

For contactors Type	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
LED modules for displaying contactor operation							
Sizes S3 to S12[1] (also for spring-type terminals)							
3RT1.4	For snapping into the location hole of an inscription label on the front of a contactor either directly on the contactor or on the front auxiliary switch. The LED module is connected to coil terminals A1 and A2 of the contactor and indicates its energized state. Yellow LED. Rated voltage: 24 ... 240 V AC/DC with reverse polarity protection	B	**3RT1926-1QT00**		1	5 units	41B


3RT1926-1QT00
Mounted on contactor

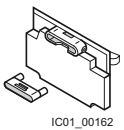
For contactors Type	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Auxiliary terminals, 3-pole							
Size S3							
3RT104.	For connection of auxiliary and control cables (0.5 to 2.5 mm^2) to the main conductor connections (for one side)	B	**3RT1946-4F**		1	1 unit	41B


3RT1946-4F

For technical specifications and circuit diagram for coupling links, see page 3/113.

[1] For sizes S6 to S12 the connecting leads have to be extended.

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

For contactors		Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type							
Box terminal blocks								
 3RT195.-4G								
S6		**For round and ribbon cables**[1]						
	3RT1.5 (3RB205)	Up to 70 mm² [2]	►	**3RT1955-4G**		1	1 unit	41B
		Up to 120 mm²	►	**3RT1956-4G**		1	1 unit	41B
		Auxiliary conductor connection for box terminals	B	**3TX7500-0A**		1	1 unit	41B
S10, S12	3RT1.6, 3RT1.7 (3RB206, 3RB216)	Up to 240 mm²	►	**3RT1966-4G**		1	1 unit	41B
		With auxiliary conductor connection						
Covers								
 3RT1946-4EA2		**Terminal covers for box terminals** (additional touch protection) To be fitted at the box terminals (2 units required per contactor)						
	3RT133, 3RT153	For 4-pole contactors	B	**3RT1936-4EA4**		1	1 unit	41B
S3	3RT104, 3RT144	--	►	**3RT1946-4EA2**		1	1 unit	41B
	3RT134	For 4-pole contactors	B	**3RT1946-4EA4**		1	1 unit	41B
S6[3]	3RT1.5	Length: 25 mm	►	**3RT1956-4EA2**		1	1 unit	41B
S10, S12[3]	3RT1.6, 3RT1.7	Length: 30 mm	►	**3RT1966-4EA2**		1	1 unit	41B
 3RT1956-4EA2								
 3RT1956-4EA1		**Terminal covers for cable lugs and busbar connection**[3] For complying with the phase clearances and as touch protection if box terminal is removed (2 units required per contactor)						
S3	3RT104, 3RT144	--	B	**3RT1946-4EA1**		1	1 unit	41B
S6	3RT1.5	Length: 100 mm	►	**3RT1956-4EA1**		1	1 unit	41B
S10/S12	3RT1.6, 3RT1.7	Length: 120 mm	►	**3RT1966-4EA1**		1	1 unit	41B
 3TX6526-3B		Can be screwed on free screw end; covers one busbar connection (1 set = 6 units)						
S6	3RT1.5	M8	B	**3TX6526-3B**		1	1 unit	41B
S10, S12	3RT1.6, 3RT1.7	M10	B	**3TX6546-3B**		1	1 unit	41B
		For busbar cover between contactor and 3RB2 overload relay or wiring module for contactor assemblies						
S6	3RT1.5	Length: 27 mm	►	**3RT1956-4EA3**		1	1 unit	41B
S10/S12[4]	3RT1.6, 3RT1.7	Length: 42 mm	►	**3RT1966-4EA3**		1	1 unit	41B
		For busbar cover of the flat line connectors for reversing and wye-delta assemblies						
S6	3RT1.5	Length: 38 mm	►	**3RT1956-4EA4**		1	1 unit	41B
Sealable covers								
 IC01_00162 3RT1926-4MA10								
S3 ... S12	3RT1.3 ... 3RT1.7 [5]	1 unit required per contactor	C	**3RT1926-4MA10**		1	5 units	41B

[1] Connectable cross-sections of the contactors, see Technical Specifications, pages 3/89 and 3/94).

[2] As standard for 3RT1054-1 contactor (55 kW).

[3] Also fits on contactors S6 to S12 with box terminals.

[4] The 3RT1966-4EA3 cover is required in addition for use in contactor assemblies (reversing/wye-delta).

[5] Exception: contactors and contactor relays with auxiliary switch block mounted onto the front.

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

Miscellaneous accessories

Links for paralleling

	For contactors Size	Type	Max. conductor cross-sections mm²	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
		3-pole, with through hole (star jumpers) [1)2)3)]							
 3RT1946-4BB31	**S3**	3RT104, 3RT144	185	▶	**3RT1946-4BB31**		1	1 unit	41B
 3RT1956-4BA31	**S6**	3RT1. 5	--	▶	**3RT1956-4BA31**		1	1 unit	41B
	S10/S12	3RT1. 6, 3RT1. 7	--	▶	**3RT1966-4BA31**		1	1 unit	41B

1) The links for paralleling can be reduced by one pole.

2) Size S3: A cover plate is included for touch protection. (Can only be used when the box terminal is removed.) Sizes S6 to S12: The 3RT1956-4EA1 (for S6) or 3RT1966-4EA1 (for S10 and S12) cover can be used for touch protection.

3) The star jumpers to the contactors of sizes S6 and S10/S12 are approved according to UL and CSA.

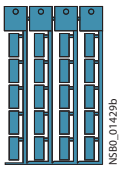
Insulation stop for securely holding back the conductor insulation on conductors up to 1 mm²

	Version	DT	Spring-type terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RT1916-4JA02	Insulation stop strip can be inserted in cable entry of spring-type terminals (2 strips per contactor required, can be removed in pairs) For all SIRIUS devices with spring-type terminals, up to 2.5 mm² conductor cross-section.	B	**3RT1916-4JA02**		1	20 units	41B

Tools for opening spring-type terminal points

	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RA2908-1A	For all SIRIUS devices with spring-type terminals, for conductor cross-sections up to 2.5 mm² Not suitable for devices with removable terminal Length: approx. 200 mm, 3.0 mm x 0.5 mm, titanium gray/black, partially insulated	A	**3RA2908-1A**		1	1 unit	41B

Blank labels

	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
 3RT1900-1SB20	**Unit labeling plates** for SIRIUS devices[1)]						
	• 10 mm x 7 mm, pastel turquoise	C	**3RT1900-1SB10**		100	816 units	41B
	• 20 mm x 7 mm, pastel turquoise	D	**3RT1900-1SB20**		100	340 units	41B
	Adhesive labels for SIRIUS devices						
	• 19 mm x 6 mm, pastel turquoise	C	**3RT1900-1SB60**		100	3060 units	41B
	• 19 mm x 6 mm, zinc/yellow	C	**3RT1900-1SD60**		100	3060 units	41B

1) PC labeling system for individual inscription of unit labeling plates available from: murrplastik Systemtechnik GmbH (see Chapter 16, "Appendix" → "External Partners").

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

Selection and ordering data

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


3RT1944-5A.01


3RT1944-5B.42


3RT1945-5A.01


3RT1945-5A.02

For contactors		Rated control supply voltage U_s				DT	Screw terminals		DT	Spring-type terminals	
		AC			DC		Article No.	Price per PU		Article No.	Price per PU
		50 Hz	50/60 Hz	60 Hz							
Size	Type	V	V	V	V						
Solenoid coils · AC operation											
S3	3RT1044	24	--	--	--	B	**3RT1944-5AB01**		B	**3RT1944-5AB02**	
		42	--	--	--	B	**3RT1944-5AD01**		B	**3RT1944-5AD02**	
		48	--	--	--	B	**3RT1944-5AH01**		B	**3RT1944-5AH02**	
		110	--	--	--	B	**3RT1944-5AF01**		B	**3RT1944-5AF02**	
		230	--	--	--	B	**3RT1944-5AP01**		B	**3RT1944-5AP02**	
		400	--	--	--	B	**3RT1944-5AV01**		B	**3RT1944-5AV02**	
		--	24	--	--	B	**3RT1944-5AC21**		B	**3RT1944-5AC22**	
		--	42	--	--	B	**3RT1944-5AD21**		B	**3RT1944-5AD22**	
		--	48	--	--	B	**3RT1944-5AH21**		B	**3RT1944-5AH22**	
		--	110	--	--	B	**3RT1944-5AG21**		B	**3RT1944-5AG22**	
		--	220	--	--	B	**3RT1944-5AN21**		B	**3RT1944-5AN22**	
		--	230	--	--	B	**3RT1944-5AL21**		B	**3RT1944-5AL22**	
		110	--	120	--	B	**3RT1944-5AK61**		B	**3RT1944-5AK62**	
		220	--	240	--	B	**3RT1944-5AP61**		B	**3RT1944-5AP62**	
		--	100	110	--	B	**3RT1944-5AG61**		B	**3RT1944-5AG62**	
		--	200	220	--	B	**3RT1944-5AN61**		B	**3RT1944-5AN62**	
		--	400	440	--	B	**3RT1944-5AR61**		B	**3RT1944-5AR62**	
	3RT1045, 3RT1046, 3RT134., 3RT1446, 3RT154.	24	--	--	--	B	**3RT1945-5AB01**		B	**3RT1945-5AB02**	
		42	--	--	--	B	**3RT1945-5AD01**		B	**3RT1945-5AD02**	
		48	--	--	--	B	**3RT1945-5AH01**		B	**3RT1945-5AH02**	
		110	--	--	--	B	**3RT1945-5AF01**		B	**3RT1945-5AF02**	
		230	--	--	--	B	**3RT1945-5AP01**		B	**3RT1945-5AP02**	
		400	--	--	--	C	**3RT1945-5AV01**		B	**3RT1945-5AV02**	
		--	24	--	--	B	**3RT1945-5AC21**		B	**3RT1945-5AC22**	
		--	42	--	--	B	**3RT1945-5AD21**		B	**3RT1945-5AD22**	
		--	48	--	--	B	**3RT1945-5AH21**		B	**3RT1945-5AH22**	
		--	110	--	--	B	**3RT1945-5AG21**		B	**3RT1945-5AG22**	
		--	220	--	--	B	**3RT1945-5AN21**		B	**3RT1945-5AN22**	
		--	230	--	--	B	**3RT1945-5AL21**		B	**3RT1945-5AL22**	
		110	--	120	--	B	**3RT1945-5AK61**		B	**3RT1945-5AK62**	
		220	--	240	--	B	**3RT1945-5AP61**		B	**3RT1945-5AP62**	
		--	100	110	--	B	**3RT1945-5AG61**		B	**3RT1945-5AG62**	
		--	200	220	--	C	**3RT1945-5AN61**		B	**3RT1945-5AN62**	
		--	400	440	--	B	**3RT1945-5AR61**		B	**3RT1945-5AR62**	
Solenoid coils · DC operation											
S3	3RT104., 3RT134., 3RT144., 3RT154.	--	--	--	24	B	**3RT1944-5BB41**		B	**3RT1944-5BB42**	
		--	--	--	42	C	**3RT1944-5BD41**		B	**3RT1944-5BD42**	
		--	--	--	48	B	**3RT1944-5BW41**		B	**3RT1944-5BW42**	
		--	--	--	60	B	**3RT1944-5BE41**		B	**3RT1944-5BE42**	
		--	--	--	110	B	**3RT1944-5BF41**		B	**3RT1944-5BF42**	
		--	--	--	125	B	**3RT1944-5BG41**		B	**3RT1944-5BG42**	
		--	--	--	220	B	**3RT1944-5BM41**		B	**3RT1944-5BM42**	
		--	--	--	230	B	**3RT1944-5BP41**		B	**3RT1944-5BP42**	

Note:

Contactors with AC and DC coils have different depths. It is only possible to replace AC coils with AC coils or DC coils with DC ones.

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

Power Contactors for Switching Motors
Spare parts for 3RT1 Contactors

Solenoid coils

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

3RT1955-5A. . 1

For contactors		Rated control supply voltage $U_{s\,min}$ ... $U_{s\,max}$	DT	Screw terminals		DT	Spring-type terminals	
				Article No.	Price per PU		Article No.	Price per PU
Size	Type	V AC/DC						
Withdrawable coils								
Conventional operating mechanisms								
S6	3RT105, 3RT145	23 ... 26	B	**3RT1955-5AB31**		B	**3RT1955-5AB32**	
		42 ... 48	B	**3RT1955-5AD31**		B	**3RT1955-5AD32**	
		110 ... 127	B	**3RT1955-5AF31**		B	**3RT1955-5AF32**	
		200 ... 220	B	**3RT1955-5AM31**		B	**3RT1955-5AM32**	
		220 ... 240	B	**3RT1955-5AP31**		B	**3RT1955-5AP32**	
		240 ... 277	B	**3RT1955-5AU31**		B	**3RT1955-5AU32**	
		380 ... 420	B	**3RT1955-5AV31**		B	**3RT1955-5AV32**	
		440 ... 480	B	**3RT1955-5AR31**		B	**3RT1955-5AR32**	
		500 ... 550	B	**3RT1955-5AS31**		B	**3RT1955-5AS32**	
		575 ... 600	B	**3RT1955-5AT31**		B	**3RT1955-5AT32**	
S10	3RT106, 3RT146	23 ... 26	B	**3RT1965-5AB31**		B	**3RT1965-5AB32**	
		42 ... 48	B	**3RT1965-5AD31**		B	**3RT1965-5AD32**	
		110 ... 127	B	**3RT1965-5AF31**		B	**3RT1965-5AF32**	
		200 ... 220	C	**3RT1965-5AM31**		B	**3RT1965-5AM32**	
		220 ... 240	B	**3RT1965-5AP31**		B	**3RT1965-5AP32**	
		240 ... 277	B	**3RT1965-5AU31**		B	**3RT1965-5AU32**	
		380 ... 420	B	**3RT1965-5AV31**		B	**3RT1965-5AV32**	
		440 ... 480	B	**3RT1965-5AR31**		B	**3RT1965-5AR32**	
		500 ... 550	C	**3RT1965-5AS31**		B	**3RT1965-5AS32**	
		575 ... 600	C	**3RT1965-5AT31**		B	**3RT1965-5AT32**	
S10	3RT126 Vacuum contactors	23 ... 26	B	**3RT1966-5AB31**			--	
		42 ... 48	B	**3RT1966-5AD31**			--	
		110 ... 127	A	**3RT1966-5AF31**			--	
		200 ... 220	C	**3RT1966-5AM31**			--	
		220 ... 240	A	**3RT1966-5AP31**			--	
		240 ... 277	C	**3RT1966-5AU31**			--	
		380 ... 420	B	**3RT1966-5AV31**			--	
		440 ... 480	C	**3RT1966-5AR31**			--	
		500 ... 550	C	**3RT1966-5AS31**			--	
		575 ... 600	C	**3RT1966-5AT31**			--	
S12	3RT107, 3RT147, 3RT127 Vacuum contactors	23 ... 26	B	**3RT1975-5AB31**		B	**3RT1975-5AB32**	
		42 ... 48	B	**3RT1975-5AD31**		B	**3RT1975-5AD32**	
		110 ... 127	B	**3RT1975-5AF31**		B	**3RT1975-5AF32**	
		200 ... 220	C	**3RT1975-5AM31**		B	**3RT1975-5AM32**	
		220 ... 240	B	**3RT1975-5AP31**		B	**3RT1975-5AP32**	
		240 ... 277	B	**3RT1975-5AU31**		B	**3RT1975-5AU32**	
		380 ... 420	B	**3RT1975-5AV31**		B	**3RT1975-5AV32**	
		440 ... 480	B	**3RT1975-5AR31**		B	**3RT1975-5AR32**	
		500 ... 550	C	**3RT1975-5AS31**		B	**3RT1975-5AS32**	
		575 ... 600	C	**3RT1975-5AT31**		B	**3RT1975-5AT32**	

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

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

3RT1955-5N. . 1

For contactors		Rated control supply voltage U_s	DT	Screw terminals		DT	Spring-type terminals	
				Article No.	Price per PU		Article No.	Price per PU
Size	Type	V AC/DC						
Withdrawable coils								
Solid-state operating mechanisms								
For 24 V DC PLC output								
S6	3RT105, 3RT145	21 ... 27.3	C	**3RT1955-5NB31**		B	**3RT1955-5NB32**	
		96 ... 127	B	**3RT1955-5NF31**		B	**3RT1955-5NF32**	
		200 ... 277	B	**3RT1955-5NP31**		B	**3RT1955-5NP32**	
S10	3RT106, 3RT146	21 ... 27.3	B	**3RT1965-5NB31**		B	**3RT1965-5NB32**	
		96 ... 127	B	**3RT1965-5NF31**		B	**3RT1965-5NF32**	
		200 ... 277	B	**3RT1965-5NP31**		B	**3RT1965-5NP32**	
	3RT126 Vacuum contactors	21 ... 27.3	B	**3RT1966-5NB31**			--	
		96 ... 127	C	**3RT1966-5NF31**			--	
		200 ... 277	C	**3RT1966-5NP31**			--	
S12	3RT107, 3RT147, 3RT127 Vacuum contactors	21 ... 27.3	B	**3RT1975-5NB31**		B	**3RT1975-5NB32**	
		96 ... 127	B	**3RT1975-5NF31**		B	**3RT1975-5NF32**	
		200 ... 277	B	**3RT1975-5NP31**		B	**3RT1975-5NP32**	
For 24 V DC PLC output/PLC relay output, with remaining lifetime indicator (RLT) (withdrawable coil with laterally mounted solid-state module)								
S6	3RT105, 3RT145	96 ... 127	B	**3RT1955-5PF31**			--	
		200 ... 277	B	**3RT1955-5PP31**			--	
S10	3RT106, 3RT146	96 ... 127	B	**3RT1965-5PF31**			--	
		200 ... 277	B	**3RT1965-5PP31**			--	
S12	3RT107, 3RT147	96 ... 127	B	**3RT1975-5PF31**			--	
		200 ... 277	B	**3RT1975-5PP31**			--	

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

Contacts and arc chutes

Selection and ordering data

For contactors		Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type							
Contacts with fixing parts								
For contactors with 3 main contacts								
S3	3RT1044	Main contacts (3 NO contacts) for utilization category AC-3	B	**3RT1944-6A**		1	1 unit	41B
	3RT1045	(1 set = 3 movable and 6 fixed switching elements with fixing parts)	B	**3RT1945-6A**		1	1 unit	41B
	3RT1046		B	**3RT1946-6A**		1	1 unit	41B
S6	3RT1054		▶	**3RT1954-6A**		1	1 unit	41B
	3RT1055		▶	**3RT1955-6A**		1	1 unit	41B
	3RT1056		▶	**3RT1956-6A**		1	1 unit	41B
S10	3RT1064		▶	**3RT1964-6A**		1	1 unit	41B
	3RT1065		▶	**3RT1965-6A**		1	1 unit	41B
	3RT1066		▶	**3RT1966-6A**		1	1 unit	41B
S12	3RT1075		▶	**3RT1975-6A**		1	1 unit	41B
	3RT1076		A	**3RT1976-6A**		1	1 unit	41B
S3	3RT1446	Main contacts (3 NO contacts) for utilization category AC-1	B	**3RT1946-6D**		1	1 unit	41B
S6	3RT1456	(1 set = 3 movable and 6 fixed switching elements with fixing parts)	B	**3RT1956-6D**		1	1 unit	41B
S10	3RT1466		B	**3RT1966-6D**		1	1 unit	41B
S12	3RT1476		A	**3RT1976-6D**		1	1 unit	41B
For 3RT12 vacuum contactors								
S10	3RT1264	3 vacuum interrupters with fixing parts	B	**3RT1964-6V**		1	1 unit	41B
	3RT1265		B	**3RT1965-6V**		1	1 unit	41B
	3RT1266		B	**3RT1966-6V**		1	1 unit	41B
S12	3RT1275		B	**3RT1975-6V**		1	1 unit	41B
	3RT1276		B	**3RT1976-6V**		1	1 unit	41B
For contactors with 4 main contacts								
S3	3RT1344	Main contacts (4 NO contacts) for utilization category AC-1	B	**3RT1944-6E**		1	1 unit	41B
	3RT1346	(1 set = 4 movable and 8 fixed switching elements with fixing parts)	B	**3RT1946-6E**		1	1 unit	41B
Arc chutes								
S3	3RT104., 3RT1446	Arc chutes, 3-pole	B	**3RT1946-7A**		1	1 unit	41B
S6	3RT1054		B	**3RT1954-7A**		1	1 unit	41B
	3RT1055		B	**3RT1955-7A**		1	1 unit	41B
	3RT1056		B	**3RT1956-7A**		1	1 unit	41B
S10	3RT1064		B	**3RT1964-7A**		1	1 unit	41B
	3RT1065		B	**3RT1965-7A**		1	1 unit	41B
	3RT1066		B	**3RT1966-7A**		1	1 unit	41B
S12	3RT1075		B	**3RT1975-7A**		1	1 unit	41B
	3RT1076		B	**3RT1976-7A**		1	1 unit	41B
S6	3RT1456		B	**3RT1956-7B**		1	1 unit	41B
S10	3RT1466		B	**3RT1966-7B**		1	1 unit	41B
S12	3RT1476		B	**3RT1976-7B**		1	1 unit	41B

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

Overview

Standards

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

The 3TF68/3TF69 contactors are suitable for use in any climate.

They are finger-safe according to EN 50274. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices (see Accessories and Spare Parts on page 3/135).

Main contacts

Contact erosion indication with 3TF68/3TF69 vacuum contactors

The contact erosion of the vacuum interrupters can be checked during operation with the help of 3 white double slides on the contactor base. If the distance indicated by one of the double slides is < 0.5 mm while the contactor is in the closed position, then the vacuum interrupter must be replaced. To ensure maximum reliability, it is recommended to replace all 3 vacuum interrupters simultaneously.

Auxiliary contacts

Contact reliability

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

Electromagnetic compatibility

The 3TF68/3TF69..-.**C**.. contactors for AC operation are fitted with an electronically controlled solenoid operating mechanism with a high interference immunity (for EMC values, see page 3/130). The solenoid coil is connected to varistors for protection against overvoltages.

The 3TF68/3TF69..-.**Q**.. contactors for AC operation are designed for operation in systems with AC control supply voltage which is subject to strong interference. The solenoid systems of these contactors are configured in the DC economy circuit with rectification. The rectifier bridge is connected to varistors for protection against overvoltages.

Protection of the main current paths

An integrated RC varistor connection for the main current paths dampens the switching overvoltage rises to safe values. This prevents multiple restricting. It can therefore be assumed that the motor winding cannot be damaged by switching overvoltages with steep voltage rises.

Note:

During operation in installations in which the emitted interference limits cannot be observed, e.g. when used for output contactors in converters, 3TF68/3TF69..-.**Q** contactors – without connection of the main current path circuit – are recommended.

Technical specifications

Contactor	Type	3TF68 and 3TF69		
Rated data of the auxiliary contacts		According to IEC 60947-5-1		
Rated insulation voltage U_i (pollution degree 3)	V	690		
Conventional thermal current I_{th} = Rated operational current I_e/AC-12	A	10		
AC load				
Rated operational current I_e/AC-15/AC-14				
• For rated operational voltage U_e				
- At 24 V	A	10		
- At 110 V	A	10		
- At 125 V	A	10		
- At 220 V	A	6		
- At 230 V	A	5.6		
- At 380 V	A	4		
- At 400 V	A	3.6		
- At 500 V	A	2.5		
- At 660 V	A	2.5		
- At 690 V	A	2.3		
DC load				
Rated operational current I_e/DC-12				
• For rated operational voltage U_e				
- At 24 V	A	10		
- At 60 V	A	10		
- At 110 V	A	3.2		
- At 125 V	A	2.5		
- At 220 V	A	0.9		
- At 440 V	A	0.33		
- At 600 V	A	0.22		
Rated operational current I_e/DC-13			Auxiliary contacts with delayed NC contact:	NS = No specification
• For rated operational voltage U_e				
- At 24 V	A	10	6	
- At 60 V	A	5	NS	
- At 110 V	A	1.14	0.98	
- At 125 V	A	0.98	NS	
- At 220 V	A	0.48	NS	
- At 440 V	A	0.13	NS	
- At 600 V	A	0.07	0.07	
cULus rated data of the auxiliary contacts				
Rated voltage, max.	V AC	600		
Switching capacity		A 600, P 600		

3TF6 vacuum contactors, 3-pole, 335 ... 450 kW

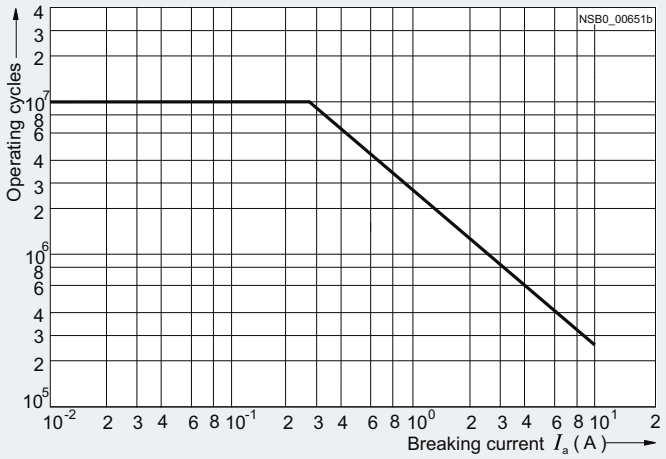
Contactor

3TF68 and 3TF69

Endurance of the auxiliary contacts

The contact endurance for utilization category AC-12 or AC-15/AC-14 depends mainly on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The characteristic curves apply to 230 V AC.



Contactor

3TF68 and 3TF69

Contact erosion indication with vacuum contactors

The contact erosion of the vacuum interrupters can be checked during operation with the help of three white double slides on the contactor base.

If the distance indicated by one of the double slides is < 0.5 mm while the contactor is in the closed position, the vacuum interrupter must be replaced. To ensure maximum reliability, it is recommended to replace all three vacuum interrupters at once.

Contact endurance of the main contacts

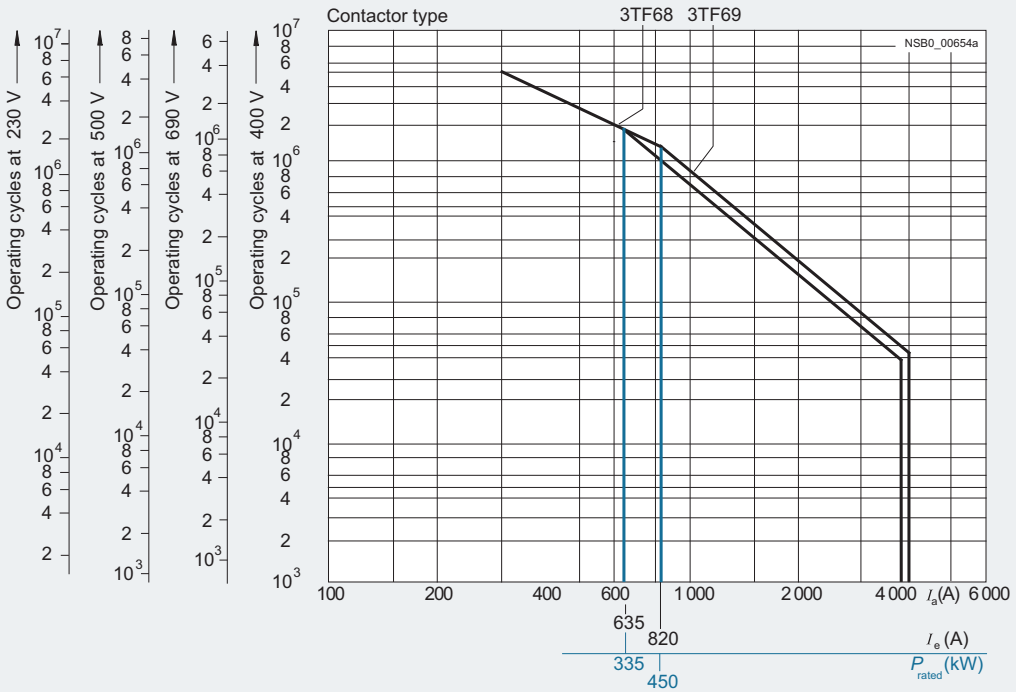
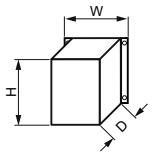
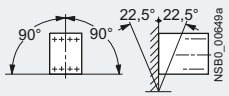


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

Type			**3TF68**	**3TF69**
Size			**14**	**14**
Dimensions (W x H x D)		mm	230 x 276 x 237	230 x 295 x 237
General data				
Permissible mounting position, installation instructions[1)2)] The contactors are designed for operation on a vertical mounting surface				
Mechanical endurance		Operating cycles	5 million	
Electrical endurance		Operating cycles	[3)]	
Rated insulation voltage U_i (pollution degree 3)		kV	1	
Rated impulse withstand voltage U_{imp}		kV	8	
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		kV	1	
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact. One NC contact each must be connected in series for the right and left auxiliary switch block respectively.			Yes, acc. to IEC 60947-4-1, Appendix F	
Permissible ambient temperature				
• During operation[4)]		°C	-25 ... +55	
• During storage		°C	-55 ... +80	
Degree of protection acc. to IEC 60947-1, Appendix C			IP00/open (where applicable, use additional terminal covers)	
Touch protection acc. to EN 50274			Finger-safe only for vertical contact from the front	
Shock resistance				
• Rectangular pulse				
- AC operation		*g*/ms	8.1/5 and 4.7/10	9.5/5 and 5.7/10
- DC operation		*g*/ms	9/5 and 5.7/10	8.6/5 and 5.1/10
• Sine pulse				
- AC operation		*g*/ms	12.8/5 and 7.4/10	13.5/5 and 7.8/10
- DC operation		*g*/ms	14.4/5 and 9.1/10	13.5/5 and 7.8/10
Conductor cross-sections			See page 3/132	
Electromagnetic compatibility (EMC)			See page 3/130	
Short-circuit protection				
Main circuit Fuse links, gG operational class: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE according to IEC 60947-4-1/EN 60947-4-1				
• Type of coordination "1"		A	1 000	1 250
• Type of coordination "2"		A	500	630
• Weld-free[5)]		A	400	500
Auxiliary circuit				
Short-circuit test				
• with fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A	10	
• with miniature circuit breakers with C characteristic with short-circuit current I_k = 400 A		A	10	

1) To easily replace the laterally mounted auxiliary switches it is recommended to maintain a minimum distance of 30 mm between the contactors.

2) If mounted at a 90° angle (current paths are horizontally above each other), the switching frequency is reduced by 80 % compared with the normal values.

3) See "Endurance of the auxiliary contacts", page 3/128.

4) For ambient temperatures > 55°C, only 3TF6.33-.Q..-Z A02 contactors (= without connection of the main current path circuits) can be used. Then derating is also possible with these contactors:
- AC-1: I_e = 782 A, 644 operating cycles/h;
- AC-3: operating range 0.85-1.05 x Us, 460 operating cycles/hour, mechanical endurance 5 million operating cycles, lateral clearance 10 mm

5) Test conditions according to IEC 60947-4-1.

Note:

For short-circuit protection of contactors with overload relay, see Configuration Manual "Configuring SIRIUS" http://support.automation.siemens.com/WW/view/en/40625241.

3TF6 vacuum contactors, 3-pole, 335 ... 450 kW

Contactor		Type / Size	3TF68 14	3TF69 14
Control				
Solenoid coil operating range			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, $U_{s\ max}$	- Closing	VA/p.f.	1850/1	950/0.98
	- Closed	VA/p.f.	49/0.15	30.6/0.31
• AC operation, $U_{s\ min}$	- Closing	VA/p.f.	1200/1	600/0.98
	- Closed	VA/p.f.	13.5/0.47	12.9/0.43
• DC economy circuit[1]	- Closing at 24 V	W	1010	960
	- Closed	W	28	20.6
For contactors of type 3TF68/3TF69..-.**Q**:				
• AC operation, $U_{s\ min}$[2]	- Closing	VA/p.f.	1 000/0.99	1 150/0.99
	- Closed	VA/p.f.	11/1	11/1
Operating times for 0.8 ... **1.1 x U_s** (Total break time = Opening delay + Arcing time)			(Values apply to cold and warm coil)	
• AC operation	- Closing delay	ms	70 ... 120 (22 ... 65)[3]	80 ... 120
	- Opening delay	ms	70 ... 100	70 ... 80
• DC economy circuit	- Closing delay	ms	76 ... 110	86 ... 280
	- Opening delay	ms	50	19 ... 25
• Arcing time		ms	10 ... 15	10
For contactors of type 3TF68/3TF69..-.**Q**:				
• AC operation	- Closing delay	ms	35 ... 90	45 ... 160
	- Opening delay	ms	65 ... 90	30 ... 80
Operating times for 1.0 x U_s (Total break time = Opening delay + Arcing time)				
• AC operation	- Closing delay	ms	80 ... 100 (30 ... 45)[3]	85 ... 100
	- Opening delay	ms	70 ... 100	70
• DC economy circuit	- Closing delay	ms	80 ... 90	90 ... 125
	- Opening delay	ms	50	19 ... 25
Minimum command duration for closing	Standard	ms	120	120
	Reduced make-time	ms	90	--
Minimum interval time between two ON commands		ms	100	300

[1] At 24 V DC; for further voltages, deviations of up to ±10 % are possible.

[2] Including reversing contactor.

[3] Values in brackets apply to contactors with reduced operating times.

Contactor	Type	3TF6.44-.CF7	3TF6.44-.CM7	3TF6.44-.CP7	3TF6.44-.CQ7	3TF6.44-.CS7
Electromagnetic compatibility						
Rated control supply voltage U_s	V AC	110 ... 132	200 ... 240	230 ... 277	380 ... 460	500 ... 600
Overvoltage type acc. to IEC 60801		Burst/Surge				
Degree of severity acc. to IEC 60801						
• Burst		3	4	4	4	4
• Surge		4	4	4	4	4
Overvoltage resistance						
• Burst	kV	2	4	4	4	4
• Surge	kV	6	5	5	6	6

Contactor		Type		3TF68	3TF69
		Size		14	14
Main circuit					
Load rating with AC					
Utilization category AC-1 Switching resistive loads					
• Rated operational currents I_e	At 40 °C up to 690 V		A	700	910
	At 55 °C up to 690 V		A	630	850
	At 55 °C 1 000 V		A	450	800
• Rated power for AC loads with p.f. = 0.95 at 55 °C	230 V		kW	240	323
	400 V		kW	415	558
	500 V		kW	545	735
	690 V		kW	720	970
	1 000 V		kW	780	1385
• Minimum conductor cross-sections for loads with I_e	At 40 °C		mm^2	2 x 240	$I_e \geq 800$ A: 2 x 60 x 5 (copper busbars)
	At 55 °C		mm^2	2 x 185	$I_e < 800$ A: 2 x 240
Utilization categories AC-2 and AC-3					
• Rated operational currents I_e	Up to 690 V		A	630	820
	1 000 V		A	435	580
• Rated power for slipring or squirrel-cage motors at 50 Hz and 60 Hz	At 230 V		kW	200	260
	400 V		kW	347	450
	500 V		kW	434	600
	690 V		kW	600	800
	1 000 V		kW	600	800
Thermal load capacity	10 s current		A	5 040	7 000
Power loss per conducting path	At I_e/AC-3		W	45	70
Utilization category AC-4 (for $I_a = 6 \times I_e$)					
Maximum values:					
• Rated operational current I_e	Up to 690 V		A	610	690
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 400 V		kW	355	400
The following applies to a contact endurance of about 200 000 operating cycles:					
• Rated operational currents I_e	Up to 690 V		A	300	360
	1 000 V		A	210	250
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 230 V		kW	97	110
	400 V		kW	168	191
	500 V[1]		kW	210	250
	690 V[1]		kW	278	335
	1 000 V[1]		A	290	350
Switching frequency					
Switching frequency z in operating cycles/hour					
• Contactors without overload relays	No-load switching frequency AC		1/h	2 000	1 000
	No-load switching frequency DC		1/h	1 000	1 000
		AC-1	1/h	700	700
		AC-2	1/h	200	200
		AC-3	1/h	500	500
		AC-4	1/h	150	150
• Contactors with overload relays (mean value)			1/h	15	15

[1] Max. permissible rated operational current I_e/AC-4 = I_e/AC-3 up to 500 V, for reduced contact endurance and reduced switching frequency.

3TF6 vacuum contactors, 3-pole, 335 ... 450 kW

Contactor	Type	3TF68	3TF69
	Size	14	14
Conductor cross-sections			
Main conductors:		Screw terminals	
• Busbar connections			
- Finely stranded with cable lug	mm^2	50 ... 240	50 ... 240
- Stranded with cable lug	mm^2	70 ... 240	50 ... 240
- Solid or stranded	AWG	2/0 ... 500 MCM	2/0 ... 500 MCM
- Connecting bar (max. width)	mm	50	60 ($U_e \leq 690$ V) 50 ($U_e > 690$ V)
• Terminal screw		M10 x 30	M12 x 40
- Tightening torque	Nm	14 ... 24	20 ... 35
	lb.in	124 ... 210	177 ... 310
• With box terminal[1]			
- Connectable copper bars			
- Width	mm	15 ... 25	15 ... 38
- Max. thickness	mm	1 x 26 or 2 x 11	1 x 46 or 2 x 18
- Terminal screw		A/F 6 (hexagon socket)	A/F 8 (hexagon socket)
- Tightening torque	Nm	25 ... 40 (221 ... 354 lb.in)	35 ... 50 (266 ... 443 lb.in)
Auxiliary conductors:			
• Solid	mm^2	2 x (0.5 ... 1)[2]/2 x (1 ... 2.5)[2]	
• Finely stranded with end sleeve	mm^2	2 x (0.5 ... 1)[2]/2 x (0.75 ... 2.5)[2]	
• Pin-end connector to DIN 46231	mm^2	2 x (1 ... 1.5)	
• Solid or stranded	AWG	2 x (18 ... 12)	
• Tightening torque	Nm	0.8 ... 1.4	
	lb.in	7 ... 12	

[1] See "Accessories and Spare Parts", page 3/135.

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

Contactor	Type	3TF68	3TF69
	Size	14	14
CSA and UL rated data			
Rated insulation voltage	V AC	600	600
Uninterrupted current			
• Open and enclosed	A	630	820
Maximum horsepower ratings (CSA and UL approved values)			
• Rated power for three-phase motors at 60 Hz			
- At 200 V	hp	231	290
- At 230 V	hp	266	350
- At 460 V	hp	530	700
- At 575 V	hp	664	860
NEMA/EEMAC ratings			
SIZE	hp	6	7
• Uninterrupted current			
- Open	A	600	820
- Enclosed	A	540	810
• Rated power for three-phase motors at 60 Hz			
- At 200 V	hp	150	--
- At 230 V	hp	200	300
- At 460 V	hp	400	600
- At 575 V	hp	400	600
Overload relays	Type	3RB12	
• Setting range	A	200 ... 820	

Short-circuit protection with overload relays, see Chapter 7, "Protection Equipment" → "Overload Relays".

Selection and ordering data

Contactors for AC control

- Main conductors: Busbar connections
- Auxiliary and control conductors: Screw terminals
- Electronically controlled solenoid operating mechanism with high EMC[1)]
- With overvoltage protection of the coil (varistor)

3TF68/69

Rated data AC-2 and AC-3 (up to 55 °C)						AC-1	Auxiliary contacts		Rated control supply voltage U_s	DT	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
Operational current I_e up to 690 V	Ratings[2)] of three-phase motors at 50 Hz and 230 V	**400 V**	500 V	690 V	1 000 V	Operational current I_e (at 40 °C)	Version NO	NC			Article No.	Price per PU			
A	kW	**kW**	kW	kW	kW	A			V						
AC operation 50/60 Hz[1)]															
Size 14															
630	200	**335**	434	600	--	700	4	4	110 ... 132 AC	A	**3TF6844-0CF7**		1	1 unit	41B
									200 ... 240 AC	▶	**3TF6844-0CM7**		1	1 unit	41B
630	200	**335**	434	600	600	700	4	4	110 ... 132 AC	C	**3TF6844-8CF7**		1	1 unit	41B
									200 ... 240 AC	A	**3TF6844-8CM7**		1	1 unit	41B
820	260	**450**	600	800	--	910	4	4	110 ... 132 AC	A	**3TF6944-0CF7**		1	1 unit	41B
									200 ... 240 AC	▶	**3TF6944-0CM7**		1	1 unit	41B
820	260	**450**	600	800	800	910	4	4	110 ... 132 AC	C	**3TF6944-8CF7**		1	1 unit	41B
									200 ... 240 AC	C	**3TF6944-8CM7**		1	1 unit	41B

1) For electromagnetic compatibility (EMC), see page 3/130.

For use of 3TF6 vacuum contactors in the environment of frequency converters, we recommend ordering a special version:
3TF6...-....-Z A02.

3TF68/3TF69 vacuum contactors in their basic version are supplied with integrated overvoltage damping for the main current paths. The surge suppression circuit is not required for operation in circuits with DC choppers, frequency converters or speed-variable operating mechanisms, for example.

The circuit could be damaged by the voltage peaks and harmonics and thus cause phase-to-phase short circuits. For this reason, the contactors can also be supplied without integrated overvoltage damping.
Without additional price.
The article number must be supplemented by **"-Z"** and the order code **"A02"**.

2) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

Other voltages, see page 3/134.
For accessories, see page 3/135, for spare parts, see page 3/136.

Footnotes for page 3/134:

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

2) On these versions, a magnetic system is used in the DC economy circuit. A varistor can be retrofitted. A 3TC4417-4AB4 reversing contactor with preassembled connecting cable (approx. 1 m) and plug is included in the scope of supply of the vacuum contactor.

3) On this version, a magnetic system with rectifier is used in the DC economy circuit. Varistor integrated. A 3TC4417-.... reversing contactor with preassembled connecting cable (approx. 1 m) is included in the scope of supply of the vacuum contactor.

4) For electromagnetic compatibility (EMC), see page 3/130.

For use of 3TF6 vacuum contactors in the environment of frequency converters, we recommend ordering a special version:
3TF6...-....-Z A02.

3TF68/3TF69 vacuum contactors in their basic version are supplied with integrated overvoltage damping for the main current paths. The surge suppression circuit is not required for operation in circuits with DC choppers, frequency converters or speed-variable operating mechanisms, for example.

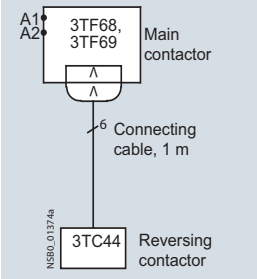
The circuit could be damaged by the voltage peaks and harmonics and thus cause phase-to-phase short circuits. For this reason, the contactors can also be supplied without integrated overvoltage damping.
Without additional price.
The article number must be supplemented by **"-Z"** and the order code **"A02"**.

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

3TF6 vacuum contactors, 3-pole, 335 ... 450 kW

Contactors for DC operation and for AC operation which is subject to strong interference

- Main conductors: Busbar connections
- Auxiliary and control conductors: Screw terminals
- DC solenoid system with 3TC44 reversing contactor for series resistor



3TF6.33-.Q.7

Rated data AC-2 and AC-3 (up to 55 °C)						AC-1	Auxiliary contacts		Rated control supply voltage U_s	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG
Operational current I_e up to 690 V	Ratings[1] of three-phase motors at 50 Hz and 230 V	400 V	500 V	690 V	1 000 V	Operational current I_e (at 40 °C)	Version				Article No.	Price per PU			
A	kW	**kW**	kW	kW	kW	A	NO	NC	V						
DC operation · DC economy circuit[2)4)]															
Size 14															
630	200	**335**	434	600	--	700	3	3	24 DC	C	**3TF6833-1DB4**		1	1 unit	41B
					600	700	3	3	24 DC	C	**3TF6833-8DB4**		1	1 unit	41B
820	260	**450**	600	800	--	910	3	3	24 DC	C	**3TF6933-1DB4**		1	1 unit	41B
					800	910	3	3	24 DC	C	**3TF6933-8DB4**		1	1 unit	41B
AC operation 50/60 Hz with DC economy circuit[3)4)] **For AC operation which is subject to strong interference**															
Size 14															
630	200	**335**	434	600	--	700	3	3	110 ... 120 AC	C	**3TF6833-1QG7**		1	1 unit	41B
									220 ... 240 AC	A	**3TF6833-1QL7**		1	1 unit	41B
									380 ... 420 AC	C	**3TF6833-1QV7**		1	1 unit	41B
					600	700	3	3	220 ... 240 AC	C	**3TF6833-8QL7**		1	1 unit	41B
820	260	**450**	600	800	--	910	3	3	110 ... 120 AC	C	**3TF6933-1QG7**		1	1 unit	41B
									220 ... 240 AC	A	**3TF6933-1QL7**		1	1 unit	41B
									380 ... 420 AC	C	**3TF6933-1QV7**		1	1 unit	41B
					800	910	3	3	110 ... 120 AC	C	**3TF6933-8QG7**		1	1 unit	41B
									220 ... 240 AC	C	**3TF6933-8QL7**		1	1 unit	41B

For footnotes, see page 3/133.
For accessories, see page 3/135, for spare parts, see page 3/136.

Rated control supply voltages (change of the 10th and 11th digits of the Article No.)

Rated control supply voltage U_s	Contactor type	3TF6844-.C.., 3TF6944-.C..
	Size	14
AC operation		
Solenoid coils for 50/60 Hz		
110 ... 132 V AC		F7
200 ... 240 V AC		M7
230 ... 277 V AC		P7
380 ... 460 V AC		Q7
500 ... 600 V AC		S7

Rated control supply voltage U_s	Contactor type	3TF6833-.D.., 3TF6933-.D..
	Size	14
DC operation		
Solenoid coils for DC economy circuit		
24 V DC		B4
110 V DC		F4
125 V DC		G4
220 V DC		M4
230 V DC		P4

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

Accessories

Version	Rated control supply voltage U_s V AC	V DC	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Surge suppressors[1] · Varistors								
 3TX7572-3. **Varistors**[2]	--	24 ... 48	C	**3TX7572-3G**		1	1 unit	41B
For DC economy circuit; for lateral snapping onto auxiliary switches	--	48 ... 127	D	**3TX7572-3H**		1	1 unit	41B
	--	127 ... 240	C	**3TX7572-3J**		1	1 unit	41B

[1] The surge suppressor (varistor) is included in the scope of supply of the 3TF68 and 3TF69 contactors with AC operation.

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

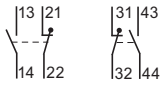
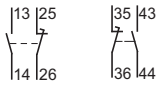
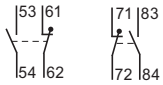
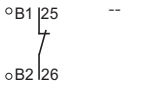
Version	DT	Screw terminals ⊕ Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solid-state compatible auxiliary switch blocks with screw terminals						
For operation in dusty atmospheres and in solid-state circuits with rated operational currents I_e AC-14 and DC-13 of 1 ... 300 mA at 3 ... 60 V						
 5TY7561-1. For lateral mounting onto contactors	▶	**3TY7561-1UA00**		1	1 unit	41B
With 1 changeover contact. 2nd auxiliary switch block, left or right (replacement for 3TY6561-1U, 3TY6561-1V)						
Mounting on the leftMounting on the right 						
Terminal covers						
 3TX76.6-0A For protection against inadvertent contact with exposed busbar connections (for 3TF68 contactor)	B	**3TX7686-0A**		1	1 unit	41B
Can be screwed onto free screw end on middle connecting bar (for 3TF69 contactor).	B	**3TX7696-0A**		1	1 unit	41B
2 units required per contactor. (1 set = 2 units)						
Links for paralleling (star jumpers), 3-pole						
Link for paralleling without connection terminals[2]	C	**3TX7680-0D**		1	1 unit	41B
Cover plates for links for paralleling						
A cover plate must be used in order to protect against inadvertent contact with exposed busbar connections (EN 50274).	C	**3TX7680-0E**		1	1 unit	41B
Box terminals for laminated copper bars						
Without auxiliary conductor connection for 3TF68 (1 set = 3 units)						
With single covers for protection against inadvertent contact (EN 50274)	D	**3TX7570-1E**		1	1 unit	41B
With auxiliary conductor connection for 3TF69 (1 set = 3 units)						
Conductor cross-sections for auxiliary conductors: • Solid 2 x (0.75 ... 2.5) mm² • Finely stranded with end sleeve 2 x (0.5 ... 2.5) mm² • Solid or stranded 2 x (18 ... 12) AWG • Tightening torque 0.8 ... 1.4 Nm (7 ... 12 lb.in)	D	**3TX7690-1F**		1	1 unit	41B

[1] Technical specifications for coupling links, see "Accessories for 3RT10 Contactors", page 3/113.

[2] The link for paralleling can be reduced by one pole.

3TF6 vacuum contactors, 3-pole, 335 ... 450 kW

Spare parts

Version	Auxiliary contacts Version	Connections	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	NO NC NC							
Auxiliary switch blocks								
 3TY7561-1.A00	**For lateral mounting**	Left Right						
	1st auxiliary switch block (replacement for 3TY7561-1A/-1B)		►	**3TY7561-1AA00**		1	1 unit	41B
	1 1 --							
	1st auxiliary switch block		►	**3TY7561-1EA00**		1	1 unit	41B
	1 -- 1							
	2nd auxiliary switch block (replacement for 3TY7561-1K/-1L)		C	**3TY7561-1KA00**		1	1 unit	41B
	1 1 --							
	For reconnection of the coil with DC economy circuit							
	-- -- 1		►	**3TY7681-1G**		1	1 unit	41B

Version	For type	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solenoid coils							
 3TY76.3-0...	**AC operation**[1]						
	The solenoid coils are fitted as standard with varistors against overvoltage; the coil is supplied with switch-on electronics.	3TF68 3TF69	**3TY7683-0C..** **3TY7693-0C..**				
	DC operation[1] **· DC economy circuit**						
	The solenoid coils for size 14 are supplied without reversing contactor.	3TF68 3TF69	**3TY7683-0D..** **3TY7693-0D..**				
Vacuum interrupters							
	Set with 3 vacuum interrupters with components	3TF68	B **3TY7680-0B**		1	1 unit	41B
	In order to ensure reliable operation of the contactors, only **original replacement interrupters** should be used.	3TF69	C **3TY7690-0B**		1	1 unit	41B

[1] Rated control supply voltages for solenoid coils: The 10th and 11th digits of the article number must be supplemented according to page 3/134.

Version	Rated control supply voltage U_s V AC	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3TC44 reversing contactors							
Complete with series resistor, 1 m connecting cable and plug-in connector For 3TF68..-.Q, 3TF69..-.Q	110 ... 120	D	**3TY7684-0QG7**		1	1 unit	41B
	220 ... 240	D	**3TY7684-0QL7**		1	1 unit	41B
	380 ... 420	D	**3TY7684-0QV7**		1	1 unit	41B
Solenoid coils for main contactor, with rectifier bridge							
For 3TF68..-.Q	110 ... 120	D	**3TY7683-0QG7**		1	1 unit	41B
	220 ... 240	D	**3TY7683-0QL7**		1	1 unit	41B
	380 ... 420	X	**3TY7683-0QV7**		1	1 unit	41B
For 3TF69..-.Q	110 ... 120	D	**3TY7693-0QG7**		1	1 unit	41B
	220 ... 240	D	**3TY7693-0QL7**		1	1 unit	41B
	380 ... 420	D	**3TY7693-0QV7**		1	1 unit	41B

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

Overview

The 3TB5 contactors are suitable for use in any climate.

They are finger-safe according to EN 50274. Terminal covers may have to be fitted onto the connecting bars, depending on the configuration with other devices; see Accessories and Spare Parts on page 3/143.

Auxiliary contacts

The contactors are equipped with two lateral auxiliary switch blocks each with 1 NO + 1 NC contact. Further auxiliary switch blocks cannot be fitted to the DC-operated contactors.

Technical specifications

Contactor	Type	3TB50		3TB52 ... 3TB56	
	Size	6		8 ... 12	
Rated data of the auxiliary contacts		According to IEC 60947-5-1			
Rated insulation voltage U_i (pollution degree 3)	V	690			
Conventional thermal current I_{th} = Rated operational current I_e/AC-12	A	10			
AC load **Rated operational current I_e/AC-15/AC-14** • For rated operational voltage U_e					
- At 24 V	A	10			
- At 110 V	A	10			
- At 125 V	A	10			
- At 220 V	A	6			
- At 230 V	A	5.6			
- At 380 V	A	4			
- At 400 V	A	3.6			
- At 500 V	A	2.5			
- At 660 V	A	2.5			
- At 690 V	A	--			
DC load **Rated operational current I_e/DC-12** • For rated operational voltage U_e					
- At 24 V	A	10		10	
- At 60 V	A	10		10	
- At 110 V	A	3.2		8	
- At 125 V	A	2.5		6	
- At 220 V	A	0.9		2	
- At 440 V	A	0.33		0.6	
- At 600 V	A	0.22		0.4	
Rated operational current I_e/DC-13 • For rated operational voltage U_e			Auxiliary contacts with delayed NC contact:		Auxiliary contacts with delayed NC contact:
- At 24 V	A	10	10	10	10
- At 60 V	A	5	7	5	4
- At 110 V	A	1.14	3.2	2.4	1.8
- At 125 V	A	0.98	2.5	2.1	1.6
- At 220 V	A	0.48	0.9	1.1	0.9
- At 440 V	A	0.13	0.33	0.32	0.27
- At 600 V	A	0.075	0.22	0.21	0.18
CSA and UL rated data of the auxiliary contacts					
Rated voltage, max.	V AC	600			
Switching capacity		A 600, P 600			

3TB5 contactors with DC solenoid system, 3-pole, 55 ... 200 kW

Contactor | **3TB5**

Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching resistive and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking six times the rated operational current) and is intended for a contact endurance of approx. 200 000 operating cycles.

If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:
- X Contact endurance for mixed operation in operating cycles
- A Contact endurance for normal operation ($I_a = I_e$) in operating cycles
- B Contact endurance for inching (I_a = multiple of I_e) in operating cycles
- C Inching operations as a percentage of total switching operations

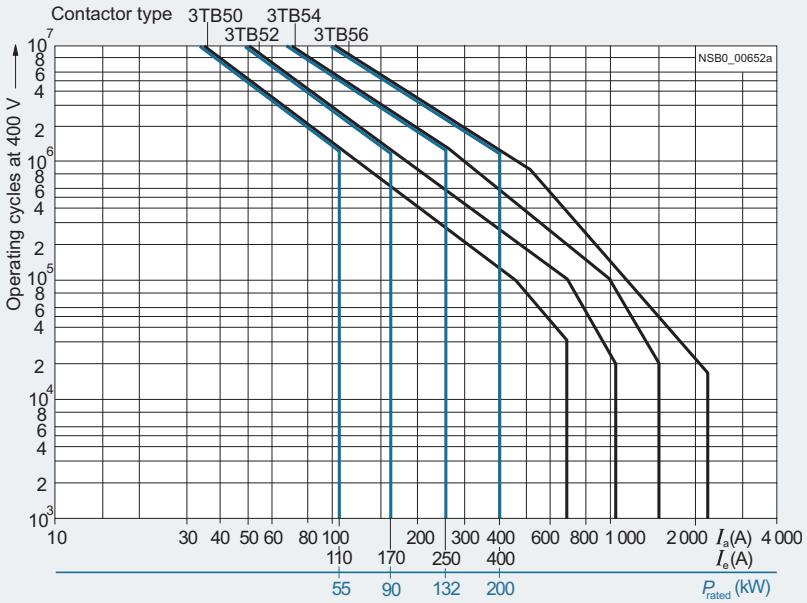
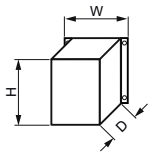
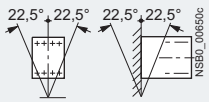


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

Type			**3TB50**	**3TB52**	**3TB54**	**3TB56**
Size			**6**	**8**	**10**	**12**
Dimensions (W x H x D)		mm	120 x 150 x 198	135 x 180 x 217	145 x 252 x 264	160 x 252 x 282
General data						
Permissible mounting position, installation instructions[1] The contactors are designed for operation on a vertical mounting surface.						
Mechanical endurance		Operating cycles	10 million			
Electrical endurance			[2]			
Rated insulation voltage U_i		V	1000			
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		V	690			
Mirror contacts A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			Yes, acc. to IEC 60947-4-1, Appendix F			
Permissible ambient temperature						
• During operation		°C	-25 ... +55			
• During storage		°C	-50 ... +80			
Degree of protection acc. to IEC 60947-1, Appendix C			IP00/open (where applicable, use additional terminal covers)			
Touch protection acc. to EN 50274			Finger-safe only for vertical contact from the front			
Shock resistance (rectangular pulse)		*g*/ms	5/10	5.9/10	5.9/10	5.9/10
Short-circuit protection						
Main circuit Fuse links, gG operational class: LV HRC, type 3NA; DIAZED, type 5SB						
• Type of coordination "1"		A	250	315	400	630
• Type of coordination "2"		A	224	250	315	500
Auxiliary circuit Short-circuit test						
• with fuse links of operational class gG: LV HRC, type 3NA; DIAZED, type 5SB with short-circuit current I_k = 1 kA according to IEC 60947-5-1		A	16			
• with miniature circuit breakers with C characteristic with short-circuit current I_k = 400 A		A	10			
Control						
Solenoid coil operating range			0.8 ... 1.1 x U_s			
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)						
• Closing = Closed		W	25	30	60	86
Operating times for 0.8 ... 1.1 x U_s Total break time = Opening delay + Arcing time			(The values apply up to and including 20 % undervoltage, 10 % overvoltage, as well as when the coil is cold and warm)			
• Closing delay		ms	105 ... 360	115 ... 400	105 ... 400	110 ... 400
• Opening delay[3]		ms	18 ... 30	22 ... 35	24 ... 55	40 ... 110
• Arcing time		ms	10 ... 15	10 ... 15	10 ... 15	10 ... 15
Operating times for 1.0 x U_s						
• Closing delay		ms	120 ... 230	130 ... 250	115 ... 250	120 ... 250
• Opening delay[3]		ms	20 ... 26	24 ... 32	35 ... 50	60 ... 95

1) For reversing duty, deviations from the vertical axis are not permitted.

2) See "Contact endurance of the main contacts", page 3/138.

3) The opening delay times can increase if the contactor coils are damped against voltage peaks.

3TB5 contactors with DC solenoid system, 3-pole, 55 ... 200 kW

Contactor	Type	3TB50	3TB52	3TB54	3TB56
	Size	6	8	10	12
Main circuit					
Load rating with AC					
Utilization category AC-1, Switching resistive loads					
• Rated operational current I_e					
- At 40 °C up to 690 V	A	170	230	325	425
- At 55 °C up to 690 V	A	160	200	300	400
• Rated power for AC loads[1] with p.f. = 0.95 (at 55 °C)					
- At 230 V	kW	61	76	114	152
- At 400 V	kW	105	132	195	262
- At 500 V	kW	138	173	260	345
- At 690 V	kW	183	228	340	455
• Minimum conductor cross-sections for loads with I_e	mm^2	70	95	185	240
Utilization categories AC-2 and AC-3		[2]			
Utilization category AC-4 (for $I_a = 6 \times I_e$)					
The following applies to a contact endurance of about 200 000 operating cycles:					
• Rated operational current I_e	A	52	72	103	120
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz					
- At 230 V	kW	15.6	21	31	37.5
- At 400 V	kW	27	37	55	65
- At 500 V	kW	35	48	72	85.5
- At 690 V	kW	45	64	92	106
• Max. permisible operational current I_e/AC-4					
- At 400 V	A	110	170	250	400
Load rating with DC					
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)					
• Rated operational currents I_e (at 55 °C)					
- 1 conducting path	Up to 24 V A	160	200	300	400
	60 V A	80	80	300	330
	110 V A	18	18	33	33
	220 V A	3.4	3.4	3.8	3.8
	440 V A	0.8	0.8	0.9	0.9
	600 V A	0.5	0.5	0.6	0.6
- 2 conducting paths in series	Up to 24 V A	160	200	300	400
	60 V A	160	200	300	400
	110 V A	160	200	300	400
	220 V A	20	20	300	400
	440 V A	3.2	3.2	4	4
	600 V A	1.6	1.6	2	2
- 3 conducting paths in series	Up to 24 V A	160	200	300	400
	60 V A	160	200	300	400
	110 V A	160	200	300	400
	220 V A	160	200	300	400
	440 V A	11.5	11.5	11	11
	600 V A	4	4	5.2	5.2
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)					
• Rated operational currents I_e (at 55 °C)					
- 1 conducting path	Up to 24 V A	16	16	35	35
	60 V A	7.5	7.5	11	11
	110 V A	2.5	2.5	3	3
	220 V A	0.6	0.6	0.6	0.6
	440 V A	0.17	0.17	0.18	0.18
	600 V A	0.12	0.12	0.125	0.125
- 2 conducting paths in series	Up to 24 V A	160	200	300	400
	60 V A	160	200	300	400
	110 V A	160	200	300	400
	220 V A	2.5	2.5	2.5	2.5
	440 V A	0.65	0.65	0.65	0.65
	600 V A	0.37	0.37	0.37	0.37
- 3 conducting paths in series	Up to 24 V A	160	200	300	400
	60 V A	160	200	300	400
	110 V A	160	200	300	400
	220 V A	160	200	300	400
	440 V A	1.4	1.4	1.4	1.4
	600 V A	0.75	0.75	0.75	0.75

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

[2] See "Selection and Ordering Data", page 3/142.

3TB5 contactors with DC solenoid system, 3-pole, 55 ... 200 kW

Contactor	Type	3TB50	3TB52	3TB54	3TB56
Size		6	8	10	12
Main circuit					
Switching frequency					
Switching frequency *z* in operating cycles/hour					
• Contactors without overload relays					
- AC-1	h^{-1}	1 000			
- AC-2	h^{-1}	500			
- AC-3	h^{-1}	500			
- AC-4	h^{-1}	250			
• Contactors with overload relays (mean value)	h^{-1}	15			
Conductor cross-sections					
Main conductors:		Screw terminals			
• Finely stranded with cable lug	mm^2	16 ... 70	35 ... 95	50 ... 240	50 ... 240
• Stranded with cable lug	mm^2	25 ... 70	50 ... 120	70 ... 240	70 ... 240
• Busbars	mm	15 x 3	20 x 3	25 x 5	2 x (25 x 3)
• Terminal screw		M6	M8	M10	M10
Auxiliary conductors:					
• Solid	mm^2	1 ... 2.5			
• Finely stranded with end sleeve	mm^2	0.75 ... 1.5			
• Pin-end connector (DIN 46231)	mm^2	2 x 1 ... 2.5			
Protective conductors:					
• Stranded with cable lug	mm^2	--	25 ... 70	35 ... 70	50 ... 120
CSA and UL rated data					
CSA rated data					
• Uninterrupted current					
- Open	A	150	170	240	300
- Enclosed	A	135	153	215	270
• Rated power for three-phase motors at 60 Hz (enclosed)					
- 115 V	hp	25	30	40	50
- 230 V	hp	50	60	75	100
- 460 V	hp	100	120	150	200
- 575 V	hp	125	160	200	250
• Overload relays	Type	3RB2056	3RB2056	3RB2066	3RB2066
- Setting range	A	50 ... 200	50 ... 200	50 ... 250	200 ... 540
• NEMA/EEMAC size					
- Contactors		4	4	4	5
- Starters (= contactors + overload relay, enclosed)		3	4	4	5
UL rated data					
• Uninterrupted current					
- Open	A	150	150	240	390
- In enclosure	A	135	135	215	350
• Rated power for three-phase motors at 60 Hz					
- 115 V	hp	25	25	30	--
- 230 V	hp	50	50	75	125
- 460 V	hp	100	100	150	250
- 575 V	hp	125	125	200	300[1)]
• Overload relays	Type	3RB2056	3RB2056	3RB2066	3RB2066
- Setting range	A	50 ... 200	50 ... 200	50 ... 250	200 ... 540
• NEMA/EEMAC size					
- Contactors		4	4	4	5
- Starters (= contactors + overload relay, enclosed)		3	4	4	5
Short-circuit protection devices					
• CLASS RK5 fuses	A	400	400	450	600
• Circuit breakers acc. to UL 489	A	175	175	250	600

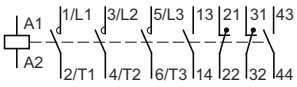
1) At 575/600 V AC max. rated motor current 325 A and motor starting current 3 250 A.

3TB5 contactors with DC solenoid system, 3-pole, 55 ... 200 kW

Selection and ordering data

Main conductors: Busbar connections
Auxiliary and control conductors: Screw terminals

3TB50

Size	Rated data AC-2 and AC-3 (up to 55 °C) Operational current I_e up to 690 V	Ratings[1] of three-phase motors at 50 Hz and 230 V	400 V	500 V	690 V	AC-1 Operational current I_e (at 40 °C)	Auxiliary contacts Version NO	NC	Rated control supply voltage U_s	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	kW	**kW**	kW	kW	A			V DC						
DC operation															
															
6	110	37	**55**	75	90	170	2	2	24	A	**3TB5017-0BB4**		1	1 unit	41B
8	170	55	**90**	110	132	230	2	2	24	A	**3TB5217-0BB4**		1	1 unit	41B
10	250	75	**132**	160	200	325	2	2	24	C	**3TB5417-0BB4**		1	1 unit	41B
12	400	115	**200**	255	355	425	2	2	24	C	**3TB5617-0BB4**		1	1 unit	41B

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

For accessories, see page 3/143.
For spare parts, see page 3/144.

Options

Rated control supply voltages
(change of the 10th and 11th digits of the Article No.)

Rated control supply voltage U_s	Contactor type	3TB50, 3TB52, 3TB54	3TB56
	Size	6, 8, 10	12
DC operation			
24 V DC		B4	B4
110 V DC		F4	--
220 V DC		M4	M4

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

Accessories

For contactors Size	Type	Version	Rated control supply voltage U_s V AC	V DC	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Surge suppressors · Varistors										
 3TX7462-3.										
6	3TB50	**Varistors**[1] for sticking onto the contactor base or for mounting separately	24 ... 48	24 ... 70	A	**3TX7462-3G**		1	1 unit	41B
			48 ... 127	70 ... 150	B	**3TX7462-3H**		1	1 unit	41B
			127 ... 240	150 ... 250	A	**3TX7462-3J**		1	1 unit	41B
			240 ... 400	--	B	**3TX7462-3K**		1	1 unit	41B
			400 ... 600	--	B	**3TX7462-3L**		1	1 unit	41B
 3TX7522-3.										
8 ... 12	3TB52 ... 3TB56	**Varistors**[1] for separate screw fixing or snapping onto TH 35 standard mounting rail	--	24 ... 70	B	**3TX7522-3G**		1	1 unit	41B
			--	70 ... 150	B	**3TX7522-3H**		1	1 unit	41B
			--	150 ... 250	B	**3TX7522-3J**		1	1 unit	41B
Surge suppressors · RC elements										
 3TX7522-3.										
6	3TB50	**RC elements** For lateral snapping onto auxiliary switch or TH 35 standard mounting rail	24 ... 48	--	B	**3TX7522-3R**		1	1 unit	41B
			48 ... 127	--	B	**3TX7522-3S**		1	1 unit	41B
			127 ... 240	--	B	**3TX7522-3T**		1	1 unit	41B
			240 ... 400	--	B	**3TX7522-3U**		1	1 unit	41B
			400 ... 600	--	B	**3TX7522-3V**		1	1 unit	41B
Surge suppressors · Diodes										
 3TX7462-3.										
6 ... 12	3TB50 ... 3TB56	**Diode assemblies**[2] (diode and Zener diode) for DC solenoid system, for sticking onto the contactor base or for mounting separately	--	24 ... 250	A	**3TX7462-3D**		1	1 unit	41B

[1] Includes the peak value of the alternating voltage on the DC side.

[2] Not for DC economy circuit.

For contactors Size	Type	Version	DT	**Screw terminals** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Terminal covers								
 3TX6526-3B								
6	3TB50	For protection against inadvertent contact with exposed busbar connections	M6	**3TX6506-3B**		1	1 unit	41B
8	3TB52		M8	**3TX6526-3B**		1	1 unit	41B
10 and 12	3TB54, 3TB56	Can be screwed on free screw end For covering one busbar connection (1 set = 6 units)	M10	**3TX6546-3B**		1	1 unit	41B

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

3TB5 contactors with DC solenoid system, 3-pole, 55 ... 200 kW

Spare parts

For contactors		Auxiliary contacts					DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG
		Version			Connections			Article No.	Price per PU			
Size	Type	NO	NC	NC								
Auxiliary switch blocks												
For lateral mounting					Left	Right						
6	3TB50	(replacement for 3TY6501-1A/-1B)										
		1	1	--	13 21 / 14 22	31 43 / 32 44	►	**3TY6501-1AA00**		1	1 unit	41B
8 ... 12	3TB52 ... 3TB56	1	1	--	13 21 / 14 22	--	►	**3TY6561-1A**		1	1 unit	41B
		1	1	--	--	31 43 / 32 44	►	**3TY6561-1B**		1	1 unit	41B
		1	--	1	--	35 43 / 36 44	►	**3TY6561-1E**		1	1 unit	41B

3TY6561-1A

For contactors		Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Size	Type							
Contacts with fixing parts								
		In order to ensure reliable operation of the contactors, only **original replacement contacts** should be used.						
6	3TB50	(1 set = 3 moving and 6 fixed switching elements)	B	**3TY6500-0A**		1	1 unit	41B
8	3TB52		B	**3TY6520-0A**		1	1 unit	41B
10	3TB54		B	**3TY6540-0A**		1	1 unit	41B
12	3TB56		B	**3TY6560-0A**		1	1 unit	41B
Arc chutes								
6	3TB50	1 arc chute, 3-pole	►	**3TY6502-0A**		1	1 unit	41B
8	3TB52		►	**3TY6522-0A**		1	1 unit	41B
10	3TB54		►	**3TY6542-0A**		1	1 unit	41B
12	3TB56		►	**3TY6562-0A**		1	1 unit	41B
Solenoid coils								
DC operation[1]								
6	3TB50			**3TY6503-0B..**	On request			
8	3TB52			**3TY6523-0B..**	On request			
10	3TB54			**3TY6543-0B..**	On request			
12	3TB56			**3TY6563-0B..**	On request			

3TY6520-0A

3TY6502-0A

3TY65.

[1] Rated control supply voltages for solenoid coils: The 10th and 11th digit of the article number must be supplemented according to page 3/142.

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

Overview

Standards

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

The contactors are suitable for use in any climate.

The contactors with screw terminals are finger-safe acc. to EN 50274.

Connection methods

The contactors are available in versions with screw terminals, 6.3 mm plug-in terminals and solder pin connections for soldering in printed circuit boards.

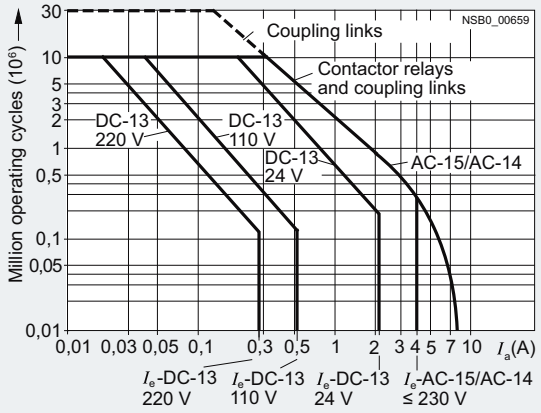
Technical specifications

Contactor	Type	3TF2

Endurance of the auxiliary contacts

The contact endurance for utilization category AC-12 or AC-15/AC-14 depends mainly on the breaking current. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

Diagram legend:
I_a = Breaking current
I_e = Rated operational current



Contact endurance of the main contacts

The characteristic curves show the contact endurance of the contactors when switching inductive AC loads (AC-3) depending on the breaking current and rated operational voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The rated operational current I_e complies with utilization category AC-4 (breaking six times the rated operational current) and is intended for a contact endurance of approx. 200 000 operating cycles. If a shorter contact endurance is sufficient, the rated operational current I_e/AC-4 can be increased.

If the contacts are used for mixed operation, i.e. normal switching (breaking the rated operational current according to utilization category AC-3) in combination with intermittent inching (breaking several times the rated operational current according to utilization category AC-4), the contact endurance can be calculated approximately from the following equation:

$$X = \frac{A}{1 + \frac{C}{100}\left(\frac{A}{B} - 1\right)}$$

Characters in the equation:
X = Contact endurance for mixed operation in operating cycles
A = Contact endurance for normal operation ($I_a = I_e$) in operating cycles
B = Contact endurance for inching (I_a = multiple of I_e) in operating cycles
C = Inching operations as a percentage of total switching operations

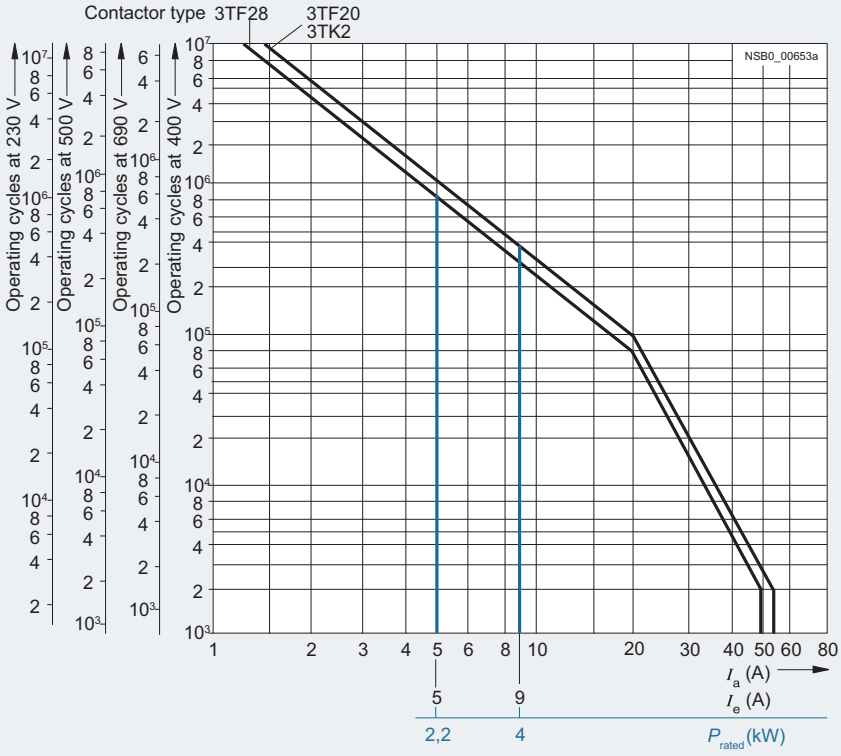
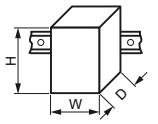


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

3TF2 contactors, 3-pole, 2.2 ... 4 kW



			3TF20, 3TF28	3TF22, 3TF29
Type				
Size			**00**	**00**
Dimensions (W x H x D)		mm	45 x 48 x 63	--
• With mounted auxiliary switch block		mm	45 x 48 x 91	45 x 48 x 91
• With 3TX4490 surge suppressor		mm	45 x 48 x 88	45 x 48 x 116
General data				
Permissible mounting position			Any	
Mechanical endurance				
• AC operation		Operating cycles	10 million	
• DC operation		Operating cycles	30 million	
Auxiliary switch block		Operating cycles	10 million	
Rated insulation voltage U_i (pollution degree 3)				
• Screw terminals		V	690	690[1]
• Flat connectors 6.3 mm x 0.8 mm		V	500	--
• Solder pin connections		V	500	--
Rated impulse withstand voltage U_{imp} (pollution degree 3)				
• Screw terminals		kV	6	6
• Flat connectors 6.3 mm x 0.8 mm		kV	6	--
• Solder pin connections		kV	6	--
Protective separation between coil and main contacts (according to IEC 60947-1, Appendix N)		V	Up to 300	
Mirror contacts				
A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.			Yes, this applies to both the basic unit as well as to between the basic unit and the mounted auxiliary switch block acc. to IEC 60947-4-1, Appendix F	Yes, acc. to IEC 60947-4-1, Appendix F and SUVA
Permissible ambient temperature[2]				
• During operation		°C	-25 ... +55	
• During storage		°C	-55 ... +80	
Degree of protection acc. to IEC 60947-1 Appendix C			IP00/open	
• Connection range for screw terminals			IP20	
Touch protection acc. to EN 50274			Finger-safe for screw terminals	
Shock resistance				
• Without 3TX44 auxiliary switch block				
- Rectangular pulse	AC operation	*g*/ms	8.3/5 and 5.2/10	--
	DC operation	*g*/ms	11.3/5 and 9.2/10	--
- Sine pulse	AC operation	*g*/ms	13/5 and 8/10	--
	DC operation	*g*/ms	17.4/5 and 12.9/10	--
• With 3TX44 auxiliary switch block				
- Rectangular pulse	AC operation	*g*/ms	5/5 and 3.6/10	5/5 and 3.6/10
	DC operation	*g*/ms	9/5 and 6.9/10	9/5 and 7.3/10
- Sine pulse	AC operation	*g*/ms	7.8/5 and 5.6/10	7.8/5 and 5.6/10
	DC operation	*g*/ms	13.9/5 and 10.1/10	14/5 and 11/10
Conductor cross-sections			[3]	
Short-circuit protection for contactors without overload relays				
Main circuit[4]				
• 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	
- Type of coordination "2"[5]		A	10	
- Weld-free		A	10	
• Miniature circuit breaker with C characteristic		A	10	
Auxiliary circuit				
Short-circuit test				
• with fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A	6	

1) Auxiliary contacts 500 V.

2) Applies to 50/60 Hz coil:
At 50 Hz, 1.1 x U_s, , side-by-side mounting and 100 % ON period the max. ambient temperature is +40 °C.

3) See "Conductor cross-sections" on page 3/149.

4) According to excerpt from IEC 60947-4-1
Type of coordination "1":
Destruction of the contactor and the overload relay is permissible.
The contactor and/or overload relay can be replaced if necessary.
Type of coordination "2":
The overload relay must not suffer any damage. Contact welding on the contactor is permissible, however, if the contacts can be easily separated.

5) A short-circuit current of $I_q \leq 6$ kA applies to type of coordination "2".

Contactor		Type	3TF2
		Size	00
Control			
Solenoid coil operating range[1]			0.8 ... 1.1 x U_s
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)			
Standard version:			
• AC operation, 50 Hz	Closing	VA	15
	P.f.		0.41
	Closed	VA	6.8
	P.f.		0.42
• AC operation, 60 Hz	Closing	VA	14.4
	P.f.		0.36
	Closed	VA	6.1
	P.f.		0.46
• AC operation, 50/60 Hz[1]	Closing	VA	16.5/13.2
	P.f.		0.43/0.38
	Closed	VA	8.0/5.4
	P.f.		0.48/0.42
For USA and Canada:			
• AC operation, 50 Hz	Closing	VA	14.6
	P.f.		0.38
	Closed	VA	6.5
	P.f.		0.40
• AC operation, 60 Hz	Closing	VA	14.4
	P.f.		0.30
	Closed	VA	6.0
	P.f.		0.44
• DC operation	Closing = Closed	W	3
Permissible residual current of the electronic circuit[2] (with 0 signal)			
	• AC operation	mA	≤ 3 x (230 V/U_s)
	• DC operation	mA	≤ 1 x (230 V/U_s)
Operating times for 0.8 ... 1.1 x U_s[3]			
Total break time = Opening delay + Arcing time			
Values apply with coil in cold state and at operating temperature for operating range			
• AC operation	Closing delay	ms	5 ... 19
	Opening delay	ms	2 ... 22
- Dead interval			To use the 3TF2 AC-operated contactor in reversing an additional dead interval of 50 ms is required along with an NC contact interlock.
• DC operation	Closing delay	ms	16 ... 65
	Opening delay	ms	2 ... 5
• Arcing time		ms	10 ... 15
Operating times for 1.0 x U_s[3]			
• AC operation	Closing delay	ms	5 ... 18
	Opening delay	ms	3 ... 21
- Dead interval			To use the 3TF2 AC-operated contactor in reversing an additional dead interval of 50 ms is required along with an NC contact interlock.
• DC operation	Closing delay	ms	19 ... 31
	Opening delay	ms	3 ... 4
• Arcing time		ms	10 ... 15

1) Applies to 50/60 Hz coil:
At 50 Hz, 1.1 x U_s, side-by-side mounting and 100 % ON period the max. ambient temperature is +40 °C.

2) The 3TX4490-1J additional load module is recommended for higher residual currents; see Accessories, page 3/154.

3) The OFF-delay of the NO contact and the ON-delay of the NC contact are increased if the contactor coils are attenuated against voltage peaks (noise suppression diode 6 to 10 times; diode assembly 2 to 6 times, varistor +2 to 5 ms).

3TF2 contactors, 3-pole, 2.2 ... 4 kW

Contactor	Type		3TF28, 3TF29	3TF20..-0..., 3TF22..-0...	3TF20..-3..., 3TF20..-6..., 3TF20..-7...
	Size		00	00	00
Main circuit					
Load rating with AC					
Utilization category AC-1 Switching resistive loads					
• Rated operational current I_e (at 40 °C)	Up to 400/380 V	A	18	18	18
	690/660 V	A	18	18	--
• Rated operational current I_e (at 55 °C)	400/380 V	A	16	16	16
	690/660 V	A	16	16	--
• Rated power of AC loads P.f. = 1	At 230/220 V	kW	6.0	6.0	6.0
	400/380 V	kW	10	10	10
	500 V	kW	13	13	13
	690/660 V	kW	17	17	--
• Minimum conductor cross-section for loads with I_e		mm^2	2.5	2.5	2.5
Utilization categories AC-2 and AC-3					
• Rated operational current I_e	Up to 220 V	A	5.1	9.0	9.0
	230 V	A	5.1	9.0	9.0
	380 V	A	5.1	9.0	9.0
	400 V	A	5.1	8.4	8.4
	500 V	A	4.8	6.5	6.5
	660 V	A	4.8	5.2	--
	690 V	A	4.8	5.2	--
• Rated power for motors with slipring or squirrel cage at 50 and 60 Hz and	At 110 V	kW	0.7	1.2	1.2
	115 V	kW	0.7	1.2	1.2
	120 V	kW	0.7	1.3	1.3
	127 V	kW	0.8	1.4	1.4
	200 V	kW	1.2	2.2	2.2
	220 V	kW	1.3	2.4	2.4
	230 V	kW	1.4	2.5	2.5
	240 V	kW	1.5	2.6	2.6
	380 V	kW	2.2	4.0	4.0
	400 V	kW	2.2	4.0	4.0
	415 V	kW	2.5	4.0	4.0
	440 V	kW	2.5	4.0	4.0
	460 V	kW	2.7	4.0	4.0
	500 V	kW	2.9	4.0	4.0
	575 V	kW	3.2	4.0	--
	660 V	kW	3.8	4.0	--
	690 V	kW	4.0	4.0	--
Utilization category AC-4					
(contact endurance approx. 200 000 operating cycles at $I_a = 6 \times I_e$)					
• Rated operational current I_e [1]	Up to 400 V	A	1.9	2.6	2.6
	690 V	A	1.4	1.8	--
• Rated power for motors with squirrel cage at 50 and 60 Hz and	At 110 V	kW	0.23	0.32	0.32
	115 V	kW	0.24	0.33	0.33
	120 V	kW	0.26	0.35	0.35
	127 V	kW	0.27	0.37	0.37
	200 V	kW	0.42	0.58	0.58
	220 V	kW	0.47	0.64	0.64
	230 V	kW	0.49	0.67	0.67
	240 V	kW	0.51	0.70	0.70
	380 V	kW	0.81	1.10	1.10
	400 V	kW	0.85	1.15	1.15
	415 V	kW	0.93	1.20	1.20
	440 V	kW	1.0	1.27	1.27
	460 V	kW	1.0	1.33	1.33
	500 V	kW	1.1	1.45	1.45
	575 V	kW	1.0	1.30	--
	660 V	kW	0.86	1.10	--
	690 V	kW	0.89	1.15	--
Thermal load capacity	10 s current	A	70		
Power loss per conducting path	At I_e/AC-3	W	0.3		

[1] The following applies: Max. permissible rated operational current I_e/AC-4 ≙ I_e/AC-3 up to 500 V, for reduced contact endurance and reduced switching frequency

Contactor	Type		3TF28, 3TF29	3TF20..-0..., 3TF22..-0...	3TF20..-3..., 3TF20..-6..., 3TF20..-7...
	Size		00	00	00
Main circuit					
Load rating with DC					
Utilization category DC-1, switching resistive loads (*L/R* ≤ 1 ms)					
• Rated operational currents I_e (at 55 °C)					
- 1 conducting path	Up to 24 V	A	10	16	16
	60 V	A	4	6	6
	110 V	A	1.5	2	2
	220/240 V	A	0.6	1	1
- 2 conducting paths in series	Up to 24 V	A	10	16	16
	60 V	A	10	16	16
	110 V	A	4	6	6
	220/240 V	A	1.5	2	2
- 3 conducting paths in series	Up to 24 V	A	10	16	16
	60 V	A	10	16	16
	110 V	A	10	16	16
	220/240 V	A	4	6	6
Utilization category DC-3/DC-5, shunt-wound and series-wound motors (*L/R* ≤ 15 ms)					
• Rated operational currents I_e (at 55 °C)					
- 1 conducting path	Up to 24 V	A	4	6	6
	60 V	A	1.8	3	3
	110 V	A	0.3	0.5	0.5
	220/240 V	A	--	0.1	0.1
- 2 conducting paths in series	Up to 24 V	A	6	10	10
	60 V	A	3	5	5
	110 V	A	1.5	2	2
	220/240 V	A	0.3	0.5	0.5
- 3 conducting paths in series	Up to 24 V	A	10	16	16
	60 V	A	10	16	16
	110 V	A	10	16	16
	220/240 V	A	1.5	2	2
Switching frequency					
Switching frequency *z* in operating cycles/hour					
• Contactors without overload relays for rated operation[1]	No-load switching frequency	h^{-1}	10000		
	AC-1	h^{-1}	1000		
	AC-2	h^{-1}	500		
	AC-3	h^{-1}	1000		
• Contactors with overload relays (mean value)		h^{-1}	15		
Conductor cross-sections					
Main and auxiliary conductors			**Screw terminals**		
• Solid		mm^2	2 x (0.5 ... 2.5), 1 x 4 2 x (20 ... 14) AWG, 1 x 12 AWG		
• Finely stranded with end sleeve		mm^2	2 x (0.5 ... 1.5), 1 x 2.5		
• Pin-end connector (DIN 46231)		mm^2	1 x 1 ... 2.5		
• Terminal screw			M3		
• Prescribed tightening torque for terminal screws		Nm lb.in	0.8 ... 1.3 7 ... 11		
			Flat connectors		
• When using a plug-in sleeve 6.3 – 1		mm^2	0.5 ... 1		
• Finely stranded with 6.3–2.5		mm^2	1 ... 2.5		
			Solder pin connections (only for printed circuit boards)		
• Solder pin cross-section		mm^2	0.8 x 1.2		
• Solder pin cross-section, plug-in base		mm^2	0.32 x 1.0		

[1] Dependence of the switching frequency *z'* on the operational current *I'* and operational voltage *U'*:
$z' = z \times (I_e/I') \times (400\ V/U')^{1.5} \times 1/h$

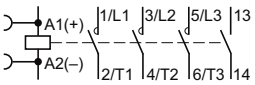
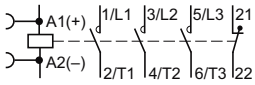
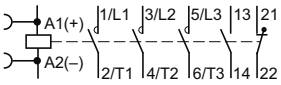
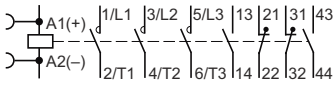
3TF2 contactors, 3-pole, 2.2 ... 4 kW

Contactor	Type		3TF20..-0...	3TF20..-3..., 3TF20..-6..., 3TF20..-7...
	Size		00	00
cULus and cULus rated data of the 3TF20 contactors				
Rated insulation voltage U_i		V AC	600	300
Uninterrupted current	Open and enclosed	A	16	16 (10 for solder pin connection)
Maximum horsepower ratings (cULus and cULus approved values)				
• Rated power for three-phase motors at 60 Hz				
- Single-phase	At 115 V	hp	0.5	--
	200 V	hp	1	1
	230 V	hp	1.5	1
	460/575 V	hp	--	--
- 3-phase	At 115 V	hp	--	--
	200 V	hp	3	3 (1 for 3TF20..-6)
	230 V	hp	3	3 (1 for 3TF20..-6)
	460/575 V	hp	5	--
Overload relays				
• Type			3UA7	
• Setting range		A	8 ... 10	

Contactor	Type		3TF2
	Size		00
Rated data of the auxiliary contacts according to IEC 60947-1			
Rated insulation voltage U_i (pollution degree 3)		V	690
Conventional thermal current I_{th} = Rated operational current I_e/AC-12		A	10
AC load **Rated operational current I_e/AC-15/AC-14**			
• For rated operational voltage U_e	24 V	A	4
	110 V	A	4
	125 V	A	4
	220 V	A	4
	230 V	A	4
	380 V	A	3
	400 V	A	3
	500 V	A	2
	660 V	A	1
	690 V	A	1
DC load **Rated operational current I_e/DC-12**			
• For rated operational voltage U_e	24 V	A	4
	48 V	A	2.2
	110 V	A	1.1
	125 V	A	1.1
	220 V	A	0.5
	440 V	A	--
	600 V	A	--
Rated operational current I_e/DC-13			
• For rated operational voltage U_e	24 V	A	2.1
	48 V	A	1.1
	110 V	A	0.52
	125 V	A	0.52
	220 V	A	0.27
	440 V	A	--
	600 V	A	--
cULus, cULus and CSA rated data of the auxiliary contacts			
Rated voltage, max.		V AC	600
Auxiliary switch blocks, max.		V AC	300
Switching capacity			A 600, Q 300
Uninterrupted current at 240 V AC		A	10

Selection and ordering data

Size 00
AC-1: Operational current I_e = 16 A (at 55 °C)
Screw terminals

Rated data Utilization categories AC-2 and AC-3					Auxiliary contacts			DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Ratings[1] of three-phase motors at 50 Hz and				Ident. No.	Version			Article No. Price per PU			
At 400/ 380 V	230/ 220 V	**400/ 380 V**	500 V	690/ 660 V		NO	NC					
A	kW	**kW**	kW	kW								
Contactors with screw terminals · For screw fixing and snap-on mounting onto TH 35 standard mounting rail												
					Ident. No. **10** 							
									Ident. No. **01** 			
 3TF20..-0..., 3TF28..-0...												
AC operation												
5	1.3	**2.2**	2.9	3.8	**10**	1	--	D	**3TF2810-0AP0**	1	1 unit	41B
					01	--	1	B	**3TF2801-0AP0**	1	1 unit	41B
9	2.4	**4**	4	4	**10**	1	--	A	**3TF2010-0AP0**	1	1 unit	41B
					01	--	1	A	**3TF2001-0AP0**	1	1 unit	41B
DC operation												
5	1.3	**2.2**	2.9	3.8	**10**	1	--	C	**3TF2810-0BB4**	1	1 unit	41B
					01	--	1	C	**3TF2801-0BB4**	1	1 unit	41B
9	2.4	**4**	4	4	**10**	1	--	A	**3TF2010-0BB4**	1	1 unit	41B
					01	--	1	C	**3TF2001-0BB4**	1	1 unit	41B
With permanently mounted auxiliary switch blocks												
Terminal designations of the auxiliary contacts according to EN 50012												
					Ident. No. **11** 							
									Ident. No. **22** 			
 3TF22..-0..., 3TF29..-0...												
AC operation												
5	1.3	**2.2**	2.9	3.8	**11**	1	1	D	**3TF2911-0AP0**	1	1 unit	41B
					22	2	2	D	**3TF2922-0AP0**	1	1 unit	41B
9	2.4	**4**	4	4	**11**	1	1	D	**3TF2211-0AP0**	1	1 unit	41B
					22	2	2	D	**3TF2222-0AP0**	1	1 unit	41B
DC operation												
5	1.3	**2.2**	2.9	3.8	**11**	1	1	D	**3TF2911-0BB4**	1	1 unit	41B
					22	2	2	C	**3TF2922-0BB4**	1	1 unit	41B
9	2.4	**4**	4	4	**11**	1	1	C	**3TF2211-0BB4**	1	1 unit	41B
					22	2	2	C	**3TF2222-0BB4**	1	1 unit	41B

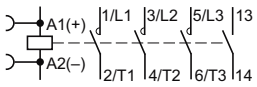
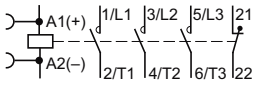
[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

For accessories, see pages 3/153 and 3/154.

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

3TF2 contactors, 3-pole, 2.2 ... 4 kW

Size 00
AC-1: Operational current I_e = 16 A (at 55 °C)
Flat connectors and solder pin connections

Rated data Utilization categories AC-2 and AC-3					Auxiliary contacts			DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Operational current I_e	Ratings[1] of three-phase motors at 50 Hz and				Ident. No.	Version							
At 400/ 380 V	230/ 220 V	**400/ 380 V**	500 V	690/ 660 V		NO	NC						
A	kW	**kW**	kW	kW									
Ident. No. **10** 									Ident. No. **01** 				
Contactors with 6.3 mm x 0.8 mm flat connectors · For screw fixing and snap-on mounting onto TH 35 standard mounting rail													
 3TF20..-3...	***AC operation***								**Flat connectors**				
	9	2.4	**4**	4	--	**10**	1	--	D	**3TF2010-3AP0**	1	1 unit	41B
						01	--	1	D	**3TF2001-3AP0**	1	1 unit	41B
	DC operation												
	9	2.4	**4**	4	--	**10**	1	--	C	**3TF2010-3BB4**	1	1 unit	41B
						01	--	1	D	**3TF2001-3BB4**	1	1 unit	41B
Contactors with 6.3 mm x 0.8 mm flat connectors · For screw fixing (diagonal)													
 3TF20..-7...	***AC operation***												
	9	2.4	**4**	4	--	**10**	1	--	C	**3TF2010-7AP0**	1	1 unit	41B
						01	--	1	D	**3TF2001-7AP0**	1	1 unit	41B
	DC operation												
	9	2.4	**4**	4	--	**10**	1	--	C	**3TF2010-7BB4**	1	1 unit	41B
						01	--	1	C	**3TF2001-7BB4**	1	1 unit	41B
Contactors with solder pin connections for printed circuit boards · For screw fixing (diagonal)													
 3TF20..-6...	***AC operation***								**Solder pin connections**				
	9	2.4	**4**	4	--	**10**	1	--	D	**3TF2010-6AP0**	1	1 unit	41B
						01	--	1	D	**3TF2001-6AP0**	1	1 unit	41B
	DC operation												
	9	2.4	**4**	4	--	**10**	1	--	C	**3TF2010-6BB4**	1	1 unit	41B
						01	--	1	C	**3TF2001-6BB4**	1	1 unit	41B

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

For accessories, see pages 3/153 and 3/154.

Rated control supply voltages (change of the 10th and 11th digits of the Article No.)

Rated control supply voltage U_s	Contactor type	3TF20, 3TF28
	Size	00
AC operation		
Solenoid coils for AC 50 and 60 Hz		
50 Hz	**60 Hz**	
24 V AC	29 V AC	B0
110 V AC	132 V AC	F0
230/220 V AC	276 V AC	P0[1]
AC operation		
Solenoid coils for AC 50/60 Hz		
230 V AC		L2
DC operation		
24 V DC		B4

Rated control supply voltage U_s	Contactor type	3TF22, 3TF29
	Size	00
AC operation		
Solenoid coils for AC 50 and 60 Hz		
50 Hz	**60 Hz**	
230/220 V AC	276 V AC	P0[1]
DC operation		
24 V DC		B4

[1] Operating range at 220 V: 0.85 to 1.15 × U_s; lower operating range limit according to IEC 60947.

Please inquire about further voltages.

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

Accessories

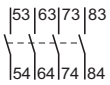
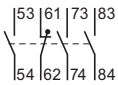
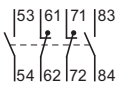
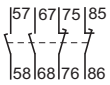
Snap-on auxiliary switch blocks

3TX44..-.A

For expansion to 2, 4 or 5 auxiliary contacts according to EN 50012
Only for 3TF2. Ident. No. 10 (with auxiliary contact 1 NO)

Rated operational current I_e/AC-15/AC-14 at 230/220 V A	400/380 V A	500 V A	Auxiliary contacts Ident. No.	Version NO	NC	NO	NC	Connections	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
4	3	2	**11**	--	1	--	--		▶	**3TX4401-1A**		1	1 unit	41A
			22	1	2	--	--		▶	**3TX4412-1A**		1	1 unit	41A
			23	1	3	--	--		▶	**3TX4413-1A**		1	1 unit	41A
			32	2	2	--	--		▶	**3TX4422-1A**		1	1 unit	41A

For expansion to 3 or 5 auxiliary contacts according to EN 50005

4	3	2	**20**	2	--	--	--		▶	**3TX4420-2A**		1	1 unit	41A
			11	1	1	--	--		▶	**3TX4411-2A**		1	1 unit	41A
			02	--	2	--	--		▶	**3TX4402-2A**		1	1 unit	41A
			11; U	--	--	1	1		D	**3TX4411-2G**		1	1 unit	41A
4	3	2	**40**	4	--	--	--		▶	**3TX4440-2A**		1	1 unit	41A
			31	3	1	--	--		▶	**3TX4431-2A**		1	1 unit	41A
			22	2	2	--	--		▶	**3TX4422-2A**		1	1 unit	41A
			22; 2 U	--	--	2	2		B	**3TX4422-2G**		1	1 unit	41A

OFF-delay devices

3TX4490-1H

For DC-operated contactors for bridging short-time power failures up to 0.8 s

For contactors Type	Rated control supply voltage U_s V DC	Time setting range (minimum times) s	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3TF2. . .-0BB4	24	0.25 or 0.5	A	**3TX4490-1H**		1	1 unit	41B

3TF2 contactors, 3-pole, 2.2 ... 4 kW

For contactors Type	Rated control supply voltage U_s V AC	V DC	Power consumption of LED at U_s mW	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Surge suppressors for plugging onto contactors with and without auxiliary switch blocks									
 3TX4490-3A	***Version without LED***								
	RC elements								
3TF2. ..-0..., 3TF2. ..-1...	24 ... 48	24 ... 70	--	B	**3TX4490-3R**		1	1 unit	41B
	48 ... 127	70 ... 150	--	B	**3TX4490-3S**		1	1 unit	41B
	127 ... 240	150 ... 250	--	B	**3TX4490-3T**		1	1 unit	41B
	240 ... 400	--	--	B	**3TX4490-3U**		1	1 unit	41B
	400 ... 600	--	--	B	**3TX4490-3V**		1	1 unit	41B
	Varistors								
3TF2. ..-0...,	≤ 48	24 ... 70	--	►	**3TX4490-3G**		1	1 unit	41B
3TF2. ..-1...	48 ... 127	70 ... 150	--	B	**3TX4490-3H**		1	1 unit	41B
	127 ... 240	150 ... 250	--	B	**3TX4490-3J**		1	1 unit	41B
	240 ... 400	--	--	B	**3TX4490-3K**		1	10 units	41B
	400 ... 600	--	--	B	**3TX4490-3L**		1	10 units	41B
	Noise suppression diodes								
3TF2. ..-0..., 3TF2. ..-1...	--	12 ... 250	--	►	**3TX4490-3A**		1	1 unit	41B
	Diode assemblies (diode and Zener diode) For DC operation and short break times								
3TF2. ..-0..., 3TF2. ..-1...	--	24 ... 250	--	B	**3TX4490-3B**		1	1 unit	41B
 3TX4490-4G	***Version with LED***								
	Varistors								
3TF2. ..-0...,	24 ... 48	12 ... 24	10 ... 120	B	**3TX4490-4G**		1	1 unit	41B
3TF2. ..-1...	48 ... 127	24 ... 70	20 ... 470	B	**3TX4490-4H**		1	1 unit	41B
	127 ... 240	70 ... 150	50 ... 700	B	**3TX4490-4J**		1	1 unit	41B
	--	150 ... 250	160 ... 950	D	**3TX4490-4K**		1	1 unit	41B
	Noise suppression diodes								
3TF2. ..-0...,	--	24 ... 70	20 ... 470	B	**3TX4490-4A**		1	1 unit	41B
3TF2. ..-1...	--	70 ... 150	50 ... 700	B	**3TX4490-4B**		1	1 unit	41B
	--	150 ... 250	160 ... 950	B	**3TX4490-4C**		1	1 unit	41B
Additional load modules for plugging onto contactors with and without auxiliary switch blocks[1]									
	For increasing the permissible residual current and for limiting the residual voltage.								
3TF2. ..-0A.., 3TF2. ..-1A..	230/220, 50 Hz 230, 60 Hz 230, 50/60 Hz Operating range 0.8 ... 1.1 × U_s		--	D	**3TX4490-1J**		1	1 unit	41B
Plug-in bases with solder pin connections for printed circuit boards, width 45 mm									
 3TX4491-2A	Rated insulation voltage U_i: 400 V (for pollution degree 3); rated impulse withstand voltage U_{imp}: 6 kV; rated operational current I_e: 6 A; CSA and UL rated data: max. 300 V, 6 A								
3TF20..-3..., 3TF20..-7...	For contactors with flat connectors 6.3 mm x 0.8 mm			D	**3TX4491-2A**		1	5 units	41A
Release tools									
3TF2. ..-7...	For releasing contactors from 3TX4491-2A plug-in bases			D	**3TX4491-2K**		1	1 unit	41A

[1] Dimensions as for 3TX4490-3 surge suppressor.

Overview

DC operation

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

The 3RT20 coupling contactors for switching motors are tailored to the special requirements of working with electronic controls.

The coupling contactors cannot be extended with auxiliary switch blocks.

Coupling contactors have a low power consumption and an extended solenoid coil operating range.

Depending on the version, the solenoid coils are supplied either without overvoltage damping (3RT201.-1HB4. and 3RT201.-.MB4.-0KT0) or with a diode, suppressor diode or varistor connected as standard.

Technical specifications

All technical specifications not mentioned in the table below are identical to those of the 3RT20 contactors for switching motors; see pages 3/19 and 3/24.

Contactor		Type		3RT201.-.HB4.	3RT201.-.JB4.	3RT201.-.KB4.	3RT202.-.KB4.
		Size		S00	S00	S00	S0
General data							
Mechanical endurance		Operating cycles		30 million			10 million
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N			V	400			
Control							
Solenoid coil operating range				0.7 ... 1.25 x U_s			
Power consumption of the solenoid coil (for cold coil) Closing = Closed		At U_s 17 V	W	1.6			2.3
		24 V	W	2.8			4.5
		30 V	W	4.4			7
Permissible residual current of the electronics (with 0 signal)				< 6 mA x (24 V/U_s)			< 10 mA x (24 V/U_s)
Overvoltage configuration of the solenoid coil				No overvoltage damping 	With diode 	With suppressor diode 	With varistor  U
Operating times							
• Closing							
- At 17 V	ON-delay NO		ms	40 ... 130			70 ... 270
	OFF-delay NC		ms	30 ... 80			60 ... 250
- At 24 V	ON-delay NO		ms	35 ... 60			65 ... 90
	OFF-delay NC		ms	25 ... 40			55 ... 80
- At 30 V	ON-delay NO		ms	25 ... 50			52 ... 65
	OFF-delay NC		ms	15 ... 30			43 ... 57
• Closing at 17 ... 30 V	OFF-delay NO		ms	7 ... 20	38 ... 65	7 ... 20	19 ... 21
	ON-delay NC		ms	20 ... 30	55 ... 75	20 ... 30	25 ... 31

Contactor	Type		3RT201.-1MB4.-0KT0	3RT201.-1VB4.	3RT201.-1SB4.
	Size		S00	S00	S00
	Width	mm	45	45	45
General data					
Mechanical endurance	Operating cycles		30 million		
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		V	400		
Control					
Solenoid coil operating range			0.85 ... 1.85 x U_s		
Power consumption of the solenoid coil (for cold coil) Closing = Closed	At U_s 24 V	W	1.6		
Permissible residual current, upright mounting position			On request		
Overvoltage configuration of the solenoid coil			No overvoltage damping 	With diode 	With suppressor diode 

SIRIUS 3RT20 coupling contactors (interface), 3-pole, up to 15 kW

Contactor			Type	3RT201.-1MB4.-0KT0	3RT201.-1VB4.	3RT201.-1SB4.
			Size	S00	S00	S00
Control						
Operating times						
• Closing						
- At 20.5 V	ON-delay NO		ms	30 ... 120		
	OFF-delay NC		ms	20 ... 110		
- At 24 V	ON-delay NO		ms	25 ... 90		
	OFF-delay NC		ms	15 ... 80		
- At 44 V	ON-delay NO		ms	15 ... 60		
	OFF-delay NC		ms	10 ... 50		
• Opening	OFF-delay NO		ms	5 ... 20	20 ... 80	5 ... 20
	ON-delay NC		ms	10 ... 30	30 ... 90	10 ... 30

Selection and ordering data

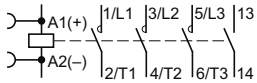
DC operation
Low power consumption
Extended operating range of the solenoid coil

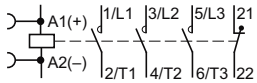
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1.B4.

3RT201.-2.B4.

Rated data AC-2 and AC-3 T_u: Up to 60 °C		Auxiliary contacts		DT	Screw terminals	DT	Spring-type terminals
					Configurator		Configurator
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Ident. No.	Version		Article No. Price per PU		Article No. Price per PU
400 V	**400 V**						
A	**kW**		NO NC				
For screw fixing and snap-on mounting onto TH 35 standard mounting rail							
Size S00							
Diode, varistor or RC element, attachable							
(no auxiliary switch blocks can be mounted)							
• 1 NO, Ident. No. **10**							
• 1 NC, Ident. No. **01**							
Rated control supply voltage U_s = 24 V DC, coil operating range **0.7 to 1.25** x U_s							
Power consumption of the solenoid coils **2.8 W** at 24 V							
7	**3**	**10**	1 --	B	**3RT2015-1HB41**	B	**3RT2015-2HB41**
		01	-- 1	B	**3RT2015-1HB42**	B	**3RT2015-2HB42**
9	**4**	**10**	1 --	B	**3RT2016-1HB41**	B	**3RT2016-2HB41**
		01	-- 1	B	**3RT2016-1HB42**	B	**3RT2016-2HB42**
12	**5.5**	**10**	1 --	B	**3RT2017-1HB41**	B	**3RT2017-2HB41**
		01	-- 1	B	**3RT2017-1HB42**	B	**3RT2017-2HB42**
Rated control supply voltage U_s = 24 V DC, operating range **0.85 to 1.85 x U_s**							
Power consumption of the solenoid coils **1.6 W** at 24 V							
7	**3**	**10**	1 --	B	**3RT2015-1MB41-0KT0**	B	**3RT2015-2MB41-0KT0**
		01	-- 1	B	**3RT2015-1MB42-0KT0**	B	**3RT2015-2MB42-0KT0**
9	**4**	**10**	1 --	B	**3RT2016-1MB41-0KT0**	B	**3RT2016-2MB41-0KT0**
		01	-- 1	B	**3RT2016-1MB42-0KT0**	B	**3RT2016-2MB42-0KT0**
12	**5.5**	**10**	1 --	B	**3RT2017-1MB41-0KT0**	B	**3RT2017-2MB41-0KT0**
		01	-- 1	B	**3RT2017-1MB42-0KT0**	B	**3RT2017-2MB42-0KT0**





For online configurator, see www.siemens.com/sirius/configurators.

1) Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

For surge suppressors, see page 3/71.

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

SIRIUS 3RT20 coupling contactors (interface), 3-pole, up to 15 kW

DC operation
Low power consumption
Extended operating range of the solenoid coil
Integrated coil circuit

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

3RT201.-1.B4.

3RT201.-2.B4.

Rated data AC-2 and AC-3 T_u: Up to 60 °C		Auxiliary contacts		DT	Screw terminals		DT	Spring-type terminals	
					Configurator			Configurator	
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Ident. No.	Version		Article No.	Price per PU		Article No.	Price per PU
400 V	**400 V**								
A	**kW**		NO NC						

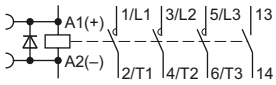
For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

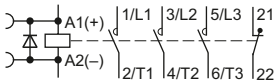
With integrated coil circuit (diode)

(no auxiliary switch blocks can be mounted)

- 1 NO, Ident. No. **10**



- 1 NC, Ident. No. **01**



Rated control supply voltage U_S = 24 V DC, coil operating range **0.7 to 1.25** x U_S
Power consumption of the solenoid coils **2.8 W** at 24 V

7	**3**	**10**	1	--	B	**3RT2015-1JB41**	B	**3RT2015-2JB41**
		01	--	1	B	**3RT2015-1JB42**	B	**3RT2015-2JB42**
9	**4**	**10**	1	--	▶	**3RT2016-1JB41**	B	**3RT2016-2JB41**
		01	--	1	A	**3RT2016-1JB42**	B	**3RT2016-2JB42**
12	**5.5**	**10**	1	--	B	**3RT2017-1JB41**	B	**3RT2017-2JB41**
		01	--	1	B	**3RT2017-1JB42**	B	**3RT2017-2JB42**

Rated control supply voltage U_S = 24 V DC, operating range **0.85 to 1.85 x U_S**
Power consumption of the solenoid coils **1.6 W** at 24 V

7	**3**	**10**	1	--	B	**3RT2015-1VB41**	B	**3RT2015-2VB41**
		01	--	1	B	**3RT2015-1VB42**	B	**3RT2015-2VB42**
9	**4**	**10**	1	--	B	**3RT2016-1VB41**	B	**3RT2016-2VB41**
		01	--	1	B	**3RT2016-1VB42**	B	**3RT2016-2VB42**
12	**5.5**	**10**	1	--	B	**3RT2017-1VB41**	B	**3RT2017-2VB41**
		01	--	1	B	**3RT2017-1VB42**	B	**3RT2017-2VB42**

For online configurator, see www.siemens.com/sirius/configurators.

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

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

SIRIUS 3RT20 coupling contactors (interface), 3-pole, up to 15 kW

DC operation
Low power consumption
Extended operating range of the solenoid coil
Integrated coil circuit

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

3RT201.-1.B4.

3RT201.-2.B4.

Rated data AC-2 and AC-3 T_u: Up to 60 °C		Auxiliary contacts		DT	Screw terminals	DT	Spring-type terminals
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Ident. No.	Version		Configurator		Configurator
400 V	**400 V**		NO NC		Article No. Price per PU		Article No. Price per PU
A	**kW**						

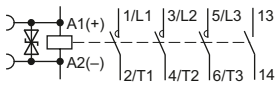
For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S00

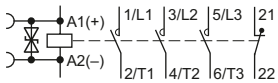
With integrated coil circuit (suppressor diode)

(no auxiliary switch blocks can be mounted)

- 1 NO, Ident. No. **10**



- 1 NC, Ident. No. **01**



Rated control supply voltage U_s = 24 V DC, coil operating range **0.7 to 1.25** x U_s
Power consumption of the solenoid coils **2.8 W** at 24 V

7	**3**	**10**	1	--	B	**3RT2015-1KB41**	B	**3RT2015-2KB41**
		01	--	1	B	**3RT2015-1KB42**	▶	**3RT2015-2KB42**
9	**4**	**10**	1	--	A	**3RT2016-1KB41**	B	**3RT2016-2KB41**
		01	--	1	B	**3RT2016-1KB42**	B	**3RT2016-2KB42**
12	**5.5**	**10**	1	--	B	**3RT2017-1KB41**	▶	**3RT2017-2KB41**
		01	--	1	B	**3RT2017-1KB42**	▶	**3RT2017-2KB42**

Rated control supply voltage U_s = 24 V DC, operating range **0.85 to 1.85 x U_s**
Power consumption of the solenoid coils **1.6 W** at 24 V

7	**3**	**10**	1	--	B	**3RT2015-1SB41**	B	**3RT2015-2SB41**
		01	--	1	B	**3RT2015-1SB42**	B	**3RT2015-2SB42**
9	**4**	**10**	1	--	B	**3RT2016-1SB41**	B	**3RT2016-2SB41**
		01	--	1	B	**3RT2016-1SB42**	B	**3RT2016-2SB42**
12	**5.5**	**10**	1	--	B	**3RT2017-1SB41**	B	**3RT2017-2SB41**
		01	--	1	B	**3RT2017-1SB42**	B	**3RT2017-2SB42**

For online configurator, see www.siemens.com/sirius/configurators.

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

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

SIRIUS 3RT20 coupling contactors (interface), 3-pole, up to 15 kW

DC operation
Low power consumption
Extended operating range of the solenoid coil
Integrated coil circuit

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

3RT202.-1KB40

3RT202.-2KB40

Rated data AC-2 and AC-3 T_u: Up to 60 °C		Auxiliary contacts		DT	Screw terminals	DT	Spring-type terminals
Operational current I_e up to	Rating[1] of three-phase motors at 50 Hz and	Ident. No.	Version		Configurator		Configurator
400 V	**400 V**		NO NC		Article No. Price per PU		Article No. Price per PU
A	**kW**						

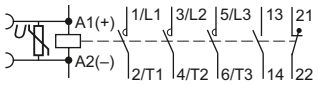
For screw fixing and snap-on mounting onto TH 35 standard mounting rail

Size S0

With integrated coil circuit (varistor)

(no auxiliary switch blocks can be mounted)

1 NO + 1 NC, Ident. No. **11**



Rated control supply voltage U_s = 24 V DC, coil operating range **0.7 to 1.25 x U_s**
Power consumption of the solenoid coils **4.5 W** at 24 V

9	**4**	**11**	1	1	► **3RT2023-1KB40**	►	**3RT2023-2KB40**
12	**5.5**	**11**	1	1	► **3RT2024-1KB40**	B	**3RT2024-2KB40**
17	**7.5**	**11**	1	1	► **3RT2025-1KB40**	B	**3RT2025-2KB40**
25	**11**	**11**	1	1	► **3RT2026-1KB40**	B	**3RT2026-2KB40**
32	**15**	**11**	1	1	► **3RT2027-1KB40**	B	**3RT2027-2KB40**

For online configurator, see www.siemens.com/sirius/configurators.

[1] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

For accessories, see page 3/67.

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

SIRIUS 3RA23 reversing contactor assemblies

Overview

The 3RA23 contactor assemblies for reversing can be ordered as follows:

Sizes S00 to S2

- Fully wired and tested, with mechanical and electrical interlock
- As individual parts for customer assembly

There is also a range of accessories (auxiliary switch blocks, surge suppressors, etc.) that must be ordered separately.

Overload relays for motor protection, see Chapter 7 "Protection Equipment" → "Overload Relays".

The 3RA23 contactor assemblies have screw or spring-type terminals (main and control circuits) and are suitable For screw fixing and snap-on mounting onto TH 35 standard mounting rails.

Complete reversing contactor assemblies

The fully wired reversing contactor assemblies are suitable for use in any climate. They are finger-safe according to EN 50274.

The contactor assemblies size S00 to S2 each consist of two contactors with the same power, with one NC contact (S00) or one NO contact and one NC contact (S0, S2) in the basic unit.

The contactors are mechanically and electrically interlocked (NC contact interlock).

For motor protection, either 3RU2 or 3RB3 overload relays for direct mounting or stand-alone installation, or 3RN1 thermistor motor protection releases must be ordered separately.

Reversing contactor assemblies with voltage tap-off

The reversing contactor assemblies with voltage tap-off are required for mounting the function modules for connection to the controller via the IO-Link or AS-Interface communication systems. The 3RA27 function modules must be ordered separately.

For more information on IO-Link and AS-Interface, see Chapter 2 "Industrial Communication".

Components for customer assembly

Assembly kits for all sizes are available for customer assembly of reversing contactor assemblies.

Contactors, overload relays and – for momentary-contact operation of size S00 – auxiliary switches (NO contacts) for self-locking must be ordered separately. (With S0 and S2, the NO contacts integrated into the basic unit can be used.)

Rated data AC-2 and AC-3 for 50 Hz 400 V AC		Size	Article No.		
Rating	Operational current I_e		Contactor	Assembly kit	**Fully wired and tested contactor assemblies**
kW	A				
			Screw terminals	**Screw terminals**	**Screw terminals**
3	7	**S00**	3RT2015-1…2	3RA2913-2AA1[1]	**3RA2315-8XB30-1…**
4	9		3RT2016-1…2		**3RA2316-8XB30-1…**
5.5	12		3RT2017-1…2		**3RA2317-8XB30-1…**
7.5	16		3RT2018-1…2		**3RA2318-8XB30-1…**
5.5	12	**S0**	3RT2024-1…0	3RA2923-2AA1[1]	**3RA2324-8XB30-1…**
7.5	16		3RT2025-1…0		**3RA2325-8XB30-1…**
11	25		3RT2026-1…0		**3RA2326-8XB30-1…**
15	32		3RT2027-1…0		**3RA2327-8XB30-1…**
18.5	38		3RT2028-1…0		**3RA2328-8XB30-1…**
18.5	40	**S2**	3RT2035-1…0	3RA2933-2AA1[2]	**3RA2335-8XB30-1…**
22	55		3RT2036-1…0		**3RA2336-8XB30-1…**
30	65		3RT2037-1…0		**3RA2337-8XB30-1…**
37	80		3RT2038-1…0		**3RA2338-8XB30-1…**
			Spring-type terminals	**Spring-type terminals**	**Spring-type terminals**
3	7	**S00**	3RT2015-2…2	3RA2913-2AA2[1]	**3RA2315-8XB30-2…**
4	9		3RT2016-2…2		**3RA2316-8XB30-2…**
5.5	12		3RT2017-2…2		**3RA2317-8XB30-2…**
7.5	16		3RT2018-2…2		**3RA2318-8XB30-2…**
5.5	12	**S0**	3RT2024-2…0	3RA2923-2AA2[3]	**3RA2324-8XB30-2…**
7.5	16		3RT2025-2…0		**3RA2325-8XB30-2…**
11	25		3RT2026-2…0		**3RA2326-8XB30-2…**
15	32		3RT2027-2…0		**3RA2327-8XB30-2…**
18.5	38		3RT2028-2…0		**3RA2328-8XB30-2…**

[1] The assembly kit contains: Mechanical interlock; connecting clips for 2 contactors, wiring modules on the top and bottom (for main, auxiliary and control circuits).

[2] The assembly kit contains: Connecting pins for 2 contactors, wiring modules on the top and bottom (for main, control and auxiliary circuits).

[3] The assembly kit contains: Mechanical interlock; connecting clips for 2 contactors, wiring modules on the top and bottom (for main circuits).

Operating times

The operating times of the individual 3RT20 contactors are rated in such a way that no overlapping of the contact making and the arcing time between two contactors can occur on reversing, providing they are interlocked by way of their auxiliary switches (NC contact interlock) and the mechanical interlock.

For assemblies with AC operation and 50/60 Hz, a dead interval of 50 ms must be provided when used with voltages ≥ 500 V; a dead interval of 30 ms is recommended for use with voltages ≥ 400 V. These dead times do not apply to assemblies with DC operation.

The operating times of the individual contactors are not affected by the mechanical interlock.

Article No. scheme

Digit of the Article No.	1st - 3rd	4th	5th	6th	7th		8th	9th	10th	11th	12th		13th	14th	15th	16th
	□□□	□	□	□	□	–	□	□	□	□	□	–	□	□	□	□
SIRIUS contactor assemblies	**3 R A**															
2nd generation		**2**														
Device type (e.g. 3 = reversing contactor assembly)			**3**													
Contactor size (1 = S00, 2 = S0, 3 = S2)				□												
Power dependent on size (e.g. 7 = 15 kW for S0)					□											
Type of overload relay (8X = without)							□	□								
Assembly (B = ready-assembled, E = ready-assembled with communication)									□							
Interlock (3 = mechanical and electrical)										□						
Free auxiliary switches (e.g. S00: 0 = none; S0, S2: 0 = 2 NO total)											□					
Connection type (1 = screw, 2 = spring)													□			
Operating range / solenoid coil circuit (e.g. A = AC standard / without)														□		
Rated control supply voltage (e.g. L2 = 230 V, 50/60 Hz)															□	□
Example	**3 R A**	**2**	**3**	**2**	**7**	**–**	**8**	**X**	**B**	**3**	**0**	**–**	**1**	**A**	**L**	**2**

Note:

The article number scheme is presented here merely for information purposes and for better understanding of the logic behind the article numbers.

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

Benefits

Using wiring kits for reversing starters has the following advantages:

- Notable reduction of wiring in the control circuit
- Integrated mechanical interlocking
- Prevention of wiring errors in the main circuit

Connecting combs for screw terminals also result in:

- Prevention of wiring errors in the control circuit
- Reduction of testing costs
- Ready-jumpered actuation of the auxiliary switches and the frame (A2)
- Integrated electrical interlocking

Accessories

Selecting the auxiliary switches

The following points should be noted:

Size S00

- For maintained-contact operation:
  Use contactors with an NC contact in the basic unit for the electrical interlock.
- For momentary-contact operation:
  Use contactors with an NC contact in the basic unit for the electrical interlock; in addition, an auxiliary switch block with at least one NO contact for latching is required per contactor.

Sizes S0 and S2

- For maintained-contact operation:
  The contactors have two integrated auxiliary contacts (1 NO + 1 NC); the NC contact can be used for electrical interlocking.
- For momentary-contact operation:
  Electrical interlock as for maintained-contact operation; the NO contact in the basic unit can be used for the latching.

Surge suppression

Sizes S00 to S2

All contactor assemblies can be fitted with RC elements or varistors for damping opening surges in the coil.

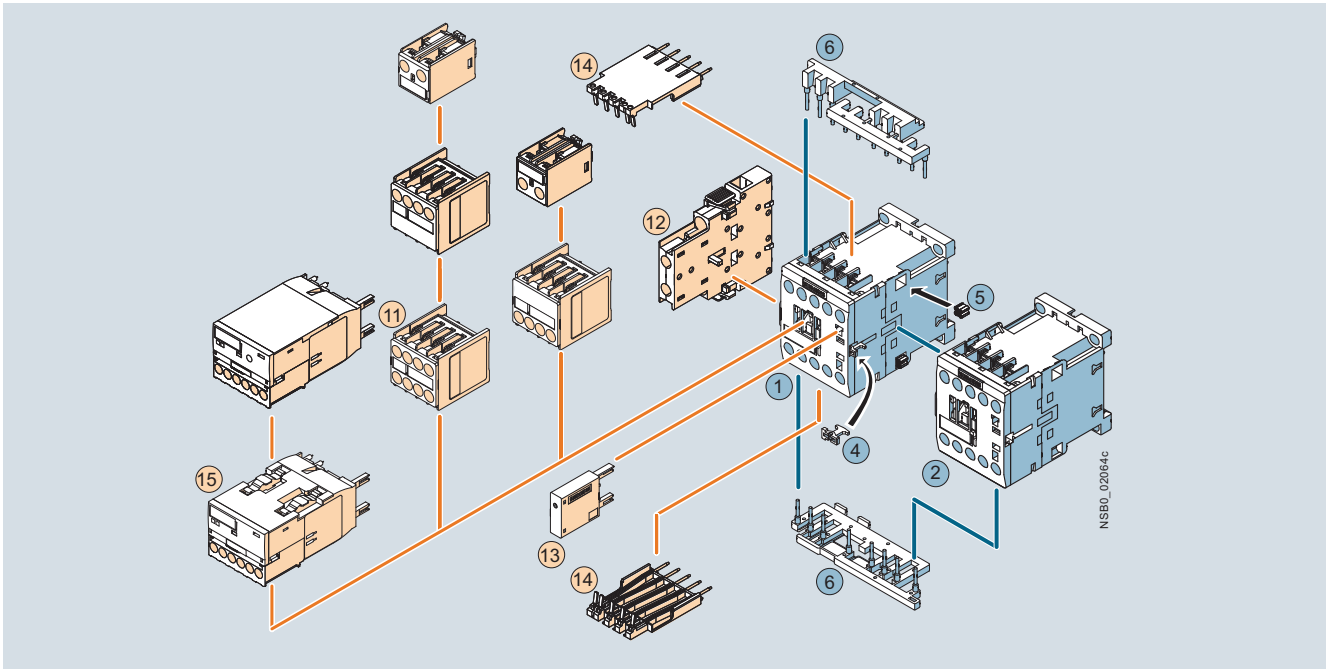
As with the individual contactors, the surge suppressors can either be plugged onto the top of the contactors (S00) or be plugged into the front of the contactors (S0 and S2).

SIRIUS 3RA23 reversing contactor assemblies

Selection and ordering data

Fully wired and tested contactor assemblies · Size S00 · up to 7.5 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Article No.	Page
(11) Auxiliary switch block, front[1]	3RH2911-1....	3/64
(12) Auxiliary switch block, lateral	3RH2921-1DA..	3/66
(13) Surge suppressors	3RT2916-1....	3/71
(14) Solder pin adapters	3RT1916-4KA1	3/75
(15) Function module for connection to the control system	3RA271.-1BA00	3/169

Complete contactor assemblies

Individual parts		Article No. Q11	Article No. Q12	Page
(1)(2)	Contactor, 3 kW	3RT2015	3RT2015	3/35, 3/42
(1)(2)	Contactor, 4 kW	3RT2016	3RT2016	3/35, 3/42
(1)(2)	Contactor, 5.5 kW	3RT2017	3RT2017	3/35, 3/42
(1)(2)	Contactor, 7.5 kW	3RT2018	3RT208	3/35, 3/42
(4)(5)(6)	Assembly kit comprising:	3RA2913-2AA1		3/168
	(4) Mechanical interlock[2]			3/168
	(5) 2 connecting clips for 2 contactors[2]			3/168
	(6) Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included[3], interruptible (NC contact interlock)			3/168

[1] Auxiliary switch block according to EN 50005 must be used.

[2] The parts (4) and (5) can only be ordered together as 3RA2912-2H mechanical connectors.

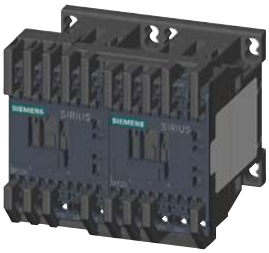
[3] 3RT201. contactors with one NC contact in the basic unit are required for the electrical interlock. An additional NO contact is required for momentary-contact operation.

Fully wired and tested contactor assemblies*[2] · *Size S00 · up to 7.5 kW

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

3RA231. -8XE30-1BB4

3RA231.-8XB30-1A.0



3RA231.-8XB30-2A.0

Rated data AC-2 and AC-3				Rated control supply voltage U_S[1]	DT	Screw terminals	DT	Spring-type terminals
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No. Price per PU		Article No. Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
7	2.2	**3**	4	24 AC	B	**3RA2315-8XB30-1AB0**	B	**3RA2315-8XB30-2AB0**
				110 AC	B	**3RA2315-8XB30-1AF0**	B	**3RA2315-8XB30-2AF0**
				230 AC	A	**3RA2315-8XB30-1AP0**	A	**3RA2315-8XB30-2AP0**
9	3	**4**	5.5	24 AC	B	**3RA2316-8XB30-1AB0**	B	**3RA2316-8XB30-2AB0**
				110 AC	B	**3RA2316-8XB30-1AF0**	B	**3RA2316-8XB30-2AF0**
				230 AC	A	**3RA2316-8XB30-1AP0**	A	**3RA2316-8XB30-2AP0**
12	3	**5.5**	5.5	24 AC	B	**3RA2317-8XB30-1AB0**	B	**3RA2317-8XB30-2AB0**
				110 AC	B	**3RA2317-8XB30-1AF0**	B	**3RA2317-8XB30-2AF0**
				230 AC	A	**3RA2317-8XB30-1AP0**	A	**3RA2317-8XB30-2AP0**
16	4	**7.5**	7.5	24 AC	B	**3RA2318-8XB30-1AB0**	B	**3RA2318-8XB30-2AB0**
				110 AC	B	**3RA2318-8XB30-1AF0**	B	**3RA2318-8XB30-2AF0**
				230 AC	A	**3RA2318-8XB30-1AP0**	A	**3RA2318-8XB30-2AP0**
DC operation								
7	2.2	**3**	4	24 DC	A	**3RA2315-8XB30-1BB4**	A	**3RA2315-8XB30-2BB4**
9	3	**4**	5.5	24 DC	A	**3RA2316-8XB30-1BB4**	A	**3RA2316-8XB30-2BB4**
12	3	**5.5**	5.5	24 DC	A	**3RA2317-8XB30-1BB4**	A	**3RA2317-8XB30-2BB4**
16	4	**7.5**	7.5	24 DC	A	**3RA2318-8XB30-1BB4**	A	**3RA2318-8XB30-2BB4**
With voltage tap-off								
7	2.2	**3**	4	24 DC	A	**3RA2315-8XE30-1BB4**	B	**3RA2315-8XE30-2BB4**
9	3	**4**	5.5	24 DC	A	**3RA2316-8XE30-1BB4**	B	**3RA2316-8XE30-2BB4**
12	3	**5.5**	5.5	24 DC	A	**3RA2317-8XE30-1BB4**	A	**3RA2317-8XE30-2BB4**
16	4	**7.5**	7.5	24 DC	A	**3RA2318-8XE30-1BB4**	A	**3RA2318-8XE30-2BB4**

[1] Coil operating range
at 50 Hz: 0.8 ... 1.1 x U_S;
at 60 Hz: 0.85 ... 1.1 x U_S.

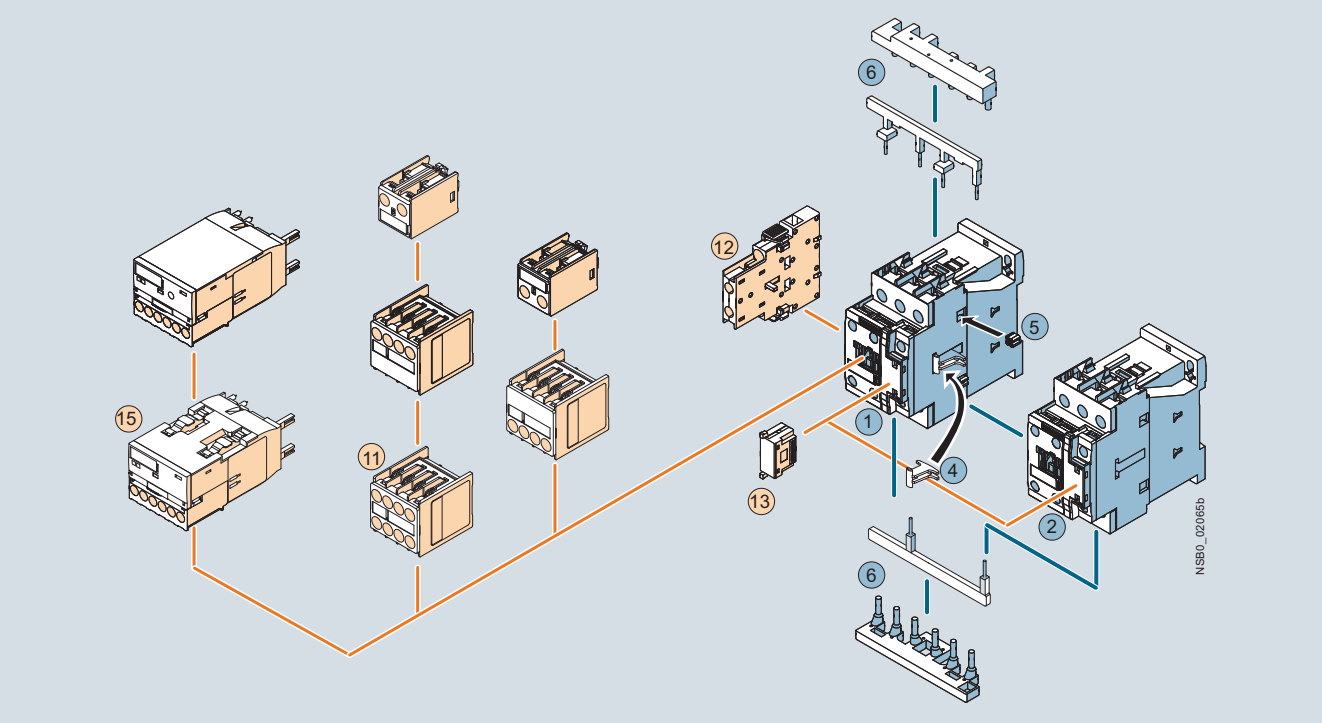
[2] The contactors integrated in the contactor assemblies have no unassigned auxiliary contacts. When used with a voltage tap-off and function module, the auxiliary contacts are unassigned.

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

SIRIUS 3RA23 reversing contactor assemblies

Fully wired and tested contactor assemblies · Size S0 · up to 18.5 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Article No.	Page
11 Auxiliary switch block, front	3RH2921-1....	3/64
12 Auxiliary switch block, lateral	3RH2921-1DA..	3/66
13 Surge suppressor	3RT2936-1....	3/71
15 Function module for connection to the control system	3RA271.-1BA00	3/169

[1] The parts 4 and 5 can only be ordered together as 3RA2922-2H mechanical connectors.

Complete contactor assemblies

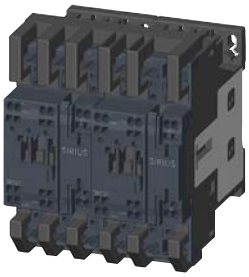
Individual parts		Article No. Q11	Article No. Q12	Page
1 2	Contactor, 5.5 kW	3RT2024	3RT2024	3/37, 3/44
1 2	Contactor, 7.5 kW	3RT2025	3RT2025	3/37, 3/44
1 2	Contactor, 11 kW	3RT2026	3RT2026	3/37, 3/44
1 2	Contactor, 15 kW	3RT2027	3RT2027	3/37, 3/44
1 2	Contactor, 18.5 kW	3RT2028	3RT2028	3/37, 3/44
4 5 6	Assembly kit comprising:	3RA2923-2AA1		3/168
	4 Mechanical interlock[1]			3/168
	5 2 connecting clips for 2 contactors[1]			3/168
	6 Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included (NC contact interlock)			3/168

Fully wired and tested contactor assemblies · Size S0 · up to 18.5 kW

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

3RA2324-8XE30-1BB4

3RA232.-8XB30-1A.2



3RA232.-8XB30-2A.2

Rated data AC-2 and AC-3				Rated control supply voltage U_s [1]	DT	Screw terminals	DT	Spring-type terminals
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No. / Price per PU		Article No. / Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
12	3	**5.5**	7.5	24 AC	B	**3RA2324-8XB30-1AC2**	B	**3RA2324-8XB30-2AC2**
				110 AC	B	**3RA2324-8XB30-1AG2**	B	**3RA2324-8XB30-2AG2**
				230 AC	B	**3RA2324-8XB30-1AL2**	B	**3RA2324-8XB30-2AL2**
17	4	**7.5**	11	24 AC	B	**3RA2325-8XB30-1AC2**	B	**3RA2325-8XB30-2AC2**
				110 AC	B	**3RA2325-8XB30-1AG2**	B	**3RA2325-8XB30-2AG2**
				230 AC	B	**3RA2325-8XB30-1AL2**	B	**3RA2325-8XB30-2AL2**
25	5.5	**11**	11	24 AC	B	**3RA2326-8XB30-1AC2**	B	**3RA2326-8XB30-2AC2**
				110 AC	B	**3RA2326-8XB30-1AG2**	B	**3RA2326-8XB30-2AG2**
				230 AC	B	**3RA2326-8XB30-1AL2**	B	**3RA2326-8XB30-2AL2**
32	7.5	**15**	18.5	24 AC	B	**3RA2327-8XB30-1AC2**	B	**3RA2327-8XB30-2AC2**
				110 AC	B	**3RA2327-8XB30-1AG2**	B	**3RA2327-8XB30-2AG2**
				230 AC	B	**3RA2327-8XB30-1AL2**	B	**3RA2327-8XB30-2AL2**
38	11	**18.5**	18.5	24 AC	B	**3RA2328-8XB30-1AC2**	B	**3RA2328-8XB30-2AC2**
				110 AC	B	**3RA2328-8XB30-1AG2**	B	**3RA2328-8XB30-2AG2**
				230 AC	B	**3RA2328-8XB30-1AL2**	B	**3RA2328-8XB30-2AL2**
DC operation								
12	3	**5.5**	7.5	24 DC	A	**3RA2324-8XB30-1BB4**	A	**3RA2324-8XB30-2BB4**
17	4	**7.5**	11	24 DC	A	**3RA2325-8XB30-1BB4**	A	**3RA2325-8XB30-2BB4**
25	5.5	**11**	11	24 DC	A	**3RA2326-8XB30-1BB4**	A	**3RA2326-8XB30-2BB4**
32	7.5	**15**	18.5	24 DC	A	**3RA2327-8XB30-1BB4**	A	**3RA2327-8XB30-2BB4**
38	11	**18.5**	18.5	24 DC	A	**3RA2328-8XB30-1BB4**	A	**3RA2328-8XB30-2BB4**
With voltage tap-off								
12	3	**5.5**	7.5	24 DC	A	**3RA2324-8XE30-1BB4**	A	**3RA2324-8XE30-2BB4**
17	4	**7.5**	11	24 DC	A	**3RA2325-8XE30-1BB4**	B	**3RA2325-8XE30-2BB4**
25	5.5	**11**	11	24 DC	A	**3RA2326-8XE30-1BB4**	A	**3RA2326-8XE30-2BB4**
32	7.5	**15**	18.5	24 DC	B	**3RA2327-8XE30-1BB4**	A	**3RA2327-8XE30-2BB4**
38	11	**18.5**	18.5	24 DC	A	**3RA2328-8XE30-1BB4**	A	**3RA2328-8XE30-2BB4**

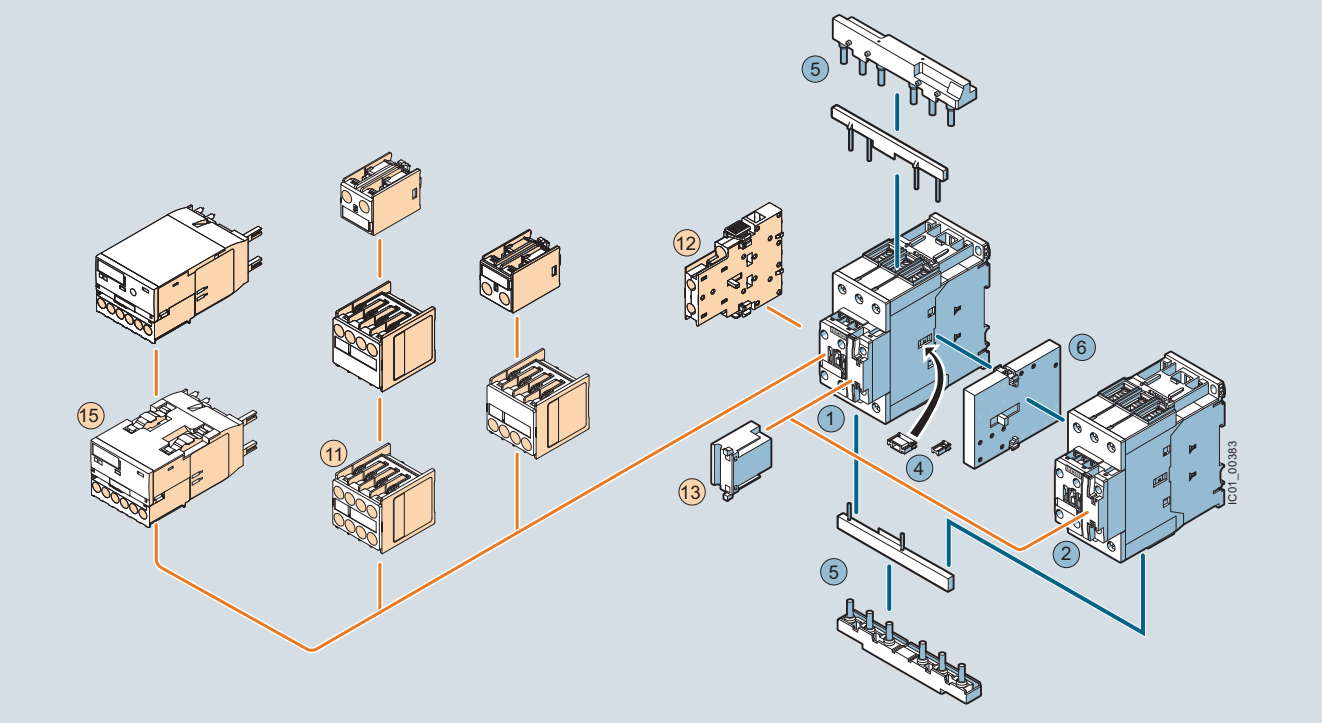
[1] Coil operating range
at 50 Hz: 0.8 ... 1.1 × U_s;
at 60 Hz: 0.85 ... 1.1 × U_s.

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

SIRIUS 3RA23 reversing contactor assemblies

Fully wired and tested contactor assemblies · Size S2 · up to 37 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Article No.	Page
(11) Auxiliary switch block, front	3RH2921-1....	3/64
(12) Auxiliary switch block, lateral	3RH2921-1DA..	3/66
(13) Surge suppressor	3RT2936-1....	3/71
(15) Function module for connection to the control system	3RA271.-1BA00	3/169

Complete contactor assemblies

Individual parts		Article No. Q11	Article No. Q12	Page
(1)(2)	Contactor, 18.5 kW	3RT2035	3RT2035	3/40, 3/48
(1)(2)	Contactor, 22 kW	3RT2036	3RT2036	3/40, 3/48
(1)(2)	Contactor, 30 kW	3RT2037	3RT2037	3/40, 3/48
(1)(2)	Contactor, 37 kW	3RT2038	3RT2038	3/40, 3/48
(4)(5)	Assembly kit comprising:	3RA2933-2AA1		3/168
	(4) 2 connecting pins for 2 contactors			3/168
	(5) Wiring modules on the top and bottom for connecting the main and auxiliary current paths, electrical interlock included (NC contact interlock)			3/168
(6)	Mechanical interlock	3RA2934-2B		3/168

3

Fully wired and tested contactor assemblies · Size S2 · up to 37 kW NEW

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

3RA233.-8XE30-1NB3

3RA233.-8XB30-1A.2

Rated data AC-2 and AC-3				Rated control supply voltage U_s [1]	DT	Screw terminals		DT	Spring-type terminals	
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No.	Price per PU		Article No.	Price per PU
400 V	230 V	**400 V**	690 V							
A	kW	**kW**	kW	V						
AC operation, 50/60 Hz										
40	11	**18.5**	22	110 AC	A	**3RA2335-8XB30-1AG2**			**--**	
				230 AC	A	**3RA2335-8XB30-1AL2**			**--**	
50	15	**22**	22	110 AC	B	**3RA2336-8XB30-1AG2**			**--**	
				230 AC	A	**3RA2336-8XB30-1AL2**			**--**	
65	18.5	**30**	45	110 AC	B	**3RA2337-8XB30-1AG2**			**--**	
				230 AC	A	**3RA2337-8XB30-1AL2**			**--**	
80	22	**37**	55	110 AC	B	**3RA2338-8XB30-1AG2**			**--**	
				230 AC	A	**3RA2338-8XB30-1AL2**			**--**	
AC/DC operation[2]										
40	11	**18.5**	22	20 ... 33 AC/DC	A	**3RA2335-8XB30-1NB3**			**--**	
50	15	**22**	22	20 ... 33 AC/DC	A	**3RA2336-8XB30-1NB3**			**--**	
65	18.5	**30**	45	20 ... 33 AC/DC	A	**3RA2337-8XB30-1NB3**			**--**	
80	22	**37**	55	20 ... 33 AC/DC	A	**3RA2338-8XB30-1NB3**			**--**	
With voltage tap-off										
40	11	**18.5**	22	20 ... 33 AC/DC	B	**3RA2335-8XE30-1NB3**			**--**	
50	15	**22**	22	20 ... 33 AC/DC	B	**3RA2336-8XE30-1NB3**			**--**	
65	18.5	**30**	45	20 ... 33 AC/DC	B	**3RA2337-8XE30-1NB3**			**--**	
80	22	**37**	55	20 ... 33 AC/DC	B	**3RA2338-8XE30-1NB3**			**--**	

[1] AC coil operating range
at 50 Hz: 0.8 ... 1.1 × U_s;
at 60 Hz: 0.85 ... 1.1 × U_s.

AC/DC coil operating range 0.8 ... 1.1 × U_s.

[2] With integrated coil switch (varistor)

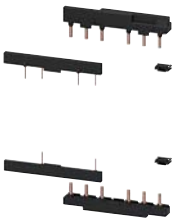
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

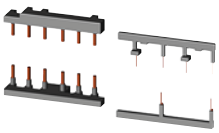
Contactor Assemblies
3RA23, 3RA13, 3RA24, 3RA14 Contactor Assemblies

SIRIUS 3RA23 reversing contactor assemblies

Components for customer assembly

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


3RA2933-2AA1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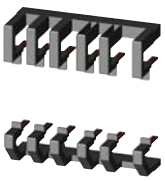

3RA2923-2AA2

For contactors Type	Size	Version		DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Assembly kits for making 3-pole contactor assemblies									
3RT201	**S00-S00**	The assembly kit contains: Mechanical interlock, 2 connecting clips for 2 contactors, wiring modules on the top and bottom							
		• For main, auxiliary and control circuits		▶	**3RA2913-2AA1**		▶	**3RA2913-2AA2**	
3RT202	**S0-S0**	The assembly kit contains: Mechanical interlock, 2 connecting clips for 2 contactors, wiring modules on the top and bottom							
		• For main, auxiliary and control circuits[1]		▶	**3RA2923-2AA1**			**--**	
		• Only for main circuit[2]			**--**		▶	**3RA2923-2AA2**	
3RT203	**S2-S2** NEW	The assembly kit contains: 2 connecting pins for 2 contactors; wiring modules on the top and bottom							
		• For main and auxiliary circuits		▶	**3RA2933-2AA1**			**--**	
		• Only for main circuit[3]			**--**		B	**3RA2933-2AA2**	
Individual components for making 3 and 4-pole contactor assemblies									
Wiring modules									
3RT201	**S00-S00**	Top (in-phase)	PS = 5 units	B	**3RA2913-3DA1**		B	**3RA2913-3DA2**	
		Bottom (with phase reversal)	PS = 5 units	B	**3RA2913-3EA1**		B	**3RA2913-3EA2**	
3RT202	**S0-S0**	Top (in-phase)	PS = 5 units	B	**3RA2923-3DA1**		B	**3RA2923-3DA2**	
		Bottom (with phase reversal)	PS = 5 units	B	**3RA2923-3EA1**		B	**3RA2923-3EA2**	
3RT203	**S2-S2**	Top (in-phase)	PS = 5 units	▶	**3RA1933-3D**		▶	**3RA1933-3D**	
	NEW	Bottom (with phase reversal)	PS = 5 units	▶	**3RA1933-3E**		▶	**3RA1933-3E**	
Mechanical connectors									
3RT201, 3RT231	**S00-S00**	For lateral interlock, without contactor clearance The connectors consist of a mechanical interlock and two connecting clips	PS = 10 units	B	**3RA2912-2H**		B	**3RA2912-2H**	
3RT202, 3RT232	**S0-S0**	For lateral interlock, without contactor clearance The connectors consist of a mechanical interlock and two connecting clips	PS = 10 units	B	**3RA2922-2H**		B	**3RA2922-2H**	
3RT203	**S2-S2** NEW	For lateral interlock, without contactor clearance	PS = 20 units	▶	**3RA2932-2C**		▶	**3RA2932-2C**	
		For lateral interlock, with 10 mm contactor clearance	PS = 20 units	▶	**3RA2932-2D**		▶	**3RA2932-2D**	
3RT233	**S2-S2** NEW	For lateral interlock, with 10 mm contactor clearance	PS = 20 units	A	**3RA2932-2G**		A	**3RA2932-2G**	
Mechanical interlocks									
3RT203	**S2-S2** NEW	**For size S2, the mechanical locking device must be ordered separately**		▶	**3RA2934-2B**		▶	**3RA2934-2B**	

[1] Use of the 3RA2923-2AA1 assembly kit in conjunction with the 3RT202.-.....-3MA0 contactors is limited because the auxiliary switches in the basic unit are not allowed to be used on account of the permanently mounted auxiliary switch block.

[2] Version in size S0 with spring-type terminals:
Only the wiring modules for the main circuit are included.
No connectors are included for the auxiliary and control circuit.

[3] Version in size S2 with spring-type terminals in the auxiliary and control circuits: Only the wiring modules for the main circuit are included. A cable set is included for the auxiliary circuit.

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

3

Components for customer assembly

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

3RA2711-1BA00

3RA2711-2BA00

For contactors Type	Size	Version		DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Function modules for connection to the control system									
3RT201, 3RT202, 3RT203	**S00, S0, S2**	**IO-Link connection**, comprising one basic and one coupling module and an additional module connector for assembling an IO-Link group		A	**3RA2711-1BA00**		A	**3RA2711-2BA00**	
3RT201, 3RT202, 3RT203	**S00, S0, S2**	**AS-Interface connection**, comprising one basic and one coupling module		A	**3RA2712-1BA00**		A	**3RA2712-2BA00**	
Accessories for 3RA27 function modules									
3RT201, 3RT202, 3RT203	**S00, S0, S2**	**Module connector set**, comprising: • 2 module connectors, 14-pole, short + 2 interface covers	NEW	A	**3RA2711-0EE10**		A	**3RA2711-0EE10**	
		Module connectors							
3RT201, 3RT202, 3RT203	**S00, S0, S2**	• 14-pole, 9 cm For size jump + 1 space	NEW	A	**3RA2711-0EE06**		A	**3RA2711-0EE06**	
3RT201, 3RT202, 3RT203	**S00, S0, S2**	• 14-pole, 26 cm For various space combinations	NEW	A	**3RA2711-0EE07**		A	**3RA2711-0EE07**	
3RT201, 3RT202, 3RT203	**S00, S0, S2**	• 14-pole, 33.5 cm For various space combinations	NEW	A	**3RA2711-0EE08**		A	**3RA2711-0EE08**	
3RT201, 3RT202, 3RT203	**S00, S0, S2**	• 10-pole, 9 cm For separate control signal infeed within an IO-Link group	NEW	A	**3RA2711-0EE16**		A	**3RA2711-0EE16**	
3RT201, 3RT202, 3RT203	**S00, S0, S2**	**Sealable covers**	PS = 5 units	A	**3RA2910-0**		A	**3RA2910-0**	

Operator panels for IO-Link, see page 3/202.

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

SIRIUS 3RA13 reversing contactor assemblies

Overview

The 3RA13 reversing contactor assemblies can be ordered as follows:

Size S3

- Fully wired and tested, with mechanical and electrical interlock
- As individual parts for customer assembly

Sizes S6 to S12

- As individual parts for customer assembly

There is also a range of accessories (auxiliary switch blocks, surge suppressors, etc.) that must be ordered separately.

Overload relays for motor protection, see Chapter 7 "Protection Equipment" → "Overload Relays".

The 3RA13 contactor assemblies have screw terminals. Size S3 is suitable For screw fixing and snap-on mounting onto TH 35 standard mounting rails.

Complete units

The fully wired reversing contactor assemblies are suitable for use in any climate. They are finger-safe according to EN 50274.

The contactor assemblies consist of two contactors with the same power, with one NC contact in the basic unit. The contactors are mechanically and electrically interlocked (NC contact interlock).

For motor protection, either 3RU11 or 3RB2 overload relays for direct mounting or stand-alone installation or 3RN1 thermistor motor protection releases must be ordered separately.

Components for customer assembly

Assembly kits for all sizes are available for customer assembly of reversing contactor assemblies.

Contactors, overload relays and the mechanical interlock and – for momentary-contact operation – auxiliary switches (NO contacts) for latching must be ordered separately.

Rated data AC-2 and AC-3 for 50 Hz 400 V AC		Size	Article No.					
Rating	Operational current I_e		Contactor	Mechanical interlock[1]	Mechanical interlock[2]	Mechanical interlock[3]	Assembly kit	**Fully wired and tested contactor assemblies**
kW	A							
30	65	**S3**	3RT1044	3RA1924-1A	3RA1924-2B	--	3RA1943-2A[4]	**3RA1344-8XB30-1…**
37	80		3RT1045					**3RA1345-8XB30-1…**
45	95		3RT1046					**3RA1346-8XB30-1…**
55	115	**S6**	3RT1054	--	--	3RA1954-2A	3RA1953-2M[5]	**--**
75	150		3RT1055					
90	185		3RT1056					
110	225	**S10**	3RT1064	--	--	3RA1954-2A	3RA1963-2A[5]	**--**
132	265		3RT1065					
160	300		3RT1066					
200	400	**S12**	3RT1075	--	--	3RA1954-2A	3RA1973-2A[5]	**--**
250	500		3RT1076					

1) Can be mounted onto the front.

2) Laterally mountable with one auxiliary contact.

3) Laterally mountable without auxiliary contact.

4) The assembly kit contains: two connecting clips for contactors as well as wiring modules on the top and bottom.

5) The assembly kit contains wiring modules on the top and bottom.

Operating times

The operating times of the individual 3RT10 contactors are rated in such a way that no overlapping of the contact making and the arcing time between two contactors can occur on reversing, provided they are interlocked by way of their auxiliary switches (NC contact interlock) and the mechanical interlock.

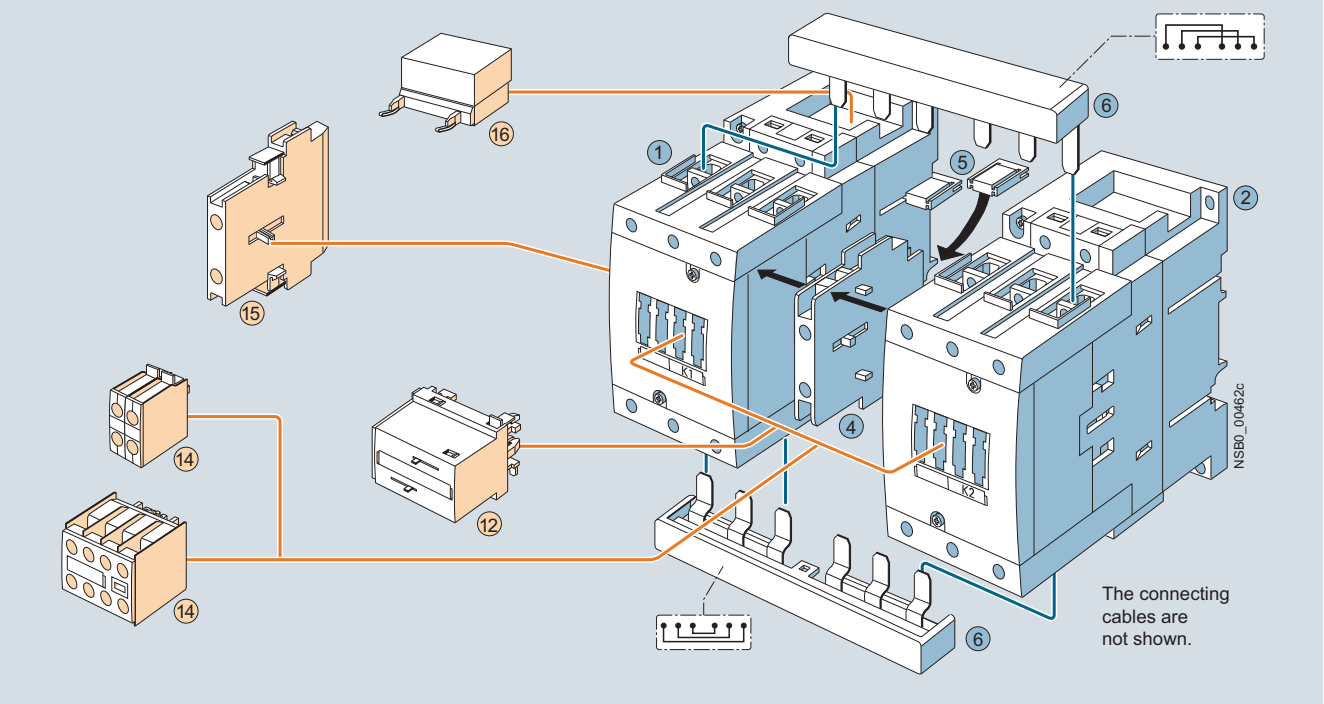
For assemblies with AC operation and 50/60 Hz, a dead interval of 50 ms must be provided when used with voltages ≥ 500 V; a dead interval of 30 ms is recommended for use with voltages ≥ 400 V. These dead times do not apply to assemblies with DC operation.

The operating times of the individual contactors are not affected by the mechanical interlock.

3

Selection and ordering data

Fully wired and tested contactor assemblies · Size S3 · up to 45 kW



Mountable accessories (optional)

To be ordered separately		Article No.	Page
12	Mech. interlock, front	3RA1924-1A	3/172
14	Auxiliary switch block, front	3RH1921-1CA..	3/114
15	Auxiliary switch block, lateral	3RH1921-1EA..	3/116
16	Surge suppressor	3RT1926-1.... 3RT1936-1....	3/119

Complete contactor assemblies

Individual parts		Article No. Q1	Q2	Page
1 2	Contactor, 30 kW	3RT1044	3RT1044	3/97
1 2	Contactor, 37 kW	3RT1045	3RT1045	3/97
1 2	Contactor, 45 kW	3RT1046	3RT1046	3/97
4	Mech. interlock, lateral	3RA1924-2B		3/172
5 6	Assembly kit	3RA1943-2A		3/173

The assembly kit contains:

5 2 connecting clips for two contactors with 10 mm distance

6 Wiring modules on the top and bottom for connecting the main current paths

3RA134.-8XB30-1...

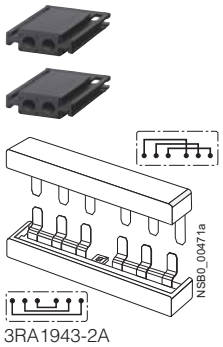
Rated data AC-2 and AC-3					Rated control supply voltage U_s [1]	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and						Article No.	Price per PU			
500 V	230 V	**400 V**	500 V	690 V							
A	kW	**kW**	kW	kW	V						
AC operation at 50/60 Hz											
65	18.5	**30**	37	45	24 AC	B	**3RA1344-8XB30-1AC2**		1	1 unit	41B
					110 AC	B	**3RA1344-8XB30-1AG2**		1	1 unit	41B
					230 AC	B	**3RA1344-8XB30-1AL2**		1	1 unit	41B
80	22	**37**	45	55	24 AC	B	**3RA1345-8XB30-1AC2**		1	1 unit	41B
					110 AC	B	**3RA1345-8XB30-1AG2**		1	1 unit	41B
					230 AC	B	**3RA1345-8XB30-1AL2**		1	1 unit	41B
95	22	**45**	55	55	24 AC	B	**3RA1346-8XB30-1AC2**		1	1 unit	41B
					110 AC	B	**3RA1346-8XB30-1AG2**		1	1 unit	41B
					230 AC	B	**3RA1346-8XB30-1AL2**		1	1 unit	41B
DC operation											
65	18.5	**30**	37	45	24 DC	B	**3RA1344-8XB30-1BB4**		1	1 unit	41B
80	22	**37**	45	55	24 DC	B	**3RA1345-8XB30-1BB4**		1	1 unit	41B
95	22	**45**	55	55	24 DC	B	**3RA1346-8XB30-1BB4**		1	1 unit	41B

[1] Coil operating range at 50 Hz: 0.8 ... 1.1 x U_s; at 60 Hz: 0.85 ... 1.1 x U_s.

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

SIRIUS 3RA13 reversing contactor assemblies

Components for customer assembly

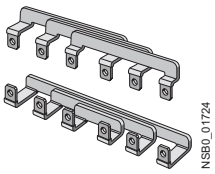
	For contactors Type	Size	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mechanical interlocks									
 3RA1924-1A mounted onto 2 contactors	3RT104 3RT134 3RT144	**S3**	**Laterally mountable**[1] Each with one auxiliary contact (1 NC contact) per contactor (can only be used to connect contactors which are not more than 1 size larger or smaller. The mounting depth of the smaller contactor has to be adapted.)	►	**3RA1924-2B**		1	1 unit	41B
	3RT104	**S3**	**Can be mounted onto the front**[2] Onto contactor sizes S2 and S3 (for contactors of the same size) Note: Use 3RA1932-2C mechanical connectors.	►	**3RA1924-1A**		1	1 unit	41B
 3RA1954-2A	3RT1.5 3RT1.6 3RT1.7	**S6** **S10** **S12**	**Laterally mountable**, without auxiliary contacts Contactor sizes S6, S10 and S12 can be interlocked with each other as required; no adaptation of mounting depth is necessary. Contactor clearance 10 mm.	►	**3RA1954-2A**		1	1 unit	41B
 3RA1954-2C	3RT104.-A with 3RT105	**S3** with **S6**	**Adapter, laterally mountable**, for mechanical interlocking of contactor S3 (only for AC operation) with contactor S6 using 3RA1954-2A locking device (must be ordered separately) incl. connecting clips	A	**3RA1954-2C**		1	1 unit	41B
Coil repeat terminals									
 3RA1923-3B	3RT104	**S3**	For the coil terminals A1 and A2 for reversing starters with contactors of size S3. 2 x A1 and 1 x A2 are required per assembly. (One set contains 10 x A1 and 5 x A2)	B	**3RA1923-3B**		1	1 unit	41B
Base plates									
	3RT105	**S6**	For customer assembly of reversing contactor assemblies	B	**3RA1952-2A**		1	1 unit	41B
	3RT1.6	**S10**		B	**3RA1962-2A**		1	1 unit	41B
	3RT1.7	**S12**		B	**3RA1972-2A**		1	1 unit	41B
Assembly kits for making 3-pole contactor assemblies									
 3RA1943-2A	3RT104	**S3**	The assembly kit contains: 2 connecting clips for two contactors, wiring modules on the top and bottom	►	**3RA1943-2A**		1	1 unit	41B

[1] Can also be used for 4-pole contactors with sizes S2 and S3.

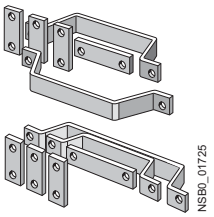
[2] Can also be used for size S0 4-pole contactors.

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

Assembly kits for making 3-pole contactor assemblies



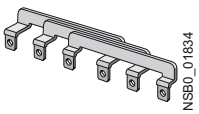
3RA1953-2A



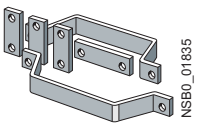
3RA1953-2M

For contactors Type	Size	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT105	**S6**	The assembly kit contains: Wiring modules on the top and bottom (for connection with box terminal)	A	**3RA1953-2A**		1	1 unit	41B
3RT105	**S6**	The assembly kit contains: Wiring modules on the top and bottom (for connection without box terminal)	A	**3RA1953-2M**		1	1 unit	41B
3RT1.6	**S10**		A	**3RA1963-2A**		1	1 unit	41B
3RT1.7	**S12**		A	**3RA1973-2A**		1	1 unit	41B

Wiring modules, single



3RA1953-3D



3RA1953-3P

For contactors Type	Size	Contactor clearance mm	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT104	**S3-S3**	10	Top (in-phase)	►	**3RA1943-3D**		1	1 unit	41B
			Bottom (with phase reversal)	►	**3RA1943-3E**		1	1 unit	41B
3RT105	**S6-S6**	10	Top (in-phase, for connection with box terminal)	A	**3RA1953-3D**		1	1 unit	41B
			Top (with phase reversal, for connection without box terminal)	A	**3RA1953-3P**		1	1 unit	41B

Mechanical connectors


3RA1932-2C


3RA1932-2D


3RA1942-2G

For contactors Type	Size	Contactor clearance mm	Interlocking	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
3RT1.4	**S3-S3**	0	On front	For 3-pole contactors (1 unit corresponds to 2 parts for 1 assembly)	►	**3RA1932-2C**		1	10 units	41B
3RT1.4 3RT1.5	**S3-S3** **S6-S6**	10	Lateral	For 3-pole contactors (1 unit corresponds to 2 parts for 1 assembly)	►	**3RA1932-2D**		1	10 units	41B
3RT1.4	**S3-S3**	10	Lateral	For 4-pole contactors (1 unit corresponds to 2 parts for 1 assembly)	B	**3RA1942-2G**		1	10 units	41B

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

SIRIUS 3RA24 contactor assemblies for wye-delta starting

Overview

These 3RA24 contactor assemblies for wye-delta starting are designed for standard applications.

Note:

Contactor assemblies for wye-delta starting in special applications such as very heavy starting[1] or wye-delta starting of special motors must be customized. Help with designing such special applications is available from Technical Assistance.

The 3RA24 contactor assemblies for wye-delta starting can be ordered as follows:

Sizes S00 to S2

- Fully wired and tested, with electrical and mechanical interlock
- As individual parts for customer assembly

A dead interval of 50 ms on reversing is already integrated in the function module for wye-delta starting.

The 3RA24 contactor assemblies have screw or spring-type terminals and are suitable for screwing or snapping onto TH 35 standard mounting rails. A base plate is also available for the size S2 assembly.

With the fully wired and tested 3RA24 contactor assemblies, the auxiliary contacts included in the basic devices are unassigned.

There is also a range of accessories (lateral auxiliary switch blocks, etc.) that must be ordered separately.

[1] For effective support from Technical Assistance you must provide the following details:
- Rated motor voltage
- Rated motor current
- Service factor, operating values
- Motor starting current factor
- Starting time
- Ambient temperature

Rated data at 50 Hz 400 V AC			Size	Article No.		
Rating	Operational current I_e	Motor current		Line/delta contactor	Star contactor	**Complete assemblies**
kW	A	A				
				Screw terminals	**Screw terminals**	**Screw terminals**
5.5	12	9.5 ... 13.8	**S00-S00-S00**	3RT2015-1....	3RT2015-1....	**3RA2415-8XF31-1...**
7.5	16	12.1 ... 17		3RT2017-1....	3RT2015-1....	**3RA2416-8XF31-1...**
11	25	19 ... 25		3RT2018-1....	3RT2016-1....	**3RA2417-8XF31-1...**
11	25	19 ... 25	**S0-S0-S0**	3RT2024-1...0	3RT2024-1...0	**3RA2423-8XF32-1...**
15	32	24.1 ... 34		3RT2026-1...0	3RT2024-1...0	**3RA2425-8XF32-1...**
18.5	40	34.5 ... 40		3RT2026-1...0	3RT2024-1...0	**3RA2425-8XF32-1...**
22	50	31 ... 43		3RT2027-1...0	3RT2026-1...0	**3RA2426-8XF32-1...**
22/30	50	31 ... 43	**S2-S2-S0**	3RT2035-1...0	3RT2026-1...0	**3RA2434-8XF32-1...**
37	80	62.1 ... 77.8		3RT2035-1...0	3RT2027-1...0	**3RA2435-8XF32-1...**
45	86	69 ... 86		3RT2036-1...0	3RT2028-1...0	**3RA2436-8XF32-1...**
55	115	77.6 ... 108.6	**S2-S2-S2**	3RT2037-1...0	3RT2035-1...0	**3RA2437-8XF32-1...**
				Spring-type terminals	**Spring-type terminals**	**Spring-type terminals**
5.5	12	9.5 ... 13.8	**S00-S00-S00**	3RT2015-2....	3RT2015-2....	**3RA2415-8XF31-2...**
7.5	16	12.1 ... 17		3RT2017-2....	3RT2015-2....	**3RA2416-8XF31-2...**
11	25	19 ... 25		3RT2018-2....	3RT2016-2....	**3RA2417-8XF31-2...**
11	25	19 ... 25	**S0-S0-S0**	3RT2024-2...0	3RT2024-2...0	**3RA2423-8XF32-2...**
15	32	24.1 ... 34		3RT2026-2...0	3RT2024-2...0	**3RA2425-8XF32-2...**
18.5	40	34.5 ... 40		3RT2026-2...0	3RT2024-2...0	**3RA2425-8XF32-2...**
22	50	31 ... 43		3RT2027-2...0	3RT2026-2...0	**3RA2426-8XF32-2...**

Note:

The selection of contactor types refers to fused designs.

Function modules for wye-delta starting

The 3RA2816-0EW20 wye-delta function module (see page 3/187) replaces the complete wiring in the control circuit and can be used in the voltage range from 24 to 240 V AC/DC. It is snapped onto the front of the contactor assembly size S00, S0 or S2.

One function module comprises a complete module kit:

- 3RA2912-0 basic module with integrated control logic and time setting
- Two 3RA2911-0 coupling modules with corresponding connecting cables

The scope of supply thus comprises a complete module kit for one contactor assembly for wye-delta starting size S00, S0 or S2, regardless of the connection method.

Data of the control circuit

- Wide voltage range 24 to 240 V AC/DC
- Time setting range 0.5 to 60 s (3 selectable settings)
- Dead interval of 50 ms, non-adjustable

Surge suppression

Surge suppression (varistor) is included in the function modules for wye-delta starting.

Motor protection

As overload protection, the 3RU21 or 3RB3 overload relays (see table below) or 3RN1 thermistor motor protection releases can be used.

The overload relay can be either mounted onto the line contactor or separately fitted. It must be set to 0.58 times the rated motor current.

Overload relays for motor protection, see Chapter 7 "Protection Equipment" → "Overload Relays" → "SIRIUS 3RB3 Electronic Overload Relays".

Components for customer assembly

Assembly kits with wiring modules and mechanical connectors are available for contactor assemblies for wye-delta starting. Contactors, overload relays, function modules for wye-delta starting or wye-delta timing relays, auxiliary switches for electrical interlock – if required also infeed terminals and base plates – must be ordered separately.

The wiring kits for sizes S00 to S2 contain the top and bottom main conducting path connections between the line and delta contactors (top) and between the delta and star contactors (bottom).

Assemblies 3RT20	Accessories for customer assembly		Overload relay, thermal (CLASS 10 trip class)		Overload relay, electronic (CLASS 10E trip class)	
Rating	Function modules for wye-delta starting	Assembly kit B, for single infeed	Setting range	Article No.	Setting range	Article No.
kW			A		A	
	Without external connection	**Screw terminals**	**Screw terminals**		**Screw terminals**	
5.5	3RA2816-0EW20	3RA2913-2BB1[1]	5.5 ... 8	3RU2116-1HB0	4 ... 16	3RB3016-1TB0
7.5			7 ... 10	3RU2116-1JB0		
11			11 ... 16	3RU2116-4AB0		
11	3RA2816-0EW20	3RA2923-2BB1[1]	11 ... 16	3RU2126-4AB0	6 ... 25	3RB3026-1QB0
15			14 ... 20	3RU2126-4BB0		
18.5			20 ... 25	3RU2126-4DB0		
22			20 ... 25	3RU2126-4DB0		
22/30	3RA2816-0EW20	3RA2933-2C[3]	18 ... 25	3RU2136-4DB0	12 ... 50	3RB3036-1UB0
37		3RA2933-2C	40 ... 50	3RU2136-4HB0	20 ... 80	3RB3036-1WB0
45		3RA2933-2C	40 ... 50	3RU2136-4HB0		
55		3RA2933-2BB1[4]	54 ... 65	3RU2136-4JB0		
	Without external connection	**Spring-type terminals**	**Spring-type terminals**		**Spring-type terminals**	
5.5	3RA2816-0EW20	3RA2913-2BB2[1]	5.5 ... 8	3RU2116-1HC0	4 ... 16	3RB3016-1TE0
7.5			7 ... 10	3RU2116-1JC0		
11			11 ... 16	3RU2116-4AC0		
11	3RA2816-0EW20	3RA2923-2BB2[2]	11 ... 16	3RU2126-4AC0	6 ... 25	3RB3026-1QE0
15			14 ... 20	3RU2126-4BC0		
18.5			20 ... 25	3RU2126-4DC0		
22			20 ... 25	3RU2126-4DC0		
22/30	3RA2816-0EW20	3RA2933-2C[3]	18 ... 25	3RU2136-4DC0	12 ... 50	3RB3036-1UD0
37		3RA2933-2C	40 ... 50	3RU2136-4HC0	20 ... 80	3RB3036-1WD0
45		3RA2933-2C	40 ... 50	3RU2136-4HC0		
55		3RA2933-2BB2[5]	54 ... 65	3RU2136-4JC0		

[1] The assembly kit contains: mechanical interlock, 4 connecting clips; wiring modules on the top (connection between line and delta contactor) and on the bottom (connection between delta and star contactor); star jumper and auxiliary circuit wiring.

[2] The assembly kit contains: mechanical interlock, 4 connecting clips; wiring modules on the top (connection between line and delta contactor) and on the bottom (connection between delta and star contactor); star jumper.

[3] The assembly kit contains: 2 connecting pins, wiring modules on the top and bottom (S2 - S0) for the main circuit, a S0 star jumper, a spacer and a cable set for the auxiliary circuit, and a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor.

[4] The assembly kit contains: 4 connecting pins, wiring modules on the top and bottom for the main circuit and the auxiliary circuit, an S2 star jumper and a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor.

[5] The assembly kit contains: 4 connecting pins, wiring modules on the top and bottom for the main circuit, an S2 star jumper, a cable set for the auxiliary circuit and a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor.

SIRIUS 3RA24 contactor assemblies for wye-delta starting

Article No. scheme

Digit of the Article No.	1st - 3rd	4th	5th	6th	7th		8th	9th	10th	11th	12th		13th	14th	15th	16th
	□□□	□	□	□	□	–	□	□	□	□	□	–	□	□	□	□
SIRIUS contactor assemblies	**3 R A**															
2nd generation		**2**														
Device type (e.g. 4 = contactor assembly for wye-delta starting)			**4**													
Contactor size (1 = S00, 2 = S0, 3 = S2)				□												
Power dependent on size (e.g. 5 = 15 kW for S0)					□											
Type of overload relay (8X = without)							□	□								
Assembly (B = ready-assembled, E, H = ready-assembled with communication)									□							
Interlock (3 = mechanical and electrical)										□						
Free auxiliary switches (e.g. S00: 1 = 3 NO total, S0: 2 = 3 NO + 3 NC total)											□					
Connection type (1 = screw, 2 = spring)													□			
Operating range / solenoid coil circuit (e.g. A = AC standard / without)														□		
Rated control supply voltage (e.g. L2 = 230 V, 50/60 Hz)															□	□
Example	**3 R A**	**2**	**4**	**2**	**5**	**–**	**8**	**X**	**F**	**3**	**2**	**–**	**1**	**A**	**L**	**2**

Note:

The article number scheme is presented here merely for information purposes and for better understanding of the logic behind the article numbers.

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

Technical specifications

All technical specifications not mentioned in the table below are identical to those of the individual 3RT2 contactors and 3RU2 overload relays

Type			**3RA2415**	**3RA2416**	**3RA2417**	**3RA2423**	**3RA2425**	**3RA2426**
Sizes **S..-S..-S..**			**00-00-00**	**00-00-00**	**00-00-00**	**0-0-0**	**0-0-0**	**0-0-0**
Dimensions (W x H x D) with function module								
• AC operation[1]		mm	135 x 68 x 145 / 135 x 84 x 145			135 x 101 x 171 / 135 x 114 x 171		
• DC operation[1]		mm	135 x 68 x 145 / 135 x 84 x 145			135 x 101 x 181 / 135 x 114 x 181		
General data								
Individual contactors								
• Q11 line contactor		Type	3RT2015	3RT2017	3RT2018	3RT2024	3RT2026	3RT2027
• Q13 delta contactor		Type	3RT2015	3RT2017	3RT2018	3RT2024	3RT2026	3RT2027
• Q12 star contactor		Type	3RT2015	3RT2015	3RT2016	3RT2024	3RT2024	3RT2026
Mechanical endurance		Operating cycles	3 million					
Unassigned auxiliary contacts of the individual contactors			[2]					
Short-circuit protection								
Main circuit without overload relays[3]								
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE with single or double infeed								
Highest rated current of the fuse according to IEC 60947-4-1								
• Type of coordination "1"		A	35	35	63	63	100	125
• Type of coordination "2"		A	20	20	25	25	35	63
Control circuit								
Short-circuit test								
• with fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A A	10 6[4], if the auxiliary contact of the overload relay is connected in the contactor coil circuit.					
• with miniature circuit breakers with C characteristic with short-circuit current I_k = 400 A		A A	10 6[4], if the auxiliary contact of the overload relay is connected in the contactor coil circuit.					
Main circuit								
Current-carrying capacity with reversing time up to 10 s								
• Rated operational current I_e	At 400 V 690 V	A A	12 6.9	17 9	25 20.8	25 20.8	40 22.5	55 35
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V 400 V 690 V	kW kW kW	3.3 5.8 5.8	4.7 8.2 7.5	7.2 12.5 18	7.2 12.5 18	12 21 20.4	16.6 30.1 33
• **Switching frequency** with overload relay		h^{-1}	15	15	15	15	15	15
Current-carrying capacity with reversing time up to 15 s								
• Rated operational current I_e	At 400 V 690 V	A A	12 6.9	17 9	25 20.8	25 20.8	31 22.5	44 35
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V 400 V 690 V	kW kW kW	3.3 5.8 5.8	4.7 8.2 7.5	7.2 12.5 18	7.2 12.5 18	9.4 16.3 20.4	13.8 24 33
• **Switching frequency** with overload relay		h^{-1}	15	15	15	15	15	15
Current-carrying capacity with reversing time up to 20 s								
• Rated operational current I_e	At 400 V 690 V	A A	12 6.9	17 9	25 20.8	25 20.8	28 22.5	39 35
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V 400 V 690 V	kW kW kW	3.3 5.8 5.8	4.7 8.2 7.5	7.2 12.5 18	7.2 12.5 18	8.5 14.7 20.4	12.2 21.3 33
• **Switching frequency** with overload relay		h^{-1}	15	15	15	15	15	15

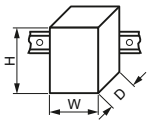
[1] Dimensions for devices with screw terminals / spring-type terminals.

[2] For circuit diagrams of the control circuit, see "Operating Instructions", http://support.automation.siemens.com/WW/view/en/34291016.

[3] For short-circuit protection with overload relays, see the Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", http://support.automation.siemens.com/WW/view/en/39714188.

[4] Up to I_k < 0.5 kA; ≤ 260 V.

SIRIUS 3RA24 contactor assemblies for wye-delta starting



Type			3RA2434	3RA2435	3RA2436	3RA2437
Sizes **S..-S..-S..**			**2-2-0**	**2-2-0**	**2-2-0**	**2-2-2**
Dimensions (W x H x D) with function module						
• Screw terminals		mm	177.5 x 142 x 223			
General data						
Individual contactors						
• Q11 line contactor		Type	3RT2035	3RT2035	3RT2036	3RT2037
• Q13 delta contactor		Type	3RT2035	3RT2035	3RT2036	3RT2037
• Q12 star contactor		Type	3RT2026	3RT2027	3RT2028	3RT2035
Mechanical endurance		Operating cycles	3 million			
Unassigned auxiliary contacts of the individual contactors			1)			
Short-circuit protection						
Main circuit without overload relays[2]						
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE with single or double infeed						
Highest rated current of the fuse according to IEC 60947-4-1						
• Type of coordination "1"		A	160	200	250	250
• Type of coordination "2"		A	80	80	125	160
Control circuit						
Short-circuit test						
• with fuse links of operational class gG:		A	10			
DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A	6[3], if the auxiliary contact of the overload relay is connected in the contactor coil circuit.			
• with miniature circuit breakers with C characteristic		A	10			
with short-circuit current I_k = 400 A		A	6[3], if the auxiliary contact of the overload relay is connected in the contactor coil circuit.			
Main circuit						
Current-carrying capacity with reversing time up to 10 s						
• Rated operational current I_e	At 400 V	A	On request			
	690 V	A	On request			
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	On request			
	400 V	kW	On request			
	690 V	kW	On request			
• **Switching frequency** with overload relay		h^{-1}	15			
Current-carrying capacity with reversing time up to 15 s						
• Rated operational current I_e	At 400 V	A	On request			
	690 V	A	On request			
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	On request			
	400 V	kW	On request			
	690 V	kW	On request			
• **Switching frequency** with overload relay		h^{-1}	15			
Current-carrying capacity with reversing time up to 20 s						
• Rated operational current I_e	At 400 V	A	On request			
	690 V	A	On request			
• Rated power for three-phase motors with 50 Hz and 60 Hz	At 230 V	kW	On request			
	400 V	kW	On request			
	690 V	kW	On request			
• **Switching frequency** with overload relay		h^{-1}	15			

1) For circuit diagrams of the control circuit, see "Operating Instructions", http://support.automation.siemens.com/WW/view/en/34291016.

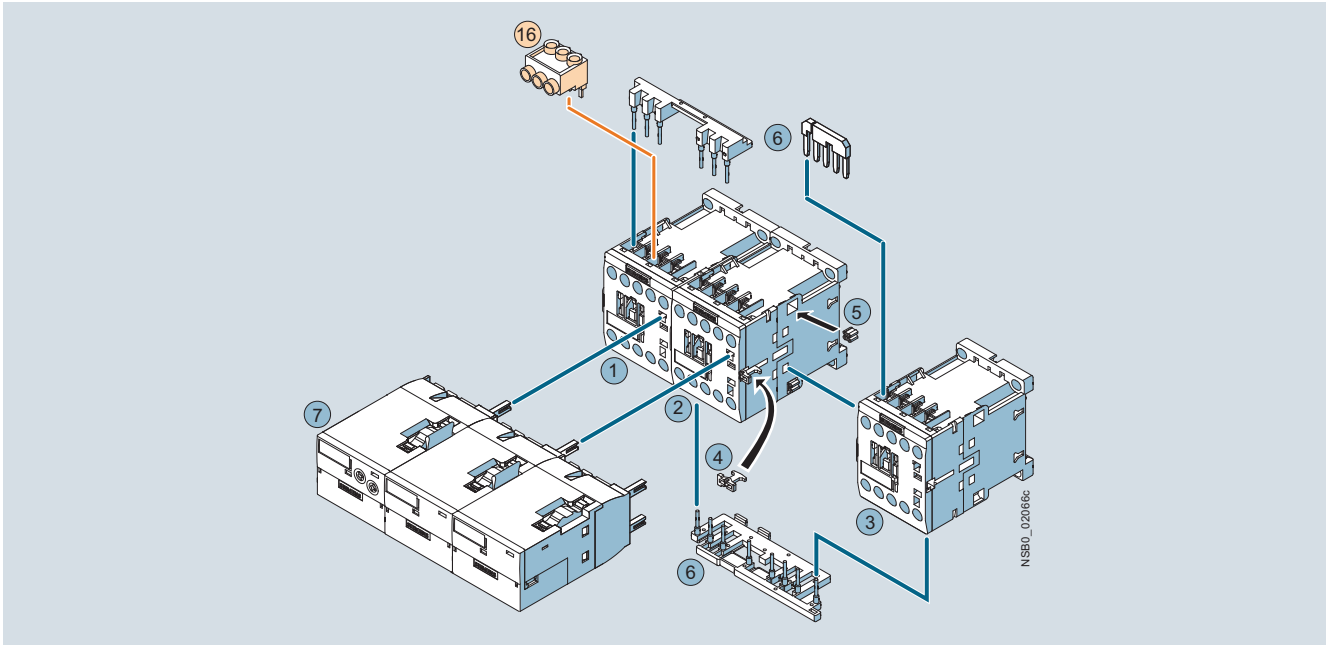
2) For short-circuit protection with overload relays, see the Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", http://support.automation.siemens.com/WW/view/en/39714188.

3) Up to I_k < 0.5 kA; ≤ 260 V.

Selection and ordering data

Fully wired and tested contactor assemblies · Size S00-S00-S00 · up to 11 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Article No.	Page
16 Three-phase infeed terminal[2]	3RA2913-3K	3/186

Complete contactor assemblies

Individual parts	Article No. Q11[1]	Q13	Q12	Page
1 2 3 Contactor, 5.5 kW	3RT2015	3RT2015	3RT2015	3/35, 3/42
1 2 3 Contactor, 7.5 kW	3RT2017	3RT2017	3RT2015	3/35, 3/42
1 2 3 Contactor, 11 kW	3RT2018	3RT2018	3RT2016	3/35, 3/42
4 5 6 Assembly kit comprising 4 Mechanical interlock 5 4 connecting clips for 3 contactors 6 Wiring modules on the top and bottom for connecting the main current paths	3RA2913-2BB1			3/185
7 Function modules for wye-delta starting	3RA2816-0EW20			3/187

[1] The version with 1 NO is required for momentary-contact operation.

[2] Part 16 can only be mounted with contactors with screw terminal.

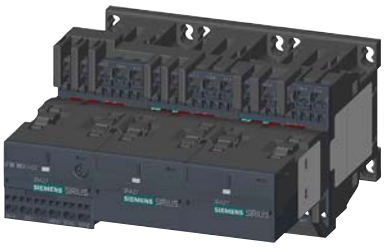
Note:

When using the function modules for contactor assemblies for wye-delta starting, no other auxiliary switches are allowed to be connected to the basic units.

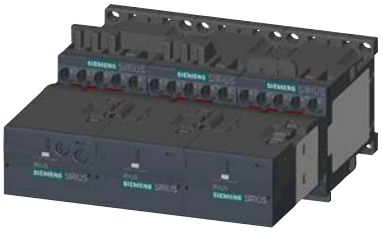
SIRIUS 3RA24 contactor assemblies for wye-delta starting

Fully wired and tested contactor assemblies · Size S00-S00-S00 · up to 11 kW

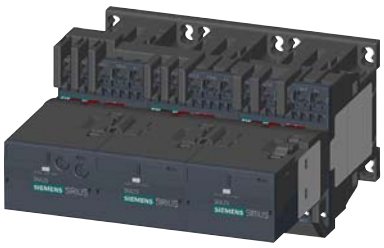
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B



3RA241.-8XE31-1BB4



3RA241.-8XF31-1A.0



3RA241.-8XF31-2A.0

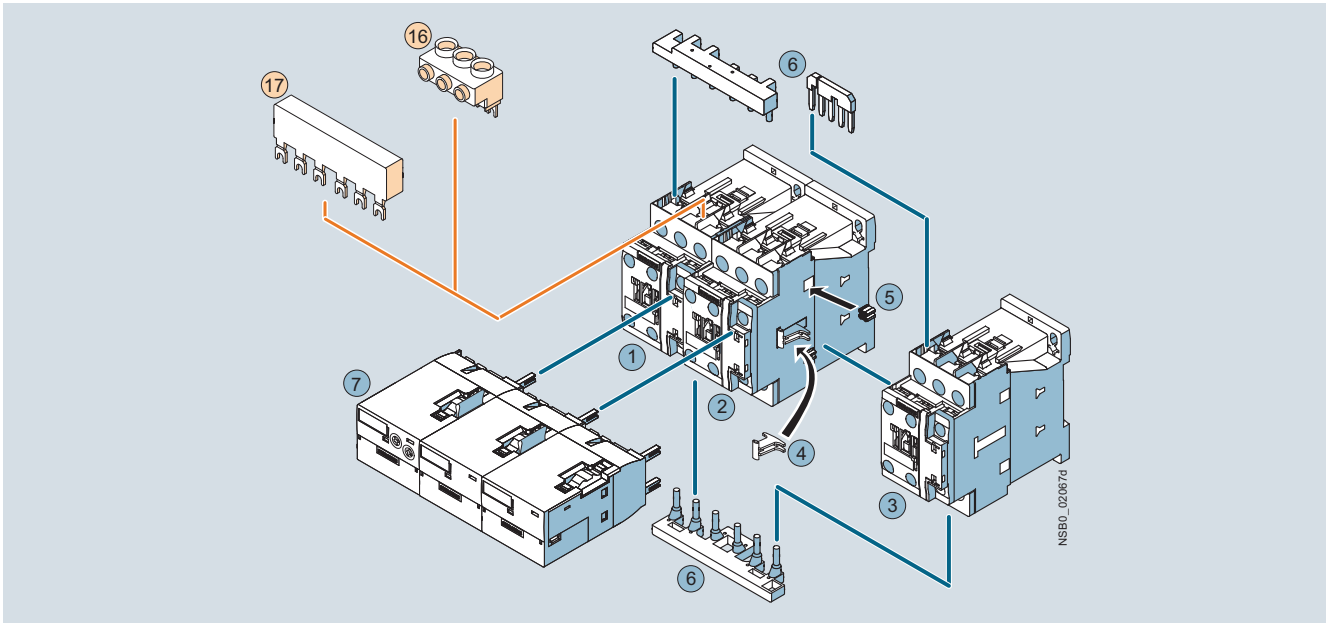
Rated data AC-3				Rated control supply voltage U_s [1]	DT	Screw terminals	DT	Spring-type terminals
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No. / Price per PU		Article No. / Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
12	3.3	**5.5**	9.2	24 AC	A	**3RA2415-8XF31-1AB0**	A	**3RA2415-8XF31-2AB0**
				110 AC	A	**3RA2415-8XF31-1AF0**	B	**3RA2415-8XF31-2AF0**
				230 AC	A	**3RA2415-8XF31-1AP0**	A	**3RA2415-8XF31-2AP0**
16	4.7	**7.5**	9.2	24 AC	A	**3RA2416-8XF31-1AB0**	B	**3RA2416-8XF31-2AB0**
				110 AC	A	**3RA2416-8XF31-1AF0**	B	**3RA2416-8XF31-2AF0**
				230 AC	A	**3RA2416-8XF31-1AP0**	A	**3RA2416-8XF31-2AP0**
25	5.5	**11**	11	24 AC	A	**3RA2417-8XF31-1AB0**	B	**3RA2417-8XF31-2AB0**
				110 AC	A	**3RA2417-8XF31-1AF0**	B	**3RA2417-8XF31-2AF0**
				230 AC	A	**3RA2417-8XF31-1AP0**	A	**3RA2417-8XF31-2AP0**
DC operation								
12	3.3	**5.5**	9.2	24 DC	A	**3RA2415-8XF31-1BB4**	A	**3RA2415-8XF31-2BB4**
16	4.7	**7.5**	9.2	24 DC	A	**3RA2416-8XF31-1BB4**	A	**3RA2416-8XF31-2BB4**
25	5.5	**11**	11	24 DC	A	**3RA2417-8XF31-1BB4**	A	**3RA2417-8XF31-2BB4**
For IO-Link connection								
12	3.3	**5.5**	9.2	24 DC	A	**3RA2415-8XE31-1BB4**	A	**3RA2415-8XE31-2BB4**
16	4.7	**7.5**	9.2	24 DC	A	**3RA2416-8XE31-1BB4**	A	**3RA2416-8XE31-2BB4**
25	5.5	**11**	11	24 DC	A	**3RA2417-8XE31-1BB4**	A	**3RA2417-8XE31-2BB4**
For AS-Interface connection								
12	3.3	**5.5**	9.2	24 DC	B	**3RA2415-8XH31-1BB4**	A	**3RA2415-8XH31-2BB4**
16	4.7	**7.5**	9.2	24 DC	A	**3RA2416-8XH31-1BB4**	B	**3RA2416-8XH31-2BB4**
25	5.5	**11**	11	24 DC	A	**3RA2417-8XH31-1BB4**	A	**3RA2417-8XH31-2BB4**

[1] Coil operating range
at 50 Hz: 0.8 ... 1.1 x U_s; at 60 Hz: 0.85 ... 1.1 x U_s.

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

Fully wired and tested contactor assemblies · Size S0-S0-S0 · up to 22 kW

The figure shows the version with screw terminals



Mountable accessories (optional)

To be ordered separately	Article No.	Page
16 Three-phase infeed terminal[1)]	3RV2925-5AB	3/186
17 Three-phase busbar[1)]	3RV1915-1AB	3/186

Complete contactor assemblies

Individual parts	Article No. Q11	Q13	Q12	Page
1 2 3 Contactor, 11 kW	3RT2024	3RT2024	3RT2024	3/37, 3/44
1 2 3 Contactors, 15/18.5 kW	3RT2026	3RT2026	3RT2024	3/37, 3/44
1 2 3 Contactor, 22 kW	3RT2027	3RT2027	3RT2026	3/37, 3/44
4 5 6 Assembly kit	3RA2923-2BB1			3/185
The assembly kit contains:				
4 Mechanical interlock				
5 4 connecting clips for 3 contactors				
6 Wiring modules on the top and bottom for connecting the main current paths				
7 Function modules for wye-delta starting	3RA2816-0EW20			3/187

[1)] The parts 16 and 17 can only be mounted with contactors with screw terminal.

Note:

When using the function modules for contactor assemblies for wye-delta starting, no other auxiliary switches are allowed to be connected to the basic units.

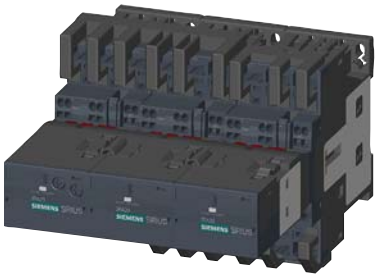
SIRIUS 3RA24 contactor assemblies for wye-delta starting

Fully wired and tested contactor assemblies · Size S0-S0-S0 · up to 22 kW

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

3RA242..-8XE32-1BB4

3RA242..-8XF32-1A..2



3RA242..-8XF32-2A..2

Rated data AC-3				Rated control supply voltage U_s [1]	DT	Screw terminals	DT	Spring-type terminals
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No. / Price per PU		Article No. / Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
25	7.1	**11**	19	24 AC	A	**3RA2423-8XF32-1AC2**	A	**3RA2423-8XF32-2AC2**
				110 AC	A	**3RA2423-8XF32-1AG2**	B	**3RA2423-8XF32-2AG2**
				230 AC	B	**3RA2423-8XF32-1AL2**	B	**3RA2423-8XF32-2AL2**
32 / 40	11.4	**15 / 18.5**	19	24 AC	A	**3RA2425-8XF32-1AC2**	A	**3RA2425-8XF32-2AC2**
				110 AC	A	**3RA2425-8XF32-1AG2**	B	**3RA2425-8XF32-2AG2**
				230 AC	B	**3RA2425-8XF32-1AL2**	B	**3RA2425-8XF32-2AL2**
50	--	**22**	19	24 AC	A	**3RA2426-8XF32-1AC2**	B	**3RA2426-8XF32-2AC2**
				110 AC	A	**3RA2426-8XF32-1AG2**	B	**3RA2426-8XF32-2AG2**
				230 AC	B	**3RA2426-8XF32-1AL2**	B	**3RA2426-8XF32-2AL2**
DC operation								
25	7.1	**11**	19	24 DC	A	**3RA2423-8XF32-1BB4**	A	**3RA2423-8XF32-2BB4**
32 / 40	11.4	**15 / 18.5**	19	24 DC	A	**3RA2425-8XF32-1BB4**	A	**3RA2425-8XF32-2BB4**
50	--	**22**	19	24 DC	A	**3RA2426-8XF32-1BB4**	A	**3RA2426-8XF32-2BB4**
For IO-Link connection								
25	7.1	**11**	19	24 DC	A	**3RA2423-8XE32-1BB4**	B	**3RA2423-8XE32-2BB4**
32 / 40	11.4	**15 / 18.5**	19	24 DC	A	**3RA2425-8XE32-1BB4**	B	**3RA2425-8XE32-2BB4**
50	--	**22**	19	24 DC	A	**3RA2426-8XE32-1BB4**	B	**3RA2426-8XE32-2BB4**
For AS-Interface connection								
25	7.1	**11**	19	24 DC	B	**3RA2423-8XH32-1BB4**	A	**3RA2423-8XH32-2BB4**
32 / 40	11.4	**15 / 18.5**	19	24 DC	B	**3RA2425-8XH32-1BB4**	B	**3RA2425-8XH32-2BB4**
50	--	**22**	19	24 DC	A	**3RA2426-8XH32-1BB4**	B	**3RA2426-8XH32-2BB4**

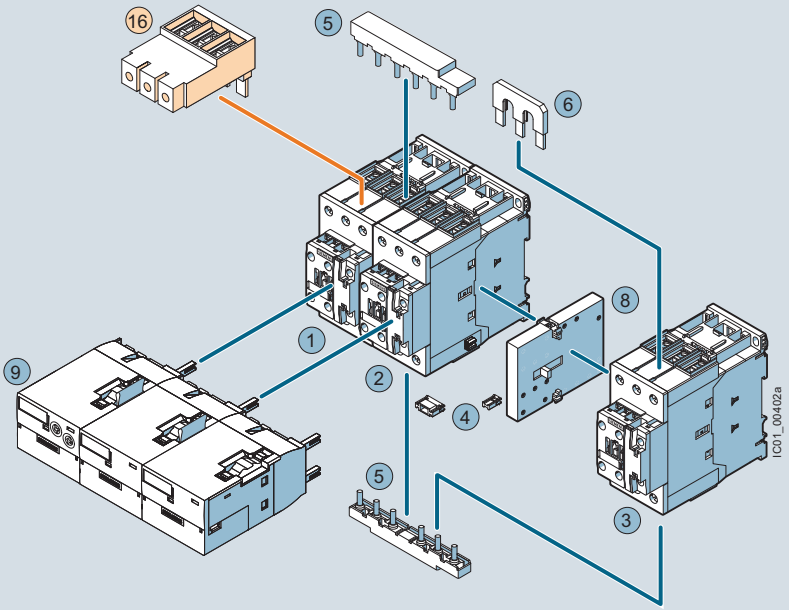
[1] Coil operating range
- at 50 Hz: 0.8 ... 1.1 x U_s;
- at 60 Hz: 0.85 ... 1.1 x U_s.

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

SIRIUS 3RA24 contactor assemblies for wye-delta starting

Fully wired and tested contactor assemblies · Size S2-S2-S0 · up to 45 kW and S2-S2-S2 · 55 kW

The figure shows the version with screw terminals in S2-S2-S2



Mountable accessories (optional)

To be ordered separately	Article No.	Page
16 Three-phase infeed terminal[1)]	3RV2935-5A	3/186

Complete contactor assemblies

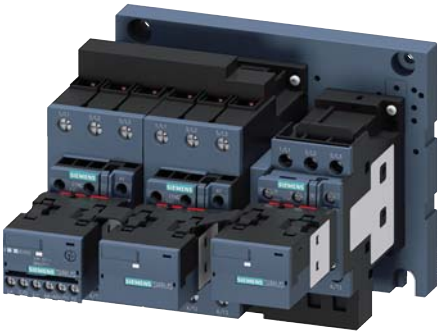
Individual parts		Article No. Q11	Q13	Q12	Page
1 2 3	Contactor, 22/30 kW	3RT2035	3RT2035	3RT2026	3/40, 3/48
1 2 3	Contactor, 37 kW	3RT2035	3RT2035	3RT2027	3/40, 3/48
1 2 3	Contactor, 45 kW	3RT2036	3RT2036	3RT2028	3/40, 3/48
1 2 3	Contactor, 55 kW	3RT2037	3RT2037	3RT2035	3/40, 3/48
4 ... 7	Assembly kit S2-S2-S2	3RA2933-2BB1			3/185
	The assembly kit contains:				
	4 4 connecting pins for 3 contactors				
	5 Wiring modules on the top and bottom for connecting the main and auxiliary circuits				
	6 1 star jumper S2				
	7 1 cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor				
8	Mechanical interlock	3RA2934-2B			3/186
9	Function modules for wye-delta starting	3RA2816-0EW20			3/187

[1)] Three-phase infeed terminal 16 can only be mounted with contactors with screw terminal.

SIRIUS 3RA24 contactor assemblies for wye-delta starting

Fully wired and tested contactor assemblies · Size S2-S2-S0 · up to 45 kW and S2-S2-S2 · 55 kW NEW

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



3RA243.-8XE32-1NB3

3RA2437-8XF32-1A.2

Rated data AC-3				Rated control supply voltage U_s	DT	Screw terminals	DT	Spring-type terminals
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No. / Price per PU		Article No. / Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 Hz								
50/65	19.6	**22/30**	34	24 AC[1]	B	**3RA2434-8XF32-1AC2**		--
				110 AC[2]	B	**3RA2434-8XF32-1AG2**		--
				230 AC[2]	▶	**3RA2434-8XF32-1AL2**		--
80	25	**37**	63	24 AC[1]	A	**3RA2435-8XF32-1AC2**		--
				110 AC[2]	A	**3RA2435-8XF32-1AG2**		--
				230 AC[2]	▶	**3RA2435-8XF32-1AL2**		--
86	27	**45**	63	24 AC[1]	A	**3RA2436-8XF32-1AC2**		--
				110 AC[2]	A	**3RA2436-8XF32-1AG2**		--
				230 AC[2]	▶	**3RA2436-8XF32-1AL2**		--
115	37	**55**	93	24 AC[1]	B	**3RA2437-8XF32-1AC2**		--
				110 AC[2]	B	**3RA2437-8XF32-1AG2**		--
				230 AC[2]	▶	**3RA2437-8XF32-1AL2**		--
AC/DC operation								
50/65	19.6	**22/30**	34	20 ... 33 AC/DC[1]	▶	**3RA2434-8XF32-1NB3**		--
80	25	**37**	63	20 ... 33 AC/DC[1]	A	**3RA2435-8XF32-1NB3**		--
86	27	**45**	63	20 ... 33 AC/DC[1]	A	**3RA2436-8XF32-1NB3**		--
115	37	**55**	93	20 ... 33 AC/DC[1]	B	**3RA2437-8XF32-1NB3**		--
DC operation								
For IO-Link connection								
50/65	19.6	**22/30**	34	24 DC[1]	B	**3RA2434-8XE32-1NB3**		--
80	25	**37**	63	24 DC[1]	B	**3RA2435-8XE32-1NB3**		--
86	27	**45**	63	24 DC[1]	B	**3RA2436-8XE32-1NB3**		--
115	37	**55**	93	24 DC[1]	B	**3RA2437-8XE32-1NB3**		--
For AS-Interface connection								
50/65	19.6	**22/30**	34	24 DC[1]	B	**3RA2434-8XH32-1NB3**		--
80	25	**37**	63	24 DC[1]	B	**3RA2435-8XH32-1NB3**		--
86	27	**45**	63	24 DC[1]	B	**3RA2436-8XH32-1NB3**		--
115	37	**55**	93	24 DC[1]	B	**3RA2437-8XH32-1NB3**		--

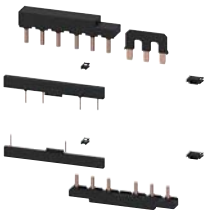
[1] Operating range:
- AC coil: 0.85 ... 1.1 x U_s
- AC/DC coil: 0.8 ... 1.1 x U_s
- DC coil: 0.8 ... 1.1 x U_s

[2] AC coil operating range
- at 50 Hz: 0,8 ... 1,1 x U_s;
- at 60 Hz: 0,85 ... 1,1 x U_s.

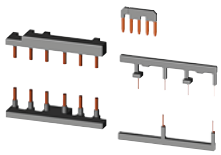
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Components for customer assembly

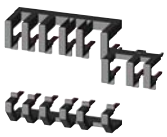
PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41B



3RA2933-2BB1



3RA2923-2BB1



3RA2923-2BB2

For contactors Type	Size	Version	DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Assembly kits[1] for making 3-pole contactor assemblies								
3RT201	**S00-S00-S00**	The assembly kit contains: Mechanical interlock, 4 connecting clips for 3 contactors; a star jumper, wiring modules on the top and bottom						
		• For main, auxiliary and control circuits	►	**3RA2913-2BB1**		►	**3RA2913-2BB2**	
3RT202	**S0-S0-S0**	The assembly kit contains: Mechanical interlock, 4 connecting clips for 3 contactors, a star jumper, wiring modules on the top and bottom						
		• For main, auxiliary and control circuits	►	**3RA2923-2BB1**			**--**	
		• Only for main circuit[2]		**--**		►	**3RA2923-2BB2**	
3RT202	**S0-S0-S0**	The assembly kit contains: mechanical interlock; 4 connecting clips for 3 contactors, wiring modules on the top and bottom, 3-phase infeed terminals						
		• For main, auxiliary and control circuits	B	**3RA2924-2BB1**			**--**	
3RT203	**S2-S2-S0** NEW	The assembly kit contains: 4 connecting pins for 3 contactors an S0 star jumper, a spacer, wiring modules on the top and bottom (S2-S0) for the main circuit, a cable set for the auxiliary circuit, a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor	►	**3RA2933-2C**		►	**3RA2933-2C**	
3RT203	**S2-S2-S2** NEW	The assembly kit contains: 4 connecting pins for 3 contactors; an S2 star jumper and						
		• wiring modules on the top and bottom for the main circuit and the auxiliary circuit, a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor.	►	**3RA2933-2BB1**			**--**	
		• Wiring modules on the top and bottom for the main circuit, a cable set for the auxiliary circuit and a cable for connecting the A2 coil contact from the line contactor to the A2 coil contact of the delta contactor.		**--**		B	**3RA2933-2BB2**	

[1] When using the function modules for wye-delta starting, the wiring modules for the auxiliary current are not required.

[2] Version in size S0 with spring-type terminals:
Only the wiring modules for the main circuit are included.
No connectors are included for the auxiliary and control circuit.

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

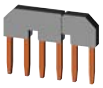
SIRIUS 3RA24 contactor assemblies for wye-delta starting

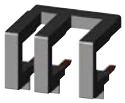
PU (UNIT, SET, M) = 1
PS* = 1 unit (unless otherwise specified)
PG = 41B


3RV2925-5AB

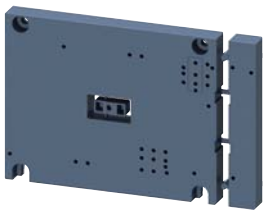

3RV1915-1AB


3RT1936-4BA31


3RT1916-4BA31


3RT2916-4BA32

For contactors Type	Size	Version		DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Three-phase infeed terminals									
		Infeed terminal blocks for the line contactor for large conductor cross-sections							
3RT201	**S00**	• Conductor cross-section 6 mm²	PS = 10 units	A	**3RA2913-3K**			**--**	
3RT202	**S0**	• Conductor cross-section 16 mm²		▶	**3RV2925-5AB**			**--**	
3RT203	**S2** NEW	• Conductor cross-section max. 70 mm²		A	**3RV2935-5A**			**--**	
				A	**3RV2935-5E**			**--**	
Three-phase busbars									
3RT202	**S0**	Bridging phase-by-phase of all input terminals of the line contactor (Q11) and the delta contactor (Q13)		▶	**3RV1915-1AB**			**--**	
Links for paralleling, 3-pole (star jumpers)									
3RT201	**S00**	Without connection terminal (the links for paralleling can be reduced by one pole)		▶	**3RT1916-4BA31**		A	**3RT2916-4BA32**	
3RT202	**S0**			▶	**3RT1926-4BA31**		A	**3RT2926-4BA32**	
3RT203	**S2** NEW			▶	**3RT1936-4BA31**		▶	**3RT1936-4BA31**	


3RA2932-2F

Mechanical interlocks									
3RT203	**S2-S2-S0, S2-S2-S2** NEW	**For size S2, the mechanical locking device must be ordered separately**		▶	**3RA2934-2B**		▶	**3RA2934-2B**	
Base plates									
3RT203	**S2-S2-S0, S2-S2-S2** NEW	For configuring contactor assemblies for wye-delta starting		B	**3RA2932-2F**		B	**3RA2932-2F**	

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

Components for customer assembly

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

3RA2816-0EW20

3RA2712-1CA00

3RA2711-2CA00

For contactors Type	Size	Version		DT	Article No.	Price per PU		Article No.	Price per PU
Function modules for wye-delta starting									
3RT201, 3RT202, 3RT203	**S00, S0, S2**	Comprising one basic module and two coupling modules Rated control supply voltage 24 ... 240 V AC/DC Time setting range 0.5 ... 60 s (10, 30, 60 s selectable)		A	**3RA2816-0EW20**		A	**3RA2816-0EW20**	
Accessories for 3RA28 function modules									
3RT201, 3RT202, 3RT203	**S00, S0, S2**	**Sealable covers**	PS = 5 units	A	**3RA2910-0**		A	**3RA2910-0**	
Function modules for wye-delta starting for connection to the control system									
					Screw terminals		DT	**Spring-type terminals**	
3RT201, 3RT202, 3RT203	**S00, S0, S2**	**IO-Link connection**, comprising one basic module and two coupling modules, plus an additional module connector for assembling an IO-Link group		A	**3RA2711-1CA00**		A	**3RA2711-2CA00**	
3RT201, 3RT202, 3RT203	**S00, S0, S2**	**AS-Interface connection**, comprising one basic module and two coupling modules		A	**3RA2712-1CA00**		A	**3RA2712-2CA00**	
Accessories for 3RA27 function modules									
3RT201, 3RT202, 3RT203	**S00, S0, S2**	**Module connector set**, comprising: • 2 module connectors, 14-pole, short + 2 interface covers		A	**3RA2711-0EE10**		A	**3RA2711-0EE10**	
		Module connectors							
3RT201, 3RT202, 3RT203	**S00, S0, S2**	• 14-pole, 9 cm For size jump S00-S0 + 1 space		A	**3RA2711-0EE06**		A	**3RA2711-0EE06**	
3RT201, 3RT202, 3RT203	**S00, S0, S2**	• 14-pole, 26 cm For various space combinations		A	**3RA2711-0EE07**		A	**3RA2711-0EE07**	
3RT201, 3RT202, 3RT203	**S00, S0, S2**	• 14-pole, 33.5 cm For various space combinations		A	**3RA2711-0EE08**		A	**3RA2711-0EE08**	
3RT201, 3RT202, 3RT203	**S00, S0, S2**	• 10-pole, 9 cm For separate control signal infeed within an IO-Link group		A	**3RA2711-0EE16**		A	**3RA2711-0EE16**	
3RT201, 3RT202, 3RT203	**S00, S0, S2**	**Sealable covers**	PS = 5 units	A	**3RA2910-0**		A	**3RA2910-0**	

Operator panels for IO-Link, see page 3/202.

Note:

When using the function modules for contactor assemblies for wye-delta starting, no other auxiliary switches are allowed to be connected to the basic units.

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

SIRIUS 3RA14 contactor assemblies for wye-delta starting

Overview

The 3RA14 contactor assemblies for wye-delta starting are designed for standard applications.

Note:

Contactor assemblies for wye-delta starting in special applications such as very heavy starting[1] or wye-delta starting of special motors must be customized. Help with designing such special applications is available from Technical Assistance.

The 3RA14 contactor assemblies for wye-delta starting can be ordered as follows:

Size S3

- Fully wired and tested, with electrical interlock, reversing time up to 10 s
- As individual parts for customer assembly

Sizes S6 to S12

- Only as individual parts for customer assembly

There is also a range of accessories (auxiliary switch blocks, surge suppressors, etc.) that must be ordered separately.

Overload relays for motor protection, see Chapter 7, "Protection Equipment" → "Overload Relays" → "SIRIUS 3RB2 Electronic Overload Relays".

The 3RA14 contactor assemblies have screw terminals. Sizes S2 to S3 are suitable for screw fixing and snap-on mounting onto TH 35 standard mounting rails.

Complete units

Fully wired and tested 3RA14 contactor assemblies have one unassigned NO contact which is mounted onto the front of the Q3 delta contactor.

With the preassembled contactor assembly sizes S2 and S3, 22 to 75 kW, a timing relay is laterally mounted. A dead interval of 50 ms on reversing is already integrated in the time relay function.

[1] For effective support from Technical Assistance you must provide the following details:
- Rated motor voltage
- Rated motor current
- Service factor, operating values
- Motor starting current factor
- Starting time
- Ambient temperature

Rated data at 50 Hz 400 V AC			Size			
Rating *P*	Operational current I_e	Motor current		Line/delta contactor	Star contactor	**Article No. complete assembly**
kW	A	A				
55	115	77.6 ... 108.6	**S3-S3-S2**	3RT1044	3RT1035	**3RA1444-8XC21-1...**
75	150	120.7 ... 150		3RT1045	3RT1036	**3RA1445-8XC21-1...**
90	160	86 ... 160	**S6-S6-S3**	3RT1054	3RT1044	**--**
110	195	86 ... 195				
132	230	86 ... 230		3RT1055	3RT1045	
160	280	86 ... 280		3RT1056	3RT1046	
200	350	95 ... 350	**S10-S10-S6**	3RT1064	3RT1054	**--**
250	430	95 ... 430		3RT1065	3RT1055	
315	540	277 ... 540	**S12-S12-S10**	3RT1075	3RT1064	**--**
355	610	277 ... 610				
400	690	277 ... 690			3RT1065	
500	850	277 ... 850		3RT1076	3RT1066	

Surge suppression

Size S3

All contactor assemblies can be fitted with RC elements, varistors or diode assemblies for damping opening surges in the coil. As with the individual contactors, the surge suppressors can either be plugged onto the top or bottom coil terminals.

Sizes S6 to S12

The contactors are fitted with varistors as standard.

Motor protection

As overload protection, the 3RU11 or 3RB2 overload relays (see table on the next page) or 3RN1 thermistor motor protection releases can be used.

The overload relay can be either mounted onto the line contactor or separately fitted. It must be set to 0.58 times the rated motor current.

SIRIUS 3RA14 contactor assemblies for wye-delta starting

Components for customer assembly

Assembly kits with wiring modules and, if necessary, mechanical connectors are available for contactor assemblies for wye-delta starting. Contactors, overload relays, wye-delta timing relays, auxiliary switches for electrical interlock – if required also infeed terminals, mechanical interlocks and base plates – must be ordered separately.

In the case of sizes S2 to S12 only the bottom main conducting path connection between the delta and star contactors is included in the wiring module, owing to the larger conductor cross-section at the infeed.

Note:

The selection of contactor types refers to fused design.

	Accessories for customer assembly					Overload relay, thermal (CLASS 10 trip class)		Overload relay, electronic (CLASS 10 trip class)	
P **kW**	Timing relays	Assembly kit A, for double infeed	Assembly kit B, for single infeed	Star jumper	Base plates	Setting range A	Article No.	Setting range A	Article No.
55	3RP1574-1N.30	3RA1943-2C[1]	--	3RT1936-4BA31	3RA1942-2E	45 ... 63	3RU1146-4JB0	25 ... 100	3RB2046-1EB0
75						70 ... 90	3RU1146-4LB0		
90	3RP1574-1N.30	--	3RA1953-3D[2]	3RT1946-4BA31	3RA1952-2E	--	--	50 ... 200	3RB2056-1FC2
110									
132									
160									
200	3RP1574-1N.30	--	--	3RT1956-4BA31	3RA1962-2E	--	--	55 ... 250	3RB2066-1GC2
250								160 ... 630	3RB2066-1MC2
315	3RP1574-1N.30	--	--	3RT1966-4BA31	3RA1972-2E	--	--	160 ... 630	3RB2066-1MC2
355									
400									
500									

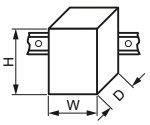
[1] Assembly kit contains wiring module on the bottom (connection between delta and star contactor) and star jumper.

[2] Wiring module on top from reversing contactor assembly (note conductor cross-sections).

SIRIUS 3RA14 contactor assemblies for wye-delta starting

Technical specifications

All technical specifications not mentioned in the table below are identical to those of the individual 3RT1 contactors and 3RU1 overload relays.

Type			**3RA1444**	**3RA1445**
Size			**S3-S3-S2**	**S3-S3-S2**
Dimensions (W x H x D) with base plate				
• DC operation		mm	218 x 180 x 207	
• AC operation		mm	218 x 180 x 194	
General data				
Individual contactors				
• Q1 line contactor		Type	3RT1044	3RT1045
• Q3 delta contactor		Type	3RT1044	3RT1045
• Q2 star contactor		Type	3RT1035	3RT1036
Mechanical endurance		Operating cycles	3 million	
Unassigned auxiliary contacts of the individual contactors			[1]	
Short-circuit protection				
Main circuit without overload relays[2]				
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE with single or double infeed				
Highest rated current of the fuse acc. to IEC 60947-4-1/EN 60947-4-1				
• Type of coordination "1"		A	250	250
• Type of coordination "2"		A	125	160
Control circuit				
Short-circuit test				
• with fuse links of operational class gG: DIAZED, type 5SB; NEOZED, type 5SE with short-circuit current I_k = 1 kA acc. to IEC 60947-5-1		A A	10 6[3], if the auxiliary contact of the overload relay is connected in the contactor coil circuit	
• with miniature circuit breakers with C characteristic with short-circuit current I_k = 400 A		A A	10 6[3], if the auxiliary contact of the overload relay is connected in the contactor coil circuit.	
Main circuit				
Current-carrying capacity with reversing time up to 10 s				
• Rated operational current I_e	At 400 V	A	115	150
	500 V	A	112.6	138.6
	690 V	A	98.7	138.6
• Rated power for three-phase motors at 50 Hz and 60 Hz and	At 230 V	kW	37	49
	400 V	kW	65	85
	500 V	kW	80	98
	690 V	kW	97	136
	1 000 V	kW	--	--
• **Switching frequency** with overload relay		h^{-1}	15	15
Current-carrying capacity with reversing time up to 15 s				
• Rated operational current I_e	At 400 V	A	97	106
	500 V	A	97	106
	690 V	A	97	106
• Rated power for three-phase motors at 50 Hz and 60 Hz and	At 230 V	kW	32	35
	400 V	kW	55	60
	500 V	kW	69	75
	690 V	kW	95	104
	1 000 V	kW	--	--
• **Switching frequency** with overload relay		h^{-1}	15	15
Current-carrying capacity with reversing time up to 20 s				
• Rated operational current I_e	At 400 V	A	85	92
	500 V	A	85	92
	690 V	A	85	92
• Rated power for three-phase motors at 50 Hz and 60 Hz and	At 230 V	kW	28	30
	400 V	kW	48	52
	500 V	kW	60	65
	690 V	kW	83	90
	1 000 V	kW	--	--
• **Switching frequency** with overload relay		h^{-1}	15	15

[1] For circuit diagrams for the control circuit, see Reference Manual "Switching Devices – Contactors and Contactor Assemblies", http://support.automation.siemens.com/WW/view/en/35554359.

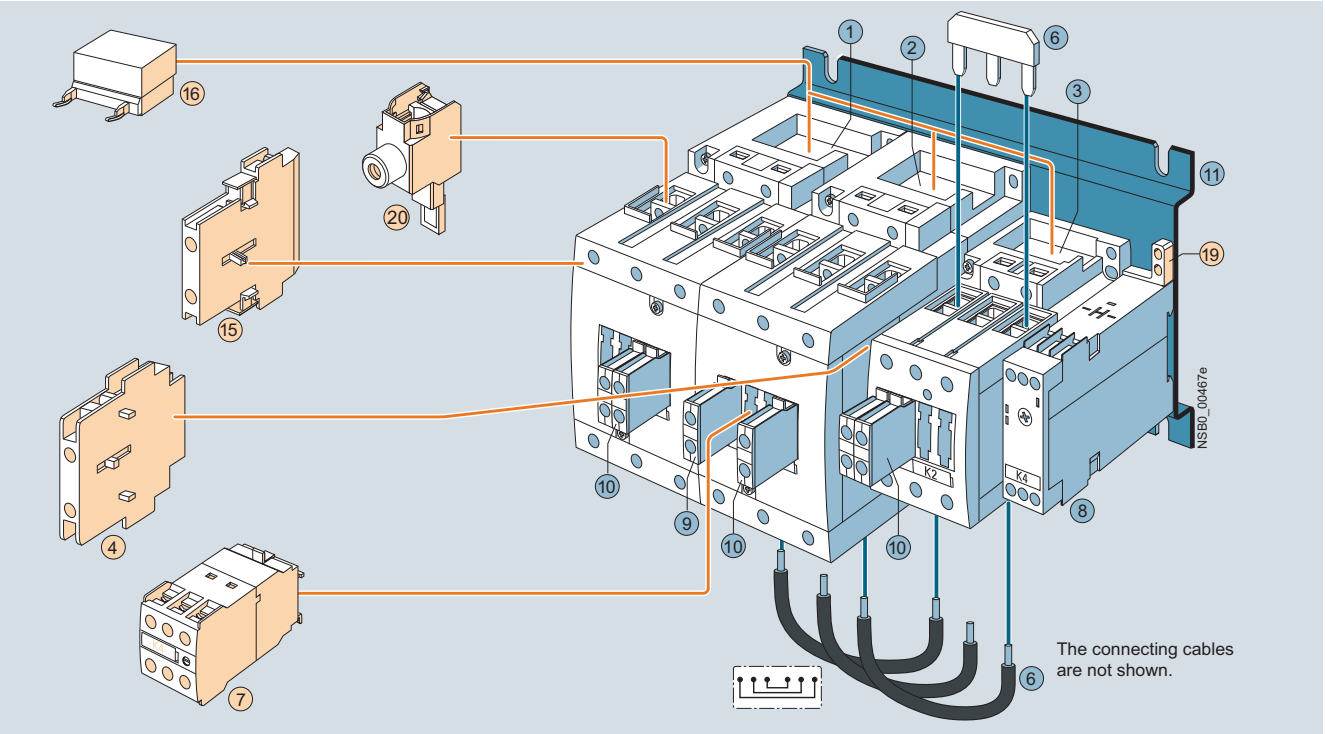
[2] For short-circuit protection with overload relay, see the Configuration Manual "Configuring SIRIUS – Selection Data for Fuseless Load Feeders", http://support.automation.siemens.com/WW/view/en/40625241.

[3] Up to I_k < 0.5 kA; ≤ 260 V.

3

Selection and ordering data

Fully wired and tested contactor assemblies · Size S3-S3-S2 · up to 75 kW



Mountable accessories (optional)

To be ordered separately		Article No.	Page
4	Mech. interlock, lateral, depth compensation required Q3: 0 mm; Q2: 27.5 mm[1]	3RA1924-2B	3/172
7	Solid-state time-delay auxiliary switch block, front[2]	3RT1926-2G...	3/118
15	Auxiliary switch block, lateral	3RH1921-1EA..	3/116
16	Surge suppressor	3RT19.6-1....	3/119
19	Push-in lug for timing relay screw mounting	3RP1903	3) 3/192
20	Single-phase infeed terminals	3RA1943-3L	

Complete contactor assemblies

Individual parts		Article No. Q1	Q3	Q2	Page
1 2 3	Contactor, 55 kW	3RT1044	3RT1044	3RT1035	3/97
1 2 3	Contactor, 75 kW	3RT1045	3RT1045	3RT1036	3/98
8	Timing relay, lateral	3RP1574-1N.30			3)
9	Auxiliary switch block with 1 unassigned NO contact	3RH1921-1CA10			3/114
10	Auxiliary switch block for local control				
	2 units	3RH1921-1CA01			
	3 units	3RH1921-1CA10			3/114
11	Base plate	3RA1942-2E			3/192
6	Assembly kit	3RA1943-2C			3/192

The assembly kit contains the star jumper on the top and the wiring module on the bottom for connecting the main current paths.

1) Use the 3RA1942-2B base plate for this design.

2) Generally possible. If a solid-state time-delay auxiliary switch block is mounted onto the front of Q3, an auxiliary switch block can only be mounted onto the side.

3) See Chapter 10 "Monitoring and Control Devices" → "3RP, 7PV Timing Relays" → "3RP15 Timing Relays in Industrial Enclosure, 22.5 mm".

Rated data AC-3					Rated control supply voltage U_s[1]	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and						Article No.	Price per PU			
400 V	230 V	**400 V**	500 V	690 V							
A	kW	**kW**	kW	kW	V						
AC operation, 50/60 Hz											
115	37	**55**	81	93	24 AC	B	**3RA1444-8XC21-1AC2**		1	1 unit	41B
					110 AC	B	**3RA1444-8XC21-1AG2**		1	1 unit	41B
					230 AC	▶	**3RA1444-8XC21-1AL2**		1	1 unit	41B
150	47	**75**	103	110	24 AC	B	**3RA1445-8XC21-1AC2**		1	1 unit	41B
					110 AC	B	**3RA1445-8XC21-1AG2**		1	1 unit	41B
					230 AC	▶	**3RA1445-8XC21-1AL2**		1	1 unit	41B
DC operation											
115	37	**55**	81	93	24 DC	B	**3RA1444-8XC21-1BB4**		1	1 unit	41B
150	47	**75**	103	110	24 DC	B	**3RA1445-8XC21-1BB4**		1	1 unit	41B

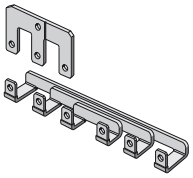
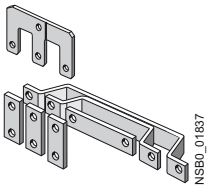
3RA144.-8XC21-1...

1) Coil operating range at 50 Hz: 0.8 ... 1.1 x U_s; at 60 Hz: 0.85 ... 1.1 x U_s.

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

SIRIUS 3RA14 contactor assemblies for wye-delta starting

Components for customer assembly

	Version	Size	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Assembly kits								
 3RA1953-2B	The assembly kit contains: star jumper, wiring module on the bottom (Wiring module on the top is not included in the scope of supply. A double infeed between the line contactor and the delta contactor is recommended.)	**S3-S3-S2**	▶	**3RA1943-2C**		1	1 unit	41B
		S3-S3-S3	▶	**3RA1943-2B**		1	1 unit	41B
		S6-S6-S6	A	**3RA1953-2B**		1	1 unit	41B
		S6-S6-S6	A	**3RA1953-2N**		1	1 unit	41B
		S10-S10-S10	A	**3RA1963-2B**		1	1 unit	41B
		S12-S12-S12	B	**3RA1973-2B**		1	1 unit	41B
 3RA1953-2N, 3RA1963-2B, 3RA1973-2B								
Single-phase feeder terminals								
	Conductor cross-section: 95 mm^2	**S3**	A	**3RA1943-3L**		1	1 unit	41B
Links for paralleling, 3-pole (star jumpers)								
 3RT1936-4BA31	Without connection terminal (the links for paralleling can be reduced by one pole)	**S3**	▶	**3RT1946-4BA31**		1	1 unit	41B
		S6[1)2)]	▶	**3RT1956-4BA31**		1	1 unit	41B
		S10, S12[1)2)]	▶	**3RT1966-4BA31**		1	1 unit	41B
Base plates								
	For customer assembly of contactor assemblies for wye-delta starting with a **laterally mounted** timing relay							
	Side-by-side mounting	**S3, S3, S2**	B	**3RA1942-2E**		1	1 unit	41B
	10 mm distance between Q1, Q3 and Q2	**S6, S6, S3**	B	**3RA1952-2E**		1	1 unit	41B
		S6, S6, S6	B	**3RA1952-2F**		1	1 unit	41B
		S10, S10, S6	B	**3RA1962-2E**		1	1 unit	41B
		S10, S10, S10	B	**3RA1962-2F**		1	1 unit	41B
		S12, S12, S10	B	**3RA1972-2E**		1	1 unit	41B
		S12, S12, S12	B	**3RA1972-2F**		1	1 unit	41B
	For customer assembly of contactor assemblies for wye-delta starting with a **front-mounted** timing relay							
	10 mm distance between Q1, Q3 and Q2	**S3, S3, S2**	B	**3RA1942-2B**		1	1 unit	41B

1) The 3RT1956-4EA1 (for S6) or 3RT1966-4EA1 (for S10 and S12) cover can be used for touch protection.

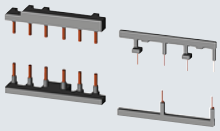
2) Sizes S6 and S10/S12 are approved as star jumpers according to UL and CSA.

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

Overview

The function modules for mounting onto contactors enable the assembly of starters and contactor assemblies for direct-on-line, reversing and wye-delta starting without any additional, complicated wiring of the individual components.

They include the key control functions required for the particular feeder, e.g. timing and interlocking, and can be connected to the control system by either parallel wiring or through IO-Link or AS-Interface.

Version	SIRIUS 3RA28 function modules	SIRIUS 3RA27 function modules for IO-Link[1]	SIRIUS 3RA27 function modules for AS-Interface[1]
For direct-on-line starting	Timing relays: ON-delay or OFF-delay with semiconductor output With screw or spring-type terminals 	With screw or spring-type terminals 	With screw or spring-type terminals 
For reversing starting	Wiring modules for size S00 to S2 contactors With screw or spring-type terminals (with screw terminals for main and control circuit) 	1 function module for size S00 to S2 contactors with screw or spring-type terminals plus the respective wiring modules[1] 	1 function module for size S00 to S2 contactors with screw or spring-type terminals plus the respective wiring modules[1] 
For wye-delta starting	1 function module for size S00 to S2 contactors with screw or spring-type terminals plus the respective wiring modules[2] 	1 function module for size S00 to S2 contactors with screw or spring-type terminals plus the respective wiring modules[2] 	1 function module for size S00 to S2 contactors with screw or spring-type terminals plus the respective wiring modules[2] 
Accessories	Sealable covers 	Operator panel for autonomous control of up to four feeders Module connector for the grouping of starters Connection cable between the operator panel and the feeder group Sealable covers 	AS-Interface addressing unit 3RK1904-2AB02 (see Chapter 2, "Industrial Communication") Sealable covers 

[1] Use of the communication-capable function modules for IO-Link or AS-Interface requires contactors with voltage tap-off; see pages 3/43 and 3/46.

[2] The modules for the control current wiring, which are included in the wiring kit, are not required.

Overview

Simply by being plugged in place, the SIRIUS function modules enable different functionalities required for the assembly of starters to be realized in the feeder. The function modules and wiring kits thus help to reduce the wiring work within the feeder practically to zero.

SIRIUS function modules for direct-on-line starting

The electronic timing relays which can be mounted onto the contactor are available in these versions:

- Sizes S00 and S0 for applications in the range from 24 to 240 V AC/DC (wide voltage range)
- Size S2 for applications in either the range from 24 to 90 V AC/DC or 90 to 240 V AC/DC

Both the electrical and mechanical connection are made by simple snapping on and locking.

A protection circuit (varistor) is integrated in each module.

The electronic timing relay with semiconductor output uses two contact legs to actuate the contactor underneath by means of a semiconductor after the set time *t* has elapsed.

The switching state feedback is performed by a mechanical switching state indicator (plunger). In addition, the auxiliary switches in the contactors are freely accessible and can be used for feedbacks to the control system or for signal lamps.

A sealable cover is available to protect against careless adjustment of the set times.

SIRIUS function modules for reversing starting

The wiring kits for reversing starters enable the cost-effective assembly of contactor assemblies. They can be used for all applications with reversing duty up to 37 kW.

For detailed description, see page 3/160

SIRIUS function modules for wye-delta starting

Both interlocking and timing functions are required for the assembly of wye-delta starters. With the function modules for wye-delta starting and the matching link modules for the main circuit, these starters can be assembled easily and with absolutely no errors.

The entire sequence in the control circuit is integrated in the snap-on modules. This covers:

- An adjustable star time *t* from 0.5 to 60 s
- A non-adjustable dead interval of 50 ms
- Electrical contacting to the contactors by means of coil pick-off (contact legs)
- Feedback of the switching state at the contactor using a mechanical switch position indicator (plunger)
- Electrical interlocking between the contactors

These modules do not require their own terminals and can therefore be used for contactors with both screw and spring-type terminals in all the sizes S00 to S2. To start the wye-delta starter, only the first of the three contactors (line contactor) is actuated. All other functions then take place inside the individual modules.

This also offers advantages if the timing function was previously implemented in a controller, as it again results in a significant reduction in the number of PLC outputs, the programming work and the wiring outlay.

The kits for the main circuit include the mechanical interlock, the star jumper, the wiring modules at the top and at the bottom, and the required connecting clips.

A protection circuit (varistor) is integrated in the basic module.

Application

The snap-on function modules for direct-on-line starting are used above all for realizing timing functions independently of the control system.

With the OFF-delay variant of the timing relay it is possible for example for the fan motor for cooling a main drive to be switched off with a delay so that sufficient cooling after operation is guaranteed even if the plant and its control system have already been switched off.

The ON-delay timing relays enable for example the time-delayed starting of several drives so that the summation starting current does not rise too high, which could result in voltage failure.

The function modules for wye-delta starting are mostly used where current-limiting measures for starting a drive are required, e.g. for large fans and ventilators, and a high level of availability is essential at the same time. This technology has been used with success for several decades and has the additional advantage of requiring relatively little know-how. Through the use of function modules, the assembly work with simple standard components is even easier and error-free.

Benefits

The use of snap-on function modules for direct-on-line starting (timing relays) results in the following advantages:

- Reduction of control current wiring
- Prevention of wiring errors
- Reduction of testing costs
- Implementation of timing functions independently of the control system
- Less space required in the control cabinet compared to a separate timing relay
- No additive protection circuit required (varistor integrated)

For advantages of using wiring kits for the assembly of reversing starters, see page 3/161.

The use of function modules for wye-delta starting results in the following advantages:

- Operation solely through the line contactor A1/A2 – no further wiring needed
- Reduction of the control current wiring inside the contactor assembly and to the higher-level control system where applicable
- Prevention of wiring errors
- Reduction of testing costs
- Integrated electrical interlocking saves costs and prevents errors
- Less space needed in the control cabinet compared to using a separate timing relay
- Adjustable starting in star mode from 0.5 to 60 s
- Independent of the contactor's control supply voltage (24 to 240 V AC/DC)
- Varistor integrated – no additive protection circuit required
- No control current wiring thanks to plug-in technology and connecting cables
- Mechanically coded assembly enables easy configuration and reliable wiring
- Fewer versions – one module kit for screw and spring-type connection and for all the contactor sizes S00 to S2
- Mechanical interlocking (with wiring kit for the main circuit)

Technical specifications

Type			**3RA2811**	**3RA2831**	**3RA2812**	**3RA2832**	**3RA2816**		
Can be used for size			**S00, S0**	**S2**	**S00, S0**	**S2**	**S00, S0, S2**		
Function			**ON-delay**		**OFF-delay with control signal**		**Wye-delta function**		
Dimensions			See 3RT20 contactors, pages 3/19 and 3/24						
General data									
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III		V AC	300						
Rated impulse withstand voltage U_{imp}		kV AC	4						
Operating range of excitation			0.85 ... 1.1 x U_s, 0.95 ... 1.05 times the rated frequency						
Overvoltage protection			Varistor integrated						
Rated power		W	1				1		
• Power consumption at 230 V AC, 50 Hz		VA	1				2		
DIAZED protection	Operational class gG	A	--				4		
Switching frequency for load									
• With I_e at 230 V AC		h^{-1}	2 500				--		
• With 3RT2 contactor at 230 V AC		h^{-1}	2 500				--		
Recovery time		ms	50				150		
Minimum ON period		ms	--		35		--		
Residual current	Max.	mA	5	--			--		
Voltage drop With conducting output	Max.	VA	3.5	--			--		
Setting accuracy With reference to upper limit of scale	Typ.		±15 %						
Repeat accuracy	Max.		±1 %						
Electrical endurance									
• With 3RT2028 contactor		Operating cycles	100 000				--		
• At AC-15, 250 V, 3 A		Operating cycles	--				100 000		
Mechanical endurance		Operating cycles	100 x 10^6				10 x 10^6		
Permissible ambient temperature									
• During operation		°C	-25 ... +60						
• During storage		°C	-40 ... +80						
Degree of protection acc. to IEC 60947-1, Appendix C			IP20						
Shock resistance Half-sine acc. to IEC 60068-2-27		g/ms	15/11						
Vibration resistance According to IEC 60068-2-6		Hz/mm	10 ... 55/0.35						
Electromagnetic compatibility (EMC)			IEC 61000-6-2, IEC 61000-6-4, IEC 61812-1, IEC 60947-4-1						
Overvoltage protection			Varistor integrated						
Permissible mounting position			Any (see contactor)						
Conductor cross-sections									
Connection type (1 or 2 conductors can be connected)			**Screw terminals**						
• Solid		mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)				--		
• Finely stranded with end sleeve		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)				--		
• AWG cables, solid or stranded		AWG	2 x (20 ... 14)				--		
• Terminal screws			M3 (for standard screw driver size 2 or Pozidriv 2)				--		
• Tightening torque		Nm	0.8 ... 1.2				--		
Connection type (1 or 2 conductors can be connected)			**Spring-type terminals**						
• Operating devices		mm	3.0 x 0.5				--		
• Solid		mm^2	2 x (0.25 ... 1.5)				--		
• Finely stranded with end sleeve		mm^2	2 x (0.25 ... 1.5)				--		
• Finely stranded		mm^2	2 x (0.25 ... 1.5)				--		
• AWG cables, solid or stranded		AWG	2 x (24 ... 16)				--		

3

Selection and ordering data

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

3RA2811-1CW10

3RA2811-2CW10

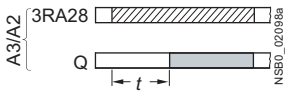
For contactors	Rated control supply voltage U_s [1]	Time setting range t	DT	Screw terminals	DT	Spring-type terminals
Type	V AC/DC	s		Article No. / Price per PU		Article No. / Price per PU
Electronic timing relays with semiconductor output, for snapping onto the front						
	The electrical connection between the timing relay and the contactor underneath is established automatically when it is snapped on and locked.					
	ON-delay Two-wire design, varistor integrated					
3RT201., 3RT202., 3RH21[2], 3RH24	24 ... 240	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2811-1CW10**	A	**3RA2811-2CW10**
3RT203.	24 ... 90	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2831-1DG10**	A	**3RA2831-2DG10**
	90 ... 240		A	**3RA2831-1DH10**	A	**3RA2831-2DH10**
	OFF-delay with control signal Varistor integrated					
3RT201., 3RT202., 3RH21[2], 3RH24	24 ... 240	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2812-1DW10**	A	**3RA2812-2DW10**
3RT203.	24 ... 90	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2832-1DG10**	A	**3RA2832-2DG10**
	90 ... 240		A	**3RA2832-1DH10**	A	**3RA2832-2DH10**
Accessories						
	Sealable covers for 3RA27, 3RA28, 3RA29		A	**3RA2910-0**	A	**3RA2910-0**

[1] AC voltage values apply for 50 Hz and 60 Hz.

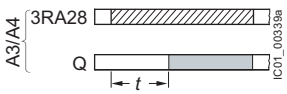
[2] Cannot be fitted onto coupling relays.

For manuals, see http://support.automation.siemens.com/WW/view/de/60279150

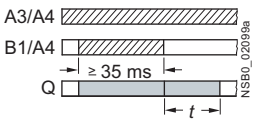
Function	Function charts
	Timing relay energized
	Contact closed
	Contact open
1 NO contact (semiconductor output)	
ON-delay	3RA2811-.CW10



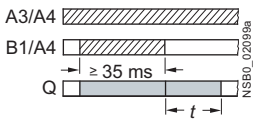
3RA2831-.D.10



OFF-delay with control signal — 3RA2812-.DW10



3RA2832-.D.10

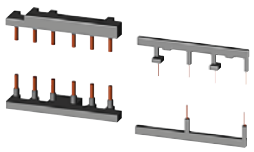


* You can order this quantity or a multiple thereof.
Illustrations are approximate

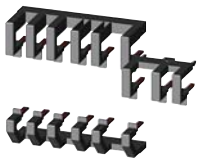
Selection and ordering data

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

3RA2816-0EW20



3RA2923-2AA1



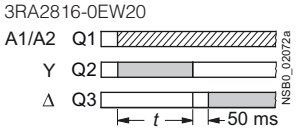
3RA2923-2BB2

For contactors	Rated control supply voltage U_s [1]	Time setting range t	DT	Screw terminals	DT	Spring-type terminals
Type	V AC/DC	s		Article No. / Price per PU		Article No. / Price per PU
Assembly kits for reversing starting						
	Assembly kits for making 3-pole contactor assemblies The assembly kit contains: Mechanical interlock, 2 connecting clips for 2 contactors, wiring modules on the top and bottom					
3RT201.	• For size S00		►	**3RA2913-2AA1**	►	**3RA2913-2AA2**
3RT202.	• For size S0		►	**3RA2923-2AA1**	►	**3RA2923-2AA2**
3RT203.	• For size S2 (only for main circuit for version with spring-type terminals)		►	**3RA2933-2AA1**	B	**3RA2933-2AA2**
Assembly kits for wye-delta starting						
	Assembly kits for making 3-pole contactor assemblies The assembly kit contains: Mechanical interlock, 4 connecting clips for 3 contactors; star jumper, wiring modules on the top and bottom					
3RT201.	• For size S00		►	**3RA2913-2BB1**	►	**3RA2913-2BB2**
3RT202.	• For size S0 (only for main circuit for version with spring-type terminals)		►	**3RA2923-2BB1**	►	**3RA2923-2BB2**
3RT203.	• For size S2 (only for main circuit for version with spring-type terminals)		►	**3RA2933-2BB1**	B	**3RA2933-2BB2**
Function modules for wye-delta starting						
	The electrical connection between the function module and the contactor assembly is established automatically by snapping on and plugging in the connecting cables. **Wye-delta function** (varistor integrated)					
3RT201., 3RT202., 3RT203. [2]	24 ... 240	0.5 ... 60 (10, 30, 60; selectable)	A	**3RA2816-0EW20**	A	**3RA2816-0EW20**
Accessories						
	Sealable covers for 3RA27, 3RA28, 3RA29		A	**3RA2910-0**	A	**3RA2910-0**

[1] AC voltage values apply for 50 Hz and 60 Hz.

[2] Cannot be fitted onto coupling relays.

For manuals, see
http://support.automation.siemens.com/WW/view/en/60279150.

Function	Function charts
	Timing relay energized Contact closed Contact open
2 NO contacts (interconnected internally)	
Wye-delta function • 1 NO contact delayed • 1 NO contact instantaneous	3RA2816-0EW20 

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

Overview

The SIRIUS function modules for IO-Link enable the assembly of starters and contactor assemblies for direct-on-line, reversing and wye-delta starting without any additional, complicated wiring of the individual components. They include the key control functions required for the particular feeder, e.g. timing and interlocking.

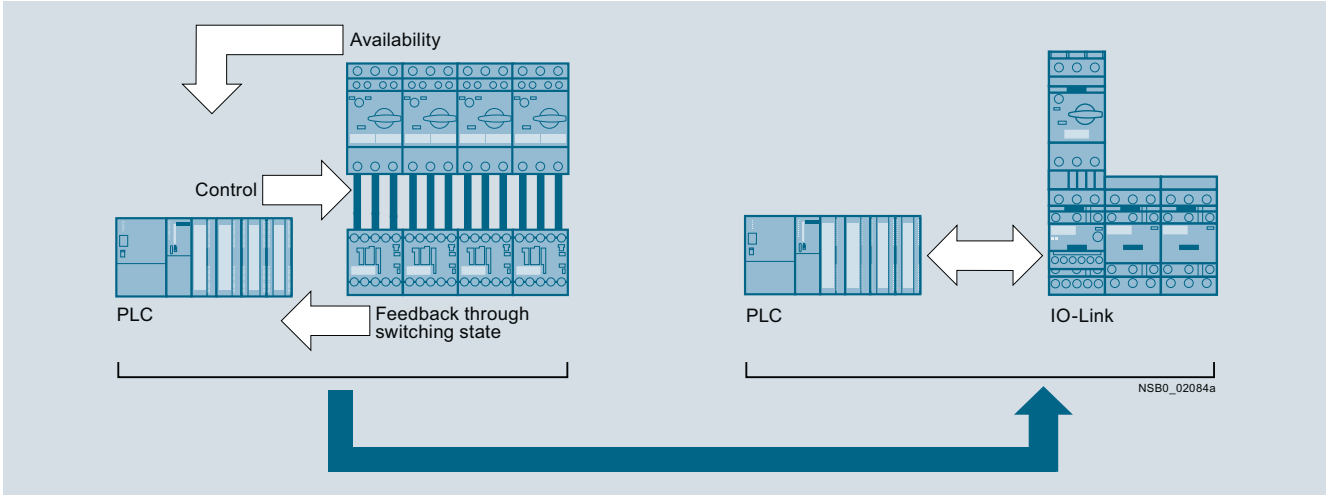
The electrical and mechanical connection to the contactor is established by snapping on and locking. An additive protection circuit for the individual contactors can be dispensed with completely because a varistor is integrated in the modules. Feedback from the contactor contacts is performed with Hall sensors which provide reliable feedback concerning the switching state even under extremely dusty conditions.

The starters are connected to the higher-level control system through IO-Link, with the possibility of connecting up to four starters as a group to one port of the IO-Link master.

Through this type of connection to the control system, a maximum of wiring is saved.

The following essential signals are transmitted:

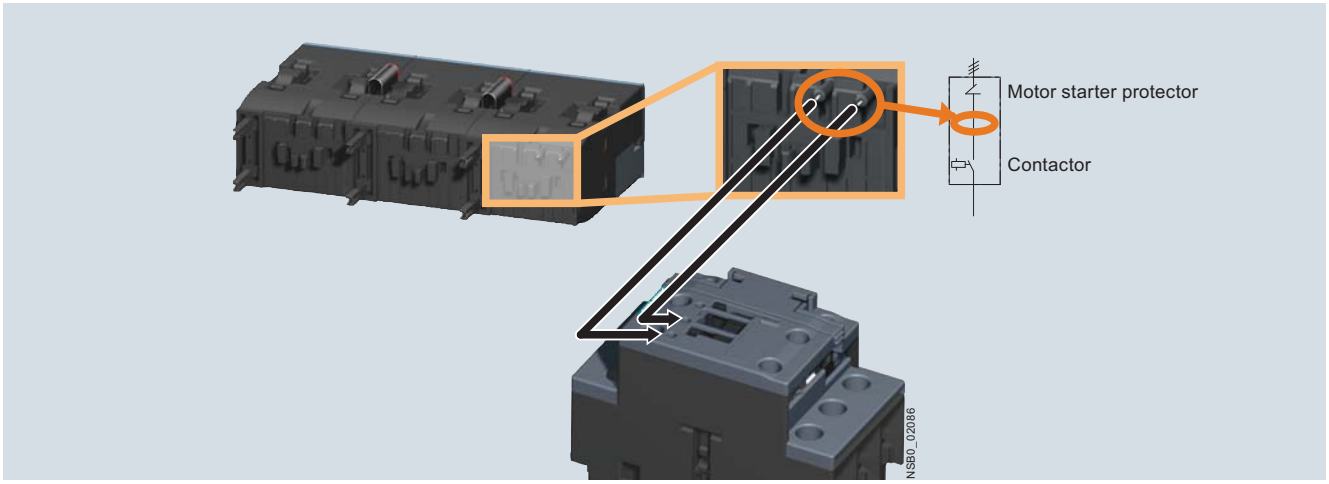
- Availability of the feeder in response to an indirect inquiry from the motor starter protector/circuit breaker
- Starter control
- Feedback concerning the switching state of the starter



Signal transmission through IO-Link

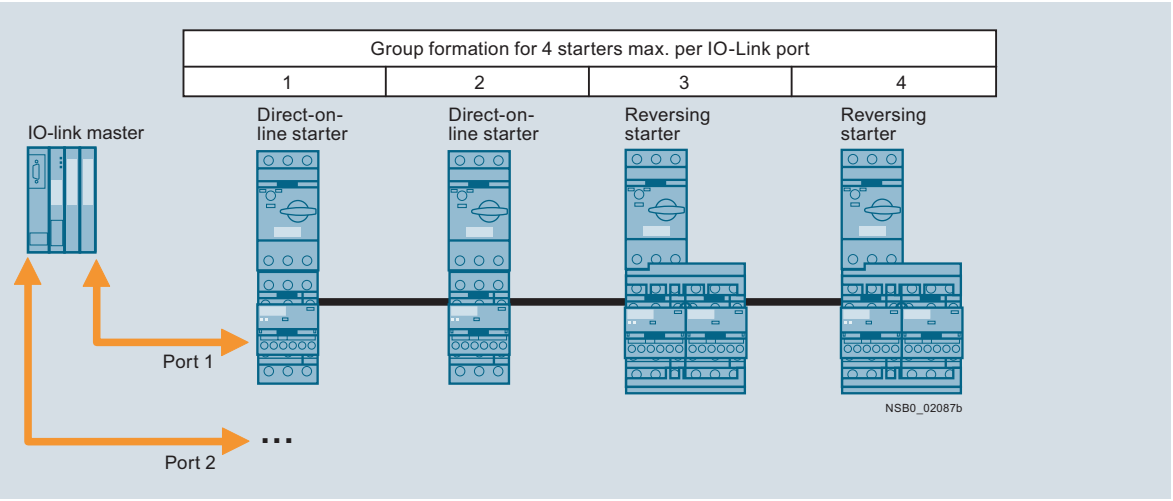
The inquiry from the motor starter protector/circuit breaker does not take place through additive wiring between the auxiliary switch and the module but by means of a voltage inquiry at the contactor input.

This requires special versions of the contactors with voltage tap-off (see pages 3/43 and 3/46).



Availability signal through voltage tap-off

By grouping up to four starters it is possible to connect up to 16 starters to one master of the ET 200S. In this case all the signals of the individual controls are made available directly in the process image of the input through only three individual wires per starter group. If the same potential is present at the ET 200S master and at the switching devices, the wiring can be reduced further by connecting the supply voltage of the contactor coils to the communication wires via jumpers.



Group formation with IO-Link

In case of a malfunction, the corresponding error signals are also sent directly to the PLC in acyclic mode. This is in addition to transmission of the switching signals and status signals.

Possible error signals:

- Switching element defective
- No main voltage (motor starter protector tripped)
- No control supply voltage
- Limit position on the right / on the left
- Manual mode
- Process image fault

This easy integration of the starters in the TIA world does not limit the flexibility in the field in the least. For example, all function modules have special terminals in order to enable direct local disconnection. These terminals can be connected for example to a position switch. The input interrupts the voltage supply to the contactor coil directly, i.e. without going through the PLC. These terminals are jumpered in the as-delivered state.

Local manual operation of the complete starter group is also straight-forward using a hand-held device. The latter is easily connected to the last starter and can be built into the front panel of the control cabinet if required. This offers significant advantages particularly for commissioning.

Application

The use of SIRIUS function modules with IO-Link is recommended above all in machines and plants in which there are several motor feeders in one control cabinet. Using IO-Link, the connection of these feeders to the automation level is easy, quick and error-free. And with IO modules no longer needed, the width of the PLC is far smaller.

Benefits

- Reduction of the control current wiring to no more than three cables for four feeders
- Elimination of testing costs and wiring errors
- Reduction of configuration work
- Integration in TIA means clear diagnostics if a fault occurs
- Dispensing with IO modules saves space in the control cabinet
- All essential timing and interlocking functions for reversing duty and wye-delta starting are integrated
- No additive protection circuit required

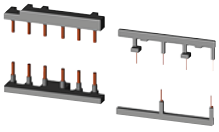
For further information on the IO-Link, see Chapter 2 "Industrial Communication".

Technical specifications

Type			**3RA2711**
Dimensions			See 3RT20 contactors, pages 3/19 and 3/24
General data			
Suitable for IO-Link masters acc. to specification			1.1
Permissible ambient temperature			
• During operation	According to IEC 60947-1	°C	-25 ... +60
• During storage	According to IEC 60721-3-1	°C	-40 ... +80
• During transport	According to IEC 60721-3-2	°C	-40 ... +80
Degree of protection			IP20
Operational voltage U_{Hi}		V DC	24 ± 20 %
Max. length of the cables for the input Y1–Y2	According to EN 50295	m	30
Electromagnetic compatibility (EMC)			IEC 61000-6-2, IEC 61000-6-4, IEC 60947-4-1
Conductor cross-sections			
Connection type (1 or 2 conductors can be connected)			**Screw terminals**
• Solid		mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)
• Finely stranded with end sleeve		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)
• AWG cables		AWG	2 x (20 ... 14)
• Terminal screws			M3 (for standard screwdriver Ø 6 mm or Pozidriv 2)
• Tightening torque of the terminal screws		Nm	0.8 ... 1.2
Connection type (1 or 2 conductors can be connected)			**Spring-type terminals**
• Operating devices		mm	3.0 x 0.5
• Solid		mm^2	2 x (0.25 ... 1.5)
• Finely stranded with end sleeve		mm^2	2 x (0.25 ... 1.5)
• Finely stranded		mm^2	2 x (0.25 ... 1.5)
• AWG cables		AWG	2 x (24 ... 16)

Selection and ordering data

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

	Version	DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Function modules for direct-on-line starting							
 3RA2711-1AA00	**IO-Link connection** Includes one module connector for assembling an IO-Link group	A	**3RA2711-1AA00**		A	**3RA2711-2AA00**	
 3RA2711-2AA00							
Function modules for reversing starting[1]							
 3RA2711-1BA00	**IO-Link connection**, comprising one basic and one coupling module and an additional module connector for assembling an IO-Link group	A	**3RA2711-1BA00**		A	**3RA2711-2BA00**	
 3RA2711-2BA00							
 3RA2923-2AA1	**Assembly kits for making 3-pole contactor assemblies** The assembly kit contains: mechanical interlock, 2 connecting clips for two contactors, wiring modules on the top and bottom						
	• For size S00	▶	**3RA2913-2AA1**		▶	**3RA2913-2AA2**	
	• For size S0						
	- For main, auxiliary and control circuits	▶	**3RA2923-2AA1**			**--**	
	- Only for main circuit[2]		**--**		▶	**3RA2923-2AA2**	
 3RA2923-2AA2	• For size S2 NEW						
	- For main, auxiliary and control circuits	▶	**3RA2933-2AA1**			**--**	
	- Only for main circuit[2]		**--**		B	**3RA2933-2AA2**	

[1] For prewired contactor assemblies for reversing starting with voltage tap-off, see pages 3/163 and 3/165. When these contactor assemblies are used, the assembly kit for the wiring is already integrated.

[2] Version in sizes S0 and S2 with spring-type terminals:
Only the wiring modules for the main circuit are included.
No connectors are included for the auxiliary and control circuit.

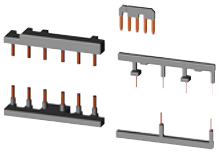
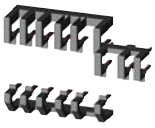
Matching contactors with voltage tap-off required; see pages 3/43 and 3/46.

For matching IO-Link masters, see Chapter 2 "Industrial Communication".

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

Function Modules
SIRIUS 3RA27 Function Modules for IO-Link for Mounting on 3RT2 Contactors

For direct-on-line starting / for reversing starting / for wye-delta starting

Version	DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Function modules for wye-delta starting[1]						
 3RA2711-1CA00 **IO-Link connection**, comprising one basic module and two coupling modules, plus an additional module connector for assembling an IO-Link group	A	**3RA2711-1CA00**		A	**3RA2711-2CA00**	
 3RA2923-2BB1 **Assembly kits for making 3-pole contactor assemblies**[2] The assembly kit contains: mechanical interlock, 4 connecting clips for 3 contactors; star jumper, wiring modules on the top and bottom						
• For size S00	▶	**3RA2913-2BB1**		▶	**3RA2913-2BB2**	
• For size S0						
- For main, auxiliary and control circuits	▶	**3RA2923-2BB1**			--	
- Only for main circuit[3]		--		▶	**3RA2923-2BB2**	
 3RA2923-2BB2 • For size S2 NEW						
- For main, auxiliary and control circuits	▶	**3RA2933-2BB1**			--	
- Only for main circuit[3]		--		B	**3RA2933-2BB2**	

[1] For complete contactor assemblies for wye-delta starting including function modules, see pages 3/180 and 3/182.

[2] When using the function modules for wye-delta starting, the wiring modules for the auxiliary current are not required.

[3] Version in sizes S0 and S2 with spring-type terminals:
Only the wiring modules for the main circuit are included.
No connectors are included for the auxiliary and control circuit.

Matching contactors with voltage tap-off required; see pages 3/43 and 3/46.

For matching IO-Link masters, see Chapter 2 "Industrial Communication".

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories						
 3RA2711-0EE10 **Module connector set**, comprising: • 2 module connectors, 14-pole, short • 2 interface covers	NEW A	**3RA2711-0EE10**		1	1 unit	41B
Module connectors						
• 14-pole, 9 cm For size jump + 1 space	NEW A	**3RA2711-0EE06**		1	1 unit	41B
 3RA2711-0EE06 • 14-pole, 26 cm For various space combinations	NEW A	**3RA2711-0EE07**		1	1 unit	41B
• 14-pole, 33.5 cm For various space combinations	NEW A	**3RA2711-0EE08**		1	1 unit	41B
 3RA2711-0EE15 • 10-pole, 9 cm For separate control signal infeed within an IO-Link group	NEW A	**3RA2711-0EE15**		1	1 unit	41B
Interface covers (Set of 5)	NEW A	**3RA2910-0**		1	5 units	41B
 3RA2910-0 **Sealable covers** For 3RA27, 3RA28, 3RA29	A					
Operator panels[1]						
 3RA6935-0A **Operator panel (set)**, comprising: • 1 x operator panel • 1 x enabling module • 1 x interface cover • 1 x fixing terminal	A	**3RA6935-0A**		1	1 unit	42F
 3RA2711-0EE11 **Connection cable**, length 2 m, 10- to 14-pole For connecting the operator panel to the communication module	A	**3RA2711-0EE11**		1	1 unit	41B
Enabling modules (replacement)	A	**3RA6936-0A**		1	1 unit	42F
Interface covers (replacement)	A	**3RA6936-0B**		1	5 units	42F

[1] Suitable only for communication through IO-Link.

For manuals, see http://support.automation.siemens.com/WW/view/en/39319600.

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

3

Overview

The SIRIUS function modules for AS-Interface enable the assembly of starters and contactor assemblies for direct-on-line, reversing and wye-delta starting without any additional, complicated wiring of the individual components. They include the key control functions required for the particular feeder, e.g. timing and interlocking.

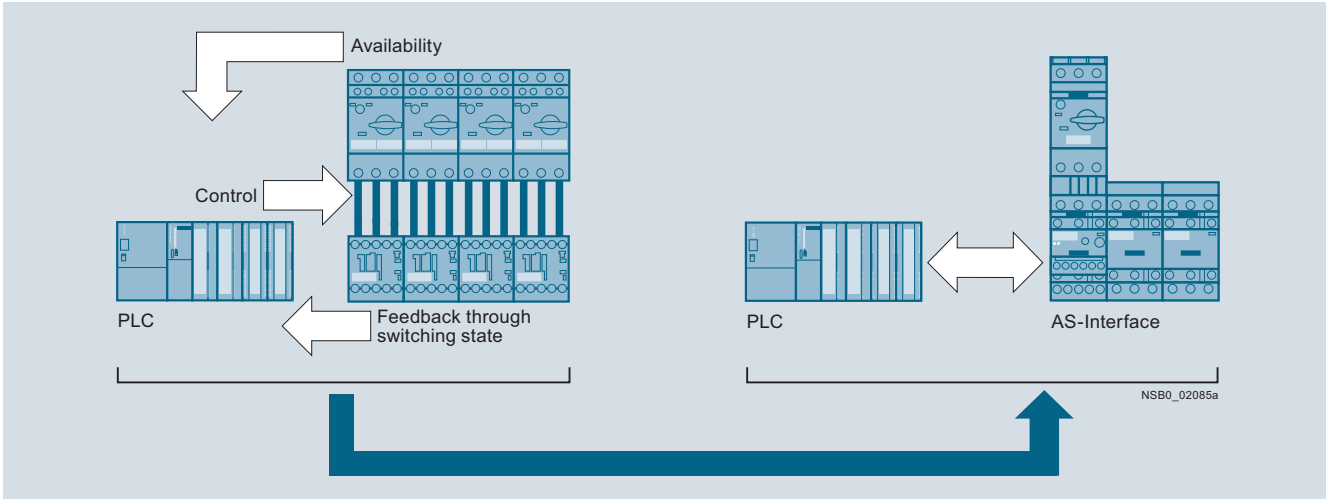
The electrical and mechanical connection to the contactor is established by snapping on and locking. An additive protection circuit for the individual contactors can be dispensed with completely because a varistor is integrated in the modules. Feedback from the contactor contacts is performed with Hall sensors which provide reliable feedback concerning the switching state even under extremely dusty conditions.

Connection of the starters to the higher-level control system takes place with AS-Interface Specification V2.1 and higher in A/B technology. As the result, up to 62 starters can be connected to one master and the address is entered in normal manner with an addressing unit.

Through this type of connection to the control system, a maximum of wiring is saved. The wiring outlay is reduced to the control supply voltage and the two individual wires for AS-Interface.

The following essential signals are transmitted:

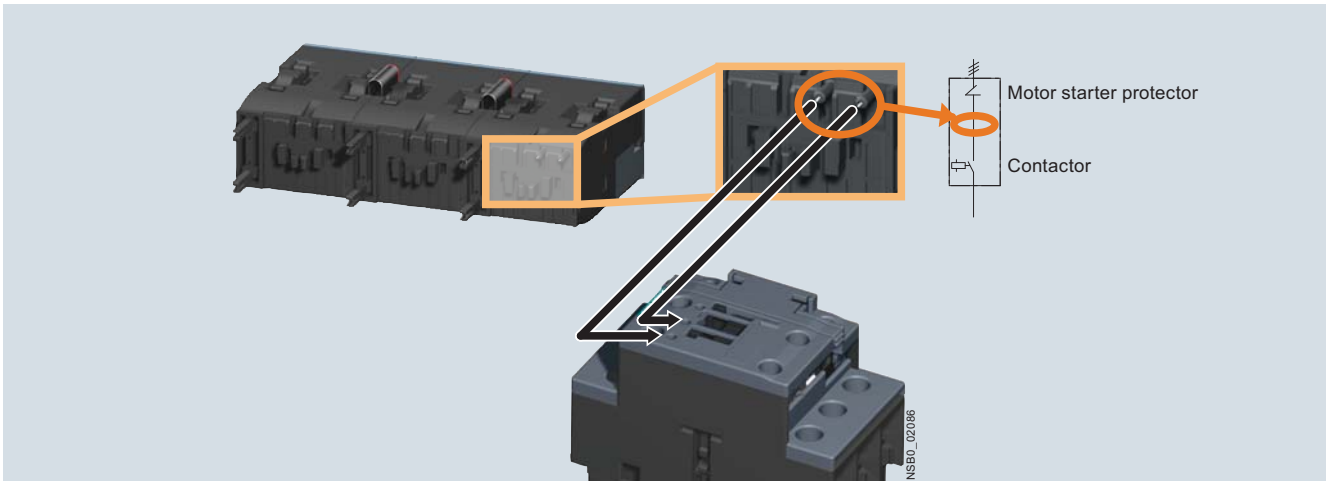
- Availability of the feeder in response to an indirect inquiry from the motor starter protector/circuit breaker
- Starter control
- Feedback concerning the switching state of the starter



Signal transmission through AS-Interface

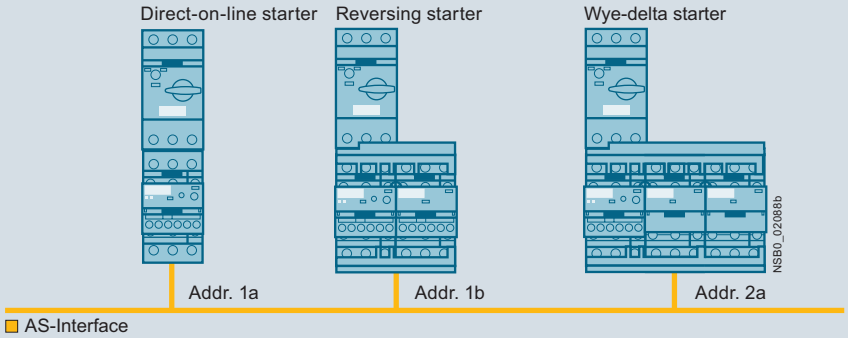
The inquiry from the motor starter protector/circuit breaker does not take place through additive wiring between the auxiliary switch and the module but by means of a voltage inquiry at the contactor input.

This requires special versions of the contactors with voltage tap-off (see pages 3/43 and 3/46).



Availability signal through voltage tap-off

Introduction



Topology with AS-Interface

This easy integration of the starters in the TIA world does not limit the flexibility in the field in the least. For example, all function modules have special terminals in order to enable direct local disconnection. These terminals can be connected for example to a position switch. The input interrupts the voltage supply to the contactor coil directly, i.e. without going through the PLC. These terminals are jumpered in the as-delivered state.

Application

The use of SIRIUS function modules with AS-Interface is recommended above all in machines and plants requiring easy connection of several different sensors and actuators both inside and outside the control cabinet to the higher-level control system. And with IO modules no longer needed, the width of the PLC is far smaller.

Benefits

- Reduction of control current wiring
- Elimination of testing costs and wiring errors
- Reduction of configuration work
- Dispensing with IO modules saves space in the control cabinet
- All essential timing and interlocking functions for reversing duty and wye-delta starting are integrated
- No additive protection circuit required

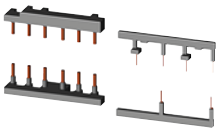
Technical specifications

Type			**3RA2712**
Dimensions			See 3RT20 contactors, pages 3/19 and 3/24
General data			
Slave type			A/B slave
Suitable for AS-i masters acc. to Spec.			2.1 or higher
AS-i Slave Profile IO.ID.ID2			7.A.E
ID1 Code (factory setting)			7
Permissible ambient temperature			
• During operation	According to IEC 60947-1	°C	-25 ... +60
• During storage	According to IEC 60721-3-1	°C	-40 ... +80
• During transport	According to IEC 60721-3-2		-40 ... +80
Degree of protection			IP20
Operational voltage			
• AS-Interface		V	26.5 ... 31.6
• AUX PWR 24 V DC		V	24 ± 20 %
Power consumption, max.			
• AS-Interface		mA	30
• AUX PWR			
- Maximum pick-up/hold current	Size S00 Size S0 Size S2	mA mA mA	200/200 300/300 1300/50
Max. length of the cables for the input Y1–Y2	According to EN 50295	m	30
Electromagnetic compatibility (EMC)			IEC 61000-6-2, IEC 61000-6-4, IEC 60947-4-1
Conductor cross-sections			
Connection type (1 or 2 conductors can be connected)			**Screw terminals**
• Solid		mm^2	1 x (0.5 ... 4), 2 x (0.5 ... 2.5)
• Finely stranded with end sleeve		mm^2	1 x (0.5 ... 2.5), 2 x (0.5 ... 1.5)
• AWG cables		AWG	2 x (20 ... 14)
• Terminal screws			M3 (for standard screwdriver Ø 6 mm or Pozidriv 2)
• Tightening torque of the terminal screws		Nm	0.8 ... 1.2
Connection type (1 or 2 conductors can be connected)			**Spring-type terminals**
• Operating devices		mm	3.0 x 0.5
• Solid		mm^2	2 x (0.25 ... 1.5)
• Finely stranded with end sleeve		mm^2	2 x (0.25 ... 1.5)
• Finely stranded		mm^2	2 x (0.25 ... 1.5)
• AWG cables		AWG	2 x (24 ... 16)

3

Selection and ordering data

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

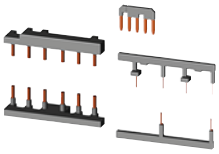
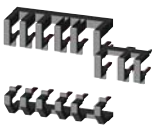
	Version	DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Function modules for direct-on-line starting							
 3RA2712-1AA00	**AS-Interface connection**	A	**3RA2712-1AA00**		A	**3RA2712-2AA00**	
 3RA2712-2AA00							
Function modules for reversing starting[1]							
 3RA2712-1BA00	**AS-Interface connection**, comprising one basic and one coupling module	A	**3RA2712-1BA00**		A	**3RA2712-2BA00**	
 3RA2712-2BA00							
 3RA2923-2AA1	**Assembly kits for making 3-pole contactor assemblies** The assembly kit contains: mechanical interlock, 2 connecting clips for two contactors, wiring modules on the top and bottom						
	• For size S00	▶	**3RA2913-2AA1**		▶	**3RA2913-2AA2**	
	• For size S0						
	- For main, auxiliary and control current	▶	**3RA2923-2AA1**			**--**	
	- Only for main current		**--**		▶	**3RA2923-2AA2**	
 3RA2923-2AA2	• For size S2 NEW						
	- For main, auxiliary and control current	▶	**3RA2933-2AA1**			**--**	
	- Only for main current		**--**		B	**3RA2933-2AA2**	

[1] For prewired contactor assemblies for reversing starting with voltage tap-off, see pages 3/163 and 3/165. When these contactor assemblies are used, the assembly kit for the wiring is already integrated.

Matching contactors with voltage tap-off required; see pages 3/43 and 3/46.

For matching AS-Interface masters, routers and power supply units, see Chapter 2 "Industrial Communication".

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

Version	DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Function modules for wye-delta starting[1]						
 3RA2712-1CA00  3RA2712-2CA00 **AS-Interface connection**, comprising one basic module and two coupling modules	A	**3RA2712-1CA00**		A	**3RA2712-2CA00**	
 3RA2923-2BB1 **Assembly kits for making 3-pole contactor assemblies** The assembly kit contains: mechanical interlock, 4 connecting clips for 3 contactors; star jumper, wiring modules on the top and bottom						
• For size S00	▶	**3RA2913-2BB1**		▶	**3RA2913-2BB2**	
• For size S0						
- For main, auxiliary and control circuits	▶	**3RA2923-2BB1**			**--**	
- Only for main circuit		**--**		▶	**3RA2923-2BB2**	
 3RA2923-2BB2 • For size S2 NEW						
- For main, auxiliary and control circuits	▶	**3RA2933-2BB1**			**--**	
- Only for main circuit		**--**		B	**3RA2933-2BB2**	

[1] For complete contactor assemblies for wye-delta starting including function modules, see pages 3/180 and 3/182.

Matching contactors with voltage tap-off required; see pages 3/43 and 3/46.

For matching AS-Interface masters, routers and power supply units, see Chapter 2 "Industrial Communication".

Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Accessories						
 3RA2711-0EE10 **Module connector set**, comprising: • 2 module connectors, 14-pole, short • 2 interface covers	NEW A	**3RA2711-0EE10**		1	1 unit	41B
 3RA2711-0EE06 **Module connectors** • 14-pole, 9 cm For size jump + 1 space	NEW A	**3RA2711-0EE06**		1	1 unit	41B
 3RA2711-0EE15 **Interface covers** (Set of 5)	NEW A	**3RA2711-0EE15**		1	1 unit	41B
 3RA2910-0 **Sealable covers** For 3RA27, 3RA28, 3RA29	A	**3RA2910-0**		1	5 units	41B

For manuals, see http://support.automation.siemens.com/WW/view/en/39318922.

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

Notes