Switching Devices – Contactors and Contactor Assemblies – for Switching Motors

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 · 2014 in the DVD box IC 01
- in the Catalog Add-On IC 10 AO · 2014 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

Power Contactors for Switching Motors

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. 3/28, 3/30)				(p. 3/33, 3/35)					
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. 3/53)	**3RH2911**	(p. 3/53)	
	Lateral	**3RH2911**	(p. 3/55)	**3RH2921**	(p. 3/55)	
Timing relay blocks		**3RA281.**	(p. 3/186)	**3RA281.**	(p. 3/186)	
Function modules		**3RA271.-. AA00**	(p. 3/157, 3/172)	**3RA271.-. AA00**	(p. 3/157, 3/172)	
Surge suppressors		**3RT2916**	(p. 3/59)	**3RT2926**	(p. 3/59)	

3RU2 and 3RB3 overload relays (Chapter 7, "Protection Equipment" → "Overload Relays")				
3RU21, thermal, CLASS 10	**3RU2116**	0.11 ... 16 A	**3RU2126**	1.8 ... 40 A
3RB30/3RB31, solid-state, CLASS 5, 10, 20 and 30	**3RB3016** **3RB3113**	0.1 ... 16 A	**3RB3026** **3RB3123**	0.1 ... 40 A

3RV20 motor starter protectors (Chapter 7, "Protection Equipment" → "Motor Starter Protectors")				
Type	**3RV2011**	0.11 ... 16 A	**3RV2021**	11 ... 40 A
Link modules	**3RA2911**		**3RA2921**	

3RA23 reversing contactor assemblies												
Complete units	Type	**3RA2315**	**3RA2316**	**3RA2317**	**3RA2318**	**--**	**3RA2324**	**3RA2325**	**3RA2326**	**3RA2327**	**3RA2328**
		(p. 3/153)					(p. 3/155)				
400 V	**kW**	**3**	**4**	**5.5**	**7.5**		**5.5**	**7.5**	**11**	**15**	**18.5**
Assembly kits/wiring modules		**3RA2913-2AA.**		(p. 3/156)		**--**	**3RA2923-2AA.**		(p. 3/156)		
Function modules		**3RA271.-. BA00**		(p. 3/157)		**--**	**3RA271.-. BA0**		(p. 3/157)		

3RA24 contactor assemblies for wye-delta starting								
Complete units	Type	**3RA2415**	**3RA2416**	**3RA2417**	**3RA2423**	**3RA2425**	**3RA2426**	
		(p. 3/168)			(p. 3/170)			
400 V	**kW**	**5.5**	**7.5**	**11**	**11**	**15/18.5**	**22**	
Assembly kits/wiring modules		**3RA2913-2BB.**		(p. 3/171)	**3RA2923-2BB.**		(p. 3/171)	
Function modules		**3RA271.-. CA00**		(p. 3/172)	**3RA271.-. CA00**		(p. 3/172)	

Note:

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

Size		S2			S3			S6		
Type		3RT103			3RT104			3RT105		
3RT10 contactors										
Type		**3RT1034**	**3RT1035**	**3RT1036**	**3RT1044**	**3RT1045**	**3RT1046**	**3RT1054**	**3RT1055**	**3RT1056**
AC, DC operation		(p. 3/83, 3/85)			(p. 3/84, 3/86)			(p. 3/87)		
AC-3										
I_e/AC-3/400 V	A	32	40	50	65	80	95	115	150	185
400 V	**kW**	**15**	**18.5**	**22**	**30**	**37**	**45**	**55**	**75**	**90**
230 V	kW	7.5	11	15	18.5	22	22	37	45	55
500 V	kW	18.5	22	30	37	45	55	75	90	110
690 V	kW	18.5	22	22	45	55	55	110	132	160
1 000 V	kW	--	--	--	30	37	37	75	90	90
AC-4 (for I_a = 6 x I_e)										
400 V	**kW**	**15**	**18.5**	**22**	**30**	**37**	**45**	**55**	**75**	**90**
400 V (200 000 operating cycles)	kW	8.2	9.5	12.6	15.1	17.9	22	29	38	45
AC-1 (40 °C, ≤ 690 V)										
I_e	**A**	**50**	**60**	**60**	**100**	**120**	**120**	**160**	**185**	**215**
3RT14 AC-1 contactors										
Type		**--**		(Chap. 4)	**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	**3RH1921**		(p. 3/103)						
	Lateral	**3RH1921**		(p. 3/105)						
Terminal covers		**3RT1936-4EA2**		(p. 3/110)	**3RT1946-4EA1/2**		(p. 3/110)	**3RT1956-4EA1/2/3**		(p. 3/110)
Box terminal blocks		**--**			**--**			**3RT1955/56-4G**		(p. 3/110)
Surge suppressors		**3RT1926/36**		(p. 3/108)				**3RT1956-1C** (RC element)		(p. 3/108)
3RU1 and 3RB2 overload relays (Chapter 7, "Protection Equipment" → "Overload Relays")										
3RU11, thermal, CLASS 10		**3RU1136**	5.5 ... 50 A		**3RU1146**	18 ... 100 A		**--**		
3RB20/3RB21, solid-state, CLASS 5, 10, 20 and 30		**3RB2036** **3RB2136**	6 ... 50 A		**3RB2046** **3RB2146**	12.5 ... 100 A		**3RB2056** **3RB2156**	50 ... 200 A	
3RB22/3RB23, solid-state, CLASS 5, 10, 20 and 30		**3RB2.83 + 3RB2906** 10 ... 100 A						**3RB2.83 + 3RB2956** 20 ... 200 A		
3RV10 motor starter protectors (Chapter 7, "Protection Equipment" → "Motor Starter Protectors")										
Type		**3RV1031**	22 ... 50 A	(Chap. 7)	**3RV1041**	45 ... 100 A	(Chap. 7)	**3RV1063**	40 ... 200 A	
Link modules		**3RA1931**		(Chap. 7)	**3RA1941**		(Chap. 7)	**--**		
3RA13 reversing contactor assemblies										
Complete units	Type	**3RA1334** (p. 3/159)	**3RA1335**	**3RA1336**	**3RA1344** (p. 3/160)	**3RA1345**	**3RA1346**	**--**		
400 V	**kW**	**15**	**18.5**	**22**	**30**	**37**	**45**	**55**	**75**	**90**
Assembly kits/wiring modules		**3RA1933-2A**		(p. 3/162)	**3RA1943-2A**		(p. 3/162)	**3RA1953-2A**		(p. 3/162)
Mechanical interlocks		**3RA1924-1A/-2B**		(p. 3/161)				**3RA1954-2A**		(p. 3/161)
3RA14 contactor assemblies for wye-delta starting										
Complete units	Type	**3RA1434** (p. 3/176)	**3RA1435** (p. 3/177)	**3RA1436**	**3RA1444** (p. 3/178)	**3RA145**		**--**		
400 V	**kW**	**22/30**	**37**	**45**	**55**	**75**		**--**		
Assembly kits/wiring modules		**3RA1933-2B/-2C**		(p. 3/179)	**3RA1943-2B/-2C**		(p. 3/179)	**3RA1953-2B**		(p. 3/179)

Power Contactors for Switching Motors

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. 3/87)	**3RT1065**	**3RT1066**	**3RT1075** (p. 3/87)	**3RT1076**	**--**	
Type			**3RT1264** (p. 3/95)	**3RT1265**	**3RT1266**	**3RT1275** (p. 3/95)	**3RT1276**	**3TF68** (p. 3/123)	**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		**3RH1921**		(p. 3/103)			**--**	
	Lateral		**3RH1921**		(p. 3/105)			**3TY7561**	(p. 3/125)
Terminal covers			**3RT1966-4EA1/-4EA2/-4EA3**		(p. 3/110)			**3TX7686/696**	(p. 3/125)
Box terminal blocks			**3RT1966-4G**		(p. 3/110)			**--**	
Surge suppressors			**3RT1956-1C** (RC element)		(p. 3/108)			**3TX7572**	(p. 3/125)
3RU1 and 3RB2 overload relays (Chapter 7, "Protection Equipment" → "Overload Relays")									
3RU11, thermal, CLASS 10			**--**			**--**		**--**	
3RB20/3RB21, solid-state, CLASS 5, 10, 20 and 30			**3RB2066** **3RB2166**	55 ... 630 A		**3RB2066** **3RB2166**	160 ... 630 A	**3RB2066** **3RB2166**	160 ... 630 A
3RB22/3RB23, solid-state, CLASS 5, 10, 20 and 30			**3RB2.83 + 3RB2966**	63 ... 630 A					
3RV10 motor starter protectors (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	**--**			**--**		**3TD6804** (p. 3/180)	
400 V		**kW**	**110**	**132**	**160**	**200**	**250**	**335**	
Assembly kits/wiring modules			**3RA1963-2A**		(p. 3/162)	**3RA1973-2A**	(p. 3/162)	**3TX7680-1A**	(Industry Mall)
Mechanical interlocks			**3RA1954-2A**		(p. 3/161)			**3TX7686-1A**	(Industry Mall)
3RA14 contactor assemblies for wye-delta starting									
Complete units		Type	**--**			**--**		**3TE6804** (p. 3/182)	
400 V		**kW**	**--**			**--**		**630**	
Assembly kits/wiring modules			**3RA1963-2B**		(p. 3/179)	**3RA1973-2B**	(p. 3/179)	**3TX7680-1B**	(Industry Mall)

Note:

Safety characteristics for contactors see Chapter 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.

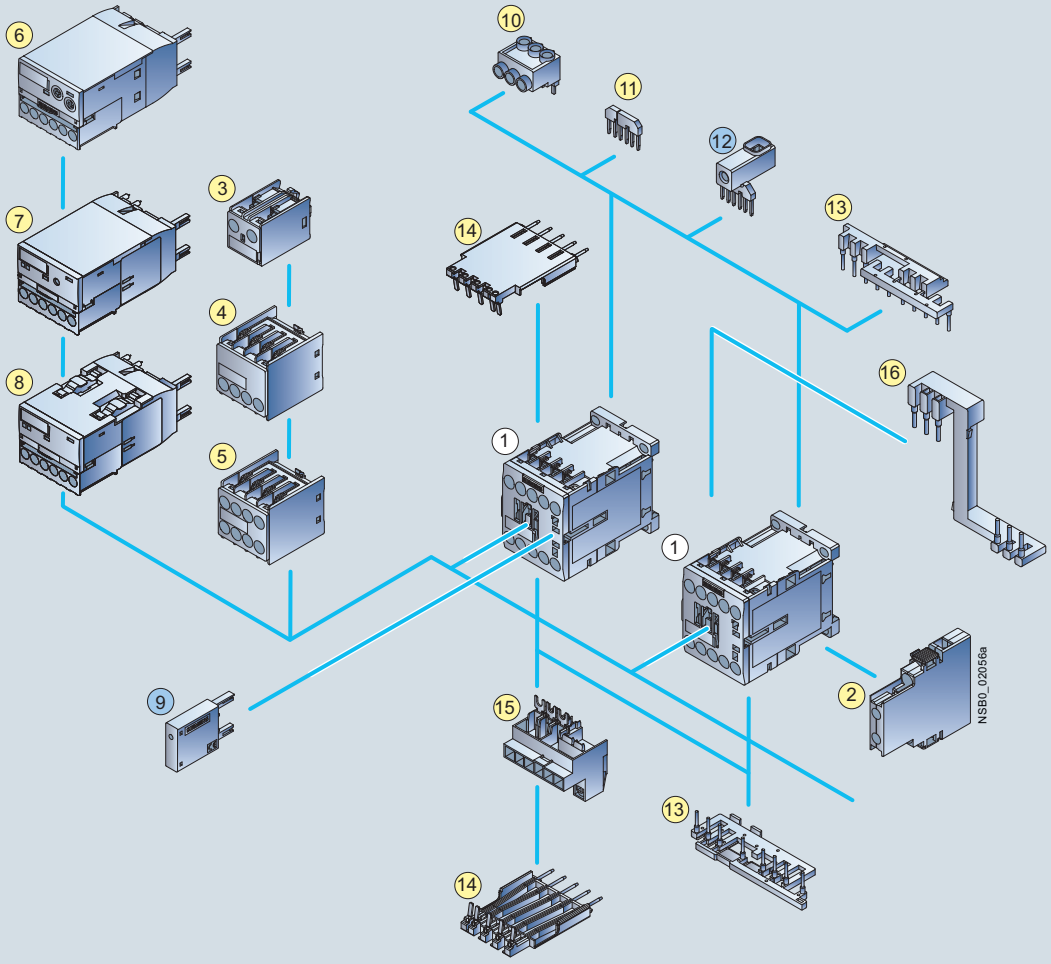
General data

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) 1-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 3/48 to 3/63.

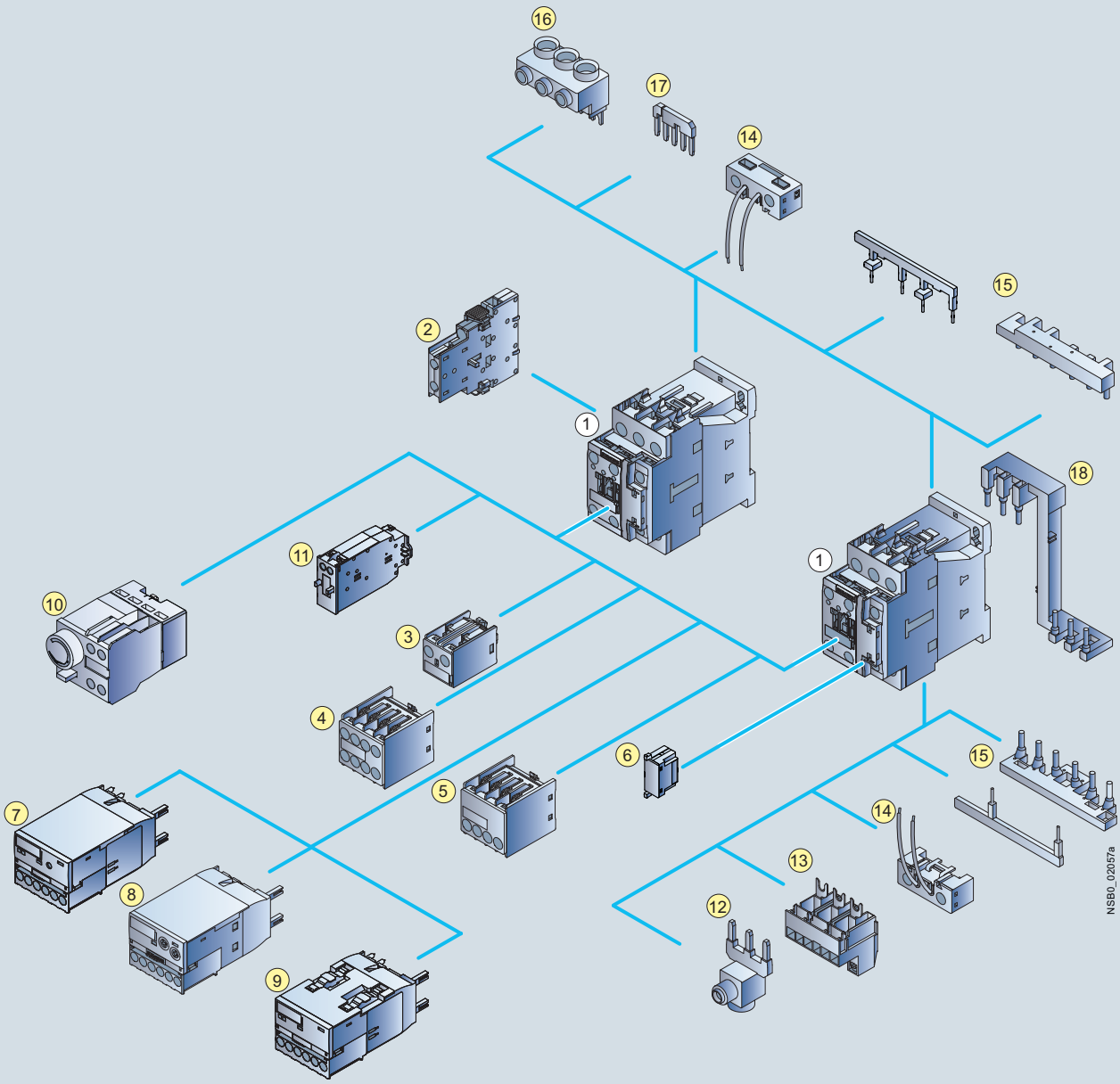
Contactor assemblies see pages 3/153 to 3/155.

Assembly kit for reversing contactor assemblies (mech. interlocking, wiring modules) see page 3/156.

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



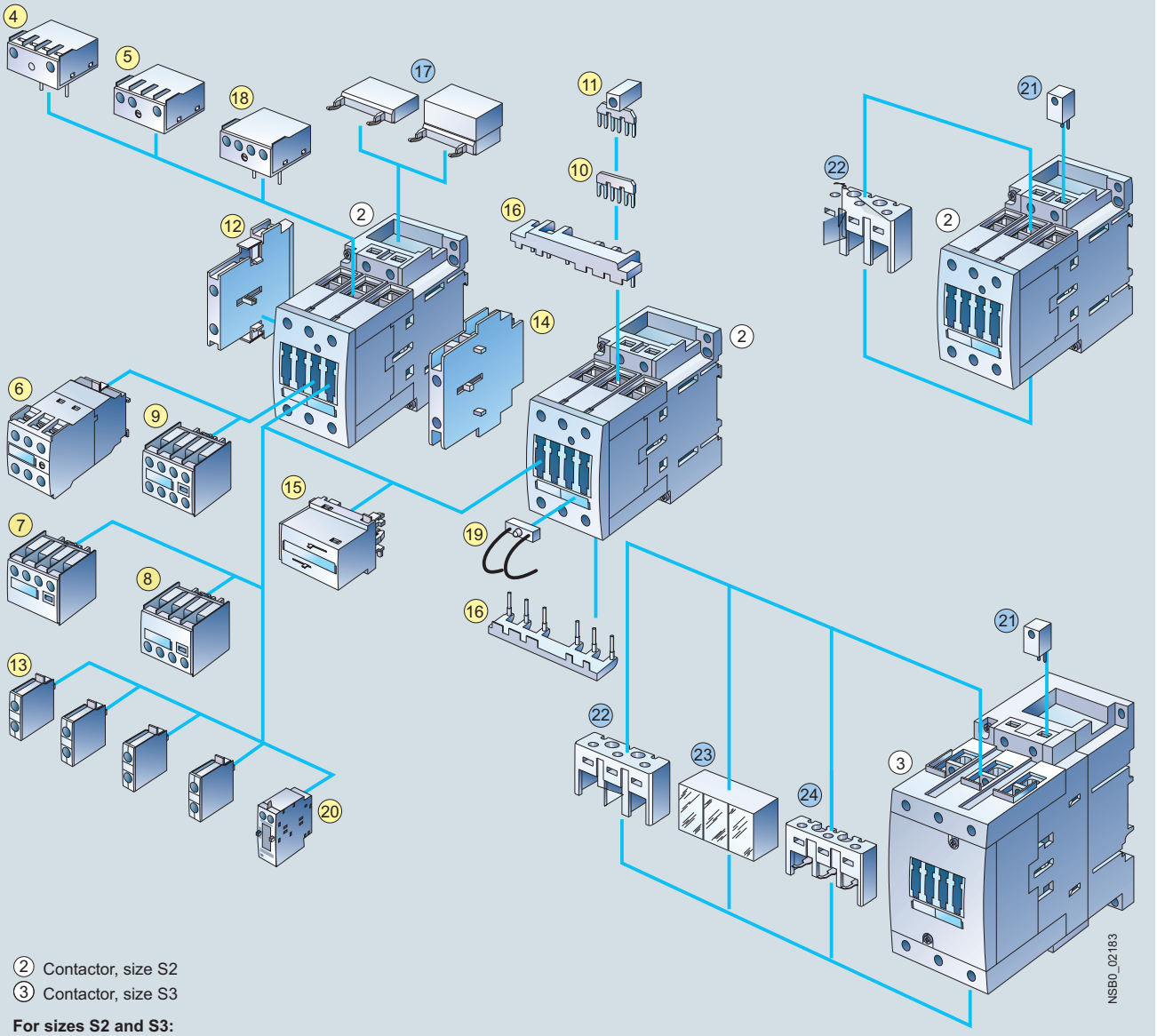
① Contactor size S0

② 1-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 3/48 to 3/63.

General data

3RT1 contactors
Sizes S2 and S3 with mountable accessories



(2) Contactor, size S2
(3) Contactor, size S3

For sizes S2 and S3:

(4) Solid-state timing relay block, ON-delay
(5) Solid-state 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:

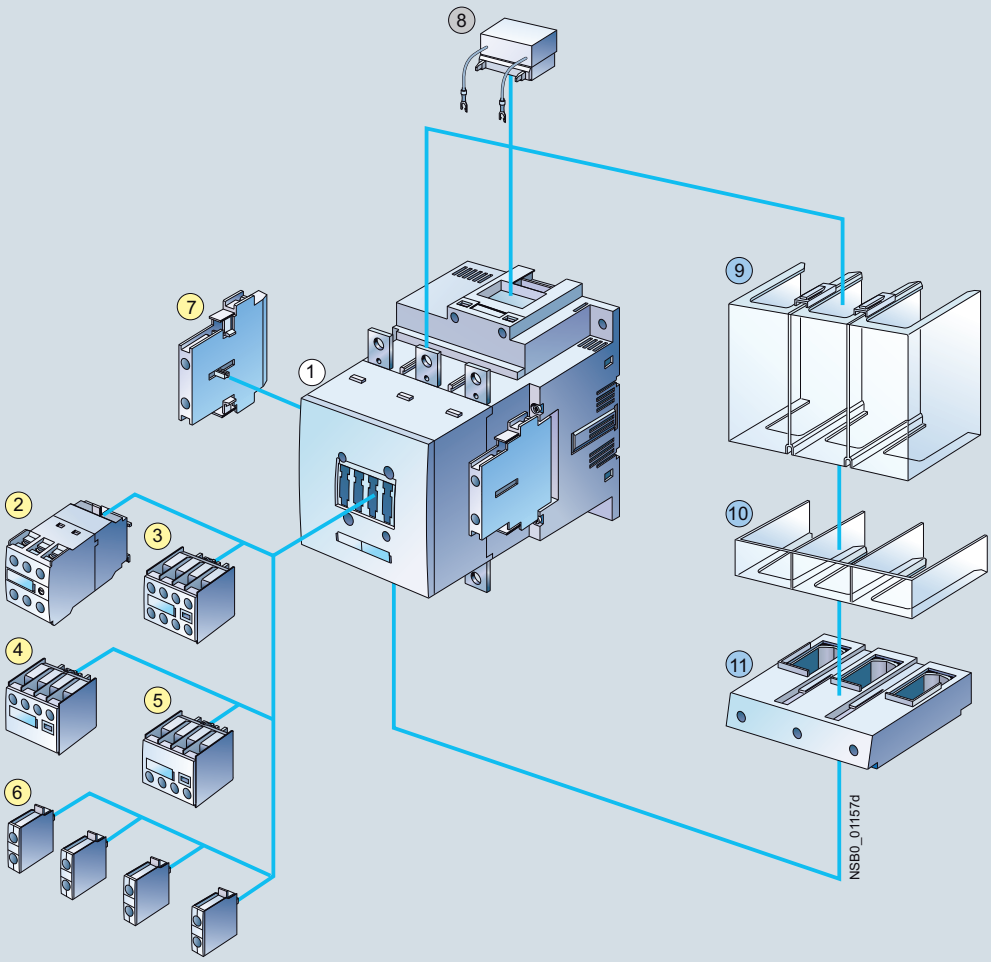
(23) Terminal cover for cable lug and bar connection
(24) Auxiliary conductor terminal, 3-pole

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

Accessories see pages 3/103 to 3/111.

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

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

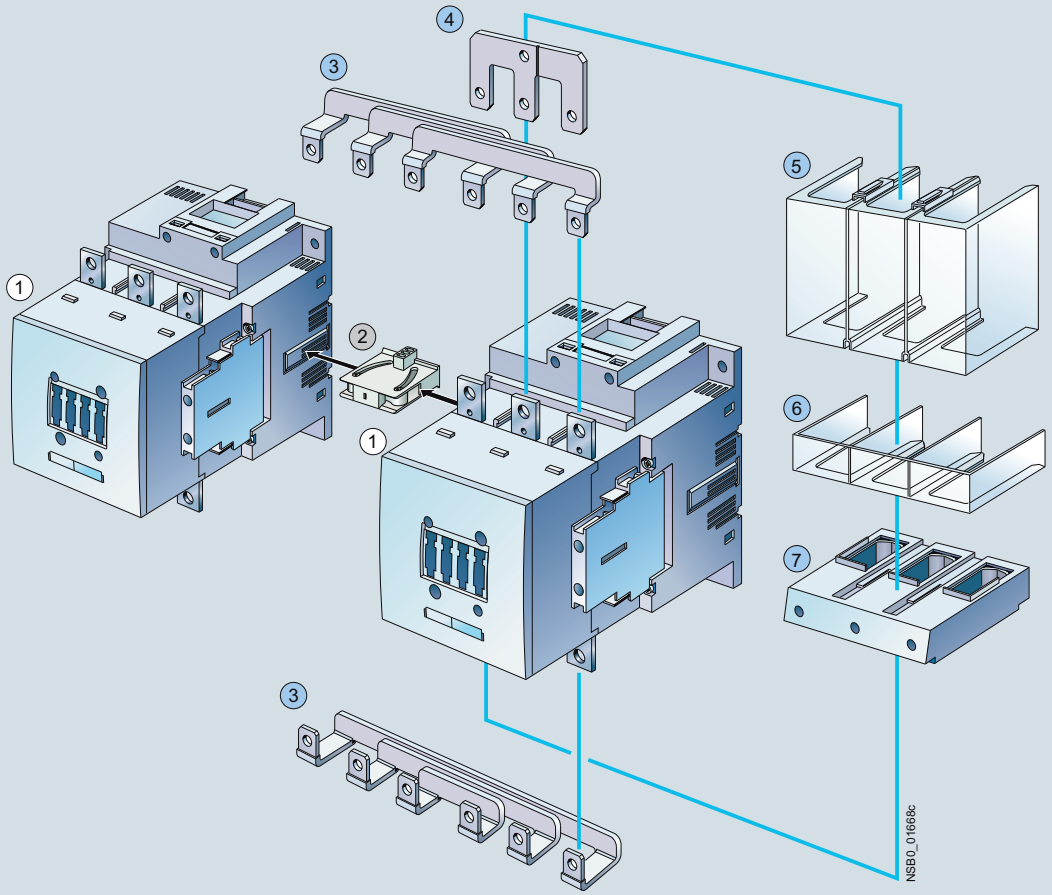
Accessories identical for sizes S0 to S12
Accessories identical for sizes S6 to S12
Accessories differ according to size

Accessories see pages 3/103 to 3/111.

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

General data

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



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

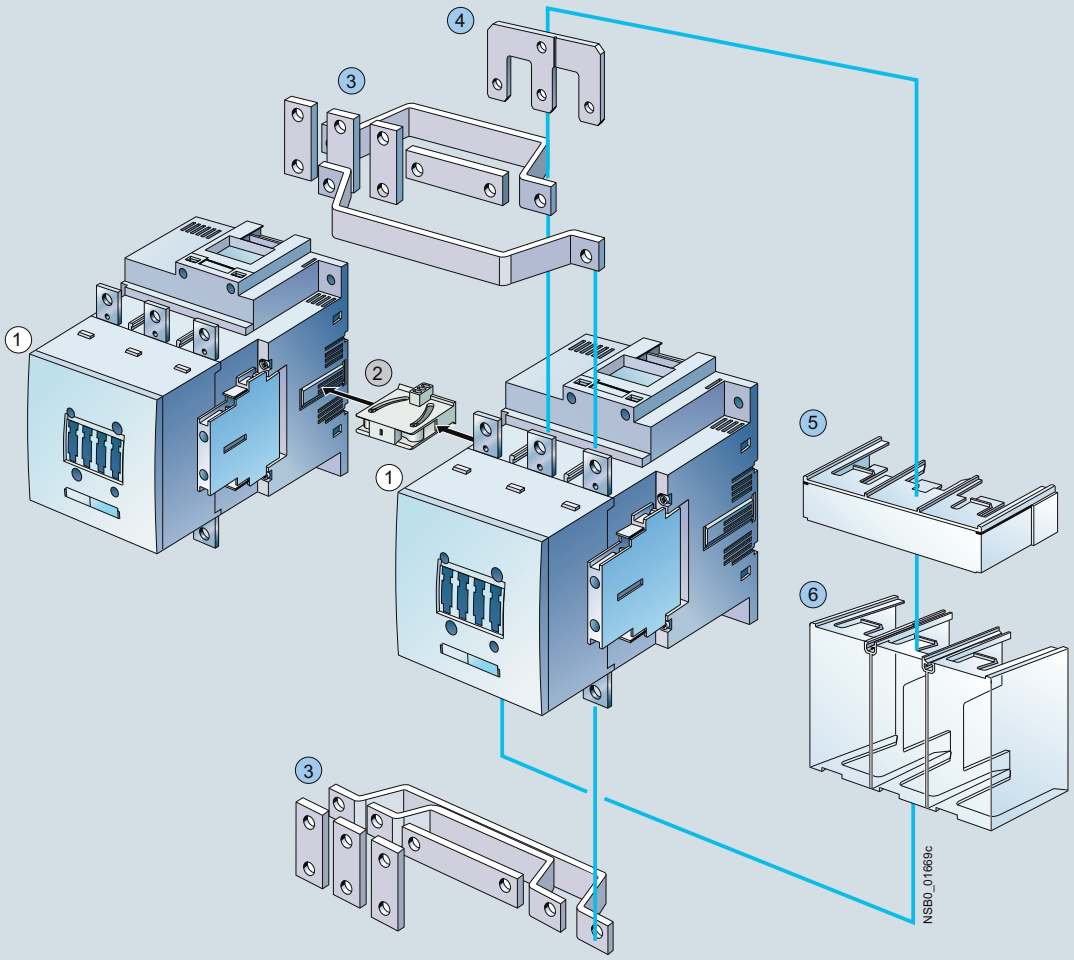
(2) Mechanical interlock, laterally mountable
(3) Wiring modules on the top and bottom, 3RA1953-2A
(4) Link for paralleling (star jumper), 3-pole, with through-hole, 3RT1956-4BA31
(5) Terminal cover for cable lug and bar connection different for sizes S6 and S10/S12
(6) Terminal cover for box terminal 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 3/161 to 3/163 and 3/103 to 3/111.

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

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

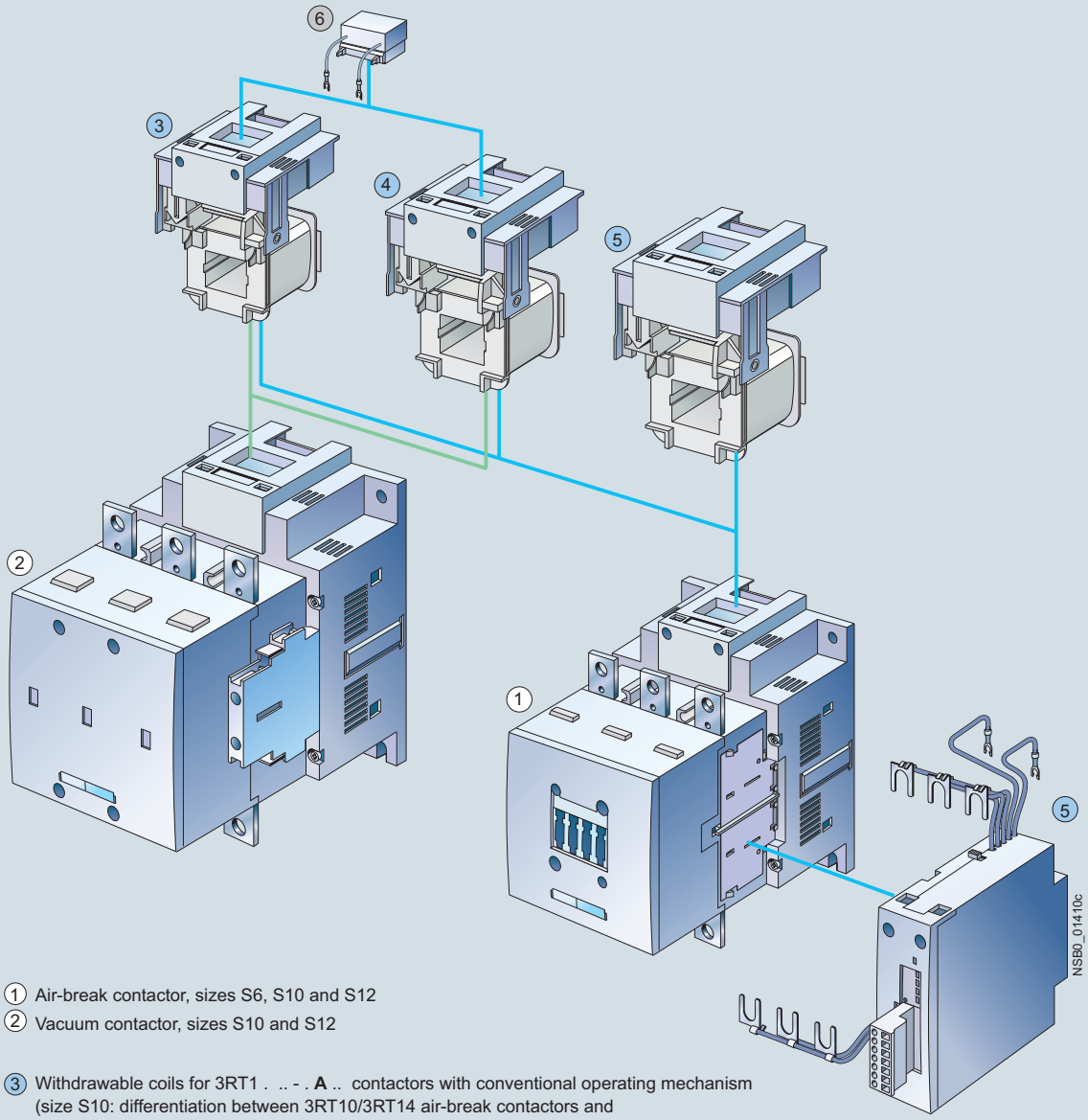
○ Accessories identical for sizes S6 to S12
○ Accessories different according to size

Accessories see pages 3/161 to 3/163 and 3/103 to 3/111.

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

General data

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

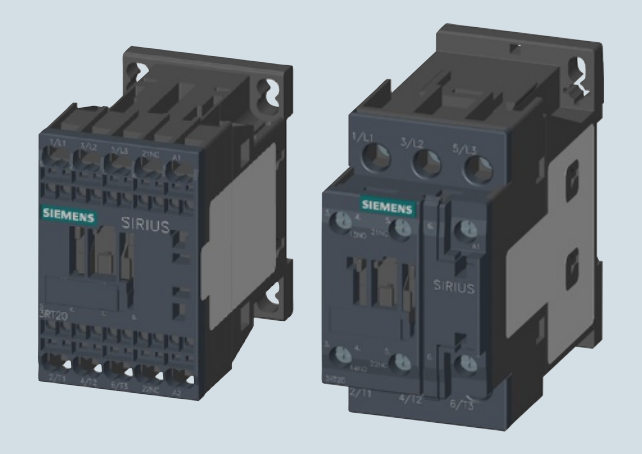
◯ Identical for sizes S6 to S12
◯ Different according to size

For surge suppressors see page 3/108,
for withdrawable coils see pages 3/114 and 3/115.

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

Overview

Sizes S00 and S0, up to 18.5 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 with up to 7.5 kW and size S0 with up to 18.5 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 size S0 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 and S0.

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 or ring terminal lug connections.

Short-circuit protection of the contactors

For short-circuit protection of contactors without overload relays see "Technical specifications" on pages 3/17 and 3/22.
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 solid-state 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

All contactors are available with AC or DC operation. For size S0 contactors, a UC operating mechanism is also available, which can be controlled with both AC (50 to 60 Hz) and DC.

Surge suppression

3RT2 contactors can be retrofitted with RC elements, varistors 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 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 and S0 contactors with communication interface

The S00 and S0 contactors with communication interface are special versions for mounting the SIRIUS function modules for connection to the control system through IO-Link or AS-Interface (see page 3/188 and 3/193).

When a function module is fitted, no additional auxiliary switches can be mounted. 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".

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

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

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)				□												
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**					

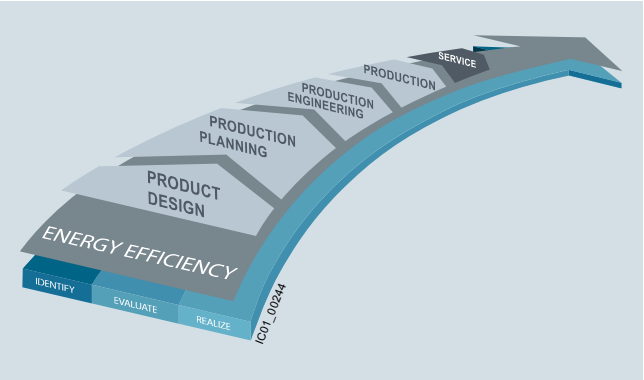
Note:

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.

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 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). 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 3/47 to 3/52.

Technical specifications

Type			3RT2
Size			S00 and S0
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]

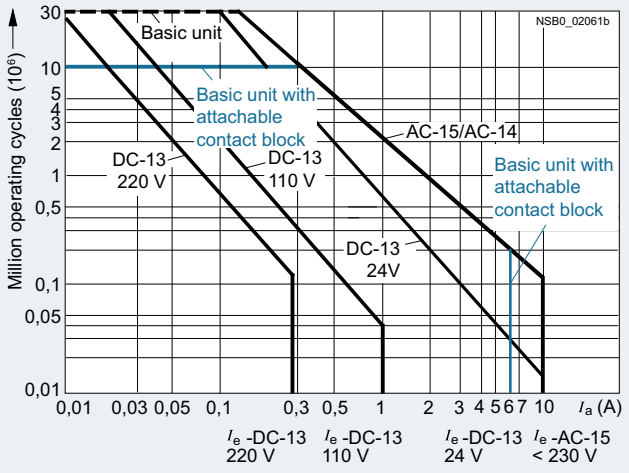


Diagram legend:
I_a = Breaking current
I_e = Rated operational current

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

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Type	3RT2
Size	S00 and 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

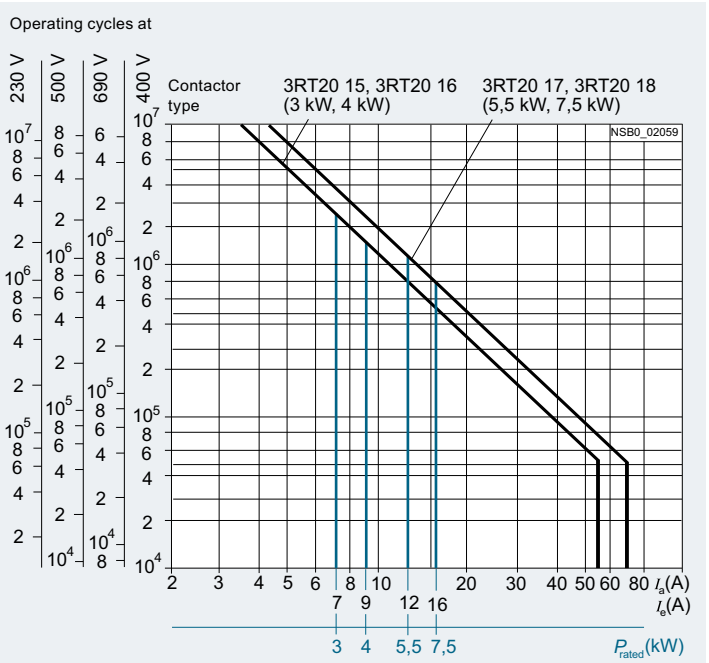


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

Size S0

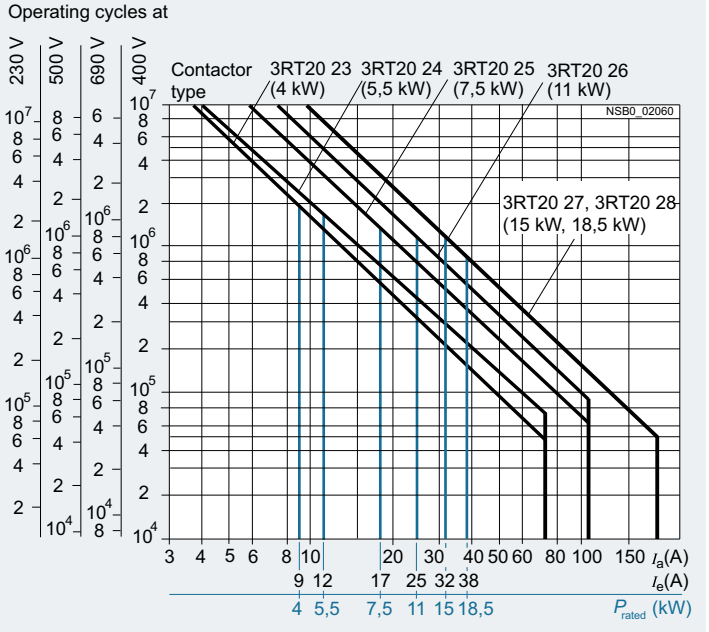
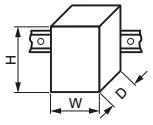
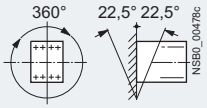


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Type			**3RT20 1 5, 3RT20 16**	**3RT20 1 7, 3RT20 18**
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			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.				
• 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			3)	
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	35	50
- Type of coordination "2"		A	20	25
- Weld-free[4]		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"[5]	
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) For contact endurance of the main contacts see page 3/16.
3) For conductor cross-sections, see page 3/21.
4) Test conditions according to IEC 60947-4-1.
5) See http://support.automation.siemens.com/WW/view/en/39714188.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 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]						
• Rated operational current I_e, maximum	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) The data only apply to 3RT2516 and 3RT2517 (2 NO + 2 NC) up to a rated operational voltage of 400 V.

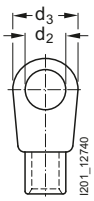
SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

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'*:
$z' = z \cdot (I_e/I') \cdot (400\ V/U')^{1.5} \cdot 1/h$

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

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, ∅ 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; 3.5 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; 3.5 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 - 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. 7.5			

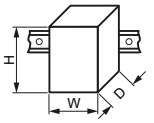
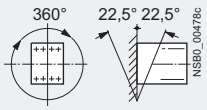


1) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

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 3/63.

3) Tool for opening the spring-type terminals, see Accessories, page 3/63.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 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 for contactors without overload relays								
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 3/16.
3) For conductor cross-sections, see page 3/26.
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, 3 ... 18.5 kW

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, 3 ... 18.5 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 $I_a = 6 \times I_e$)								
• Rated operational current I_e, max.	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).

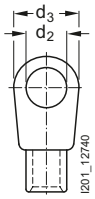
[2] According to IEC 60947-4-1.
Rated values for various start-up conditions
see Chapter 7, "Protection Equipment" → "Overload Relays".

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'*:
$z' = z \cdot (I_e/I') \cdot (400\ V/U')^{1.5} \cdot 1/h$

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 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					
Conductor cross-section								
• 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 - Tightening torque		Nm	M4 (for Pozidriv size 2, Ø 5 ... 6) 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 - Tightening torque		Nm	M3 (for Pozidriv size 2, Ø 5 ... 6) 0.8 ... 1.2 (7 ... 10.3 lb.in)					
Main conductors[2]			Spring-type terminals					
• Operating devices[3]		mm	3.0 x 0.5; 3.5 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; 3.5 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 2					
• Operating devices		mm	Ø 5 ... 6					
• Tightening torque		Nm	2 ... 2.5					
• Usable ring terminal lugs - 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 mm	d_2 = min. 4.3 d_3 = max. 12.2					
Auxiliary conductors								
• 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					
		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 3/63.

3) Tool for opening the spring-type terminals, see Accessories, page 3/63.

Type			3RT201	3RT202	
Size			S00	S0	
			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

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Type			3RT2015	3RT2016	3RT2017	3RT2018
Size			S00	S00	S00	S00
cULus rated data						
Rated insulation voltage		V AC	600			
Uninterrupted current, at 40 °C, open and enclosed		A	20			
Maximum horsepower ratings (from cULus and cULus 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	5	5	5
• Fuse CLASS J[2]		A	40	40	40	40
• Circuit breakers with overload protection acc. to UL 489		A	50	50	50	50
• Combination motor controllers type E according to UL 508			--[3]	--[3]	--[3]	--[3]
NEMA/EEMAC ratings						
NEMA/EEMAC size		hp	--			0
• Uninterrupted current						
- Open		A	--			18
- Enclosed		A	--			18
• Rated power for three-phase motors at 60 Hz	At 200 V	hp	--			3
	230 V	hp	--			3
	460 V	hp	--			5
	575 V	hp	--			5
Overload relays						
• Type			3RU211	/ 3RB301		
• Setting range		A	0.11 ... 16	/ 0.1 ... 16		

Type			3RT2023	3RT2024	3RT2025	3RT2026	3RT2027	3RT2028
Size			S0	S0	S0	S0	S0	S0
cULus rated data								
Rated insulation voltage		V AC	600				600	
Uninterrupted current, at 40 °C, open and enclosed		A	35				42	
Maximum horsepower ratings (from cULus and cULus 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	5	5	5	5	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	At 480 V	Type	3RV202					
		A	--					
		kA	--[3]					
	At 600 V	Type	3RV202					
		A	--					
		kA	--[3]					
NEMA/EEMAC ratings								
NEMA/EEMAC size		hp	--				1	
• Uninterrupted current								
- Open		A	--				27	
- Enclosed		A	--				27	
• Rated power for three-phase motors at 60 Hz	At 200 V	hp	--				7.5	
	230 V	hp	--				7.5	
	460 V	hp	--				10	
	575 V	hp	--				10	
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.

[3] Values on request.

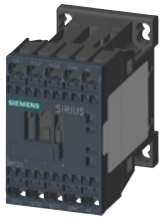
SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

Selection and ordering data

AC operation

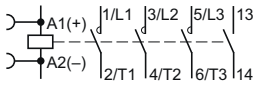
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RT201.-1A...

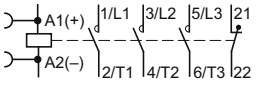


3RT201.-2A...

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 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 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 3/39 on request.

For accessories see page 3/48.

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

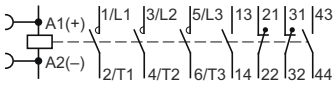
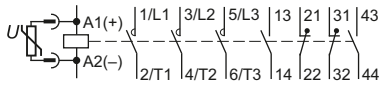
SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

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 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				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 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.

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.

Other voltages according to page 3/39 on request.

For accessories see page 3/48.

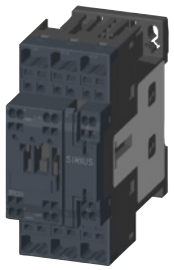
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

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	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 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 3/39 on request.

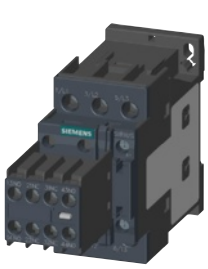
For accessories see page 3/48.
For spare parts see page 3/64.

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

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 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	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*[2]**												
With mounted auxiliary switch block (removable)[3]												
9	**4**	40	**22**	2	2	24 230	B ▶	**3RT2023-1AB04** **3RT2023-1AP04**		B A	**3RT2023-2AB04** **3RT2023-2AP04**	
12	**5.5**	40	**22**	2	2	24 110 230	B B ▶	**3RT2024-1AB04** **3RT2024-1AF04** **3RT2024-1AP04**		B B A	**3RT2024-2AB04** **3RT2024-2AF04** **3RT2024-2AP04**	
17	**7.5**	40	**22**	2	2	24 110 230	B B ▶	**3RT2025-1AB04** **3RT2025-1AF04** **3RT2025-1AP04**		B B A	**3RT2025-2AB04** **3RT2025-2AF04** **3RT2025-2AP04**	
25	**11**	40	**22**	2	2	24 110 230	B B ▶	**3RT2026-1AB04** **3RT2026-1AF04** **3RT2026-1AP04**		B B A	**3RT2026-2AB04** **3RT2026-2AF04** **3RT2026-2AP04**	
32	**15**	50	**22**	2	2	24 110 230	B B ▶	**3RT2027-1AB04** **3RT2027-1AF04** **3RT2027-1AP04**		B B A	**3RT2027-2AB04** **3RT2027-2AF04** **3RT2027-2AP04**	
38	**18.5**	50	**22**	2	2	24 110 230	B B ▶	**3RT2028-1AB04** **3RT2028-1AF04** **3RT2028-1AP04**		B B A	**3RT2028-2AB04** **3RT2028-2AF04** **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 No. for the auxiliary switch block (removable): 3RH2911-.HA11

Other voltages according to page 3/39 on request.

For accessories see page 3/48.
For spare parts see page 3/64.

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

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

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 and snap-on mounting onto TH 35 standard mounting rail												
Size S0												
With permanently mounted auxiliary switch block[2]												
9	**4**	40	**22**	2	2	230	B	**3RT2023-1AL24-3MA0**		B	**3RT2023-2AL24-3MA0**	
12	**5.5**	40	**22**	2	2	230	B	**3RT2024-1AL24-3MA0**		B	**3RT2024-2AL24-3MA0**	
17	**7.5**	40	**22**	2	2	230	B	**3RT2025-1AL24-3MA0**		B	**3RT2025-2AL24-3MA0**	
25	**11**	40	**22**	2	2	230	B	**3RT2026-1AL24-3MA0**		B	**3RT2026-2AL24-3MA0**	
32	**15**	50	**22**	2	2	230	B	**3RT2027-1AL24-3MA0**		B	**3RT2027-2AL24-3MA0**	
38	**18.5**	50	**22**	2	2	230	B	**3RT2028-1AL24-3MA0**		B	**3RT2028-2AL24-3MA0**	
With permanently mounted auxiliary switch block and varistor plugged into the front side												
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.

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) No retrofitting of surge suppressors.

Other voltages according to page 3/39 on request.

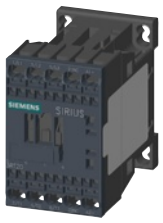
For accessories see page 3/48.
For spare parts see page 3/64.

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

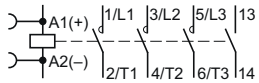
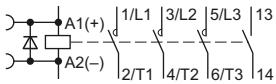
DC operation

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

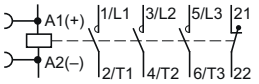
3RT201.-1B...



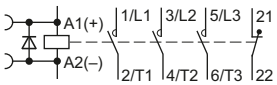
3RT201.-2B...

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 and snap-on mounting onto TH 35 standard mounting rail												
Size S00[2]												
• With auxiliary contact 1 NO, Ident. No. **10**												
												
7	**3**	18	**10**	1	--	24	▶	**3RT2015-1BB41**		▶	**3RT2015-2BB41**	
						220	A	**3RT2015-1BM41**		B	**3RT2015-2BM41**	
			01	--	1	24	▶	**3RT2015-1BB42**		▶	**3RT2015-2BB42**	
						220	B	**3RT2015-1BM42**		B	**3RT2015-2BM42**	
9	**4**	22	**10**	1	--	24	▶	**3RT2016-1BB41**		▶	**3RT2016-2BB41**	
						220	B	**3RT2016-1BM41**		B	**3RT2016-2BM41**	
			01	--	1	24	▶	**3RT2016-1BB42**		▶	**3RT2016-2BB42**	
						220	B	**3RT2016-1BM42**		B	**3RT2016-2BM42**	
12	**5.5**	22	**10**	1	--	24	▶	**3RT2017-1BB41**		▶	**3RT2017-2BB41**	
						220	B	**3RT2017-1BM41**		B	**3RT2017-2BM41**	
			01	--	1	24	▶	**3RT2017-1BB42**		▶	**3RT2017-2BB42**	
						220	B	**3RT2017-1BM42**		B	**3RT2017-2BM42**	
16	**7.5**	22	**10**	1	--	24	▶	**3RT2018-1BB41**		▶	**3RT2018-2BB41**	
						220	B	**3RT2018-1BM41**		B	**3RT2018-2BM41**	
			01	--	1	24	▶	**3RT2018-1BB42**		▶	**3RT2018-2BB42**	
						220	B	**3RT2018-1BM42**		B	**3RT2018-2BM42**	
With integrated coil circuit (diode)												
• With auxiliary contact 1 NO, Ident. No. **10**												
												
7	**3**	18	**10**	1	--	24	▶	**3RT2015-1FB41**		▶	**3RT2015-2FB41**	
			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**



• 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 3/39 on request.

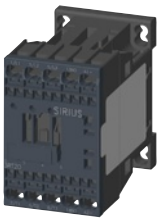
For accessories see page 3/48.

SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

DC operation

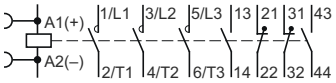
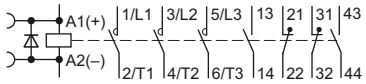
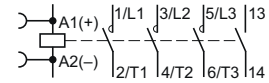
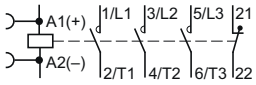
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B


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 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 communication interface (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 3/39 on request.

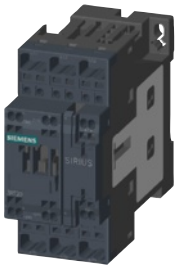
For accessories see page 3/48.

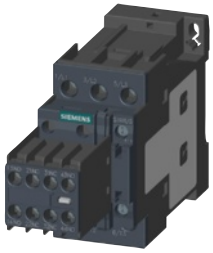
* You can order this quantity or a multiple thereof.
Illustrations are approximate

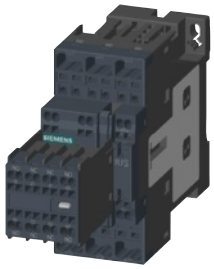
DC operation

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


3RT202.-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						
				NO	NC			Article No. / Price per PU		Article No. / Price per PU
400 V	**400 V**	690 V								
A	**kW**	A				V DC				
For screw 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	▶	**3RT2024-1BB40**	▶	**3RT2024-2BB40**
						220	B	**3RT2024-1BM40**	B	**3RT2024-2BM40**
17	**7.5**	40	**11**	1	1	24	▶	**3RT2025-1BB40**	▶	**3RT2025-2BB40**
						220	B	**3RT2025-1BM40**	B	**3RT2025-2BM40**
25	**11**	40	**11**	1	1	24	▶	**3RT2026-1BB40**	▶	**3RT2026-2BB40**
						220	B	**3RT2026-1BM40**	B	**3RT2026-2BM40**
32	**15**	50	**11**	1	1	24	▶	**3RT2027-1BB40**	▶	**3RT2027-2BB40**
						220	B	**3RT2027-1BM40**	B	**3RT2027-2BM40**
38	**18.5**	50	**11**	1	1	24	▶	**3RT2028-1BB40**	▶	**3RT2028-2BB40**
						220	B	**3RT2028-1BM40**	B	**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.

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 No. for the auxiliary switch block (removable): 3RH2911-.HA11

Other voltages according to page 3/39 on request.

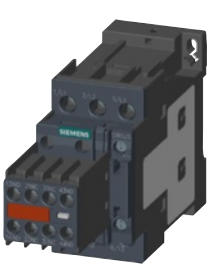
For accessories see page 3/48.

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

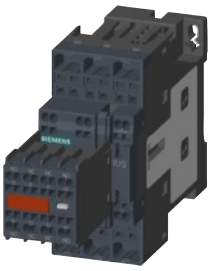
SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

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	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 and snap-on mounting onto TH 35 standard mounting rail												
Size S0												
With permanently mounted auxiliary switch block[2]												
9	**4**	40	**22**	2	2	24	B	**3RT2023-1BB44-3MA0**		B	**3RT2023-2BB44-3MA0**	
12	**5.5**	40	**22**	2	2	24	B	**3RT2024-1BB44-3MA0**		B	**3RT2024-2BB44-3MA0**	
17	**7.5**	40	**22**	2	2	24	B	**3RT2025-1BB44-3MA0**		B	**3RT2025-2BB44-3MA0**	
25	**11**	40	**22**	2	2	24	B	**3RT2026-1BB44-3MA0**		B	**3RT2026-2BB44-3MA0**	
32	**15**	50	**22**	2	2	24	B	**3RT2027-1BB44-3MA0**		B	**3RT2027-2BB44-3MA0**	
38	**18.5**	50	**22**	2	2	24	B	**3RT2028-1BB44-3MA0**		B	**3RT2028-2BB44-3MA0**	
With permanently mounted auxiliary switch block and coil circuit plugged in (varistor)												
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 coil circuit plugged in (diode assembly)												
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.

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) No retrofitting of surge suppressors.

Other voltages according to page 3/39 on request.

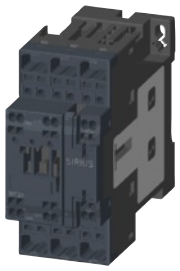
For accessories see page 3/48.

* 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.-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	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 and snap-on mounting onto TH 35 standard mounting rail										
Size S0										
Contactors with communication interface										
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.

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 3/48.

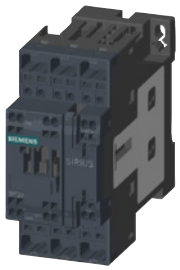
SIRIUS 3RT20 contactors, 3-pole, 3 ... 18.5 kW

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

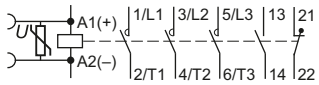
- Extended operating range of solenoid coil 0.7 ... 1.3 x U_S
- Reduced power consumption when closing and in the closed state

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 [1]	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 S0[2]										
With integrated coil circuit (varistor)										
										
12	**5.5**	40	**11**	1	1	21 ... 28	▶	**3RT2024-1NB30**	B	**3RT2024-2NB30**
						95 ... 130	▶	**3RT2024-1NF30**	B	**3RT2024-2NF30**
						200 ... 280[3]	▶	**3RT2024-1NP30**	▶	**3RT2024-2NP30**
17	**7.5**	40	**11**	1	1	21 ... 28	▶	**3RT2025-1NB30**	B	**3RT2025-2NB30**
						95 ... 130	▶	**3RT2025-1NF30**	B	**3RT2025-2NF30**
						200 ... 280[3]	▶	**3RT2025-1NP30**	▶	**3RT2025-2NP30**
25	**11**	40	**11**	1	1	21 ... 28	▶	**3RT2026-1NB30**	▶	**3RT2026-2NB30**
						95 ... 130	▶	**3RT2026-1NF30**	▶	**3RT2026-2NF30**
						200 ... 280[3]	▶	**3RT2026-1NP30**	▶	**3RT2026-2NP30**
32	**15**	50	**11**	1	1	21 ... 28	▶	**3RT2027-1NB30**	▶	**3RT2027-2NB30**
						95 ... 130	▶	**3RT2027-1NF30**	B	**3RT2027-2NF30**
						200 ... 280[3]	▶	**3RT2027-1NP30**	▶	**3RT2027-2NP30**
38	**18.5**	50	**11**	1	1	21 ... 28	B	**3RT2028-1NB30**	B	**3RT2028-2NB30**
						95 ... 130	B	**3RT2028-1NF30**	B	**3RT2028-2NF30**
						200 ... 280[3]	▶	**3RT2028-1NP30**	▶	**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

Options

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

Rated control supply voltage U_s	Contactor type	3RT201	3RT202	3RT231, 3RT251	3RT232, 3RT252
	Size	S00	S0	S00	S0
Sizes S00 and S0					
AC operation[1]					
Solenoid coils for 50 Hz (exception: Size S00: 50 and 60 Hz[2])					
24 V AC		B0	B0	B0	B0
42 V AC		D0	D0	D0	--
48 V AC		H0	H0	H0	--
110 V AC		F0	F0	F0	F0
230 V AC		P0	P0	P0	P0
240 V AC		U0	U0	--	--
400 V AC		V0	V0	V0	V0
Solenoid coils for 50 and 60 Hz[2]					
24 V AC		B0	C2	B0	C2
42 V AC		D0	D2	D0	D2
48 V AC		H0	H2	H0	H2
110 V AC		F0	G2	F0	G2
220 V AC		N2	N2	N2	N2
230 V AC		P0	L2	P0	L2
Solenoid coils (for USA and Canada[3]**)**					
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[4]	**60 Hz**[5]				
100 V AC	110 V AC	G6	G6	G6	G6
200 V AC	220 V AC	N6	N6	N6	N6
400 V AC	440 V AC	R6	R6	R6	R6
DC operation[1]					
12 V DC		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 $U_{s\,min}$ ... $U_{s\,max}$[6]	Contactor type	--	3RT2. 2.-.N
	Size	S00	S0
Size S0			
UC operation (AC 50 up to 60 Hz, DC)			
21 ... 28 V AC/DC		--	B3
95 ... 130 V AC/DC		--	F3
200 ... 280 V AC/DC[7]		--	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: 0.7 x $U_{s\,min}$ ...1.3 x $U_{s\,max}$.

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

General data

Overview

Auxiliary switches

See also pages 3/14 and 3/47.

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 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 and S0
- With LED (also for spring-type terminals)
  Sizes S00 and S0

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 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

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 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.

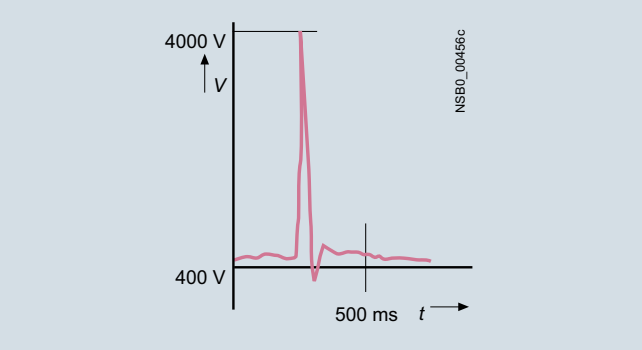
Mounting

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

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 4000 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 interference 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

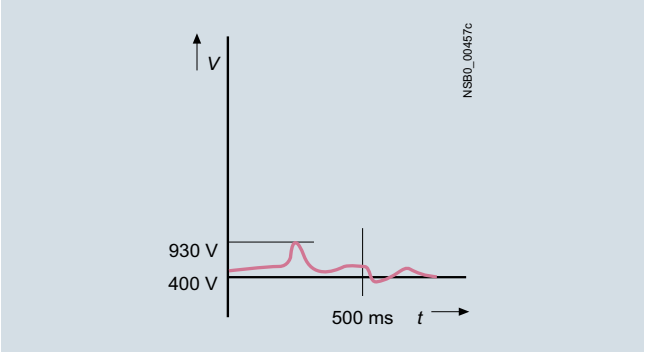
Since the EMC suppression module achieves a significant reduction in radio-frequency components and the voltage level in three phases, the contact endurance is also improved considerably. This makes an important contribution towards enhancing the reliability and availability of the system as a whole.

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.

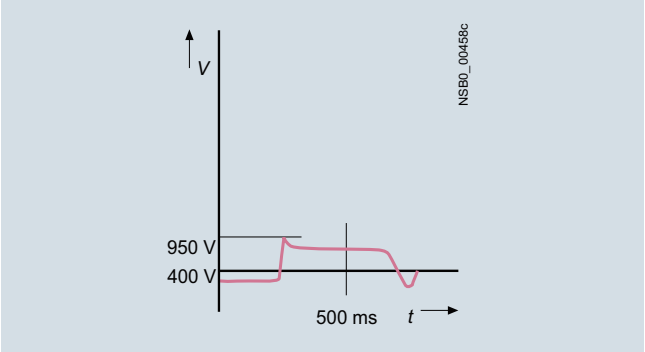
Two electrical versions are available:

- 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:

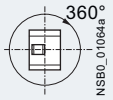
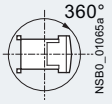
- Solder pin adapter for contactors with one integrated auxiliary contact
- Solder pin adapter for contactors with mounted 4-pole auxiliary switch block

General data

Technical specifications

Version	Type		3RA2813	3RA2814	3RA2815
	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		
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					
• AC-140	At 24 ... 240 V, 50 Hz	A	--		
• AC-15	At 24 ... 240 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, operational class gG: 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	--		
Short-time loading capacity up to 10 ms		A	--		
Setting accuracy, typ. with reference to upper limit of scale			±15 %		
Repeat accuracy, max.			±1 %		
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 60947-1		
Overvoltage protection			Varistor integrated		
Permissible mounting position			Any		
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**		
• 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)		

[1] Dimensions with mounted function module see 3RT20 contactors, pages 3/17 and 3/22.

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 ... S3	S00/S0	S00/S0
• AC supply		--	S00/S0	S00/S0
	Type	3RT20..-1BB4., 3RH2...-1BB40	3RT201.-1BF4, 3RT202.-1BF4, 3RH2...-1BF40	3RT201.-1BM4./1BP4., 3RT202.-1BM4./1BP4., 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
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
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 3/17.

General data

Version	Type / Function		3RT2926-2P 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
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
Time delay			
• Accuracy			±10 %
cULus and UL rated data			
• Rated voltage		V AC	600
• Switching capacity			A 600, Q 600

[1] For size S0.
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 / Function		3RT2926-3A 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 lb.in	0.8 ... 1.1 7 ... 9.5

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.

General data

Version	Type Function	3RH2924-1GP11 Coupling links for PLC for mounting on contactors
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
• Enclosure		IP40
Permissible ambient temperature		
• During operation	°C	-25 ... +60
• During storage	°C	-40 ... +80
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 million
Electrical endurance at I_e	Operating cycles	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
Switching voltage	V AC/DC	24 ... 250
Permissible residual current of the electronics (with 0 signal)	mA	2.5

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:

- 1st digit: number of normally open contacts (NO)
- 2nd 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 3/48 to 3/52.

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	3RT202
	Version		S00	S00	S0
	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

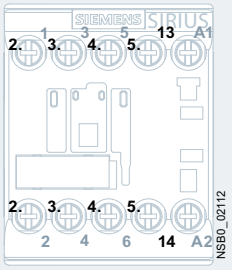
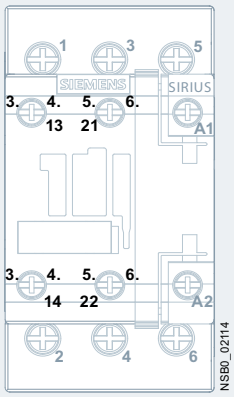
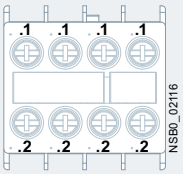
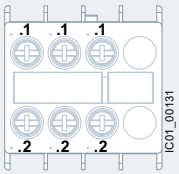
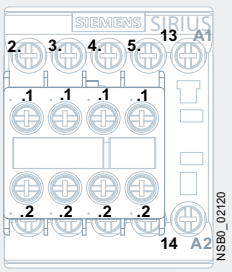
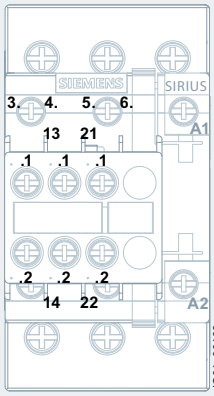
[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold print**. All combinations comply with EN 50005.

Example 1

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

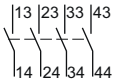
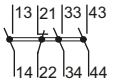
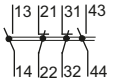
Example 2

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

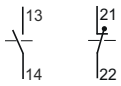
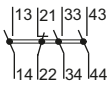
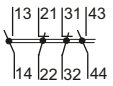
	Example 1	Example 2
Type	3RT20 motor contactor, S00 with 1 NO	3RT20 motor contactor, S0 with 1 NO + 1 NC
		
Sequence digit	2. 3. 4. 5.	3. 4. 5. 6.
Type	Auxiliary switch with 4 NC, 3RH2911-.FA04	Auxiliary switch with 3 NC, 3RH2911-.HA03
		
Function digit	.1 .2 .1 .2 .1 .2 .1 .2	.1 .2 .1 .2 .1 .2
Combination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

Auxiliary switch blocks

Selection and ordering data

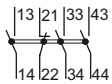
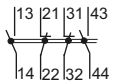
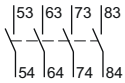
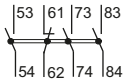
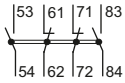
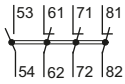
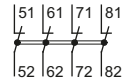
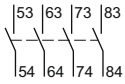
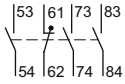
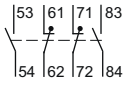
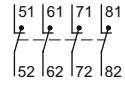
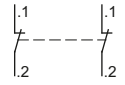
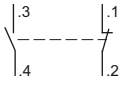
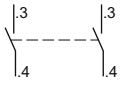
Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article No.	Auxiliary contacts		S00		S0	S00		S0		S00		
	Version		3RT201	3RT201	3RT202	3RT231	3RT251	3RT232	3RT252	3RH21, 3RH24		
	NO	NC	10	01	11	--	--	11	11	40E	31E	22E
												
			2. 3. 4. 5.	5. 6. 7. 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.

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article No.	Auxiliary contacts		S00		S0	S00		S0		S00		
	Version		3RT201	3RT201	3RT202	3RT231	3RT251	3RT232	3RT252	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												
3RH2911-□FB11	--	1	21	12	22	11	11	22	22	51	42	33
3RH2911-□FB22	--	2	32	23	33	22	22	33	--	62	53	44
3RH2911-□FC22	--	3	32	23	33	22	22	33	--	62	53	44
With complete inscription[1]												
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

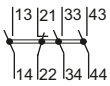
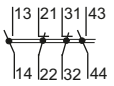
[1] Terminals from the top or bottom; see page 3/54.

Auxiliary switch blocks

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article No.	Auxiliary contacts		S00		S0	S00		S0		S00		
	Version		3RT201	3RT201	3RT202	3RT231	3RT251	3RT232	3RT252	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

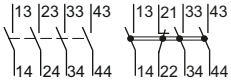
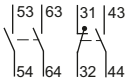
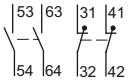
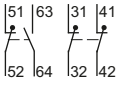
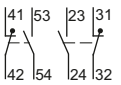
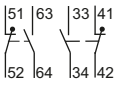
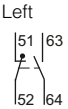
[1] Combinations according to EN 50011 and IEC 60947-5-1 are in **bold print**. All combinations comply with EN 50005.

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

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article No.	Auxiliary contacts		S00		S0	S00		S0		S00		
	Version		3RT201	3RT201	3RT202	3RT231	3RT251	3RT232	3RT252	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	--	2			14	--	--	--	--	--	--	--	--
3RH2911-□DA11	1	1			**21**	--	--	11	11	--	--	--	--
3RH2911-□DA11	1	1			32	--	--	22	22	--	--	--	--
3RH2911-□DA20	2	--			30	--	--	20	20	--	--	--	--
3RH2911-□DA20	2	--			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			Left	Right									
3RH2921-□DA02	--	2			12	03	**13**	02	02	**13**	--	--	--	--
3RH2921-□DA02	--	2			14	--	--	--	--	--	--	--	--
3RH2921-□DA11	1	1			21	12	**22**	11	11	**22**	**22**	--	--	--
3RH2921-□DA11	1	1			32	23	33	22	22	33	--	--	--	--
3RH2921-□DA20	2	--			30	21	**31**	20	20	**31**	**31**	--	--	--
3RH2921-□DA20	2	--			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.

Auxiliary switch blocks

Additional auxiliary switch blocks			3-pole contactors			4-pole contactors				Contactor relays		
Article No.	Auxiliary contacts		S00		S0	S00		S0		S00		
	Version		3RT201	3RT201	3RT202	3RT231	3RT251	3RT232	3RT252	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, S00			Left Right									
3RH2921-☐DA20 + **3RH2921-☐DA11**	2	--		41	32	42	31	31	42	42	--	--	--
	1	1											
3RH2921-☐DA20 + **3RH2921-☐DA02**	2	--		32	23	33	22	22	33	--	--	--	--
	--	2											
3RH2921-☐DA11 + **3RH2921-☐DA02**	1	1		23	14	24	13	--	--	--	--	--	--
	--	2											
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	1	1		32	--	--	22	22	--	--	--	--	--
For size S0, S00			Left Right										
3RH2921-2DE11	1	1		21	12	22	11	11	22	22	--	--	--
3RH2921-2DE11	1	1		32	23	33	22	22	33	--	--	--	--
For contactor relays			Left										
3RH2921-☐DE11	1	1		--	--	--	--	--	--	--	**51X**	**42X**	**33X**

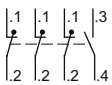
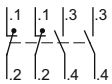
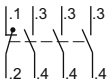
[1] Combinations according to EN 50012, EN 50011 and IEC 60947-5-1 are in **bold print**. All combinations comply with EN 50005.

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 and S0[2]									
3RT2.1., 3RT2.2. 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 3/48.

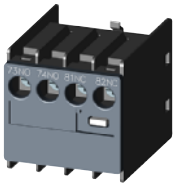
[2] The 3RH29 auxiliary switches are also available with ring terminal lug connection. The 8th digit of the Article No. must be changed from a **"1"** to a **"4"**, e.g. 3RH2911-**1**HA22 ➞ 3RH2911-**4**HA22.

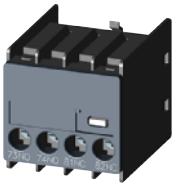
Auxiliary switch blocks

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


3RH2911-1FC22

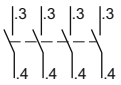
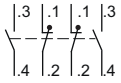
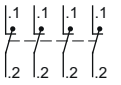
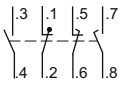
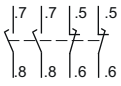

3RH2911-2FC22


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 and S0												
3RT2.1., 3RT2.2. 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. 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 3/48 and 3/49.

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

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		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 and S0									
3RT2.1., 3RT2.2.[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**	
Size S0			Left / Right						
3RT2.2.[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 3/50.
[2] For detailed information on use see pages 3/51 and 3/52.
[3] With 3RT232., 3RT252., mountable only on the right.

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

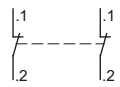
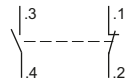
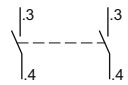
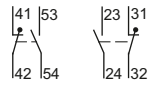
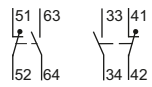
Auxiliary switch blocks

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 (for auxiliary switches for snapping onto the front, see footnote)									
Auxiliary switch blocks for snapping onto the front[2]									
Sizes S00 and S0									
3RT2.1., 3RT2.2. 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**	
Size S0			Left Right						
3RT2.2.	1	1			--		A	**3RH2921-2DE11**	

[1] For detailed information on use see pages 3/50 and 3/52.

[2] The 3RH2911-.NF.. auxiliary switches are also available with ring terminal lug connection. In the 8th position of the Article No., the **"1"** must be replaced with **"4"**, e.g.: 3RH2911-**1**NF11 ➞ 3RH2911-**4**NF11

[3] The following applies to size S0 contactors: The NC contacts are mirror contacts.

*** 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

3RA2813-1AW10

3RA2813-2AW10

For contactors	Rated control supply voltage U_s [1]	Time setting range *t*	Output / auxiliary contacts	DT	Screw terminals		DT	Spring-type terminals	
					Article No.	Price per PU		Article No.	Price per PU
Type	V	s							
Solid-state time-delay auxiliary switch blocks for snapping onto the front, terminal designations according to DIN 46199-5									
Sizes S00 and S0									
	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 contactors.

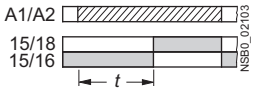
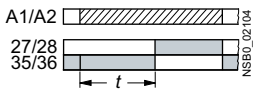
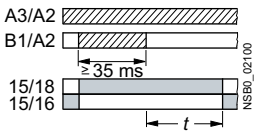
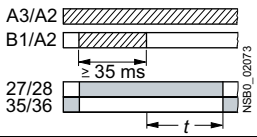
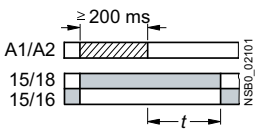
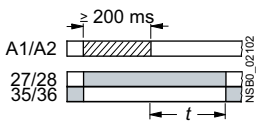
3) Setting of output contacts in as-supplied state not defined (bistable relay). Application of the control supply voltage once results in contact change-over to the correct setting.

For technical specifications see page 3/42.

Note:

When using the solid-state time-delay auxiliary switches, no other auxiliary switches are allowed to be connected to the basic units.

Technical specifications

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

Delay and latching blocks

Selection and ordering data

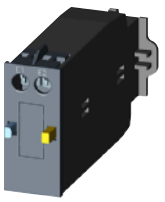
For contactors	Rated control supply voltage U_s	Time setting range t	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Type	V	s		Article No. / Price per PU			
OFF-delay devices							
Sizes S00 and S0							
For contactors with DC operation							
Non-adjustable delay time							
3RT2.1, 3RT2.2, 3RH2...-1BF40	110 AC/DC	S00: > 0.1 S0:> 0.08	B	**3RT2916-2BK01**	1	1 unit	41B
3RT2.1, 3RT2.2, 3RH2...-1BM40	220/230 AC/DC	S00: > 0.5 S0: > 0.3	B	**3RT2916-2BL01**	1	1 unit	41B
3RT2.1, 3RT2.2, 3RH2...-1BB40	24 DC	S00: > 0.2 S0: > 0.1	A	**3RT2916-2BE01**	1	1 unit	41B
Delay blocks · For snapping onto the front of contactors							
Solid-state timing relays with semiconductor output							
Sizes S00 and S0							
ON-delay Two-wire design, varistor integrated							
3RT201., 3RT202., 3RH21[2], 3RH24	24 ... 240 AC/DC[1]	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2811-1CW10**	1	1 unit	41B
OFF-delay with control signal Varistor integrated							
3RT201., 3RT202., 3RH21[2], 3RH24	24 ... 240 AC/DC[1]	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2812-1DW10**	1	1 unit	41B
ON-delay Two-wire design, varistor integrated				**Spring-type terminals**			
3RT201., 3RT202., 3RH21[2], 3RH24	24 ... 240 AC/DC[1]	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2811-2CW10**	1	1 unit	41B
OFF-delay with control signal Varistor integrated							
3RT201., 3RT202., 3RH21[2], 3RH24	24 ... 240 AC/DC[1]	0.05 ...100 (1, 10, 100; selectable)	A	**3RA2812-2DW10**	1	1 unit	41B
Pneumatic[3] · size S0							
Auxiliary contacts 1 NO and 1 NC[4]				**Screw terminals**			
ON-delay							
3RT202.	--	0.1 ... 30	C	**3RT2926-2PA01**	1	1 unit	41B
		1 ... 60	C	**3RT2926-2PA11**	1	1 unit	41B
OFF-delay							
3RT202.	--	0.1 ... 30	C	**3RT2926-2PR01**	1	1 unit	41B
		1 ... 60	C	**3RT2926-2PR11**	1	1 unit	41B
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


3RT2916-2B.01


3RA2811-1CW10


3RA2811-2CW10


3RT2926-2P...


3RT2926-3A.31

For technical specifications see pages 3/43, 3/44 and 3/185.

1) AC voltage values apply for 50 Hz and 60 Hz.
2) Cannot be fitted onto coupling contactors.
3) Certificate for versions for furnaces according to VDE 0116 on request.
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

Surge suppressors without LED (also for spring-type terminals)


3RT2916-1B.00

For contactors	Version	Rated control supply voltage U_s [1] AC operation	DC operation	DT	Article No. [2]	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	V DC						
Size S00									
	For plugging onto the front side of the contactors (with and without auxiliary switch block)								
3RT2.1, 3RH2.	**Varistor**	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	**Varistor**	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


3RT2926-1E.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 No.

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


3RT2916-1J.00

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)	PS*	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.	**Varistor**	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
Size S0										
	For plugging onto the front side of the contactors (prior to mounting of the auxiliary switch block)									
3RT2.2	**Varistor**	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

[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 No.

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

Other function blocks

Selection and ordering data

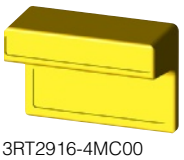
For contactors Type	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
EMC suppression modules; 3-phase, up to 7.5 kW							
Size S00 (for contactors with AC or DC operation)[1]							
			Screw terminals				
3RT201	**RC elements** (3 x 220 Ω/0.22 µF)						
	Up to 400 V	▶	**3RT2916-1PA1**		1	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	**Varistor**						
	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
Additional load modules							
Size S00							
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: AC 50/60 Hz, 180 to 255 V. Operating range: 0.8 to 1.1 x U_s	▶	**3RT2916-1GA00**		1	1 unit	41B
LED modules for displaying contactor operation							
Size S0							
3RT2.2	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
Coupling links for control by PLC							
Size S0							
3RT2.2	**For mounting onto the coil terminals of the contactors** With LED for indicating switching state. With integrated varistor for damping opening surges. 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	▶	**3RH2924-1GP11**		1	1 unit	41B
Control kit							
Sizes S00 and S0	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

3RT2916-1PA.


3RT2916-1GA00


3RT2926-1QT00


3RH2924-1GP11


3RT2916-4MC00

For technical specifications for coupling links see page 3/46.

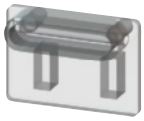
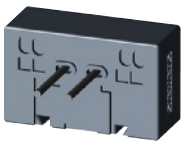
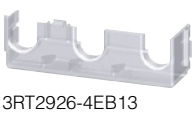
1) See also description on page 3/41.

2) For packs of 10 units, the Article No. must be supplemented with "**-Z**" and order code "**X90**".

3) See also Chapter 8, "Load Feeders and Motor Starters for Use in the Control Cabinet" ➞ "ET 200S Motor Starters" ➞ "Accessories", Article No. 3RK1903-0CA00.

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

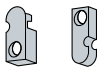
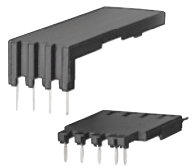
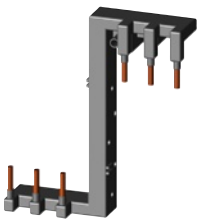
Selection and ordering data

	For contactors Type	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Sealable covers								
	Sizes S00 and S0							
 3RT2916-4MA10	3RT2.1, 3RT2.2, 3RH2.[1]	Sealable covers for preventing manual operation (Not suitable for coupling contactors)	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
Coil connection modules								
	Size S0							
 3RT2926-4RA11	3RT2.2	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 terminal lug connection								
	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	B	**3RT2926-4EB13**		1	1 unit	41B

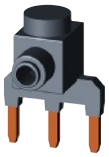
For technical specifications for connection modules see page 3/45.

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

Terminals, covers, adapters, connectors

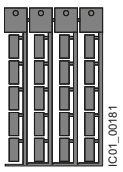
	For contactors Type	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Screw adapters for fixing the contactors								
	Size S0							
 NSB0_01470 3RT1926-4P	3RT2. 2	Screw adapters for easier screw fixing 2 units required per contactor (1 pack contains 10 sets for 10 contactors)	C	**3RT1926-4P**		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 and S0							
 3RA2926-1A		**For series connection of 2 contactors**						
	3RT2. 1		A	**3RA2916-1A**		1	1 unit	41B
	3RT2. 2		A	**3RA2926-1A**		1	1 unit	41B

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

	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 and S0							
 3RT1916-4BB31	**3-pole, with connection terminal**[1)2)]			**Screw terminals**				
	3RT201	25, stranded	▶	**3RT1916-4BB31**		1	1 unit	41B
	3RT202	50, stranded	A	**3RT2926-4BB31**		1	1 unit	41B
 3RT2926-4BB31								
 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 and S0 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 (3RT201. or 3RH2.), removable individually	B	**3RT2916-4JA02**		1	20 units	41B
	• For auxiliary and control current on basic units size S0 (3RT202.) 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	3 060 units	41B

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

Solenoid coils

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, 3RT2024, 3RT2025	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, 3RT2027, 3RT2028	24	--	--	B	**3RT2926-5AB01**		1	1 unit	41B
		42	--	--	B	**3RT2926-5AD01**		1	1 unit	41B
		48	--	--	B	**3RT2926-5AH01**		1	1 unit	41B
	3RT2325, 3RT2326, 3RT2327	110	--	--	B	**3RT2926-5AF01**		1	1 unit	41B
		230	--	--	B	**3RT2926-5AP01**		1	1 unit	41B
		400	--	--	B	**3RT2926-5AV01**		1	1 unit	41B
	3RT2526	--	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 DC coils have different depths.
Coils can only be exchanged with AC contactors and this is only possible with AC coils.

* 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 3/71 and 3/76. For short-circuit protection of contactors with overload relay, see Configuration Manual "Configuring SIRIUS" 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 solid-state overload relays can be fitted to the 3RT1 contactors for protection against overload. The overload relays must be ordered separately.

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 and S0, up to 11 kW

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

Sizes S2 and S3, up to 45 kW

Auxiliary contact complement

The basic units of sizes S2 and S3 are delivered only with the main contacts and can be extended with auxiliary switch blocks.

For sizes S2 and 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 3/96.

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 S2 and 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.
Exceptions:
3RT1926-1T.00 and 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 3/96.

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

Contactors with conventional operating mechanism

Version 3RT1. ..-.A:

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.

SIRIUS 3RT10 contactors, 3-pole, 15 ... 250 kW

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.

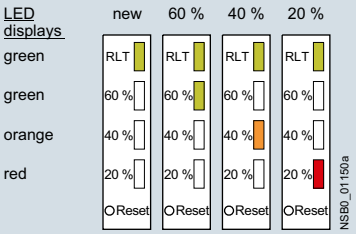
Indication of remaining lifetime (RLT)

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).

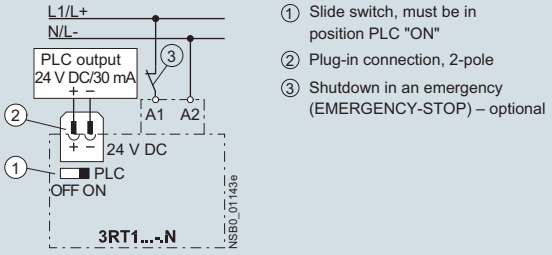


- Early warning to replace contacts
- Optimum utilization of contact material
- Visual inspection of the condition of contacts no longer necessary
- Reduction of ongoing operating costs
- Optimum planning of maintenance measures
- Avoidance of unforeseen plant downtimes

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

2 control options:

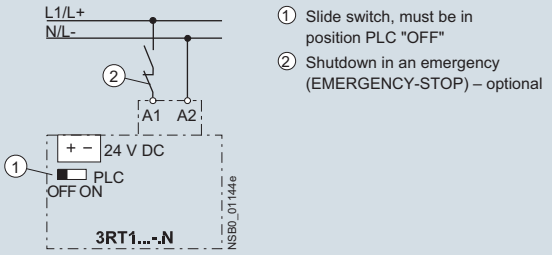
- Control without a coupling link directly through a 24 V DC/≥ 30 mA PLC output (IEC 61131-2). Connection by means of 2-pole plug-in connection. The screwless spring-type connection is part of the scope of supply. The control supply voltage which supplies the solenoid operating mechanism must be connected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

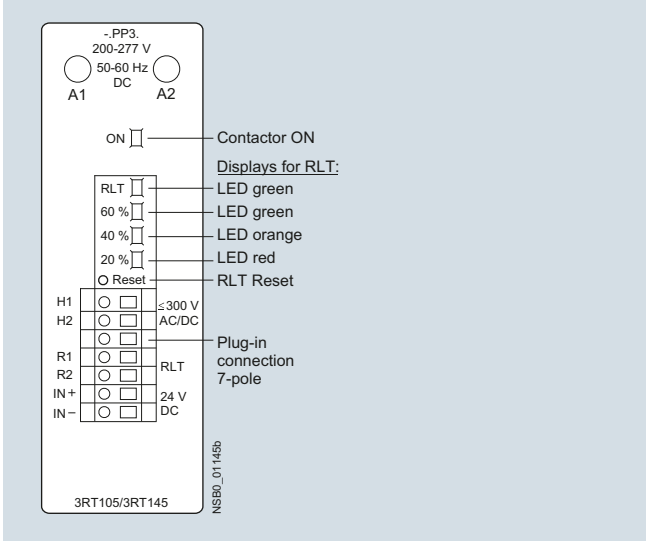
- Conventional control by applying the control supply voltage at A1/A2 through a switching contact.



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)

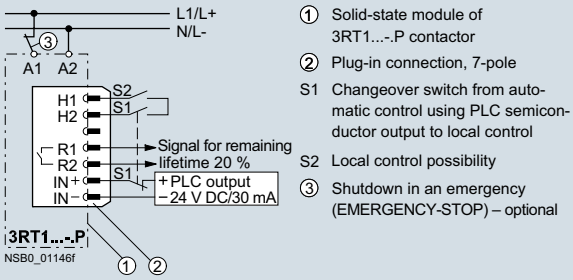


To supply the solenoid and the remaining lifetime indicator with power, the control supply voltage U_S must be connected to terminals A1/A2 of the laterally mounted electronic module. The control inputs of the contactor are connected to a 7-pole plug-in connection; the screwless spring-type connection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

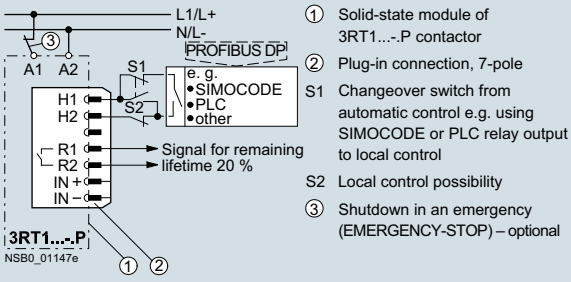
2 control options:

- 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-.



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



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 (3 = S2, 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.

SIRIUS 3RT10 contactors, 3-pole, 15 ... 250 kW

Technical specifications

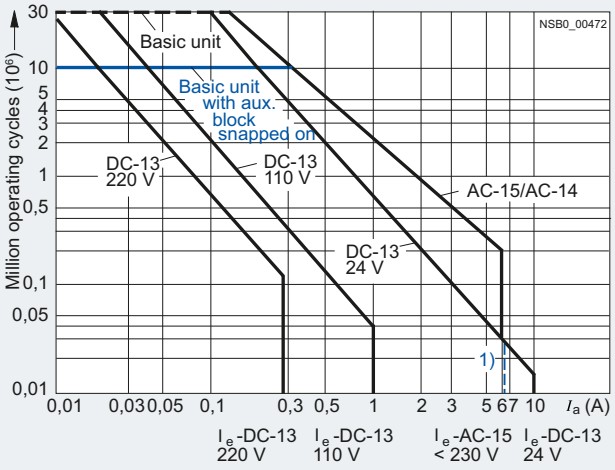
Type			3RT1
Size			S2 to S12
Rated data of the auxiliary contacts			
Acc. to IEC 60947-5-1/EN 60947-5-1 The data apply to integrated auxiliary contacts and contacts in the auxiliary switch blocks for contactor sizes S00 to S12			
Rated insulation voltage U_i (pollution degree 3)		V	690
• For laterally 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

Contact 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)]



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	S2 and S3

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 S2

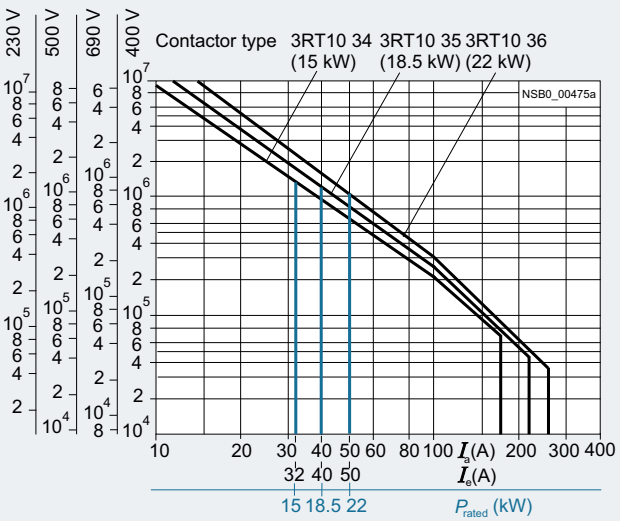


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

Size S3

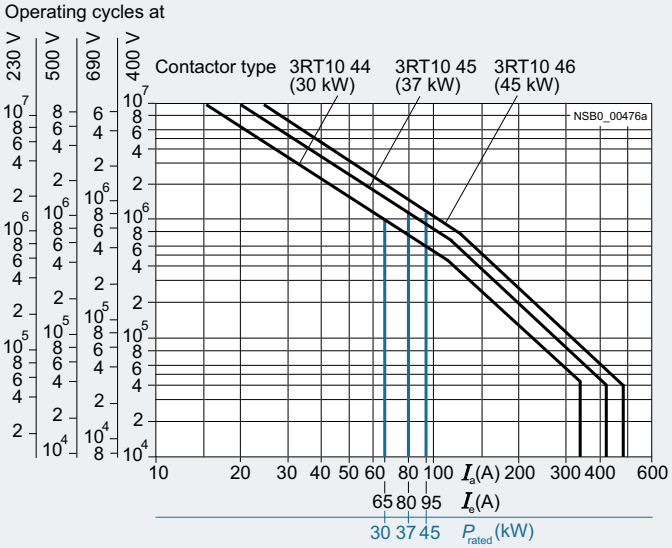


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

SIRIUS 3RT10 contactors, 3-pole, 15 ... 250 kW

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

Contact endurance of the main contacts

Sizes S6 to S12

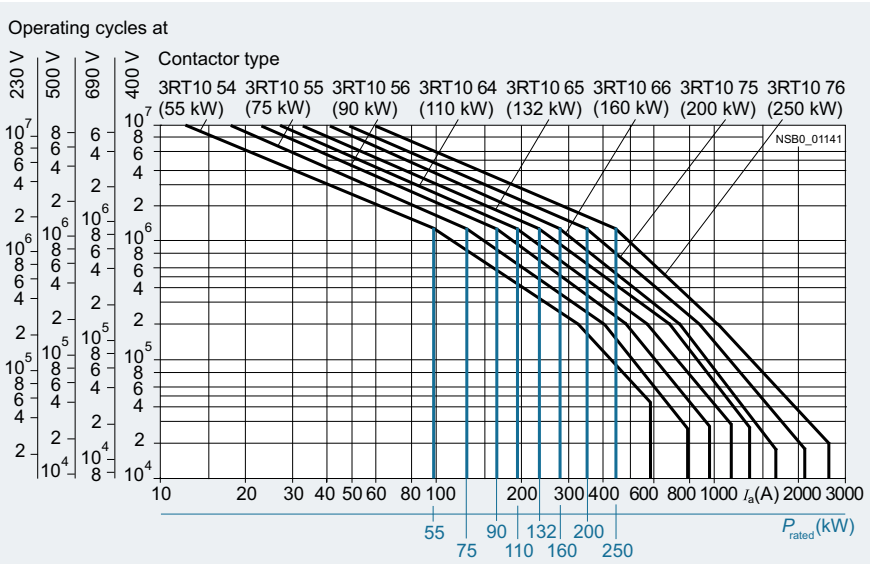


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

3RT12 vacuum contactors · Sizes S10 and S12

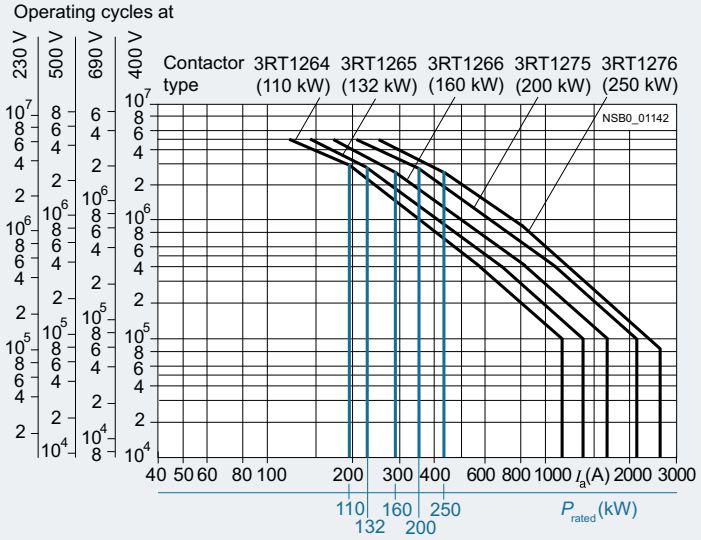
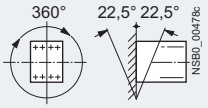


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

SIRIUS 3RT10 contactors, 3-pole, 15 ... 250 kW

Type			**3RT1034**	**3RT1035**	**3RT1036**	**3RT1044**	**3RT1045**	**3RT1046**
Size			**S2**			**S3**		
Dimensions (W x H x D), AC operation		mm	55 x 112 x 110			70 x 146 x 134		
• With mounted auxiliary switch block		mm	55 x 112 x 159			70 x 146 x 183		
Dimensions (W x H x D), DC operation			55 x 112 x 125			70 x 146 x 147		
• With mounted auxiliary switch block			55 x 112 x 174			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	690			1 000		
Rated impulse withstand voltage U_{imp}		kV	6			6		
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N		V	400			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	10/5 and 5/10			6.8/5 and 4/10		
• Sine pulse		*g*/ms	15/5 and 8/10			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	125	125	160	250	250	
• Type of coordination "2"		A	63	63	80	125	160	
• Weld-free[3]		A	16	16	50	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 3/69.
2) For conductor cross-sections, see page 3/75.
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, 15 ... 250 kW

Type Size			3RT1034 S2	3RT1035 S2	3RT1036 S2	3RT1044 S3	3RT1045 S3	3RT1046 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	104	145		218	270	
- P.f.			0.78	0.79		0.61	0.68	
- Closed		VA	9.7	12.5		21	22	
- P.f.			0.42	0.36		0.26	0.27	
• AC operation, 50/60 Hz, standard version								
- Closing		VA	127/113	170/155		247/211	298/274	
- P.f.			0.73/0.69	0.76/0.72		0.62/0.57	0.7/0.62	
- Closed		VA	11.3/9.5	15/11.8		25/18	27/20	
- P.f.			0.41/0.42	0.35/0.38		0.27/0.3	0.29/0.31	
• AC operation, 50 Hz, for USA/Canada								
- Closing		VA	108	150		218	270	
- P.f.			0.76	0.77		0.61	0.68	
- Closed		VA	9.6	12.5		21	22	
- P.f.			0.42	0.35		0.26	0.27	
• AC operation, 60 Hz, for USA/Canada								
- Closing		VA	120	166		232	300	
- P.f.			0.7	0.71		0.55	0.52	
- Closed		VA	10.1	12.6		20	21	
- P.f.			0.42	0.37		0.28	0.29	
• DC operation								
- Closing = Closed		W	13.3	13.3		15	15	
Permissible residual current of the electronics (with 0 signal)								
• AC operation		mA	<12 mA x (230 V/U_s)	<18 mA x (230 V/U_s)		<25 mA x (230 V/U_s)		
• DC operation		mA	<38 mA x (24 V/U_s)	<38 mA x (24 V/U_s)		<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	11 ... 30	10 ... 24		16 ... 57	17 ... 90	
- Opening delay		ms	7 ... 10	7 ... 10		10 ... 19	10 ... 25	
• DC operation								
- Closing delay		ms	50 ... 95	60 ... 100		90 ... 230	90 ... 230	
- Opening delay		ms	20 ... 30	20 ... 25		14 ... 20	14 ... 20	
• Arcing time		ms	10	10		10 ... 15	10 ... 15	
Operating times for 1.0 x U_s[2]								
• AC operation								
- Closing delay		ms	13 ... 22	12 ... 20		18 ... 34	18 ... 30	
- Opening delay		ms	7 ... 10	7 ... 10		11 ... 18	11 ... 23	
• DC operation								
- Closing delay		ms	60 ... 75	70 ... 85		100 ... 120	100 ... 120	
- Opening delay		ms	20 ... 30	20 ... 25		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 3/71).

[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 Size		3RT1034 S2	3RT1035 S2	3RT1036 S2	3RT1044 S3	3RT1045 S3	3RT1046 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	50	60	60	100	120	120
- At 40 °C up to 1 000 V	A	--	--	--	50	60	70
- At 60 °C up to 690 V	A	45	55	55	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	18	22	22	34	38	38
- At 400 V	kW	31	38	38	59	66	66
- At 500 V	kW	39	46	46	74	82	82
- At 690 V	kW	54	66	66	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	16	16	16	35	50	50
- At 60 °C	mm^2	10	16	16	35	35	35
Utilization categories AC-2 and AC-3							
• Rated operational currents I_e							
- Up to 500 V	A	32	40	50	65	80	95
- At 690 V	A	20	24	24	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	7.5	11	15	18.5	22	22
- At 400 V	kW	15	18.5	22	30	37	45
- At 500 V	kW	18.5	22	30	37	45	55
- At 690 V	kW	18.5	22	22	45	55	55
- At 1 000 V	kW	--	--	--	30	37	37
Thermal load capacity, 10 s current[2]	A	320	400	400	600	760	760
Power loss per conducting path at I_e/AC-3	W	1.8	2.6	5	4.6	7.7	10.8
Utilization category AC-4 (for $I_a = 6 \times I_e$)							
• Rated operational current I_e, maximum							
- Up to 400 V	A	29	35	41	55	66	80
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz							
- At 400 V	kW	15	18.5	22	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	15.6	18.5	24	28	34	42
- Up to 690 V	A	15.6	18.5	24	28	34	42
- Up to 1 000 V	A	--	--	--	20	23	23
• Rated power for squirrel-cage motors with 50 Hz and 60 Hz							
- At 230 V	kW	4.7	5.4	7.3	8.7	10.4	12
- At 400 V	kW	8.2	9.5	12.6	15.1	17.9	22
- At 500 V	kW	9.8	11.8	15.8	18.4	22.4	27
- At 690 V	kW	13	15.5	21.8	25.4	30.9	38
- At 1 000 V	kW	--	--	--	22	30	30

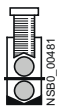
1) Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

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, 15 ... 250 kW

Type Size			3RT1034 S2	3RT1035 S2	3RT1036 S2	3RT1044 S3	3RT1045 S3	3RT1046 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	45	55	55	90	100	100
	60 V	A	20	23	23	23	60	60
	110 V	A	4.5	4.5	4.5	4.5	9	9
	220 V	A	2	2	2	1	2	2
	440 V	A	0.4	0.4	0.4	0.4	0.6	0.6
	600 V	A	0.25	0.25	0.25	0.26	0.4	0.4
- 2 conducting paths in series	Up to 24 V	A	45	55	55	90	100	100
	60 V	A	45	45	45	90	100	100
	110 V	A	45	45	45	90	100	100
	220 V	A	5	5	5	5	10	10
	440 V	A	1	1	1	1	1.8	1.8
	600 V	A	0.8	0.8	0.8	0.8	1	1
- 3 conducting paths in series	Up to 24 V	A	45	55	55	90	100	100
	60 V	A	45	55	55	90	100	100
	110 V	A	45	55	55	90	100	100
	220 V	A	45	45	45	70	80	80
	440 V	A	2.9	2.9	2.9	2.9	1.8	4.5
	600 V	A	1.4	1.4	1.4	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	35	35	35	40	40	40
	60 V	A	6	6	6	6	6.5	6.5
	110 V	A	2.5	2.5	2.5	2.5	2.5	2.5
	220 V	A	2	2	2	1	1	1
	440 V	A	0.1	0.1	0.1	0.15	0.15	0.15
	600 V	A	0.06	0.06	0.06	0.06	0.06	0.06
- 2 conducting paths in series	Up to 24 V	A	45	55	55	90	100	100
	60 V	A	45	45	45	90	100	100
	110 V	A	25	25	25	90	100	100
	220 V	A	5	5	5	7	7	7
	440 V	A	0.27	0.27	0.27	0.42	0.42	0.42
	600 V	A	0.16	0.16	0.16	0.16	0.16	0.16
- 3 conducting paths in series	Up to 24 V	A	45	55	55	90	100	100
	60 V	A	45	55	55	90	100	100
	110 V	A	45	55	55	90	100	100
	220 V	A	25	25	25	35	35	35
	440 V	A	0.6	0.6	0.6	0.8	0.8	0.8
	600 V	A	0.6	0.6	0.6	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			5 000		
• No-load switching frequency DC		h^{-1}	1 500			1 000		
• Switching frequency *z* during rated operation[1]								
- I_e/AC-1	At 400 V	h^{-1}	1 200	1 200	1 000	1 000	900	900
- I_e/AC-2	At 400 V	h^{-1}	750	600	400	400	400	350
- I_e/AC-3	At 400 V	h^{-1}	1 000	1 000	800	1 000	1000	850
- I_e/AC-4	At 400 V	h^{-1}	250	300	300	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'*:
$z' = z \cdot (I_e/I') \cdot (400\ V/U')^{1.5} \cdot 1/h$

Type Size		3RT103. S2	3RT104. S3
Conductor cross-sections			
Main conductors (1 or 2 conductors can be connected)		**Screw terminals**	
Box terminals			
• Terminal screws - Tightening torque	Nm lb.in	3 ... 4.5 27 ... 40	4 ... 6 36 ... 53
Front clamping point connected			
 NSB0_00479			
• Finely stranded with end sleeve	mm^2	0.75 ... 25	2.5 ... 35
• Finely stranded without end sleeve	mm^2	0.75 ... 25	10 ... 50
• Stranded	mm^2	0.75 ... 35	10 ... 70
• Solid	mm^2	0.75 ... 16	2.5 ... 16
• AWG cables, solid or stranded	AWG	18 ... 2	10 ... 2/0
• Ribbon cable conductors (Number x Width x Thickness)	mm	6 x 9 x 0.8	6 x 9 x 0.8
Rear clamping point connected			
 NSB0_00480			
• Finely stranded with end sleeve	mm^2	0.75 ... 25	2.5 ... 50
• Finely stranded without end sleeve	mm^2	0.75 ... 25	10 ... 50
• Stranded	mm^2	0.75 ... 35	10 ... 70
• Solid	mm^2	0.75 ... 16	2.5 ... 16
• AWG cables, solid or stranded	AWG	18 ... 2	10 ... 2/0
• Ribbon cable conductors (Number x Width x Thickness)	mm	6 x 9 x 0.8	6 x 9 x 0.8
Both clamping points connected			
 NSB0_00481			
• Finely stranded with end sleeve	mm^2	2 x (0.75 ... 16)	2 x (2.5 ... 35)
• Finely stranded without end sleeve	mm^2	2 x (0.75 ... 16)	2 x (10 ... 35)
• Stranded	mm^2	2 x (0.75 ... 25)	2 x (10 ... 50)
• Solid	mm^2	2 x (0.75 ... 16)	2 x (2.5 ... 16)
• AWG cables, solid or stranded	AWG	2 x (18 ... 2)	2 x (10 ... 1/0)
• Ribbon cable conductors (Number x Width x Thickness)	mm	2 x (6 x 9 x 0.8)	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	mm^2	--	10 ... 50[3]
• Stranded with cable lug	mm^2	--	10 ... 70[3]
• AWG cables, solid or stranded	AWG	--	7 ... 1/0
• Terminal screws		--	M6
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 (20 ... 16)[4]; 2 x (18 ... 14)[4]; 1 x 12	
• Terminal screws - Tightening torque	 Nm lb.in	M3 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) If bars larger than 12 mm x 10 mm are connected, a 3RT19 46-4EA1 terminal cover is needed to comply with the phase clearance.

2) When connecting conductors which are larger than 25 mm^2, the 3RT19 46-4EA1 terminal cover must be used to keep the phase clearance.

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

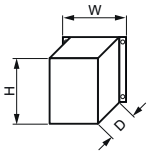
4) If two different conductor cross-sections are connected to one clamping point, both cross-sections must lie in one of the ranges specified.

5) Max. external diameter of the cable insulation: 3.6 mm.
An "insulation stop" must be used for conductor cross-sections ≤ 1 mm^2;
see "Accessories" on page 3/111.

6) Tool for opening the spring-type terminals,
see Accessories, page 3/111.

SIRIUS 3RT10 contactors, 3-pole, 15 ... 250 kW

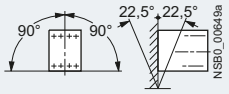
Type			3RT1054	3RT1055, 3RT1056	3RT1064, 3RT1065, 3RT1066	3RT1075	3RT1076
Size			S6		S10	S12	
Dimensions (W x H x D)		mm	120 x 172 x 170		145 x 210 x 202	160 x 214 x 225	
• With mounted auxiliary switch block		mm	120 x 172 x 217		145 x 210 x 251	160 x 214 x 271	



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 3/70.
2) For conductor cross-sections, see page 3/80.
3) For electromagnetic compatibility (EMC) see page 3/66.
4) Test conditions according to IEC 60947-4-1.
5) See http://support.automation.siemens.com/WW/view/en/40625241

SIRIUS 3RT10 contactors, 3-pole, 15 ... 250 kW

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 mechanism				
• 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, 15 ... 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 $I_a = 6 \times I_e$)									
• Rated operational current I_e, maximum									
- 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
- Up to 1 000 V	A	34	38	42	42	57	57	80	80
• 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
- At 1 000 V	kW	49	55	60	59	80	80	113	113

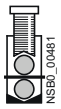
1) Industrial furnaces and electric heaters with resistance heating, etc. (increased power consumption on heating up has been taken into account).

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'*:
$z' = z \cdot (I_e/I') \cdot (400\ V/U')^{1.5} \cdot 1/h$

SIRIUS 3RT10 contactors, 3-pole, 15 ... 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	3RT19 55-4G (55 kW)	3RT19 56-4G	3RT19 66-4G	
• 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 3/111.

6) Tool for opening the spring-type terminals,
see Accessories, page 3/111.

SIRIUS 3RT10 contactors, 3-pole, 15 ... 250 kW

Type Size			3RT1034 S2	3RT1035 S2	3RT1036 S2	3RT1044 S3	3RT1045 S3	3RT1046 S3
SR and UL rated data								
Rated insulation voltage		V AC	600			600		
Uninterrupted current, at 40 °C, open and enclosed		A	45	55	50	90	105	105
Maximum horsepower ratings (from SR and UL approved values)								
• Rated power for three-phase motors at 60 Hz								
- At 200 V		hp	10	10	15	20	25	30
- At 230 V		hp	10	15	15	25	30	30
- At 460 V		hp	25	30	40	50	60	75
- At 575 V		hp	30	40	50	60	75	100
Short-circuit protection[1]								
• At 600 V (contactor or overload relay)		kA	5	5	5	10	10	10
• CLASS RK5 fuse		A	125	150	200	250	300	350
• Circuit breakers with overload protection acc. to UL 489		A	125	150	200	250	300	400
• Combination motor controllers type E according to UL 508								
- At 480 V	Type		3RV103			3RV104		
		A	32	40	50	63	75	100
		kA	65	65	65	65	65	65
- At 600 V	Type		3RV104			3RV104		
		A	32	40	50	63	75	75
		kA	25	25	25	30	30	30
NEMA/EEMAC ratings								
NEMA/EEMAC size		hp	--		2	--		3
• Uninterrupted current								
- Open		A	--		45	--		90
- Enclosed		A	--		45	--		90
• Rated power for three-phase motors at 60 Hz								
- At 200 V		hp	--		10	--		25
- At 230 V		hp	--		15	--		30
- At 460 V		hp	--		25	--		50
- At 575 V		hp	--		25	--		50
Overload relays	Type		3RU113			3RU114		
• Setting range		A	5.5 ... 50			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.

Size			**S2 to S12** **Screw terminals and spring-type terminals** Snap-on auxiliary switch block (1- and 4-pole)	**S2 to S12** **Screw terminals and spring-type terminals** Laterally mountable auxiliary switch block
SR 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

SIRIUS 3RT10 contactors, 3-pole, 15 ... 250 kW

Type Size			3RT1054 S6	3RT1055 S6	3RT1056 S6	3RT1064 S10	3RT1065 S10	3RT1066 S10
SR 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 SR 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
NEMA/EEMAC ratings								
NEMA/EEMAC size		hp	--	4	--	--	--	5
• Uninterrupted current								
- Open		A	--	150	--	--	--	300
- Enclosed		A	--	135	--	--	--	270
• Rated power for three-phase motors at 60 Hz								
- At 200 V		hp	--	40	--	--	--	75
- At 230 V		hp	--	50	--	--	--	100
- At 460 V		hp	--	100	--	--	--	200
- At 575 V		hp	--	100	--	--	--	200
Overload relays	Type		3RB2056			3RB2066		

Type Size			3RT1075 S12	3RT1076 S12
SR 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 SR 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
NEMA/EEMAC ratings				
NEMA/EEMAC size		hp	--	6
• Uninterrupted current				
- Open		A	--	600
- Enclosed		A	--	540
• Rated power for three-phase motors at 60 Hz				
- At 200 V		hp	--	150
- At 230 V		hp	--	200
- At 460 V		hp	--	400
- At 575 V		hp	--	400
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

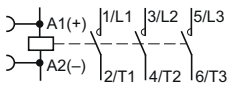
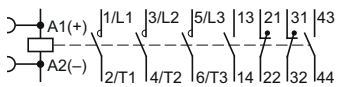
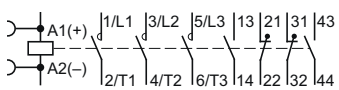
AC operation

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

3RT103.-1A.00

3RT103.-3A.00

3RT103.-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						Article No. / Price per PU		Article No. / Price per PU
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						
500 V	**400 V**	690 V								
A	**kW**	A		NO	NC	V AC				
For screw and snap-on mounting onto TH 35 standard mounting rail										
Size S2										
										
32	**15**	50	--	--	--	24	▶	**3RT1034-1AB00**	B	**3RT1034-3AB00**
						110	▶	**3RT1034-1AF00**	B	**3RT1034-3AF00**
						230	▶	**3RT1034-1AP00**	▶	**3RT1034-3AP00**
40	**18.5**	60	--	--	--	24	▶	**3RT1035-1AB00**	B	**3RT1035-3AB00**
						110	▶	**3RT1035-1AF00**	B	**3RT1035-3AF00**
						230	▶	**3RT1035-1AP00**	▶	**3RT1035-3AP00**
50	**22**	60	--	--	--	24	▶	**3RT1036-1AB00**	B	**3RT1036-3AB00**
						110	▶	**3RT1036-1AF00**	B	**3RT1036-3AF00**
						230	▶	**3RT1036-1AP00**	▶	**3RT1036-3AP00**
With mounted auxiliary switch block (removable)[2]										
										
32	**15**	50	**22**	2	2	24	▶	**3RT1034-1AB04**		--
						110	▶	**3RT1034-1AF04**		--
						230	▶	**3RT1034-1AP04**		--
40	**18.5**	60	**22**	2	2	24	▶	**3RT1035-1AB04**		--
						110	▶	**3RT1035-1AF04**		--
						230	▶	**3RT1035-1AP04**		--
50	**22**	60	**22**	2	2	24	▶	**3RT1036-1AB04**		--
						110	▶	**3RT1036-1AF04**		--
						230	▶	**3RT1036-1AP04**		--
With permanently mounted auxiliary switch block for safety applications according to SUVA										
										
32	**15**	50	**22**	2	2	230	B	**3RT1034-1AP04-3MA0**		--
40	**18.5**	60	**22**	2	2	230	B	**3RT1035-1AP04-3MA0**		--
50	**22**	60	**22**	2	2	230	B	**3RT1036-1AP04-3MA0**		--

Other voltages according to page 3/90 on request.
For accessories see page 3/103.
For spare parts see page 3/112.

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

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

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

SIRIUS 3RT10 contactors, 3-pole, 15 ... 250 kW

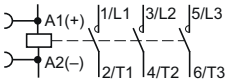
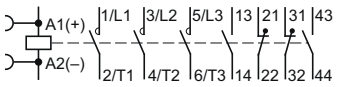
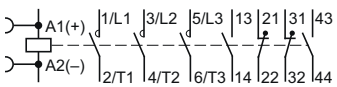
AC operation

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 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 3/90 on request.
For accessories see page 3/103.
For spare parts see page 3/113.

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

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

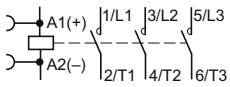
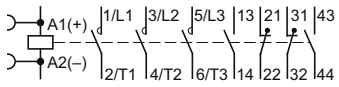
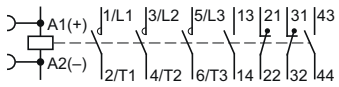
DC operation

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

3RT103.-1B.40

3RT103.-3B.40

3RT103.-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								
A	**kW**	A		NO	NC	V DC				
For screw and snap-on mounting onto TH 35 standard mounting rail										
Size S2										
										
32	**15**	50	--	--	--	24 220	▶ B	**3RT1034-1BB40** **3RT1034-1BM40**	▶ B	**3RT1034-3BB40** **3RT1034-3BM40**
40	**18.5**	60	--	--	--	24 220	▶ B	**3RT1035-1BB40** **3RT1035-1BM40**	▶ B	**3RT1035-3BB40** **3RT1035-3BM40**
50	**22**	60	--	--	--	24 220	▶ B	**3RT1036-1BB40** **3RT1036-1BM40**	▶ B	**3RT1036-3BB40** **3RT1036-3BM40**
With mounted auxiliary switch block (removable)[2]										
										
32	**15**	50	**22**	2	2	24 220	▶ B	**3RT1034-1BB44** **3RT1034-1BM44**		-- --
40	**18.5**	60	**22**	2	2	24 220	▶ B	**3RT1035-1BB44** **3RT1035-1BM44**		-- --
50	**22**	60	**22**	2	2	24 220	▶ B	**3RT1036-1BB44** **3RT1036-1BM44**		-- --
With permanently mounted auxiliary switch block for safety applications according to SUVA										
										
32	**15**	50	**22**	2	2	24	B	**3RT1034-1BB44-3MA0**		--
40	**18.5**	60	**22**	2	2	24	B	**3RT1035-1BB44-3MA0**		--
50	**22**	60	**22**	2	2	24	B	**3RT1036-1BB44-3MA0**		--

Other voltages according to page 3/90 on request.
For accessories see page 3/103.
For spare parts see page 3/113.

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

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

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

SIRIUS 3RT10 contactors, 3-pole, 15 ... 250 kW

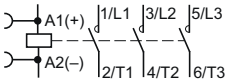
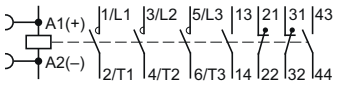
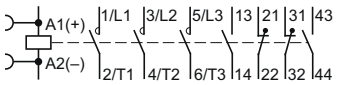
DC operation

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					
A	**kW**	A				V DC				
For screw and snap-on mounting onto TH 35 and TH 75 standard mounting rail										
Size S3										
										
65	**30**	100	--	--	--	24	▶	**3RT1044-1BB40**	▶	**3RT1044-3BB40**
						220	B	**3RT1044-1BM40**	B	**3RT1044-3BM40**
80	**37**	120	--	--	--	24	▶	**3RT1045-1BB40**	▶	**3RT1045-3BB40**
						220	B	**3RT1045-1BM40**	B	**3RT1045-3BM40**
95	**45**	120	--	--	--	24	▶	**3RT1046-1BB40**	▶	**3RT1046-3BB40**
						220	B	**3RT1046-1BM40**	B	**3RT1046-3BM40**
With mounted auxiliary switch block (removable)[2]										
										
65	**30**	100	**22**	2	2	24	▶	**3RT1044-1BB44**		--
						220	B	**3RT1044-1BM44**		--
80	**37**	120	**22**	2	2	24	▶	**3RT1045-1BB44**		--
						220	B	**3RT1045-1BM44**		--
95	**45**	120	**22**	2	2	24	▶	**3RT1046-1BB44**		--
						220	B	**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 3/90 on request.
For accessories see page 3/103.
For spare parts see page 3/113.

[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 No. for the auxiliary switch block (removable): 3RH1921-1HA22 (2 NO + 2 NC according 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	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	kW	**kW**	kW	kW	A			V AC/DC						
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 3/90 on request.
For accessories see page 3/103.
For spare parts see page 3/114.

[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 No., 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, 15 ... 250 kW

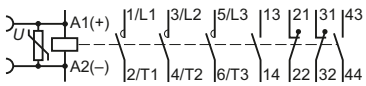
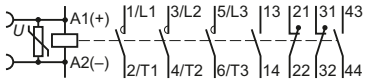
UC operating mechanism · AC/DC operation (50/60 Hz and DC)

- 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	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
	A	kW	**kW**	kW	kW	A			V AC/DC						
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 3/90 on request.
For accessories see page 3/103.
For spare parts see page 3/115.

[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 No., 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.

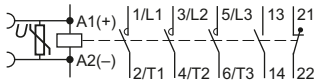
[2)] Guide value for 4-pole standard motors at 50 Hz 400 V AC. The actual starting and rated data of the motor to be switched must be considered when selecting the units.

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

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	B	**3RT1054-1PF35**		1	1 unit	41B
									200 … 277	B	**3RT1054-1PP35**		1	1 unit	41B
	150	45	**75**	90	132	185	1	1	96 … 127	B	**3RT1055-6PF35**		1	1 unit	41B
									200 … 277	B	**3RT1055-6PP35**		1	1 unit	41B
	185	55	**90**	110	160	215	1	1	96 … 127	B	**3RT1056-6PF35**		1	1 unit	41B
									200 … 277	B	**3RT1056-6PP35**		1	1 unit	41B
S10	225	55	**110**	160	200	275	1	1	96 … 127	B	**3RT1064-6PF35**		1	1 unit	41B
									200 … 277	B	**3RT1064-6PP35**		1	1 unit	41B
	265	75	**132**	160	250	330	1	1	96 … 127	B	**3RT1065-6PF35**		1	1 unit	41B
									200 … 277	B	**3RT1065-6PP35**		1	1 unit	41B
	300	90	**160**	200	250	330	1	1	96 … 127	B	**3RT1066-6PF35**		1	1 unit	41B
									200 … 277	B	**3RT1066-6PP35**		1	1 unit	41B
S12	400	132	**200**	250	400	430	1	1	96 … 127	B	**3RT1075-6PF35**		1	1 unit	41B
									200 … 277	B	**3RT1075-6PP35**		1	1 unit	41B
	500	160	**250**	355	400	610	1	1	96 … 127	B	**3RT1076-6PF35**		1	1 unit	41B
									200 … 277	B	**3RT1076-6PP35**		1	1 unit	41B

Other voltages according to page 3/90 on request.
For accessories see page 3/103.
For spare parts see page 3/115.

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 No., 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.

SIRIUS 3RT10 contactors, 3-pole, 15 ... 250 kW

Options

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

Rated control supply voltage U_s	Contactor type	3RT103, 3RT104	3RT144	3RT133, 3RT134, 3RT153	3RT1617, 3RT1627, 3RT1647
	Size	S2, S3	S3	S2, S3	S00, S0, S3
Sizes S2 and 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	3RT1034-1A**P0**0	Contactor with screw terminals; with solenoid coil for 50 Hz for rated control supply voltage 230 V AC
	3RT1034-1A**G2**0	Contactor with screw terminals; with solenoid coil for 50/60 Hz for rated control supply voltage 110 V AC
DC operating mechanism	3RT1034-3B**B4**0	Contactor with spring-type terminals; for rated control supply voltage 24 V DC
	3RT1034-3B**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 mechanism**			
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 (sizes S2 and S3):
at 50 Hz and 60 Hz: 0.8 to 1.1 × U_s.

3) Coil operating range (sizes S2 and 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 × $U_{s\,max}$.

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

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.

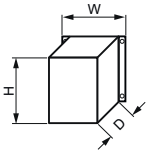
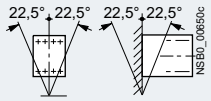
Note:

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 S2 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 contacts 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[1]		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 3/70.

[2] For conductor cross-sections, see page 3/94.

[3] For electromagnetic compatibility (EMC) see page 3/66.

[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 mechanism						
• 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	

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

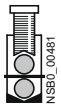
Type Size		3RT1264 S10	3RT1265 S10	3RT1266 S10	3RT1275 S12	3RT1276 S12
Main circuit						
Load rating with AC						
Utilization category AC-1 **Switching resistive loads**						
• Rated operational currents I_e						
- At 40 °C up to 1 000 V	A	330			610	
- At 60 °C up to 1 000 V	A	300			550	
• Rated 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 $I_a = 6 \times I_e$)						
• Rated operational current I_e, maximum						
- 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'*:
$z' = z \cdot (I_e/I') \cdot (400\ V/U')^{1.5} \cdot 1/h$

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				
 NSB0_00479	• Finely stranded with end sleeve • Finely stranded without end sleeve • Stranded	mm² mm² mm²	70 ... 240 70 ... 240 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				
 NSB0_00480	• Finely stranded with end sleeve • Finely stranded without end sleeve • Stranded	mm² mm² mm²	120 ... 185 120 ... 185 120 ... 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				
 NSB0_00481	• Finely stranded with end sleeve • Finely stranded without end sleeve • Stranded	mm² mm² mm²	Min. 2 x 50, max. 2 x 185 Min. 2 x 50, max. 2 x 185 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)] • Stranded with cable lug[1)] • AWG cables, solid or stranded	mm² mm² AWG	50 ... 240 70 ... 240 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 and 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 and 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
NEMA/EEMAC ratings						
• NEMA/EEMAC size	hp	--	--	5	--	6
• Uninterrupted current						
- Open	A	--	--	300	--	600
- Enclosed	A	--	--	270	--	540
• Rated power for three-phase motors at 60 Hz						
- At 200 V	hp	--	--	75	--	150
- At 230 V	hp	--	--	100	--	200
- At 460 V	hp	--	--	200	--	400
- At 575 V	hp	--	--	200	--	400
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.

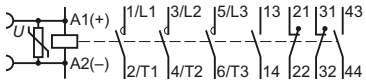
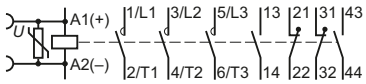
Selection and ordering data

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 AC-2 and AC-3, T_u: Up to 60 °C					AC-1, T_u: 40 °C	Auxiliary contacts, lateral		Rated control supply voltage U_s	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	Operational current I_e up to	Ratings[1] of three-phase motors at 50 Hz and				Operational current I_e up to					Article No.	Price per PU			
	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 3/90 on request.
For more 3TF68/3TF69 vacuum contactors (335 kW and 450 kW) see page 3/123.
For accessories see page 3/105.

[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

General data

Overview

Snap-on auxiliary switch blocks

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

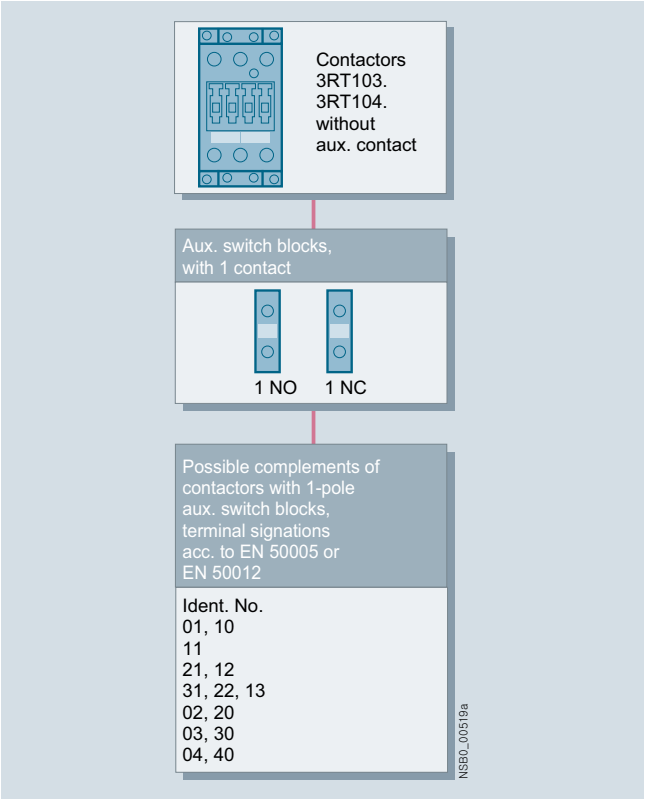
Sizes S2 to S12

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).

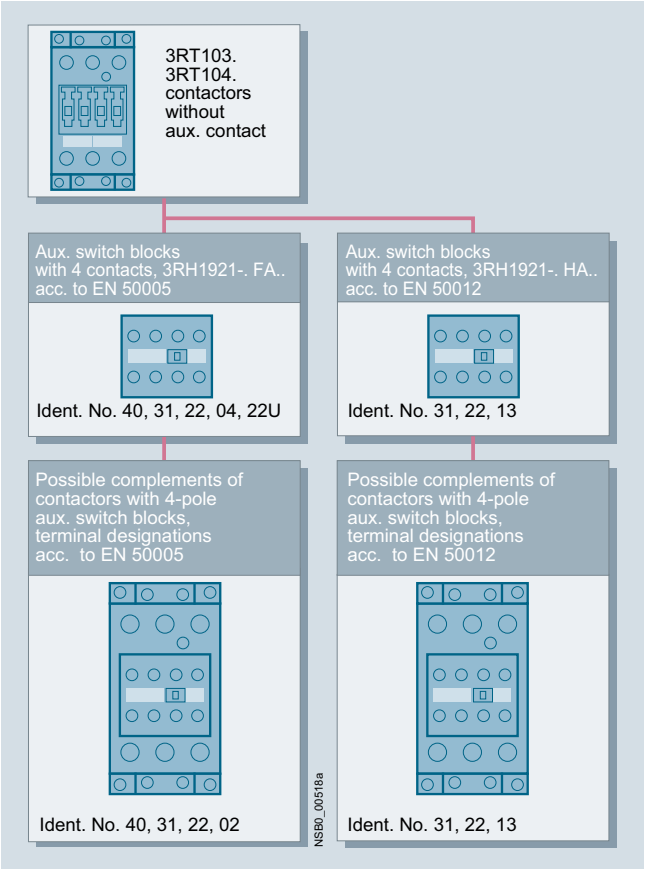


1-pole auxiliary switch blocks for 3RT1 contactors

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.

Size S2

A maximum of four auxiliary contacts can be attached; the auxiliary switch blocks used can be of any version. For reasons of symmetry, when two 2-pole laterally mountable auxiliary switch blocks are used, one block must be attached on the right and one on the left.

More auxiliary contacts are permissible with size S2 under certain conditions (please ask).

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

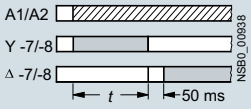
The solid-state, time-delay auxiliary switch block is fitted onto the front side of the contactor.

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 S2 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.

Solid-state 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.

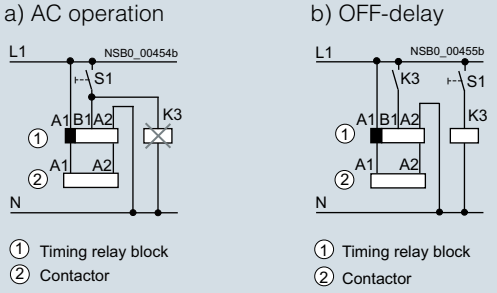
The timing relays are suitable for both AC and DC operation.

Sizes S2 and S3

The timing relay block for size S0 to 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 circuit diagram).

General data

OFF-delay device for size S00 and S0 contactors

AC and DC operation

IEC 60947, EN 60947

For screw 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 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 V and 230 V, either AC voltage or DC voltage can be applied on the line side, whereas the version 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.

Surge suppressors

- Without LED (also for spring-type terminals)
  Sizes S2, 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 S2 and 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 sizes S2 and 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 S2 to S12

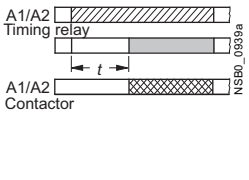
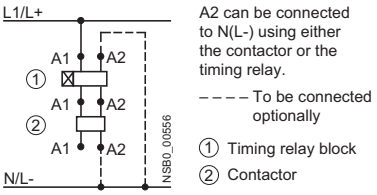
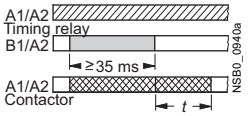
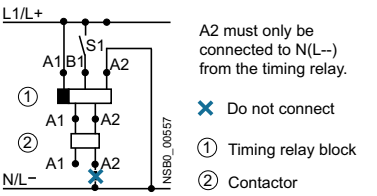
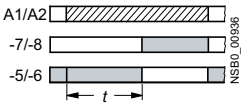
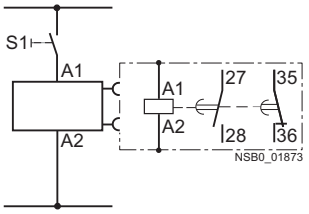
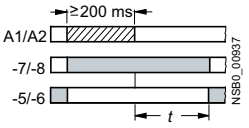
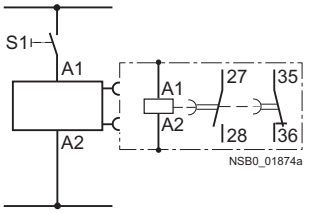
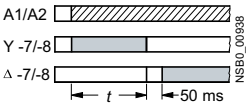
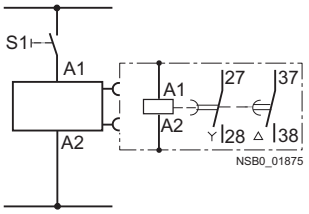
When contactors and contactor relays are used in safety-related applications, it must be ensured that it is impossible to operate the contactors manually.

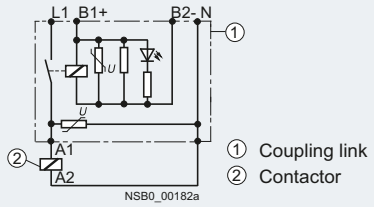
For SIRIUS contactors there are sealable covers available for this purpose as accessories; these prevent accidental manual operation. These are transparent molded-plastic caps with a bracket that enables the contactor to be sealed.

Technical specifications

Contactor	Type		3RT1926-2C	3RT1926-2D	3RT1926-2E	3RT1926-2F	3RT1926-2G
			Solid-state 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 operational class gG		A	--		4		
Residual current	Max.	mA	5		--		
Voltage drop With conducting output	Max.	VA	3.5		--		
Mechanical endurance	Operating cycles		100 x 10^6		10 x 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
Solid-state 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

General data

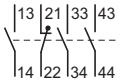
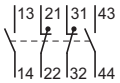
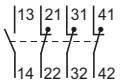
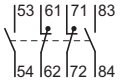
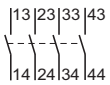
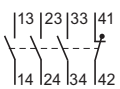
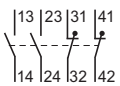
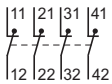
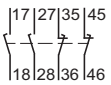
Contactor	Type		3RT1926-3A Mechanical latching blocks
General data			
Rated insulation voltage U_i (pollution degree 3)		V	690
Permissible ambient temperature			
• During operation		°C	-25 ... +60
• During storage		°C	-50 ... +80
Degree of protection acc. to IEC 60947-1, Appendix C			IP20
Mechanical endurance			
• With 3RT1.2	Operating cycles		3 x 10^6
• With 3RT1.3	Operating cycles		50 000
Conductor cross-sections			
• Solid		mm^2 AWG	2 x (0.5 ... 2.5); 1 x 4 2 x 14; 1 x 12
• Finely stranded with end sleeve		mm^2 AWG	2 x (0.5 ... 2.5); 1 x 2.5 2 x 14; 1 x 12
Tightening torque of the terminal screws		Nm lb.in	0.8 ... 1.1 7 ... 9.5
Control			
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

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												
Sizes S2 and S3[1]												
	4-pole auxiliary switch blocks											
3RT1.3, 3RT1.4	**31**	3	1	--	--		▶	**3RH1921-1HA31**		▶	**3RH1921-2HA31**	
	22	2	2	--	--		▶	**3RH1921-1HA22**		▶	**3RH1921-2HA22**	
	13	1	3	--	--		▶	**3RH1921-1HA13**		▶	**3RH1921-2HA13**	
Sizes S2 to S12[2]												
	4-pole auxiliary switch blocks											
3RT1.3 ... 3RT1.7	**22**	2	2	--	--		B	**3RH1921-1XA22-0MA0**		D	**3RH1921-2XA22-0MA0**	
Auxiliary switch blocks for snapping onto the front according to EN 50005												
Sizes S2 and S3[1]												
	4-pole auxiliary switch blocks											
3RT1.3, 3RT1.4	**40**	4	--	--	--		▶	**3RH1921-1FA40**		▶	**3RH1921-2FA40**	
	31	3	1	--	--		▶	**3RH1921-1FA31**		▶	**3RH1921-2FA31**	
	22	2	2	--	--		▶	**3RH1921-1FA22**		▶	**3RH1921-2FA22**	
	04	--	4	--	--		▶	**3RH1921-1FA04**		A	**3RH1921-2FA04**	
	22 U	--	--	2	2		▶	**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

Auxiliary switches

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												
***Sizes S2 and S3*[1)]												
	2-pole auxiliary switch blocks with cable entry on one side • **Cable entry from above**											
3RT1.3, 3RT1.4	**11**	1	1	--	--	13 21 / 14 22	▶	**3RH1921-1LA11**			**--**	
	20	2	--	--	--	13 23 / 14 24	▶	**3RH1921-1LA20**			**--**	
	02	--	2	--	--	11 21 / 12 22	▶	**3RH1921-1LA02**			**--**	
	• **Cable entry from below**											
3RT1.3, 3RT1.4	**11**	1	1	--	--	13 21 / 14 22	▶	**3RH1921-1MA11**			**--**	
	20	2	--	--	--	13 23 / 14 24	▶	**3RH1921-1MA20**			**--**	
	02	--	2	--	--	11 21 / 12 22	▶	**3RH1921-1MA02**			**--**	
***Sizes S2 to S12*[2)]												
	1-pole auxiliary switch blocks according to EN 50005 and EN 50012											
3RT1.3 ... 3RT1.7	**10**	1	--	--	--	.3 / .4	▶	**3RH1921-1CA10**		▶	**3RH1921-2CA10**	
	01	--	1	--	--	.1 / .2	▶	**3RH1921-1CA01**		▶	**3RH1921-2CA01**	
	10	--	--	1	--	.7 / .8	▶	**3RH1921-1CD10**			**--**	
	01	--	--	--	1	.5 / .6	▶	**3RH1921-1CD01**			**--**	

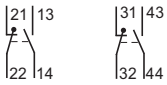
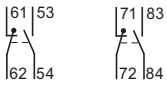
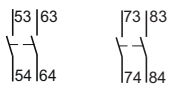
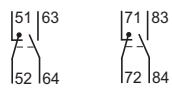
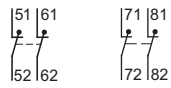
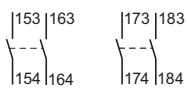
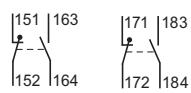
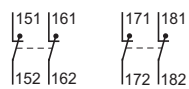
[1)] Exception: 3RT16.
[2)] Exception: 3RT12, 3RT16

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	Auxiliary contacts			DT	Screw terminals		DT	Spring-type terminals	
	Version				Article No.	Price per PU		Article No.	Price per PU
Type	NO	NC							
Laterally mountable auxiliary switch blocks according to EN 50012									
Sizes S2 and S3			Left Right						
	First laterally mountable auxiliary switch block (right or left), 2-pole								
3RT1.3, 3RT1.4	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 S2 to S12			Left Right						
	First laterally mountable auxiliary switch block (right or left), 2-pole								
3RT1.3 ... 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**	

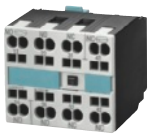
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Auxiliary switches

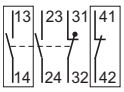
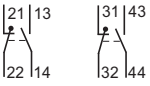
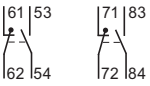
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

3RH1921-2DE11,
3RH1921-2JE11

3RH1921-1FE22



3RH1921-2JE22

For contactors	Contacts / Version					DT	Screw terminals		DT	Spring-type terminals	
							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											
Sizes S2 and S3											
3RT1.3 ... 3RT1.7	1	1	1	1		▶	**3RH1921-1FE22**		B	**3RH1921-2FE22**	
Laterally mountable auxiliary switch blocks according to EN 50012											
Sizes S2 to S12					Left / Right						
	First laterally mountable auxiliary switch block (right or left), 2-pole										
3RT1.3 ... 3RT1.7	1	--	--	1			--		▶	**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			--		▶	**3RH1921-2JE11**	

[1] 1 NO + 1 NC standard auxiliary switches:
See descriptions on page 3/96.

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

Selection and ordering data

For contactors	Auxiliary contacts	Rated control supply voltage U_s [1]	Time setting range t	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V	s						
Solid-state time-delay auxiliary switch blocks for snapping onto the front, terminal designations according to DIN 46199-5									
Sizes S2 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
Solid-state timing relay blocks with semiconductor output									
Sizes S2 and S3									
	For mounting onto top-lying coil terminals, only for devices with screw terminals **• ON-delay (varistor integrated)**								
 3RT1926-2C...									
3RT103, 3RT104, 3RT13[4] 3RT15	--	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...									
3RT103, 3RT104, 3RT13[4] 3RT15	--	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									
Sizes S2 and S3									
 3RT1916-2BE01									
3RT103, 3RT104		24 DC Only for contactors with DC operation	S2: 90 fixed S3: 70 fixed	B	**3RT1916-2BE01**		1	1 unit	41H

For technical specifications, operating travel diagrams and circuit diagrams see pages 3/99 and 3/100.

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 changeover 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

Surge suppressors

Selection and ordering data

For contactors	Version	Rated control supply voltage U_s [1] AC operation	Rated control supply voltage U_s [1] DC operation	DT	Article No. [2]	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type		V AC	V DC						
Surge suppressors without LED									
Sizes S2 and S3 (also for spring-type terminals)									
	For fitting onto the coil terminals at top or bottom								
 3RT1926-1B.00									
3RT1.3, 3RT1.4	**Varistor** 	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									
3RT1.3[3], 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
3RT1.3, 3RT1.4	**Diode assembly** for DC operation 								
	• Connectable at the top	--	24	▶	**3RT1936-1ER00**		1	1 unit	41B
	(e.g. for contactor with overload relay)	--	30 ... 250	▶	**3RT1936-1ES00**		1	1 unit	41B
	• Connectable at the bottom	--	24	▶	**3RT1936-1TR00**		1	1 unit	41B
	(e.g. for fuseless load feeders)	--	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 No.

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

For contactors	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Type							
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

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

Selection and ordering data

For contactors Type	Rated control supply voltage U_s V	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mechanical latching blocks							
Size S2							
	For mounting on 1 contactor[1] **The contactor remains in the energized state even after a voltage failure**						
3RT1.3	24 AC/DC	A	**3RT1926-3AB31**		1	1 unit	41B
	110 AC/DC	B	**3RT1926-3AF31**		1	1 unit	41B
	230 AC/DC	B	**3RT1926-3AP31**		1	1 unit	41B


3RT1926-3A.31

[1] Two front-mounted auxiliary switch blocks can be mounted in addition.

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							
Sizes S2 and S3							
	For mounting onto the coil terminals of the contactors With LED for indicating switching state						
3RT1.3, 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 S2 to S12[1] ***(also for spring-type terminals)***							
3RT1.3, 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
Auxiliary terminals, 3-pole							
Size S3							
3RT104.	For connection of auxiliary and control cables (0.5 to 2.5 mm²) to the main conductor connections (for one side)	B	**3RT1946-4F**		1	1 unit	41B


3RT1926-1QT00
mounted on contactor


3RT1946-4F

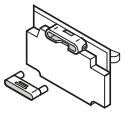
For technical specifications for latching blocks see page 3/102.

For technical specifications and circuit diagram for coupling links see page 3/101.

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

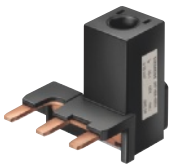
* You can order this quantity or a multiple thereof.
Illustrations are approximate

Miscellaneous accessories

	For contactors Size	Type	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
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 (3RB206,3 RB216)	Up to 240 mm²	▶	**3RT1966-4G**		1	1 unit	41B
			With auxiliary conductor connection						
Covers									
 3RT1936-4EA2			**Terminal covers for box terminals** (additional touch protection)						
			To be fitted at the box terminals (2 units required per contactor)						
	S2	3RT103	--	B	**3RT1936-4EA2**		1	1 unit	41B
		3RT133, 3RT153	For 4-pole contactors	B	**3RT1936-4EA4**		1	1 unit	41B
 3RT1956-4EA2	**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
 3RT1956-4EA1			**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	**S2 ... 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 3/75 and 3/80).
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

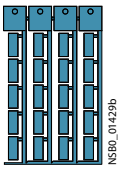
	For contactors		Max. conductor cross-sections	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG
	Size	Type	mm²		Article No.	Price per PU			
Links for paralleling									
 3RT1936-4BB31		**3-pole, with connection terminal**[1)2)]							
	S2	3RT103	95	▶	**3RT1936-4BB31**		1	1 unit	41B
 3RT1956-4BA31		**3-pole, with through hole (star jumpers)**[1)2)3)]							
	S3	3RT104, 3RT144	185	▶	**3RT1946-4BB31**		1	1 unit	41B
	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 S2: The links for paralleling are insulated.
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.

	Version	DT	Spring-type terminals		PU (UNIT, SET, M)	PS*	PG
			Article No.	Price per PU			
Insulation stop for securely holding back the conductor insulation on conductors up to 1 mm²							
 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							
 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

	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Blank labels							
 3RT1900-1SB20	**Unit labeling plates** for SIRIUS devices[1)]						
	• 10 mm × 7 mm, pastel turquoise	C	**3RT1900-1SB10**		100	816 units	41B
	• 20 mm × 7 mm, pastel turquoise	D	**3RT1900-1SB20**		100	340 units	41B
	Adhesive labels for SIRIUS devices						
	• 19 mm × 6 mm, pastel turquoise	C	**3RT1900-1SB60**		100	3 060 units	41B
	• 19 mm × 6 mm, zinc/yellow	C	**3RT1900-1SD60**		100	3 060 units	41B

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

Solenoid coils

Selection and ordering data

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

3RT1934-5A.01

For contactors		Rated control supply voltage U_s			DT	Screw terminals		DT	Spring-type terminals	
		50 Hz	50/60 Hz	60 Hz		Article No.	Price per PU		Article No.	Price per PU
Size	Type	V	V	V						
Solenoid coils · AC operation										
S2	3RT1034	24	--	--	B	**3RT1934-5AB01**		B	**3RT1934-5AB02**	
		42	--	--	B	**3RT1934-5AD01**		B	**3RT1934-5AD02**	
		48	--	--	B	**3RT1934-5AH01**		B	**3RT1934-5AH02**	
		110	--	--	B	**3RT1934-5AF01**		B	**3RT1934-5AF02**	
		230	--	--	B	**3RT1934-5AP01**		B	**3RT1934-5AP02**	
		400	--	--	C	**3RT1934-5AV01**		B	**3RT1934-5AV02**	
		--	24	--	B	**3RT1934-5AC21**		B	**3RT1934-5AC22**	
		--	42	--	B	**3RT1934-5AD21**		B	**3RT1934-5AD22**	
		--	48	--	B	**3RT1934-5AH21**		B	**3RT1934-5AH22**	
		--	110	--	C	**3RT1934-5AG21**		B	**3RT1934-5AG22**	
		--	220	--	C	**3RT1934-5AN21**		B	**3RT1934-5AN22**	
		--	230	--	C	**3RT1934-5AL21**		B	**3RT1934-5AL22**	
		110	--	120	B	**3RT1934-5AK61**		B	**3RT1934-5AK62**	
		220	--	240	B	**3RT1934-5AP61**		B	**3RT1934-5AP62**	
		--	100	110	B	**3RT1934-5AG61**		B	**3RT1934-5AG62**	
		--	200	220	B	**3RT1934-5AN61**		B	**3RT1934-5AN62**	
		--	400	440	B	**3RT1934-5AR61**		B	**3RT1934-5AR62**	
	3RT1035, 3RT1036, 3RT133., 3RT153.	24	--	--	B	**3RT1935-5AB01**		B	**3RT1935-5AB02**	
		42	--	--	B	**3RT1935-5AD01**		B	**3RT1935-5AD02**	
		48	--	--	B	**3RT1935-5AH01**		B	**3RT1935-5AH02**	
		110	--	--	▶	**3RT1935-5AF01**		B	**3RT1935-5AF02**	
		230	--	--	▶	**3RT1935-5AP01**		B	**3RT1935-5AP02**	
		400	--	--	C	**3RT1935-5AV01**		B	**3RT1935-5AV02**	
		--	24	--	B	**3RT1935-5AC21**		B	**3RT1935-5AC22**	
		--	42	--	B	**3RT1935-5AD21**		B	**3RT1935-5AD22**	
		--	48	--	B	**3RT1935-5AH21**		B	**3RT1935-5AH22**	
		--	110	--	B	**3RT1935-5AG21**		B	**3RT1935-5AG22**	
		--	220	--	B	**3RT1935-5AN21**		B	**3RT1935-5AN22**	
		--	230	--	B	**3RT1935-5AL21**		B	**3RT1935-5AL22**	
		110	--	120	B	**3RT1935-5AK61**		B	**3RT1935-5AK62**	
		220	--	240	B	**3RT1935-5AP61**		B	**3RT1935-5AP62**	
		--	100	110	B	**3RT1935-5AG61**		B	**3RT1935-5AG62**	
		--	200	220	B	**3RT1935-5AN61**		B	**3RT1935-5AN62**	
		--	400	440	C	**3RT1935-5AR61**		B	**3RT1935-5AR62**	

Note:

Contactors with AC and DC coils have different depths. That is why when replacing coils it is only possible to replace AC coils with AC coils and DC coils with DC coils.

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

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											
S2	3RT103., 3RT133., 3RT153.	--	--	--	24	B	**3RT1934-5BB41**		B	**3RT1934-5BB42**	
		--	--	--	42	B	**3RT1934-5BD41**		B	**3RT1934-5BD42**	
		--	--	--	48	B	**3RT1934-5BW41**		B	**3RT1934-5BW42**	
		--	--	--	60	B	**3RT1934-5BE41**		B	**3RT1934-5BE42**	
		--	--	--	110	B	**3RT1934-5BF41**		B	**3RT1934-5BF42**	
		--	--	--	125	B	**3RT1934-5BG41**		B	**3RT1934-5BG42**	
		--	--	--	220	B	**3RT1934-5BM41**		B	**3RT1934-5BM42**	
		--	--	--	230	B	**3RT1934-5BP41**		B	**3RT1934-5BP42**	
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. That is why when replacing coils it is only possible to replace AC coils with AC coils and DC coils with DC coils.

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

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, 3RT12 7 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 mechanism						
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**
	3RT12 6 vacuum contactors	21 ... 27.3	B	**3RT1966-5NB31**		--
		96 ... 127	C	**3RT1966-5NF31**		--
		200 ... 277	C	**3RT1966-5NP31**		--
S12	3RT107, 3RT147, 3RT12 7 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								
S2	3RT1034	Main contacts (3 NO contacts) for utilization category AC-3	▶	**3RT1934-6A**		1	1 unit	41B
	3RT1035	(1 set = 3 movable and 6 fixed switching elements with fixing parts)	▶	**3RT1935-6A**		1	1 unit	41B
	3RT1036		▶	**3RT1936-6A**		1	1 unit	41B
S3	3RT1044		B	**3RT1944-6A**		1	1 unit	41B
	3RT1045		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								
S2	3RT1336	Main contacts (4 NO contacts) for utilization category AC-1	B	**3RT1936-6E**		1	1 unit	41B
S3	3RT1344	(1 set = 4 movable and 8 fixed switching elements with fixing parts)	B	**3RT1944-6E**		1	1 unit	41B
	3RT1346		B	**3RT1946-6E**		1	1 unit	41B
Arc chutes								
S2	3RT103.	Arc chutes, 3-pole	B	**3RT1936-7A**		1	1 unit	41B
S3	3RT104., 3RT1446		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 3/125).

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 3/120). 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		
• For rated operational voltage U_e		
- At 24 V	A	10
- At 60 V	A	5
- At 110 V	A	1.14
- At 125 V	A	0.98
- At 220 V	A	0.48
- At 440 V	A	0.13
- At 600 V	A	0.07
CSA and UL 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

Contact 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

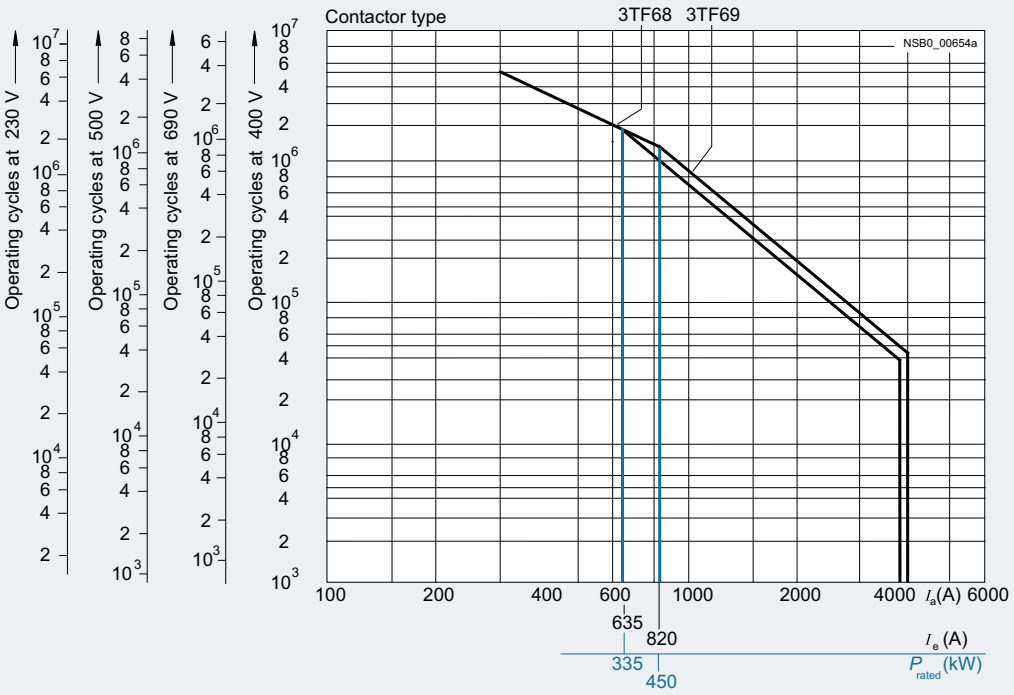
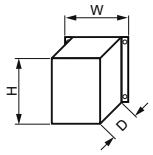
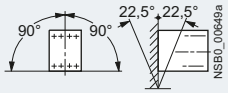


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

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

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	°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 "Conductor cross-sections" on page 3/122	
Electromagnetic compatibility (EMC)		See "Electromagnetic compatibility (EMC)" on page 3/120	

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	1 000	1 250
• Type of coordination "2"	A	500	630
• Weld-free[4)]	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 3/118.

4) 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	3TF68	3TF69
		Size	14	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

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

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
Utilization category AC-4 (for $I_a = 6 \times I_e$)					
• Rated operational current I_e, maximum	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 3/125.

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	

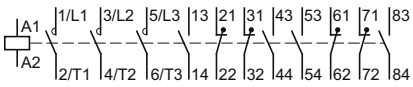
Short-circuit protection with overload relays see Chapter 7, "Protection Equipment" → "Overload Relays".

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							Auxiliary contacts		Rated control supply voltage U_s	DT	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
AC-2 and AC-3 (up to 55 °C)						AC-1									
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				Article No.	Price per PU			
							NO	NC							
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 3/120.
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 No. 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 3/124.
For accessories see page 3/125,
for spare parts see page 3/126.

Footnotes for page 3/124:

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 3TC4417-4A. reversing contactor with preassembled connecting cable (approx. 1 m) is included in the scope of supply of the vacuum contactor.

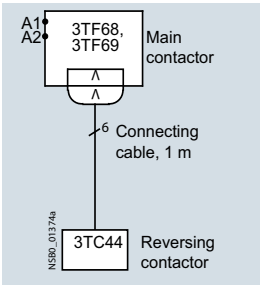
4) For electromagnetic compatibility (EMC) see page 3/120.
For use of 3TF6 vacuum contactors in the environment of frequency converters, we recommend ordering a special version:
3TF6 ...-....-Z A02.
3TF68/3TF69 vacuum contactors in their basic version are supplied with integrated overvoltage damping 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 No. 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) 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	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	kW	A			V						
DC operation · DC economy circuit[2)3)]															
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 3/123.
For accessories see page 3/125,
for spare parts see page 3/126.

Rated control supply voltages (change of 10th and 11th digit 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	Rated control supply voltage U_s 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.

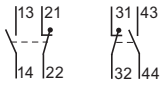
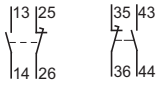
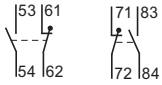
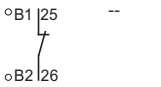
Version	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solid-state compatible auxiliary switch blocks with screw terminals						
For operation in dusty atmospheres and in solid-state circuits with rated operational currents I_e AC-14 and DC-13 of 1 ... 300 mA at 3 ... 60 V						
 5TY7561-1. For mounting onto the side of 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 left: 51, 52, 54 — Mounting on the right: 61, 62, 64						
Coupling links for control by PLC						
For snapping onto the side of auxiliary switch, with surge suppression. Operating range: 17 V to 30 V DC. Power consumption: 0.5 W at 24 V DC. Fitted with varistor.[1]	►	**3TX7090-0D**		1	1 unit	41B
Terminal covers						
 3TX76.6-0A For protection against inadvertent contact with exposed busbar connections	B	**3TX7686-0A**		1	1 unit	41B
	B	**3TX7696-0A**		1	1 unit	41B
Can be screwed onto free screw end on middle connecting bar. 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 3/101.

[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								
For lateral mounting		Left Right						
1st auxiliary switch block (replacement for 3TY7561-1A/ -1B)	1 1 --		▶	**3TY7561-1AA00**		1	1 unit	41B
1st auxiliary switch block	1 -- 1		▶	**3TY7561-1EA00**		1	1 unit	41B
2nd auxiliary switch block (replacement for 3TY7561-1K/ -1L)	1 1 --		C	**3TY7561-1KA00**		1	1 unit	41B
For reconnection of the coil with DC economy circuit	-- -- 1	 --	▶	**3TY7681-1G**		1	1 unit	41B


3TY7561-1.A00

Version	For type	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Solenoid coils							
AC operation[1]							
The solenoid coils are fitted as standard with varistors against overvoltage; the coil is supplied with switch-on electronics.	3TF68		**3TY7683-0C..**				
	3TF69		**3TY7693-0C..**				
DC operation[1] **· DC economy circuit**							
The solenoid coils for size 14 are supplied without reversing contactor.	3TF68		**3TY7683-0D..**				
	3TF69		**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


3TY76.3-0...

[1] Rated control supply voltages for solenoid coils: The 10th and 11th digit of the Article No. must be supplemented according to page 3/124.

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	110 ... 120	D	**3TY7684-0QG7**		1	1 unit	41B
	220 ... 240	D	**3TY7684-0QL7**		1	1 unit	41B
For 3TF68..-.Q, 3TF69..-.Q	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	D	**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

3TB5 contactors with DC solenoid system, 3-pole, 55 ... 200 kW

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 3/133).

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 [1]			
• For rated operational voltage U_e			
- 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	

[1] Values in brackets apply to auxiliary contacts with delayed NC contact.

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

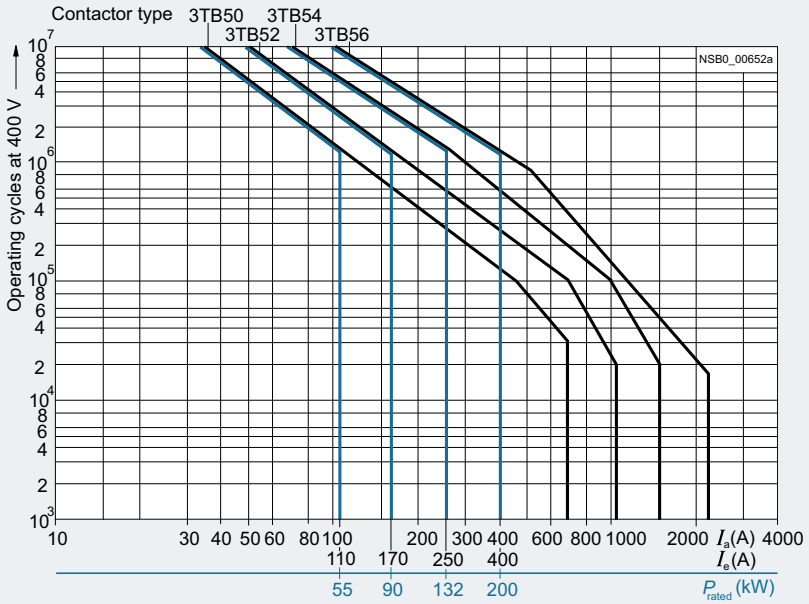
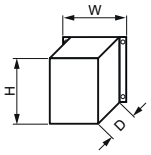
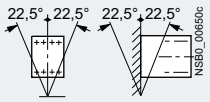


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

3TB5 contactors with DC solenoid system, 3-pole, 55 ... 200 kW

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, operational class gG: 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 (when coil is cold 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 3/128.

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" 3/132.

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

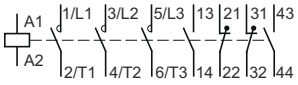
1) At 575/600 V AC max. rated motor current 325 A and motor starting current 3 250 A.

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 · DC solenoid system															
															
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 3/133.
For spare parts see page 3/134.

Options

Rated control supply voltages
(change of 10th and 11th digit of the Article No.)

Rated control supply voltage U_s	**Contactor type** **Size**	**3TB50, 3TB52, 3TB54** **6, 8, 10**	**3TB56** **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	B	**3TX6506-3B**		1	1 unit	41B
8	3TB52		M8	B	**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	B	**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
		1	--	1	--	35 43 / 36 44	▶	**3TY6501-1E**		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..**				
8	3TB52			**3TY6523-0B..**				
10	3TB54			**3TY6543-0B..**				
12	3TB56			**3TY6563-0B..**				

3TY6520-0A

3TY6502-0A

3TY65.

[1] Rated control supply voltages for solenoid coils: The 10th and 11th digit of the Article No. must be supplemented according to page 3/132.

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.

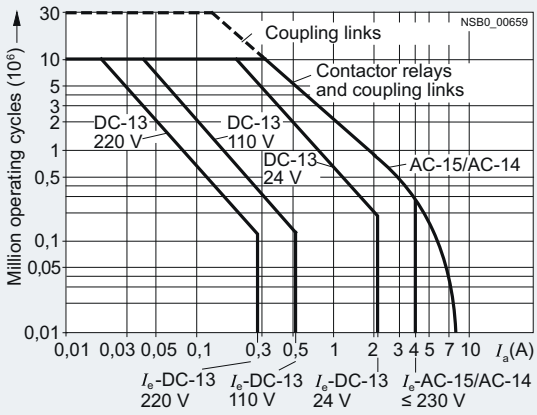
Technical specifications

Contactor	Type	3TF2

Contact 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

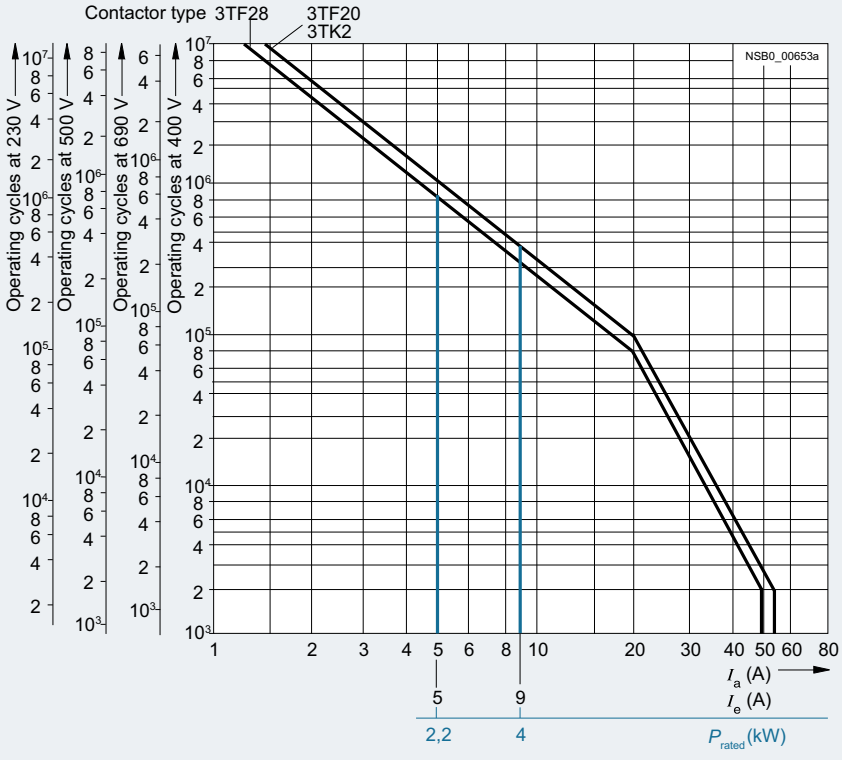
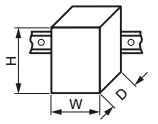


Diagram legend:
P_{rated} = Rated power for squirrel-cage motors at 400 V
I_a = Breaking current
I_e = Rated operational current

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 3/139.

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 3/144.

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 x 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

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 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'*: $z' = z \cdot (I_e/I') \cdot (400\ V/U')^{1.5} \cdot 1/h$

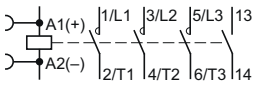
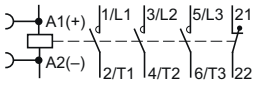
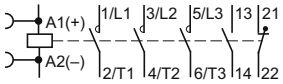
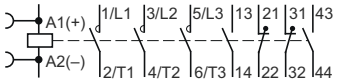
3TF2 contactors, 3-pole, 2.2 ... 4 kW

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** 			
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** 			
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

3TF20 . .-0. . .,
3TF28 . .-0. . .

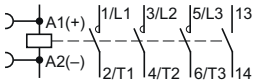
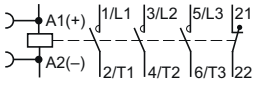
3TF22 . .-0. . .,
3TF29 . .-0. . .

[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 3/143 and 3/144.

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** 													
Contacts 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
Contacts 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
Contacts 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 3/143 and 3/144.

Rated control supply voltages (change of 10th and 11th digit 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

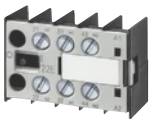
[1] Operating range at 220 V:
0.85 to 1.15 × U_s; lower operating range limit according to IEC 60947.

Please inquire about further voltages.

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

Accessories

Rated operational current I_e/AC-15/AC-14 at			Auxiliary contacts					DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG
			Ident. No.	Version			Connections					
230/ 220 V	400/ 380 V	500 V		NO	NC	NO	NC		Article No. / Price per PU			
A	A	A										
Snap-on auxiliary switch blocks												
For expansion to 2, 4 or 5 auxiliary contacts according to EN 50012 Only for 3TF2. Ident. No. 10 (with auxiliary contact 1 NO)												
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



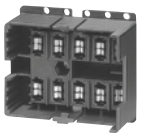
3TX44..-.A

For contactors	Rated control supply voltage U_s	Time setting range (minimum times)	DT	Screw terminals	PU (UNIT, SET, M)	PS*	PG
Type	V DC	s		Article No. / Price per PU			
OFF-delay devices							
For DC-operated contactors for bridging short-time power failures up to 0.8 s							
3TF2...-0BB4	24	0.25 or 0.5	A	**3TX4490-1H**	1	1 unit	41B

3TX4490-1H

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

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..., 3TF2...-1...	≤ 48	24 ... 70	--	►	**3TX4490-3G**		1	1 unit	41B
	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..., 3TF2...-1...	24 ... 48	12 ... 24	10 ... 120	B	**3TX4490-4G**		1	1 unit	41B
	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..., 3TF2...-1...	--	24 ... 70	20 ... 470	B	**3TX4490-4A**		1	1 unit	41B
	--	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 6.3 mm x 0.8 mm flat connectors			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.

SIRIUS 3RT20 coupling contactors (interface), 3-pole, 3 ... 15 kW

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 3RT201 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 3/17 and 3/22.

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 
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, 3 ... 15 kW

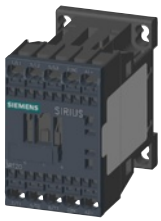
Contactor		Type Size	3RT201.-1MB4.-0KT0 S00	3RT201.-1VB4. S00	3RT201.-1SB4. S00
Control					
Operating times					
• Closing					
- At 20.5 V	ON-delay NO	ms	30 ... 120		
	OFF-delay NC	ms	20 ... 110		
- At 24 V	ON-delay NO	ms	25 ... 90		
	OFF-delay NC	ms	15 ... 80		
- At 44 V	ON-delay NO	ms	15 ... 60		
	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

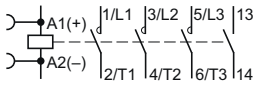
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

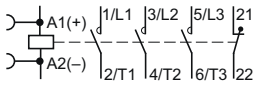
3RT201.-1.B4.



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
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**				Article No. Price per PU		Article No. Price per PU
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	▶	**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 surge suppressors, see page 3/59.

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

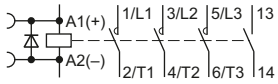
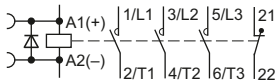
SIRIUS 3RT20 coupling contactors (interface), 3-pole, 3 ... 15 kW

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

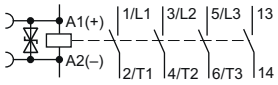
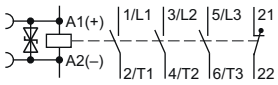
SIRIUS 3RT20 coupling contactors (interface), 3-pole, 3 ... 15 kW

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 (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.

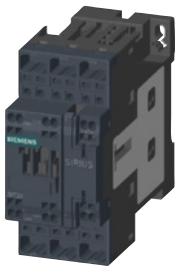
* You can order this quantity or a multiple thereof.
Illustrations are approximate

SIRIUS 3RT20 coupling contactors (interface), 3-pole, 3 ... 15 kW

DC operation
Low power consumption
Extended operating range of the solenoid coil
Integrated coil circuit

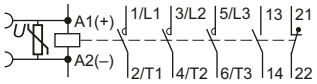
PU (UNIT, SET, M) = 1
PS* = 1 unit
PG = 41B

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**							
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**



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

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 3/56.

*** 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 and S0

- 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 screwing or snapping 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 and S0 each consist of two contactors with the same power, with one NC contact (S00) or one NO contact and one NC contact (S0) 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 communication interface

The reversing contactor assemblies with communication interface are required for mounting the function modules for connection to the controller via the IO-Link or AS-Interface communication systems.

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, 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	**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	**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…**
			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[2)]	**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, control and auxiliary circuits).

2) 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)				□												
Power dependent on size (e.g. 27 = 15 kW)					□											
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: 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 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.

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.

Size S0

- 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 and S0

All contactor assemblies can be fitted with RC elements or varistors for damping opening surges in the coil.

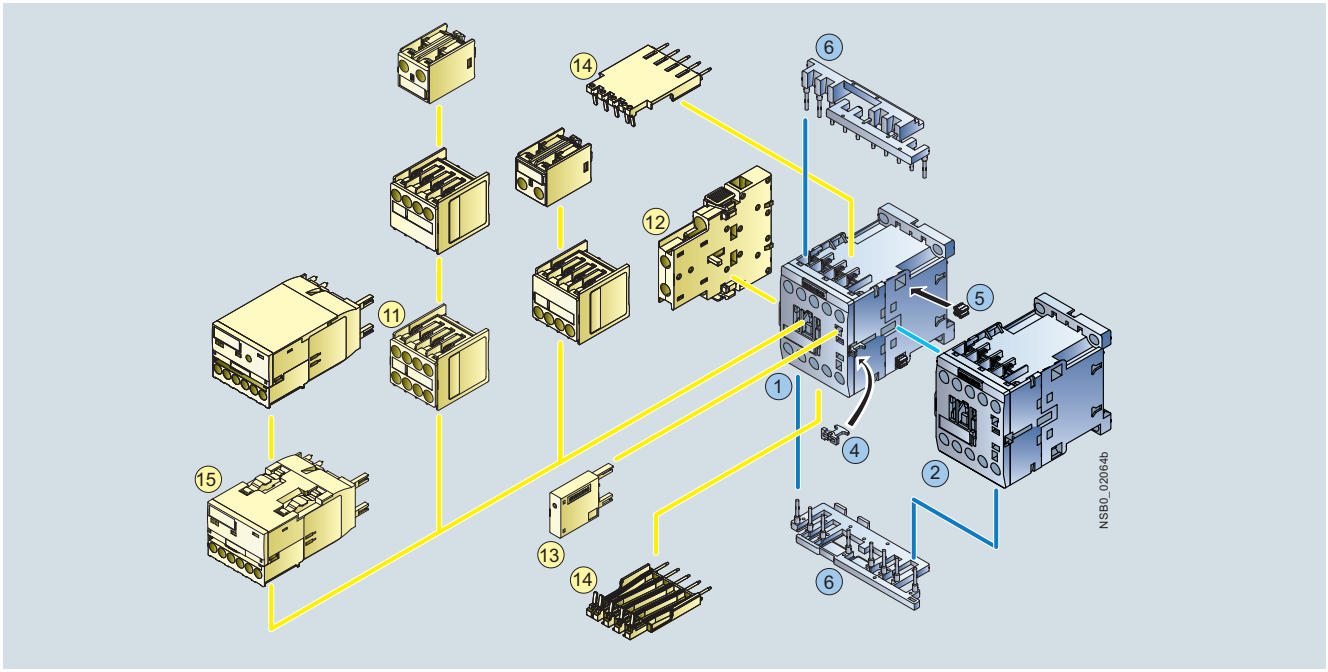
As with the individual contactors, the surge suppressors can either be plugged onto the top of the contactors (S00) or be plugged into the front of the contactors (S0).

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....	3/53
(12) Auxiliary switch block, lateral	3RH2921-1DA..	3/55
(13) Surge suppressors	3RT2916-1....	3/59
(14) Solder pin adapters	3RT1916-4KA1	3/62
(15) Function module for connection to the control system	3RT271.-1BA00	3/157

Complete contactor assemblies

Individual parts		Article No. Q11	Article No. Q12	Page
(1)(2)	Contactor, 3 kW	3RT2015	3RT2015	3/28, 3/33
(1)(2)	Contactor, 4 kW	3RT2016	3RT2016	3/28, 3/33
(1)(2)	Contactor, 5.5 kW	3RT2017	3RT2017	3/28, 3/33
(1)(2)	Contactor, 7.5 kW	3RT2018	3RT208	3/28, 3/33
(4)(5)(6)	Assembly kit comprising:	3RA2913-2AA1		3/156
	(4) Mechanical interlock[2]			3/156
	(5) 2 connecting clips for 2 contactors[2]			3/156
	(6) Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included[3], interruptible (NC contact interlock)			3/156

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.

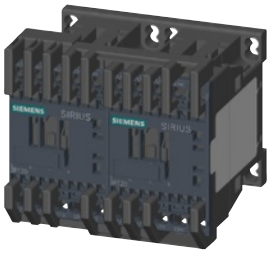
3) 3RT201. contactors with one NC contact in the basic unit are required for the electrical interlock. An additional NO contact is required for momentary-contact operation.

***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	DT	Screw terminals	DT	Spring-type terminals
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and			U_s[1]		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 communication interface								
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.

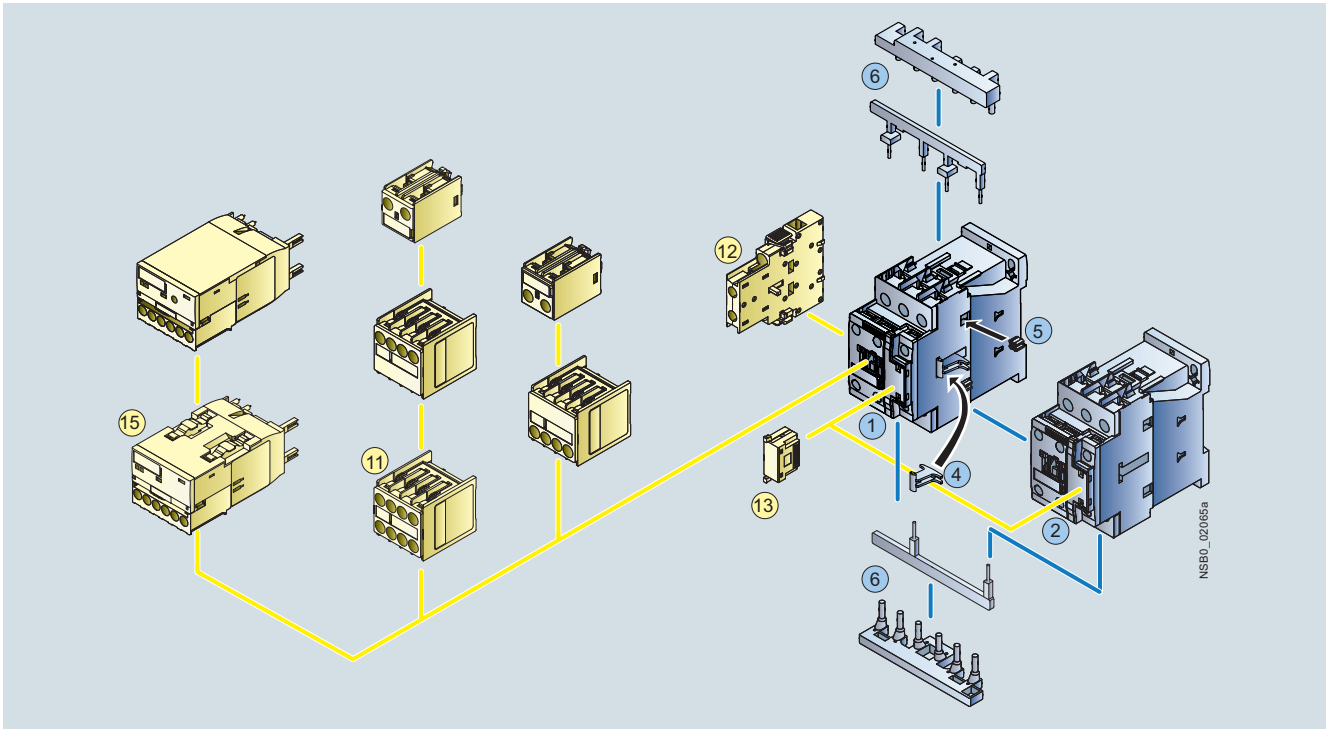
[2] The contactors integrated in the contactor assemblies have no unassigned auxiliary contacts. When used with a communication interface and function module, the auxiliary contacts are unassigned.

*** 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....	3/53
12	Auxiliary switch block, lateral	3RH2921-1DA..	3/55
13	Surge suppressors	3RT2926-1....	3/59
15	Function module for connection to the control system	3RT271.-1BA00	3/157

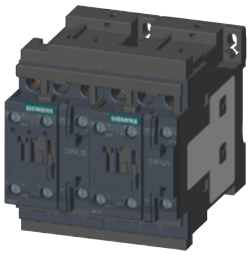
Complete contactor assemblies

Individual parts		Article No. Q11	Article No. Q12	Page
1 2	Contactor, 5.5 kW	3RT2024	3RT2024	3/30, 3/35
1 2	Contactor, 7.5 kW	3RT2025	3RT2025	3/30, 3/35
1 2	Contactor, 11 kW	3RT2026	3RT2026	3/30, 3/35
1 2	Contactor, 15 kW	3RT2027	3RT2027	3/30, 3/35
1 2	Contactor, 18.5 kW	3RT2028	3RT2028	3/30, 3/35
4 5 6	Assembly kit comprising:	3RA2923-2AA1		3/156
	4 Mechanical interlock[1)]			3/156
	5 2 connecting clips for 2 contactors[1)]			3/156
	6 Wiring modules on the top and bottom for connecting the main current paths, electrical interlock included (NC contact interlock)			3/156

[1)] The parts 4 and 5 can only be ordered together as 3RA2922-2H mechanical connectors.

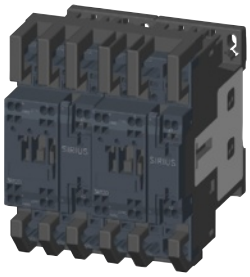
Fully wired and tested contactor assemblies · Size S0 · up to 18.5 kW

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 communication interface										
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**		A	**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	A	**3RA2327-8XE30-1BB4**		A	**3RA2327-8XE30-2BB4**	
38	11	**18.5**	18.5	24 DC	A	**3RA2328-8XE30-1BB4**		A	**3RA2328-8XE30-2BB4**	

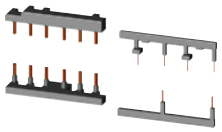
[1] Coil operating range
at 50 Hz: 0.8 ... 1.1 × U_s; at 60 Hz: 0.85 ... 1.1 × U_s.

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

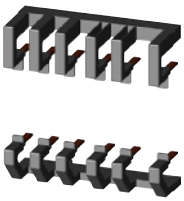
SIRIUS 3RA23 reversing contactor assemblies

Components for customer assembly

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



3RA2923-2AA1



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		▶	**3RA2923-2AA1**			**--**	
		• Only for main circuit[1]			**--**		▶	**3RA2923-2AA2**	
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**	
Mechanical connectors									
		The connectors consist of a mechanical interlock and two connecting clips							
3RT201, 3RT231	**S00-S00**	For lateral interlock, without contactor clearance	PS = 10 units	B	**3RA2912-2H**		B	**3RA2912-2H**	
3RT202, 3RT232	**S0-S0**	For lateral interlock, without contactor clearance	PS = 10 units	B	**3RA2922-2H**		B	**3RA2922-2H**	

[1] 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

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	**S00, S0**	**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	**S00, S0**	**AS-Interface connection**, comprising one basic and one coupling module	A	**3RA2712-1BA00**		A	**3RA2712-2BA00**	
Accessories for 3RA27 function modules								
3RT201, 3RT202	**S00, S0**	**Module connector set**, comprising: • 2 module connectors, 14-pole, short + 2 interface covers	A	**3RA2711-0EE01**		A	**3RA2711-0EE01**	
		Module connectors						
3RT201, 3RT202	**S00, S0**	• 14-pole, 8 cm For size jump S00-S0 + 1 space	A	**3RA2711-0EE02**		A	**3RA2711-0EE02**	
3RT201, 3RT202	**S00, S0**	• 14-pole, 21 cm For various space combinations	A	**3RA2711-0EE03**		A	**3RA2711-0EE03**	
3RT201, 3RT202	**S00, S0**	• 10-pole, 8 cm For separate control signal infeed within an IO-Link group	A	**3RA2711-0EE04**		A	**3RA2711-0EE04**	
3RT201, 3RT202	**S00, S0**	**Sealable covers** PS = 5 units	A	**3RA2910-0**		A	**3RA2910-0**	

Operator panels for IO-Link see page 3/192.

*** 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:

Sizes S2 and 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. Sizes S2 to S3 are 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							
15	32	**S2**	3RT1034	3RA1924-1A	3RA1924-2B	--	3RA1933-2A[4]	**3RA1334-8XB30-1…**
18.5	40		3RT1035					**3RA1335-8XB30-1…**
22	50		3RT1036					**3RA1336-8XB30-1…**
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 a wiring module on the top and bottom.

Operating times

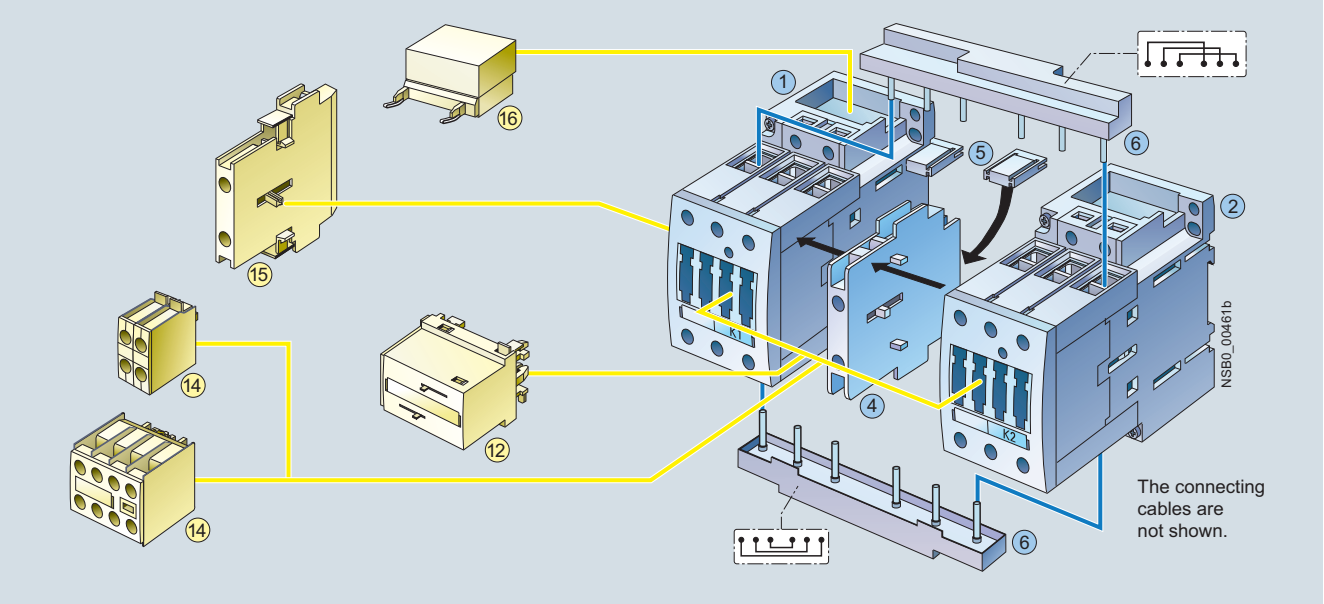
The operating times of the individual 3RT10 contactors are rated in such a way that no overlapping of the contact making and the arcing time between two contactors can occur on reversing, provided they are interlocked by way of their auxiliary switches (NC contact interlock) and the mechanical interlock.

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

Selection and ordering data

Fully wired and tested contactor assemblies · Size S2 · up to 22 kW



Mountable accessories (optional)

	To be ordered separately	Article No.	Page
12	Mech. interlock, front	3RA1924-1A	3/161
14	Auxiliary switch block, front	3RH1921-1CA..	3/103
15	Auxiliary switch block, lateral	3RH1921-1EA..	3/105
16	Surge suppressors	3RT1926-1.... 3RT1936-1....	3/108

Complete contactor assemblies

	Individual parts	Article No. Q1	Q2	Page
1 2	Contactor, 15 kW	3RT1034	3RT1034	3/83
1 2	Contactor, 18.5 kW	3RT1035	3RT1035	3/83
1 2	Contactor, 22 kW	3RT1036	3RT1036	3/83
4	Mech. interlock, lateral	3RA1924-2B		3/161
5 6	Assembly kit	3RA1933-2A		3/162

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

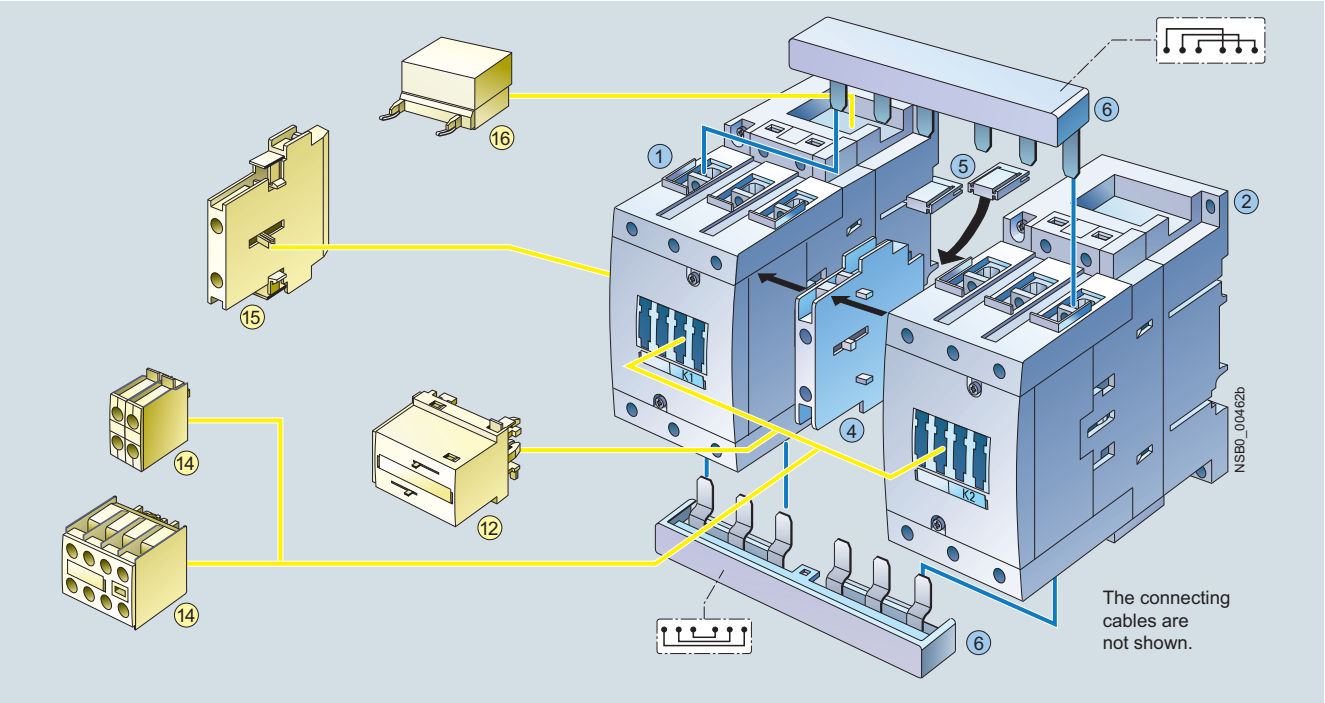
3RA133.-8XB30-1...

Rated data AC-2 and AC-3 Operational current I_e up to 500 V	Ratings of three-phase motors at 50 Hz and 230 V	**400 V**	500 V	690 V	Rated control supply voltage U_s [1]	DT	**Screw terminals** Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
A	kW	**kW**	kW	kW	V						
AC operation, 50/60 Hz											
32	7.5	**15**	18.5	18.5	24 AC	A	**3RA1334-8XB30-1AC2**		1	1 unit	41B
					110 AC	A	**3RA1334-8XB30-1AG2**		1	1 unit	41B
					230 AC	A	**3RA1334-8XB30-1AL2**		1	1 unit	41B
40	11	**18.5**	22	22	24 AC	A	**3RA1335-8XB30-1AC2**		1	1 unit	41B
					110 AC	A	**3RA1335-8XB30-1AG2**		1	1 unit	41B
					230 AC	A	**3RA1335-8XB30-1AL2**		1	1 unit	41B
50	15	**22**	30	22	24 AC	B	**3RA1336-8XB30-1AC2**		1	1 unit	41B
					110 AC	B	**3RA1336-8XB30-1AG2**		1	1 unit	41B
					230 AC	A	**3RA1336-8XB30-1AL2**		1	1 unit	41B
DC operation											
32	7.5	**15**	18.5	18.5	24 DC	A	**3RA1334-8XB30-1BB4**		1	1 unit	41B
40	11	**18.5**	22	22	24 DC	A	**3RA1335-8XB30-1BB4**		1	1 unit	41B
50	15	**22**	30	22	24 DC	A	**3RA1336-8XB30-1BB4**		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.

SIRIUS 3RA13 reversing contactor assemblies

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	3/161
14	Auxiliary switch block, front	3RH1921-1CA..	3/103
15	Auxiliary switch block, lateral	3RH1921-1EA..	3/105
16	Surge suppressors	3RT1926-1.... 3RT1936-1....	3/108

Complete contactor assemblies

Individual parts		Article No. Q1	Q2	Page
1 2	Contactor, 30 kW	3RT1044	3RT1044	3/84
1 2	Contactor, 37 kW	3RT1045	3RT1045	3/84
1 2	Contactor, 45 kW	3RT1046	3RT1046	3/84
4	Mech. interlock, lateral	3RA1924-2B		3/161
5 6	Assembly kit	3RA1943-2A		3/162

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

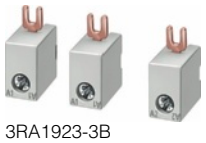
3RA134.-8XB30-1...

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

Components for customer assembly

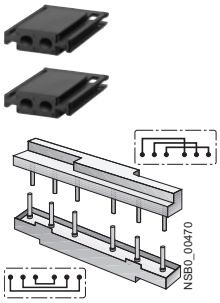
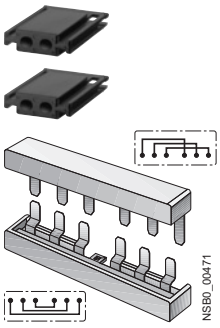
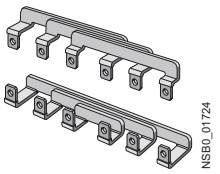
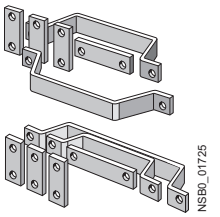
	For contactors Type	Size	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mechanical interlocks									
 3RA1924-1A mounted onto 2 contactors	3RT103 3RT104 3RT133 3RT134 3RT144 3RT153	**S2** **S3**	**Laterally mountable**[1] Each with one auxiliary contact (1 NC contact) per contactor (can 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
	3RT103 3RT104	**S2** **S3**	**Can be mounted onto the front**[2] Onto contactor sizes S2 and S3 (for contactors of the same size) Note: Sizes S2 and S3: 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	3RT103 3RT104	**S2, S3**	For the coil terminals A1 and A2 for reversing starters (contactor sizes S2 and S3). 2 x A1 and 1 x A2 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

[1] Can also be used for 4-pole contactors with sizes S2 and S3.

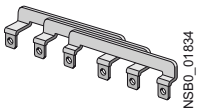
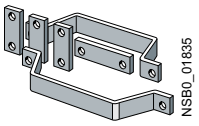
[2] Can also be used for size S0 4-pole contactors.

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

SIRIUS 3RA13 reversing contactor assemblies

	For contactors Type	Size	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Assembly kits for making 3-pole contactor assemblies									
 3RA1933-2A	3RT103	**S2**	The assembly kit contains: 2 connecting clips for two contactors, wiring modules on the top and bottom	►	**3RA1933-2A**		1	1 unit	41B
 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
 3RA1953-2A	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
 3RA1953-2M	3RT105 3RT1.6 3RT1.7	**S6** **S10** **S12**	The assembly kit contains: Wiring modules on the top and bottom (for connection without box terminal)	A A A	**3RA1953-2M** **3RA1963-2A** **3RA1973-2A**		1 1 1	1 unit 1 unit 1 unit	41B 41B 41B

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

	For contactors Type	Size	Contactor clearance mm	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Wiring modules, single										
	3RT103	**S2-S2**	10	Top (in-phase)	►	**3RA1933-3D**		1	1 unit	41B
				Bottom (with phase reversal)	►	**3RA1933-3E**		1	1 unit	41B
	3RT104	**S3-S3**	10	Top (in-phase)	►	**3RA1943-3D**		1	1 unit	41B
				Bottom (with phase reversal)	►	**3RA1943-3E**		1	1 unit	41B
 NSB0_01834 3RA1953-3D	3RT105	**S6-S6**	10	Top (in-phase, for connection with box terminal)	A	**3RA1953-3D**		1	1 unit	41B
 NSB0_01835 3RA1953-3P				Top (with phase reversal, for connection without box terminal)	A	**3RA1953-3P**		1	1 unit	41B

	For contactors Type	Size	Contactor clearance mm	Interlocking	Version	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Mechanical connectors							1 pack = 10 units for 10 combinations				
 3RA1932-2C	3RT1.3 3RT1.4	**S2-S2** **S3-S3**	0	On front	For 3-pole contactors	►	**3RA1932-2C**		1	10 units	41B
 3RA1932-2D	3RT1.3 3RT1.4 3RT1.5	**S2-S2** **S3-S3** **S6-S6**	10	Lateral	For 3-pole contactors	►	**3RA1932-2D**		1	10 units	41B
 3RA1932-2G	3RT1.3	**S2-S2**	10	Lateral	For 4-pole contactors	A	**3RA1932-2G**		1	10 units	41B
 3RA1942-2G	3RT1.4	**S3-S3**	10	Lateral	For 4-pole contactors	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 and S0

- 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.

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...**
				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 3/172) 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 or S0.

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 or S0, 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 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.

Overload relays for motor protection see Chapter 7 "Protection Equipment" → "Overload Relays" → "SIRIUS 3RB3 Solid-State 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 and S0 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, solid-state (CLASS 10 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[2]	11 ... 16	3RU2126-4AB0	6 ... 25	3RB3026-1QB0
15			14 ... 20	3RU2126-4BB0		
18.5			20 ... 25	3RU2126-4DB0		
22			20 ... 25	3RU2126-4DB0		
	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		

[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.

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)				□												
Power dependent on size (e.g. 25 = 15 kW)					□											
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 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.

SIRIUS 3RA24 contactor assemblies for wye-delta starting

Technical specifications

All technical specifications not mentioned in the table below are identical to those of the individual 3RT2 contactors and 3RU2 overload relays

			3RA2415 00-00-00	3RA2416 00-00-00	3RA2417 00-00-00	3RA2423 0-0-0	3RA2425 0-0-0	3RA2426 0-0-0
Type								
Sizes **S..-S..-S..**								
Dimensions (W x H x D) with function module								
• AC operation[1]		mm	135 x 68 x 145 / 135 x 84 x 145			135 x101 x 171 / 135 x114 x 171		
• DC operation[1]		mm	135 x 68 x 145 / 135 x 84 x 145			135 x101 x 181 / 135 x114 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 1000 V	kW 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 1000 V	kW 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 1000 V	kW 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.

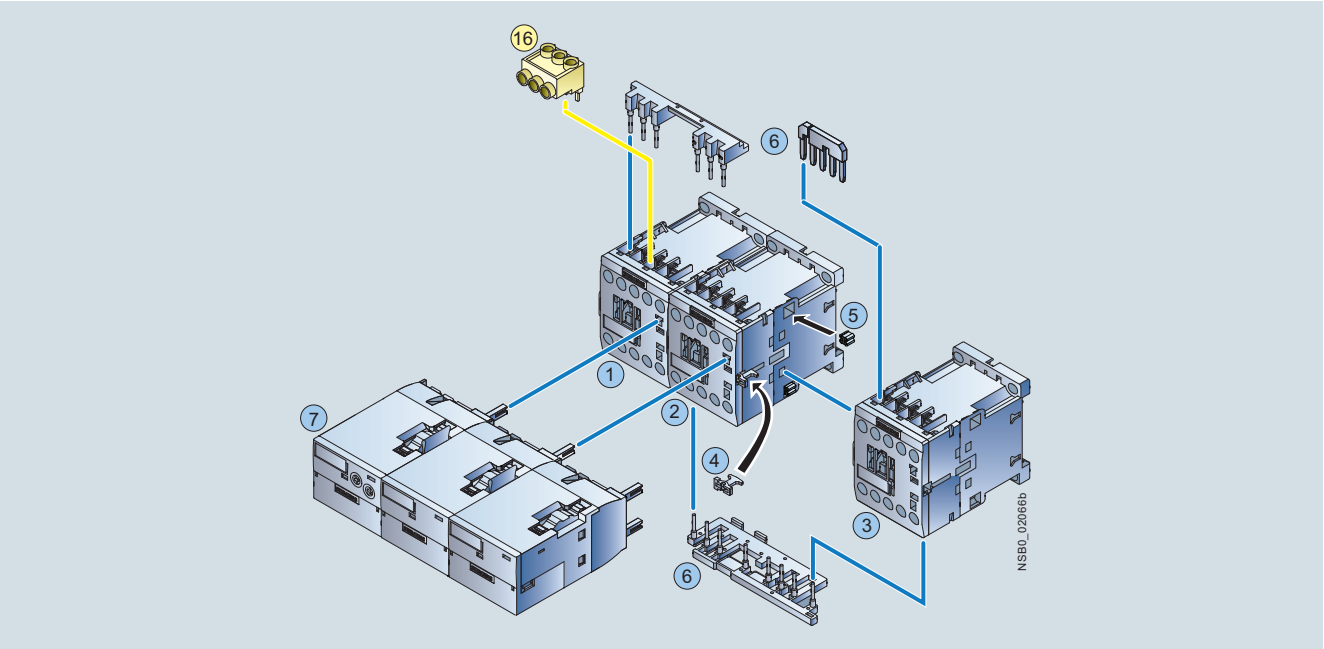
3) For short-circuit protection with overload relays See the Configuration Manual "Configuring SIRIUS Innovations – Selection Data for Fuseless and Fused Load Feeders", Article No. 3ZX1012-0RA21-1AB0, http://support.automation.siemens.com/WW/view/en/39714188.

4) 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	3/172

Complete contactor assemblies

Individual parts		Article No. Q11[1]	Q13	Q12	Page
1 2 3	Contactor, 5.5 kW	3RT2015	3RT2015	3RT2015	3/28, 3/33
1 2 3	Contactor, 7.5 kW	3RT2017	3RT2017	3RT2015	3/28, 3/33
1 2 3	Contactor, 11 kW	3RT2018	3RT2018	3RT2016	3/28, 3/33
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			3/172
7	Function modules for wye-delta starting	3RA2816-0EW20			3/172

[1] The version with 1 NO is required for momentary-contact operation.

[2] Part 16 can only be mounted with contactors with screw terminal.

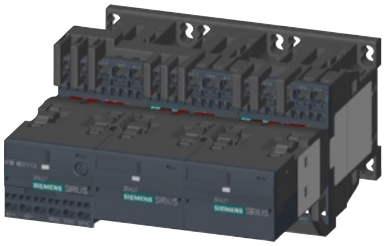
Note:

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



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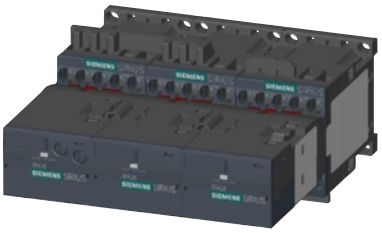

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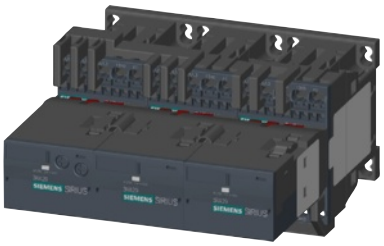


3RA241.-8XF31-2A.0

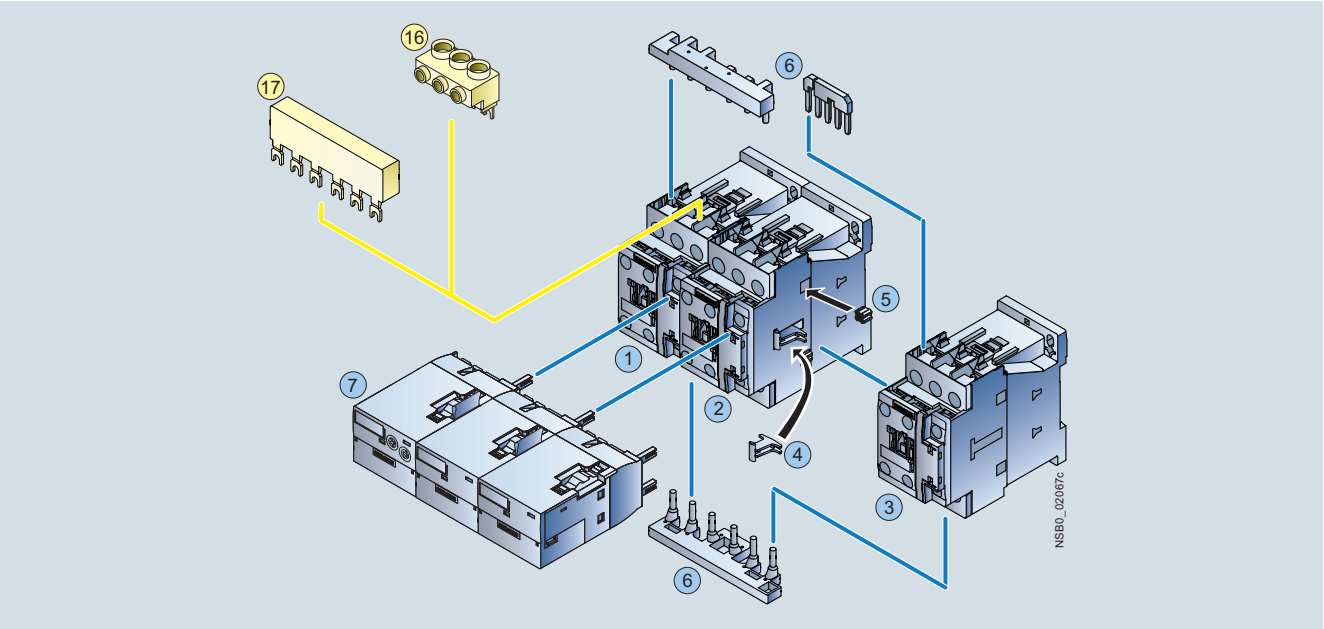
Rated data AC-3				Rated control supply voltage U_s [1]	DT	Screw terminals	DT	Spring-type terminals
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No. / Price per PU		Article No. / Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 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	A	**3RA2415-8XH31-1BB4**	A	**3RA2415-8XH31-2BB4**
16	4.7	**7.5**	9.2	24 DC	A	**3RA2416-8XH31-1BB4**	A	**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	3/171
17 Three-phase busbar[1)]	3RV1915-1AB	3/171

Complete contactor assemblies

Individual parts		Article No. Q11	Q13	Q12	Page
1 2 3	Contactor, 11 kW	3RT2024	3RT2024	3RT2024	3/30, 3/35
1 2 3	Contactor, 15/18.5 kW	3RT2026	3RT2026	3RT2024	3/30, 3/35
1 2 3	Contactor, 22 kW	3RT2027	3RT2027	3RT2026	3/30, 3/35
4 5 6	Assembly kit	3RA2923-2BB1			3/171
	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			3/172

[1)] The parts 16 and 17 Can only be mounted with contactors with screw terminal.

Note:

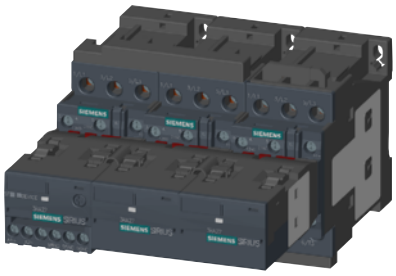
When using the function modules for contactor assemblies for wye-delta starting, no other auxiliary switches are allowed to be connected to the basic units.

3RA23, 3RA13, 3RA24, 3RA14 Contactor Assemblies

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



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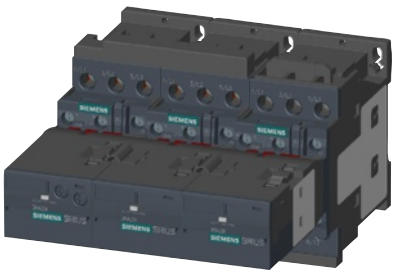

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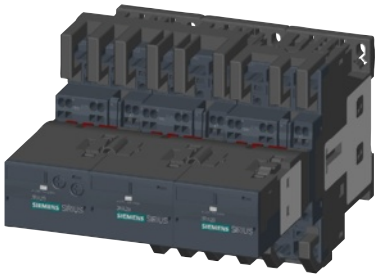


3RA242.-8XF32-2A.2

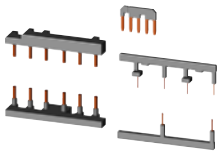
Rated data AC-3				Rated control supply voltage U_s [1]	DT	Screw terminals	DT	Spring-type terminals
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and					Article No. / Price per PU		Article No. / Price per PU
400 V	230 V	**400 V**	690 V					
A	kW	**kW**	kW	V				
AC operation, 50/60 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**	A	**3RA2423-8XE32-2BB4**
32 / 40	11.4	**15 / 18.5**	19	24 DC	A	**3RA2425-8XE32-1BB4**	A	**3RA2425-8XE32-2BB4**
50	--	**22**	19	24 DC	A	**3RA2426-8XE32-1BB4**	A	**3RA2426-8XE32-2BB4**
For AS-Interface connection								
25	7.1	**11**	19	24 DC	A	**3RA2423-8XH32-1BB4**	A	**3RA2423-8XH32-2BB4**
32 / 40	11.4	**15 / 18.5**	19	24 DC	A	**3RA2425-8XH32-1BB4**	A	**3RA2425-8XH32-2BB4**
50	--	**22**	19	24 DC	A	**3RA2426-8XH32-1BB4**	A	**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.

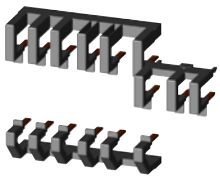
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Components for customer assembly

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



3RA2923-2BB1

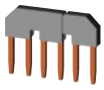


3RA2923-2BB2

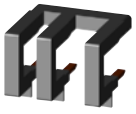
For contactors Type	Size	Version		DT	Screw terminals Article No.	Price per PU	DT	Spring-type terminals Article No.	Price per PU
Assembly kits[1] for making 3-pole contactor assemblies									
3RT201	**S00**	The assembly kit contains: mechanical interlock, 4 connecting clips, star jumper, wiring modules on the top and bottom							
		• For main, auxiliary and control circuits		▶	**3RA2913-2BB1**		▶	**3RA2913-2BB2**	
3RT202	**S0**	The assembly kit contains: mechanical interlock, 4 connecting clips, 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**	The assembly kit contains: mechanical interlock; 2 connecting clips for 2 contactors, wiring modules on the top and bottom, 3-phase infeed terminals							
		• For main, auxiliary and control circuits		B	**3RA2924-2BB1**			--	

3RV2925-5AB

3RV1915-1AB



3RT1916-4BA31



3RT2916-4BA32

Three-phase infeed terminals									
		Infeed terminal blocks for the line contactor for large conductor cross-sections							
3RT201	**S00**	• Conductor cross-section 6 mm^2	PS = 10 units	A	**3RA2913-3K**			--	
3RT202	**S0**	• Conductor cross-section 16 mm^2		▶	**3RV2925-5AB**			--	
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**	

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

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	DT	Article No.	Price per PU
Function modules for wye-delta starting									
3RT201, 3RT202	**S00, S0**	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	**S00, S0**	**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	**S00, S0**	**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	**S00, S0**	**AS-Interface connection**, comprising one basic module and two coupling modules		A	**3RA2712-1CA00**		A	**3RA2712-2CA00**	
Accessories for 3RA27 function modules									
3RT201, 3RT202	**S00, S0**	**Module connector set**, comprising: • 2 module connectors, 14-pole, short + 2 interface covers		A	**3RA2711-0EE01**		A	**3RA2711-0EE01**	
		Module connectors							
3RT201, 3RT202	**S00, S0**	• 14-pole, 8 cm For size jump S00-S0 + 1 space		A	**3RA2711-0EE02**		A	**3RA2711-0EE02**	
3RT201, 3RT202	**S00, S0**	• 14-pole, 21 cm For various space combinations		A	**3RA2711-0EE03**		A	**3RA2711-0EE03**	
3RT201, 3RT202	**S00, S0**	• 10-pole, 8 cm For separate control signal infeed within an IO-Link group		A	**3RA2711-0EE04**		A	**3RA2711-0EE04**	
3RT201, 3RT202	**S00, S0**	**Sealable covers**	PS = 5 units	A	**3RA2910-0**		A	**3RA2910-0**	

Operator panels for IO-Link see page 3/192.

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

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:

Sizes S2 and 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 Solid-State 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				
22	50	31 ... 43	**S2-S2-S0**	3RT1034	3RT1026	**3RA1434-8XC21-1...**
30	50	48.3 ... 65		3RT1034		**--**
37	80	62.1 ... 77.8	**S2-S2-S2**		3RT1034	**3RA1435-8XC21-1...**
45	86	69 ... 86		3RT1036		**3RA1436-8XC21-1...**
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

Sizes S2 and 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.

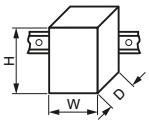
	Accessories for customer assembly					Overload relay, thermal (CLASS 10 trip class)		Overload relay, solid-state (CLASS 10 trip class)	
P **kW**	Timing relays	Assembly kit A, for double infeed	Assembly kit B, for single infeed	Star jumper	Base plates	Setting range A	Article No.	Setting range A	Article No.
22	3RP1574-1N.30	3RA1933-2C [1]	3RV1935-1A	3RT1926-4BA31	3RA1932-2E	18 ... 25	3RU1136-4DB0	12.5 ... 50	3RB2036-1UB0
30						28 ... 40	3RU1136-4FB0		
37	3RP1574-1N.30	3RA1933-2B [1]	3RV1935-1A	3RT1936-4BA31	3RA1932-2F	36 ... 45	3RU1136-4GB0	12.5 ... 50	3RB2036-1UB0
45						40 ... 50	3RU1136-4HB0		
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).

Technical specifications

All technical specifications not mentioned in the table below are identical to those of the individual 3RT1 contactors and 3RU1 overload relays



			3RA1435	3RA1436	3RA1444	3RA1445
Type						
Size			S2-S2-S2	S2-S2-S2	S3-S3-S2	S3-S3-S2
Dimensions (W x H x D) with base plate						
• DC operation		mm	198 x 140 x 184		218 x 180 x 207	
• AC operation		mm	198 x 140 x 169		218 x 180 x 194	
General data						
Individual contactors						
• Q1 line contactor		Type	3RT1035	3RT1036	3RT1044	3RT1045
• Q3 delta contactor		Type	3RT1035	3RT1036	3RT1044	3RT1045
• Q2 star contactor		Type	3RT1034	3RT1034	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	125	160	250	250
• Type of coordination "2"		A	63	80	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	80	86	115	150
	500 V	A	69.3	86	112.6	138.6
	690 V	A	69.3	69.3	98.7	138.6
• Rated power for three-phase motors at 50 Hz and 60 Hz and	At 230 V	kW	25.5	27.8	37	49
	400 V	kW	44	48	65	85
	500 V	kW	48	60	80	98
	690 V	kW	66	67	97	136
	1 000 V	kW	--	--	--	--
• **Switching frequency** with overload relay		h^{-1}	15	15	15	15
Current-carrying capacity with reversing time up to 15 s						
• Rated operational current I_e	At 400 V	A	57	67	97	106
	500 V	A	57	67	97	106
	690 V	A	57	67	97	106
• Rated power for three-phase motors at 50 Hz and 60 Hz and	At 230 V	kW	18.2	21.6	32	35
	400 V	kW	31.6	38	55	60
	500 V	kW	40	47	69	75
	690 V	kW	55	65	95	104
	1 000 V	kW	--	--	--	--
• **Switching frequency** with overload relay		h^{-1}	15	15	15	15
Current-carrying capacity with reversing time up to 20 s						
• Rated operational current I_e	At 400 V	A	51	57	85	92
	500 V	A	51	57	85	92
	690 V	A	51	57	85	92
• Rated power for three-phase motors at 50 Hz and 60 Hz and	At 230 V	kW	16.3	18.4	28	30
	400 V	kW	28	32	48	52
	500 V	kW	35	40	60	65
	690 V	kW	49	55	83	90
	1 000 V	kW	--	--	--	--
• **Switching frequency** with overload relay		h^{-1}	15	15	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 Configuration Manual "SIRIUS Configuration – Selection Data for Fuseless Load Feeders", Article No. 3ZX1012-0RA21-0AB0, http://support.automation.siemens.com/WW/view/en/40625241.

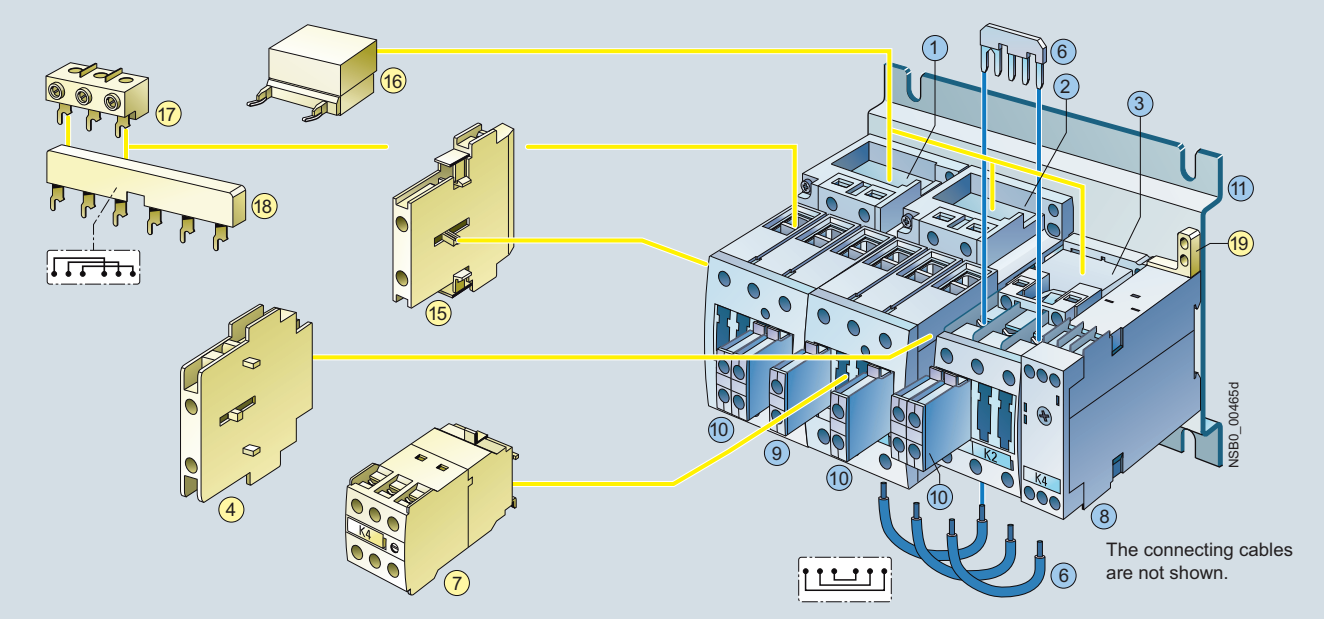
[3] Up to I_k < 0.5 kA; ≤ 260 V.

[4] Selection data for fuseless load feeders.

SIRIUS 3RA14 contactor assemblies for wye-delta starting

Selection and ordering data

Fully wired and tested contactor assemblies · Size S2-S2-S0 · up to 30 kW



Mountable accessories (optional)

To be ordered separately		Article No.	Page
④	Mech. interlock, lateral Depth compensation required Q3: 1.5 mm; Q2: 0 mm[1]	3RA1924-2B	3/161
⑦	Solid-state time-delay auxiliary switch block, front[2]	3RT1926-2G...	3/107
⑮	Auxiliary switch block, lateral	3RH1921-1EA..	3/105
⑯	Surge suppressors	3RT1926-1.... 3RT1936-1....	3/108, 3/108
⑰	Three-phase infeed terminals	3RV1935-5A	3/179
⑱	Three-phase busbars	3RV1935-1A	3/179
⑲	Push-in lug for timing relay screw mounting	3RP1903	[3]

[1] Use the 3RA1932-2B 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.

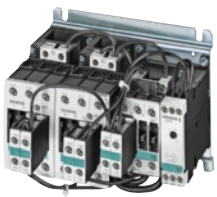
Complete contactor assemblies

Individual parts		Article No. Q1	Q3	Q2	Page
①②③	Contactor, 22/30 kW	3RT1034	3RT1034	3RT1026	3/83
⑧	Timing relay, lateral	3RP1574-1N.30			[3]
⑨	Auxiliary switch block with 1 unassigned NO contact	3RH1921-1CA10			3/103
⑩	Auxiliary switch block for local control				
	2 units	3RH1921-1CA01			3/103
	3 units	3RH1921-1CA10			
⑪	Base plate	3RA1932-2E			3/179
⑥	Assembly kit	3RA1933-2C			3/179

The assembly kit contains the star jumper on the top and the wiring module on the bottom for connecting the main current paths.

[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											
50 / 65	19.6	**22 / 30**	35	34	24 AC	A	**3RA1434-8XC21-1AC2**		1	1 unit	41B
					110 AC	A	**3RA1434-8XC21-1AG2**		1	1 unit	41B
					230 AC	▶	**3RA1434-8XC21-1AL2**		1	1 unit	41B
DC operation											
50 / 65	19.6	**22 / 30**	35	34	24 DC	▶	**3RA1434-8XC21-1BB4**		1	1 unit	41B

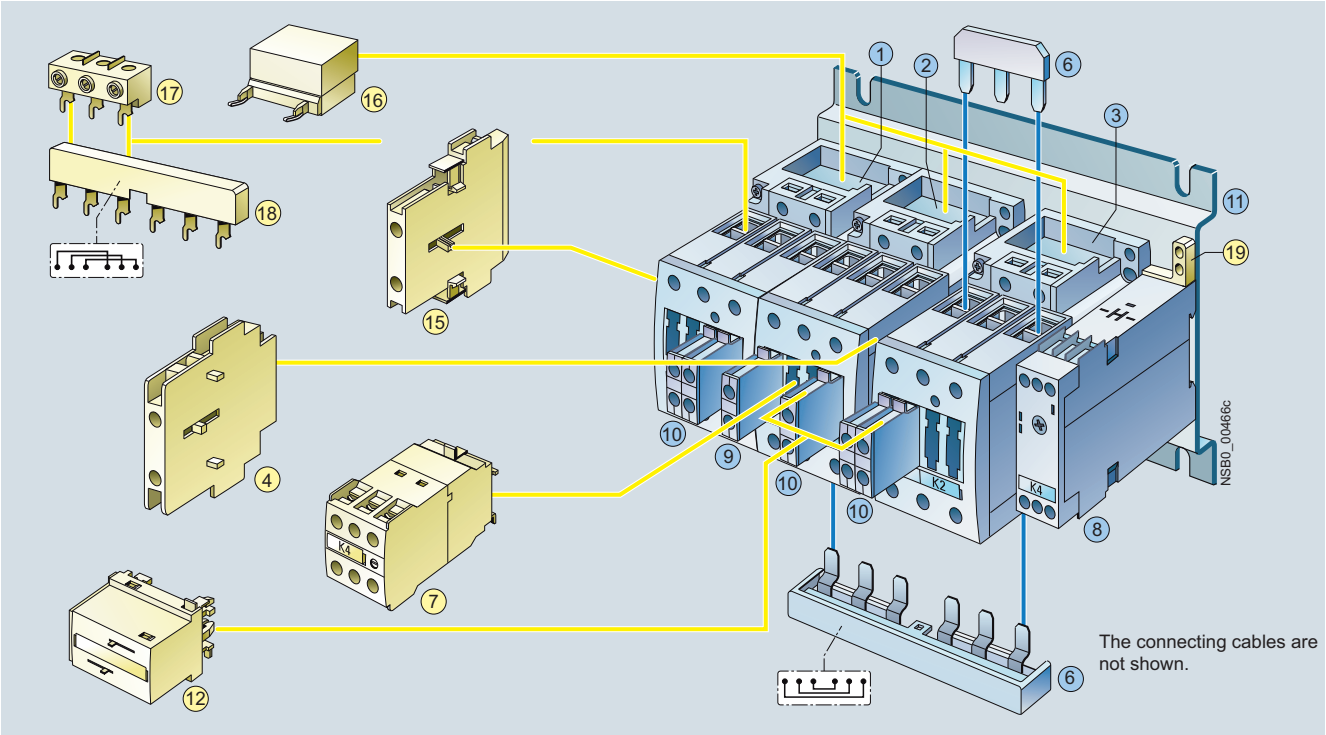


3RA1434-8XC21-1...

[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

Fully wired and tested contactor assemblies · Size S2-S2-S2 · up to 45 kW



Mountable accessories (optional)

To be ordered separately		Article No.	Page
④	Mech. interlock, lateral	3RA1924-2B	3/161
⑦	Solid-state time-delay auxiliary switch block, front[1]	3RT1926-2G...	3/107
⑫	Mech. interlock, front	3RA1924-1A	3/161
⑮	Auxiliary switch block, lateral	3RH1921-1EA..	3/105
⑯	Surge suppressors	3RT1926-1.... 3RT1936-1....	3/108, 3/108
⑰	Three-phase infeed terminal	3RV1935-5A	3/179
⑱	Three-phase busbar	3RV1935-1A	3/179
⑲	Push-in lug for timing relay screw mounting	3RP1903	[2]

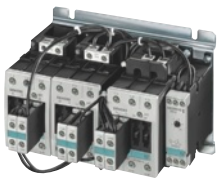
[1] Generally possible. If a solid-state time-delay auxiliary switch block is mounted onto the front of Q3, an auxiliary switch block can only be mounted onto the side.

Complete contactor assemblies

Individual parts		Article No. Q1	Q3	Q2	Page
①②③	Contactor, 37 kW	3RT1035	3RT1035	3RT1034	3/83
①②③	Contactor, 45 kW	3RT1036	3RT1036	3RT1034	3/83
⑧	Timing relay, lateral	3RP1574-1N.30			[2]
⑨	Auxiliary switch block with 1 unassigned NO contact	3RH1921-1CA10			3/103
⑩	Auxiliary switch block for local control 2 units 3 units	 3RH1921-1CA01 3RH1921-1CA10			 3/103
⑪	Base plate	3RA1932-2F			3/179
⑥	Assembly kit	3RA1933-2B			3/179

The assembly kit contains the star jumper on the top and the wiring module on the bottom for connecting the main current paths.

[2] See Chapter 10 "Monitoring and Control Devices" → "3RP, 7PV Timing Relays" → "3RP15 Timing Relays in Industrial Enclosure, 22.5 mm".


3RA143.-8XC21-1...

Rated data AC-3 Operational current I_e up to	Ratings of three-phase motors at 50 Hz and				Rated control supply voltage U_s[1]	DT	Screw terminals Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
400 V	230 V	**400 V**	500 V	690 V							
A	kW	**kW**	kW	kW	V						
AC operation, 50/60 Hz											
80	25	**37**	51	63	24 AC	A	**3RA1435-8XC21-1AC2**		1	1 unit	41B
					110 AC	A	**3RA1435-8XC21-1AG2**		1	1 unit	41B
					230 AC	▶	**3RA1435-8XC21-1AL2**		1	1 unit	41B
86	27	**45**	55	63	24 AC	A	**3RA1436-8XC21-1AC2**		1	1 unit	41B
					110 AC	A	**3RA1436-8XC21-1AG2**		1	1 unit	41B
					230 AC	▶	**3RA1436-8XC21-1AL2**		1	1 unit	41B
DC operation											
80	25	**37**	51	63	24 DC	A	**3RA1435-8XC21-1BB4**		1	1 unit	41B
86	27	**45**	55	63	24 DC	A	**3RA1436-8XC21-1BB4**		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.

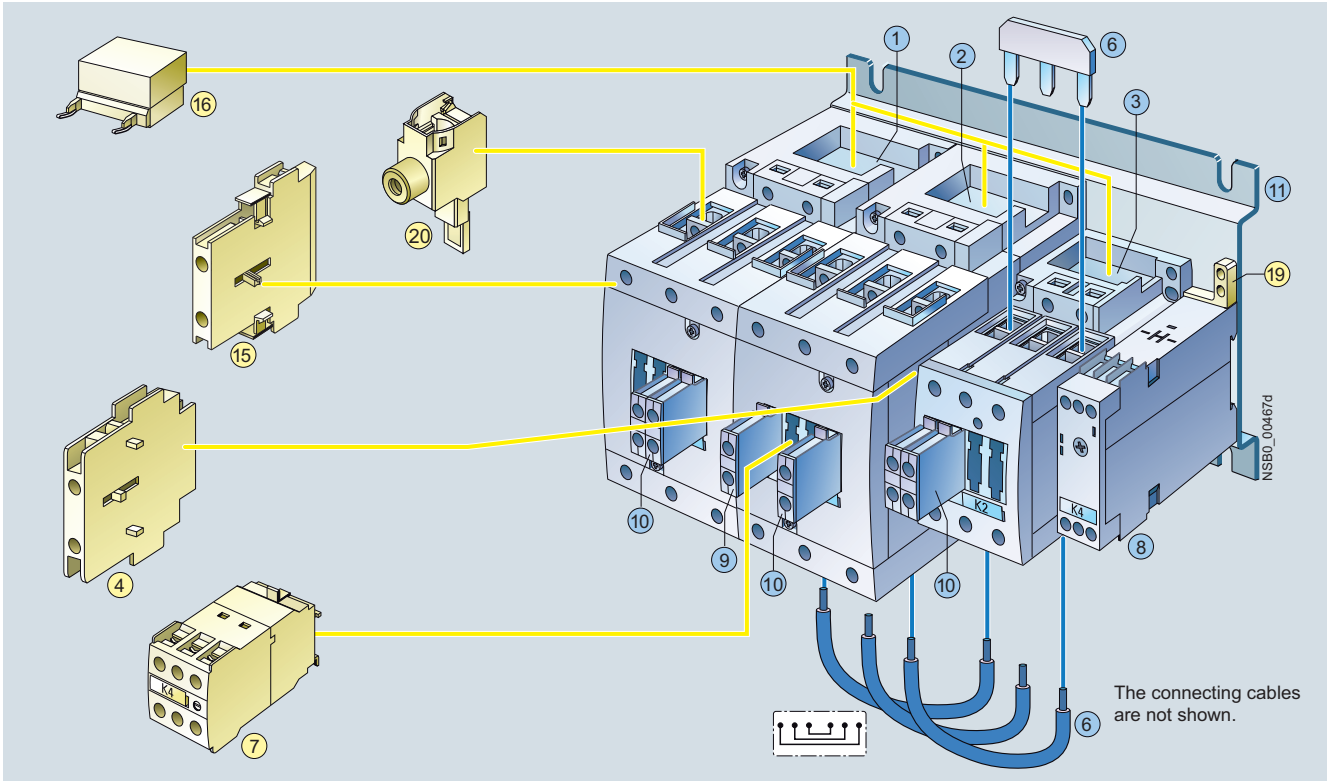
*** You can order this quantity or a multiple thereof.**
Illustrations are approximate

Contactor Assemblies

3RA23, 3RA13, 3RA24, 3RA14 Contactor Assemblies

SIRIUS 3RA14 contactor assemblies for wye-delta starting

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	3/161
⑦	Solid-state time-delay auxiliary switch block, front[2]	3RT1926-2G...	3/107
⑮	Auxiliary switch block, lateral	3RH1921-1EA..	3/105
⑯	Surge suppressors	3RT19.6-1....	3/108
⑲	Push-in lug for timing relay screw mounting	3RP1903	[3]
⑳	Single-phase infeed terminals	3RA1943-3L	3/179

Complete contactor assemblies

Individual parts		Article No. Q1	Q3	Q2	Page
①②③	Contactor, 55 kW	3RT1044	3RT1044	3RT1035	3/83
①②③	Contactor, 75 kW	3RT1045	3RT1045	3RT1036	3/83
⑧	Timing relay, lateral	3RP1574-1N.30			[3]
⑨	Auxiliary switch block with 1 unassigned NO contact	3RH1921-1CA10			3/103
⑩	Auxiliary switch block for local control				
	2 units	3RH1921-1CA01			3/103
	3 units	3RH1921-1CA10			
⑪	Base plate	3RA1942-2E			3/179
⑥	Assembly kit	3RA1943-2C			3/179

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".

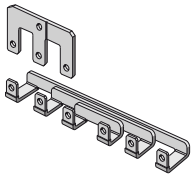
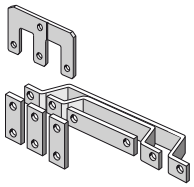
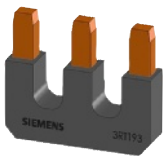
Rated data AC-3					Rated control supply voltage U_s[1]	DT	Screw terminals		PU (UNIT, SET, M)	PS*	PG
Operational current I_e up to	Ratings of three-phase motors at 50 Hz and						Article No.	Price per PU			
400 V	230 V	**400 V**	500 V	690 V							
A	kW	**kW**	kW	kW	V						
AC operation, 50/60 Hz											
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

Components for customer assembly

	Version	Size	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*	PG
Assembly kits								
 NSB0_01836 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.)	**S2-S2-S0**	▶	**3RA1933-2C**		1	1 unit	41B
		S2-S2-S2	▶	**3RA1933-2B**		1	1 unit	41B
		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
 NSB0_01837 3RA1953-2N, 3RA1963-2B, 3RA1973-2B								
Single-phase infeed terminals								
	Conductor cross-section: 95 mm²	**S3**	A	**3RA1943-3L**		1	1 unit	41B
Three-phase infeed terminals								
	Infeed terminal blocks for the line contactor for large conductor cross-sections							
	Conductor cross-section: 50 mm²	**S2**	▶	**3RV1935-5A**		1	1 unit	41E
Three-phase busbars								
	Bridging phase-by-phase of all input terminals of the line contactor Q1 and the delta contactor Q3							
		S2	▶	**3RV1935-1A**		1	1 unit	41E
Links for paralleling, 3-pole (star jumpers)								
 3RT1936-4BA31	Without connection terminal (the links for paralleling can be reduced by one pole)	**S2**	▶	**3RT1936-4BA31**		1	1 unit	41B
		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	**S2, S2, S0**	B	**3RA1932-2E**		1	1 unit	41B
	10 mm distance between Q3 and Q2	**S2, S2, S2**	B	**3RA1932-2F**		1	1 unit	41B
	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	**S2, S2, S0**	B	**3RA1932-2B**		1	1 unit	41B
		S2, S2, S2	B	**3RA1932-2B**		1	1 unit	41B
		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.

3TD6 reversing contactor assemblies, 335 kW

Overview

The contactor assemblies are suitable for use in any climate and the contactors are mechanically interlocked. They are finger-safe according to EN 50274.

Complete units and components for customer assembly are available. For motor protection, either overload relays for stand-alone installation or thermistor motor protection releases must be ordered separately.

Complete units

The 3TD68 contactor assemblies each consist of two 3TF68 contactors that are mechanically interlocked with 3TX7686-1A. Electrical interlocking is wired. The main and control circuits are wired according to the circuit diagrams.

An internal circuit diagram, a type designation and an unit labeling plate are provided on a common cover.

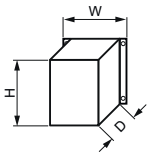
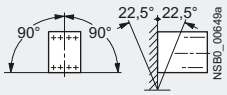
Auxiliary contacts

The contactor assemblies have 4 NO + 4 NC contacts per individual contactor. 3 NO + 3 NC contacts are unassigned for momentary-contact operation and 4 NO + 3 NC contacts unassigned for continuous contacting.

For the wiring of individual contactors, see the circuit diagrams of the control circuits in the Reference Manual "Contactors and Contactor Assemblies", http://support.automation.siemens.com/WW/view/en/35554359.

Technical specifications

The technical specifications are identical to those of the 3TF68 individual contactors unless otherwise stated.

Type			**3TD68**
Size			**14**
Dimensions (W x H x D) with base plate		mm	520 x 310 x 278
General data			
Permissible mounting position, installation instructions[1] The contactors are designed for operation on a vertical mounting surface.			
Mechanical endurance	Operating cycles		5 million
and rated data			
Rated insulation voltage		V AC	600
Uninterrupted current enclosed		A	550
Maximum horsepower ratings (and approved values)			
• Rated power for three-phase motors at 60 Hz	At 200 V 230 V 460 V 575 V	hp hp hp hp	200 229 464 582
NEMA/EEMAC ratings	NEMA/EEMAC SIZE		6
• Uninterrupted current			
- Open - Enclosed		A A	600 540
• Rated power for three-phase motors at 60 Hz	At 200 V 230 V 460 V 575 V	hp hp hp hp	150 200 400 400
Overload relays	Type		3RB2066
• Setting range		A	160 ... 630

[1] If the contactors are mounted at a 90° angle (conducting paths horizontally one above the other), the following reductions apply: switching frequency: to 80 % of the standard values.

Short-circuit protection with overload relays see Chapter 7, "Protection Equipment" → "Overload Relays" → "SIRIUS 3RB2 Solid-State Overload Relays".

Selection and ordering data

Size	Rated data AC-3					Auxiliary contacts per direction of rotation		Rated control supply voltage U_s	DT	**Screw terminals**		PU (UNIT, SET, M)	PS*	PG
	Operational current I_e up to	Ratings of three-phase motors at 50 Hz and				Version				Article No.	Price per PU			
	690 V	230 V	**400 V**	500 V	690 V									
	A	kW	**kW**	kW	kW	NO	NC	V AC						
Complete units														
AC operation, 50/60 Hz														
14	630	200	**335**	434	600	4	4	110 … 132	C	**3TD6804-2CF7**		1	1 unit	41B
								200 … 240	C	**3TD6804-2CM7**		1	1 unit	41B

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

Overview

The contactor assemblies are suitable for use in any climate. They are finger-safe according to EN 50274.

3TE contactor assemblies are available as complete units and components for customer assembly. They consist of two 3TF68 contactors, and the 3RT1075 contactor as star (wye) contactor.

The complete unit combinations are optionally supplied without a main conducting path connection between the line contactor and the delta contactor.

Control circuit (auxiliary contacts)

The 3TF68 contactors have four lateral auxiliary switches, each with 1 NO + 1 NC contact. The following auxiliary contacts are required for the control circuit of the assembly:

- Line contactor Q1: 13-14, 43-44
- Star (wye) contactor Q2: 13-14, 21-22
- Delta contactor Q3: 13-14, 21-22

The star-delta (wye-delta) changeover is implemented via a lateral time relay 3RP1574 (1 ... 20 ms) or 3RP1576 (3 ... 60 ms).

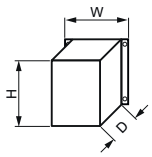
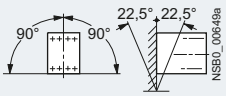
Motor protection

3TE68 contactor assemblies are supplied without overload protection. Overload relays or thermistor motor protection releases must be ordered separately.

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.

Technical specifications

The technical specifications are identical to those of the 3TF68 individual contactors unless otherwise stated.

Type			**3TE68**
Size			**14**
Dimensions (W x H x D) with base plate		mm	665 x 325 x 278
General data			
Permissible mounting position, installation instructions[1]			
The contactors are designed for operation on a vertical mounting surface.			
Individual contactors			
• Q1 line contactor		Type	3TF68
• Q2 star contactor		Type	3RT1075
• Q3 delta contactor		Type	3TF68
Mechanical endurance		Operating cycles	3 million
Unassigned auxiliary contacts of the individual contactors			[2]
Main circuit			
Current-carrying capacity with reversing time up to 10 s			
• Rated operational current I_e	Up to 690 V	A	1 090
• Rated power for three-phase motors at 50 Hz	At 230 V	kW	355
	400 V	kW	612
	500 V	kW	800
	690 V	kW	1 046
• Switching frequency with overload relay		h^{-1}	3
Current-carrying capacity with reversing time up to 15 s			
• Rated operational current I_e	Up to 500 V	A	923
	690 V	A	883
• Rated power for three-phase motors at 50 Hz	At 230 V	kW	295
	400 V	kW	515
	500 V	kW	677
	690 V	kW	885
• Switching frequency with overload relay		h^{-1}	2
Current-carrying capacity with reversing time up to 20 s			
• Rated operational current I_e	Up to 500 V	A	800
	690 V	A	765
• Rated power for three-phase motors at 50 Hz	At 230 V	kW	244
	400 V	kW	444
	500 V	kW	590
	690 V	kW	770
• Switching frequency with overload relay		h^{-1}	2

1) If the contactors are mounted at a 90° angle (conducting paths horizontally one above the other), the following reductions apply: switching frequency: to 80 % of the standard values.

2) See circuit diagrams of the control circuits in Reference Manual "Contactors and Contactor Assemblies", http://support.automation.siemens.com/WW/view/en/35554359.

3TE6 contactor assemblies for wye-delta starting, 630 kW

Contactor	Type	3TE68
Short-circuit protection		
Main circuit		
Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE		
Highest rated current of the fuse acc. to IEC 60947-4-1/EN 60947-4-1		
• Type of coordination "1"	A	1 000
• Type of coordination "2"	A	500[1]
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 with fuses for motor feeders with short-circuit currents up to 50 kA and 690 V		
Rated motor current	A	277 ... 1 090
Overload relays	Type	3RB2066
Setting range (The overload relays must be set to 0.58 times the rated motor current.)	A	160 ... 630
Permissible back-up fuses for starters, comprising contactor assemblies and overload relays. Single or double infeed[1]		
• Fuse links, operational class gG: LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE		
- Type of coordination "1"	A	1 000
- Type of coordination "2"	A	500
• Fuse links, aM operational class: LV HRC, type 3ND		
- Type of coordination "2"	A	630
• Fuse links, Siemens Canada, HRC fuses, Type II	A	1 000
• Fuse links, UL-listed fuses, CLASS L	A	1 200
• Fuse links, British Standard Fuses, BS88		
- Type of coordination "1"	A	1 000
- Type of coordination "2"	A	500

[1] The maximum rated motor current must not be exceeded.

Short-circuit protection with overload relays see Chapter 7, "Protection Equipment" → "Overload Relays" → "SIRIUS 3RB2 Solid-State Overload Relays".

Use double infeed for higher rated motor currents; see the circuit diagrams in the Reference Manual "Contactors and Contactor Assemblies", http://support.automation.siemens.com/WW/view/en/35554359.

Selection and ordering data

Size	Rated data AC-3					Rated control supply voltage U_s	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			
	690 V	230 V	**400 V**	500 V	690 V						
	A	kW	**kW**	kW	kW	V AC					
Complete units, reversing time up to 10 s											
AC operation, 50/60 Hz											
Without main current path connection between line and delta contactor											
14	1 090	315	**630**	800	1 000	110	C	**3TE6804-5CF0**	1	1 unit	41B
						230/220[1]	D	**3TE6804-5CP0**	1	1 unit	41B

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

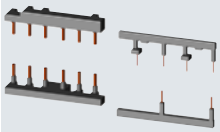
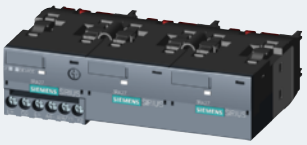
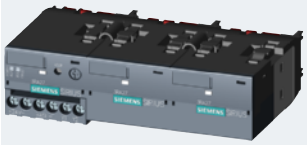
For motor protection, overload relays for stand-alone installation must be ordered separately; see Chapter 7, "Protection Equipment" → "Overload Relays" → "SIRIUS 3RB2 Solid-State Overload Relays".

* 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 sizes S00 and S0 With screw or spring-type terminals (with screw terminals for main and control circuit) 	1 function module for size S00 and S0, screw or spring-type connection, plus the respective wiring modules[1] 	1 function module for size S00 and S0, screw or spring-type connection, plus the respective wiring modules[1] 
For wye-delta starting	1 function module for size S00 and S0 with screw or spring-type terminals plus the respective wiring modules[2] 	1 function module for size S00 and S0 with screw or spring-type terminals plus the respective wiring modules[2] 	1 function module for size S00 and S0 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 communication interface (see pages 3/34 and 3/37).

[2] The modules for the control current wiring, which are included in the wiring kit, are not required.

Note:

When using the function modules, no other auxiliary switches are allowed to be connected to the basic units.

SIRIUS 3RA28 Function Modules for Mounting on 3RT2 and 3RH21 Contactors

Introduction

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

All solid-state timing relays 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.

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

The solid-state 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 18.5 kW.

For detailed description see page 3/150.

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 the two sizes S00 and S0. 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 3/151.

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 the two sizes S00 and S0
- Mechanical interlocking (with wiring kit for the main circuit)

Technical specifications

Type			**3RA2811**	**3RA2812**	**3RA2816**
Function			**ON-delay**	**OFF-delay with control signal**	**Wye-delta function**
Dimensions			See 3RT20 contactors, pages 3/17 and 3/22.		
General data					
Rated insulation voltage U_i Pollution degree 3 Overvoltage category III		V AC	300		
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
Rated operational currents I_e					
• Load current	- At 24 ... 240 V, 50 Hz	A	0.4		--
	- At 24 ... 240 V, DC	A	0.4		--
• AC-15	At 24 ... 240 V, 50 Hz	A	--		3
• DC-13	- At 24 V	A	--		1
	- At 125 V	A	--		0.2
	- At 250 V	A	--		0.1
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		--
Short-time loading capacity	Up to 10 ms	A	10		--
Setting accuracy With reference to upper limit of scale	Typ.		±15 %		
Repeat accuracy	Max.		±1 %		
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 61812-1, IEC 61000-6-2, IEC 61000-6-4		IEC 60947-4-1
Permissible mounting position			Any		
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)		--

SIRIUS 3RA28 Function Modules for Mounting on 3RT2 and 3RH21 Contactors

For direct-on-line starting

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
Solid-state 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**
	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**
Accessories						
	Sealable covers for 3RA27, 3RA28, 3RA29		A	**3RA2910-0**	A	**3RA2910-0**

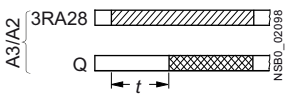
[1] AC voltage values apply for 50 Hz and 60 Hz.

[2] Cannot be fitted onto coupling contactors.

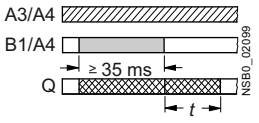
Note:

When using the function modules, no other auxiliary switches are allowed to be connected to the basic units.

Function	Function charts
	Timing relay energized Contact closed Contact open
1 NO contact (semiconductor output)	
ON-delay	3RA2811-.CW10



OFF-delay with control signal	3RA2812-.DW10



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

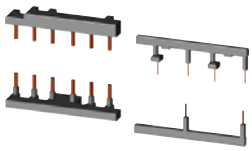
SIRIUS 3RA28 Function Modules for Mounting on 3RT2 and 3RH21 Contactors

For reversing starting / for wye-delta starting

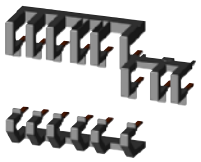
Selection and ordering data

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

3RA2816-0EW20



3RA2923-2AA1



3RA2923-2BB2

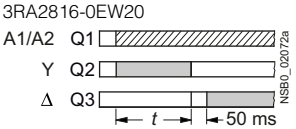
For contactors	Rated control supply voltage U_s [1]	Time setting range t	DT	Screw terminals	DT	Spring-type terminals
Type	V AC/DC	s		Article No. / Price per PU		Article No. / Price per PU
Assembly kits for reversing starting						
	Assembly kits for making 3-pole contactor assemblies The assembly kit 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**
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 main current for version with spring-type terminals)		▶	**3RA2923-2BB1**	▶	**3RA2923-2BB2**
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. [2]	24 ... 240	0.5 ... 60 (10, 30, 60; selectable)	A	**3RA2816-0EW20**	A	**3RA2816-0EW20**
	Individual modules					
	24 ... 240	Basic modules for wye-delta starting	A	**3RA2912-0**	A	**3RA2912-0**
	--	Coupling modules for wye-delta starting	A	**3RA2911-0**	A	**3RA2911-0**
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 contactors.

Note:

When using the function modules, no other auxiliary switches are allowed to be connected to the basic units.

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