


Size		**S3**			**S6**		**S10**			**S12**	
Type		3RT244.			3RT1456		3RT146.			3RT1476	
3RT244, and 3RT145 to 3RT147 3-pole contactors											
Type		**3RT2446**	**3RT2448**		**3RT1456**		**3RT1466**	**3RT1467**		**3RT1476**	
Number of main contacts		3 NO			3 NO		3 NO			3 NO	
AC, AC/DC operation		(p. 4/14)			(p. 4/15, 4/16)		(p. 4/15, 4/16)			(p. 4/15, 4/16)	
AC-1											
U_i	V	1 000									
U_e	V	1 000									
I_e up to 690 V	40 °C A	**140**	**160**		**275**		**400**	**500**		**690**	
	60 °C A	130	140		250		380	450		Standard operating mechanism: 650, solid-state operating mechanism: 600	
Accessories for contactors											
Auxiliary switch blocks		**3RH29, 3RA28**	(p. 3/94 ... 3/101)		**3RH19, 3RT1926**					(p. 3/97, 3/99, 3/100, 3/102)	
Functional modules (Direct-on-line, star-delta (wye-delta) starting)		**3RA281.**	(p. 3/106)		**--**						
Terminal covers		**3RT2946-4EA4**	(p. 3/118)		**3RT1956-4EA.**					(p. 3/118)	
Box terminal blocks		**--**			**3RT1955/56-4G**					(p. 3/116)	
Surge suppressors		**3RT2936**[1], **3RT2946**	(p. 3/103, 3/104)		**3RT1956-1C** (RC element)					(p. 3/104)	

[1] Surge suppressors 3RT2936-1B/-1E can be used for 3RT2.4 contactors as from product version E03. When using an AC/DC coil, the surge suppressor is already integrated in the electronics.




Size		**S00**		**S0**			**S2**		**S3**					
Type		3RT231.		3RT232.			3RT233.		3RT234.					
4-pole 3RT23 contactors														
Type		**3RT2316**	**3RT2317**	**3RT2325**	**3RT2326**	**3RT2327**	**3RT2336**	**3RT2337**	**3RT2344**	**3RT2346**	**3RT2348**			
Number of main contacts		4 NO		4 NO			4 NO		4 NO					
AC, DC and AC/DC operation		(p. 4/22, 4/24)		(p. 4/22 ... 4/24)			(p. 4/22 ... 4/26)		(p. 4/22 ... 4/26)					
AC-1														
U_i	V	690												
U_e	V	690												
I_e up to 690 V	40 °C A	**18**	**22**	**35**	**40**	**50**	**60**	**110**	**110**	**140**	**160**			
	60 °C A	16	20	30	35	42	55	95	100	130	140			
AC-2 and AC-3														
I_e up to 400 V	A	9	12	15.5	15.5	15.5	--	--	--	--	--			
P at 400 V	kW	**4**	**5.5**	**7.5**	**7.5**	**7.5**	**--**	**--**	**--**	**--**	**--**			
Accessories for contactors														
Auxiliary switch blocks		**3RH29, 3RA28**										(p. 3/94 ... 3/101)		
Function modules (direct-on-line starting, star-delta (wye-delta) starting)		**3RA281.**										(p. 3/106)		
Terminal covers		**--**					**3RT2936-4EA4**	(p. 3/118)	**3RT2946-4EA4**			(p. 3/118)		
Surge suppressors		**3RT2916**	(p. 3/103, 3/104)				**3RT2936**	(p. 3/103, 3/104)	**3RT2936**[1], **3RT2946**			(p. 3/103, 3/104)		

[1] Surge suppressors 3RT2936-1B/-1E can be used for 3RT2.4 contactors as from product version E03. When using an AC/DC coil, the surge suppressor is already integrated in the electronics.

Overview

Standards

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

3RT.4 contactors are used for switching resistive loads (AC-1) or as contactors that normally only have to carry the current, for example, for variable-speed drives.

The accessories and spare parts of the 3RT contactors can also be used here, see from page 3/76 onwards.

For a general description of 3RT contactors, sizes S3 to S12, see from page 3/17 onwards.

Connection methods

Main circuit

- Size S3: screw terminals with box terminal; direct connection to the connecting bar possible with cable lugs when the box terminal is removed.
- Sizes S6 to S12: screw terminals with connecting bars that the cables can be connected to using either cable lugs or flexible or rigid busbars. Alternatively, box terminals are available as accessories.

Auxiliary/control circuit

Sizes S3 to S12: Screw terminals

Operating mechanism types

3RT2 contactors

3RT2 contactors are available as versions with conventional AC or DC operating mechanisms or as versions with a wide-range solid-state operating mechanism and a universal actuating voltage (AC or DC operation).

With an operating range from 0.8 to 1.1 x U_S, control takes place via the control supply voltage connection A1 - A2 as is typically the case.

3RT1 contactors

The following control and/or actuator versions are available in sizes S6 to S12:

- Standard operating mechanism with economy circuit for AC and DC operating mechanism (switchover from closing coil to holding coil)
- Solid-state operating mechanisms
  Overvoltage damping of the operating mechanism coil is already integrated in the electronics for contactors with solid-state operating mechanisms. The operating mechanisms are powered via a supply voltage with an operating range from 0.8 to 1.1 x U_S, optionally also controlled depending on the chosen mode of operation. Alternatively, control is via the separate 24 V DC control signal input. Various rated voltage ranges for AC/DC control are available.

  The following versions are available:
  - With two operating modes: Direct control or via CPU input
  - As above, but additionally with remaining lifetime indication (RLT)
  - With fail-safe PLC input for simplification of safety applications (without mode of operation selection)

Solenoid coils/drive units

3RT2 contactors

Coil replacement is possible for sizes S0 to S3.

3RT1 contactors

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

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

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

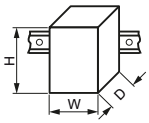
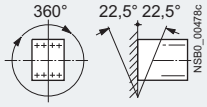
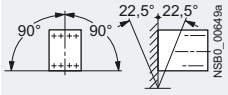
Technical specifications

More information

Technical specifications, see https://support.industry.siemens.com/cs/ww/en/ps/24229/td

FAQs, see https://support.industry.siemens.com/cs/ww/en/ps/24229/faq

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

Type		3RT2446, 3RT2448	3RT1456	3RT1466	3RT1467	3RT1476
Size		S3	S6	S10		S12
General data						
Dimensions (W x H x D) 						
• Basic units - Screw/spring-type terminals	mm	70 x 140 x 152	120 x 172 x 170	145 x 210 x 202		160 x 214 x 225
• Basic unit with mounted auxiliary switch block - Screw terminals - Spring-type terminals	mm mm	70 x 140 x 196 70 x 140 x 200	120 x 172 x 217 --	145 x 210 x 251		160 x 214 x 271
• Basic unit with mounted function module or solid-state time-delayed auxiliary switch block - Screw/spring-type terminals	mm	70 x 140 x 226	--			
Permissible mounting position The contactors are designed for operation on a vertical mounting surface.						
Upright mounting position		 Special version required	--			
Mechanical endurance						
• Basic units and basic units with mounted auxiliary switch block	Operating cycles	10 million				
• Basic units with solid-state compatible auxiliary switch block	Operating cycles	5 million	--			
Electrical endurance for utilization category AC-1, at U_e = 400 V	Operating cycles	0.5 million			On request	0.5 million
Rated insulation voltage U_i (pollution degree 3)	V	1 000				
Rated impulse withstand voltage U_{imp}	kV	6	8			
Protective separation between the coil and the main contacts acc. to IEC 60947-1, Appendix N	V	690				
Mirror contacts according to IEC 60947-4-1, Appendix F A mirror contact is an auxiliary NC contact that cannot be closed simultaneously with an NO main contact.						
• Integrated auxiliary switches		Yes	--			
• Removable auxiliary switch block		--	Yes			
Permissible ambient temperature						
• During operation	°C	-25 ... +60				
• During storage	°C	-55 ... +80				
Degree of protection acc. to IEC 60529						
• On front		IP20	IP00 (IP20 with box terminal/cover)			
• Connecting terminal		IP00 (for higher degree of protection: use additional terminal covers)				
Touch protection acc. to IEC 60529		Finger-safe for vertical touching from the front	Finger-safe for vertical touching from the front with cover			
Shock resistance						
• Rectangular pulse - AC operation - DC operation	 *g*/ms *g*/ms	 10.3/5 and 10.5/10 6.7/5 and 4.0/10	 8.5/5 and 4.2/10 8.5/5 and 4.2/10			
• Sine pulse - AC operation - DC operation	 *g*/ms *g*/ms	 16.3/5 and 10.5/10 10.6/5 and 6.3/10	 13.4/5 and 6.5/10 13.4/5 and 6.5/10			

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

Type		3RT2446, 3RT2448		3RT1456		3RT1466, 3RT1467		3RT1476	
		-.A	-.N	-.A	-.N/-.P/-.S	-.A	-.N/-.P/-.S	-.A	-.N/-.P/-.S
Size		S3		S6		S10		S12	
Control									
Solenoid coil operating range (AC/DC)		0.8 ... 1.1 x U_s	0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$						
Power consumption of the solenoid coils (for cold coil and 1.0 x U_s)									
• AC operation, 50 Hz, standard version									
- Closing	VA	296	--						
- P.f.		0.61	--						
- Closed	VA	19	--						
- P.f.		0.38	--						
• AC operation, 50/60 Hz, standard version									
- Closing	VA	348/296	--						
- P.f.		0.62/0.55	--						
- Closed	VA	25/18	--						
- P.f.		0.35/0.41	--						
• AC operation, 50/60 Hz, for USA/Canada									
- Closing	VA	326/326	--						
- P.f.		0.62/0.55	--						
- Closed	VA	22/22	--						
- P.f.		0.38/0.4	--						
• AC/DC operation									
- Closing for AC operation	VA	--	163	300	280	590	530	830	750
- P.f.		--		0.9	0.8	0.9	0.8	0.9	0.8
- Closed for AC operation	VA	--	3.1	5.8	4.8	6.7	8.5	9.2	9
- P.f.		--		0.8	0.6	0.9	0.4	0.9	0.4
- Closing for DC operation	W	--	76	360	320	650	580	920	800
- Closed for DC operation	W	--	1.8	5.2	2.8	7.4	3.4	10	3.6

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Type			3RT2446, 3RT2448	3RT1456	3RT1466, 3RT1467	3RT1476
Size			S3	S6	S10	S12
Control (continued)						
Type of PLC control input according to IEC 60947-1						
Solid-state operating mechanism						
• Version	3RT14..-.N/-.P/-.S		--	Type 1		
• Rated voltage		V DC	--	24		
• Operating range		V DC	--	17 ... 30		
• Power consumption		mA	--	≤ 30		
• Recovery time after mains failure, typical	3RT14..-.S	s	--	2		
Operating times for 1.0 x U_s [1] (Total break time = Opening delay + Arcing time)						
Standard operating mechanism	3RT.4..-.A					
- Closing delay		ms	13 ... 50	25 ... 50	35 ... 50	50 ... 70
- Opening delay		ms	10 ... 21	40 ... 60	50 ... 80	70 ... 100
Solid-state operating mechanism						
• Actuated via A1/A2	3RT.4..-.N/-.P					
- Closing delay		ms	50 ... 70	100 ... 120	110 ... 130	125 ... 150
- Opening delay		ms	38 ... 57	80 ... 100		
• Actuated via PLC input	3RT14..-.N/-.P					
- Closing delay		ms	--	40 ... 60	50 ... 65	65 ... 80
- Opening delay		ms	--	80 ... 100		
• Actuated via F-PLC input	3RT14..-.S					
- Closing delay		ms	--	60 ... 75		
- Opening delay		ms	--	115 ... 130		
• Arcing time		ms	10 ... 20	10 ... 15		

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

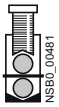
Type			3RT2446	3RT2448	3RT1456	3RT1466	3RT1467	3RT1476
Size			S3		S6	S10		S12
Rated data of the main contacts								
Load rating with AC								
Utilization category AC-1, switching resistive loads								
• Rated operational currents I_e	At 40 °C up to 690 V	A	140	160	275	400	500	690
	At 60 °C up to 690 V	A	130	140	250	380	450	Standard operating mechanism: 650, solid-state operating mechanism: 600
	Up to 1 000 V	A	60	80	100	150	--	250
• Minimum conductor cross-section for loads with I_e	At 40 °C	mm^2	50	70	2 x 70	240	300	2 x 240
	At 60 °C	mm^2	50		120	240	300	2 x 240
Utilization categories AC-2 and AC-3 With an electrical endurance of 1.3 million operating cycles								
• Rated operational currents I_e	Up to 400 V	A	44		97	138		170
	Up to 690 V	A	44		97	138		170
• Rated power for slipring or squirrel-cage motors at 50 and 60 Hz	At 230 V	kW	12.7		30	37		55
	400 V	kW	22		55	75		90
	500 V	kW	29.9		55	90		110
	690 V	kW	38.2		90	132		160
Power loss per conducting path	At I_e/AC-1	W	--		20	27	42	55
Load rating with DC								
Utilization category DC-1, switching resistive loads ($L/R \leq 1$ ms)								
• Rated operational currents I_e (at 60 °C)								
- 1 conducting path	Up to 24 V	A	130	140	250	380		500
	60 V	A	80		250	380		500
	110 V	A	12		18	33		
	220 V	A	2.5		3.4	3.8		
	440 V	A	0.8		0.8	0.9		
	600 V	A	0.48		0.5	0.6		
- 2 conducting paths in series	Up to 24 V	A	130	140	250	380		500
	60 V	A	130	140	250	380		500
	110 V	A	130	140	250	380		500
	220 V	A	13		20	380		500
	440 V	A	2.4		3.2	4		
	600 V	A	1.3		1.6	2		
- 3 conducting paths in series	Up to 24 V	A	130	140	250	380		500
	60 V	A	130	140	250	380		500
	110 V	A	130	140	250	380		500
	220 V	A	130	140	250	380		500
	440 V	A	6		11.5	11		
	600 V	A	3.4		4	5.2		
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \leq 15$ ms)								
• Rated operational currents I_e (at 60 °C)								
- 1 conducting path	Up to 24 V	A	6		250	380		500
	60 V	A	3		7.5	11		
	110 V	A	1.25		2.5	3		
	220 V	A	0.35		0.6			
	440 V	A	0.15		0.17	0.18		
	600 V	A	0.1		0.12	0.125		
- 2 conducting paths in series	Up to 24 V	A	130	140	250	380		500
	60 V	A	130	140	250	380		500
	110 V	A	130	140	250	380		500
	220 V	A	1.75		2.5			
	440 V	A	0.42		0.65			
	600 V	A	0.27		0.37			
- 3 conducting paths in series	Up to 24 V	A	130	140	250	380		500
	60 V	A	130	140	250	380		500
	110 V	A	130	140	250	380		500
	220 V	A	4		250	380		500
	440 V	A	0.8		1.4			
	600 V	A	0.45		0.75			

SIRIUS 3RT.4 contactors for resistive loads (AC-1), 3-pole

Type				3RT2446	3RT2448	3RT1456	3RT1466, 3RT1467	3RT1476
Size				S3		S6	S10	S12
Rated data of main contacts (continued)								
Switching frequency								
Switching frequency *z* in operating cycles/hour								
Contactors without overload relays								
• No-load switching frequency								
- Standard operating mechanism	3RT244.-.A		1/h	5 000	1 000	--		
	3RT14..-.A		1/h	--		2 000		
- Solid-state operating mechanism	3RT14..-.N/-.P		1/h	--		1 000		
	3RT14..-.S		1/h	--		1 000		500
• Switching frequency z during rated operation								
- Standard operating mechanism	3RT244.-.A	I_e/AC-1 at 400 V	1/h	650		--		
- Standard operating mechanism 3RT14..-.A and solid-state operating mechanism 3RT14..-.N/-.P		I_e/AC-1 at 400 V	1/h	--		600		
- Solid-state operating mechanism 3RT14..-.S		I_e/AC-1 at 400 V	1/h	--		350		
Dependence of the switching frequency z' on the operational current I' and operational voltage U': $z' = z \cdot (I_e/I') \cdot (U_e/U')^{1.5} \cdot 1/h$								

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

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

Type		3RT1456		3RT1466, 3RT1467	3RT1476
Size		S6		S10	S12
Conductor cross-sections					
Main conductors (1 or 2 conductors can be connected)		Screw terminals			
With mounted box terminals	Type	3RT1955-4G	3RT1956-4G	3RT1966-4G	
Terminal screws		M10 (hexagon socket, A/F 4)	M10 (hexagon socket, A/F 4)	M12 (hexagon socket, A/F 5)	
• Tightening torque	Nm lb.in	10 ... 12 90 ... 110	10 ... 12 90 ... 110	20 ... 22 180 ... 195	
Front clamping point connected					
 NSB0_00479					
• Finely stranded with end sleeve (DIN 46228-1)	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 (DIN 46228-1)	mm^2	16 ... 70	16 ... 120	120 ... 185	
• Finely stranded without end sleeve	mm^2	16 ... 70	16 ... 120	120 ... 185	
• Stranded	mm^2	16 ... 70	16 ... 120	120 ... 240	
• AWG cables, solid or stranded	AWG	6 ... 2/0	6 ... 250 kcmil	250 ... 500 kcmil	
• Ribbon cable conductors (Number x Width x Thickness)	mm	Min. 3 x 9 x 0.8, max. 6 x 15.5 x 0.8	Min. 3 x 9 x 0.8, max. 10 x 15.5 x 0.8	Min. 6 x 9 x 0.8, max. 20 x 24 x 0.5	
Both clamping points connected (minimum cross-section 16 mm^2)					
 NSB0_00481					
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185	
• Finely stranded without end sleeve	mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 50, max. 2 x 185	
• Stranded	mm^2	Max. 1 x 50, 1 x 70	Max. 1 x 95, 1 x 120	Min. 2 x 70, max. 2 x 240	
• AWG cables, solid or stranded	AWG	Max. 2 x 1/0	Max. 2 x 3/0	Min. 2 x 2/0, max. 2 x 500 kcmil	
• Ribbon cable conductors (Number x Width x Thickness)	mm	Max. 2 x (6 x 15.5 x 0.8)	Max. 2 x (10 x 15.5 x 0.8)	Max. 2 x (20 x 24 x 0.5)	
Busbar connections					
• Connecting bar (max. width)	mm	17		25	
- Bore diameter	mm	9		11	
Cable lug connection		1)		2)	
• Finely stranded with cable lug	mm^2	16 ... 95		50 ... 240	
• Stranded with cable lug	mm^2	25 ... 120		70 ... 240	
• AWG cables, solid or stranded	AWG	4 ... 250 kcmil		2/0 ... 500 kcmil	
• Terminal screws		M8 x 25 (A/F 13)		M10 x 30 (A/F 17)	
- Tightening torque	Nm lb.in	10 ... 14 90 ... 124		14 ... 24 124 ... 210	
Auxiliary conductors (1 or 2 conductors can be connected)					
• Solid	mm^2	2 x (0.5 ... 1.5)[3]; 2 x (0.75 ... 2.5)[3] acc. to IEC 60947; max. 2 x (0.75 ... 4)[3]			
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 ... 1.5)[3]; 2 x (0.75 ... 2.5)[3]			
• AWG cables, solid or stranded	AWG	2 x (18 ... 14)			
• Terminal screws		M3 (Pozidriv size 2)			
- Tightening torque	Nm lb.in	0.8 ... 1.2 7 ... 10.3			
Auxiliary conductors[4] (1 or 2 conductors can be connected)		Spring-type terminals			
• Operating tool		3.0 x 0.5; 3.5 x 0.5			
• Solid	mm^2	2 x (0.25 ... 2.5)			
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.25 ... 1.5)			
• Finely stranded without end sleeve	mm^2	2 x (0.25 ... 2.5)			
• AWG cables, solid or stranded	AWG	2 x (24 ... 14)			

1) 3RT1456: When connecting cable lugs according to DIN 46235, use the 3RT1956-4EA1 terminal cover for conductor cross-sections from 95 mm^2 to keep the phase clearance, see page 3/118.

2) 3RT1466, 3RT1467 and 3RT1476: When connecting cable lugs according to DIN 46234 for conductor cross-sections larger than 240 mm^2 and according to DIN 46235 for conductor cross-sections larger than 185 mm^2, the 3RT1966-4EA1 terminal cover is required to maintain phase separation, see page 3/118.

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

4) Max. external diameter of the conductor insulation: 3.6 mm. With conductor cross-sections ≤ 1 mm^2 an "insulation stop" must be used, see page 3/121.

Rated control supply voltages for 3RT14 contactors, possible on request (change of the 10th and 11th digits of the Article No.)

Delivery time on request

Rated control supply voltage	Contactor type	3RT145.-.A, 3RT146.-.A, 3RT147.-.A	Rated control supply voltage	Contactor type	3RT145.-.N, 3RT146.-.N, 3RT147.-.N	3RT145.-.P, 3RT145.-.S, 3RT146.-.P, 3RT146.-.S, 3RT147.-.P, 3RT147.-.S
$U_{s\,min}$ ... $U_{s\,max}$	Sizes	S6 to S12	$U_{s\,min}$ ... $U_{s\,max}$	Sizes	S6 to S12	
Sizes S6 to S12						
AC/DC operation (50/60 Hz AC or DC) and operating range 0.8 x $U_{s\,min}$ ... 1.1 x $U_{s\,max}$						
Standard operating mechanism			**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				