Switching Devices – Contactors and Contactor Assemblies

Power Contactors for Switching Motors

Introduction





		4 4 4				6 6			
Size		S2 3RT203				S3			
Type 3RT20 contactors	,	3R12U3				3RT204			
Type	1	3RT2035	3RT2036	3RT2037	3RT2038	3RT2045	3RT2046	3RT2047	
AC, DC operation		on 12033 (p. 3/58, 3/67,		3H12U31	3H12U30	(p. 3/59, 3/6		3H12U41	
AC-3						1			
I _e /AC-3/400 V	A	40	50	65	80	80	95	110	
400 V		18.5	22	30	37	37	45	55	
230 V 690 V		11 22	15 22	18.5 37	22 45	22 55	22 75	30 90	
1 000 V						37	37	37	
AC-4 (at $I_a = 6 \times I_{\Theta}$)									
400 V 400 V (200 000 operating cycles)		18.5 11.6	22 12.6	30 14.7	37 15.8	37 17.9	45 22	55 24.3	
AC-1 (40 °C, ≤ 690 V)									
I_{e}	A	60	70	80	90	125	130	130	
Accessories for contactors	;								
Auxiliary • On front switch blocks • Lateral		3RH29, 3RA2 3RH29	8		(p. 3/94 3/101) (p. 3/98)		A28		(p. 3/94 3/101) (p. 3/98)
Function modules • Direct-on-line st • IO-Link, AS-Inte		3RA283. 3RA271AA(00		(p. 3/106) (p. 3/107, 3/108)	3RA283. 3RA271A	A00		(p. 3/106) (p. 3/107, 3/108)
Surge suppressors		3RT2936			(p. 3/103, 3/104)		3RT2946		(p. 3/103, 3/104)
Terminal covers	;	3RT2936-4EA	2		(p. 3/118)	3RT2946-4I	EA2		(p. 3/118)
3RU2 and 3RB overload rel	ays								
3RU thermal overload relays	:	3RU2136	11 80 A		(p. 7/93)	3RU2146	28 100 A		(p. 7/93)
3RB electronic overload relays									
For standard applications		3RB3036, 3RB3133	12.5 80 A	(p. 7/105 7/107)	3RB3046, 3RB3143	12.5 115 A	(p. 7/105 7/107)
• For High-Feature applications		3RB22, 3RB2			(p. 7/128, 7/136)		B23 and 3RB24		(p. 7/128, 7/136)
		with current r module 3RB2			(p. 7/140)		nt measuring B2906-2JG1 10 100 A		(p. 7/140)
3RV20 motor starter protec	tors						10 100 / 1		
Motor starter protectors		3RV2031, 3R\	/2032	9.5 80 A	(p. 7/30)	3RV2041, 3	RV2042	28 100 A	(p. 7/30)
Link modules	;	3RA2931			(p. 7/56)	3RA1941			(p. 7/56)
3RA23 reversing contactor	assem	nblies							
•	Type	3RA2335 (p. 3/165)	3RA2336	3RA2337	3RA2338	3RA2345 (p. 3/166)	3RA2346	3RA2347	
400 V		18.5	22	30	37	37	45	55	
Assembly kits/wiring modules		3RA2933-2A	<u></u> \.		(p. 3/110)	3RA2943-2	AA.		(p. 3/110)
Function modules	;	3RA271BA0	00		(p. 3/107)	3RA271B	A00		(p. 3/107)
Mechanical interlocks	;	3RA2934-2B			(p. 3/114)	3RA2934-2	В		(p. 3/114)
3RA24 contactor assemblie	es for s	star-delta (w	ve-delta) st	arting					
Complete units		3RA2434	3RA2435	3RA2436	3RA2437	3RA2444	3RA2445	3RA2446	
piere e iiiie		(p. 3/182)		3	J	(p. 3/183)		J 110	
400 V	kW 2	22/30	37	45	55	55	75	90	
Assembly kits/wiring modules	;	3RA2933-2BE	3./-2C		(p. 3/111)	3RA2943-2	BB./-2C		(p. 3/111)
Function modules	:	3RA271CA	00		(p. 3/107)	3RA271C	A00		(p. 3/107)

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

Note:

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

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



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

3RT contactors, sizes S00 to S12

Our power range:

- · Contactors for switching motors:
 - Size S00: 3RT201 up to 7.5 kW
 - Size S0: 3RT202 up to 18.5 kW
 - Size S2: 3RT203 up to 37 kW Size S3: 3RT204 up to 55 kW

 - Sizes S6 to S12: 3RT10 up to 250 kW
- For vacuum contactors for switching motors, see page 3/126
 - Sizes S10 and S12: 3RT12 up to 250 kW
 - Size 14: 3TF6 up to 450 kW

Standards

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

Ambient conditions

If the devices are 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 Support:

https://support.industry.siemens.com/My/ww/en/requests

Auxiliary contact complement

- Size S00: an auxiliary contact is integrated in the basic device.
- Sizes S0 to S3: the basic units contain two integrated auxiliary contacts (1 NO + 1 NC).

All basic units, with the exception of coupling relays in sizes S00 and S0, can be expanded using auxiliary switch blocks, see page 3/88 for the permitted selection of auxiliary switches.

• Sizes S6 to S12: These contactors are supplied with two laterally mounted auxiliary switch blocks. The fitting of auxiliary switches is possible on the front and on the side (the 3RT12 vacuum contactor is an exception: only lateral fitting of auxiliary switches is possible here).

For detailed information about the fitting of auxiliary switches, see pages 3/88 to 3/93.

Contact reliability

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

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

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

Contactors for special applications

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

Article No. scheme

Product versions		Article number
SIRIUS power contactors		3RT2
Device type	e.g. 0 = 3-pole motor contactor	
Size of the contactor	e.g. 4 = S3	
Power dependent on size	e.g. 5 = 37 kW in the case of S3	
Type of electrical connection	e.g. 1 = screw terminals (main and auxiliary circuits)	
Operating range/solenoid coil circuit	e.g. A = AC standard/without coil circuit	
Rated control supply voltage	e.g. P0 = 230 V AC, 50 Hz	
Auxiliary switches	e.g. 0 = in the case of S3: 1 NO + 1 NC integrated	
Special version		0000
Example		3RT2 0 4 5 - 1 A P 0 0

Note:

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

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

		Contactors
Туре		3RT2035 3RT2036 3RT2037 3RT2038
Size		S2
General data		
Dimensions (W x H x D)		
Basic unit Screw/spring-type terminals	mm	55 x 114 x 130
Basic unit with mounted auxiliary switch block		
- Screw terminals	mm	55 x 114 x 174
- Spring-type terminals	mm	55 x 114 x 178
Basic unit with mounted function module or solid-state time-delayed auxiliary switch block		
- Screw/spring-type terminals	mm	55 x 114 x 204
Permissible mounting position		
The contactors are designed for operation on		360° 22,5° 22,5° 👙
a vertical mounting surface.		* * *
11. 1.11		т ″
Upright mounting position		E
		NSB0_00477a Special version required
Mechanical endurance		
Basic units and	Operating	10 million
basic units with mounted auxiliary switch block	cycles	
Basic units with solid-state compatible auxiliary switch block	Operating	5 million
	cycles	
Electrical endurance		For contact endurance of the main contacts, see page 3/26.
Rated insulation voltage <i>U</i> _i (pollution degree 3)	V	690
Rated impulse withstand voltage $U_{\rm imp}$		
Auxiliary circuit	kV	6
• Main circuit	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
3RT2.3. (removable 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 60529		
On front		IP20
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
Shock resistance		
Rectangular pulse AC operation	alma	11.8/5 and 7.4/10
- AC operation - DC operation	<i>g</i> /ms <i>g</i> /ms	11.8/5 and 7.4/10 7.7/5 and 4.5/10
• Sine pulse	J	
- AC operation	g/ms	18.5/5 and 11.6/10
- DC operation	<i>g</i> /ms	12/5 and 7/10
Short-circuit protection		
Main circuit		
• Fuse links, operational class gG:		
LV HRC, type 3NA; DIAZED, type 5SB; NEOZED, type 5SE acc. to IEC/EN 60947-4-1		
- Type of coordination "1"	Α	160 250
- Type of coordination "2" Wold from (test conditions one to IEC 60047 4.1)	A	80 125 160
- Weld-free (test conditions acc. to IEC 60947-4-1)	А	16 25 50
Auxiliary circuit	٨	10
 Fuse links, operational class gG: DIAZED, type 5SB; NEOZED, type 5SE 	Α	10
(weld-free protection at $I_k \le 1$ kA)		
• 230 V miniature circuit breaker, C characteristic	Α	10
(short-circuit current I _k < 400 A)		
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 onwards

_		Contactors		Coupling contactor
Type		3RT203A	3RT203N.3.	3RT203KB4.
Size		S2		
Control				
Type of operating mechanism		AC	AC/DC	DC
Solenoid coil operating range				
• AC operation ¹⁾		0.8 1.1 x <i>U</i> _s		
 AC/DC operation¹⁾ 			0.8 1.1 x U _s	
DC operation				0.8 1.2 x <i>U</i> _s
Power consumption of the solenoid coils (for cold coil and $1.0 \times U_{\rm S}$)				
 AC operation, 50 Hz, standard version 				
- Closing	VA	190		
- P.f. - Closed	VA	0.72 16		
- P.f.	٧A	0.37		
AC operation, 50/60 Hz, standard version				
- Closing	VA	210/188		
- P.f. - Closed	VA	0.69/0.65		
- Closed - P.f.	VA	17.2/16.5 0.36/0.39		
AC operation, 60 Hz, for USA/Canada				
- Closing	VA	212		
- P.f.	1/4	0.67		
- Closed - P.f.	VA	18.5 0.37		
• AC/DC operation		0.07		
- Closing for AC operation	VA		40	
- P.f.			0.95	
- Closed for AC operation	VA		2	
- P.f.			0.95	
DC operationClosing for DC operation	W		23 ²⁾	21.5
- Closed for DC operation	W		1	1
Permissible residual current of the electronics with 0 signal)				
• AC/DC operation	mA		< 20	
DC operation	mA		. = -	< 20
Overvoltage configuration of the solenoid coil	111/1		Built-in varistor	Built-in varistor
o to to tage comingulation of the solellold coll			- Varistor	- Varistor
			U	U
Operating times at 0.7 1.25 x $U_{\rm s}^{(3)}$			· ·	
Total break time = Opening delay + Arcing time				
• DC operation				
- Closing delay	ms			45 60
- Opening delay	ms			35 55
Operating times at 1.0 x U _s ³⁾				
AC operation				
- Closing delay	ms	1222	35 80	
- Opening delay	ms	1018	30 55	
DC operation	ms		35 80	35 80
- Closing delay - Opening delay	ms		30 55	30 55
Arcing time	ms	10 20	0	
Along time	1113	3) TL OFF LL (

¹⁾ Coil operating range

<sup>Coil operating range

At 50 Hz: 0.8 to 1.1 x U_s
At 60 Hz: 0.85 to 1.1 x U_s

In the case of AC/DC coils, increased starting currents (2.6 A on average) occur during the first 200 ms. For direct control from a PLC, we therefore recommend special coupling contactors with adapted power consumption. The connection of one 3RT203.-. KB4. coupling contactor is possible per PLC output port with an output current of 2 A, see page 3/67.</sup>

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 (varistor +2 ms to 5 ms, diode assembly: 2x to 6x).

T			Contactors	ORTOOC	0DT0007	0PT0000
Type Size			3RT2035	3RT2036	3RT2037	3RT2038
			S2			
Rated data of the main contacts						
Load rating with AC						
Utilization category AC-1, switching resistive loads						
$ullet$ Rated operational current $I_{ m e}$	At 40 °C up to 690 V At 60 °C up to 690 V	A A	60 55	70 60	80 70	90 80
• Rated power for AC loads ¹⁾ P.f. = 0.95 (at 60 °C)	230 V 400 V 690 V	kW kW kW	23 39 68	26 46 79	30 53 91	34 59 102
\bullet Minimum conductor cross-section for loads with $I_{\rm e}$	At 40 °C At 60 °C	mm^2 mm^2	16 16	25	25	35
Utilization categories AC-2 and AC-3						
$ullet$ Rated operational currents I_{e}	Up to 400 V 440 V 500 V 690 V	A A A	40 40 40 24	50 50 50	65 65 65 47	80 80 80 58
Rated power for slipring or squirrel-cage motors at 50 Hz and 60 Hz	At 230 V 400 V 690 V	kW kW kW	11 18.5 22	15 22	18.5 30 37	22 37 45
Thermal load capacity	10 s current	Α	400	420	520	640
Power loss per conducting path	At I _e /AC-3	W	2.2	4	3.8	5.7
Utilization category AC-4 (for $I_a = 6 \times I_e$)						
Maximum values						
- Rated operational current I _e	Up to 400 V	Α	35	41	55	
 Rated power for squirrel-cage motors with 50 Hz and 60 Hz 	At 400 V	kW	18.5	22	30	
• The following applies to a contact endurance of about 200 000 operating cycles:						
- Rated operational currents I_{e}	Up to 400 V 690 V	A A	22 18.5	24 20	28 22	30 24
- Rated power for squirrel-cage motors with 50 Hz and 60 Hz	At 110 V 230 V 400 V 690 V	kW kW kW kW	3.2 6.7 11.6 16.8	3.5 7.3 12.6 18.2	4.1 8.5 14.7 20	4.3 9.1 15.8 21.8

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

Torre			Contactors	OPTOOC	0070007	0.000.00
Type			3RT2035	3RT2036	3RT2037	3RT2038
Size			S2			
Rated data of the main contacts (continued)						
Load rating with DC						
Utilization category DC-1, switching resistive loads ($L/R \le 1$ ms)						
 Rated operational currents I_e (at 60 °C) 						
- 1 conducting path	Up to 24 V 60 V 110 V 220 V 440 V	A A A A	55 23 4.5 1 0.4			
- 2 conducting paths in series	600 V Up to 24 V 60 V 110 V 220 V 440 V	A A A A	0.25 55 45 45 5			
- 3 conducting paths in series	600 V Up to 24 V 60 V 110 V 220 V 440 V	A A A A A	0.8 55 55 55 45 2.9			
	600 V	A	1.4			
Utilization category DC-3/DC-5, shunt-wound and series-wound motors ($L/R \le 15$ ms)						
 Rated operational currents I_e (at 60 °C) 						
- 1 conducting path	Up to 24 V 60 V 110 V 220 V	A A A	35 6 2.5			
	440 V 600 V	A A	0.1 0.06			
- 2 conducting paths in series	Up to 24 V 60 V 110 V 220 V 440 V 600 V	A A A A A	55 45 25 5 0.27 0.16			
- 3 conducting paths in series	Up to 24 V 60 V 110 V	A A A	55 55 55			
	220 V 440 V 600 V	A A A	25 0.6 0.35			
Switching frequency						
Switching frequency <i>z</i> in operating cycles/hour Contactors without overload relays						
No-load switching frequency	AC	1/h	5 000			
- No load switching frequency	AC/DC	1/h	1 500			
• Switching frequency z during rated operation ¹⁾						
- I _e /AC-1 - I _e /AC-2	At 400 V At 400 V	1/h 1/h	1 200 750	1 000 600	800 400	700 350
- I _o /AC-3 - I _o /AC-4	At 400 V At 400 V	1/h 1/h	1 000	800 250	700 200	500 150
Contactors with overload relays	7.1.100 V			200	200	.00
Mean value		1/h	15			

¹⁾ Dependence of the switching frequency z' on the operational current I' and operational voltage U': $z' = z \cdot (I_0/I') \cdot (U_0/U')^{1.5} \cdot 1/h$.

		Contactors
Туре		3RT2035 to 3RT2038
Size		S2
Conductor cross-sections		
Main conductors (1 or 2 conductors can be connected)		Screw terminals
Solid or stranded	mm^2	2 x (1 35) ¹⁾ ; 1 x (1 50) ¹⁾
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (1 25) ¹⁾ ; 1 x (1 35) ¹⁾
AWG cables, solid or stranded	AWG	2 x (18 2) ¹⁾ ; 1 x (18 1) ¹⁾
Terminal screwsTightening torque	Nm	Pozidriv size 2; Ø 5 6 3 4.5 (27 40 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 screwsTightening torque	Nm	M3 (for Pozidriv size 2; Ø 5 6) 0.8 1.2 (7 10.3 lb.in)
Auxiliary and control conductors ²⁾ (1 or 2 conductors can be connected)		
Operating devices	mm	3.0 x 0.5
Solid or stranded	mm^2	2 x (0.5 2.5)
• Finely stranded with end sleeve (DIN 46228-1)	mm^2	2 x (0.5 1.5)
• Finely stranded without end sleeve	mm^2	2 x (0.5 2.5)
AWG cables, solid or stranded	AWG	2 x (20 14)
1) If two different conductor cross-sections are connected to one clampi point, both cross-sections must lie in one of the ranges specified.	ng	2) Max. external diameter of the conductor insulation: 3.6 mm. On spring-type terminals with conductor cross-sections ≤ 1 mm ² an insulation stop must be used, see page 3/121.

IE3/IE4 ready SIRIUS 3RT contactors, 3-pole up to 250 kW

DC operation for direct control from the PLC

- Coupling contactors with adapted power consumption
 Suitable for solid-state PLC/F-PLC outputs with 2 A

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









3KT2031KB4	·U
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Rated data AC-2 and AC-3, $t_{\rm u}$: 60 °C AC-1, t_u: 40 °C Ratings of three-phase Opera-Operational tional current I_e current I_e motors at 50 Hz up to and up to 400 V 400 V 690 V

Auxiliary contacts Rated control supply voltage Us DC Ident. Version No. NO NC

Screw terminals Article No. Price per PU

Spring-type terminals Article No. Price per PU

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

Α

Size	S2
Size	52

Α

With in	tegrated coil ci	rcuit (varistor)								
	ing range 0.8 power of the so		W at 24 V							
40	18.5	60	11	1	1	24	>	3RT2035-1KB40	X	3RT2035-3KB40
50	22	70	11	1	1	24	>	3RT2036-1KB40	Χ	3RT2036-3KB40
65	30	80	11	1	1	24	>	3RT2037-1KB40	Χ	3RT2037-3KB40
80	37	90	11	1	1	24		3RT2038-1KB40	5	3RT2038-3KB40

For screw and snap-on mounting onto TH 35-15 and TH 75-15 standard mounting rails

Size S3

With i	integrated coil ci	rcuit (varistor)								
	ating range 0.8 g power of the sol		/ at 24 V							
80	37	125	11	1	1	24	2	3RT2045-1KB40	2	3RT2045-3KB40
95	45	130	11	1	1	24	2	3RT2046-1KB40	2	3RT2046-3KB40

Other voltages according to page 3/74 on request.

Accessories and spare parts, see pages 3/76 to 3/125.

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

Options

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

Delivery time on request

Rated control	Contactor type	·	3RT202	3RT203	3RT204
supply voltage U _s	Jize	S00	S0	S2	S3
Sizes S00 to S					
AC operation1)					
Solenoid coils for (exception: Size S00: 50 Hz a					
24 V AC 42 V AC 48 V AC 110 V AC 230 V AC 240 V AC 400 V AC		B0 D0 H0 F0 P0 U0 V0	B0 D0 H0 F0 P0 U0 V0	B0 D0 H0 F0 P0 U0 V0	B0 D0 H0 F0 P0 U0 V0
Solenoid coils fo	or 50 Hz and 60 Hz ²⁾				
24 V AC 42 V AC 48 V AC 110 V AC 220 V AC 230 V AC		B0 D0 H0 F0 N2 P0	C2 D2 H2 G2 N2 L2	C2 D2 H2 G2 N2 L2	C2 D2 H2 G2 N2 L2
Solenoid coils (fo	or USA and Canada ³⁾)				
50 Hz	60 Hz				
110 V AC 220 V AC	120 V AC 240 V AC	K6 P6	K6 P6	K6 P6	K6 P6
Solenoid coils (fo	or Japan)				
50/60 Hz ⁴⁾	60 Hz ⁵⁾				
100 V AC 200 V AC 400 V AC	110 V AC 220 V AC 440 V AC	G6 N6 R6	G6 N6 R6	G6 N6 R6	G6 N6 R6
DC operation1))				
12 V DC 24 V DC 42 V DC 42 V DC 48 V DC 60 V DC 110 V DC 125 V DC 220 V DC 230 V DC		A4 B4 D4 W4 E4 F4 G4 M4 P4	A4 B4 D4 W4 E4 F4 G4 M4 P4	 	
Examples					
AC operation	3RT2023-1A P0 0 3RT2023-1A G2 0	Contactor with screw terr	ninals; with solenoid coil for 5	0 Hz for rated control supply v 0/60 Hz for rated control suppl	9
DC operation	3RT2025-2B B4 0	Contactor with spring-typ	e terminals; for rated control :	supply voltage 24 V DC.	

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

3RT2025-2B**G4**0

Rated control supply	Contactor	3RT202N	Rated control supply	Contactor	3RT203N	3RT204N
voltage	type		voltage	type		
$U_{\rm smin}\ldotsU_{\rm smax}^{1)}$	Size	S0	<i>U</i> _{s min} <i>U</i> _{s max} 1)	Size	S2	S3
Sizes S00 to S3						

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

	,			
21 28 V AC/DC	B3	20 33 V AC/DC	B3	В3
95 130 V AC/DC	F3	48 80 V AC/DC	E3	E3
200 280 V AC/DC ²⁾	P3	83 155 V AC/DC	F3	F3
		175 280 V AC/DC	P3	P3

¹⁾ Coil operating range

²⁾ Coil operating range

⁻ At 50 Hz: 0.8 to 1.1 x U_s,

⁻ At 60 Hz: 0.85 to 1.1 x U_s.

³⁾ Coil operating range

⁻ Size S00:

At 50 Hz: 0.85 to 1.1 x U_s , at 60 Hz: 0.8 to 1.1 x U_s

⁻ Sizes S0 to S3: at 50 Hz and 60 Hz: 0.8 to 1.1 x U_s.

Contactor with spring-type terminals; for rated control supply voltage 125 V DC. 4) Coil operating range

⁻ Size S00: At 50/60 Hz: 0.85 to 1.1 x U_s

⁻ Size S0:

at 50 Hz: 0.8 to 1.1 x U_s ; at 60 Hz: 0.85 to 1.1 x U_s ;

 $^{^{5)}}$ Coil operating range at 60 Hz: 0.8 to 1.1 x $U_{\rm S}.$

⁻ Size S0: 0.7 x $U_{\rm S\,min}$ to 1.3 x $U_{\rm S\,max}$ - Sizes S2 and S3: 0.8 x $U_{\rm S\,min}$ to 1.1 x $U_{\rm S\,max}$

 $^{^{2)}}$ The following applies to S0 and $U_{\rm S\,max}$ = 280 V: Upper limit = 1.1 x $U_{\rm S\,max}$