## **SIEMENS**

Data sheet	3RT2045-1AL20
	CONTACTOR, AC3: 37KW/400V, 1NO+1NC, 230VAC 50/60HZ, 3-POLE, 3NO, SIZE: S3, SCREW TERMINALS
product brandname	SIRIUS
Product designation	Power contactor
Product type designation	3RT2
General technical data	
Size of contactor	S3
Product extension	
<ul> <li>function module for communication</li> </ul>	No
Auxiliary switch	Yes
Insulation voltage	
• rated value	1 000 V
Degree of pollution	3
Surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
<ul> <li>between coil and main contacts acc. to EN 60947-1</li> </ul>	400 V
Protection class IP	
• on the front	IP20
of the terminal	IP00
Shock resistance	
at rectangular impulse	
— at AC	6.7 g / 5 ms, 4.0 g / 10 ms
with sine pulse	
— at AC	10.6 g / 5 ms, 6.3 g / 10 ms
Mechanical service life (switching cycles)	
of contactor typical	10 000 000
<ul> <li>of the contactor with added electronics- compatible auxiliary switch block typical</li> </ul>	5 000 000
<ul> <li>of the contactor with added auxiliary switch block typical</li> </ul>	10 000 000
Ambient conditions	
Installation altitude at height above sea level maximum	2 000 m
Ambient temperature	
during operation	-25 +60 °C
during storage	-55 +80 °C

Main circuit  Number of poles for main current circuit	3
Number of NO contacts for main contacts	3
Number of NC contacts for main contacts	0
Operating voltage	
at AC-3 rated value maximum	1 000 V
Operating current	
• at AC-1 at 400 V	
— at ambient temperature 40 °C rated value	125 A
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	125 A
— up to 690 V at ambient temperature 60 °C rated value	105 A
• at AC-2 at 400 V rated value	80 A
• at AC-3	
— at 400 V rated value	80 A
— at 500 V rated value	80 A
— at 690 V rated value	58 A
Connectable conductor cross-section in main circuit at AC-1	
• at 60 °C minimum permissible	35 mm²
• at 40 °C minimum permissible	50 mm²
Operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	34 A
• at 690 V rated value	24 A
Operating current	
• at 1 current path at DC-1	
— at 24 V rated value	100 A
— at 110 V rated value	9 A
— at 220 V rated value	2 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.4 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	100 A
— at 110 V rated value	100 A
— at 220 V rated value	10 A
— at 440 V rated value	1.8 A
— at 600 V rated value	1 A
• with 3 current paths in series at DC-1	
— at 24 V rated value	100 A

	— at 110 V rated value	100 A
— at 600 V rated value 2.6 A  Coperating current  ■ at 1 current path at DC-3 at DC-5  — at 24 V rated value 2.5 A  — at 220 V rated value 1 A  — at 440 V rated value 0.15 A  — at 440 V rated value 0.06 A  ■ with 2 current paths in series at DC-3 at DC-5  — at 110 V rated value 100 A  — at 220 V rated value 100 A  ■ with 2 current paths in series at DC-3 at DC-5  — at 110 V rated value 100 A  — at 220 V rated value 100 A  — at 24 V rated value 100 A  — at 440 V rated value 0.16 A  ■ with 3 current paths in series at DC-3 at DC-5  — at 110 V rated value 100 A  — at 240 V rated value 100 A  — at 220 V rated value 100 A  — at 24 V rated value 35 A  — at 24 V rated value 100 A  — at 24 V rated value 100 A  — at 24 V rated value 2.8 A  — at 24 V rated value 2.8 A  — at 230 V rated value 2.8 kW  — at 400 V rated value 2.8 kW  — at 400 V rated value 32 kW  — at 400 V rated value 119 kW  ■ at AC-1 41690 V rated value 119 kW  ■ at AC-2 at 400 V rated value 119 kW  ■ at AC-2 at 400 V rated value 37 kW  ■ at AC-3 17 kW  ■ at AC-3 17 kW  ■ at AC-3 17 kW  ■ at AC-4 17 kW  ■ at 230 V rated value 37 kW  ■ at AC-3 17 kW  ■ at AC-3 17 kW  ■ at AC-3 17 kW  ■ at AC-4 17 kW  ■ at AC-3 17 kW  ■ at AC-5 17 kW  ■ at AC-6 2 at 400 V rated value 37 kW  ■ at AC-7 2 at 400 V rated value 37 kW  ■ at AC-8 30 V rated value 37 kW  ■ at AC-9 trated value 45 kW  — at 800 V rated value 55 kW  □ at AC-9 trated value 55 kW  □ at AC-9 trated value 45 kW  ■ at AC-9 trated value 45 kW	— at 220 V rated value	80 A
Operating current              ◆ at 1 current path at DC-3 at DC-5                  — at 24 V rated value	— at 440 V rated value	4.5 A
* at 1 current path at DC-3 at DC-5     — at 24 V rated value     — at 110 V rated value     — at 110 V rated value     — at 440 V rated value     — at 600 V rated value     — at 600 V rated value     — at 600 V rated value     — at 110 V rated value     — at 110 V rated value     — at 110 V rated value     — at 124 V rated value     — at 224 V rated value     — at 24 V rated value     — at 24 V rated value     — at 600 V rated value     — at 600 V rated value     — at 600 V rated value     — at 110 V rated value     — at 110 V rated value     — at 110 V rated value     — at 120 V rated value     — at 220 V rated value     — at 24 V rated value     — at 24 V rated value     — at 24 V rated value     — at 27 V rated value     — at 28 V rated value     — at 29 V rated value     — at 20 V rated value     — at 20 V rated value     — at 40 V rated value     — at 600 V rated value     — at 600 V rated value     — at 600 V rated value     — at 230 V rated value     — at 230 V rated value     — at 400 V rated value     — at 400 V rated value     — at 690 V rate	— at 600 V rated value	2.6 A
at 24 V rated value	Operating current	
- at 110 V rated value	<ul> <li>at 1 current path at DC-3 at DC-5</li> </ul>	
- at 220 V rated value	— at 24 V rated value	40 A
- at 440 V rated value	— at 110 V rated value	2.5 A
— at 800 V rated value     • with 2 current paths in series at DC-3 at DC-5     — at 110 V rated value     — at 220 V rated value     — at 220 V rated value     — at 24 V rated value     — at 600 V rated value     — at 600 V rated value     — at 600 V rated value     — at 110 V rated value     — at 600 V rated value     — at 110 V rated value     — at 110 V rated value     — at 110 V rated value     — at 220 V rated value     — at 220 V rated value     — at 24 V rated value     — at 24 V rated value     — at 440 V rated value     — at 440 V rated value     — at 600 V rated value     — at 600 V rated value     — at 600 V rated value     — at 230 V rated value     — at 230 V rated value     — at 400 V rated value     — at 600 V rated va	— at 220 V rated value	1 A
<ul> <li>with 2 current paths in series at DC-3 at DC-5         <ul> <li>at 110 V rated value</li> <li>at 220 V rated value</li> <li>at 24 V rated value</li> <li>at 24 V rated value</li> <li>at 600 V rated value</li> <li>at 600 V rated value</li> <li>with 3 current paths in series at DC-3 at DC-5</li> <li>at 110 V rated value</li> <li>with 3 current paths in series at DC-3 at DC-5</li> <li>at 110 V rated value</li> <li>at 220 V rated value</li> <li>at 24 V rated value</li> <li>0.8 A</li> <li>at 440 V rated value</li> <li>0.8 A</li> </ul> </li> <li>at 600 V rated value</li> <li>40 kW</li> <li>at 230 V rated value</li> <li>at 230 V rated value</li> <li>at 400 V rated value</li> <li>at 22 kW</li> <li>at AC-2 at 400 V rated value</li> <li>at AC-3</li> <li>at 230 V rated value</li> <li>at AC-3 vrated value</li> <li>at 400 V rated value</li> <li>at 5 kW</li> </ul> <li>at 690 V rated value</li> <li>at 690 V rated value</li> <li>55 kW</li> <li>Operating power for approx. 200000 operating cycles at AC-4</li> <li>at 400 V rated value</li> <li>at 400 V rated value</li>	— at 440 V rated value	0.15 A
- at 110 V rated value 100 A - at 220 V rated value 7 A - at 24 V rated value 100 A - at 440 V rated value 0.42 A - at 600 V rated value 0.16 A  • with 3 current paths in series at DC-3 at DC-5 - at 110 V rated value 100 A - at 220 V rated value 35 A - at 220 V rated value 100 A - at 440 V rated value 100 A - at 440 V rated value 0.8 A - at 600 V rated value 0.35 A  Operating power  • at AC-1 - at 230 V rated value 40 kW - at 230 V ated value 82 kW - at 400 V rated value 82 kW - at 400 V rated value 82 kW - at 690 V rated value 69 kW - at 690 V rated value 119 kW • at AC-2 at 400 V rated value 37 kW • at AC-3 - at 230 V rated value 22 kW - at 400 V rated value 37 kW • at AC-3 - at 230 V rated value 37 kW • at AC-3 - at 690 V rated value 37 kW - at 690 V rated value 55 kW  Operating power for approx. 200000 operating cycles at AC-4 • at 400 V rated value 17.9 kW	— at 600 V rated value	0.06 A
- at 220 V rated value	<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 V rated value — at 440 V rated value 0.42 A 0.16 A  • with 3 current paths in series at DC-3 at DC-5 — at 110 V rated value 100 A at 220 V rated value 100 A at 220 V rated value 100 A at 440 V rated value 100 A at 440 V rated value 0.8 A at 600 V rated value 0.35 A  Operating power  • at AC-1 — at 230 V rated value 47 kW — at 230 V rated value 47 kW — at 400 V rated value 82 kW — at 400 V rated value 48 kW — at 400 V rated value 119 kW  at AC-2 at 400 V rated value 9 at AC-3 — at 230 V rated value 9 at AC-3 — at 250 V rated value 9 at AC-3 — at 250 V rated value 9 at AC-3 — at 250 V rated value 9 at AC-3 — at 250 V rated value 9 at AC-3 — at 250 V rated value 9 at AC-3 — at 250 V rated value 9 at AC-3 — at 250 V rated value 9 at AC-3 — at 400 V rated value 9 at AC-3 — at 500 V rated value 9 at 60 V rated value 9 at 60 V rated value 9 at 60 V rated value 9 at 400 V rated value 9 at 400 V rated value 9 at 400 V rated value 9 at 60 V rated value 9 at 400 V rated value 9 at 60 V rated value 9 at 400 V rated value 9 at 60 V rated val	— at 110 V rated value	100 A
at 440 V rated value	— at 220 V rated value	7 A
<ul> <li>— at 600 V rated value</li> <li>● with 3 current paths in series at DC-3 at DC-5</li> <li>— at 110 V rated value</li> <li>— at 220 V rated value</li> <li>— at 24 V rated value</li> <li>— at 440 V rated value</li> <li>— at 600 V rated value</li> <li>— at 600 V rated value</li> <li>— at AC-1</li> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 690 V rated value</li> <li>— at 690 V rated value</li> <li>— at 690 V rated value</li> <li>— at AC-2 at 400 V rated value</li> <li>— at AC-3</li> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 690 V rated value</li> <li>— at 690</li></ul>	— at 24 V rated value	100 A
<ul> <li>with 3 current paths in series at DC-3 at DC-5         <ul> <li>at 110 V rated value</li> <li>at 220 V rated value</li> <li>35 A</li> <li>at 24 V rated value</li> <li>100 A</li> <li>at 440 V rated value</li> <li>0.8 A</li> <li>at 600 V rated value</li> <li>0.35 A</li> </ul> </li> <li>Operating power         <ul> <li>at AC-1</li> <li>at 230 V rated value</li> <li>at 230 V rated value</li> <li>at 400 V rated value</li> <li>at 690 V rated value</li> <li>at 690 V rated value</li> <li>at 690 V rated value</li> <li>at AC-2 at 400 V rated value</li> <li>at AC-3</li> <li>at 230 V rated value</li> <li>at 400 V rated value</li> <li>at 500 V rated value</li> <li>at 690 V rated value</li> </ul> </li> <li>Operating power for approx. 200000 operating cycles at AC-4         <ul> <li>at 400 V rated value</li> <li>17.9 kW</li> </ul> </li> </ul>	— at 440 V rated value	0.42 A
- at 110 V rated value	— at 600 V rated value	0.16 A
at 220 V rated value 35 A at 24 V rated value 100 A at 440 V rated value 0.8 A at 600 V rated value 0.35 A  Operating power  ■ at AC-1 at 230 V rated value 47 kW at 230 V at 60 °C rated value 40 kW at 400 V rated value 82 kW at 400 V rated value 69 kW at 690 V rated value 142 kW at 690 V rated value 119 kW  ■ at AC-2 at 400 V rated value 37 kW  ■ at AC-3 at 230 V rated value 37 kW at 400 V rated value 55 kW  Operating power for approx. 200000 operating cycles at AC-4 ■ at 400 V rated value 17.9 kW	<ul> <li>with 3 current paths in series at DC-3 at DC-5</li> </ul>	
- at 24 V rated value 100 A - at 440 V rated value 0.8 A - at 600 V rated value 0.35 A  Operating power	— at 110 V rated value	100 A
at 440 V rated value 0.8 A at 600 V rated value 0.35 A  Operating power  ■ at AC-1  — at 230 V rated value 47 kW  — at 230 V at 60 °C rated value 40 kW  — at 400 V rated value 82 kW  — at 400 V at 60 °C rated value 69 kW  — at 690 V rated value 142 kW  — at 690 V rated value 119 kW  ■ at AC-2 at 400 V rated value 37 kW  ■ at AC-3  — at 230 V rated value 22 kW  — at 400 V rated value 37 kW  ■ at 400 V rated value 45 kW  — at 690 V rated value 55 kW  Operating power for approx. 200000 operating cycles at AC-4  ■ at 400 V rated value 17.9 kW	— at 220 V rated value	35 A
— at 600 V rated value 0.35 A  Operating power	— at 24 V rated value	100 A
Operating power         • at AC-1         — at 230 V rated value       47 kW         — at 230 V at 60 °C rated value       40 kW         — at 400 V rated value       82 kW         — at 490 V rated value       69 kW         — at 690 V rated value       142 kW         — at 690 V at 60 °C rated value       119 kW         • at AC-2 at 400 V rated value       37 kW         • at AC-3       22 kW         — at 400 V rated value       37 kW         — at 500 V rated value       45 kW         — at 690 V rated value       55 kW         Operating power for approx. 200000 operating cycles at AC-4       17.9 kW	— at 440 V rated value	0.8 A
• at AC-1  — at 230 V rated value — at 230 V at 60 °C rated value 40 kW — at 400 V rated value 82 kW — at 400 V rated value 69 kW — at 690 V rated value 142 kW — at 690 V at 60 °C rated value 119 kW  • at AC-2 at 400 V rated value 37 kW  • at AC-3 — at 230 V rated value 22 kW — at 400 V rated value 37 kW — at 500 V rated value 55 kW   Operating power for approx. 200000 operating cycles at AC-4  • at 400 V rated value 17.9 kW	— at 600 V rated value	0.35 A
- at 230 V rated value 47 kW - at 230 V at 60 °C rated value 40 kW - at 400 V rated value 82 kW - at 400 V at 60 °C rated value 69 kW - at 690 V rated value 142 kW - at 690 V at 60 °C rated value 119 kW  • at AC-2 at 400 V rated value 37 kW  • at AC-3 - at 230 V rated value 22 kW - at 400 V rated value 37 kW - at 500 V rated value 45 kW - at 690 V rated value 55 kW  Operating power for approx. 200000 operating cycles at AC-4 • at 400 V rated value 17.9 kW	Operating power	
- at 230 V at 60 °C rated value 40 kW - at 400 V rated value 69 kW - at 690 V rated value 142 kW - at 690 V at 60 °C rated value 119 kW  • at AC-2 at 400 V rated value 37 kW  • at AC-3 - at 230 V rated value 22 kW - at 400 V rated value 37 kW  - at 690 V rated value 55 kW  Operating power for approx. 200000 operating cycles at AC-4 • at 400 V rated value 17.9 kW	• at AC-1	
- at 400 V rated value 82 kW  - at 400 V at 60 °C rated value 69 kW  - at 690 V rated value 142 kW  - at 690 V at 60 °C rated value 119 kW  • at AC-2 at 400 V rated value 37 kW  • at AC-3  - at 230 V rated value 22 kW  - at 400 V rated value 37 kW  - at 500 V rated value 45 kW  - at 690 V rated value 55 kW  Operating power for approx. 200000 operating cycles at AC-4  • at 400 V rated value 17.9 kW	— at 230 V rated value	47 kW
- at 400 V at 60 °C rated value 69 kW  - at 690 V rated value 142 kW  - at 690 V at 60 °C rated value 119 kW  • at AC-2 at 400 V rated value 37 kW  • at AC-3  - at 230 V rated value 22 kW  - at 400 V rated value 37 kW  - at 500 V rated value 55 kW  Operating power for approx. 200000 operating cycles at AC-4  • at 400 V rated value 17.9 kW	— at 230 V at 60 °C rated value	40 kW
<ul> <li>— at 690 V rated value</li> <li>— at 690 V at 60 °C rated value</li> <li>119 kW</li> <li>• at AC-2 at 400 V rated value</li> <li>• at AC-3</li> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> <li>— at 690 V rated value</li> <li>— at 400 V rated value</li> <li>— at 690 V rated value</li> <li>— at 690 V rated value</li> <li>— at 400 V rated value</li> <li>— at 400 V rated value</li> </ul>	— at 400 V rated value	82 kW
- at 690 V at 60 °C rated value 37 kW  • at AC-2 at 400 V rated value 37 kW  • at AC-3  - at 230 V rated value 22 kW  - at 400 V rated value 37 kW  - at 500 V rated value 45 kW  - at 690 V rated value 55 kW  Operating power for approx. 200000 operating cycles at AC-4  • at 400 V rated value 17.9 kW	— at 400 V at 60 °C rated value	69 kW
<ul> <li>at AC-2 at 400 V rated value</li> <li>at AC-3</li> <li>at 230 V rated value</li> <li>at 400 V rated value</li> <li>at 500 V rated value</li> <li>at 690 V rated value</li> <li>operating power for approx. 200000 operating cycles at AC-4</li> <li>at 400 V rated value</li> <li>17.9 kW</li> </ul>	— at 690 V rated value	142 kW
<ul> <li>at AC-3</li> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> <li>55 kW</li> </ul> Operating power for approx. 200000 operating cycles at AC-4 <ul> <li>at 400 V rated value</li> <li>17.9 kW</li> </ul>	— at 690 V at 60 °C rated value	119 kW
<ul> <li>— at 230 V rated value</li> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> <li>55 kW</li> </ul> Operating power for approx. 200000 operating cycles at AC-4 <ul> <li>at 400 V rated value</li> </ul> 17.9 kW	• at AC-2 at 400 V rated value	37 kW
<ul> <li>— at 400 V rated value</li> <li>— at 500 V rated value</li> <li>— at 690 V rated value</li> <li>55 kW</li> </ul> Operating power for approx. 200000 operating cycles at AC-4 <ul> <li>• at 400 V rated value</li> <li>17.9 kW</li> </ul>	● at AC-3	
— at 500 V rated value 45 kW  — at 690 V rated value 55 kW  Operating power for approx. 200000 operating cycles at AC-4  • at 400 V rated value 17.9 kW	— at 230 V rated value	22 kW
— at 690 V rated value 55 kW  Operating power for approx. 200000 operating cycles at AC-4	— at 400 V rated value	37 kW
Operating power for approx. 200000 operating cycles at AC-4  • at 400 V rated value  17.9 kW	— at 500 V rated value	45 kW
at AC-4  ● at 400 V rated value  17.9 kW		55 kW
• at 400 V rated value 17.9 kW		
		17.0 kW
● at 690 v rated value Z1.0 KVV		
	■ at 690 v rated value	Z I.O NVV

Thermal short-time current limited to 10 s	760 A
Power loss [W] at AC-3 at 400 V for rated value of	5.3 W
the operating current per conductor	
No-load switching frequency	
• at AC	5 000 1/h
Operating frequency	
• at AC-1 maximum	900 1/h
• at AC-2 maximum	400 1/h
• at AC-3 maximum	1 000 1/h
• at AC-4 maximum	300 1/h
Control circuit/ Control	
Type of voltage of the control supply voltage	AC.

Control circuit/ Control	
Type of voltage of the control supply voltage	AC
Control supply voltage at AC	
● at 50 Hz rated value	230 V
• at 60 Hz rated value	230 V
Operating range factor control supply voltage rated value of magnet coil at AC	
● at 50 Hz	0.8 1.1
● at 60 Hz	0.85 1.1
Apparent pick-up power of magnet coil at AC	
● at 50 Hz	348 V·A
● at 60 Hz	296 V·A
Inductive power factor with closing power of the coil	
● at 50 Hz	0.62
● at 60 Hz	0.55
Apparent holding power of magnet coil at AC	
● at 50 Hz	25 V·A
● at 60 Hz	18 V·A
Inductive power factor with the holding power of the coil	
● at 50 Hz	0.35
● at 60 Hz	0.41
Closing delay	
• at AC	13 50 ms
Opening delay	
• at AC	10 21 ms
Arcing time	10 20 ms

Auxiliary circuit		
Number of NC contacts		
• for auxiliary contacts		
<ul> <li>instantaneous contact</li> </ul>	1	
Number of NO contacts		

— instantaneous contact  Operating current at AC-12 maximum  Operating current at AC-15  • at 230 V rated value • at 500 V rated value • at 800 V rated value • at 800 V rated value • at 800 V rated value • at 24 V rated value • at 48 V rated value • at 125 V rated value • at 125 V rated value • at 125 V rated value • at 126 V rated value • at 1270 V rated value • at 128 V rated value • at 128 V rated value • at 129 V rated value • at 120 V rated value • at 20 V rated value • at 24 V rated value • at 80 V rated value • at 125 V rated value • at 120 V rated value • at 200 V rated value • at 460/480 V rated value • at 200 V rated value • at 450/480 V rated value • at 200 V rated val	• for auxiliary contacts	
A	— instantaneous contact	1
• at 230 V rated value • at 400 V rated value • at 500 V rated value • at 600 V rated value • at 800 V rated value • at 48 V rated value • at 48 V rated value • at 80 V rated value • at 125 V rated value • at 125 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 125 V rated value • at 125 V rated value • at 120 V rated value • at 100 V rated value • at 200 V rated value • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for three-phase AC motor • at 200/208 V rated value • for thr	Operating current at AC-12 maximum	10 A
• at 400 V rated value 2 A   • at 500 V rated value 2 A   • at 690 V rated value 1 A    Operating current at DC-12   • at 24 V rated value 6 A   • at 48 V rated value 6 A   • at 110 V rated value 6 A   • at 110 V rated value 1 A   • at 125 V rated value 1 A   • at 220 V rated value 1 A   • at 220 V rated value 0.15 A    Operating current at DC-13   • at 24 V rated value 0.15 A    Operating current at DC-13   • at 24 V rated value 2 A   • at 80 V rated value 2 A   • at 80 V rated value 1 A   • at 60 V rated value 2 A   • at 60 V rated value 2 A   • at 60 V rated value 1 A   • at 125 V rated value 1 A   • at 600 V rated value 1 A   • at 220 V rated value 1 A   • at 480 V rated value 1 A   • at 230 V rated value 1 A   • at 250 V rated value 1 A   • at 250 V rated value 1 A   • at 460480 V rated value 1 A   • a	Operating current at AC-15	
• at 500 V rated value 2 A • at 690 V rated value 1 A  Operating current at DC-12 • at 24 V rated value 6 A • at 48 V rated value 6 A • at 48 V rated value 3 A • at 110 V rated value 2 A • at 125 V rated value 2 A • at 220 V rated value 1 A • at 600 V rated value 1 A • at 600 V rated value 2 A • at 220 V rated value 1 A • at 600 V rated value 2 A • at 220 V rated value 2 A • at 60 V rated value 2 A • at 60 V rated value 10 A • at 60 V rated value 2 A • at 110 V rated value 2 A • at 110 V rated value 2 A • at 125 V rated value 1 A • at 600 V rated value 1 A •	• at 230 V rated value	6 A
• at 690 V rated value 10 A  Operating current at DC-12  • at 24 V rated value 6 A • at 48 V rated value 6 A • at 80 V rated value 3 A • at 125 V rated value 2 A • at 125 V rated value 1 A • at 60 V rated value 2 A • at 200 V rated value 1 A • at 600 V rated value 2 A • at 200 V rated value 2 A • at 200 V rated value 2 A • at 600 V rated value 2 A • at 600 V rated value 2 A • at 600 V rated value 2 A • at 42 V rated value 2 A • at 40 V rated value 2 A • at 60 V rated value 2 A • at 110 V rated value 2 A • at 110 V rated value 2 A • at 125 V rated value 3 A • at 125 V rated value 3 A • at 220 V rated value 4 A • at 125 V rated value 5 A • at 200 V rated value 6 A • at 300 V rated value 7 A • at 300 V rated value 7 A • at 600 V rated value 9 • at 600 V rated value 900 P600	• at 400 V rated value	3 A
Operating current at DC-12	• at 500 V rated value	2 A
• at 24 V rated value	• at 690 V rated value	1 A
• at 48 V rated value • at 60 V rated value • at 110 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 110 V rated value • at 125 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value • at 800 V rated value • at 600 V rated value • at 500 V rated value • at 600 V rated value • at 500 V rated value • at 220/230 V rated value • at 220/230 V rated value • at 25 hp • at 460/480 V rated value • at 575/600 V rated value • at 575/600 V rated value • 60 hp  Contact rating of auxiliary contacts according to UL  Short-circuit protection	Operating current at DC-12	
• at 60 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 60 V rated value • at 42 V rated value • at 48 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 110 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value • at 800 V rated value • at 600 V rated value • at 500 V rated value • at 600 V rated value • at 200/208 V rated value • at 575/600 V rated value • at 600 V P600  Short-circuit protection	• at 24 V rated value	10 A
• at 110 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value  • at 24 V rated value • at 24 V rated value  • at 48 V rated value • at 110 V rated value • at 125 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value • at 220 V rated value • at 600 V rated value • at 220 V rated value • at 480 V rated value • at 230 V rated value • at 200 V rated value • at 200 V rated value • at 200 V rated value • for three-phase AC motor  — at 200/208 V rated value  — at 200/208 V rated value  — at 200/208	• at 48 V rated value	6 A
• at 125 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value  • at 600 V rated value  • at 24 V rated value • at 48 V rated value • at 48 V rated value • at 60 V rated value • at 60 V rated value • at 110 V rated value • at 125 V rated value • at 125 V rated value • at 125 V rated value • at 220 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value  • at 600 V rated value  • at 600 V rated value • at 480 V rated value • at 480 V rated value • at 200 V rated value • at 480 V rated value • at 600 V rated value • at 200 V rated value • at 200 V rated value • at 200 V rated value • for three-phase AC motor  — at 200/208 V rated value • for three-phase AC motor  — at 200/208 V rated value — at 200/208 V rated value — at 255 hp  — at 2575/600 V rated value — at 575/600 V rated value  — at 575/600 V rated value  — at 575/600 V rated value  — at 575/600 V rated value  — at 575/600 V rated value  — at 575/600 V rated value  — at 575/600 V rated value  — at 575/600 V rated value  — at 575/600 V rated value  — at 575/600 V rated value  — at 575/600 V rated value — at 575/600 V rated value  — at 575/600 V rated value  — at 575/600 V rated value — at 575/600 V rated value — at 575/600 V rated value — at 575/600 V rated value — at 575/600 V rated value — at 575/600 V rated value — at 575/600 V rated value — at 575/600 V rated value	• at 60 V rated value	6 A
at 220 V rated value     at 600 V rated value     0.15 A  Operating current at DC-13      at 24 V rated value     10 A     at 48 V rated value     at 60 V rated value     at 10 V rated value     at 110 V rated value     at 125 V rated value     at 220 V rated value     at 220 V rated value     at 600 V rated value     77 A     at 600 V rated value     75 hp     at 230 V rated value     75 hp     at 220 V rated value     62 A  Yielded mechanical performance [hp]     for single-phase AC motor     at 230 V rated value     for three-phase AC motor     at 220/230 V rated value     for three-phase AC motor     at 220/230 V rated value     at 460/480 V rated value     at 460/480 V rated value     at 460/480 V rated value     at 575/600 V rated value     at 575/600 V rated value     A600 / P600  Short-circuit protection	• at 110 V rated value	3 A
• at 600 V rated value	• at 125 V rated value	2 A
Operating current at DC-13  • at 24 V rated value • at 48 V rated value • at 60 V rated value • at 110 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 600 V rated value  Contact reliability of auxiliary contacts  1 faulty switching per 100 million (17 V, 1 mA)  UL/CSA ratings  Full-load current (FLA) for three-phase AC motor • at 480 V rated value • at 600 V rated value • at 600 V rated value • for single-phase AC motor — at 110/120 V rated value — at 230 V rated value • for three-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 4575/600 V rated value 60 hp  Contact rating of auxiliary contacts according to UL  Short-circuit protection	• at 220 V rated value	1 A
<ul> <li>at 24 V rated value</li> <li>at 48 V rated value</li> <li>at 60 V rated value</li> <li>at 110 V rated value</li> <li>at 110 V rated value</li> <li>at 110 V rated value</li> <li>at 125 V rated value</li> <li>at 220 V rated value</li> <li>at 600 V rated value</li> <li>full-load current (FLA) for three-phase AC motor</li> <li>at 480 V rated value</li> <li>at 600 V rated value</li> <li>for single-phase AC motor</li> <li>at 110/120 V rated value</li> <li>for single-phase AC motor</li> <li>at 230 V rated value</li> <li>for three-phase AC motor</li> <li>at 200/208 V rated value</li> <li>for three-phase AC motor</li> <li>at 200/208 V rated value</li> <li>at 200/208 V rated value</li> <li>at 460/480 V rated value</li> <li>60 hp</li> <li>at 575/600 V rated value</li> <li>60 hp</li> <li>Contact rating of auxiliary contacts according to UL</li> <li>Short-circuit protection</li> </ul>	• at 600 V rated value	0.15 A
at 48 V rated value     at 60 V rated value     at 110 V rated value     at 110 V rated value     at 125 V rated value     at 220 V rated value     at 600 V rated value      Try      A tax tings  Full-load current (FLA) for three-phase AC motor     at 480 V rated value     for at 600 V rated value     for single-phase AC motor	Operating current at DC-13	
* at 60 V rated value     * at 110 V rated value     * at 125 V rated value     * at 220 V rated value     * at 220 V rated value     * at 600 V rated value  Contact reliability of auxiliary contacts  1 faulty switching per 100 million (17 V, 1 mA)  UL/CSA ratings  Full-load current (FLA) for three-phase AC motor     * at 480 V rated value     * at 600 V rated value     * at 600 V rated value     * for single-phase AC motor     * — at 110/120 V rated value     * — at 230 V rated value     * for three-phase AC motor     * — at 230 V rated value     * for three-phase AC motor     * — at 200/208 V rated value     * at 460/480 V rated value     * at 460/480 V rated value     * at 460/480 V rated value     * at 575/600 V rated value     * at 600 V P600  Contact rating of auxiliary contacts according to UL  Short-circuit protection	• at 24 V rated value	10 A
at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value at 600 V rated value  at 600 V rated value  O.1 A  Contact reliability of auxiliary contacts  1 faulty switching per 100 million (17 V, 1 mA)  UL/CSA ratings  Full-load current (FLA) for three-phase AC motor at 480 V rated value at 600 V rated value for single-phase AC motor  at 10/120 V rated value for single-phase AC motor  at 230 V rated value for three-phase AC motor  at 230 V rated value for three-phase AC motor  at 220/208 V rated value for three-phase AC motor  at 200/208 V rated value for three-phase AC motor  at 25 hp  at 25 hp  at 2575/600 V rated value for hp  contact rating of auxiliary contacts according to UL  Short-circuit protection	• at 48 V rated value	2 A
at 125 V rated value at 220 V rated value at 600 V rated value 0.1 A  Contact reliability of auxiliary contacts 1 faulty switching per 100 million (17 V, 1 mA)  UL/CSA ratings  Full-load current (FLA) for three-phase AC motor at 480 V rated value at 600 V rated value for single-phase AC motor — at 110/120 V rated value — at 230 V rated value for three-phase AC motor — at 230 V rated value for three-phase AC motor — at 220/230 V rated value at 220/230 V rated value at 60 hp — at 575/600 V rated value 60 hp  Contact rating of auxiliary contacts according to UL  Short-circuit protection	• at 60 V rated value	2 A
at 220 V rated value at 600 V rated value  0.1 A  Contact reliability of auxiliary contacts  1 faulty switching per 100 million (17 V, 1 mA)  UL/CSA ratings  Full-load current (FLA) for three-phase AC motor at 480 V rated value at 600 V rated value for single-phase AC motor  - at 110/120 V rated value - at 230 V rated value for three-phase AC motor - at 230 V rated value for three-phase AC motor - at 200/208 V rated value - at 220/230 V rated value - at 460/480 V rated value - at 575/600 V rated value 60 hp - at 575/600 V rated value Contact rating of auxiliary contacts according to UL  Short-circuit protection	• at 110 V rated value	1 A
at 600 V rated value  Contact reliability of auxiliary contacts  1 faulty switching per 100 million (17 V, 1 mA)  UL/CSA ratings  Full-load current (FLA) for three-phase AC motor  at 480 V rated value  at 600 V rated value  for single-phase AC motor  at 110/120 V rated value  for three-phase AC motor  at 230 V rated value  for three-phase AC motor  at 200/208 V rated value  at 220/230 V rated value  at 460/480 V rated value  at 460/480 V rated value  at 575/600 V rated value  Contact rating of auxiliary contacts according to UL  Short-circuit protection	• at 125 V rated value	0.9 A
Contact reliability of auxiliary contacts  1 faulty switching per 100 million (17 V, 1 mA)  UL/CSA ratings  Full-load current (FLA) for three-phase AC motor  • at 480 V rated value  • at 600 V rated value  for single-phase AC motor  — at 110/120 V rated value  7.5 hp  — at 230 V rated value  • for three-phase AC motor  — at 200/208 V rated value  25 hp  — at 220/230 V rated value  — at 460/480 V rated value  — at 575/600 V rated value  60 hp  Contact rating of auxiliary contacts according to UL  Short-circuit protection	• at 220 V rated value	0.3 A
Full-load current (FLA) for three-phase AC motor  • at 480 V rated value  • at 600 V rated value  for single-phase AC motor  — at 110/120 V rated value  • for three-phase AC motor  — at 230 V rated value  • for three-phase AC motor  — at 200/208 V rated value  — at 220/230 V rated value  — at 460/480 V rated value  — at 575/600 V rated value  Contact rating of auxiliary contacts according to UL  Short-circuit protection	• at 600 V rated value	0.1 A
Full-load current (FLA) for three-phase AC motor  • at 480 V rated value  • at 600 V rated value  • for single-phase AC motor  — at 110/120 V rated value  7.5 hp — at 230 V rated value  • for three-phase AC motor  — at 200/208 V rated value  • at 220/230 V rated value  — at 460/480 V rated value  — at 575/600 V rated value  Contact rating of auxiliary contacts according to UL  Short-circuit protection	Contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
<ul> <li>at 480 V rated value</li> <li>at 600 V rated value</li> <li>62 A</li> <li>Yielded mechanical performance [hp]</li> <li>for single-phase AC motor</li> <li>at 110/120 V rated value</li> <li>at 230 V rated value</li> <li>for three-phase AC motor</li> <li>at 200/208 V rated value</li> <li>at 200/208 V rated value</li> <li>at 220/230 V rated value</li> <li>at 460/480 V rated value</li> <li>at 575/600 V rated value</li> <li>at 575/600 V rated value</li> <li>A600 / P600</li> <li>Short-circuit protection</li> </ul>	UL/CSA ratings	
at 600 V rated value  Yielded mechanical performance [hp]      for single-phase AC motor      — at 110/120 V rated value     — at 230 V rated value     • for three-phase AC motor      — at 200/208 V rated value     — at 220/230 V rated value     — at 460/480 V rated value     — at 575/600 V rated value     — at 575/600 V rated value  Contact rating of auxiliary contacts according to UL  Short-circuit protection	Full-load current (FLA) for three-phase AC motor	
Yielded mechanical performance [hp]  ● for single-phase AC motor  — at 110/120 V rated value 7.5 hp  — at 230 V rated value 15 hp  ● for three-phase AC motor  — at 200/208 V rated value 25 hp  — at 220/230 V rated value 30 hp  — at 460/480 V rated value 60 hp  — at 575/600 V rated value 60 hp  Contact rating of auxiliary contacts according to UL A600 / P600	● at 480 V rated value	77 A
<ul> <li>for single-phase AC motor  — at 110/120 V rated value</li></ul>	● at 600 V rated value	62 A
- at 110/120 V rated value 7.5 hp  at 230 V rated value 15 hp  for three-phase AC motor  - at 200/208 V rated value 25 hp  at 220/230 V rated value 30 hp  - at 460/480 V rated value 60 hp  - at 575/600 V rated value 60 hp  Contact rating of auxiliary contacts according to UL  Short-circuit protection	Yielded mechanical performance [hp]	
<ul> <li>— at 230 V rated value</li> <li>● for three-phase AC motor</li> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>— at 460/480 V rated value</li> <li>— at 575/600 V rated value</li> <li>Contact rating of auxiliary contacts according to UL</li> <li>Short-circuit protection</li> </ul>	<ul> <li>for single-phase AC motor</li> </ul>	
● for three-phase AC motor  — at 200/208 V rated value 25 hp  — at 220/230 V rated value 30 hp  — at 460/480 V rated value 60 hp  — at 575/600 V rated value 60 hp  Contact rating of auxiliary contacts according to UL A600 / P600  Short-circuit protection	— at 110/120 V rated value	7.5 hp
- at 200/208 V rated value 25 hp  at 220/230 V rated value 30 hp  at 460/480 V rated value 60 hp  at 575/600 V rated value 60 hp  Contact rating of auxiliary contacts according to UL A600 / P600  Short-circuit protection	— at 230 V rated value	15 hp
- at 220/230 V rated value 30 hp  - at 460/480 V rated value 60 hp  - at 575/600 V rated value 60 hp  Contact rating of auxiliary contacts according to UL A600 / P600  Short-circuit protection	• for three-phase AC motor	
— at 460/480 V rated value 60 hp  — at 575/600 V rated value 60 hp  Contact rating of auxiliary contacts according to UL A600 / P600  Short-circuit protection	— at 200/208 V rated value	25 hp
— at 575/600 V rated value 60 hp  Contact rating of auxiliary contacts according to UL A600 / P600  Short-circuit protection	— at 220/230 V rated value	30 hp
Contact rating of auxiliary contacts according to UL  A600 / P600  Short-circuit protection	— at 460/480 V rated value	60 hp
Short-circuit protection	— at 575/600 V rated value	60 hp
<u> </u>	Contact rating of auxiliary contacts according to UL	A600 / P600
Design of the fuse link	Short-circuit protection	
	Design of the fuse link	

• for short-circuit protection of the main circuit

— with type of coordination 1 required

— with type of assignment 2 required

• for short-circuit protection of the auxiliary switch required

gL/gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 250 A gL/gG NH 3NA, DIAZED 5SB, NEOZED 5SE: 160 A fuse gG: 10 A

Mounting position	+/-180° rotation possible on vertical mounting surface; can be	
<u>.</u>	tilted forward and backward by +/- 22.5° on vertical mounting	
	surface	
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail	
	according to DIN EN 50022	
<ul> <li>Side-by-side mounting</li> </ul>	Yes	
Height	140 mm	
Width	70 mm	
Depth	152 mm	
Required spacing		
<ul><li>with side-by-side mounting</li></ul>		
— forwards	0 mm	
— Backwards	0 mm	
— upwards	0 mm	
— downwards	0 mm	
— at the side	0 mm	
• for grounded parts		
— forwards	0 mm	
— Backwards	0 mm	
— upwards	10 mm	
— at the side	10 mm	
— downwards	10 mm	
• for live parts		
— forwards	0 mm	
— Backwards	0 mm	
— upwards	10 mm	
— downwards	10 mm	
— at the side	10 mm	
Connections/Terminals		
Type of electrical connection		
• for main current circuit	screw-type terminals	
<ul> <li>for auxiliary and control current circuit</li> </ul>	screw-type terminals	

• for main contacts

— finely stranded with core end processing

2x (2.5 ... 35 mm²), 1x (2.5 ... 50 mm²)

<ul> <li>at AWG conductors for main contacts</li> </ul>	2x (10 1/0), 1x (10 2)
Type of connectable conductor cross-sections	
• for auxiliary contacts	
<ul><li>— single or multi-stranded</li></ul>	2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
<ul> <li>at AWG conductors for auxiliary contacts</li> </ul>	2x (20 16), 2x (18 14)

Safety related data	
B10 value	
<ul> <li>with high demand rate acc. to SN 31920</li> </ul>	1 000 000
Proportion of dangerous failures	
<ul> <li>with low demand rate acc. to SN 31920</li> </ul>	40 %
<ul> <li>with high demand rate acc. to SN 31920</li> </ul>	73 %
Product function	
<ul> <li>Mirror contact acc. to IEC 60947-4-1</li> </ul>	Yes
<ul><li>positively driven operation acc. to IEC 60947-5-</li></ul>	No
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Protection against electrical shock	finger-safe when touched vertically from front acc. to IEC 60529

## Certificates/approvals

General Product Approval	Declaration of	Shipping Approval
	Conformity	













LRS

Shipping	other
Annroval	



Bestätigungen

## Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

http://www.siemens.com/industrial-controls/catalogs

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2045-1AL20

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2045-1AL20

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RT2045-1AL20

odified:	03/01/2017	