# **SIEMENS**

Data sheet 3RT2016-1VB42



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 1 NC, 24 V DC 0.85-1.85  $^{\star}$  US, with diode integrated, 3-pole, frame size S00, screw terminal not expandable with auxiliary switch

product brand name	SIRIUS	
product designation	Coupling contactor	
product type designation	3RT2	
General technical data		
size of contactor	S00	
product extension		
<ul> <li>function module for communication</li> </ul>	No	
<ul> <li>auxiliary switch</li> </ul>	No	
power loss [W] for rated value of the current		
<ul> <li>at AC in hot operating state</li> </ul>	0.9 W	
<ul> <li>at AC in hot operating state per pole</li> </ul>	0.3 W	
<ul> <li>without load current share typical</li> </ul>	1.6 W	
insulation voltage		
<ul> <li>of main circuit with degree of pollution 3 rated value</li> </ul>	690 V	
<ul> <li>of auxiliary circuit with degree of pollution 3 rated value</li> </ul>	690 V	
surge voltage resistance		
<ul> <li>of main circuit rated value</li> </ul>	6 kV	
<ul> <li>of auxiliary circuit rated value</li> </ul>	6 kV	
maximum permissible voltage for safe isolation between coil and main contacts according to EN 60947-1	400 V	
shock resistance at rectangular impulse		
• at DC	6,7g / 5 ms, 4,2g / 10 ms	
shock resistance with sine pulse		
• at DC	10,5g / 5 ms, 6,6g / 10 ms	
mechanical service life (operating cycles)		
<ul> <li>of contactor typical</li> </ul>	30 000 000	
reference code according to IEC 81346-2	Q	
Substance Prohibitance (Date)	10/01/2009	
Ambient conditions		
installation altitude at height above sea level maximum	2 000 m	
ambient temperature		
<ul><li>during operation</li></ul>	-25 +60 °C	
during storage	-55 +80 °C	
relative humidity minimum	10 %	
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %	
Main circuit		
number of poles for main current circuit	3	
number of NO contacts for main contacts	3	
operating voltage		
<ul> <li>at AC-3 rated value maximum</li> </ul>	690 V	

<ul> <li>at AC-3e rated value maximum</li> </ul>	690 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C	22 A
rated value	
<ul> <li>at AC-1</li> <li>— up to 690 V at ambient temperature 40 °C</li> </ul>	22 A
rated value	22 //
— up to 690 V at ambient temperature 60 °C	20 A
rated value	
● at AC-3 — at 400 V rated value	9 A
— at 500 V rated value	7.7 A
— at 690 V rated value	6.7 A
• at AC-3e	
— at 400 V rated value	9 A
— at 500 V rated value	7.7 A
— at 690 V rated value	6.7 A
• at AC-4 at 400 V rated value	8.5 A 19.4 A
<ul><li>at AC-5a up to 690 V rated value</li><li>at AC-5b up to 400 V rated value</li></ul>	7.4 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated	5.3 A
value	
<ul> <li>— up to 400 V for current peak value n=20 rated value</li> </ul>	5.3 A
— up to 500 V for current peak value n=20 rated	5.3 A
value — up to 690 V for current peak value n=20 rated	5 A
value	5 A
• at AC-6a	
<ul> <li>up to 230 V for current peak value n=30 rated</li> </ul>	3.5 A
value	3.5 A
<ul> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	3.5 A
— up to 500 V for current peak value n=30 rated value	3.6 A
<ul> <li>up to 690 V for current peak value n=30 rated value</li> </ul>	3.3 A
minimum cross-section in main circuit at maximum AC-1 rated value	4 mm²
operational current for approx. 200000 operating	
cycles at AC-4	
at 400 V rated value	4.1 A
at 690 V rated value	3.3 A
operational current  ● at 1 current path at DC-1	
— at 24 V rated value	20 A
— at 110 V rated value	2.1 A
— at 220 V rated value	0.8 A
— at 440 V rated value	0.6 A
— at 600 V rated value	0.6 A
<ul> <li>with 2 current paths in series at DC-1</li> <li>— at 24 V rated value</li> </ul>	20 A
— at 110 V rated value	12 A
— at 220 V rated value	1.6 A
— at 440 V rated value	0.8 A
— at 600 V rated value	0.7 A
<ul> <li>with 3 current paths in series at DC-1</li> </ul>	
— at 24 V rated value	20 A
— at 110 V rated value	20 A 20 A
— at 220 V rated value — at 440 V rated value	20 A 1.3 A
— at 600 V rated value	1.3 A
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 110 V rated value	0.15 A

with 2 current paths in series at DC-3 at DC-5     — at 110 V rated value     — at 110 V rated value     — at 22 V rated value     — at 23 V rated value     — at 800 V rated value     — at 600 V rated value     — at 600 V rated value     — at 400 V rated value     — at 400 V rated value     — at 500 V rated value     — at 500 V rated value     — at 600 V rated value     — at 800 V rated value     — at 800 V rated value     — at 800 V rated value     — at 400 V rated value     — at 400 V rated value     — at 400 V rated value     — at 600 V rated value     — at 400 V rated value     — at 400 V rated value     — at 600 V rated value		
	•	
with 3 current paths in series at DC-3 at DC-5	— at 24 V rated value	
		0.35 A
	•	
at AC-3   A	— at 440 V rated value	
* al AC-3     — al 400 V rated value     — at 400 V rated value     — at 690 V rated value     — at 690 V rated value     — at 400 V rated value     — at 500 V rated value     — at 500 V rated value     — at 600 V rated value     • at 400 V rated value     • at 600 V rated value     • at 600 V rated value     • at 600 V for current peak value n=20 rated value     • up to 230 V for current peak value n=20 rated value     • up to 230 V for current peak value n=20 rated value     • up to 500 V for current peak value n=20 rated value     • up to 500 V for current peak value n=20 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 v for current peak value n=30 rated value     • up to 500 v for current peak value n=30 rated value     • up to 500 v for current peak value n=30 rated value     • up to 500 v for current peak value n=30 rated value     • up to 500 v for current peak value n=30 rated value     • up to 500 v for current peak value n=30 rated value     • up to 500 v for current peak value n=30 rated value     • up to 500 v for current peak value n=30 rated value     • up to 500 v for current peak value n=30 rated value     • up to 500 v for up to 500 v for value     • up to 500 v for up to 500 v for value n=50 v for to 5	— at 600 V rated value	0.2 A
	operating power	
- at 690 V rated value		
at AC-3e  — at 230 V rated value — at 400 V rated value — at 690 V rated value operating power for approx. 200000 operating cycles at AC-4  at 400 V rated value operating apparent power at AC-8  • up to 230 V for current peak value n=20 rated value • up to 800 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 500 V for current peak value n=20 rated value • up to 230 V for current peak value n=30 rated value operating apparent power at AC-8  • up to 230 V for current peak value n=30 rated value operating apparent power at AC-8  • up to 230 V for current peak value n=30 rated value operating apparent power at AC-8  • up to 500 V for current peak value n=30 rated value op to 500 V for current peak value n=30 rated value op to 500 V for current peak value n=30 rated value op to 500 V for current peak value n=30 rated value op to 40 °C  initied to 1 s switching at zero current maximum olimited to 10 s switching at zero current maximum olimited to 60 s switching at zero current maximum olimited to 60 s switching at zero current maximum olimited to 60 s switching at zero current maximum olimited to 60 s switching at zero current maximum oloads witching frequency or at AC-3 maximum oloads witching frequency or at AC-4 maximum oloads witching at zero current maximum oloads witching frequency or at AC-4 maximum oloads witching frequency or at AC-4 maximum oloads witching at zero current maximum oloads witching frequency or at AC-4 maximum oloads witching frequency or at AC-4 maximum oloads witching at zero current maximum oloads witching at zero current maximum oloads witching frequency or at AC-4 maximum oloads witching at zero current maximum oloads witching at zero current witching at zero current witching at zero current witching at		
- at 230 V rated value - at 400 V rated value - at 500 V rated value - at 600 V rated value - up to 400 V for current peak value n=20 rated value - up to 500 V for current peak value n=20 rated value - up to 600 V for current peak value n=20 rated value - up to 600 V for current peak value n=20 rated value - up to 600 V for current peak value n=30 rated value - up to 600 V for current peak value n=30 rated value - up to 600 V for current peak value n=30 rated value - up to 600 V for current peak value n=30 rated value - up to 600 V for current peak value n=30 rated value - up to 600 V for current peak value n=30 rated value - up to 600 V for current peak value n=30 rated value - up to 600 V for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - up to 600 v for current peak value n=30 rated value - 11		5.5 kW
- at 400 V rated value - at 690 V rated value - at 690 V rated value operating power for approx. 200000 operating cycles at AC-4		
- at 500 V rated value - at 690 V rated value - 20 rated value - 25 kW - 25		
at AC-4  at 400 V rated value at 600 V rated value up to 230 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value up to 500 V for current peak value n=20 rated value up to 600 V for current peak value n=30 rated value up to 600 V for current peak value n=30 rated value up to 500 V for current peak value n=30		
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• at 690 V rated value operating apparent power at AC-6a     • up to 230 V for current peak value n=20 rated value     • up to 500 V for current peak value n=20 rated value     • up to 500 V for current peak value n=20 rated value     • up to 500 V for current peak value n=20 rated value     • up to 500 V for current peak value n=30 rated value     • up to 230 V for current peak value n=30 rated value     • up to 230 V for current peak value n=30 rated value     • up to 230 V for current peak value n=30 rated value     • up to 230 V for current peak value n=30 rated value     • up to 230 V for current peak value n=30 rated value     • up to 230 V for current peak value n=30 rated value     • up to 230 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 690 V for current peak value n=30 rated value     • up to 690 V for current peak value n=30 rated value     • up to 690 V for current peak value n=30 rated value     • up to 690 V for current peak value n=30 rated value     • up to 690 V for current peak value n=30 rated value     • up to 690 V for current peak value n=30 rated value     • up to 690 V for current peak value n=30 rated value     • up to 690 V for current peak value n=30 rated value     • limited to 5 s switching at zero current maximum     • limited to 5 s switching at zero current maximum     • limited to 5 s switching at zero current maximum     • limited to 5 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • at DC     • at AC-1 maximum     • at AC-3 maximum     • at AC-4 maximum     • at AC-4 maximum     • at AC-5 maximum     • at AC-4 maximum     • at AC-4 maximum     • at AC-4 maximum     • at AC-4 maximum     • at AC-5 maximum		2 kW
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• up to 400 V for current peak value n=20 rated value     • up to 500 V for current peak value n=20 rated value     • up to 690 V for current peak value n=20 rated value     • up to 230 V for current peak value n=30 rated value     • up to 230 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • up to 500 V for current peak value n=30 rated value     • limited to 10 s switching at zero current maximum     • limited to 1 s switching at zero current maximum     • limited to 10 s switching at zero current maximum     • limited to 10 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current		2 k\/A
up to 500 V for current peak value n=20 rated value     up to 690 V for current peak value n=20 rated value     oparating apparent power at AC-8a     up to 230 V for current peak value n=30 rated value     up to 500 V for current peak value n=30 rated value     up to 500 V for current peak value n=30 rated value     up to 600 V for current peak value n=30 rated value     up to 600 V for current peak value n=30 rated value     up to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current peak value n=30 rated value     sup to 600 V for current maximum     sup to 600 V S witching at zero current maximum     sup to 600 V S witching at zero current maximum     sup to 600 V S witching at zero current maximum     sup to 600 V S witching at zero current maximum     sup to 600 V S witching at zero current maximum     sup to 600 V S witching at zero current maximum     sup to 600 V S witching at zero current maximum     sup to 600 V S witching at zero current maximum     sup to 600 V S witching at zero current maximum     sup to 600 V S witching		
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up to 400 V for current peak value n=30 rated value     up to 500 V for current peak value n=30 rated value     up to 690 V for current peak value n=30 rated value     short-time withstand current in cold operating state up to 40 °C     ilmited to 1 s switching at zero current maximum     ilmited to 5 s switching at zero current maximum     ilmited to 30 s switching at zero current maximum     ilmited to 60 switching at zero curren		1 3 k\/A
up to 500 V for current peak value n=30 rated value     up to 690 V for current peak value n=30 rated value     short-time withstand current in cold operating state up to 40 °C      ilmited to 1 s switching at zero current maximum     ilmited to 5 s switching at zero current maximum     ilmited to 10 s switching at zero current maximum     ilmited to 30 s switching at zero current maximum     ilmited to 80 s switching at zero current maximum     ilmited to 80 s switching at zero current maximum     ilmited to 80 s switching at zero current maximum     ilmited to 80 s switching at zero current maximum     ilmited to 80 s switching at zero current maximum     ilmited to 80 s switching at zero current maximum     no-load switching frequency     at DC     operating frequency     at AC-1 maximum     at AC-2 maximum     at AC-3 maximum     at AC-4 maximum     250 1/h     control circuit/ Control  Control circuit/ Control  Uppe of voltage of the control supply voltage control supply voltage at DC     intital value		
• up to 690 V for current peak value n=30 rated value short-time withstand current in cold operating state up to 40 °C      • limited to 1 s switching at zero current maximum     • limited to 5 s switching at zero current maximum     • limited to 30 s switching at zero current maximum     • limited to 30 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     • limited to 60 s switching at zero current maximum     ro-load switching frequency     • at DC     operating frequency     • at AC-1 maximum     • at AC-2 maximum     • at AC-3 maximum     • at AC-3 maximum     • at AC-3 maximum     • at AC-3 maximum     • at AC-4 maximum     • at AC-4 maximum     • at AC-4 maximum     • at AC-4 maximum     • at AC-9 voltage of the control supply voltage     control supply voltage at DC     • rated value     operating range factor control supply voltage raded value of magnet coil at DC     • initial value     • full-scale value     design of the surge suppressor     closing power of magnet coil at DC     holding power of magnet coil at DC     opening delay       4 kVA    155 A; Use minimum cross-section acc. to AC-1 rated value     111 A; Use minimum cross-section acc. to AC-1 rated value     110 AC-1 rate		
short-time withstand current in cold operating state up to 40 °C  imited to 1 s switching at zero current maximum  imited to 5 s switching at zero current maximum  imited to 10 s switching at zero current maximum  imited to 30 s switching at zero current maximum  imited to 30 s switching at zero current maximum  imited to 30 s switching at zero current maximum  imited to 60 s switching at zero current maximum  or limited to 60 s switching at zero current maximum  no-load switching frequency  at DC  operating frequency  at AC-1 maximum  at AC-2 maximum  at AC-3 maximum  at AC-3 maximum  at AC-3 maximum  at AC-4 maximum  bat AC-4 maximum  at AC-3 maximum  at AC-4 maximum  control circuit/ Control  type of voltage of the control supply voltage  control supply voltage at DC  initial value  initial value  initial value  full-scale value  design of the surge suppressor  closing power of magnet coil at DC  nolding power of magnet coil at DC  opening delay  at DC  opening delay		
up to 40 °C  imited to 1 s switching at zero current maximum imited to 5 s switching at zero current maximum imited to 30 s switching at zero current maximum imited to 30 s switching at zero current maximum imited to 30 s switching at zero current maximum imited to 30 s switching at zero current maximum imited to 60 s switching at zero current maximum no-load switching frequency at DC operating frequency at AC-3 maximum at AC-2 maximum at AC-3 maximum at AC-3 maximum at AC-3 maximum but AC-3 maximum at AC-4 maximum but AC-3 maximum at AC-4 maximum but AC-3 maximum but AC-4 maximum but AC-3 maxi	·	T NV/ N
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Ilimited to 10 s switching at zero current maximum Ilimited to 30 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum Ino-load switching frequency I at DC I 10 000 1/h I 1000 1/	<ul> <li>limited to 1 s switching at zero current maximum</li> </ul>	155 A; Use minimum cross-section acc. to AC-1 rated value
Ilimited to 30 s switching at zero current maximum Ilimited to 60 s switching at zero current maximum Incload switching frequency Incload swi	<ul> <li>limited to 5 s switching at zero current maximum</li> </ul>	111 A; Use minimum cross-section acc. to AC-1 rated value
● limited to 60 s switching at zero current maximum no-load switching frequency ● at DC operating frequency ● at AC-1 maximum ● at AC-2 maximum ● at AC-2 maximum ● at AC-3 maximum ● at AC-3 maximum ● at AC-4 maximum ● at AC-4 maximum  ■ at AC-3 maximum  ■ at AC-3 maximum  ■ at AC-3 maximum  ■ at AC-4 maximum  ■ at AC-3 maximum  ■ at AC-3 maximum  ■ at AC-3 maximum  ■ at AC-4 maximum  ■ at AC-3 maximum  ■ at AC-3 maximum  ■ at AC-3 maximum  ■ at AC-4 maximum  ■ at AC-3 maximum  ■ at AC-3 maximum  ■ at AC-4 maximum  ■ at AC-3 maximum  ■ at AC-3 maximum  ■ at AC-4 maximum  ■ at AC-3 maximum  ■ at AC-3 maximum  ■ at AC-4 maximum  ■ at	<ul> <li>limited to 10 s switching at zero current maximum</li> </ul>	86 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency  • at DC  operating frequency  • at AC-1 maximum  • at AC-2 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-3e maximum  • at AC-3e maximum  • at AC-4 maximum  • at AC-4 maximum  250 1/h  • at AC-4 maximum  Control circuit/ Control  type of voltage of the control supply voltage control supply voltage at DC  • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  design of the surge suppressor closing power of magnet coil at DC  holding power of magnet coil at DC  closing delay  • at DC  opening delay	<ul> <li>limited to 30 s switching at zero current maximum</li> </ul>	66 A; Use minimum cross-section acc. to AC-1 rated value
<ul> <li>at DC</li> <li>operating frequency</li> <li>at AC-1 maximum</li> <li>at AC-2 maximum</li> <li>at AC-3 maximum</li> <li>at AC-3 maximum</li> <li>at AC-3e maximum</li> <li>at AC-4 maximum</li> <li>at AC-4 maximum</li> <li>at AC-4 maximum</li> <li>250 1/h</li> </ul> Control circuit/ Control type of voltage of the control supply voltage <ul> <li>control supply voltage at DC</li> <li>rated value</li> <li>operating range factor control supply voltage rated value of magnet coil at DC</li> <li>initial value</li> <li>full-scale value</li> <li>design of the surge suppressor</li> <li>closing power of magnet coil at DC</li> <li>holding power of magnet coil at DC</li> <li>holding power of magnet coil at DC</li> <li>closing delay</li> <li>at DC</li> <li>opening delay</li> </ul>	<ul> <li>limited to 60 s switching at zero current maximum</li> </ul>	55 A; Use minimum cross-section acc. to AC-1 rated value
operating frequency  • at AC-1 maximum  • at AC-2 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-3 maximum  • at AC-4 m	no-load switching frequency	
<ul> <li>at AC-1 maximum</li> <li>at AC-2 maximum</li> <li>at AC-3 maximum</li> <li>at AC-3 maximum</li> <li>at AC-3e maximum</li> <li>at AC-3e maximum</li> <li>at AC-4 maximum</li> <li>250 1/h</li> <li>at AC-4 maximum</li> <li>250 1/h</li> </ul> Control circuit/ Control type of voltage of the control supply voltage <ul> <li>control supply voltage at DC</li> <li>rated value</li> <li>poperating range factor control supply voltage rated value of magnet coil at DC</li> <li>initial value</li> <li>full-scale value</li> <li>design of the surge suppressor</li> <li>closing power of magnet coil at DC</li> <li>holding power of magnet coil at DC</li> <li>holding power of magnet coil at DC</li> <li>closing delay</li> <li>at DC</li> <li>at DC</li> <li>at DC</li> <li>opening delay</li> </ul>	• at DC	10 000 1/h
<ul> <li>at AC-2 maximum</li> <li>at AC-3 maximum</li> <li>at AC-3e maximum</li> <li>at AC-3e maximum</li> <li>at AC-4 maximum</li> <li>250 1/h</li> <li>at AC-4 maximum</li> <li>250 1/h</li> </ul> Control circuit/ Control type of voltage of the control supply voltage control supply voltage at DC <ul> <li>rated value</li> <li>operating range factor control supply voltage rated value of magnet coil at DC</li> <li>initial value</li> <li>full-scale value</li> <li>design of the surge suppressor</li> <li>closing power of magnet coil at DC</li> <li>holding power of magnet coil at DC</li> <li>1.6 W</li> <li>closing delay</li> <li>at DC</li> <li>at DC</li> <li>opening delay</li> </ul>	operating frequency	
<ul> <li>at AC-3 maximum</li> <li>at AC-3e maximum</li> <li>at AC-4e maximum</li> <li>at AC-4 maximum</li> <li>250 1/h</li> </ul> Control circuit/ Control type of voltage of the control supply voltage control supply voltage at DC <ul> <li>rated value</li> <li>operating range factor control supply voltage rated value of magnet coil at DC</li> <li>initial value</li> <li>full-scale value</li> <li>full-scale value</li> <li>design of the surge suppressor</li> <li>closing power of magnet coil at DC</li> <li>holding power of magnet coil at DC</li> <li>t.6 W</li> <li>holding power of magnet coil at DC</li> <li>closing delay</li> <li>at DC</li> <li>opening delay</li> </ul>	• at AC-1 maximum	1 000 1/h
<ul> <li>at AC-3e maximum</li> <li>at AC-4 maximum</li> <li>250 1/h</li> </ul> Control circuit/ Control type of voltage of the control supply voltage control supply voltage at DC <ul> <li>rated value</li> <li>operating range factor control supply voltage rated value of magnet coil at DC</li> <li>initial value</li> <li>full-scale value</li> <li>full-scale value</li> <li>design of the surge suppressor</li> <li>closing power of magnet coil at DC</li> <li>holding power of magnet coil at DC</li> <li>holding power of magnet coil at DC</li> <li>closing delay</li> <li>at DC</li> <li>at DC</li></ul>	• at AC-2 maximum	750 1/h
at AC-4 maximum  Control circuit/ Control  type of voltage of the control supply voltage control supply voltage at DC     • rated value     operating range factor control supply voltage rated value of magnet coil at DC     • initial value     • full-scale value     design of the surge suppressor     closing power of magnet coil at DC     holding power of magnet coil at DC     holding power of magnet coil at DC     closing delay     • at DC     opening delay	• at AC-3 maximum	750 1/h
type of voltage of the control supply voltage control supply voltage at DC  • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  design of the surge suppressor closing power of magnet coil at DC  holding power of magnet coil at DC  closing delay  • at DC opening delay	<ul> <li>at AC-3e maximum</li> </ul>	750 1/h
type of voltage of the control supply voltage control supply voltage at DC  • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  design of the surge suppressor  closing power of magnet coil at DC  holding power of magnet coil at DC  closing delay  • at DC  opening delay  ORS  1.85  diode 1.6 W  1.6 W  25 120 ms  opening delay	at AC-4 maximum	250 1/h
control supply voltage at DC  • rated value  operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  design of the surge suppressor  closing power of magnet coil at DC  holding power of magnet coil at DC  tolosing delay  • at DC  opening delay  value  24 V  0.85	Control circuit/ Control	
<ul> <li>rated value</li> <li>operating range factor control supply voltage rated value of magnet coil at DC</li> <li>initial value</li> <li>full-scale value</li> <li>design of the surge suppressor</li> <li>closing power of magnet coil at DC</li> <li>holding power of magnet coil at DC</li> <li>to W</li> <li>closing delay</li> <li>at DC</li> <li>opening delay</li> </ul> 24 V 24 V 0.85 1.85 diode 1.6 W 1.6 W 25 120 ms opening delay 25 120 ms	type of voltage of the control supply voltage	DC
operating range factor control supply voltage rated value of magnet coil at DC  • initial value  • full-scale value  design of the surge suppressor  closing power of magnet coil at DC  holding power of magnet coil at DC  closing delay  • at DC  opening delay  opening delay	control supply voltage at DC	
value of magnet coil at DC  • initial value  • full-scale value  design of the surge suppressor  closing power of magnet coil at DC  holding power of magnet coil at DC  closing delay  • at DC  opening delay  opening delay	rated value	24 V
• full-scale value     design of the surge suppressor     closing power of magnet coil at DC     holding power of magnet coil at DC     closing delay     • at DC     opening delay   1.85  1.6 W  1.6 W  25 120 ms		
design of the surge suppressor closing power of magnet coil at DC holding power of magnet coil at DC  closing delay  ● at DC  opening delay   diode  1.6 W  1.6 W  25 120 ms	● initial value	0.85
closing power of magnet coil at DC holding power of magnet coil at DC closing delay  • at DC opening delay  • at DC	full-scale value	1.85
holding power of magnet coil at DC  closing delay  • at DC  opening delay  1.6 W  25 120 ms		diode
closing delay		1.6 W
• at DC 25 120 ms  opening delay	holding power of magnet coil at DC	1.6 W
opening delay	closing delay	
		25 120 ms
• at DC 20 80 ms	opening delay	
	• at DC	20 80 ms

arcing time	10 15 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	Control With The
number of NC contacts for auxiliary contacts	1
instantaneous contact	'
operational current at AC-12 maximum	10 A
operational current at AC-15	
at 230 V rated value	10 A
<ul> <li>at 400 V rated value</li> </ul>	3 A
<ul> <li>at 500 V rated value</li> </ul>	2 A
<ul> <li>at 690 V rated value</li> </ul>	1 A
operational current at DC-12	
at 24 V rated value	10 A
<ul><li>at 48 V rated value</li></ul>	6 A
<ul><li>at 60 V rated value</li></ul>	6 A
• at 110 V rated value	3 A
at 125 V rated value	2 A
at 220 V rated value	1 A
• at 600 V rated value	0.15 A
operational current at DC-13	10.0
at 48 V rated value	10 A 2 A
<ul> <li>at 48 V rated value</li> <li>at 60 V rated value</li> </ul>	2 A 2 A
at 60 V rated value     at 110 V rated value	1 A
at 125 V rated value	0.9 A
at 220 V rated value	0.3 A
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 3-phase AC motor	
• at 480 V rated value	7.6 A
at 600 V rated value	9 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	0.33 hp
— at 230 V rated value	1 hp
<ul> <li>for 3-phase AC motor</li> </ul>	
<ul> <li>— at 200/208 V rated value</li> </ul>	2 hp
<ul> <li>at 220/230 V rated value</li> </ul>	3 hp
<ul> <li>— at 460/480 V rated value</li> </ul>	5 hp
— at 575/600 V rated value	7.5 hp
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the fuse link	
<ul> <li>for short-circuit protection of the main circuit</li> </ul>	
<ul><li>— with type of coordination 1 required</li></ul>	gG: 35A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)
— with type of assignment 2 required	gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V,
• for short circuit protection of the cuvilians quitely	80kA)
<ul> <li>for short-circuit protection of the auxiliary switch required</li> </ul>	gG: 10 A (500 V, 1 kA)
Installation/ mounting/ dimensions	
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted
<b>-</b> ·	forward and backward by +/- 22.5° on vertical mounting surface
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN
	60715
side-by-side mounting	Yes
height	58 mm
width	45 mm
depth	73 mm
required spacing	
with side-by-side mounting     forwards	10 mm
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm

- at the side 0 mm • for grounded parts - forwards 10 mm upwards 10 mm - at the side 6 mm 10 mm downwards · for live parts 10 mm - forwards - upwards 10 mm - downwards 10 mm - at the side 6 mm

screw-type terminals

screw-type terminals

Screw-type terminals

Screw-type terminals

0.5 ... 4 mm<sup>2</sup> 0.5 ... 4 mm<sup>2</sup>

0.5 ... 2.5 mm<sup>2</sup>

0.5 ... 4 mm<sup>2</sup>

0.5 ... 2.5 mm<sup>2</sup>

#### type of electrical connection

• for main current circuit · for auxiliary and control circuit • at contactor for auxiliary contacts

· of magnet coil

#### type of connectable conductor cross-sections

• for main contacts

- solid - solid or stranded

- finely stranded with core end processing

• at AWG cables for main contacts

#### connectable conductor cross-section for main contacts

solid stranded

• finely stranded with core end processing

#### connectable conductor cross-section for auxiliary contacts

 solid or stranded finely stranded with core end processing

# type of connectable conductor cross-sections

· for auxiliary contacts

solid or stranded

- finely stranded with core end processing

· at AWG cables for auxiliary contacts

#### AWG number as coded connectable conductor cross section

 for main contacts • for auxiliary contacts

2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>), 2x 4 mm<sup>2</sup> 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)

2x (0.5 ... 1.5 mm<sup>2</sup>), 2x (0.75 ... 2.5 mm<sup>2</sup>), 2x 4 mm<sup>2</sup>

2x (0,5 ... 1,5 mm²), 2x (0,75 ... 2,5 mm²), 2x 4 mm²

2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²)

2x (20 ... 16), 2x (18 ... 14), 2x 12

2x (20 ... 16), 2x (18 ... 14), 2x 12

20 ... 12 20 ... 12

# Safety related data

# product function

• mirror contact according to IEC 60947-4-1 B10 value with high demand rate according to SN 31920

### proportion of dangerous failures

with low demand rate according to SN 31920

• with high demand rate according to SN 31920

failure rate [FIT] with low demand rate according to SN 31920

T1 value for proof test interval or service life according to IEC 61508

#### protection class IP on the front according to IEC 60529

touch protection on the front according to IEC 60529 suitability for use

safety-related switching OFF

Yes

1 000 000

40 %

73 %

100 FIT

20 y

IP20

finger-safe, for vertical contact from the front

Yes

# Certificates/ approvals

## **General Product Approval**



Confirmation





KC



EMC

Functional Safety/Safety of Machinery

**Declaration of Conformity** 

**Test Certificates** 



Type Examination Certificate





Type Test Certificates/Test Report

Special Test Certificate

#### Marine / Shipping













Marine / Shipping

other

Railway

**Dangerous Good** 



Confirmation



Vibration and Shock

<u>Transport Information</u>

#### **Further information**

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

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2016-1VB42

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT2016-1VB42}$ 

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1VB42

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

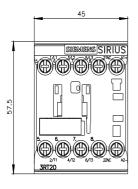
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2016-1VB42&lang=en

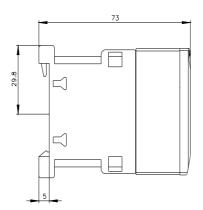
Characteristic: Tripping characteristics, I2t, Let-through current

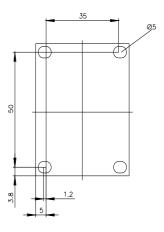
https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1VB42/char

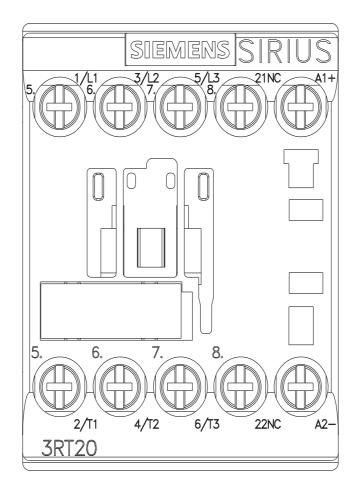
Further characteristics (e.g. electrical endurance, switching frequency)

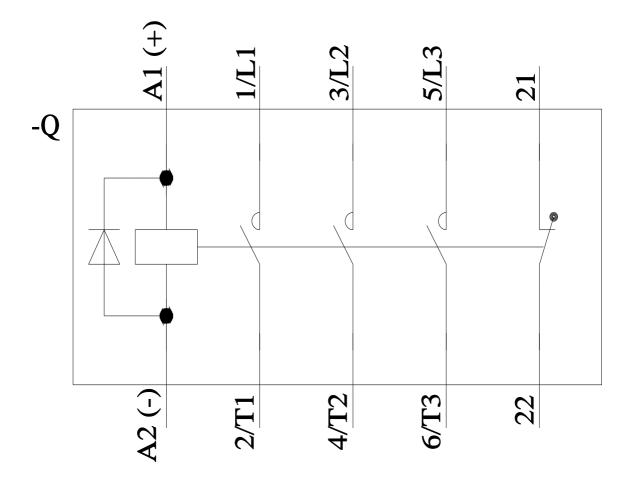
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2016-1VB42&objecttype=14&gridview=view1











last modified: 11/21/2022 🖸