## **SIEMENS**

Data sheet 3RT2016-1HB42



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 24 V DC, 0.7-1.25\* Us, auxiliary contacts: 1 NC, screw terminal, size: S00, suitable for PLC outputs, 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	
• function module for communication	No
auxiliary switch	No
power loss [W] for rated value of the current	
• at AC in hot operating state	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>	2.8 W
type of calculation of power loss depending on pole	quadratic
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 protective separation 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)	
of contactor typical	30 000 000
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	10/01/2009
Weight	0.298 kg
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
relative humidity minimum	10 %
relative humidity at 55 °C according to IEC 60068-2-30 maximum	95 %
Environmental footprint	
Environmental Product Declaration(EPD)	Yes
global warming potential [CO2 eq] total	153 kg

global warming potential [CO2 eq] during manufacturing	1.42 kg
global warming potential [CO2 eq] during manufacturing global warming potential [CO2 eq] during operation	1.42 kg 152 kg
global warming potential [CO2 eq] after end of life	-0.305 kg
Main circuit	0.000 kg
number of poles for main current circuit	3
number of NO contacts for main contacts	3
operating voltage	
at AC-3 rated value maximum	690 V
at AC-3e rated value maximum	690 V
operational current	
at AC-1 at 400 V at ambient temperature 40 °C rated	22 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 $^{\circ}\text{C}$ rated value	22 A
— up to 690 V at ambient temperature 60 $^{\circ}\text{C}$ rated value	20 A
• 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
• at AC-5a up to 690 V rated value	19.4 A
● at AC-5b up to 400 V rated value	7.4 A
• at AC-6a	
<ul> <li>up to 230 V for current peak value n=20 rated value</li> </ul>	5.3 A
— up to 400 V for current peak value n=20 rated value	5.3 A
— up to 500 V for current peak value n=20 rated value	5.3 A
<ul><li>— up to 690 V for current peak value n=20 rated value</li><li>at AC-6a</li></ul>	5 A
<ul> <li>up to 230 V for current peak value n=30 rated value</li> </ul>	3.5 A
— up to 400 V for current peak value n=30 rated value	3.5 A
<ul> <li>up to 500 V for current peak value n=30 rated value</li> </ul>	3.6 A
— up to 690 V for current peak value n=30 rated value	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 60 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
with 2 current paths in series at DC-1     ot 24 Verted value.	20 A
— at 24 V rated value	20 A
— at 60 V rated value	20 A 12 A
— at 110 V rated value — at 220 V rated value	12 A 1.6 A
— at 440 V rated value  — at 440 V rated value	1.6 A 0.8 A
— at 440 V rated value  — at 600 V rated value	0.6 A 0.7 A
with 3 current paths in series at DC-1	0.171
— at 24 V rated value	20 A
— at 60 V rated value	20 A
at 55 v rated value	2071

— at 110 V rated value	20 A
— at 220 V rated value	20 A
— at 440 V rated value	1.3 A
— at 600 V rated value	1 A
<ul> <li>at 1 current path at DC-3 at DC-5</li> </ul>	
— at 24 V rated value	20 A
— at 60 V rated value	0.5 A
— at 110 V rated value	0.15 A
<ul> <li>with 2 current paths in series at DC-3 at DC-5</li> </ul>	
— at 24 V rated value	20 A
— at 60 V rated value	5 A
— at 110 V rated value	0.35 A
	0.00 A
with 3 current paths in series at DC-3 at DC-5     ot 24 V reted value.	20.4
— at 24 V rated value	20 A
— at 60 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	1.5 A
— at 440 V rated value	0.2 A
— at 600 V rated value	0.2 A
operating power	
• at AC-3	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	5.5 kW
• at AC-3e	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	5.5 kW
operating power for approx. 200000 operating cycles at AC-	
at 400 V rated value	2 kW
at 690 V rated value	2.5 kW
operating apparent power at AC-6a	
up to 230 V for current peak value n=20 rated value	2 kVA
up to 400 V for current peak value n=20 rated value  up to 400 V for current peak value n=20 rated value	3.6 kVA
up to 500 V for current peak value n=20 rated value  up to 500 V for current peak value n=20 rated value	4.6 kVA
• up to 500 v for current peak value 11–20 fated value	
- up to 600 V for current mode value m=20 rated value	
up to 690 V for current peak value n=20 rated value	5.9 kVA
operating apparent power at AC-6a	
operating apparent power at AC-6a • up to 230 V for current peak value n=30 rated value	1.3 kVA
<ul> <li>operating apparent power at AC-6a</li> <li>up to 230 V for current peak value n=30 rated value</li> <li>up to 400 V for current peak value n=30 rated value</li> </ul>	1.3 kVA 2.4 kVA
operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  up to 400 V for current peak value n=30 rated value  up to 500 V for current peak value n=30 rated value	1.3 kVA 2.4 kVA 3.1 kVA
operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  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	1.3 kVA 2.4 kVA
operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  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	1.3 kVA 2.4 kVA 3.1 kVA
operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  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	1.3 kVA 2.4 kVA 3.1 kVA 4 kVA
operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  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  limited to 1 s switching at zero current maximum	1.3 kVA 2.4 kVA 3.1 kVA 4 kVA  155 A; Use minimum cross-section acc. to AC-1 rated value
operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  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  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	1.3 kVA 2.4 kVA 3.1 kVA 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
operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  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  limited to 1 s switching at zero current maximum  limited to 5 s switching at zero current maximum	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value
operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  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  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	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value
operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  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  limited to 1 s switching at zero current maximum  limited to 5 s switching at zero current maximum	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value
operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  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  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	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value
operating apparent power at AC-6a  up to 230 V for current peak value n=30 rated value  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  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 10 s switching at zero current maximum  limited to 60 s switching at zero current maximum	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value
operating apparent power at AC-6a  • up to 230 V for current peak value n=30 rated value  • 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  • 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 10 s switching at zero current maximum  • limited to 30 s switching at zero current maximum  • limited to 60 s switching at zero current maximum	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value
operating apparent power at AC-6a  • up to 230 V for current peak value n=30 rated value  • 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  • 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 10 s switching at zero current maximum  • limited to 30 s switching at zero current maximum  • limited to 60 s switching at zero current maximum  no-load switching frequency  • at DC	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value
operating apparent power at AC-6a  • up to 230 V for current peak value n=30 rated value  • 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  • 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 10 s switching at zero current maximum  • limited to 30 s switching at zero current maximum  • limited to 60 s switching at zero current maximum  no-load switching frequency  • at DC  operating frequency	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h
operating apparent power at AC-6a  • up to 230 V for current peak value n=30 rated value  • 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  • 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 10 s switching at zero current maximum  • limited to 30 s switching at zero current maximum  • limited to 60 s switching at zero current maximum  no-load switching frequency  • at DC  operating frequency  • at AC-1 maximum	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h  1 000 1/h
operating apparent power at AC-6a  • up to 230 V for current peak value n=30 rated value  • 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  • limited to 1 s switching at zero current maximum  • limited to 5 s switching at zero current maximum  • limited to 10 s switching at zero current maximum  • limited to 30 s switching at zero current maximum  • 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	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h  1 000 1/h 1 000 1/h
operating apparent power at AC-6a  • up to 230 V for current peak value n=30 rated value  • 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  • 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 10 s switching at zero current maximum  • limited to 30 s switching at zero current maximum  • 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	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h  1 000 1/h 1 750 1/h 750 1/h
operating apparent power at AC-6a  • up to 230 V for current peak value n=30 rated value  • 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  • 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 10 s switching at zero current maximum  • limited to 30 s switching at zero current maximum  • 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-4 maximum	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h  1 000 1/h 750 1/h 750 1/h 750 1/h
operating apparent power at AC-6a  • up to 230 V for current peak value n=30 rated value  • 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  • 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 10 s switching at zero current maximum  • limited to 30 s switching at zero current maximum  • 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	1.3 kVA 2.4 kVA 3.1 kVA 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 86 A; Use minimum cross-section acc. to AC-1 rated value 66 A; Use minimum cross-section acc. to AC-1 rated value 55 A; Use minimum cross-section acc. to AC-1 rated value 10 000 1/h  1 000 1/h 750 1/h 750 1/h 750 1/h

Control supply voltage at DC rated value   24		
magnet col at DC  • full-scale value  • at DC  copening delay  • at DC  opening delay  • at DC  • at DC  opening of magnet coll at DC  opening delay  • at DC  • at DC  opening delay  • at DC  opening of the switch operating mechanism  Standard A1 - A2  Auxiliary circuit  number of NC contacts for auxiliary contacts instantaneous contact  contact  operational current at AC-12 maximum  10 A  operational current at DC-12  • at 300 V rated value  • at 600 V rated value  • at 600 V rated value  • at 60 V rated value  • at 60 V rated value  • at 60 V rated value  • at 125 V rated value  • at 125 V rated value  • at 126 V rated value  • at 126 V rated value  • at 127 v rated value  • at 128 V rated value  • at 128 V rated value  • at 129 V rated value  • at 200 V rated value  • at 400 V rated value  •	ontrol supply voltage at DC rated value	24 V
• Initial value		
• full-scale value closing power of magnet coil at DC closing delay • at DC opening delay • at DC opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay • at DC  opening delay  opening delay  opening delay  • at CC  opening delay  • at CC  opening delay  • at CC  • at Z30 V rated value • at 600 V rated value • at 160 V rated value • at 60 V rated value • at		0.7
closing power of magnet coil at DC		
bolding power of magnet coil at DC   2.8 W		
e at DC 25 130 ms  opening delay		
• at DC opening delay • at DC arcing time control version of the switch operating mechanism standard A1 - A2  Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-13 maximum operational current at AC-18 maximum operational current at DC-19 maximum		2.8 W
oe at DC         7 20 ms           arcing time         10 15 ms           control version of the switch operating mechanism         Standard A1 - A2           Auxiliary circuit         20 ms           number of NC contacts for auxiliary contacts instantaneous contact         1           operational current at AC-12 maximum         10 A           operational current at AC-14 sulue         10 A           e at 400 V rated value         3 A           e at 500 V rated value         2 A           e at 500 V rated value         10 A           e at 42 V rated value         6 A           e at 42 V rated value         6 A           e at 42 V rated value         6 A           e at 100 V rated value         3 A           e at 125 V rated value         6 A           e at 125 V rated value         1 A           e at 220 V rated value         1 A           e at 220 V rated value         1 A           e at 48 V rated value         1 A           e at 48 V rated value         2 A           e at 48 V rated value         1 A           e at 60 V rated value         2 A           e at 60 V rated value         1 A           e at 220 V rated value         0.3 A           e at		
* at DCC   7 20 ms		25 130 ms
Arching time		
Control version of the switch operating mechanism   Standard A1 - A2		
Auxiliary circuit         1           operational current at AC-12 maximum         10 A           operational current at AC-15         10 A           a at 230 V rated value         10 A           at 360 V rated value         2A           at 690 V rated value         1A           operational current at DC-12         1A           at 690 V rated value         1A           operational current at DC-12         10 A           at 48 V rated value         6A           at 80 V rated value         6A           at 80 V rated value         3A           at 110 V rated value         3A           at 125 V rated value         1A           at 200 V rated value         1A           at 200 V rated value         1A           at 24 V rated value         1A           at 24 V rated value         1A           at 24 V rated value         2A           at 36 V rated value         2A           at 36 V rated value         2A           at 36 V rated value         2A           at 250 V rated value         0.9 A           at 250 V rated value         0.1 A           at 250 V rated value         0.1 A           at 250 V rated value         0.1 A		
number of NC contacts for auxiliary contacts instantaneous contact c		Standard A1 - A2
Operational current at AC-12 maximum   10 A		
operational current at AC-12 maximum         10 A           operational current at AC-15         10 A           • at 230 V rated value         3 A           • at 500 V rated value         2 A           • at 690 V rated value         1 A           operational current at DC-12         - at 42 V rated value           • at 24 V rated value         6 A           • at 46 V rated value         6 A           • at 10 V rated value         3 A           • at 110 V rated value         2 A           • at 220 V rated value         1 A           • at 220 V rated value         1 A           • at 600 V rated value         0.15 A           operational current at DC-13         - at 600 V rated value           • at 60 V rated value         2 A           • at 60 V rated value         2 A           • at 60 V rated value         2 A           • at 110 V rated value         2 A           • at 125 V rated value         0.9 A           • at 220 V rated value         0.1 A           • at 220 V rated value         0.1 A           • at 600 V rated value<		1
10 A		10 Λ
• at 230 V rated value • at 400 V rated value • at 690 V rated value • at 24 V rated value • at 24 V rated value • at 24 V rated value • at 48 V rated value • at 10 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 110 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 125 V rated value • at 125 V rated value • at 126 V rated value • at 127 V rated value • at 128 V rated value • at 129 V rated value • at 120 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 480 V rated value • at 600 V rated value • at		10 A
		10.0
• at 690 V rated value 1 0 A  operational current at DC-12  • at 24 V rated value 6 A • at 60 V rated value 6 A • at 60 V rated value 3 A • at 110 V rated value 3 A • at 125 V rated value 1 A • at 600 V rated value 2 A • at 24 V rated value 2 A • at 24 V rated value 2 A • at 48 V rated value 2 A • at 60 V rated value 1 A • at 110 V rated value 1 A • at 125 V rated value 1 A • at 27 V rated value 1 A • at 600 V rated value		
Deprational current at DC-12		
		1 A
		10.0
• 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 24 V rated value             • at 48 V rated value             • at 600 V rated value             • at 100 V rated value             • at 100 V rated value             • at 110 V rated value             • at 25 V rated value             • at 220 V rated value             • at 220 V rated value             • at 220 V rated value             • at 200 V rated value             • at 300 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 480 V rated value             • at 600 V rated value             • at 300 V rated value             • at 200 V r		
• at 220 V rated value 0.15 A  operational current at DC-13  • at 24 V rated value 10 A • at 48 V rated value 2A • at 60 V rated value 2A • at 110 V rated value 1A • at 125 V rated value 1A • at 220 V rated value 2A • at 110 V rated value 3A • at 220 V rated value 3A • at 600 V		
• at 600 V rated value 0.15 A  operational current at DC-13  • at 24 V rated value 10 A • at 48 V rated value 2 A • at 60 V rated value 2 A • 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 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 • for 3-phase AC motor — at 200/208 V rated value 2 hp — at 220/230 V rated value 2 hp — at 220/230 V rated value 3 hp		
operational current at DC-13		
<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 125 V rated value</li> <li>at 220 V rated value</li> <li>at 220 V rated value</li> <li>at 600 V rated value</li> <li>at 480 V rated value</li> <li>at 600 V rated value</li> <li>at 10/120 V rated value</li> <li>at 230 V rated value</li> <li>at 220/230 V rated value</li> <li>at 200/208 V rated value</li> <li>at 220/230 V rated value</li> </ul>		0.15 A
<ul> <li>at 48 V rated value</li> <li>at 60 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>for single-phase AC motor</li> <li>at 110/120 V rated value</li> <li>at 230 V rated value</li> <li>for 3-phase AC motor</li> <li>at 200/208 V rated value</li> </ul>		
<ul> <li>at 60 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>at 480 V rated value</li> <li>at 600 V rated value</li> <li>at 7.6 A</li> <li>at 600 V rated value</li> <li>for single-phase AC motor</li> <li>at 110/120 V rated value</li> <li>at 230 V rated value</li> <li>1 hp</li> <li>for 3-phase AC motor</li> <li>at 200/208 V rated value</li> <li>at 200/208 V rated value</li> <li>at 200/208 V rated value</li> <li>3 hp</li> </ul>		
<ul> <li>at 125 V rated value</li> <li>at 220 V rated value</li> <li>at 600 V rated value</li> <li>0.1 A</li> <li>contact reliability of auxiliary contacts</li> <li>1 faulty switching per 100 million (17 V, 1 mA)</li> <li>UL/CSA ratings</li> <li>full-load current (FLA) for 3-phase AC motor         <ul> <li>at 480 V rated value</li> <li>at 600 V rated value</li> <li>at 600 V rated value</li> </ul> </li> <li>for single-phase AC motor         <ul> <li>at 110/120 V rated value</li> <li>at 230 V rated value</li> <li>1 hp</li> </ul> </li> <li>for 3-phase AC motor         <ul> <li>at 230 V rated value</li> <li>thp</li> </ul> </li> <li>for 3-phase AC motor         <ul> <li>at 200/208 V rated value</li> <li>at 200/208 V rated value</li> <li>3 hp</li> </ul> </li> </ul>		
<ul> <li>at 220 V rated value</li> <li>at 600 V rated value</li> <li>0.1 A</li> <li>contact reliability of auxiliary contacts</li> <li>1 faulty switching per 100 million (17 V, 1 mA)</li> <li>UL/CSA ratings</li> <li>full-load current (FLA) for 3-phase AC motor <ul> <li>at 480 V rated value</li> <li>at 600 V rated value</li> <li>9 A</li> </ul> </li> <li>yielded mechanical performance [hp] <ul> <li>for single-phase AC motor</li> <li>at 110/120 V rated value</li> <li>1 hp</li> </ul> </li> <li>for 3-phase AC motor <ul> <li>at 230 V rated value</li> <li>1 hp</li> </ul> </li> <li>for 3-phase AC motor</li> <li>at 200/208 V rated value</li> <li>2 hp</li> <li>at 220/230 V rated value</li> <li>3 hp</li> </ul>		
<ul> <li>at 600 V rated value</li> <li>0.1 A</li> <li>contact reliability of auxiliary contacts</li> <li>1 faulty switching per 100 million (17 V, 1 mA)</li> <li>UL/CSA ratings</li> <li>full-load current (FLA) for 3-phase AC motor <ul> <li>at 480 V rated value</li> <li>at 600 V rated value</li> <li>9 A</li> </ul> </li> <li>yielded mechanical performance [hp] <ul> <li>for single-phase AC motor</li> <li>at 110/120 V rated value</li> <li>1 hp</li> </ul> </li> <li>for 3-phase AC motor</li> <li>at 230 V rated value</li> <li>1 hp</li> <li>for 3-phase AC motor</li> <li>at 200/208 V rated value</li> <li>3 hp</li> </ul>		
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  • at 600 V rated value  9 A  yielded mechanical performance [hp]  • for single-phase AC motor  — at 110/120 V rated value  1 hp  • for 3-phase AC motor  — at 230 V rated value  • for 3-phase AC motor  — at 200/208 V rated value  2 hp  — at 220/230 V rated value  3 hp		
### Comparison of Comparison o		
full-load current (FLA) for 3-phase AC motor  • at 480 V rated value  • at 600 V rated value  9 A  yielded mechanical performance [hp]  • for single-phase AC motor  — at 110/120 V rated value  — at 230 V rated value  • for 3-phase AC motor  — at 200/208 V rated value  — at 220/230 V rated value  3 hp		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>9 A</li> </ul> yielded mechanical performance [hp] <ul> <li>for single-phase AC motor</li> <li>at 110/120 V rated value</li> <li>at 230 V rated value</li> <li>for 3-phase AC motor</li> <li>at 200/208 V rated value</li> <li>at 200/230 V rated value</li> <li>3 hp</li> </ul>		
at 600 V rated value  yielded mechanical performance [hp]  of or single-phase AC motor  - at 110/120 V rated value  - at 230 V rated value  of or 3-phase AC motor  - at 200/208 V rated value  - at 220/230 V rated value  3 hp		
yielded mechanical performance [hp]  • for single-phase AC motor  — at 110/120 V rated value  — at 230 V rated value  • for 3-phase AC motor  — at 200/208 V rated value  2 hp  — at 220/230 V rated value  3 hp		
<ul> <li>for single-phase AC motor  — at 110/120 V rated value</li></ul>		9 A
<ul> <li>— at 110/120 V rated value</li> <li>— at 230 V rated value</li> <li>• for 3-phase AC motor</li> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>3 hp</li> </ul>		
<ul> <li>— at 230 V rated value</li> <li>● for 3-phase AC motor</li> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>3 hp</li> </ul>		
<ul> <li>for 3-phase AC motor</li> <li>— at 200/208 V rated value</li> <li>— at 220/230 V rated value</li> <li>3 hp</li> </ul>	— at 110/120 V rated value	0.33 hp
— at 200/208 V rated value 2 hp — at 220/230 V rated value 3 hp	— at 230 V rated value	1 hp
— at 220/230 V rated value 3 hp	• for 3-phase AC motor	
·	— at 200/208 V rated value	2 hp
— at 460/480 V rated value 5 hp	— at 220/230 V rated value	3 hp
	— at 460/480 V rated value	5 hp
— at 575/600 V rated value 7.5 hp	— at 575/600 V rated value	7.5 hp
contact rating of auxiliary contacts according to UL A600 / Q600	ontact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	ort-circuit protection	
design of the miniature circuit breaker for short-circuit protection  C characteristic: 10 A; 0.4 kA		C characteristic: 10 A; 0.4 kA
of the auxiliary circuit up to 230 V		
design of the fuse link	-	
for short-circuit protection of the main circuit		
— with type of coordination 1 required 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, 80kA)		
• for short-circuit protection of the auxiliary switch required gG: 10 A (500 V, 1 kA)	for short-circuit protection of the auxiliary switch required	gG: 10 A (500 V, 1 kA)

nstallation/ mounting/ dimensions	
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
fastening method side-by-side mounting	Yes
·	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715
fastening method	·
height	58 mm
width	45 mm
depth	73 mm
required spacing	
with side-by-side mounting	40
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
<ul> <li>for grounded parts</li> </ul>	
— forwards	10 mm
— upwards	10 mm
— at the side	6 mm
— downwards	10 mm
• for live parts	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm
Connections/ Terminals	
type of electrical connection	
for main current circuit	screw-type terminals
for auxiliary and control circuit	screw-type terminals
at contactor for auxiliary contacts	Screw-type terminals
• of magnet coil	Screw-type terminals
type of connectable conductor cross-sections	Colon type terminals
• for main contacts	
— solid	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²
— solid or stranded	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)
— finely stranded with core end processing	
for AWG cables for main contacts	2x (20 16), 2x (18 14), 2x 12
connectable conductor cross-section for main contacts	0.5
• solid	0.5 4 mm <sup>2</sup>
• stranded	0.5 4 mm²
finely stranded with core end processing	0.5 2.5 mm²
connectable conductor cross-section for auxiliary contacts	
<ul> <li>solid or stranded</li> </ul>	0.5 4 mm²
finely stranded with core end processing	0.5 2.5 mm²
type of connectable conductor cross-sections	
for auxiliary contacts	
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 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>for AWG cables for auxiliary contacts</li> </ul>	2x (20 16), 2x (18 14), 2x 12
AWG number as coded connectable conductor cross section	
• for main contacts	20 12
for auxiliary contacts	20 12
afety related data	
product function	
mirror contact according to IEC 60947-4-1	Yes
	No
a nocitively driven operation according to IEC 60047 F 4	INO
positively driven operation according to IEC 60947-5-1     pultable for sofety function.	Voc
suitable for safety function	Yes
suitable for safety function suitability for use safety-related switching OFF	Yes
suitable for safety function	

<ul> <li>with low demand rate according to SN 31920</li> </ul>	40 %
<ul> <li>with high demand rate according to SN 31920</li> </ul>	73 %
B10 value with high demand rate according to SN 31920	1 000 000
failure rate [FIT] with low demand rate according to SN 31920	100 FIT
ISO 13849	
device type according to ISO 13849-1	3
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	
safety device type according to IEC 61508-2	Type A
Electrical Safety	
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
Approvals Certificates	

**General Product Approval** 







Confirmation



<u>KC</u>

**General Product Ap**proval

EMV

**Test Certificates** 

Marine / Shipping





Type Test Certificates/Test Report

**Special Test Certific**ate





Marine / Shipping











**Miscellaneous** 

other

other

Railway

**Dangerous goods** 

**Environment** 

Confirmation

**Special Test Certific**ate

**Transport Information** 



**Environmental Con**firmations

## Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RT2016-1HB42

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-1HB42

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

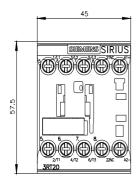
https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1HB4

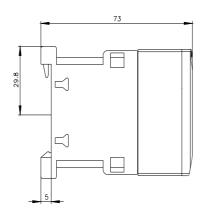
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

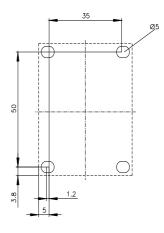
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RT2016-1HB42&lang=en

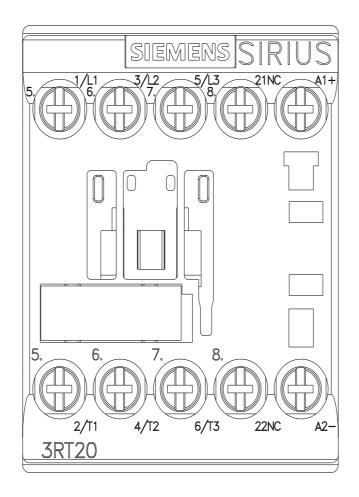
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1HB42/char

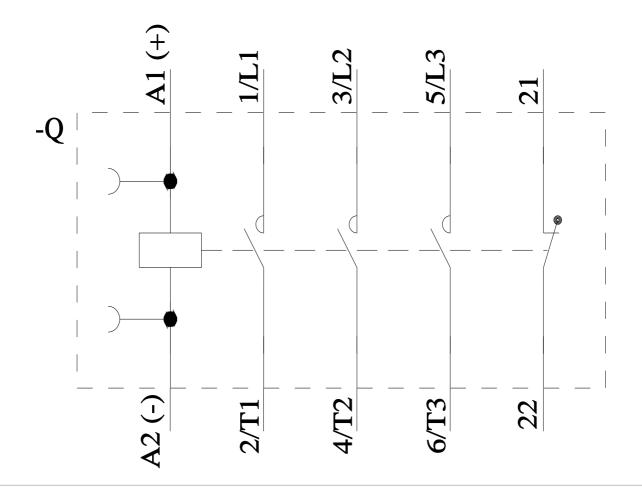
Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2016-1HB42&objecttype=14&gridview=view1











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