SIEMENS

Data sheet

3RT2015-1BB42



power contactor, AC-3e/AC-3, 7 A, 3 kW / 400 V, 3-pole, 24 V DC, auxiliary contacts: 1 NC, screw terminal, size: S00

product brand name	SIRIUS	
product designation	Power contactor	
product type designation	3RT2	
General technical data		
size of contactor	S00	
product extension		
 function module for communication 	No	
auxiliary switch	Yes	
power loss [W] for rated value of the current		
 at AC in hot operating state 	0.6 W	
 at AC in hot operating state per pole 	0.2 W	
 without load current share typical 	4 W	
type of calculation of power loss depending on pole	quadratic	
insulation voltage		
 of main circuit with degree of pollution 3 rated value 	690 V	
• of auxiliary circuit with degree of pollution 3 rated value	690 V	
surge voltage resistance		
of main circuit rated value	6 kV	
 of auxiliary circuit rated value 	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	
 of the contactor with added electronically optimized auxiliary switch block typical 	5 000 000	
 of the contactor with added auxiliary switch block typical 	10 000 000	
reference code according to IEC 81346-2	Q	
Substance Prohibitance (Date)	10/01/2009	
Weight	0.292 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 operation	152 kg
global warming potential [CO2 eq] after end of life	-0.305 kg
Main circuit	
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 value at AC-1 	18 A
up to 690 V at ambient temperature 40 °C rated value	18 A
— up to 690 V at ambient temperature 60 °C rated value	16 A
• at AC-3	
— at 400 V rated value	7 A
— at 500 V rated value	6 A
— at 690 V rated value	4.9 A
• at AC-3e	
- at 400 V rated value	7 A
- at 500 V rated value	6 A
 at 690 V rated value at AC-4 at 400 V rated value 	4.9 A 6.5 A
at AC-5a up to 690 V rated value	15.8 A
at AC-5b up to 400 V rated value	5.8 A
• at AC-6a	
— up to 230 V for current peak value n=20 rated value	4 A
— up to 400 V for current peak value n=20 rated value	4 A
— up to 500 V for current peak value n=20 rated value	3.8 A
— up to 690 V for current peak value n=20 rated value	3.6 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	2.7 A
— up to 400 V for current peak value n=30 rated value	2.7 A
— up to 500 V for current peak value n=30 rated value	2.5 A
— up to 690 V for current peak value n=30 rated value	2.4 A
minimum cross-section in main circuit at maximum AC-1 rated value	2.5 mm ²
operational current for approx. 200000 operating cycles at AC-4 • at 400 V rated value	2.6 A
at 690 V rated value	1.8 A
operational current	
at 1 current path at DC-1	
— at 24 V rated value	15 A
— at 60 V rated value	15 A
— at 110 V rated value	1.5 A
— at 220 V rated value	0.6 A
— at 440 V rated value	0.42 A
— at 600 V rated value	0.42 A
 with 2 current paths in series at DC-1 	
— at 24 V rated value	15 A
— at 60 V rated value	15 A
— at 110 V rated value	8.4 A
— at 220 V rated value	1.2 A
- at 440 V rated value	0.6 A
— at 600 V rated value	0.5 A

• with 3 current paths in series at DC-1	
— at 24 V rated value	15 A
— at 60 V rated value	15 A
— at 110 V rated value	15 A
— at 220 V rated value	15 A
— at 440 V rated value	0.9 A
— at 600 V rated value	0.7 A
 at 1 current path at DC-3 at DC-5 	
— at 24 V rated value	15 A
— at 60 V rated value	0.35 A
 with 2 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	15 A
— at 60 V rated value	3.5 A
— at 110 V rated value	0.25 A
 with 3 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	15 A
— at 60 V rated value	15 A
— at 110 V rated value	15 A
— at 220 V rated value	1.2 A
— at 440 V rated value	0.14 A
— at 600 V rated value	0.14 A
operating power	
• at AC-3	
— at 230 V rated value	1.5 kW
— at 400 V rated value	3 kW
— at 500 V rated value	3 kW
— at 690 V rated value	4 kW
• at AC-3e	
— at 230 V rated value	1.5 kW
— at 400 V rated value	3 kW
— at 500 V rated value	3 kW
— at 690 V rated value	4 kW
operating power for approx. 200000 operating cycles at AC- 4	
at 400 V rated value	1.15 kW
at 400 V rated value at 690 V rated value	1.15 kW
operating apparent power at AC-6a	1.13 KW
	1.5 kVA
 up to 230 V for current peak value n=20 rated value up to 400 V for current peak value n=20 rated value 	2.7 kVA
	3.3 kVA
• up to 500 V for current peak value n=20 rated value	4.3 kVA
up to 690 V for current peak value n=20 rated value	4.5 KVA
operating apparent power at AC-6a	4 10/0
up to 230 V for current peak value n=30 rated value	1 kVA
• up to 400 V for current peak value n=30 rated value	1.8 kVA
 up to 500 V for current peak value n=30 rated value up to 600 V for current peak value n=30 rated value 	2.2 kVA 2.9 kVA
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 	120 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	86 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	67 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	52 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 60 s switching at zero current maximum 	43 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	
• at DC	10 000 1/h
operating frequency	
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	750 1/h
• at AC-3 maximum	750 1/h
• at AC-3e maximum	750 1/h
• at AC-4 maximum	250 1/h

Control circuit/ Control				
type of voltage of the control supply voltage	DC			
control supply voltage at DC rated value	24 V			
operating range factor control supply voltage rated value of				
magnet coil at DC • initial value	0.8			
full-scale value	1.1			
closing power of magnet coil at DC	4 W			
holding power of magnet coil at DC	4 W			
closing delay • at DC	20 100 mg			
	30 100 ms			
opening delay at DC 	7 13 ms			
	10 15 ms			
arcing time control version of the switch operating mechanism	Standard A1 - A2			
Auxiliary circuit	Stanuaru AT - Az			
	1			
number of NC contacts for auxiliary contacts instantaneous contact				
operational current at AC-12 maximum	10 A			
operational current at AC-15				
• at 230 V rated value	10 A			
• at 400 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 24 V rated value 	10 A			
 at 48 V rated value 	6 A			
 at 60 V rated value 	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				
 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	4.8 A			
at 600 V rated value	6.1 A			
yielded mechanical performance [hp]				
for single-phase AC motor				
— at 110/120 V rated value	0.25 hp			
— at 230 V rated value	0.75 hp			
for 3-phase AC motor				
- at 200/208 V rated value	1.5 hp			
- at 220/230 V rated value	2 hp			
- at 460/480 V rated value	3 hp			
at 575/600 V rated value	5 hp			
contact rating of auxiliary contacts according to UL	A600 / Q600			
Short-circuit protection				
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 10 A; 0.4 kA			
design of the fuse link				
 for short-circuit protection of the auxiliary switch required 	gG: 10 A (500 V, 1 kA)			
Installation/ 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			
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715			
height	58 mm			
width	45 mm			
depth	73 mm			
required spacing				
 with side-by-side mounting 				
— 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			
— 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				
 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			
 finely stranded with core end processing 	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)			
for AWG cables for main contacts	2x (20 16), 2x (18 14), 2x 12			
connectable conductor cross-section for main contacts				
• solid	0.5 4 mm ²			
• stranded	0.5 4 mm ²			
finely stranded with core end processing	0.5 2.5 mm²			
connectable conductor cross-section for auxiliary contacts				
solid or stranded	0.5 4 mm ²			
finely stranded with core end processing	0.5 2.5 mm²			
type of connectable conductor cross-sections				
for auxiliary contacts colid or stranded	$2 \times (0.5 - 1.5 \text{ mm}^2) 2 \times (0.75 - 0.5 \text{ mm}^2) 2 \times 4 \text{ mm}^2$			
— solid or stranded	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²), 2x 4 mm ²			
 finely stranded with core end processing for AWC cobleg for auxiliant contacts 	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)			
for AWG cables for auxiliary contacts AWG number as coded connectable conductor cross	2x (20 16), 2x (18 14), 2x 12			
section				
for main contacts	20 12			
 for auxiliary contacts 	20 12			
Safety related data				
product function				
 mirror contact according to IEC 60947-4-1 	Yes			
 positively driven operation according to IEC 60947-5-1 	No			
 suitable for safety function 	Yes			
suitability for use safety-related switching OFF	Yes			
service life maximum	20 a			
test wear-related service life necessary	Yes			
proportion of dangerous failures				
 with low demand rate according to SN 31920 	40 %			

 with high deman 	d rate according to SN 31	920	73 %			
B10 value with high d	emand rate according to	SN 31920	1 000 00	0		
failure rate [FIT] with 31920	low demand rate accord	ing to SN	100 FIT			
ISO 13849						
device type according	to ISO 13849-1		3			
overdimensioning acc	cording to ISO 13849-2 n	ecessary	Yes			
IEC 61508						
safety device type acc	cording to IEC 61508-2		Туре А			
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	Test Certificates	other			Environment	
EAC	<u>Special Test Certific-</u> <u>ate</u>	Miscellaneou	<u>US</u>	<u>Confirmation</u>	Environmental Con- firmations	Environmental Con- firmations

	ther	information	
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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=3RT2015-1BB42

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2015-1BB42

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2015-1BB4

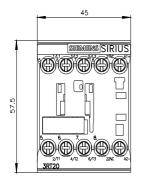
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

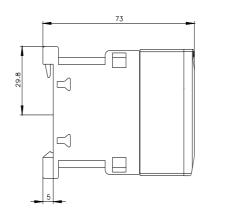
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2015-1BB42&lang=en

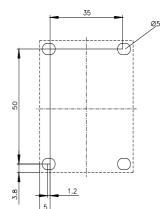
Characteristic: Tripping characteristics, I²t, Let-through current

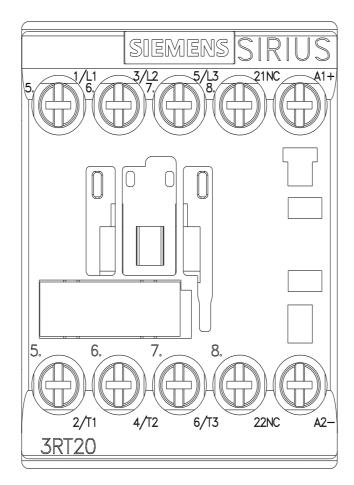
https://support.industry.siemens.com/cs/ww/en/ps/3RT2015-1BB42/char

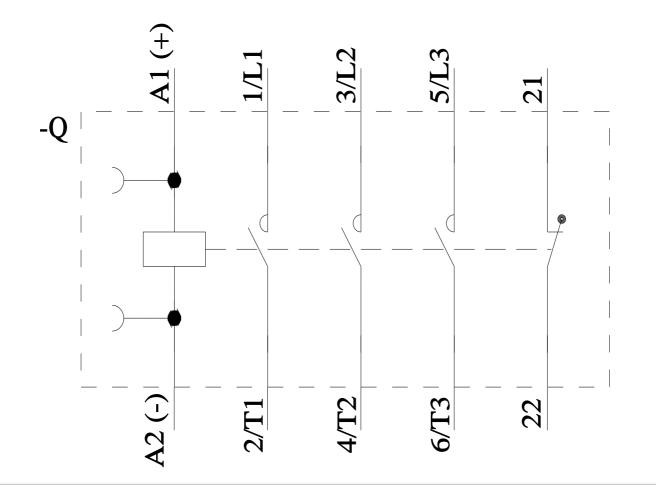
Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2015-1BB42&objecttype=14&gridview=view1











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