SIEMENS

Data sheet

3RT2016-1BB42



Power contactor, AC-3 9 A, 4 kW / 400 V 1 NC, 24 V DC 3-pole, Size S00 screw terminal

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	2.1 W		
per pole	0.7 W		
power loss [W] for rated value of the current without load current share typical	4 W		
surge voltage resistance			
 of main circuit rated value 	6 kV		
 of auxiliary circuit rated value 	6 kV		
maximum permissible voltage for safe isolation between coil and main contacts acc. 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 (switching 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 acc. to IEC 81346-2	Q		
Substance Prohibitance (Date)	01.10.2009		
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 acc. 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		

operational current 22 A att AC-1 22 A - up to 640 V at ambient temperature 40 °C 22 A - up to 640 V att ambient temperature 40 °C 22 A - up to 640 V att ambient temperature 60 °C 22 A - att AC-3 9 - att AC-3 9 - att AC-4 9 - att AC-3 9 - att AC-4 9 - att AC-4 9 - att AC-5 9 - att AC-4 9 - att AC-4 9 - up to 500 V trade value 9 - up to 500 V to rated value 9 - up to 500 V tor current peak value n=20 rated 5.3 A value - up to 500 V tor current peak value n=20 rated 5.3 A value - up to 500 V tor current peak value n=20 rated 3.5 A value - att AC-4 3.5 A - up to 500 V tor current peak value n=30 rated 3.5 A value - att AC-4 - att AC-4 - up to 400 V tor current peak value n=30 rated 3.5 A value 3.5 A	operating voltage at AC-3 rated value maximum	690 V
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 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 tkV·A 3.1 kV·A tkV·A 	 up to 690 V for current peak value n=20 rated value 	5.9 kV·A
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• up to 690 V for current peak value n=30 rated value 4 kV·A short-time withstand current in cold operating state up to 40 °C - • limited to 1 s switching at zero current maximum 155 A; Use minimum cross-section acc. to AC-1 rated value		
short-time withstand current in cold operating state up to 40 °C • • limited to 1 s switching at zero current maximum 155 A; Use minimum cross-section acc. to AC-1 rated value		
 up to 40 °C limited to 1 s switching at zero current maximum 155 A; Use minimum cross-section acc. to AC-1 rated value 		4 KV·A
• limited to 1 s switching at zero current maximum 155 A; Use minimum cross-section acc. to AC-1 rated value		
	-	155 A; Use minimum cross-section acc. to AC-1 rated value
- initia to o o ovitaling at zero autont maximum	 limited to 5 s switching at zero current maximum 	111 A; Use minimum cross-section acc. to AC-1 rated value

- limited to 10 a switching at some surrout requireurs	00 At the minimum energy continue and to AC 4 rated value				
Imited to 10 s switching at zero current maximum	86 A; Use minimum cross-section acc. to AC-1 rated value				
Imited to 30 s switching at zero current maximum	66 A; Use minimum cross-section acc. to AC-1 rated value				
Imited to 60 s switching at zero current maximum	55 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-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	30 100 ms				
opening delay					
• at DC	7 13 ms				
arcing time	10 15 ms				
control version of the switch operating mechanism	 Standard A1 - A2				
Auxiliary circuit					
number of NC contacts for auxiliary contacts instantaneous contact	1				
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 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	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	0.33 hp 1 hp				
	ЧП				

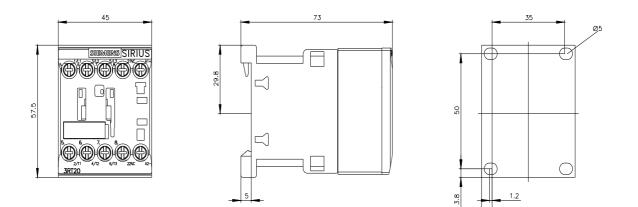
- for 2 phone AC				
for 3-phase AC motor at 200/200 V reted value	2 hz			
- at 200/208 V rated value	2 hp			
- at 220/230 V rated value	3 hp			
— at 460/480 V rated value	5 hp			
— at 575/600 V rated value	7.5 hp			
contact rating of auxiliary contacts according to UL	A600 / Q600			
Short-circuit protection				
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,			
 for short-circuit protection of the auxiliary switch 	80kA) gG: 10 A (500 V, 1 kA)			
required	gg. 10 A (500 V, T 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	screw and snap-on mounting onto 35 mm standard mounting 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			
— 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 mm²), 2x (0.75 2.5 mm²)			
 at AWG cables for main contacts 	2x (20 16), 2x (18 14), 2x 12			
connectable conductor cross-section for main				
contacts	0.5 4 mm²			
• solid	0.5 4 mm ²			
• stranded	0.5 4 mm ²			
finely stranded with core end processing	0.5 2.5 mm ²			
connectable conductor cross-section for auxiliary contacts				
 solid or stranded 	0.5 4 mm²			
 finely stranded with core end processing 	0.5 2.5 mm ²			
type of connectable conductor cross-sections				

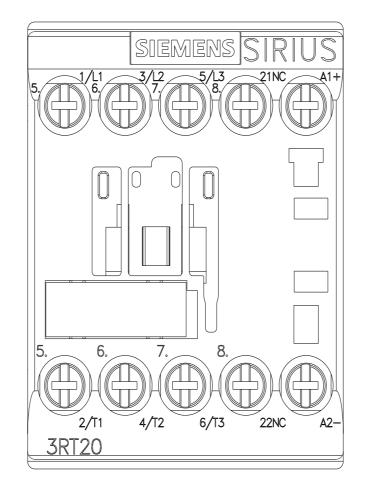
 for auxiliary cor 	itacts					
— solid or str			2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²			
- finely strar	y stranded with core end processing			5 1.5 mm²), 2x (0.75		
•	WG cables for auxiliary contacts			0 16), 2x (18 14), 1		
AWG number as coded connectable conductor cross section		X				
 for main contact 	ts		20	12		
 for auxiliary cor 	itacts		20	12		
Safety related data						
B10 value with high d	emand rate acc. to SN	31920	1 000 000			
proportion of dange	rous failures					
 with low deman 	d rate acc. to SN 31920)	40 %			
 with high dema 	nd rate acc. to SN 3192	0	73 %			
	ow demand rate acc. to		100 F	ΊΤ		
T1 value for proof te IEC 61508	st interval or service l	ife acc. to	20 y			
	on the front acc. to IEC	60529	IP20			
	the front acc. to IEC 6			-safe, for vertical conta	act from the front	
suitability for use			iniger			
 safety-related s 	witching OFF		Yes			
Certificates/ approval	-					
General Product Ap						
General Froduct Ap	provar					
SP CAA		<u>Confirmatic</u>	<u>on</u>		<u>KC</u>	EHC
EMC	Functional Safety/Safety of Machinery	Declaration of Conformity		ormity	Test Certificates	
RCM	<u>Type Examination</u> <u>Certificate</u>	<u>UK Declaration of</u> <u>Conformity</u>		EG-Konf.	<u>Type Test Certific-</u> ates/Test Report	Special Test Certific- ate
Marine / Shipping						
ABS	B U R E A U VERITAS			Llovds Register urs	PRS	RINA
Marine / Shipping	other			Dangerous Good		
	<u>Confirmation</u>	UDE VDE	•	<u>Transport Informa-</u> tion		
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=3RT2016-1BB42 Cax online generator http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-1BB42						

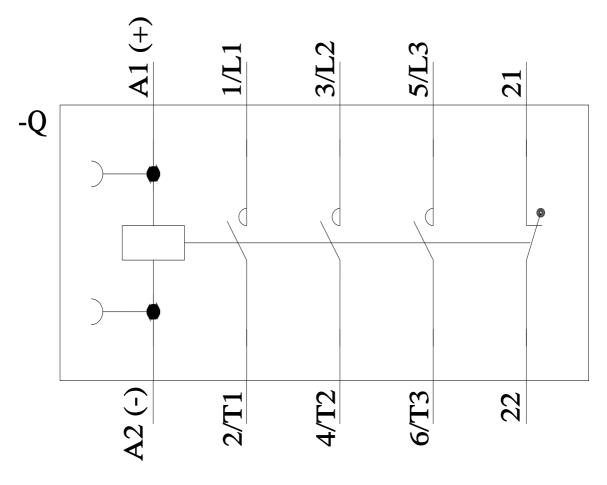
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1BB42

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-1BB42&lang=en Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1BB42/char Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2016-1BB42&objecttype=14&gridview=view1







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