SIEMENS

Data sheet

3RT2016-2BE42



power contactor, AC-3e/AC-3, 9 A, 4 kW / 400 V, 3-pole, 60 V DC, auxiliary contacts: 1 NC, spring-loaded 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 	0.9 W
 at AC in hot operating state per pole 	0.3 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 ∨
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)	
Weight	0.317 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	22 A
 at AC-1 — up to 690 V at ambient temperature 40 °C rated 	22 A
value — up to 690 V at ambient temperature 60 °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	
— up to 230 V for current peak value n=20 rated value	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
— up to 690 V for current peak value n=20 rated value	5 A
• at AC-6a	
— up to 230 V for current peak value n=30 rated value	3.5 A
— up to 400 V for current peak value n=30 rated value	3.5 A
— up to 500 V for current peak value n=30 rated value	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 mm ²
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 24 V rated value — at 60 V rated value	20 A 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	
— at 24 V rated value	20 A
— at 60 V rated value	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

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- af 24 Y died value20 A- af 60 Y rated value0.5 A- af 60 Y rated value0.5 A- af 60 Y rated value20 A- af 60 Y rated value20 A- af 60 Y rated value0.5 A- af 60 Y rated value0.5 A- af 74 Y rated value20 A- af 740 Y rated value22 K W- af 740 Y rated value24 K N- af 740 Y rated value28 K N- af 740 Y rated value28 K N- af 740 Y rated value m20 rated value36 K N- af 740 Y rated value m20 rated value36 K N- af 740 Y rated value m20 rated value36 K N- af 740 Y rated value m20 rated value36 K N- af 740 Y rated value m20 rated value36 K N- af 740 Y rated value m20 rated value36 K N- af 740 Y rated		IA			
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operating apparent power at AC-6aI.3 kVA• up to 230 V for current peak value n=30 rated value1.3 kVA• up to 400 V for current peak value n=30 rated value2.4 kVA• up to 500 V for current peak value n=30 rated value3.1 kVA• up to 690 V for current peak value n=30 rated value4 kVAshort-time withstand current in cold operating state up to 40 °C40 °C• limited to 1 s switching at zero current maximum155 A; Use minimum cross-section acc. to AC-1 rated value• limited to 1 s switching at zero current maximum111 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum50 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• at DC10 000 1/h <td< td=""><td> up to 500 V for current peak value n=20 rated value </td><td>4.6 kVA</td></td<>	 up to 500 V for current peak value n=20 rated value 	4.6 kVA			
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• up to 230 V for current peak value n=30 rated value1.3 kVA• up to 400 V for current peak value n=30 rated value2.4 kVA• up to 500 V for current peak value n=30 rated value3.1 kVA• up to 690 V for current peak value n=30 rated value4 kVA• up to 690 V for current peak value n=30 rated value4 kVA• up to 690 V for current peak value n=30 rated value4 kVA• up to 690 V for current peak value n=30 rated value4 kVA• up to 690 V for current peak value n=30 rated value4 kVA• up to 690 V for current peak value n=30 rated value4 kVA• up to 690 V for current peak value n=30 rated value4 kVA• up to 690 V for current peak value n=30 rated value4 kVA• up to 690 V for current peak value n=30 rated value4 kVA• up to 690 V for current peak value n=30 rated value4 kVA• up to 500 V for current peak value n=30 rated value4 kVA• up to 690 V for current peak value n=30 rated value4 kVA• limited to 1 s switching at zero current maximum155 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum10 000 1/h• at DC10 000 1/h• at DC10 000 1/h• at AC-1 maximum1 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h	operating apparent power at AC-6a				
• up to 400 V for current peak value n=30 rated value2.4 kVA• up to 500 V for current peak value n=30 rated value3.1 kVA• up to 690 V for current peak value n=30 rated value4 kVA• abort-time withstand current in cold operating state up to 40°C		1.3 kVA			
• up to 500 V for current peak value n=30 rated value3.1 kVA• up to 690 V for current peak value n=30 rated value4 kVAshort-time withstand current in cold operating state up to 40°C4 kVA• limited to 1 s switching at zero current maximum155 A; Use minimum cross-section acc. to AC-1 rated value• limited to 1 s switching at zero current maximum111 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum1000 1/h• at DC10000 1/h• at AC-1 maximum1000 1/h• at AC-1 maximum1000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h		2.4 kVA			
• up to 690 V for current peak value n=30 rated value4 kVAshort-time withstand current in cold operating state up to 40 °C4• limited to 1 s witching at zero current maximum155 A; Use minimum cross-section acc. to AC-1 rated value• limited to 5 s witching at zero current maximum111 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s witching at zero current maximum86 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s witching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum106 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum1000 1/h• at DC10 000 1/h• at AC-1 maximum1 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h		3.1 kVA			
short-time withstand current in cold operating state up to 40 °C155 A; Use minimum cross-section acc. to AC-1 rated value• limited to 1 s switching at zero current maximum155 A; Use minimum cross-section acc. to AC-1 rated value• limited to 5 s switching at zero current maximum111 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum86 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching frequency10 000 1/h• at DC10 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h		4 kVA			
• limited to 5 s switching at zero current maximum111 A; Use minimum cross-section acc. to AC-1 rated value• limited to 10 s switching at zero current maximum86 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• at DC10 000 1/h• at DC10 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h	short-time withstand current in cold operating state up to				
• limited to 10 s switching at zero current maximum86 A; Use minimum cross-section acc. to AC-1 rated value• limited to 30 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated value• no-load switching frequency55 A; Use minimum cross-section acc. to AC-1 rated value• at DC10 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h	 limited to 1 s switching at zero current maximum 	155 A; Use minimum cross-section acc. to AC-1 rated value			
• limited to 30 s switching at zero current maximum66 A; Use minimum cross-section acc. to AC-1 rated value• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated valueno-load switching frequency10 000 1/h• at DC10 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum1 000 1/h• at AC-3 maximum750 1/h• at AC-3 maximum750 1/h	 limited to 5 s switching at zero current maximum 	111 A; Use minimum cross-section acc. to AC-1 rated value			
• limited to 60 s switching at zero current maximum55 A; Use minimum cross-section acc. to AC-1 rated valueno-load switching frequency-• at DC10 000 1/hoperating frequency-• at AC-1 maximum1 000 1/h• at AC-2 maximum1 000 1/h• at AC-3 maximum750 1/h• at AC-3 maximum750 1/h	 limited to 10 s switching at zero current maximum 	86 A; Use minimum cross-section acc. to AC-1 rated value			
no-load switching frequency 10 000 1/h • 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	 limited to 30 s switching at zero current maximum 	66 A; Use minimum cross-section acc. to AC-1 rated value			
• 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	 limited to 60 s switching at zero current maximum 	55 A; Use minimum cross-section acc. to AC-1 rated value			
operating frequency1 000 1/h• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 1/h	no-load switching frequency				
• at AC-1 maximum 1 000 1/h • at AC-2 maximum 750 1/h • at AC-3 maximum 750 1/h	• at DC	10 000 1/h			
• at AC-2 maximum 750 1/h • at AC-3 maximum 750 1/h	operating frequency				
• at AC-3 maximum 750 1/h	• at AC-1 maximum	1 000 1/h			
	• at AC-2 maximum	750 1/h			
• at AC-3e maximum 750 1/h	• at AC-3 maximum	750 1/h			
	● at AC-3e maximum	750 1/h			

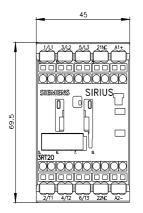
● at AC-4 maximum	250 1/h			
at AC-4 maximum Control circuit/ Control				
type of voltage of the control supply voltage	DC			
control supply voltage at DC rated value	60 V			
operating range factor control supply voltage rated value of magnet coil at DC				
initial value	0.8			
full-scale value	1.1			
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			
 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			
• for 3-phase AC motor				
— 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, 80kA)			

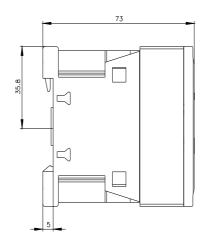
for short-circuit protection of the auxiliary switch required

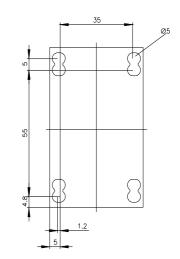
gG: 10 A (500 V, 1 kA)

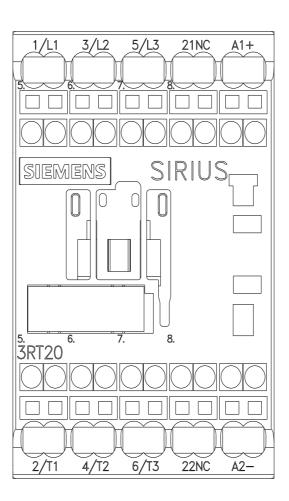
Installation/ mounting/ dimensions				
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface			
fastening method	screw and snap-on mounting onto 35 mm DIN rail according to DIN EN 60715			
height	70 mm			
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	spring-loaded terminals			
for auxiliary and control circuit	spring-loaded terminals			
at contactor for auxiliary contacts	Spring-type terminals			
of magnet coil	Spring-type terminals			
type of connectable conductor cross-sections				
for main contacts	0.405.4.3			
— solid	2x (0.5 4 mm ²)			
— solid or stranded	2x (0,5 4 mm ²)			
 finely stranded with core end processing 	2x (0.5 2.5 mm ²)			
— finely stranded without core end processing	2x (0.5 2.5 mm ²)			
• for AWG cables for main contacts	2x (20 12)			
connectable conductor cross-section for main contacts solid 	0.5 4 mm²			
solu stranded	0.5 4 mm ²			
 finely stranded with core end processing 	0.5 4 mm 0.5 2.5 mm ²			
 finely stranded with core end processing finely stranded without core end processing 	0.5 2.5 mm ²			
connectable conductor cross-section for auxiliary contacts	0.5 2.5 mm			
solid or stranded	0.5 4 mm²			
 finely stranded with core end processing 	0.5 4 mm ²			
 finely stranded with core end processing finely stranded without core end processing 	0.5 2.5 mm ²			
type of connectable conductor cross-sections				
for auxiliary contacts				
— solid or stranded	2x (0,5 4 mm²)			
 — finely stranded with core end processing 	2x (0.5 2.5 mm ²)			
 — finely stranded without core end processing 	2x (0.5 2.5 mm ²)			
for AWG cables for auxiliary contacts	2x (20 12)			
AWG number as coded connectable conductor cross 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			

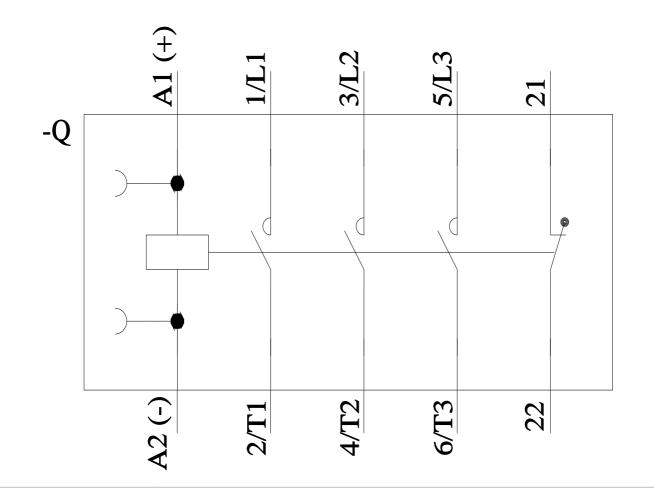
	hy related antitable - OFF		Vac			
	ty-related switching OFF		Yes 20 a			
service life maximum						
test wear-related ser	-		Yes			
proportion of danger	ous failures					
 with low deman 	d rate according to SN 319	20	40 %			
 with high deman 	nd rate according to SN 31	920	73 %			
B10 value with high of	demand rate according to	SN 31920	1 000	000		
failure rate [FIT] with 31920	low demand rate accord	ing to SN	100 F	IT		
ISO 13849						
device type accordin	g to ISO 13849-1		3			
	cording to ISO 13849-2 n	ecessary	Yes			
IEC 61508						
	cording to IEC 61508-2	_	Туреи	٨		
			Type			
Electrical Safety			1000			
-	n the front according to I		IP20		· · · ·	
-	the front according to IEC	60529	finger	-safe, for vertical contact	from the front	
Approvals Certificates						
General Product App	proval					
CE EG-Konf.	UK CA			<u>Confirmation</u>	U	<u>KC</u>
General Product Approval	EMV	Functional Saft	tey	Test Certificates		Marine / Shipping
EHC	RCM	<u>Type Examinatior</u> <u>tificate</u>	<u>n Cer-</u>	Special Test Certific- ate	<u>Type Test Certific-</u> ates/Test Report	ABS
Marine / Shipping						other
BUREAU VERITAS		PRS		RINA	RMRS RMRS	<u>Miscellaneous</u>
other	Railway	Dangerous goo	ods	Environment		
<u>Confirmation</u>	Special Test Certific- ate	Transport Inform	<u>ation</u>	EPD	Environmental Con- firmations	
Further information						
Information on the pa						
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=3RT2016-2BE42						
Cax online generator						
	http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2016-2BE42 Service&Support (Manuals, Certificates, Characteristics, FAQs,)					
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