SIEMENS

Data sheet

3RT2018-1BM41



power contactor, AC-3e/AC-3, 16 A, 7.5 kW / 400 V, 3-pole, 220 V DC, auxiliary contacts: 1 NO, 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 	3 W			
 at AC in hot operating state per pole 	1 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	7.3g / 5 ms, 4.7g / 10 ms			
shock resistance with sine pulse				
• at DC	11,4g / 5 ms, 7,3g / 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	0.3 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	16 A
— at 500 V rated value	12.4 A
— at 690 V rated value	8.9 A
• at AC-3e	
— at 400 V rated value	16 A
— at 500 V rated value	12.4 A
— at 690 V rated value	8.9 A
• at AC-4 at 400 V rated value	11.5 A
 at AC-5a up to 690 V rated value 	19.4 A
 at AC-5b up to 400 V rated value 	13.2 A
● at AC-6a	
 — up to 230 V for current peak value n=20 rated value 	9.6 A
— up to 400 V for current peak value n=20 rated value	9.6 A
— up to 500 V for current peak value n=20 rated value	9.6 A
— up to 690 V for current peak value n=20 rated value	8.9 A
at AC-6a up to 230 V for current peak value n=30 rated value	664
 up to 230 V for current peak value n=30 rated value up to 400 V for current peak value n=30 rated value 	6.6 A
 — up to 400 V for current peak value n=30 rated value — up to 500 V for current peak value n=30 rated value 	6.4 A 6.4 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 	6.4 A
minimum cross-section in main circuit at maximum AC-1 rated	0.4 A 4 mm ²
value operational current for approx. 200000 operating cycles at	
AC-4	
• at 400 V rated value	5.5 A
• at 690 V rated value	4.4 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	20.4
- 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 — at 440 V rated value	1.6 A 0.8 A
	0.7 A
— at 600 V rated value	U.I A

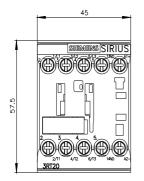
• with 2 during paths in Series at U-1		
	with 3 current paths in series at DC-1	
- at 40 V mice value13.A- at 40 V mice value1A- at 30 V ratic value20.A- at 30 V ratic value0.5 A- at 10 V ratic value0.15 A- at 10 V ratic value20.A- at 20 V ratic value75 KW- at 20 V ratic value25 KW- at 20 V ratic value25 KW- at 20 V ratic value25 KW- at 20 V ratic value38 KW- at 20 V ratic value38 KW- at 20 V ratic value38 KW- at 20 V ratic value25 KW- at 20 V ratic value38 KW <trr>- at 20 V ratic value38 KW<td></td><td></td></trr>		
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		1 A
- af 60 Y taidet value0.5 A- af 11 V Y taidet value0.15 A- af 24 Y taidet value20 A- af 24 Y taidet value20 A- af 30 V taidet value0.35 A- aft 30 V taidet value20 A- aft 40 V tradet value20 A- aft 400 V tradet value20 A- aft 400 V tradet value7.5 kW- aft 400 V tradet value2.5 kW- aft 400 V tradet value2.5 kW- aft 400 V tradet value3.6 kVA- aft 400 V tradet value3.6 kVA- aft 400 V fradet value3.6 kVA- aft 400 V fradet value ne-20 rated value3.6 kVA- aft 400 V fradet value ne-20 rated value3.6 kVA- aft 400 V fradet value ne-20 rated value3.6 kVA- aft 400 V fradet value ne-20 rated value4.6 kVA- aft 400 V fradet value ne-20 rated value4.6 kVA- aft 400 V fradet value ne-20 rated value	-	
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	-	
with 3 current paths in series at DC-3 at DC-3		
		0.35 A
- at 110 V rated value20 A- at 220 V rated value1.5 A- at 600 V rated value0.2 Aoperating power0.2 A- at 600 V rated value0.2 A- at 230 V rated value7.5 kW- at 600 V rated value8.5 kW- at 600 V rated value8.5 kW- at 600 V rated value8.5 kW- at 600 V rated value - 20 rated value8.3 kVA• up 6 200 V for current pack value n=20 rated value8.3 kVA• up 6 500 V for current pack value n=20 rated value8.3 kVA• up 6 200 V for current pack value n=30 rated value7.6 kVA• up 6 200 V for current pack value n=30 rated value7.6 kVA• up 6 200 V for current pack value n=30 rated value7.6 kVA• up 6 200 V for current pack value n=30 rated value7.6 kVA• up 6 200 V for current pack value n=30 rated value7.6 kVA• up 6 200 V for current pack value n=30 rated value7.6 kVA• up 6 200 V for		
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• up to 500 V for current peak value n=30 rated value5.5 kVA• up to 690 V for current peak value n=30 rated value7.6 kVAshort-time withstand current in cold operating state up to 40 °C*********************************		
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• limited to 60 s switching at zero current maximum 74 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 1000 1/h • at AC-2 maximum 1000 1/h • at AC-2 maximum 750 1/h • at AC-3 maximum 750 1/h	 limited to 10 s switching at zero current maximum 	128 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency I0 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 	92 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 	74 A; Use minimum cross-section acc. to AC-1 rated value
operating frequency 1 000 1/h • at AC-1 maximum 1 000 1/h • at AC-2 maximum 750 1/h • at AC-3 maximum 750 1/h	no-load switching frequency	
• at AC-1 maximum1 000 1/h• at AC-2 maximum750 1/h• at AC-3 maximum750 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

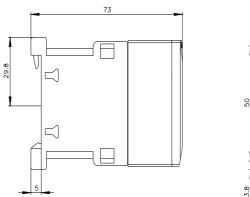
● at AC-4 maximum	250 1/h		
Control circuit/ Control	250 1/11		
	20		
type of voltage of the control supply voltage	DC		
control supply voltage at DC rated value	220 V		
operating range factor control supply voltage rated value of magnet coil at DC			
initial value	0.8		
full-scale value	1.1		
closing 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 NO 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	14 A		
at 600 V rated value	11 A		
yielded mechanical performance [hp]			
 for single-phase AC motor 			
— at 110/120 V rated value	1 hp		
— at 230 V rated value	2 hp		
 for 3-phase AC motor 			
— at 200/208 V rated value	3 hp		
— at 220/230 V rated value	5 hp		
— at 460/480 V rated value	10 hp		
— at 575/600 V rated value	10 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: 50A (690V,100kA), aM: 25A (690V,100kA), BS88: 50A (415V,80kA)		
 — with type of assignment 2 required 	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)		

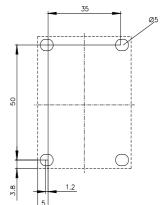
gG: 10 A (500 V, 1 kA)

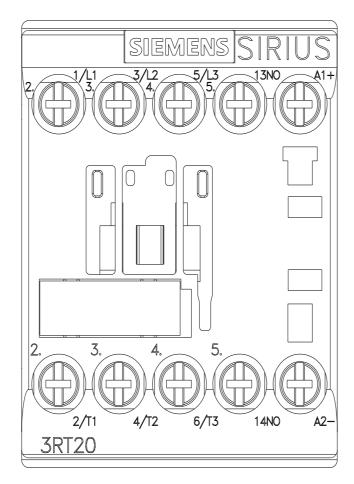
Installation/ mounting/ dimensions			
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface		
fastening method side-by-side mounting	Yes		
fastening method	screw and snap-on mounting onto 35 mm DIN rail according 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 mm²), 2x (0.75 2.5 mm²)		
 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 mm²		
• stranded	0.5 4 mm²		
 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 mm ²		
 finely stranded with core end processing 	0.5 2.5 mm ²		
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		
 finely stranded with core end processing 	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)		
 for AWG cables for auxiliary contacts 	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		
Safety related data			
product function			
	Yes; with 3RH29		
	,		
 mirror contact according to IEC 60947-4-1 positively driven operation according to IEC 60947-5-1 	No		
positively driven operation according to IEC 60947-5-1	No		
 positively driven operation according to IEC 60947-5-1 suitable for safety function 	Yes		
• positively driven operation according to IEC 60947-5-1			

proportion of dangero	ous failures					
• with low demand rate according to SN 31920		40 %				
• with high demand rate according to SN 31920		73 %				
B10 value with high d	emand rate according to	SN 31920	1 000	000		
failure rate [FIT] with low demand rate according to SN 31920		100 F	IT			
ISO 13849						
device type according	to ISO 13849-1		3			
overdimensioning acc	ording to ISO 13849-2 n	ecessary	Yes			
IEC 61508						
safety device type acc	cording to IEC 61508-2		Туре	A		
Electrical Safety						
protection class IP on	the front according to I	EC 60529	IP20			
touch protection on th	ne front according to IEC	60529	finger	-safe, for vertical contact	from the front	
pprovals Certificates						
General Product App	roval					
CE EG-Konf.	UK CA			<u>Confirmation</u>		KC
General Product Approval	EMV	Functional Saf	tey	Test Certificates		Marine / Shipping
EHC	RCM	<u>Type Examinatio</u> tificate	<u>n Cer-</u>	Type Test Certific- ates/Test Report	Special Test Certific- ate	ABS
Marine / Shipping						other
BUREAU VERITAS		PRS		RINA	RMRS	<u>Miscellaneous</u>
other	Railway	Dangerous goo	ods	Environment		
<u>Confirmation</u>	Special Test Certific- ate	Transport Information		EPD	Environmental Con- firmations	
Information- and Dow https://www.siemens.cc/ Industry Mall (Online of https://mall.industry.sier Cax online generator http://support.automatic Service&Support (Mar https://support.industry.	<u>siemens.com/cs/ww/en/vi</u> nloadcenter (Catalogs, E om/ic10	Brochures,) alog/product?mlfb= order/default.aspx acteristics, FAQs s/3RT2018-1BM41	<u>?lang=e</u> ,) <u>l</u>	en&mlfb=3RT2018-1BM4	_	
http://www.automation.s	siemens.com/bilddb/cax_c ng characteristics, I ² t, Le siemens.com/cs/ww/en/ps	de.aspx?mlfb=3RT et-through current	<u>2018-11</u> t		., <u></u>	
Further characteristic	s (e.g. electrical endurar	nce, switching fre	quency	/) =3RT2018-1BM41&objec	ttype=14&gridview=view1	

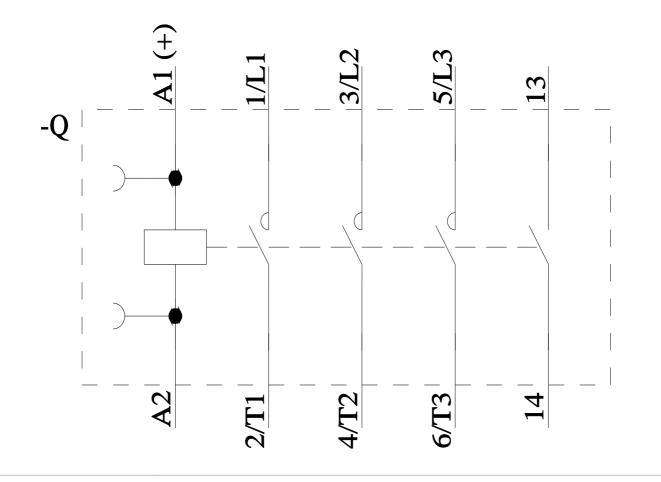








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