SIEMENS

Data sheet

3RT2018-1AB01



power contactor, AC-3e/AC-3, 16 A, 7.5 kW / 400 V, 3-pole, 24 V AC, 50/60 Hz, 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 	1.5 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 AC	7,3g / 5 ms, 4,7g / 10 ms			
shock resistance with sine pulse				
• at AC	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			
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				

	Vec		
Environmental Product Declaration(EPD)	Yes 30.6 kg		
Global Warming Potential [CO2 eq] total	39.6 kg		
Global Warming Potential [CO2 eq] during manufacturing	1.18 kg		
Global Warming Potential [CO2 eq] during operation	38.5 kg		
Global Warming Potential [CO2 eq] after end of life	-0.155 kg		
Main circuit	2		
number of poles for main current circuit number of NO contacts for main contacts	3 3		
operating voltage	5		
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 value	22 A		
— 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 • at AC-3e	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 	6.6 A		
 — up to 400 V for current peak value n=30 rated value 	6.4 A		
 — up to 500 V for current peak value n=30 rated value 	6.4 A		
— 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 value	4 mm ²		
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 — at 600 V rated value	0.6 A 0.6 A		
with 2 current paths in series at DC-1	0.0 A		
- 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		
• with 3 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	20 A				
— at 220 V rated value	20 A				
— at 440 V rated value	1.3 A				
— at 600 V rated value	1 A				
 at 1 current path at DC-3 at DC-5 					
— at 24 V rated value	20 A				
— at 60 V rated value	0.5 A				
— at 110 V rated value	0.15 A				
 with 2 current paths in series at DC-3 at DC-5 					
— at 24 V rated value	20 A				
— at 60 V rated value	5 A				
— at 110 V rated value	0.35 A				
 with 3 current paths in series at DC-3 at DC-5 					
— 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	4 kW				
— at 400 V rated value	7.5 kW				
— at 500 V rated value	7.5 kW				
— at 690 V rated value	7.5 kW				
• at AC-3e					
— at 230 V rated value	4 kW				
— at 400 V rated value	7.5 kW				
— at 500 V rated value	7.5 kW				
— at 690 V rated value	7.5 kW				
operating power for approx. 200000 operating cycles at AC- 4					
 at 400 V rated value 	2.5 kW				
at 690 V rated value	3.5 kW				
operating apparent power at AC-6a	0.0 KW				
up to 230 V for current peak value n=20 rated value	3.8 kVA				
• up to 400 V for current peak value n=20 rated value	6.6 kVA				
• up to 500 V for current peak value n=20 rated value	8.3 kVA				
• up to 690 V for current peak value n=20 rated value	10.6 kVA				
operating apparent power at AC-6a	10.0 КУЛ				
up to 230 V for current peak value n=30 rated value	2.5 kVA				
 up to 250 v for current peak value n=30 rated value up to 400 V for current peak value n=30 rated value 	4.4 kVA				
 up to 500 V for current peak value n=30 rated value 	5.5 kVA				
• up to 690 V for current peak value n=30 rated value	7.6 kVA				
short-time withstand current in cold operating state up to					
40 °C					
 limited to 1 s switching at zero current maximum 	300 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 5 s switching at zero current maximum 	169 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 10 s switching at zero current maximum 	128 A; Use minimum cross-section acc. to AC-1 rated value				
 limited to 30 s switching at zero current maximum 	92 A; Use minimum cross-section acc. to AC-1 rated value				
 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 AC	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	AC			
control supply voltage at AC				
• at 50 Hz rated value	24 V			
• at 60 Hz rated value	24 V			
operating range factor control supply voltage rated value of				
magnet coil at AC				
• at 50 Hz	0.8 1.1			
• at 60 Hz	0.85 1.1			
apparent pick-up power of magnet coil at AC				
• at 50 Hz	37 VA			
• at 60 Hz	33 VA			
inductive power factor with closing power of the coil • at 50 Hz	0.8			
• at 50 Hz	0.75			
apparent holding power of magnet coil at AC				
at 50 Hz	5.7 VA			
• at 60 Hz	4.4 VA			
inductive power factor with the holding power of the coil				
• at 50 Hz	0.25			
• at 60 Hz	0.25			
closing delay				
• at AC	9 35 ms			
opening delay				
• at AC	4 15 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	1A			
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 1 A			
 at 110 V rated value at 125 V rated value 	1 A 0.9 A			
at 125 V rated value at 220 V rated value	0.9 A 0.3 A			
at 220 V rated value 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			

a for 2 phase AC motor					
for 3-phase AC motor at 200/208 V setect value	2 hz				
- 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 with type of coordination 2 required 	gG: 50A (690V,100kA), aM: 25A (690V,100kA), BS88: 50A (415V,80kA)				
 — with type of assignment 2 required a for abort circuit protection of the quiviliant quitab required 	gG: 25A (690V,100kA), aM: 20A (690V,100kA), BS88: 25A (415V,80kA)				
for short-circuit protection of the auxiliary switch required Installation/ mounting/ dimensions	gG: 10 A (500 V, 1 kA)				
	1/ 100° retation people on vertical mounting outpace, can be tilted forward and				
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	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 mm²				
connectable conductor cross-section for auxiliary contacts					
solid or stranded	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				
 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					
3000011					

 for main contacts 	3		20	12			
for auxiliary contacts			20 12				
Safety related data							
product function							
mirror contact according to IEC 60947-4-1			Yes; v	Yes; with 3RH29			
suitability for use safety-related switching OFF			Yes; applies only to contactor operating mechanism				
proportion of dangero	ous failures						
 with low demand 	I rate according to SN 319	920	40 %				
 with high deman 	d rate according to SN 31	920	73 %				
B10 value with high d	emand rate according to	o SN 31920	1 000 000				
failure rate [FIT] with 31920	low demand rate accord	ling to SN	100 FIT				
IEC 61508							
T1 value							
 for proof test inte 61508 	erval or service life accord	ling to IEC	20 a				
Electrical Safety							
protection class IP on	the front according to	IEC 60529	IP20				
	he front according to IE	C 60529	finger	-safe, for vertical contact f	from the front		
Approvals Certificates							
General Product App		CE EG-Konf.		UK CA	Confirmation		
General Product App	roval	EMV		Functional Saftey	Test Certificates		
<u>KC</u>	EAC	RCM	•	<u>Type Examination Cer-</u> <u>tificate</u>	<u>Type Test Certific-</u> ates/Test Report	<u>Special Test Certific-</u> <u>ate</u>	
Marine / Shipping							
ABS	BUREAU VERITAS			Lloydis Register us	PRS	RINA	
Marine / Shipping	other				Railway	Environment	
RMRS	Miscellaneous	<u>Confirmation</u>	<u>on</u>	<u>Confirmation</u>	<u>Special Test Certific-</u> <u>ate</u>	EPD	
Environment							
Environmental Con- firmations							

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2018-1AB01

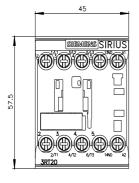
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

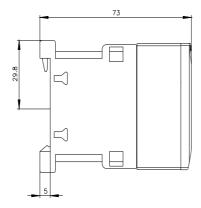
https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-1AB01

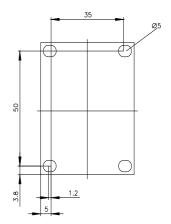
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2018-1AB01&lang=en

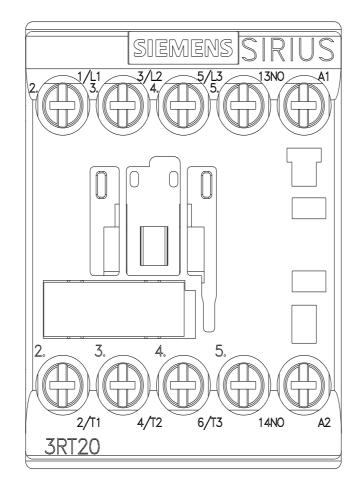
Characteristic: Tripping characteristics, I2t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2018-1AB01/char

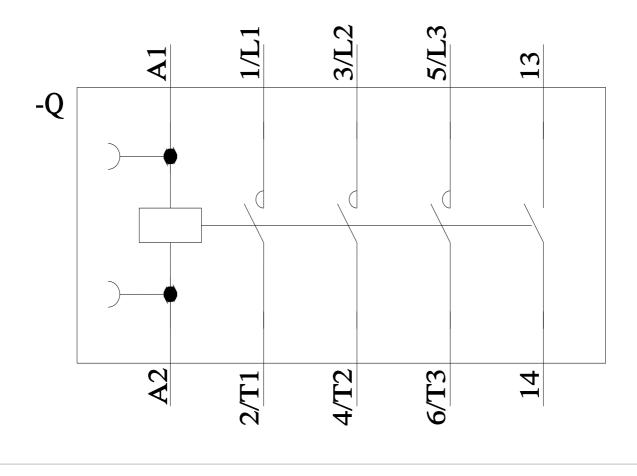
Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2018-1AB01&objecttype=14&gridview=view1











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