SIEMENS

Data sheet

3RT2017-2AP02-1AA0



power contactor, AC-3e/AC-3, 12 A, 5.5 kW / 400 V, 3-pole, 230 V AC, 50/60 Hz, auxiliary contacts: 1 NC, spring-loaded terminal, size: S00, upright mounting position

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 	1.5 W
 at AC in hot operating state per pole 	0.5 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
Weight	0.255 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	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	
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 	22 A
— 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	12 A
— at 500 V rated value	9.2 A
— at 690 V rated value	6.7 A
• at AC-3e	
— at 400 V rated value	12 A
— at 500 V rated value	9.2 A
- at 690 V rated value	6.7 A
at AC-4 at 400 V rated value	8.5 A 19.4 A
 at AC-5a up to 690 V rated value at AC-5b up to 400 V rated value 	9.9 A
• at AC-6a	5.5 A
 up to 230 V for current peak value n=20 rated value 	7.2 A
— up to 400 V for current peak value n=20 rated value	7.2 A
— up to 500 V for current peak value n=20 rated value	7.2 A
— up to 690 V for current peak value n=20 rated value	6.7 A
● at AC-6a	
 — up to 230 V for current peak value n=30 rated value 	4.8 A
— up to 400 V for current peak value n=30 rated value	4.8 A
 — up to 500 V for current peak value n=30 rated value 	4.8 A
— up to 690 V for current peak value n=30 rated value	4.8 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 60 V rated value	20 A 20 A
— at 100 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

- with 2 surrant action in carias at DC 4					
with 3 current paths in series at DC-1 — at 24 V rated value	20.4				
— at 60 V rated value	20 A				
— at 110 V rated value	20 A				
	20 A 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	20 A				
— at 24 V rated value	20 A				
— at 60 V rated value — at 110 V rated value	0.5 A				
	0.15 A				
with 2 current paths in series at DC-3 at DC-5 at 24 // reted value	20.4				
— 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	20 A				
— at 24 V rated value	20 A				
- at 60 V rated value	20 A 20 A				
— at 110 V rated value					
— at 220 V rated value	1.5 A				
— at 440 V rated value	0.2 A				
— at 600 V rated value	0.2 A				
• at AC-2 at 400 V rated value	5.5 kW				
• at AC-3	0.0 KVV				
 at AC-3 — at 230 V rated value 	3 kW				
— at 400 V rated value	5.5 kW				
— at 500 V rated value	5.5 kW				
— at 690 V rated value	5.5 kW				
• at AC-3e	5.5 KVV				
- at 230 V rated value	3 kW				
— at 400 V rated value	5.5 kW				
— at 500 V rated value	5.5 kW				
— at 600 V rated value	5.5 kW				
operating power for approx. 200000 operating cycles at AC-	0.0 KW				
4					
• at 400 V rated value	2 kW				
• at 690 V rated value	2.5 kW				
operating apparent power at AC-6a					
 up to 230 V for current peak value n=20 rated value 	2.8 kVA				
 up to 400 V for current peak value n=20 rated value 	4.9 kVA				
 up to 500 V for current peak value n=20 rated value 	6.2 kVA				
 up to 690 V for current peak value n=20 rated value 	8 kVA				
operating apparent power at AC-6a					
 up to 230 V for current peak value n=30 rated value 	1.9 kVA				
 up to 400 V for current peak value n=30 rated value 	3.3 kVA				
 up to 500 V for current peak value n=30 rated value 	4.1 kVA				
 up to 690 V for current peak value n=30 rated value 	5.7 kVA				
short-time withstand current in cold operating state up to 40 °C					
Imited to 1 s switching at zero current maximum	200 A; Use minimum cross-section acc. to AC-1 rated value				
Imited to 5 s switching at zero current maximum	123 A; Use minimum cross-section acc. to AC-1 rated value				
Imited to 10 s switching at zero current maximum	96 A; Use minimum cross-section acc. to AC-1 rated value				
Imited to 30 s switching at zero current maximum	74 A; Use minimum cross-section acc. to AC-1 rated value				
Imited to 60 s switching at zero current maximum	61 A; Use minimum cross-section acc. to AC-1 rated value				
no-load switching frequency	40,000,4%				
• at AC	10 000 1/h				
operating frequency	1,000,1/b				
at AC-1 maximum at AC-2 maximum	1 000 1/h				
• at AC-2 maximum	750 1/h 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	230 V
• at 60 Hz rated value	230 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 60 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
	9 55 IIIS
opening delay	4 45
• at AC	4 15 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	1A
at 125 V rated value	0.9 A
at 220 V rated value	0.3 A
• at 600 V rated value	0.1 A
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
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	11 A
• at 600 V rated value	11 A

yielded mechanical performance [hp]			
 for single-phase AC motor 			
— at 110/120 V rated value	0.5 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	3 hp		
— at 460/480 V rated value	7.5 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: 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	standing, on horizontal 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	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			
— solid	2x (0.5 4 mm²)		
— solid or stranded	2x (0.5 4 mm ²)		
 — finely stranded with core end processing 	2x (0.5 2.5 mm ²)		
 finely stranded with core end processing finely stranded without core end processing 	2x (0.5 2.5 mm ²)		
for AWG cables for main contacts	2x (0.5 2.5 mm)) 2x (20 12)		
connectable conductor cross-section for main contacts			
solid	0.5 4 mm²		
	0.5 4 mm ²		
 stranded finally stranded with core and processing 	0.5 4 mm ²		
 finely stranded with core end processing finely stranded without core and processing 			
finely stranded without core end processing	0.5 2.5 mm²		
connectable conductor cross-section for auxiliary contacts	0.5 4 mm ²		
solid or stranded	0.5 4 mm ²		
 finely stranded with core end processing 	0.5 2.5 mm²		

 finely stranded without core end processin 	a	0.5 2.5 mm²			
type of connectable conductor cross-section	•				
 for auxiliary contacts 					
— solid or stranded		2x (0,5 4 mm²)			
- finely stranded with core end process	sina	2x (0.5 2.5 mm ²)			
— finely stranded without core end proc	ů.	2x (0.5 2.5 mm ²)			
 for AWG cables for auxiliary contacts 	Jocomig	2x (20 12)			
AWG number as coded connectable conduct	or cross	ZA (20 12)			
section		00 40			
• 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 IE 	C 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 319 	920	40 %			
 with high demand rate according to SN 31 		73 %			
B10 value with high demand rate according to		1 000 000			
failure rate [FIT] with low demand rate accord 31920		100 FIT			
ISO 13849					
device type according to ISO 13849-1		3			
overdimensioning according to ISO 13849-2 r		Yes			
IEC 61508	lecessal y	103			
safety device type according to IEC 61508-2		Туре А			
Electrical Safety		Type A			
protection class IP on the front according to	EC 60529	IP20			
touch protection on the front according to IE	touch protection on the front according to IEC 60529		finger-safe, for vertical contact from the front		
Approvals Certificates					
General Product Approval					
CCC CCC CCC	Confirmation	UK CA		KC	
General Product Ap- proval EMV	Test Certificate	2S	Marine / Shipping		
	Special Test Ce ate	rtific- <u>Type Test Certific-</u> ates/Test Report	ABS	BUREAU VERITAS	
Marine / Shipping				other	
	PRS	RINA		<u>Miscellaneous</u>	
other	Railway	Environment			

Confirmation

Confirmation

Special Test Certificate



Environmental Confirmations

Further information

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=3RT2017-2AP02-1AA0

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2017-2AP02-1AA0

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

https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-2AP02-1AA0

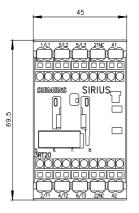
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

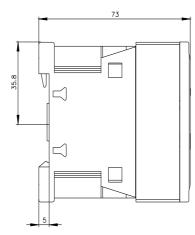
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2017-2AP02-1AA0&lang=en

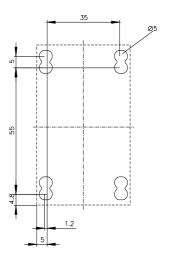
Characteristic: Tripping characteristics, I²t, Let-through current

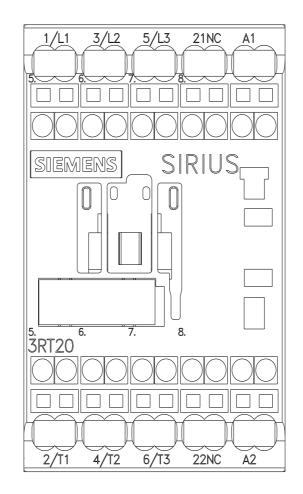
https://support.industry.siemens.com/cs/ww/en/ps/3RT2017-2AP02-1AA0/char Further characteristics (e.g. electrical endurance, switching frequency)

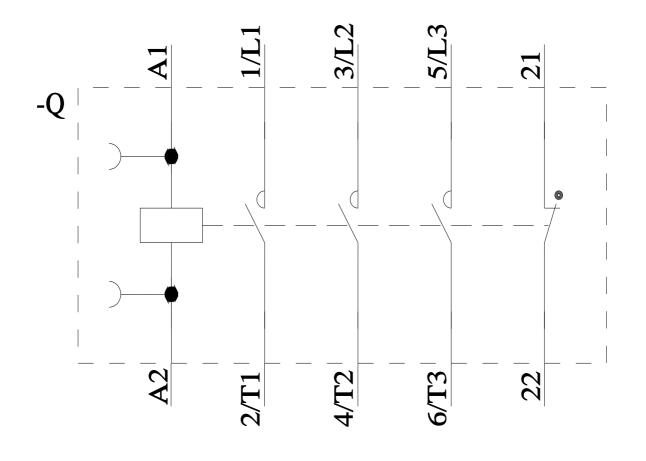
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