SIEMENS

Data sheet

3RT2017-2GG22



power contactor, AC-3e/AC-3, 12 A, 5.5 kW / 400 V, 3-pole, 110 V AC, 50/60 Hz, with integrated full-wave rectifier, 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	\$00
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 	5.7 W
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 %
Main circuit	
number of poles for main current circuit	3

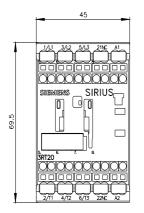
number of NO contacts for main contacts	3
operating voltage	
at AC-3 rated value maximum	690 V
 at AC-3e rated value maximum 	690 V
operational current	
• at AC-1 at 400 V at ambient temperature 40 °C rated	22 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	22 A
— up to 690 V at ambient temperature 60 °C rated	20 A
value	
• 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
• at AC-5a up to 690 V rated value	19.4 A
• at AC-5b up to 400 V rated value	9.9 A
● at AC-6a	
 — 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
— 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
 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	

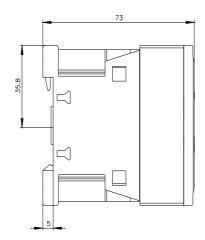
 at 24 V rated value at 60 V rated value at 110 V rated value with 2 current paths in series at DC-3 at DC-5 at 24 V rated value at 60 V rated value 	20 A 0.5 A 0.15 A 20 A 5 A
 — at 110 V rated value • with 2 current paths in series at DC-3 at DC-5 — at 24 V rated value 	0.15 A 20 A
• with 2 current paths in series at DC-3 at DC-5 — at 24 V rated value	20 A
— at 24 V rated value	
— 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-2 at 400 V rated value	5.5 kW
• 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 600 V rated value	5.5 kW
• at AC-3e	
- 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
	5.5 KW
operating power for approx. 200000 operating cycles at AC- 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	
 limited to 1 s switching at zero current maximum 	200 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	123 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	96 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	74 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 60 s switching at zero current maximum 	61 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	
	AC
type of voltage of the control supply voltage	
 control supply voltage at AC at 50 Hz rated value 	110 V
at 60 Hz rated value	110 V
operating range factor control supply voltage rated value of magnet coil at AC	

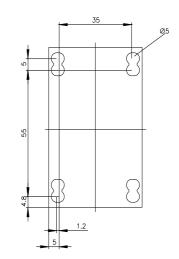
	0.0 4.4
• at 50 Hz	0.8 1.1
• at 60 Hz	0.85 1.1
design of the surge suppressor	full-wave rectifier
apparent pick-up power of magnet coil at AC	
• at 50 Hz	5.71 VA
• at 60 Hz	5.71 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.9
• at 60 Hz	0.9
apparent holding power of magnet coil at AC	
• at 50 Hz	5.71 VA
• at 60 Hz	5.71 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.9
• at 60 Hz	0.9
closing delay	
• at AC	30 100 ms
opening delay	
• at AC	38 65 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	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	
contact a data of a data and y contacts according to or	

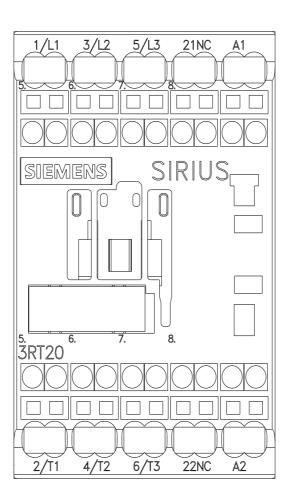
Short-circuit protection				
design of the fuse link				
• for short-circuit protection of the main circuit				
— with type of coordination 1 required	gG: 50A (690V,100kA), aM: 20A (690V,100kA), BS88: 35A (415V,80kA)			
 — with type of assignment 2 required 	gG: 20A (690V,100kA), aM: 16A (690V, 100kA), BS88: 20A (415V, 80kA)			
 for short-circuit protection of the auxiliary switch required 	gG: 10 A (500 V, 1 kA)			
nstallation/ 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 607			
 side-by-side mounting 	Yes			
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			
	10 11111			
for live parts	10 mm			
— 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 mm²)			
 finely stranded with core end processing 	2x (0.5 2.5 mm²)			
 finely stranded without core end processing 	2x (0.5 2.5 mm²)			
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			
 finely stranded without 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 mm ²			
 finely stranded without core end processing 	0.5 2.5 mm²			
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 with core end processing finely stranded without core end processing 	2x (0.5 2.5 mm ²)			
for AWG cables for auxiliary contacts	2x (0.5 2.5 mm)) 2x (20 12)			
AWG number as coded connectable conductor cross	LA (LV 12)			
section				
for main contacts	20 12			
 for auxiliary contacts 	20 12			

product function						
 mirror contact according to IEC 60947-4-1 		Yes 1 000 000				
B10 value with high demand rate according to SN 31920						
proportion of danger	ous failures					
 with low demand rate according to SN 31920 		40 %				
 with high demand rate according to SN 31920 		73 %				
failure rate [FIT] with lo	w demand rate according	to SN 31920	100 FIT			
T1 value for proof test 61508	interval or service life acco	ording to IEC	20 a			
protection class IP or	n the front according to I	EC 60529	IP20			
touch protection on the front according to IEC 60529			finger-safe, for vertical contact from the front			
suitability for use						
 safety-related sy 	witching OFF		Yes			
ertificates/ approvals	-					
General Product App						
Contrain roudor rpp						
(SP)		<u>Confirmation</u>		KC	EHC	
EMC	Functional Safety/Safety of Ma- chinery	Declaration of C	Conformity	Test Certificates		
RCM	<u>Type Examination Cer-</u> <u>tificate</u>	CE EG-Konf.	UK CA	<u>Special Test Certific-</u> <u>ate</u>	Type Test Certific- ates/Test Report	
Marine / Shipping			Lloyd's Register uis	PRS	RINA	
Marine / Shipping	other		Railway	Dangerous Good	Environment	
RMRS RMRS	<u>Confirmation</u>		Vibration and Shock	Transport Information	Environmental Con- firmations	
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