SIEMENS

Data sheet

3RT2016-1AT61



Power contactor, AC-3 9 A, 4 kW / 400 V 1 NO, 600 V AC, 60 Hz 3-pole, Size S00 screw terminal

product brand name	SIRIUS			
product brand name product designation	Power contactor			
product designation	3RT2			
General technical data				
	000			
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	4.8 W			
insulation voltage	200.14			
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 safe isolation between coil and main contacts according to EN 60947-1	400 V			
shock resistance at rectangular impulse				
• at AC	6,7g / 5 ms, 4,2g / 10 ms			
shock resistance with sine pulse				
• at AC	10,5g / 5 ms, 6,6g / 10 ms			
mechanical service life (switching 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 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	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 operational current for approx. 200000 operating	4 mm ²
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 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
	20 A 12 A
— at 110 V rated value	
— 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 	

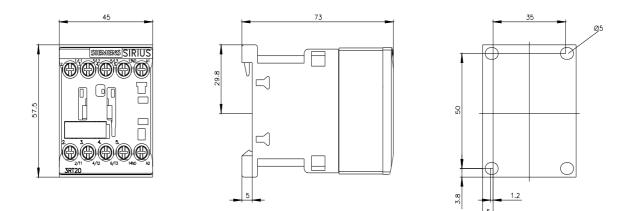
	20.4
— at 24 V rated value	20 A
— at 110 V rated value	20 A
— at 220 V rated value	20 A
— at 440 V rated value	1.3 A
— at 600 V rated value	1 A
• at 1 current path at DC-3 at DC-5	
— at 24 V rated value	20 A
— at 110 V rated value	0.1 A
 with 2 current paths in series at DC-3 at DC-5 	
— at 24 V rated value	20 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 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	4 kW
• at AC-3	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	5.5 kW
• at AC-3e	
— at 230 V rated value	2.2 kW
— at 400 V rated value	4 kW
— at 500 V rated value	4 kW
— at 690 V rated value	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	2.5 KW
• up to 230 V for current peak value n=20 rated value	2 kVA
• up to 400 V for current peak value n=20 rated value	3.6 kVA
• up to 500 V for current peak value n=20 rated value	4.6 kVA
• up to 690 V for current peak value n=20 rated value	5.9 kVA
operating apparent power at AC-6a	0.0 KVA
• up to 230 V for current peak value n=30 rated value	1.3 kVA
• up to 400 V for current peak value n=30 rated value	2.4 kVA
 up to 500 V for current peak value n=30 rated value 	3.1 kVA
 up to 600 V for current peak value n=30 rated value up to 690 V for current peak value n=30 rated value 	4 kVA
short-time withstand current in cold operating state	
up to 40 °C	
 limited to 1 s switching at zero current maximum 	155 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 5 s switching at zero current maximum 	111 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	86 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	66 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 60 s switching at zero current maximum 	55 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

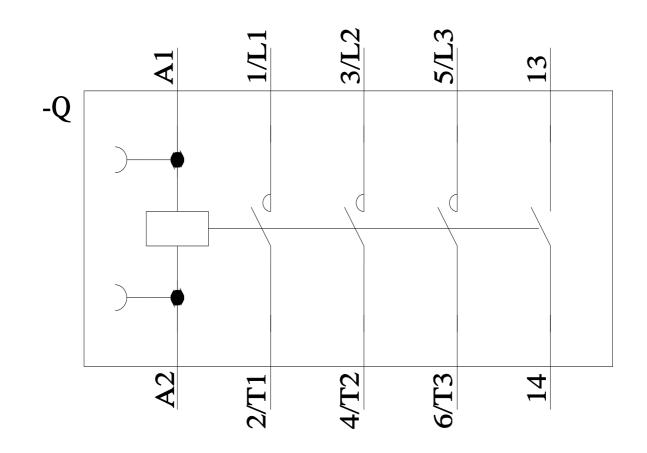
control supply voltage at AC 600 V operating range factor control supply voltage rated value of magnet coil at AC 0.85 1.1 apparent pick-up power of magnet coil at AC 0.85 1.1 at 00 Hz 31.7 VA Inductive power factor with closing power of the coil 0.81 at 80 Hz 0.81 apparent holding power of magnet coil at AC 4.8 VA inductive power factor with the holding power of the coil 0.81 at 0 Hz 0.25 closing delay 9 35 ms • at 0 Hz 0.15 ms control version of the switch operating mechanism Standard A1 - A2 Auxiliary circuit 10 A operational current at AC-15 1 • at 300 V rated value 3A • at 300 V rated value 3A • at 300 V rated value 10 A operational current at AC-15 1 • at 300 V rated value 1A • at 300 V rated value 3A • at 3	
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at 480 V rated value 7.6 A at 600 V rated value 9 A yielded mechanical performance [hp] o for single-phase AC motor	
• at 600 V rated value 9 A yielded mechanical performance [hp] • for single-phase AC motor	
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)		
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 standard mounting rail according to DIN EN 60715		
 side-by-side mounting 	Yes		
height			
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 	V 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 mm ²), 2x (0,75 2,5 mm ²), 2x 4 mm ²		
 finely stranded with core end processing 	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²)		
at 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 mm ²		
type of connectable conductor cross-sections			
for auxiliary contacts			
-	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²		
- SONO OF SITADOPO			
 — solid or stranded — finely stranded with core end processing 	$2x (0.5 \pm 1.5 \text{ mm}^2) 2x (0.75 \pm 2.5 \text{ mm}^2)$		
 — solid of stranded — finely stranded with core end processing • at AWG cables for auxiliary contacts 	2x (0.5 1.5 mm ²), 2x (0.75 2.5 mm ²) 2x (20 16), 2x (18 14), 2x 12		

 for main contact 			20 12				
,				20 12			
Safety related data							
product function							
	according to IEC 60947-		Yes; with 3	RH29			
-	B10 value with high demand rate according to SN 31920		1 000 000				
proportion of dange							
	nd rate according to SN		40 %				
	and rate according to SN		73 %				
31920	low demand rate accord		100 FIT				
IEC 61508	st interval or service life a		20 y				
60529	on the front according		IP20				
touch protection or	the front according to	IEC 60529	finger-safe	, for vertical cor	ntact from the front		
suitability for use							
 safety-related 	-		Yes				
Certificates/ approva	ls						
General Product A	pproval						
()		<u>Confirmatio</u>	<u>on</u>	(UL)	<u>KC</u>	EHC	
EMC	Functional Safety/Safety of Machinery	Declaration of	of Conformit	у	Test Certificates		
RCM	<u>Type Examination</u> <u>Certificate</u>	UK CA		CE EG-Konf.	<u>Type Test Certific-</u> ates/Test Report	Special Test Certific- ate	
Marine / Shipping							
ABS	BUREAU VERITAS			Hoyds Register urs	PRS	RINA	
Marine / Shipping other							
RMRS	<u>Confirmation</u>	DE	•				
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Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros,)							

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2016-1AT61&lang=en Characteristic: Tripping characteristics, l²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RT2016-1AT61/char Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2016-1AT61&objecttype=14&gridview=view1





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