SIEMENS

Data sheet

3RT2028-4AK60



power contactor, AC-3e/AC-3, 38 A, 18.5 kW / 400 V, 3-pole, 110 V AC, 50 Hz / 120 V, 60 Hz, auxiliary contacts: 1 NO + 1 NC, ring cable lug connection, size: S0

product brand name SIRUS product dispination Power contactor product dispination SRT2 Central technical data Size of contactor size of contactor Si product extension No • anxillary switch Yes power loss [W] for rated value of the current 9.6 W • at AC in hot operating state 9.6 W • at AC in hot operating state per pole 3.2 W • without load current share typical 2.7 W Insulation voltage 690 V • of main circuit with degree of pollution 3 rated value 690 V • of auxillary circuit rated value 690 V • of auxillary circuit rated value 64V • of auxillary circuit rated value		
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Ambient conditions installation altitude at height above sea level maximum 2 000 m ambient temperature -25 +60 °C • 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	reference code according to IEC 81346-2	Q
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• during storage -55 +80 °C relative humidity minimum 10 % relative humidity at 55 °C according to IEC 60068-2-30 maximum 95 % Main circuit	ambient temperature	
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relative humidity at 55 °C according to IEC 60068-2-30 95 % maximum 95 % Main circuit 95 %	during storage	-55 +80 °C
maximum Main circuit	relative humidity minimum	10 %
		95 %
number of poles for main current circuit 3	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	50 A
value	
• at AC-1	
— up to 690 V at ambient temperature 40 °C rated value	50 A
— up to 690 V at ambient temperature 60 °C rated	42 A
value	
• at AC-3	
— at 400 V rated value	38 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
• at AC-3e	
— at 400 V rated value	38 A
— at 500 V rated value	32 A
— at 690 V rated value	21 A
at AC-4 at 400 V rated value	22 A
at AC-5a up to 690 V rated value	44 A
• at AC-5b up to 400 V rated value	31.5 A
• at AC-6a	30.8 A
— up to 230 V for current peak value n=20 rated value	
— up to 400 V for current peak value n=20 rated value	30.8 A 30.8 A
 up to 500 V for current peak value n=20 rated value up to 690 V for current peak value n=20 rated value 	21 A
• at AC-6a	21A
 up to 230 V for current peak value n=30 rated value 	20.5 A
— up to 200 V for current peak value n=30 rated value	20.5 A
— up to 500 V for current peak value n=30 rated value	21.4 A
— up to 690 V for current peak value n=30 rated value	21 A
minimum cross-section in main circuit at maximum AC-1 rated	10 mm ²
value	
operational current for approx. 200000 operating cycles at AC-4	
at 400 V rated value	12 A
at 690 V rated value	12 A
operational current	
 at 1 current path at DC-1 	
— at 24 V rated value	35 A
— at 60 V rated value	20 A
— at 110 V rated value	4.5 A
— at 220 V rated value	1 A
— at 440 V rated value	0.4 A
— at 600 V rated value	0.25 A
• with 2 current paths in series at DC-1	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	5 A
— at 440 V rated value	1 A
— at 600 V rated value	0.8 A
 with 3 current paths in series at DC-1 	
— at 24 V rated value	35 A
— at 60 V rated value	35 A
— at 110 V rated value	35 A
— at 220 V rated value	35 A
— at 440 V rated value	2.9 A
— at 600 V rated value	1.4 A
 at 1 current path at DC-3 at DC-5 	

— at 24 V rated value	20 A			
— at 60 V rated value	5 A			
— at 220 V rated value	1 A			
— at 440 V rated value	0.09 A			
— at 600 V rated value	0.06 A			
 with 2 current paths in series at DC-3 at DC-5 				
— at 24 V rated value	35 A			
— at 60 V rated value	35 A			
— at 110 V rated value	15 A			
— at 220 V rated value	3 A			
— at 440 V rated value	0.27 A			
— at 600 V rated value	0.16 A			
 with 3 current paths in series at DC-3 at DC-5 				
— at 24 V rated value	35 A			
— at 60 V rated value	35 A			
— at 110 V rated value	35 A			
— at 220 V rated value	10 A			
— at 440 V rated value	0.6 A			
— at 600 V rated value	0.6 A			
operating power				
• at AC-2 at 400 V rated value	18.5 kW			
• at AC-3				
— at 230 V rated value	11 kW			
— at 400 V rated value	18.5 kW			
— at 500 V rated value	18.5 kW			
— at 690 V rated value	18.5 kW			
• at AC-3e				
— at 230 V rated value	11 kW			
— at 400 V rated value	18.5 kW			
— at 500 V rated value	18.5 kW			
— at 690 V rated value	18.5 kW			
operating power for approx. 200000 operating cycles at AC-				
4				
• at 400 V rated value	6 kW			
at 690 V rated value	10.3 kW			
operating apparent power at AC-6a				
 up to 230 V for current peak value n=20 rated value 	12.2 kVA			
 up to 400 V for current peak value n=20 rated value 	21.3 kVA			
 up to 500 V for current peak value n=20 rated value 	26.6 kVA			
 up to 690 V for current peak value n=20 rated value 	25 kVA			
operating apparent power at AC-6a				
• up to 230 V for current peak value n=30 rated value	8.1 kVA			
• up to 400 V for current peak value n=30 rated value	14.2 kVA			
• up to 500 V for current peak value n=30 rated value	18.5 kVA			
• up to 690 V for current peak value n=30 rated value	25 kVA			
short-time withstand current in cold operating state up to 40 °C				
 limited to 1 s switching at zero current maximum 	593 A; Use minimum cross-section acc. to AC-1 rated value			
- miniou to a 5 switching at Zero current maximum				
-	341 A: Use minimum cross-section acc. to AC-1 rated value			
• limited to 5 s switching at zero current maximum	341 A; Use minimum cross-section acc. to AC-1 rated value			
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value			
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value			
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value			
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value			
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum no-load switching frequency at AC 	260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value			
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum no-load switching frequency at AC operating frequency	260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 5 000 1/h			
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum no-load switching frequency at AC operating frequency at AC-1 maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 5 000 1/h 1 000 1/h			
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum no-load switching frequency at AC operating frequency at AC-1 maximum at AC-2 maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 5 000 1/h 1 000 1/h 750 1/h			
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum no-load switching frequency at AC operating frequency at AC-1 maximum at AC-2 maximum at AC-3 maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 5 000 1/h 1 000 1/h 750 1/h 750 1/h			
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum no-load switching frequency at AC operating frequency at AC-1 maximum at AC-2 maximum at AC-3 maximum at AC-3 emaximum 	260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 5 000 1/h 1 000 1/h 750 1/h 750 1/h 750 1/h			
 limited to 5 s switching at zero current maximum limited to 10 s switching at zero current maximum limited to 30 s switching at zero current maximum limited to 60 s switching at zero current maximum no-load switching frequency at AC operating frequency at AC-1 maximum at AC-2 maximum at AC-3 maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value 199 A; Use minimum cross-section acc. to AC-1 rated value 162 A; Use minimum cross-section acc. to AC-1 rated value 5 000 1/h 1 000 1/h 750 1/h 750 1/h			

type of voltage of the control supply voltage	AC
control supply voltage at AC	
• at 50 Hz rated value	110 V
• at 60 Hz rated value	120 V
operating range factor control supply voltage rated value of magnet coil at AC	
• at 50 Hz	0.8 1.1
• at 60 Hz	0.8 1.1
apparent pick-up power of magnet coil at AC	
• at 50 Hz	81 VA
• at 60 Hz	79 VA
inductive power factor with closing power of the coil	
• at 50 Hz	0.72
• at 60 Hz	0.74
apparent holding power of magnet coil at AC	
• at 50 Hz	10.5 VA
• at 60 Hz	8.5 VA
inductive power factor with the holding power of the coil	
• at 50 Hz	0.25
• at 60 Hz	0.28
closing delay	
• at AC	8 40 ms
opening delay	
• at AC	4 16 ms
arcing time	10 10 ms
control version of the switch operating mechanism	Standard A1 - A2
Auxiliary circuit	
number of NC contacts for auxiliary contacts instantaneous contact	1
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
	84
• at 110 V rated value	3 A
at 110 V rated valueat 125 V rated value	
	3 A
• at 125 V rated value	3 A 2 A
at 125 V rated valueat 220 V rated value	3 A 2 A 1 A
 at 125 V rated value at 220 V rated value at 600 V rated value 	3 A 2 A 1 A
at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13	3 A 2 A 1 A 0.15 A
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value 	3 A 2 A 1 A 0.15 A 10 A
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value 	3 A 2 A 1 A 0.15 A 10 A 2 A
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 48 V rated value at 60 V rated value 	3 A 2 A 1 A 0.15 A 10 A 2 A 2 A
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 60 V rated value at 110 V rated value 	3 A 2 A 1 A 0.15 A 10 A 2 A 2 A 2 A 1 A
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value 	3 A 2 A 1 A 0.15 A 10 A 2 A 2 A 2 A 1 A 0.9 A
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value 	3 A 2 A 1 A 0.15 A 10 A 2 A 2 A 2 A 1 A 0.9 A 0.3 A
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 600 V rated value 	3 A 2 A 1 A 0.15 A 10 A 2 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 600 V rated value 	3 A 2 A 1 A 0.15 A 10 A 2 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A
 at 125 V rated value at 220 V rated value at 220 V rated value at 600 V rated value at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 220 V rated value at 600 V rated value at 600 V rated value at 220 V rated value at 220 V rated value at 600 V rated value at 220 V rated value at 220 V rated value at 220 V rated value at 600 V rated value at 600 V rated value at 600 V rated value 	3 A 2 A 1 A 0.15 A 10 A 2 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 10 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 600 V rated value at 600 V rated value at 600 V rated value bit 125 V rated value at 220 V rated value at 600 V rated value at 600 V rated value at 600 V rated value bit 125 V rated value at 600 V rated value bit 125 V rated value<td>3 A 2 A 1 A 0.15 A 10 A 2 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA)</td>	3 A 2 A 1 A 0.15 A 10 A 2 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA)
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 600 V rated value at 480 V rated value at 480 V rated value 	3 A 2 A 1 A 0.15 A 10 A 2 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA) 34 A
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 10 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 600 V rated value at 480 V rated value at 480 V rated value at 600 V rated value 	3 A 2 A 1 A 0.15 A 10 A 2 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA) 34 A
 at 125 V rated value at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 600 V rated value full-load current (FLA) for 3-phase AC motor at 480 V rated value at 600 V rated value at 600 V rated value 	3 A 2 A 1 A 0.15 A 10 A 2 A 2 A 2 A 1 A 0.9 A 0.3 A 0.1 A 1 faulty switching per 100 million (17 V, 1 mA) 34 A

— at 230 V rated value	5 hp			
• for 3-phase AC motor				
— at 200/208 V rated value	10 hp			
— at 220/230 V rated value	10 hp			
— at 460/480 V rated value	25 hp			
— at 575/600 V rated value	25 hp			
contact rating of auxiliary contacts according to UL	A600 / P600			
Short-circuit protection				
design of the fuse link				
 for short-circuit protection of the main circuit 				
 — with type of coordination 1 required 	gG: 125A (690V,100kA), aM: 50A (690V,100kA), BS88: 125A (415V,80kA)			
 — with type of assignment 2 required 	gG: 50A (690V,100kA), aM: 25A (690V, 100kA), BS88: 50A (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 60715			
• side-by-side mounting	Yes			
height	85 mm			
width	45 mm			
depth	97 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	U IIIII			
type of electrical connection	Ding coble lug connection			
for main current circuit	Ring cable lug connection			
for auxiliary and control circuit	ring terminal lug connection			
at contactor for auxiliary contacts	Ring cable lug connection			
of magnet coil	Ring cable lug connection			
Safety related data				
product function				
mirror contact according to IEC 60947-4-1	Yes			
suitability for use safety-related switching OFF	Yes			
B10 value with high demand rate according to SN 31920	450 000			
proportion of dangerous failures				
 with low demand rate according to SN 31920 	40 %			
 with high demand rate according to SN 31920 	73 %			
failure rate [FIT] with low demand rate according to SN 31920	100 FIT			
T1 value for proof test interval or service life according to IEC 61508	20 a			
	IP00			
protection class IP on the front according to IEC 60529				

SA CSA		<u>Confirmation</u>		<u>KC</u>	EHC
EMC	Functional Safety/Safety of Ma- chinery	Declaration of Conformity	,	Test Certificates	
RCM	<u>Type Examination Cer-</u> <u>tificate</u>	CE EG-Konf.	UK CA	Special Test Certific- ate	<u>Type Test Certific-</u> ates/Test Report
Marine / Shipping					
ABS	BUREAU VERITAS		Lloyd's Kegister us	PRS	RINA
Marine / Shipping	other			Railway	Environment
RMRS	<u>Confirmation</u>	DE	<u>Confirmation</u>	Vibration and Shock	Environmental Con- firmations
Further information					
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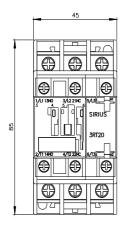
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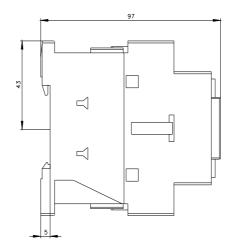
Characteristic: Tripping characteristics, I²t, Let-through current

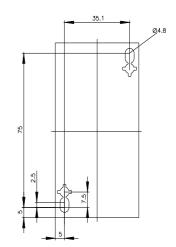
https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-4AK60/char

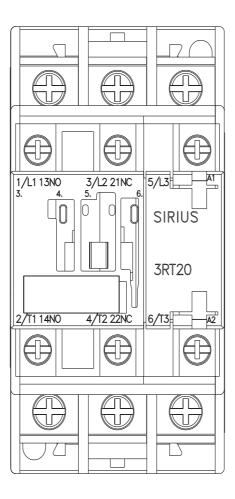
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siem ens.com/bilddb/index.aspx?view= . &mlft











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