SIEMENS

Data sheet 3RT2028-1AL24



Power contactor, AC-3 38 A, 18.5 kW / 400 V 2 NO + 2 NC, 230 V AC 50/60 Hz, 3-pole Size S0, screw terminals Removable auxiliary switch

product brand name	SIRIUS
product designation	Power contactor
product type designation	3RT2
General technical data	
size of contactor	S0
product extension	
 function module for communication 	No
auxiliary switch	No
power loss [W] for rated value of the current	
 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 	10.5 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 safe isolation between coil and main contacts according to EN 60947-1	400 V
shock resistance at rectangular impulse	
• at AC	8,3g / 5 ms, 5,3g / 10 ms
shock resistance with sine pulse	
• at AC	13,5g / 5 ms, 8,3g / 10 ms
mechanical service life (switching cycles)	
of contactor typical	10 000 000
 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	ŭ
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	50 A
• 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 value at AC-3 	42 A
— 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	
 up to 230 V for current peak value n=20 rated value 	30.8 A
 up to 400 V for current peak value n=20 rated value 	30.8 A
— up to 500 V for current peak value n=20 rated value	30.8 A
 up to 690 V for current peak value n=20 rated value at AC-6a 	21 A
up to 230 V for current peak value n=30 rated value	20.5 A
 up to 400 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 minimum cross-section in main circuit at maximum AC-1	21 A 10 mm ²
rated 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 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 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	05.4
— at 24 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

-t COO \ /tdl	4.4.4
— at 600 V rated value	1.4 A
• at 1 current path at DC-3 at DC-5	00.4
— at 24 V rated value	20 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	OF A
— at 24 V rated value	35 A
— at 110 V rated value	15 A
— at 220 V rated value	3 A 0.27 A
— at 440 V rated value	
— 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 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	0.0 A
• 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
 limited to 5 s switching at zero current maximum 	341 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 10 s switching at zero current maximum 	260 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 30 s switching at zero current maximum 	199 A; Use minimum cross-section acc. to AC-1 rated value
 limited to 60 s switching at zero current maximum 	162 A; Use minimum cross-section acc. to AC-1 rated value
no-load switching frequency	T 000 4"
• at AC	5 000 1/h
operating frequency	4 000 4/5
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	750 1/h 750 1/h
 at AC-3 maximum at AC-3e maximum 	750 1/h
at AC-3e maximum at AC-4 maximum	250 1/h
	200 1/11
Control circuit/ Control	40
type of voltage of the control supply voltage	AC
control supply voltage at AC	220 V
 at 50 Hz rated value at 60 Hz rated value 	230 V 230 V
● at 60 Fiz rated value operating range factor control supply voltage rated	200 V
operating range ractor control supply voltage rated	

** at 00 Hz apparent pick-up power of magnet coil at AC	value of magnet coil at AC	
apparent pick-up power of magnet coil at AC at 60 Hz 78 VA at 60 Hz 0.72 0.74 apparent holding power factor with closing power of the coil at 60 Hz 0.74 0.74 apparent holding power of magnet coil at AC at 60 Hz 0.74 apparent holding power of magnet coil at AC at 60 Hz 0.5 VA at 60 Hz 0.5 VA 0.5 VA at 60 Hz 0.5 VA 0.5 VA at 60 Hz 0.25 0.28 closing delay at 70 VA 0.28 at 80 Hz 0.28 0.28 closing delay at 70 VA 0.28 at 80 Hz 0.28 0.28		
• at 50 Hz		0.85 1.1
• at 60 Hz • at 70 • a	apparent pick-up power of magnet coil at AC	
inductive power factor with closing power of the coil	● at 50 Hz	81 VA
• at 60 Hz apparent holding power of magnet coll at AC a file 0 Hz al 60 Hz	● at 60 Hz	79 VA
	inductive power factor with closing power of the coil	
apparent holding power of magnet coil at AC	● at 50 Hz	0.72
• at 50 Hz alt 60 Hz	● at 60 Hz	0.74
• at 50 Hz alt 60 Hz	apparent holding power of magnet coil at AC	
■ at 60 Hz all 50 Hz all 60		10.5 VA
inductive power factor with the holding power of the coil at 80 Hz closing delay at AC at AC at BO Hz closing delay at AC at	• at 60 Hz	
	inductive power factor with the holding power of the	
• at 80 Hz closing delay • at AC opening delay • at AC arcing time control version of the switch operating mechanism Auxiliarry circuit number of NC contacts for auxiliary contacts instantaneous contact number of NC contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-12 maximum operational current at AC-15 • at 230 V rated value • at 600 V rated value • at 600 V rated value • at 600 V rated value • at 60 V rated value • at 100 V rated value • at 80 V rated		0.05
closing delay		
e at AC opening delay e at AC arcing time control version of the switch operating mechanism Auxiliary circuit number of NC contacts for auxiliary contacts instantaneous contact number of NC contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum 10 A operational current at AC-15 e at 230 V rated value 6 A 6 A e at 430 V rated value 3 A e at 690 V rated value 1 A operational current at DC-12 e at 24 V rated value 1 A operational current at AC-15 e at 230 V rated value 1 A operational current at DC-12 e at 24 V rated value 6 A 6 A e at 48 V rated value 6 A e at 110 V rated value 6 A e at 110 V rated value 1 A e at 125 V rated value 1 A e at 20 V rated value 1 A e at 20 V rated value 2 A e at 20 V rated value 2 A e at 20 V rated value 1 A e at 20 V rated value 2 A e at 20 V rated value 1 A e at 60 V ra		0.28
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* at AC 4 16 ms 10 10 ms	• at AC	8 40 ms
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Auxiliary circuit Image: Provided Standard A1 - A2	• at AC	
Auxiliary circuit number of NC contacts for auxiliary contacts	arcing time	10 10 ms
Auxiliary circuit number of NC contacts for auxiliary contacts	control version of the switch operating mechanism	Standard A1 - A2
number of NC contacts for auxiliary contacts 2 instantaneous contact instantaneous contact 2 instantaneous contact 2 instantaneous contact 2 instantaneous contact 3 4 3 4 4 4 4 4 4 4	Auxiliary circuit	
instantaneous contact number of NO contacts for auxiliary contacts instantaneous contact operational current at AC-12 maximum operational current at AC-15 * at 230 V rated value * at 690 V rated value * at 690 V rated value * at 44 V rated value * at 48 V rated value * at 48 V rated value * at 100 V rated value * at 690 V rated value * at 100 V rated value * at 100 V rated value * at 125 V rated value * at 20 V rated value * at 20 V rated value * at 20 V rated value * at 24 V rated value * at 20 V rated value * at 600 V rated value * at 100 V rated value * at 200 V rated value * at 480 V rated value * at 200 V rated value * at 600 V rated value * at 200 V rated value * at 200 V rated value * at 600 V rated value * at 200 V rated value * at 600 V r		2
instantaneous contact operational current at AC-12 maximum		
operational current at AC-15 • at 230 V rated value		2
	operational current at AC-12 maximum	10 A
	operational current at AC-15	
	•	6 A
at 500 V rated value at 690 V rated value at 690 V rated value operational current at DC-12 at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 60 V rated value at 600 V rated value at 600 V rated value at 600 V rated value at 220 V rated value at 24 V rated value at 600 V rated value at 20 V rated value at 20 V rated value at 20 V rated value at 48 V rated value at 48 V rated value at 20 V rated value at 20 V rated value at 110 V rated value at 20 V rated value at 20 V rated value at 220 V rated value at 280 V rated value at 280 V rated value at 600 V rated value at 200 V rated value at 200 V rated value at 200 V rated value at 300 V rated value at 200 V rated value at 480 V rated value at 200 V rated value at 480 V rated value at 200 V rated value		
• at 690 V rated value operational current at DC-12 • at 24 V rated value • at 48 V rated value • at 48 V rated value • at 10 V rated value • at 110 V rated value • at 110 V rated value • at 125 V rated value • at 220 V rated value • at 220 V rated value • at 360 V rated value • at 360 V rated value • at 48 V rated value • at 600 V rated value • at 600 V rated value • at 48 V rated value • at 48 V rated value • at 110 V rated value • at 110 V rated value • at 360 V rated value • at 48 V rated value • at 360 V rated value • at 48 V rated value • at 110 V rated value • at 25 V rated value • at 25 V rated value • at 25 V rated value • at 260 V rated value • at 27 V rated value • at 28 V rated value • at 360 V rated value • at 480 V rated value • 34 A • at 480 V rated value • at 348 V rated value • at 480 V rated value • at 300 V rated value • at 27 A yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value • for 3-phase AC motor — at 200/208 V rated value • for 3-phase AC motor — at 200/208 V rated value — at 460/480 V rated value — at 575/600 V rated value		
at 24 V rated value		
 at 24 V rated value at 48 V rated value at 48 V rated value at 46 V v rated value at 110 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 260 V rated value operational current at DC-13 at 24 V rated value at 34 V rated value at 48 V rated value at 60 V rated value at 60 V rated value at 60 V rated value at 10 V rated value at 10 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 60 V rated value at 60 V rated value at 600 V rated value at 600 V rated value at 600 V rated value at 480 V rated value at 600 V rated value at 7 A biplace AC motor at 10 hp at 200/208 V rated value at 200/208 V rated value at 460/480 V rated value at 460/480 V rated value at 56 hp at 575/600 V rated value 25 hp at 575/600 V rated value 25 hp 		1 A
 at 48 V rated value at 6 A 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 ontat 24 V rated value at 24 V rated value at 48 V rated value at 60 V rated value at 110 V rated value at 110 V rated value at 110 V rated value at 125 V rated value at 220 V rated value at 30 V rated value at 34 A at 480 V rated value at 480 V rated value at 480 V rated value at 600 V rated value at 34 A at 30 V rated value at 600 V rated value at 70 A at 27 A yielded mechanical performance [hp] for single-phase AC motor at 120 V rated value at 20 V rated value for 3-phase AC motor at 200 V rated value for 3-phase AC motor at 200 V rated value for 3-phase AC motor at 200 V rated value for 3-phase AC motor at 200 V rated value at 25 hp at 575/600 V rated value 25 hp at 575/600 V rated value 25 hp 	·	40.4
 at 60 V rated value at 110 V rated value at 125 V rated value 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 at 48 V rated value at 60 V rated value at 60 V rated value at 60 V rated value at 10 V rated value at 25 V rated value at 25 V rated value at 600 V rated value at 480 V rated value at 27 A yielded mechanical performance [hp] for single-phase AC motor at 200/208 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor at 200/208 V rated value for 3-phase AC motor at 460/480 V rated value for hp at 460/480 V rated value at 60 V rated value bhp at 460/480 V rated value 25 hp at 575/600 V rated value 25 hp 		
 at 110 V rated value at 125 V rated value at 220 V rated value at 220 V rated value at 3 A at 220 V rated value 0.15 A operational current at DC-13 at 24 V rated value at 24 V rated value at 24 V rated value at 60 V rated value at 10 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 600 V rated value at 7 A yielded mechanical performance [hp] for single-phase AC motor at 230 V rated value at 230 V rated value 5 hp for 3-phase AC motor at 200/208 V rated value 5 hp at 220/230 V rated value at 220/230 V rated value bhp at 460/480 V rated value at 460/480 V rated value 25 hp at 575/600 V rated value 25 hp 		
 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 80 V rated value at 125 V rated value at 126 V rated value at 127 V rated value at 128 V rated value at 125 V rated value at 125 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 at 600 V rated value at 110/120 V rated value at 27 A yielded mechanical performance [hp] for single-phase AC motor at 230 V rated value 5 hp for 3-phase AC motor at 200/208 V rated value 5 hp for 3-phase AC motor at 200/208 V rated value 5 hp at 200/208 V rated value 25 hp at 460/480 V rated value 25 hp at 575/600 V rated value 25 hp 		
 at 220 V rated value at 600 V rated value operational current at DC-13 at 24 V rated value at 8 V rated value at 60 V rated value at 60 V rated value at 110 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 7 A at 200 V rated value at 460 V 480 V rated value at 57 b at 57 b by 7 b 	at 110 V rated value	
• at 600 V rated value 0.15 A operational current at DC-13 • at 24 V rated value 6 A • at 48 V rated value 2 A • at 60 V rated value 1 A • at 160 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 34 A • at 600 V rated value 27 A yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 3 hp — at 230 V rated value 5 hp • for 3-phase AC motor — at 200/208 V rated value 5 hp • for 3-phase AC motor — at 200/208 V rated value 10 hp — at 260/230 V rated value 25 hp — at 575/600 V rated value 25 hp — at 575/600 V rated value 25 hp		
operational current at DC-13	 at 220 V rated value 	1 A
• at 24 V rated value 6 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 27 A yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 3 hp — at 230 V rated value 5 hp • for 3-phase AC motor — at 200/208 V rated value 10 hp — at 460/480 V rated value 25 hp — at 4575/600 V rated value 25 hp — at 575/600 V rated value 25 hp	 at 600 V rated value 	0.15 A
 at 48 V rated value at 60 V rated value at 110 V rated value at 1125 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 600 V rated value at 600 V rated value for single-phase AC motor at 110/120 V rated value at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 200/208 V rated value at 200/208 V rated value at 460/480 V rated value at 460/480 V rated value at 575/600 V rated value bp 	operational current at DC-13	
 at 60 V rated value at 110 V rated value 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 at 600 V rated value at 600 V rated value for single-phase AC motor at 110/120 V rated value at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 230 V rated value for 3-phase AC motor at 200/208 V rated value to hp at 220/230 V rated value at 460/480 V rated value 10 hp at 460/480 V rated value 25 hp 	 at 24 V rated value 	6 A
 at 110 V rated value at 125 V rated value at 220 V rated value at 600 V rated value at 480 V rated value at 600 V rated value at 7 A yielded mechanical performance [hp] for single-phase AC motor at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 230 V rated value for 3-phase AC motor at 220/230 V rated value to hp at 220/230 V rated value to hp at 460/480 V rated value at 575/600 V rated value pp at 575/600 V rated value at 575/600 V rated value 	 at 48 V rated value 	2 A
 at 125 V rated value 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 at 600 V rated value at 600 V rated value for single-phase AC motor at 110/120 V rated value for 3-phase AC motor at 230 V rated value for 3-phase AC motor at 200/208 V rated value at 220/230 V rated value at 220/230 V rated value at 460/480 V rated value at 460/480 V rated value at 5 hp 	at 60 V rated value	2 A
 at 125 V rated value 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 at 600 V rated value at 600 V rated value for single-phase AC motor at 110/120 V rated value for 3-phase AC motor at 230 V rated value for 3-phase AC motor at 200/208 V rated value at 220/230 V rated value at 220/230 V rated value at 460/480 V rated value at 460/480 V rated value at 5 hp 	at 110 V rated value	1 A
 at 220 V rated value at 600 V rated value 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 at 600 V rated value for single-phase AC motor at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 230 V rated value for 3-phase AC motor at 200/208 V rated value at 200/208 V rated value at 200/230 V rated value at 460/480 V rated value at 460/480 V rated value at 575/600 V rated value 25 hp 		
 at 600 V rated value 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 at 600 V rated value at 600 V rated value for single-phase AC motor at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 200/208 V rated value at 200/208 V rated value at 220/230 V rated value at 460/480 V rated value at 460/480 V rated value at 575/600 V rated value 25 hp 		
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 • at 600 V rated value 9 for single-phase AC motor - at 110/120 V rated value 1 faulty switching per 100 million (17 V, 1 mA) 34 A 27 A yielded mechanical performance [hp] • for single-phase AC motor - 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		
tull-load current (FLA) for 3-phase AC motor • at 480 V rated value		
full-load current (FLA) for 3-phase AC motor • at 480 V rated value • at 600 V rated value 27 A yielded mechanical performance [hp] • for single-phase AC motor — at 110/120 V rated value 3 hp — 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		riddity officialing por 100 million (11 V, 1 milly)
 at 480 V rated value at 600 V rated value 27 A yielded mechanical performance [hp] for single-phase AC motor at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 200/208 V rated value at 220/230 V rated value at 460/480 V rated value at 575/600 V rated value at 575/600 V rated value at 575/600 V rated value at 575/600 V rated value 		
 at 600 V rated value yielded mechanical performance [hp] for single-phase AC motor — at 110/120 V rated value — at 230 V rated value for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 25 hp 		24.4
yielded mechanical performance [hp] ● for single-phase AC motor — at 110/120 V rated value 3 hp — 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		
 for single-phase AC motor at 110/120 V rated value at 230 V rated value for 3-phase AC motor at 200/208 V rated value at 220/230 V rated value at 460/480 V rated value at 575/600 V rated value for 3 hp for 3 hp for 3 hp for 4 hp for 5 hp 25 hp for 3 hp for 4 hp for 5 hp for 4 hp for 5 hp<th></th><th>ZIA</th>		ZIA
 — at 110/120 V rated value — at 230 V rated value 5 hp for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 25 hp 		
 — at 230 V rated value ■ for 3-phase AC motor — at 200/208 V rated value — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 25 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		
- 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		5 hp
 — at 220/230 V rated value — at 460/480 V rated value — at 575/600 V rated value 25 hp 	•	
— at 460/480 V rated value 25 hp — at 575/600 V rated value 25 hp	— at 200/208 V rated value	10 hp
— at 575/600 V rated value 25 hp	 at 220/230 V rated value 	10 hp
— at 575/600 V rated value 25 hp	 at 460/480 V rated value 	25 hp
contact rating of auxiliary contacts according to UL A600 / Q600	 at 575/600 V rated value 	
	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: 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 gG: 10 A (500 V, 1 kA) required Installation/ 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 Yes • side-by-side mounting 85 mm height width 45 mm depth 141 mm required spacing • with side-by-side mounting 10 mm forwards 10 mm - upwards downwards 10 mm - at the side 0 mm • for grounded parts 10 mm — forwards 10 mm - upwards - at the side 6 mm - downwards 10 mm · for live parts 10 mm - forwards - 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 2x (1 ... 2.5 mm²), 2x (2.5 ... 10 mm²) - solid - solid or stranded 2x (1 ... 2.5 mm²), 2x (2.5 ... 10 mm²) - finely stranded with core end processing 2x (1 ... 2.5 mm²), 2x (2.5 ... 6 mm²), 1x 10 mm² · at AWG cables for main contacts 2x (16 ... 12), 2x (14 ... 8) connectable conductor cross-section for main contacts solid 1 ... 10 mm² stranded 1 ... 10 mm² • finely stranded with core end processing 1 ... 10 mm² connectable conductor cross-section for auxiliary contacts 0.5 ... 2.5 mm² solid or stranded • finely stranded with core end processing 0.5 ... 2.5 mm² type of connectable conductor cross-sections · for auxiliary contacts 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) solid or stranded finely stranded with core end processing 2x (0.5 ... 1.5 mm²), 2x (0.75 ... 2.5 mm²) · at AWG cables for auxiliary contacts 2x (20 ... 16), 2x (18 ... 14) AWG number as coded connectable conductor cross section · for main contacts 16 ... 8 • for auxiliary contacts 20 ... 14

Safety related data product function • mirror contact according to IEC 60947-4-1 Yes • positively driven operation according to IEC 60947-No 5-1 450 000 B10 value with high demand rate according to SN 31920 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 100 FIT 31920 T1 value for proof test interval or service life according to 20 y IEC 61508 protection class IP on the front according to IEC IP20 60529

Yes

Certificates/ approvals

suitability for use

General Product Approval

• safety-related switching OFF



Confirmation

touch protection on the front according to IEC 60529





finger-safe, for vertical contact from the front

<u>KC</u>



Functional
Safety/Safety of
Machinery

Declaration of Conformity

Test Certificates



Type Examination Certificate





Type Test Certificates/Test Report

Special Test Certificate

Marine / Shipping













other Railway

Confirmation



Confirmation

Vibration and Shock

Further informatior

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=3RT2028-1AL24

Cax online generator

 $\underline{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RT2028-1AL24}$

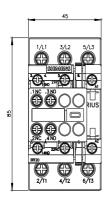
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

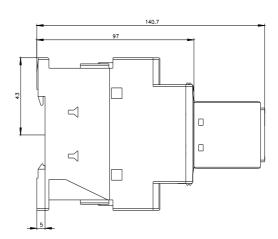
https://support.industry.siemens.com/cs/ww/en/ps/3RT2028-1AL24

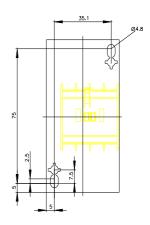
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

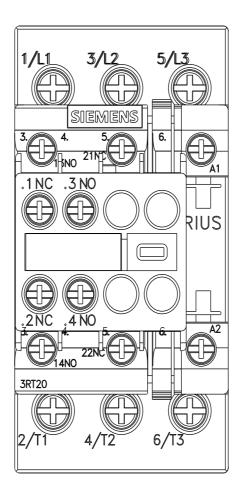
 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2028-1AL24\&lang=en}}$

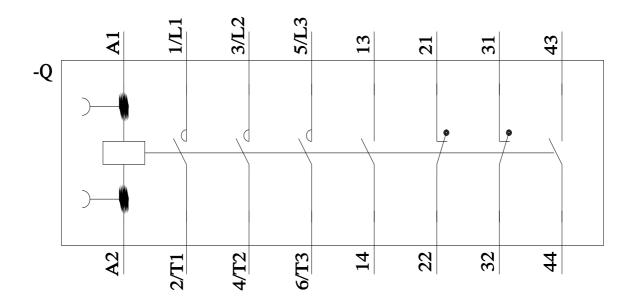
Further characteristics (e.g. electrical endurance, switching frequency)
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2028-1AL24&objecttype=14&gridview=view1











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