SIEMENS

Data sheet

3RT2016-2AB01



Power contactor, AC-3 9 A, 4 kW / 400 V 1 NO, 24 V AC, 50 / 60 Hz, 3-pole, Size S00 Spring-type terminal

ingel 6			
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	2.1 W		
per pole	0.7 W		
power loss [W] for rated value of the current without load current share typical	4.2 W		
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 acc. 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 acc. to IEC 81346-2	Q		
Substance Prohibitance (Date)	01.10.2009 00:00:00		
Ambient conditions			
installation altitude at height above sea level maximum	2 000 m		
 ambient temperature during operation 	-25 +60 °C		
ambient temperature during storage	-55 +80 °C		
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		

operational current	
at AC-1 at 400 V at ambient temperature 40 °C	22 A
rated 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 $^\circ ext{C}$ 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-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 at AC-6a 	7.4 A
— 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 at AC-6a 	5 A
— 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	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 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 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 110 V rated value	20 A
— at 220 V rated value	20 A
— at 440 V rated value	1.3 A
	1 A
— at 600 V rated value	
operational current	
	20 A

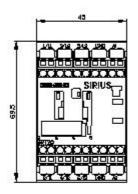
— at 110 V rated value	0.1 A			
 with 2 current paths in series at DC-3 at DC-5 				
— at 24 V rated value	20 A			
— at 110 V rated value	0.35 A			
 with 3 current paths in series at DC-3 at DC-5 				
— at 24 V rated value	20 A			
— at 110 V rated value	20 A			
— at 220 V rated value	1.5 A			
— at 440 V rated value	0.2 A			
— at 600 V rated value	0.2 A			
operating power				
• at AC-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			
operating power for approx. 200000 operating cycles	0.0 (())			
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 kV·A			
• up to 400 V for current peak value n=20 rated value	3.6 kV·A			
• up to 500 V for current peak value n=20 rated value	4.6 kV·A			
• up to 690 V for current peak value n=20 rated value	5.9 kV·A			
operating apparent power at AC-6a				
• up to 230 V for current peak value n=30 rated value	1.3 kV·A			
• up to 400 V for current peak value n=30 rated value	2.4 kV·A			
	3.1 kV·A			
• up to 500 V for current peak value n=30 rated value				
up to 690 V for current peak value n=30 rated value	4 kV·A			
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-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	24 V			
at 50 Hz rated value at 60 Hz rated value	24 V 24 V			
	24 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	27 V·A			
• at 60 Hz	24.3 V·A			
inductive power factor with closing power of the coil				
• at 50 Hz	0.8			
• at 60 Hz	0.75			

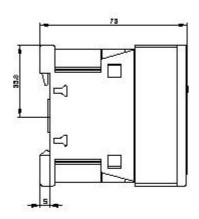
apparent holding power of magnet coil at AC				
• at 50 Hz	4.2 V·A			
• at 60 Hz	3.3 V·A			
inductive power factor with the holding power of the coil				
• at 50 Hz	0.25			
• at 60 Hz	0.25			
closing delay				
• at AC	9 35 ms			
opening delay				
• at AC	3.5 14 ms			
arcing time	10 15 ms			
control version of the switch operating mechanism	Standard A1 - A2			
Auxiliary circuit				
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			
 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	7.6 A			
• at 600 V rated value	9 A			
yielded mechanical performance [hp]				
 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)			

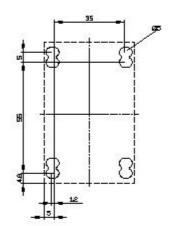
• for short-circuit protection of the auxiliary switch required

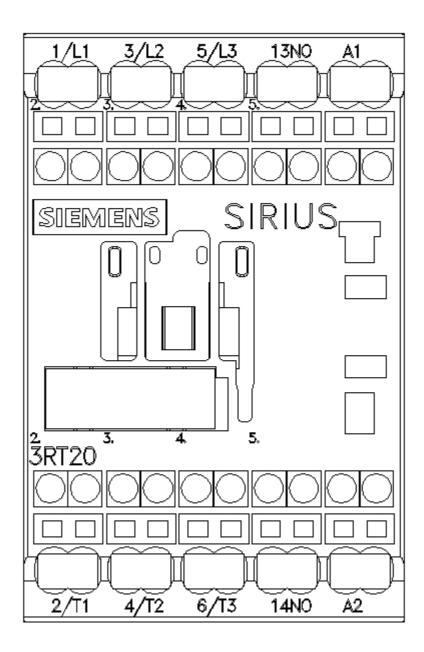
mounting position +/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface fastening method screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715 • side-by-side mounting Yes height 70 mm width 45 mm depth 73 mm required spacing In mm • with side-by-side mounting 0 mm - forwards 10 mm - upwards 10 mm - downwards 0 mm - forwards 10 mm - downwards 10 mm - downwards 10 mm - downwards 10 mm - forwards 10 mm - downwards 10 mm - forwards 10 mm - downwards <th1< th=""><th>Installation/ mounting/ dimensions</th><th></th></th1<>	Installation/ mounting/ dimensions			
Invariant and backward by 4-22.5° on vertical mounting surface sected and snape on mounting onto 35 mm standard mounting rail according to INL EN 80715 height 70 mm height 70 mm depth 70 mm depth <th70 mm<="" th=""></th70>		+/-180° rotation possible on vertical mounting surface; can be tilted		
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• for grounded partsImage: constraint of the state of the	— downwards	10 mm		
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	 for grounded parts 			
- a the side6 mm- downwards10 mm• for live parts10 mm- upwards10 mm- upwards10 mm- downwards0 mm- a the side6 mmConnections/ Terminals6 mmConnections/ Terminalsspring-loaded terminalsof or and no current circuitspring-loaded terminalsof or adin contactsSpring-type terminalsof main contactsSpring-type terminalsof main contactsSpring-type terminals- solid2x (0 5 4 mm²)- solid or stranded2x (0 5 4 mm²)- solid or stranded with core end processing2x (0 5 2 5 mm²)- finely stranded with core end processing0 5 2 5 mm²)• solid0.5 4 mm²• solid or stranded0.5 4 mm²• finely stranded with core end processing0.5 2 5 mm²• solid or stranded0.5 4 mm²• solid or stranded0.5 2 mm²• solid or stranded0.5 2 mm²• solid or stranded0.5 2 mm²• finely stranded with core end processing0.5	— forwards	10 mm		
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 for live parts forwards forwards domm upwards domm upwards domm downwards domm downwards domm downwards domm downwards for any the side Spring-loaded terminals spring-loaded terminals	— at the side	6 mm		
forwards10 mm upwards10 mm downwards00 mm downwards0 mm downwards6 mmConnections/ Terminalsspring-loaded terminals• for nain current circuitspring-loaded terminals• for nain current circuitspring-loaded terminals• for nain current circuitspring-loaded terminals• at contactor for auxiliary contactsSpring-type terminals• of mane contactsSpring-type terminals• for main contactsSpring-type terminals• for main contacts2x (0,5 4 mm²)- solid2x (0,5 4 mm²)- finely stranded with core end processing2x (0,5 2,5 mm²)• at AWG cables for main contacts2x (0,5 2,5 mm²)• solid0.5 4 mm²• finely stranded with core end processing0.5 2,5 mm²• solid0.5 4 mm²• solid or stranded0.5 4 mm²• finely stranded with core end processing0.5 2,5 mm²• solid or stranded0.5 4 mm²• finely stranded with core end processing0.5 2,5 mm²• finely stranded with core end processing0.5 2,5 mm²• for auxiliary contacts2 2,5 mm²• finely stranded with core end processing0.5 2,5 mm²• for auxiliary contacts2 2,5 mm²• finely stranded with core end p		10 mm		
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Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit • for auxiliary and control circuit • of magnet coil • of stranded - solid - solid or stranded - minely stranded without core end processing - finely stranded without core end processing • at AWG cables for main contacts • solid • solid • stranded • solid • finely stranded with core end processing • finely stranded without core end processing • finely stranded without core end processing	— downwards	10 mm		
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 coll Spring-type terminals type of connectable conductor cross-sections • for main contacts - solid 2x (0.5 4 mm²) - solid or stranded 2x (0.5 2.5 mm²) - finely stranded with core end processing 2x (0.5 2.5 mm²) - tatAWG cables for main contacts 2x (20 12) connectable conductor cross-section for main contacts 0.5 4 mm² • solid 0.5 4 mm² • solid 0.5 4 mm² • solid 0.5 2.5 mm² • solid 0.5 4 mm² • solid 0.5 2.5 mm² • solid or stranded 0.5 2.5 mm² • finely stranded with core end processing 0.5 2.5 mm² • solid or stranded 0.5 2.5 mm² • finely stranded with core end processing 0.5 2.5 mm² • for auxiliary contacts 0.5 2.5 mm² • for auxiliary contacts 2x (0.5 2.5 mm²) • for auxiliary contacts </td <td>— at the side</td> <td>6 mm</td>	— at the side	6 mm		
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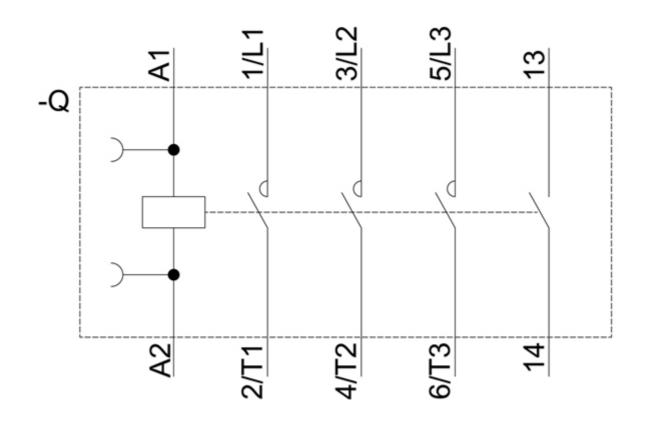
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Safety related data						
-	demand rate acc. to SN	31020	1 000 000	_		
proportion of dang		51920	1000000			
	and rate acc. to SN 3192	0	40 %			
	and rate acc. to SN 3192		40 % 73 %			
	low demand rate acc. to		100 FIT			
product function		5 514 51320	100111			
	acc. to IEC 60947-4-1		Yes; with 3RH2	29		
	test interval or service	life acc. to	20 y			
IEC 61508			20 9			
protection class IP	on the front acc. to IE	C 60529	IP20			
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Certificates/ approva	als					
General Product A	oproval					EMC
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Characteristic: Trip	oping characteristics, later structure s	t, Let-through d	current			











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