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Data sheet 3RT2025-2KB40



COUPLING RELAY, AC-3, 7.5KW/400V, 1NO+1NC, DC 24V, W. PLUGGED-IN VARISTOR 3-POLE, SZ S0 SPRING-LOADED TERMINAL

product brand name	SIRIUS
Product designation	Coupling relay

General technical data:	
Product expansion function module for communication	No
Insulation voltage	
• Rated value	690 V
maximum permissible voltage for safe isolation between coil and main contacts acc. to EN 60947-1	400 V
Degree of pollution	3
Shock resistance	
• **at rectangular impulse**	
— **for DC**	10g / 5 ms, 7,5g / 10 ms
• **with sine pulse**	
— **for DC**	15g / 5 ms, 10g / 10 ms
Surge voltage resistance Rated value	6 kV
Mechanical service life (switching cycles)	
• of the contactor typical	10 000 000
• of the contactor with added electronics-compatible auxiliary switch block typical	5 000 000
• of the contactor with added auxiliary switch block typical	10 000 000
Thermal short-time current restricted to 10 s	150 A
Protection class IP	
• on the front	IP20

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• of the terminal	IP20
Equipment marking	
• acc. to DIN EN 61346-2	Q
• acc. to DIN EN 81346-2	Q

Main circuit:	
Number of poles for main current circuit	3
Number of NC contacts for main contacts	0
Number of NO contacts for main contacts	3
Operating voltage	
• at AC-3 Rated value maximum	690 V
Operating current	
• at AC-1	
— at 400 V at ambient temperature 40 °C Rated value	40 A
— up to 690 V at ambient temperature 40 °C Rated value	40 A
— up to 690 V at ambient temperature 60 °C Rated value	35 A
• at AC-2 at 400 V Rated value	17 A
• at AC-3	
— at 400 V Rated value	17 A
— at 500 V Rated value	17 A
— at 690 V Rated value	13 A
• at AC-4 at 400 V Rated value	15.5 A
Operating current with 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
• at DC-3 at DC-5	
— at 24 V Rated value	20 A
— at 110 V Rated value	2.5 A
— at 220 V Rated value	1 A
— at 440 V Rated value	0.09 A
— at 600 V Rated value	0.06 A
Operating current 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

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— at 440 V Rated value	1 A
— at 600 V Rated value	0.8 A
• at DC-3 at DC-5	
— at 110 V Rated value	15 A
— at 220 V Rated value	3 A
— at 24 V Rated value	35 A
— at 440 V Rated value	0.27 A
— at 600 V Rated value	0.16 A
Operating current with 3 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	35 A
— at 440 V Rated value	2.9 A
— at 600 V Rated value	1.4 A
• at DC-3 at DC-5	
— at 110 V Rated value	35 A
— at 220 V Rated value	10 A
— at 24 V Rated value	35 A
— at 440 V Rated value	0.6 A
— at 600 V Rated value	0.6 A
Operating power	
• at AC-1	
— at 230 V at 60 °C Rated value	13.3 kW
— at 400 V at 60 °C Rated value	23 kW
— at 690 V at 60 °C Rated value	40 kW
Operating power for ≥ 200000 operating cycles at AC-4	
• at 400 V Rated value	3.5 kW
• at 690 V Rated value	6 kW
Active power loss at AC-3 at 400 V for rated value of the operating current per conductor	0.9 W
Operating frequency	
• at AC-1 maximum	1 000 1/h
• at AC-2 maximum	1 000 1/h
• at AC-3 maximum	1 000 1/h
• at AC-4 maximum	300 1/h
No-load switching frequency	
• for DC	1 500 1/h
Control circuit/ Control:	
Type of voltage of the control supply voltage	DC

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Control supply voltage for DC	
• Rated value	24 V
Operating range factor control supply voltage rated value of the magnet coil for DC	0.7 ... 1.25
Design of the surge suppressor	with varistor
Closing power of the magnet coil for DC	4.5 W
Holding power of the magnet coil for DC	4.5 W
Closing delay	
• for DC	50 ... 170 ms
Opening delay	
• for DC	15 ... 17.5 ms
Arcing time	10 ... 10 ms
Residual current of the electronics for control with signal <0>	
• with AC at 230 V maximum permissible	6 mA
• for DC at 24 V maximum permissible	16 mA
Auxiliary circuit:	
Number of NC contacts	
• for auxiliary contacts	
— instantaneous contact	1
Number of NO contacts	
• for auxiliary contacts	
— instantaneous contact	1
Product expansion Auxiliary switch	No
Operating current at AC-12 maximum	10 A
Operating current at AC-15	
• at 230 V Rated value	10 A
• at 400 V Rated value	3 A
• at 690 V Rated value	1 A
Operating current at DC-12	
• 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
Operating current at DC-13	
• at 24 V Rated value	10 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

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Contact reliability of the auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
UL/CSA ratings:	
Full-load current (FLA) for three-phase AC motor	
• at 480 V Rated value	14 A
• at 600 V Rated value	17 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V Rated value	1 hp
— at 230 V Rated value	3 hp
• for three-phase AC motor	
— at 200/208 V Rated value	3 hp
— at 220/230 V Rated value	5 hp
— at 460/480 V Rated value	10 hp
— at 575/600 V Rated value	15 hp
Contact rating of the auxiliary contacts acc. to UL	A600 / Q600
Short-circuit:	
Design of the fuse link	
• for short-circuit protection of the main circuit	
— with type of assignment 1 required	gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 63 A
— with type of assignment 2 required	gL/gG LV HRC 3NA, DIAZED 5SB, NEOZED 5SE: 25 A
• for short-circuit protection of the auxiliary switch required	fuse gL/gG: 10 A
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
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 50022
• Side-by-side mounting	Yes
Height	102 mm
Width	45 mm
Depth	107 mm
Required spacing	
• with side-by-side mounting	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— downwards	0 mm
— at the side	0 mm
• for grounded parts	
— forwards	0 mm

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— Backwards	0 mm
— upwards	0 mm
— at the side	6 mm
— downwards	0 mm
• for live parts	
— forwards	0 mm
— Backwards	0 mm
— upwards	0 mm
— downwards	0 mm
— at the side	6 mm

Connections/ Terminals:

Type of electrical connection	
• for main current circuit	spring-loaded terminals
• for auxiliary and control current circuit	spring-loaded terminals
Type of connectable conductor cross-section	
• for main contacts	
— single or multi-stranded	2x (1 ... 10 mm²)
— finely stranded with core end processing	2x (1 ... 6 mm²)
— finely stranded without core end processing	2x (1 ... 6 mm²)
• for AWG conductors for main contacts	2x (18 ... 8)
• for auxiliary contacts	
— single or multi-stranded	2x (0,5 ... 2,5 mm²)
— finely stranded with core end processing	2x (0.5 ... 1.5 mm²)
— finely stranded without core end processing	2x (0.5 ... 2.5 mm²)
• for AWG conductors for auxiliary contacts	2x (20 ... 14)

Safety related data:

B10 value with high demand rate acc. to SN 31920	1 000 000
Proportion of dangerous failures	
• with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	73 %
Product function	
• Mirror contact acc. to IEC 60947-4-1	Yes
T1 value for proof test interval or service life acc. to IEC 61508	20 y
Protection against electrical shock	finger-safe

Mechanical data:

Size of contactor	S0

Ambient conditions:

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Installation altitude at height above sea level maximum	2 000 m
Ambient temperature	
• during operation	-25 ... +60 °C
• during operation Note	Railway application: -40 ... 70 °C with 10 mm clearance. See catalog for other rated conditions
• during storage	-55 ... +80 °C

Certificates/ approvals:

General Product Approval				EMC	Functional Safety/Safety of Machinery
					Type Examination
CCC	CSA		UL	C-TICK	

Declaration of Conformity	Test Certificates			Shipping Approval	
	Special Test Certificate	Type Test Certificates/Test Report	other		
EG-Konf.				ABS	BUREAU VERITAS

Shipping Approval

DNV	GL	LRS	PRS	RINA	RMRS

other

Environmental Confirmations	Confirmation	
		VDE

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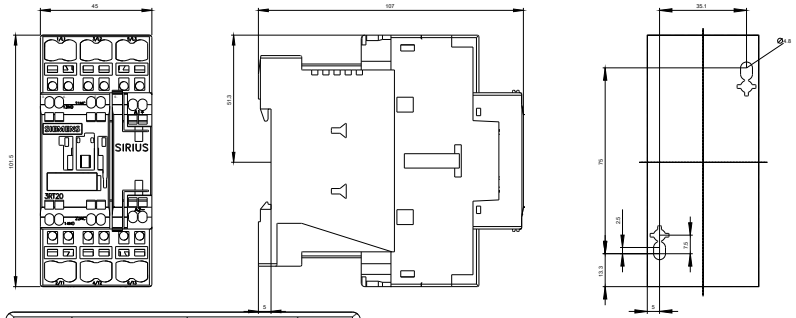
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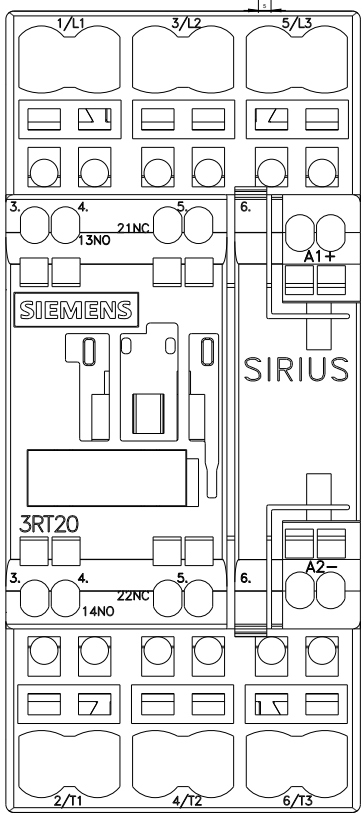
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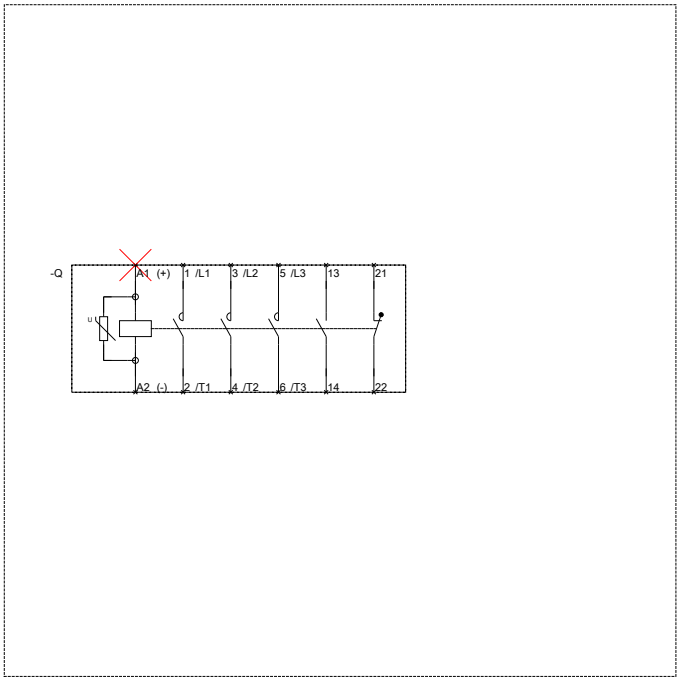
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