SIEMENS

Data sheet 3RT2027-1KB40

Contactor relay, AC-3 32 A, 15 kW / 400 V 1 NO + 1 NC, 24 V DC with integrated varistor 3-pole, size S0 screw terminals suitable for PLC outputs



Product brand name	SIRIUS
Product designation	Coupling relay
Product type designation	3RT2

General technical data	
Size of contactor	S0
Product extension	
 function module for communication 	No
Auxiliary switch	No
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	400 V
60947-1	
Protection class IP	
• on the front	IP20
of the terminal	IP20
Shock resistance at rectangular impulse	
• at DC	10g / 5 ms, 7,5g / 10 ms

Shock resistance with sine pulse	
• at DC	15g / 5 ms, 10g / 10 ms
Mechanical service life (switching cycles)	
of 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
Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750	К
Reference code acc. to DIN EN 81346-2	Q
Ambient conditions	
Installation altitude at height above sea level	
• maximum	2 000 m
Ambient temperature	
 during operation 	-25 +60 °C
during operation	Railway application: -40 70 °C with 10 mm clearance. See catalog for other rated conditions
• 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
Operating current	
• at AC-1 at 400 V	
— at ambient temperature 40 °C rated valueat AC-1	50 A
— up to 690 V at ambient temperature 40 °C rated value	50 A
— up to 690 V at ambient temperature 60 °C rated value	42 A
• at AC-2 at 400 V rated value	32 A
• at AC-3	
— at 400 V rated value	32 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
Connectable conductor cross-section in main circuit at AC-1	
• at 60 °C minimum permissible	10 mm²
• at 40 °C minimum permissible	10 mm²

Operating current for approx. 200000 operating cycles at AC-4	
• at 400 V rated value	12 A
• at 690 V rated value	12 A
Operating 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 	
— 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
Operating current	
• at 1 current path 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
• with 2 current paths in series at DC-3 at DC-5	
— at 24 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 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-1	
— at 230 V rated value	16 kW
— at 230 V at 60 °C rated value	15.5 kW
— at 400 V rated value	28 kW
— at 400 V at 60 °C rated value	27.5 kW
— at 690 V rated value	48 kW
— at 690 V at 60 °C rated value	47.5 kW
• at AC-2 at 400 V rated value	15 kW
• at AC-3	
— at 230 V rated value	7.5 kW
— at 400 V rated value	15 kW
— at 500 V rated value	15 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
Thermal short-time current limited to 10 s	260 A
Power loss [W] at AC-3 at 400 V for rated value of	2.7 W
the operating current per conductor No-load switching frequency	
• at DC	1 500 1/h
Operating frequency	1 000 1/11
• 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	
Type of voltage of the control supply voltage	DC
Control supply voltage at DC	24.V
rated value Operating range factor control supply voltage rated.	24 V
Operating range factor control supply voltage rated value of magnet coil at DC	
• initial value	0.7
• Full-scale value	1.25
Design of the surge suppressor	with varistor
Closing power of magnet coil at DC	4.5 W
Holding power of magnet coil at DC	4.5 W
Closing delay	
• at DC	50 170 ms

Opening delay	
• at DC	15 17.5 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
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 500 V rated value	2 A
• at 690 V rated value	1 A
Operating 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
Operating 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 three-phase AC motor	
● at 480 V rated value	27 A
• at 600 V rated value	27 A
Yielded mechanical performance [hp]	
 for single-phase AC motor 	
— at 110/120 V rated value	2 hp
— at 230 V rated value	5 hp
• for three-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	20 hp
— at 575/600 V rated value	25 hp
Contact rating of auxiliary contacts according to UL	A600 / Q600

contact runing or durantally contacts according to co	
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 	fuse gG: 10 A

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
Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
Side-by-side mounting	Yes
Height	85 mm
Width	45 mm
Depth	107 mm
Required spacing	
 for grounded parts 	
— at the side	6 mm
• for live parts	
— at the side	6 mm

screw-type terminals
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screw-type terminals
2x (1 2.5 mm²), 2x (2.5 10 mm²)
2x (1 2,5 mm²), 2x (2,5 10 mm²)
2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
2x (16 12), 2x (14 8)
1 10 mm²

• stranded	1 10 mm²
 finely stranded with core end processing 	1 10 mm²
Connectable conductor cross-section for auxiliary	
contacts	
 single or multi-stranded 	0.5 2.5 mm²
 finely stranded with core end processing 	0.5 2.5 mm²
Type of connectable conductor cross-sections	
 for auxiliary contacts 	
— single or multi-stranded	2x (0,5 1,5 mm²), 2x (0,75 2,5 mm²)
 finely stranded with core end processing 	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²)
 at AWG conductors 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		
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 %	
Failure rate [FIT]		
 with low demand rate acc. to SN 31920 	100 FIT	
Product function		
 Mirror contact acc. to IEC 60947-4-1 	Yes	
T1 value for proof test interval or service life acc. to	20 y	
IEC 61508		
Protection against electrical shock	finger-safe	

Certificates/approvals

General Product Approval







KC





EMC

Functional
Safety/Safety
of Machinery

Declaration	C
Conformity	

Test Certificates

Marine / **Shipping**

Type Examination



Type Test Certificates/Test Report

Special Test Certificate

Miscellaneous



Marine / Shipping





GL









Marine / Shipping other

Confirmation



Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

http://www.siemens.com/industrial-controls/catalogs

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RT2027-1KB40

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RT2027-1KB40

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

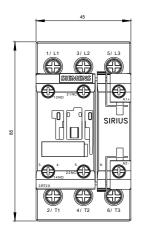
https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-1KB40

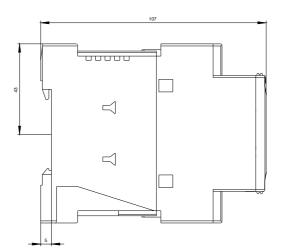
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RT2027-1KB40&lang=en

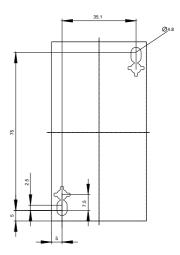
Characteristic: Tripping characteristics, I2t, Let-through current

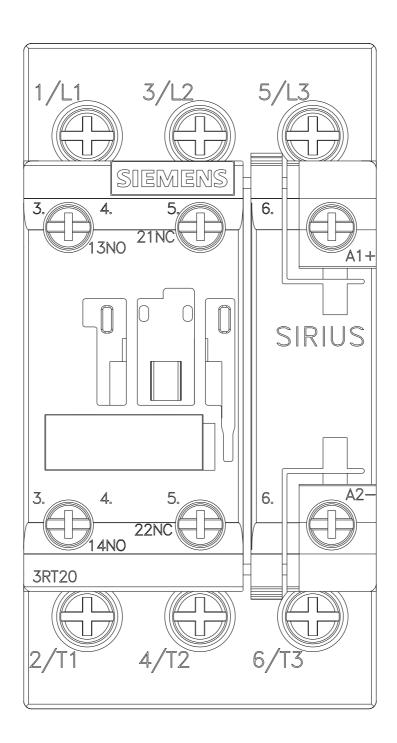
https://support.industry.siemens.com/cs/ww/en/ps/3RT2027-1KB40/char

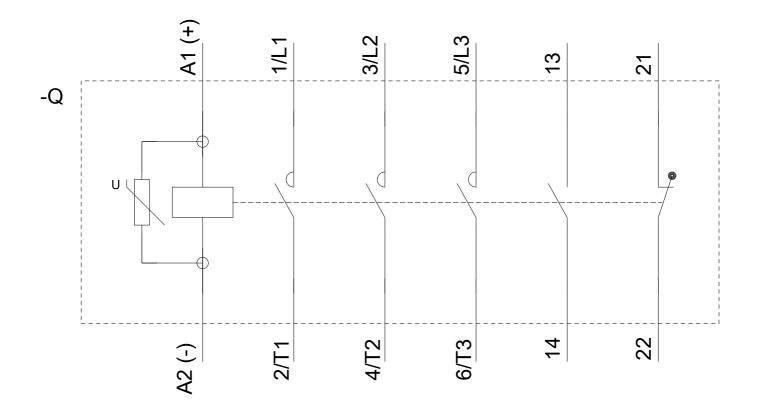
Further characteristics (e.g. electrical endurance, switching frequency) http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RT2027-1KB40&objecttype=14&gridview=view1











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