SIEMENS

Data sheet 3RH2131-1FB40

Contactor relay, 3 NO + 1 NC, 24 V DC, with integrated diode, Size S00, screw terminal



Product brand name	SIRIUS
Product designation	contactor relay
Product type designation	3RH2

General technical data	
Size of contactor	S00
Product extension	
• Auxiliary switch	Yes
Insulation voltage	
• with degree of pollution 3 rated value	690 V
Degree of pollution	3
Surge voltage resistance rated value	6 kV
Protection class IP	
• on the front	IP20
Shock resistance at rectangular impulse	
• at DC	10g / 5 ms, 5g / 10 ms
Shock resistance with sine pulse	
• at DC	15g / 5 ms, 8g / 10 ms
Mechanical service life (switching cycles)	
• of contactor typical	30 000 000

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• 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

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

Main circuit	
No-load switching frequency	
• at AC	10 000 1/h
• at DC	10 000 1/h

Control circuit/ Control	
Type of voltage of the control supply voltage	DC
Control supply voltage at DC	
• rated value	24 V
Design of the surge suppressor	with diode
Closing power of magnet coil at DC	4 W
Holding power of magnet coil at DC	4 W
Closing delay	
• at DC	30 ... 100 ms
Opening delay	
• at DC	7 ... 13 ms
Arcing time	10 ... 15 ms

Auxiliary circuit	
Number of NC contacts	
• **for auxiliary contacts**	1
— instantaneous contact	1
Number of NO contacts	
• **for auxiliary contacts**	3
— instantaneous contact	3
Identification number and letter for switching elements	31 E
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

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Operating current at 1 current path at DC-12	
• at 24 V rated value	10 A
• at 110 V rated value	3 A
• at 220 V rated value	1 A
• at 440 V rated value	0.3 A
• at 600 V rated value	0.15 A
Operating current with 2 current paths in series at DC-12	
• at 24 V rated value	10 A
• at 60 V rated value	10 A
• at 110 V rated value	4 A
• at 220 V rated value	2 A
• at 440 V rated value	1.3 A
• at 600 V rated value	0.65 A
Operating current with 3 current paths in series at DC-12	
• at 24 V rated value	10 A
• at 60 V rated value	10 A
• at 110 V rated value	10 A
• at 220 V rated value	3.6 A
• at 440 V rated value	2.5 A
• at 600 V rated value	1.8 A
Operating frequency at DC-12 maximum	1 000 1/h
Operating current at 1 current path at DC-13	
• at 24 V rated value	10 A
• at 110 V rated value	1 A
• at 220 V rated value	0.3 A
• at 440 V rated value	0.14 A
• at 600 V rated value	0.1 A
Operating current with 2 current paths in series at DC-13	
• at 24 V rated value	10 A
• at 60 V rated value	3.5 A
• at 110 V rated value	1.3 A
• at 220 V rated value	0.9 A
• at 440 V rated value	0.2 A
• at 600 V rated value	0.1 A
Operating current with 3 current paths in series at DC-13	
• at 24 V rated value	10 A
• at 60 V rated value	4.7 A
• at 110 V rated value	3 A

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• at 220 V rated value	1.2 A
• at 440 V rated value	0.5 A
• at 600 V rated value	0.26 A
Operating frequency at DC-13 maximum	1 000 1/h
Design of the miniature circuit breaker	
• for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 6 A; 0.4 kA
Contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)

UL/CSA ratings

Contact rating of auxiliary contacts according to UL	A600 / Q600

Short-circuit protection

Design of the fuse link	
• 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
Height	57.5 mm
Width	45 mm
Depth	73 mm
Required spacing	
• for grounded parts	
— at the side	6 mm
• for live parts	
— at the side	6 mm

Connections/Terminals

Type of electrical connection	
• for auxiliary and control current circuit	screw-type terminals
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), 2x 4 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), 2x 12

Safety related data

B10 value	
• with high demand rate acc. to SN 31920	1 000 000; With 0.3 x Ie
Proportion of dangerous failures	
• with low demand rate acc. to SN 31920	40 %
• with high demand rate acc. to SN 31920	73 %

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Failure rate [FIT]	
• with low demand rate acc. to SN 31920	100 FIT
Product function	
• positively driven operation acc. to IEC 60947-5-1	Yes
T1 value for proof test interval or service life acc. to IEC 61508	20 y

Certificates/approvals

General Product Approval				Functional Safety/Safety of Machinery	Declaration of Conformity
CCC	CSA	UL	EAC	Type Examination	EG-Konf.

Test Certificates	Marine / Shipping				
Type Test Certificates/Test Report	ABS	BUREAU VERITAS	GL	LRS	PRS

Marine / Shipping			other	
RINA	RMRS	DNV·GL DNVGL.COM/AF	Confirmation	VDE

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=3RH2131-1FB40

Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RH2131-1FB40

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RH2131-1FB40

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RH2131-1FB40&lang=en

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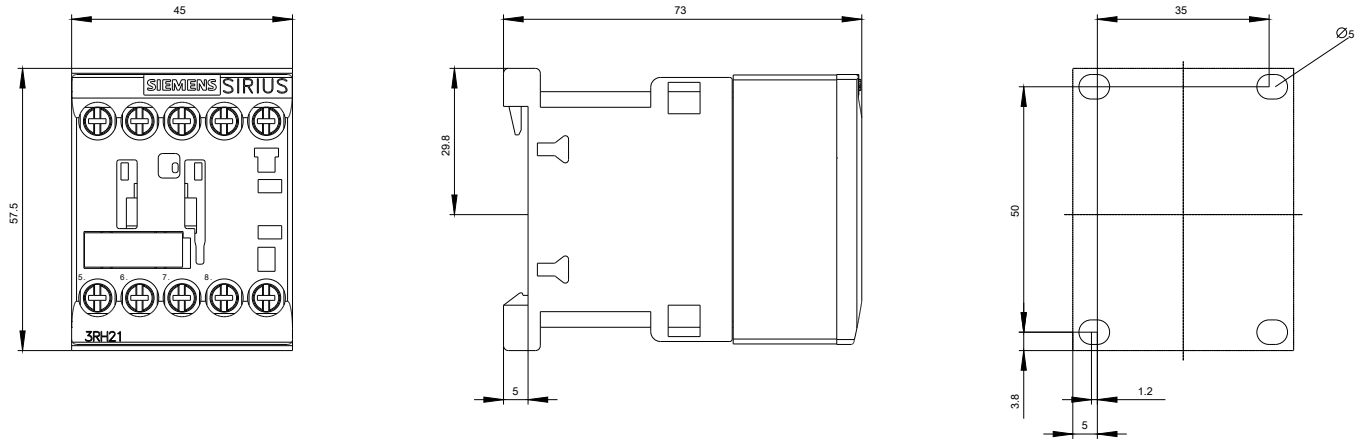

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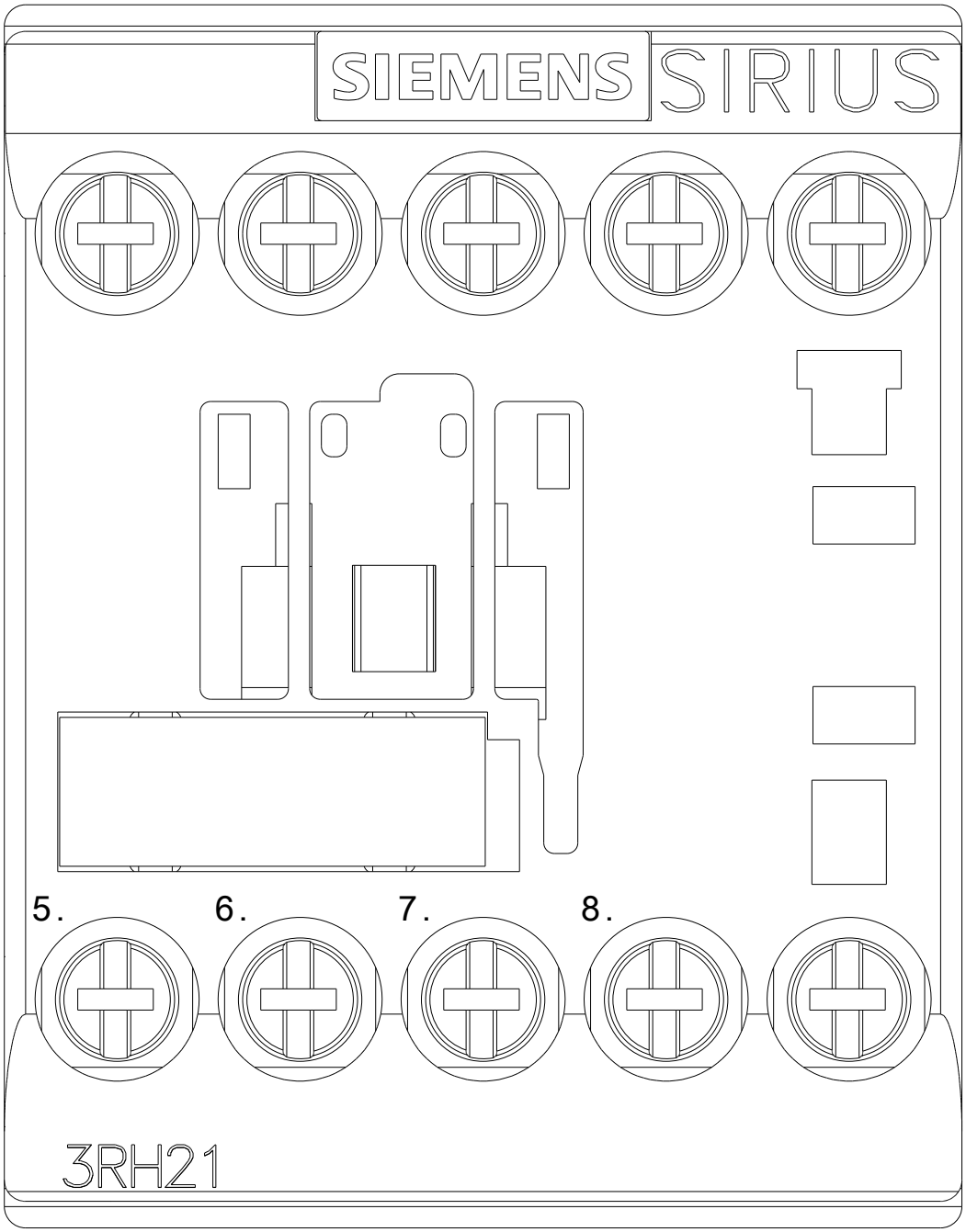

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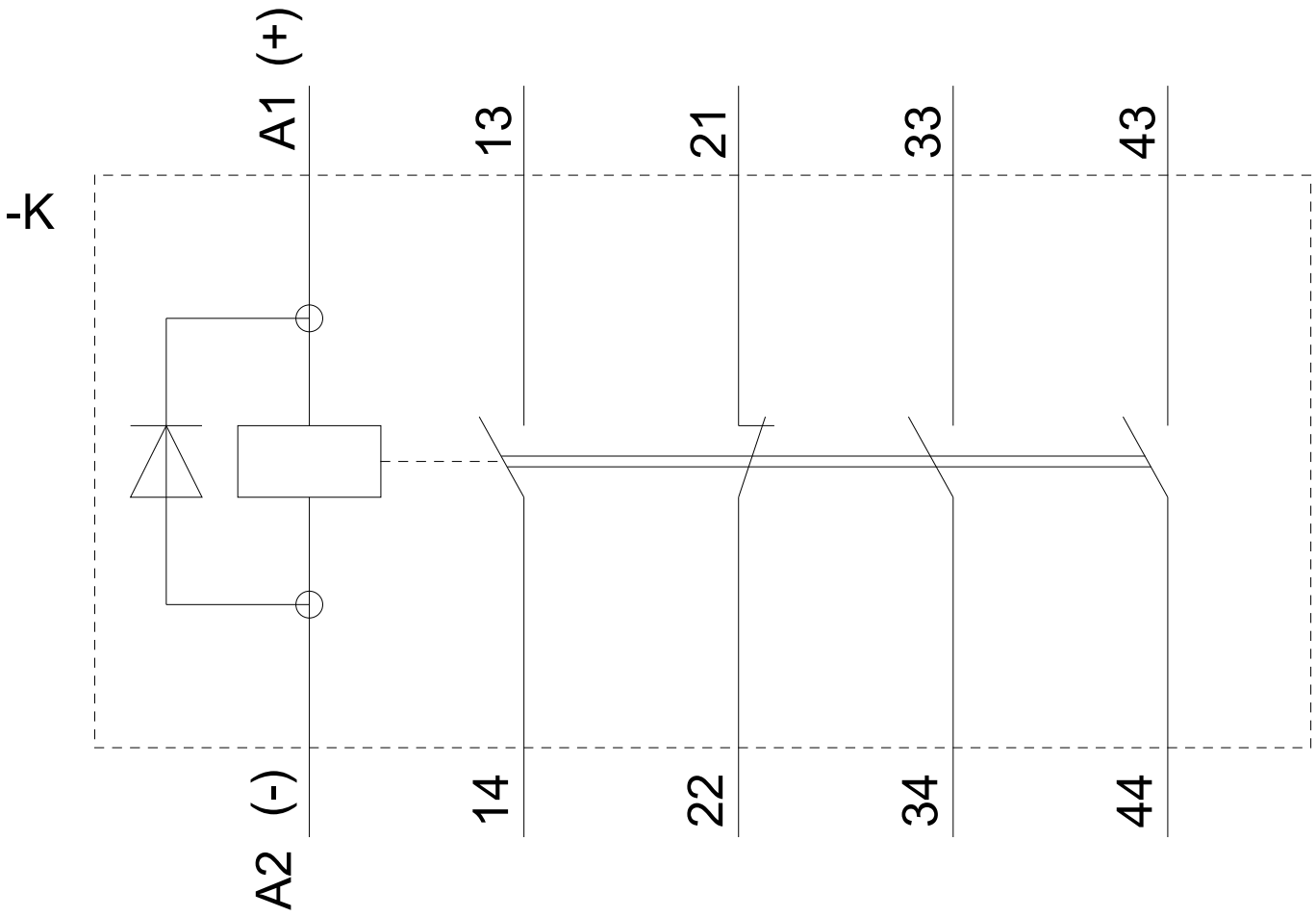

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