

Overload relay 12.5...50 A Electronic For motor protection Size S3, Class 10E Stand-alone installation Main circuit: Straight-through transformer Auxiliary circuit: Spring-type terminal Manual-Automatic-Reset



Product brand name	SIRIUS
Product designation	solid-state overload relay
Product type designation	3RB3

General technical data

Size of overload relay	S3
Size of contactor can be combined company-specific	S3
Power loss [W] for rated value of the current	
• at AC in hot operating state	0.2 W
• at AC in hot operating state per pole	0.07 W
Insulation voltage with degree of pollution 3 rated value	1 000 V
Surge voltage resistance rated value	8 kV
maximum permissible voltage for safe isolation	
• in networks with grounded star point between auxiliary and auxiliary circuit	300 V
• in networks with grounded star point between auxiliary and auxiliary circuit	300 V
• in networks with grounded star point between main and auxiliary circuit	600 V

<ul style="list-style-type: none"> in networks with grounded star point between main and auxiliary circuit 	690 V
Protection class IP	
<ul style="list-style-type: none"> on the front 	IP20
<ul style="list-style-type: none"> of the terminal 	IP20
Shock resistance	8g / 11 ms
<ul style="list-style-type: none"> acc. to IEC 60068-2-27 	15g / 11 ms; Signaling contact 97 / 98 in position "Tripped": 8g / 11 ms
Vibration resistance	1-6 Hz, 15 mm; 6-500 Hz, 20 m/s ² ; 10 cycles
Thermal current	50 A
Recovery time	
<ul style="list-style-type: none"> after overload trip with automatic reset typical 	3 min
<ul style="list-style-type: none"> after overload trip with remote-reset 	0 min
<ul style="list-style-type: none"> after overload trip with manual reset 	0 min
Type of protection according to ATEX directive 2014/34/EU	Ex II (2) G [Ex e] [Ex d] [Ex px] ; Ex II (2) D [Ex t] [Ex p]
Certificate of suitability according to ATEX directive 2014/34/EU	PTB 09 ATEX 3001
Reference code acc. to DIN EN 81346-2	F

Ambient conditions

Installation altitude at height above sea level	
<ul style="list-style-type: none"> maximum 	2 000 m
Ambient temperature	
<ul style="list-style-type: none"> during operation 	-25 ... +60 °C
<ul style="list-style-type: none"> during storage 	-40 ... +80 °C
<ul style="list-style-type: none"> during transport 	-40 ... +80 °C
Temperature compensation	-25 ... +60 °C
Relative humidity during operation	10 ... 95 %

Main circuit

Number of poles for main current circuit	3
Adjustable pick-up value current of the current-dependent overload release	12.5 ... 50 A
Operating voltage	
<ul style="list-style-type: none"> rated value 	1 000 V
<ul style="list-style-type: none"> at AC-3 rated value maximum 	1 000 V
Operating frequency rated value	50 ... 60 Hz
Operating current rated value	50 A
Operating power	
<ul style="list-style-type: none"> for three-phase motors at 400 V at 50 Hz 	7.5 ... 22 kW
<ul style="list-style-type: none"> for AC motors at 500 V at 50 Hz 	11 ... 30 kW
<ul style="list-style-type: none"> for AC motors at 690 V at 50 Hz 	11 ... 45 kW

Auxiliary circuit

Design of the auxiliary switch	integrated
Number of NC contacts for auxiliary contacts	1
• Note	for contactor disconnection
Number of NO contacts for auxiliary contacts	1
• Note	for message "tripped"
Number of CO contacts	
• for auxiliary contacts	0
Operating current of auxiliary contacts at AC-15	
• at 24 V	4 A
• at 110 V	4 A
• at 120 V	4 A
• at 125 V	4 A
• at 230 V	3 A
Operating current of auxiliary contacts at DC-13	
• at 24 V	2 A
• at 60 V	0.55 A
• at 110 V	0.3 A
• at 125 V	0.3 A
• at 220 V	0.11 A

Protective and monitoring functions

Trip class	CLASS 10E
Design of the overload release	electronic

UL/CSA ratings

Full-load current (FLA) for three-phase AC motor	
• at 480 V rated value	50 A
• at 600 V rated value	50 A
Contact rating of auxiliary contacts according to UL	B600 / R300

Short-circuit protection

Design of the fuse link	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 200 A
— with type of assignment 2 required	gG: 200 A
• for short-circuit protection of the auxiliary switch required	fuse gG: 6 A

Installation/ mounting/ dimensions

Mounting position	any
Mounting type	stand-alone installation
Height	106 mm
Width	70 mm
Depth	124 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
— 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

Product function	
• removable terminal for auxiliary and control circuit	Yes
Type of electrical connection	
• for main current circuit	straight-through transformers
• for auxiliary and control current circuit	spring-loaded terminals
Arrangement of electrical connectors for main current circuit	Top and bottom
Type of connectable conductor cross-sections	
• for auxiliary contacts	
— solid	2x (0.25 ... 1.5 mm ²)
— single or multi-stranded	2x (0,25 ... 1,5 mm ²)
— finely stranded with core end processing	2x (0.25 ... 1.5 mm ²)
— finely stranded without core end processing	2x (0.25 ... 1.5 mm ²)
• at AWG conductors for auxiliary contacts	2x (24 ... 16)
Design of screwdriver shaft	Diameter 5 to 6 mm
Size of the screwdriver tip	Pozidriv PZ 2

Communication/ Protocol

Type of voltage supply via input/output link master	No
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Electromagnetic compatibility

Conducted interference	
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- due to burst acc. to IEC 61000-4-4
- due to conductor-earth surge acc. to IEC 61000-4-5
- due to conductor-conductor surge acc. to IEC 61000-4-5
- due to high-frequency radiation acc. to IEC 61000-4-6

2 kV (power ports), 1 kV (signal ports) corresponds to degree of severity 3
 2 kV (line to earth) corresponds to degree of severity 3
 1 kV (line to line) corresponds to degree of severity 3
 10 V in frequency range 0.15 to 80 MHz, modulation 80 % AM with 1 kHz




Field-bound parasitic coupling acc. to IEC 61000-4-3	10 V/m
Electrostatic discharge acc. to IEC 61000-4-2	6 kV contact discharge / 8 kV air discharge



Display

Display version	
• for switching status	Slide switch

Certificates/ approvals

General Product Approval	EMC	For use in hazardous locations
 CCC	 CSA	 UL
		
		
		

Declaration of Conformity	Test Certificates	Marine / Shipping
 EG-Konf.	Miscellaneous Type Test Certificates/Test Report Special Test Certificate	 LRS  PRS

Marine / Shipping	other
 RINA  DNV-GL DNVGL.COM/AF	Confirmation

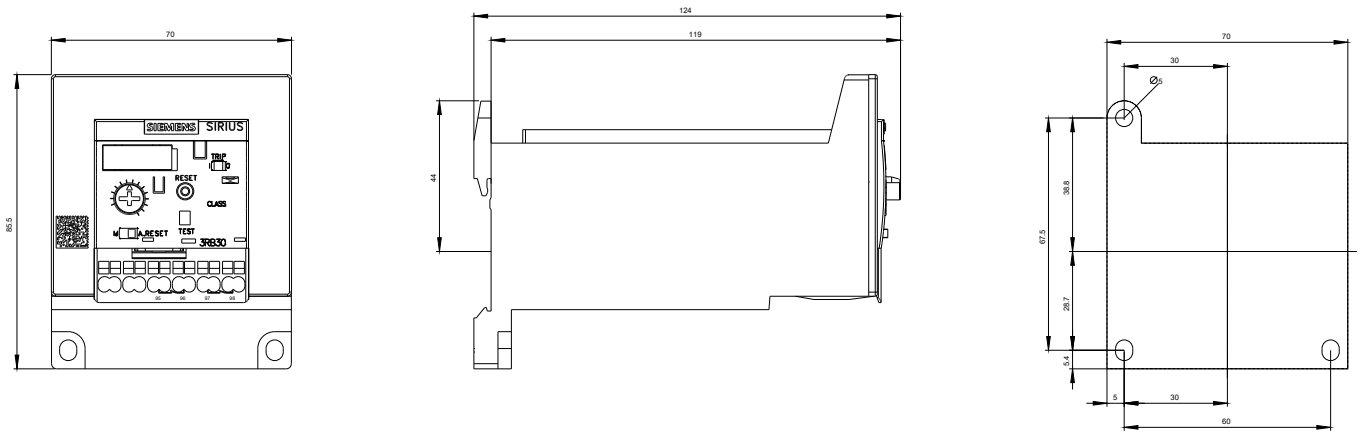
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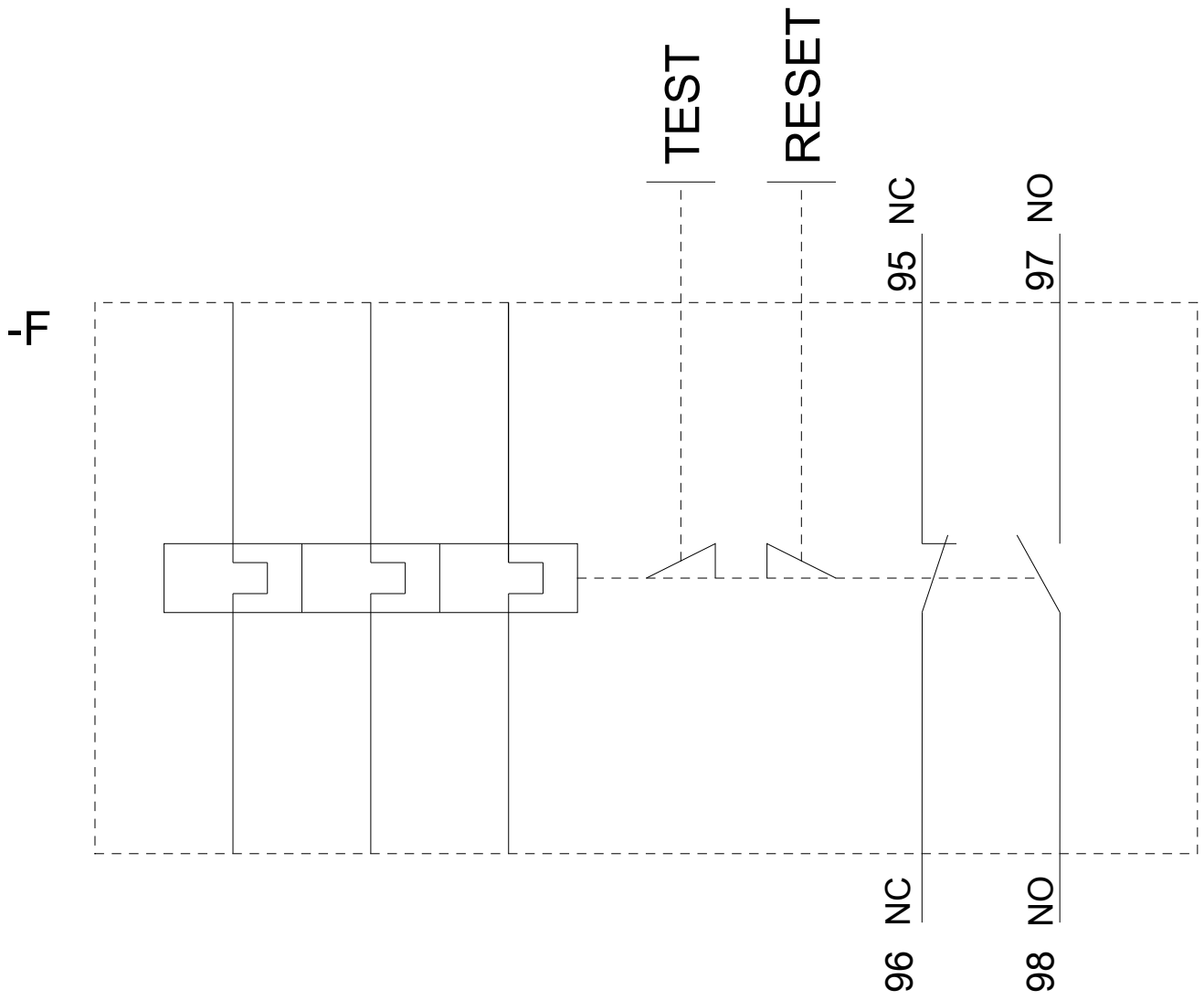
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Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB3046-1UX1&lang=en

Characteristic: Tripping characteristics, I^2t , Let-through current
<https://support.industry.siemens.com/cs/ww/en/ps/3RB3046-1UX1/char>

Further characteristics (e.g. electrical endurance, switching frequency)
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB3046-1UX1&objecttype=14&gridview=view1>





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