

Overload relay 32...115 A for motor protection Size S3, Class 20E
 Stand-alone installation Main circuit: Straight-through transformer
 Auxiliary circuit: Screw 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] total typical	0.6 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	
<ul style="list-style-type: none"> • in networks with grounded star point between auxiliary and auxiliary circuit 	300 V
<ul style="list-style-type: none"> • in networks with grounded star point between auxiliary and auxiliary circuit 	300 V
<ul style="list-style-type: none"> • 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
Vibration resistance	1-6 Hz, 15 mm; 6-500 Hz, 20 m/s ² ; 10 cycles
Thermal current	115 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	II (2) G [Ex e] [Ex d] [Ex px] II (2) D [Ex t] [Ex p]
Certificate of suitability relating to ATEX	PTB 09 ATEX 3001
Protection against electrical shock	finger-safe
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	32 ... 115 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	115 A
Operating power	
<ul style="list-style-type: none"> • for three-phase motors at 400 V at 50 Hz 	18.5 ... 55 kW
<ul style="list-style-type: none"> • for AC motors at 500 V at 50 Hz 	22 ... 75 kW
<ul style="list-style-type: none"> • for AC motors at 690 V at 50 Hz 	30 ... 90 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 20E
Design of the overload release	electronic

UL/CSA ratings

Full-load current (FLA) for three-phase AC motor	
• at 480 V rated value	115 A
• at 600 V rated value	115 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: 315 A
— with type of assignment 2 required	gG: 315 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	screw-type terminals
Arrangement of electrical connectors for main current circuit	Top and bottom
Type of connectable conductor cross-sections	
• for auxiliary contacts	
— solid	1x (0.5 ... 4 mm ²), 2x (0.5 ... 2.5 mm ²)
— single or multi-stranded	1x (0,5 ... 4 mm ²), 2x (0,5 ... 2,5 mm ²)
— finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
• at AWG conductors for auxiliary contacts	2x (20 ... 14)
Tightening torque	
• for auxiliary contacts with screw-type terminals	0.8 ... 1.2 N·m
Design of screwdriver shaft	Diameter 5 to 6 mm
Size of the screwdriver tip	Pozidriv PZ 2
Design of the thread of the connection screw	
• of the auxiliary and control contacts	M3

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 <ul style="list-style-type: none"> • for switching status 	Slide switch
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Certificates/approvals

General Product Approval	EMC	For use in hazardous locations	Declaration of Conformity
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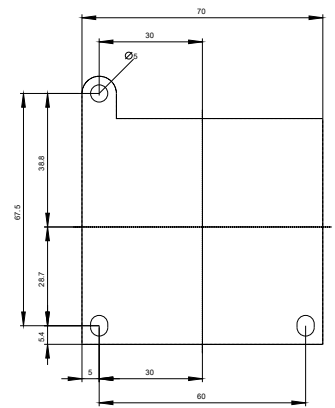
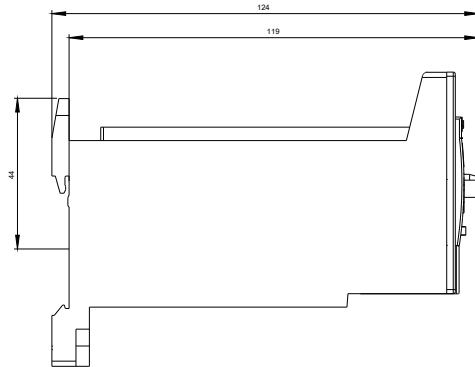
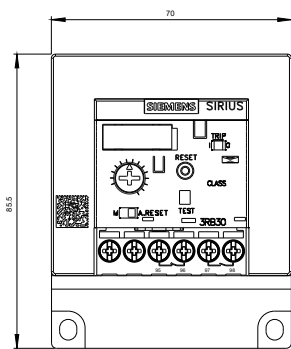


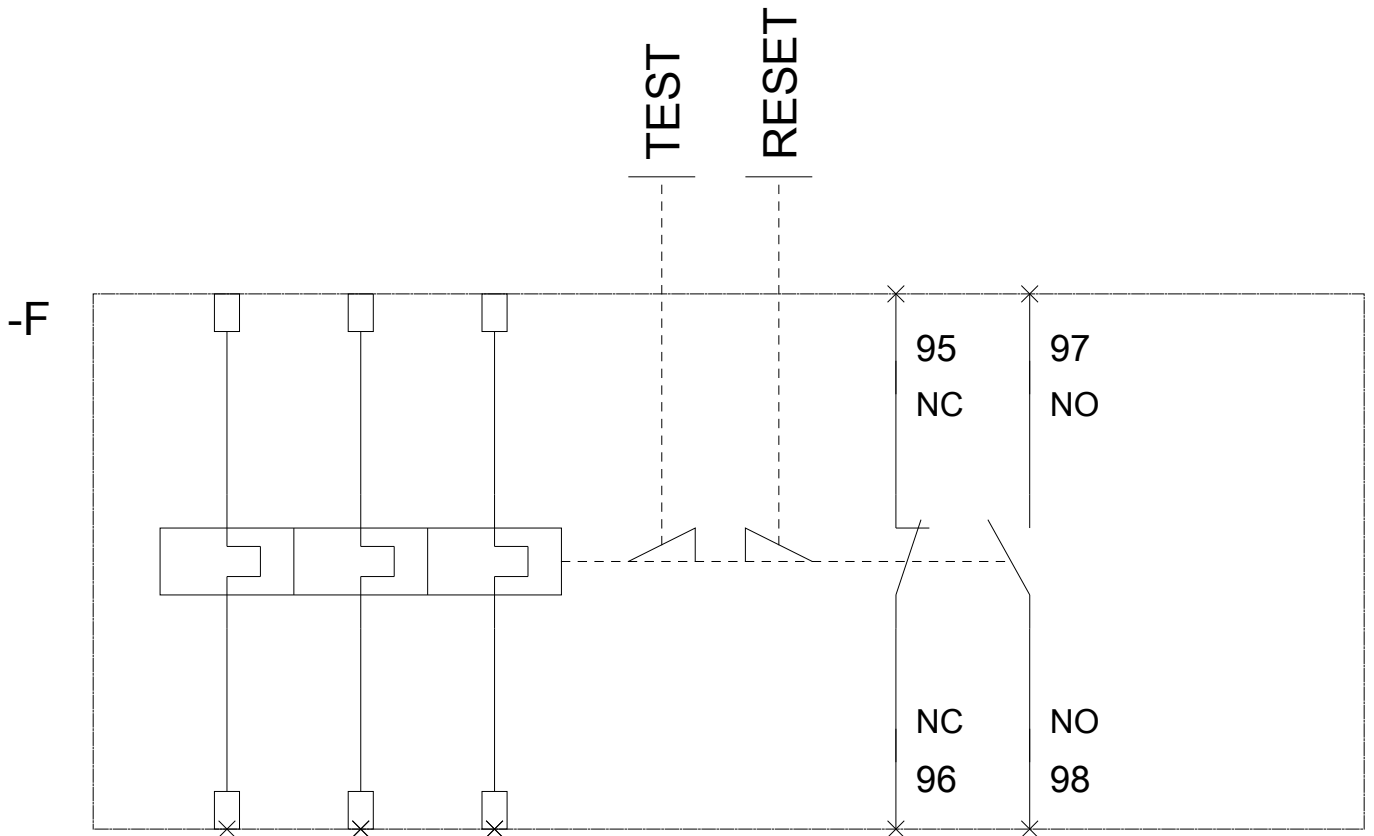
Test Certificates	Marine / Shipping	other
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Further information

- 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=3RB3046-2XW1>
- Cax online generator**
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB3046-2XW1>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
<https://support.industry.siemens.com/cs/ww/en/ps/3RB3046-2XW1>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB3046-2XW1&lang=en
- Characteristic: Tripping characteristics, I^t, Let-through current**
<https://support.industry.siemens.com/cs/ww/en/ps/3RB3046-2XW1/char>
- Further characteristics (e.g. electrical endurance, switching frequency)**
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB3046-2XW1&objecttype=14&gridview=view1>





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