

Overload relay 12.5...50 A Electronic For motor protection Size S2, Class 5E...30E Stand-alone installation Main circuit: Straight-through transformer Auxiliary circuit: Screw Manual-Automatic-Reset Internal ground fault detection



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

General technical data	
Size of overload relay	S2
Size of contactor can be combined company-specific	S2
Power loss [W] for rated value of the current	
• at AC in hot operating state	0.1 W
• at AC in hot operating state per pole	0.03 W
Insulation voltage with degree of pollution 3 at AC rated value	690 V
Surge voltage resistance rated value	6 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
<ul style="list-style-type: none"> protection class IP on the front 	IP20
<ul style="list-style-type: none"> Protection class IP of the terminal 	IP20
Shock resistance	15g / 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 	690 V
<ul style="list-style-type: none"> for remote-reset function at DC 	24 V
<ul style="list-style-type: none"> at AC-3 rated value maximum 	690 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
• Operating current of auxiliary contacts at AC-15 at 110 V	4 A
• Operating current of auxiliary contacts at AC-15 at 120 V	4 A
• Operating current of auxiliary contacts at AC-15 at 125 V	4 A
• Operating current of auxiliary contacts at AC-15 at 230 V	3 A
• operating current of auxiliary contacts at DC-13 at 24 V	2 A
• Operating current of auxiliary contacts at DC-13 at 60 V	0.55 A
• Operating current of auxiliary contacts at DC-13 at 110 V	0.3 A
• operating current of auxiliary contacts at DC-13 at 125 V	0.3 A
• Operating current of auxiliary contacts at DC-13 at 220 V	0.11 A

Protective and monitoring functions	
Trip class	CLASS 5E, 10E, 20E and 30E adjustable
Design of the overload release	electronic
Response value current	
• of the ground fault protection minimum	$0.75 \times I_{\text{Motor}}$
Response time of the ground fault protection in settled state	1 000 ms
Operating range of the ground fault protection relating to current setting value	
• minimum	$I_{\text{Motor}} > \text{lower current setting value}$
• maximum	$I_{\text{Motor}} < \text{upper current setting value} \times 3.5$

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: 250 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 | 81 mm |
| Width | 55 mm |
| Depth | 109 mm |

Connections/ Terminals

Product function

- | | |
|---|-------------------------------|
| • removable terminal for auxiliary and control circuit | Yes |
| • Type of electrical connection for main current circuit | straight-through transformers |
| • Type of electrical connection 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 main contacts <ul style="list-style-type: none">— single or multi-stranded | 1x (1 ... 50 mm ²), 2x (1 ... 35 mm ²) |
|--|--|

Type of connectable conductor cross-sections

- | | |
|--|--|
| • for auxiliary contacts <ul style="list-style-type: none">— solid— single or multi-stranded— finely stranded with core end processing | 1x (0.5 ... 4 mm ²), 2x (0.5 ... 2.5 mm ²)
1x (0,5 ... 4 mm ²), 2x (0,5 ... 2,5 mm ²)
1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²) |
| • at AWG conductors for auxiliary contacts | 1x (20 ... 14), 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 |
|---|----|

Electromagnetic compatibility

Conducted interference	<ul style="list-style-type: none"> • 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 	<p>2 kV (power ports), 1 kV (signal ports) corresponds to degree of severity 3</p> <p>2 kV (line to earth) corresponds to degree of severity 3</p> <p>1 kV (line to line) corresponds to degree of severity 3</p> <p>10 V in frequency range 0.15 to 80 MHz, modulation 80 % AM with 1 kHz</p>
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

Certificates/ approvals		
General Product Approval	EMC	For use in hazardous locations



Declaration of Conformity	Test Certificates	Marine / Shipping
<p>EG-Konf.</p>	<p>Miscellaneous</p> <p>Type Test Certificates/Test Report</p> <p>Special Test Certificate</p>	<p>ABS</p> <p>LRS</p>

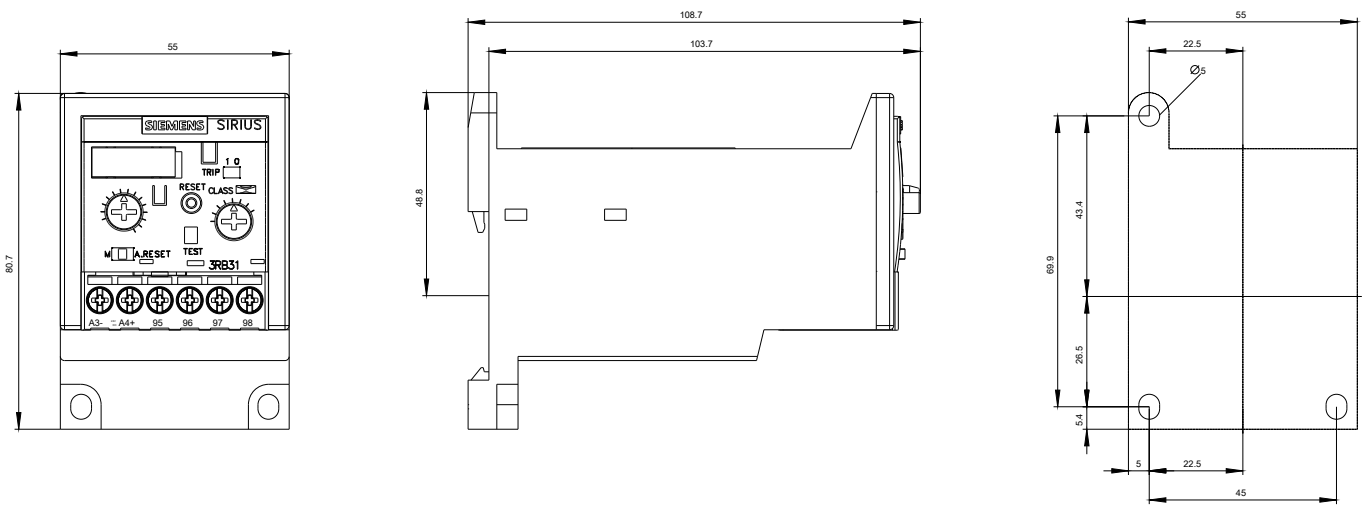
Marine / Shipping	other
<p>PRS</p> <p>RINA</p> <p>RMRS</p> <p>DNV-GL DNVGL.COM/AF</p>	<p>Confirmation</p>

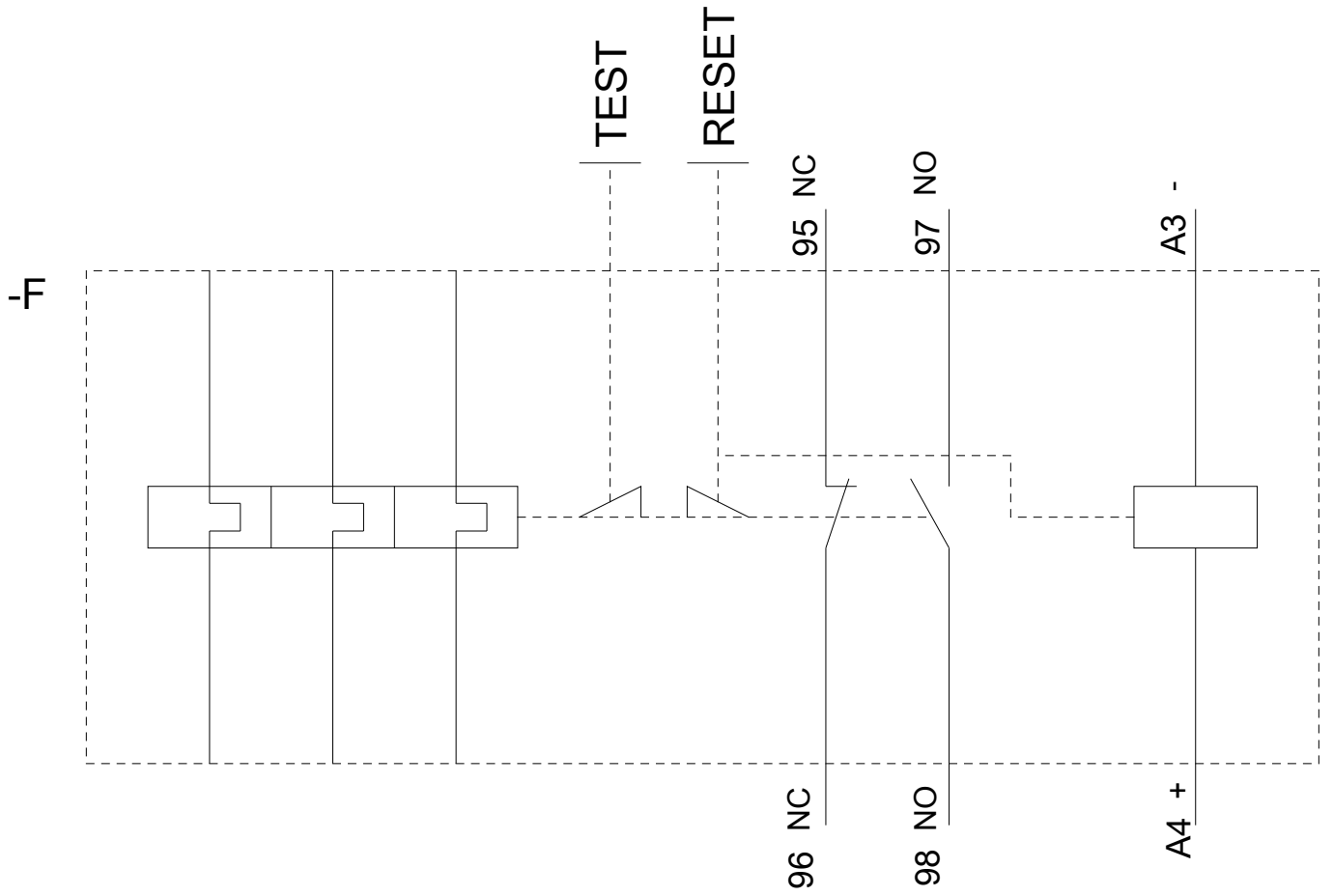
Further information
<p>Information- and Downloadcenter (Catalogs, Brochures,...) https://www.siemens.com/ic10</p> <p>Industry Mall (Online ordering system) https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RB3133-4UW1</p> <p>Cax online generator http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB3133-4UW1</p> <p>Service&Support (Manuals, Certificates, Characteristics, FAQs,...) https://support.industry.siemens.com/cs/ww/en/ps/3RB3133-4UW1</p>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB3133-4UW1&lang=en

Characteristic: Tripping characteristics, I^2t , Let-through current
<https://support.industry.siemens.com/cs/ww/en/ps/3RB3133-4UW1/char>

Further characteristics (e.g. electrical endurance, switching frequency)
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB3133-4UW1&objecttype=14&gridview=view1>





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