

Overload relay 20...80 A Electronic For motor protection Size S2, Class 5E...30E Contactor mounting Main circuit: Screw 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	4.6 W
• at AC in hot operating state per pole	1.53 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"> <li>in networks with grounded star point between main and auxiliary circuit</li> </ul>	690 V
<b>protection class IP</b>	
<ul style="list-style-type: none"> <li>on the front</li> <li>of the terminal</li> </ul>	IP20 IP00
<b>shock resistance</b>	15g / 11 ms
<ul style="list-style-type: none"> <li>acc. to IEC 60068-2-27</li> </ul>	15g / 11 ms; Signaling contact 97 / 98 in position "Tripped": 8g / 11 ms
<b>vibration resistance</b>	1-6 Hz, 15 mm; 6-500 Hz, 20 m/s <sup>2</sup> ; 10 cycles
<b>thermal current</b>	80 A
<b>recovery time</b>	
<ul style="list-style-type: none"> <li>after overload trip with automatic reset typical</li> <li>after overload trip with remote-reset</li> <li>after overload trip with manual reset</li> </ul>	3 min 0 min 0 min
<b>type of protection according to ATEX directive 2014/34/EU</b>	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
<b>reference code acc. to DIN EN 81346-2</b>	F

#### Ambient conditions

<ul style="list-style-type: none"> <li>installation altitude at height above sea level maximum</li> </ul>	2 000 m
<b>ambient temperature</b>	
<ul style="list-style-type: none"> <li>during operation</li> <li>during storage</li> <li>during transport</li> </ul>	-25 ... +60 °C -40 ... +80 °C -40 ... +80 °C
<b>temperature compensation</b>	-25 ... +60 °C
relative humidity during operation	10 ... 95 %

#### Main circuit

<b>number of poles for main current circuit</b>	3
<b>adjustable pick-up value current of the current-dependent overload release</b>	20 ... 80 A
<b>operating voltage</b>	
<ul style="list-style-type: none"> <li>rated value</li> <li>for remote-reset function at DC</li> <li>at AC-3 rated value maximum</li> </ul>	690 V 24 V 690 V
<b>operating frequency rated value</b>	50 ... 60 Hz
<b>operating current rated value</b>	80 A
<b>operating power</b>	
<ul style="list-style-type: none"> <li>for three-phase motors at 400 V at 50 Hz</li> <li>for AC motors at 500 V at 50 Hz</li> <li>for AC motors at 690 V at 50 Hz</li> </ul>	11 ... 37 kW 15 ... 55 kW 18.5 ... 75 kW

Auxiliary circuit	
<b>design of the auxiliary switch</b>	integrated
<b>number of NC contacts for auxiliary contacts</b>	1
• note	for contactor disconnection
<b>number of NO contacts for auxiliary contacts</b>	1
• note	for message "tripped"
<b>number of CO contacts</b>	
• for auxiliary contacts	0
<b>operating current of auxiliary contacts at AC-15</b>	
• 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
<b>operating current of auxiliary contacts at DC-13</b>	
• 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	
<b>trip class</b>	CLASS 5E, 10E, 20E and 30E adjustable
<b>design of the overload release</b>	electronic
<b>response value current</b>	
• of the ground fault protection minimum	$0.75 \times I_{\text{Motor}}$
<b>response time of the ground fault protection in settled state</b>	1 000 ms
<b>operating range of the ground fault protection relating to current setting value</b>	
• minimum	$I_{\text{Motor}} > \text{lower current setting value}$
• maximum	$I_{\text{Motor}} < \text{upper current setting value} \times 3.5$

UL/CSA ratings	
<b>full-load current (FLA) for three-phase AC motor</b>	
• at 480 V rated value	80 A
• at 600 V rated value	80 A
<b>contact rating of auxiliary contacts according to UL</b>	B600 / R300

Short-circuit protection	
<b>design of the fuse link</b>	
• for short-circuit protection of the main circuit	
— with type of coordination 1 required	gG: 250 A, RK5: 300 A
— with type of assignment 2 required	gG: 250 A

- for short-circuit protection of the auxiliary switch required

fuse gG: 6 A

### Installation/ mounting/ dimensions

<b>mounting position</b>	any
<b>mounting type</b>	Contacteur mounting
<b>height</b>	99 mm
<b>width</b>	55 mm
<b>depth</b>	104 mm

### Connections/ Terminals

<b>product function</b>	Yes
<ul style="list-style-type: none"> <li>• removable terminal for auxiliary and control circuit</li> </ul>	
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control current circuit</li> </ul>	<p>screw-type terminals</p> <p>screw-type terminals</p>
<b>arrangement of electrical connectors for main current circuit</b>	Top and bottom
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— stranded</li> <li>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG conductors for main contacts</li> </ul>	<p>1x (1 ... 50 mm<sup>2</sup>), 2x (1 ... 35 mm<sup>2</sup>)</p> <p>2x (10 ... 35 mm<sup>2</sup>), 1x 50 mm<sup>2</sup></p> <p>1x (1 ... 50 mm<sup>2</sup>), 2x (1 ... 35 mm<sup>2</sup>)</p> <p>1x (1 ... 35 mm<sup>2</sup>), 2x (1 ... 25 mm<sup>2</sup>)</p> <p>2x (18 ... 2), 1x (18 ... 1)</p>
<ul style="list-style-type: none"> <li>• type of connectable conductor cross-sections for auxiliary contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• type of connectable conductor cross-sections at AWG conductors for auxiliary contacts</li> </ul>	<p>1x (0.5 ... 4 mm<sup>2</sup>), 2x (0.5 ... 2.5 mm<sup>2</sup>)</p> <p>1x (0,5 ... 4 mm<sup>2</sup>), 2x (0,5 ... 2,5 mm<sup>2</sup>)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.5 mm<sup>2</sup>)</p> <p>1x (20 ... 14), 2x (20 ... 14)</p>
<b>tightening torque</b>	
<ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary contacts with screw-type terminals</li> </ul>	<p>3 ... 4.5 N·m</p> <p>0.8 ... 1.2 N·m</p>
<b>design of screwdriver shaft</b>	Diameter 5 to 6 mm
<b>size of the screwdriver tip</b>	Pozidriv PZ 2
<b>design of the thread of the connection screw</b>	
<ul style="list-style-type: none"> <li>• for main contacts</li> <li>• of the auxiliary and control contacts</li> </ul>	<p>M6</p> <p>M3</p>

### Communication/ Protocol

<b>type of voltage supply via input/output link master</b>	No
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## Electromagnetic compatibility

### conducted interference

- 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
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Declaration of Conformity	Test Certificates	Marine / Shipping
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[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



Marine / Shipping	other
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[Confirmation](#)

## Further information

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

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RB3133-4WB0>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB3133-4WB0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RB3133-4WB0>

**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**

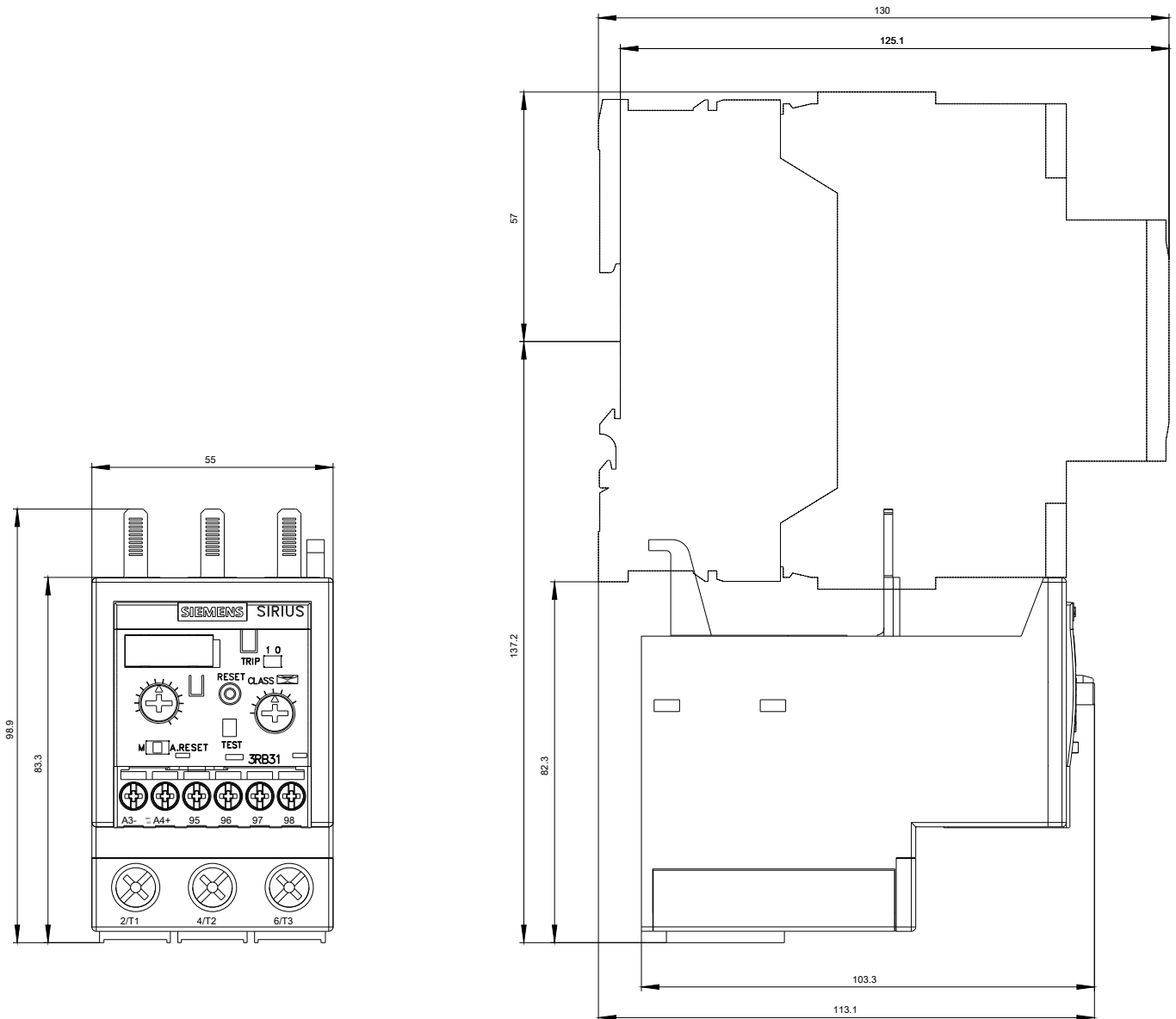
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RB3133-4WB0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB3133-4WB0&lang=en)

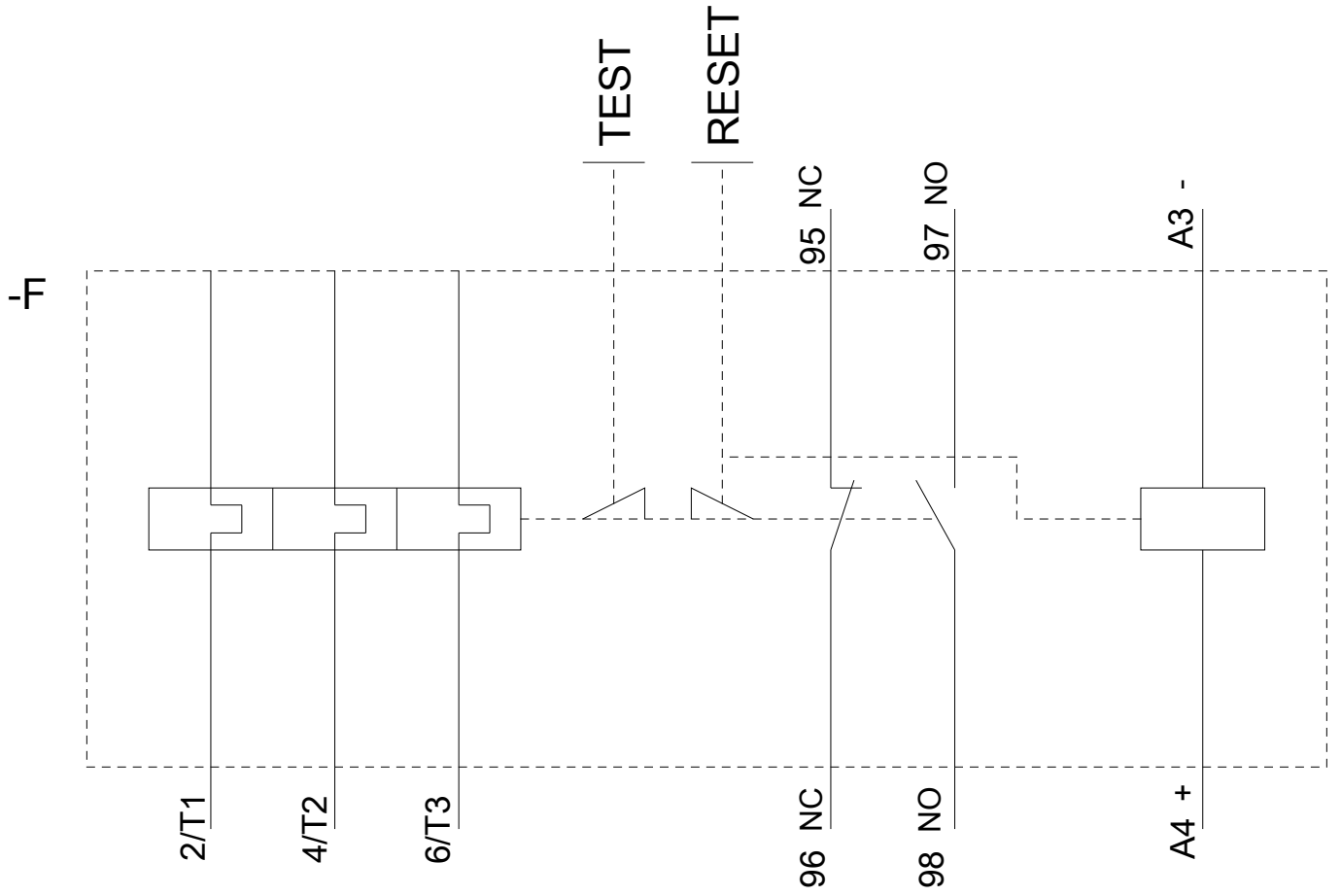
**Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RB3133-4WB0/char>

**Further characteristics (e.g. electrical endurance, switching frequency)**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB3133-4WB0&objecttype=14&gridview=view1>





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