



Overload relay 12.5...50 A Electronic For motor protection Size S2, Class 5E...30E Contactor mounting Main circuit: Screw Auxiliary circuit: Spring-type terminal 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                                                                                                                                                         | 1.8 W                                                                    |
| <ul style="list-style-type: none"> <li>per pole</li> </ul>                                                                                                                                                                         | 0.6 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                                                                                                                                                |                                                                          |
| <ul style="list-style-type: none"> <li>between auxiliary and auxiliary circuit</li> <li>between auxiliary and auxiliary circuit</li> <li>between main and auxiliary circuit</li> <li>between main and auxiliary circuit</li> </ul> | 300 V<br>300 V<br>600 V<br>690 V                                         |
| shock resistance                                                                                                                                                                                                                   | 15g / 11 ms                                                              |
| <ul style="list-style-type: none"> <li>according to IEC 60068-2-27</li> </ul>                                                                                                                                                      | 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 <sup>2</sup> ; 10 cycles                 |
| thermal current                                                                                                                                                                                                                    | 50 A                                                                     |
| 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 according to IEC 81346-2                                                                                                                                                                                            | F                                                                        |
| Substance Prohibition (Date)                                                                                                                                                                                                       | 10/15/2014                                                               |

### Ambient conditions

|                                                                                                                      |                                                    |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| installation altitude at height above sea level maximum                                                              | 2 000 m                                            |
| ambient temperature                                                                                                  |                                                    |
| <ul style="list-style-type: none"> <li>during operation</li> <li>during storage</li> <li>during transport</li> </ul> | -25 ... +60 °C<br>-40 ... +80 °C<br>-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 current response value current of the current-dependent overload release                    | 12.5 ... 50 A |
| operating voltage                                                                                      |               |
| <ul style="list-style-type: none"> <li>rated value</li> <li>for remote-reset function at DC</li> </ul> | 690 V<br>24 V |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at AC-3e rated value maximum</li> </ul> <b>operating frequency rated value</b><br><b>operational current rated value</b><br>operational current at AC-3e at 400 V rated value<br><b>operating power</b> <ul style="list-style-type: none"> <li>• for 3-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>                                                                                                                                                                                                                                                                                               | 690 V<br>50 ... 60 Hz<br>50 A<br>50 A<br>7.5 ... 22 kW<br>11 ... 30 kW<br>11 ... 45 kW                                                                                 |
| <b>Auxiliary circuit</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                        |
| <b>design of the auxiliary switch</b><br><b>number of NC contacts for auxiliary contacts</b> <ul style="list-style-type: none"> <li>• note</li> </ul> <b>number of NO contacts for auxiliary contacts</b> <ul style="list-style-type: none"> <li>• note</li> </ul> number of CO contacts for auxiliary contacts<br><b>operational current of auxiliary contacts at AC-15</b> <ul style="list-style-type: none"> <li>• at 24 V</li> <li>• at 110 V</li> <li>• at 120 V</li> <li>• at 125 V</li> <li>• at 230 V</li> </ul> <b>operational current of auxiliary contacts at DC-13</b> <ul style="list-style-type: none"> <li>• at 24 V</li> <li>• at 60 V</li> <li>• at 110 V</li> <li>• at 125 V</li> <li>• at 220 V</li> </ul> | integrated<br>1<br>for contactor disconnection<br>1<br>for message "tripped"<br>0<br>4 A<br>4 A<br>4 A<br>4 A<br>3 A<br>2 A<br>0.55 A<br>0.3 A<br>0.3 A<br>0.11 A      |
| <b>Protective and monitoring functions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                        |
| <b>trip class</b><br><b>design of the overload release</b><br>response value current of the grounding protection minimum<br><b>response time of the grounding protection in settled state</b><br><b>operating range of the grounding protection relating to current set value</b> <ul style="list-style-type: none"> <li>• minimum</li> <li>• maximum</li> </ul>                                                                                                                                                                                                                                                                                                                                                              | CLASS 5E, 10E, 20E and 30E adjustable<br>electronic<br>0.75 x IMotor<br>1 000 ms<br>IMotor > lower current setting value<br>IMotor < upper current setting value x 3.5 |
| <b>UL/CSA ratings</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                        |
| <b>full-load current (FLA) for 3-phase AC motor</b> <ul style="list-style-type: none"> <li>• at 480 V rated value</li> <li>• at 600 V rated value</li> </ul> <b>contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 50 A<br>50 A<br>B600 / R300                                                                                                                                            |
| <b>Short-circuit protection</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                        |
| <b>design of the fuse link</b> <ul style="list-style-type: none"> <li>• for short-circuit protection of the main circuit <ul style="list-style-type: none"> <li>— with type of coordination 1 required</li> <li>— with type of assignment 2 required</li> </ul> </li> <li>• for short-circuit protection of the auxiliary switch required</li> </ul>                                                                                                                                                                                                                                                                                                                                                                          | gG: 250 A<br>gG: 200 A<br>fuse gG: 6 A                                                                                                                                 |
| <b>Installation/ mounting/ dimensions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                        |
| <b>mounting position</b><br><b>fastening method</b><br><b>height</b><br><b>width</b><br><b>depth</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | any<br>Contactor mounting<br>99 mm<br>55 mm<br>104 mm                                                                                                                  |
| <b>Connections/ Terminals</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                        |
| <b>product component removable terminal for auxiliary and control circuit</b><br><b>type of electrical connection</b> <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control circuit</li> </ul> <b>arrangement of electrical connectors for main current</b>                                                                                                                                                                                                                                                                                                                                                                                                                  | Yes<br>screw-type terminals<br>spring-loaded terminals<br>Top and bottom                                                                                               |

**circuit**

type of connectable conductor cross-sections for main contacts

- solid
- stranded
- finely stranded with core end processing

**type of connectable conductor cross-sections**

- for auxiliary contacts
  - solid
  - solid or stranded
  - finely stranded with core end processing
  - finely stranded without core end processing
- at AWG cables for auxiliary contacts

**tightening torque**

- for main contacts with screw-type terminals

**design of screwdriver shaft****size of the screwdriver tip****design of the thread of the connection screw**

- for main contacts

1x (1 ... 50 mm<sup>2</sup>), 2x (1 ... 35 mm<sup>2</sup>)

2x (10 ... 35 mm<sup>2</sup>), 1x 50 mm<sup>2</sup>

1x (1 ... 35 mm<sup>2</sup>), 2x (1 ... 25 mm<sup>2</sup>)

2x (0.25 ... 1.5 mm<sup>2</sup>)

2x (0.25 ... 1.5 mm<sup>2</sup>)

2x (0.25 ... 1.5 mm<sup>2</sup>)

2x (0.25 ... 1.5 mm<sup>2</sup>)

1x (24 ... 16), 2x (24 ... 16)

3 ... 4.5 N·m

Diameter 5 to 6 mm

Pozidriv PZ 2

M6

**Safety related data**

**protection class IP on the front according to IEC 60529**

IP20

**touch protection on the front according to IEC 60529**

finger-safe, for vertical contact from the front

**Communication/ Protocol**

**type of voltage supply via input/output link master**

No

**Electromagnetic compatibility****conducted interference**

- due to burst according to IEC 61000-4-4
- due to conductor-earth surge according to IEC 61000-4-5
- due to conductor-conductor surge according to IEC 61000-4-5
- due to high-frequency radiation according 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

10 V/m

**field-based interference according to IEC 61000-4-3**

**electrostatic discharge according 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**



[Confirmation](#)



**For use in hazardous locations**

**Declaration of Conformity**

**Test Certificates**

**Marine / Shipping**



[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)



**Marine / Shipping**

**other**



[Confirmation](#)

## Further information

### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

### 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=3RB3133-4UD0>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB3133-4UD0>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RB3133-4UD0>

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

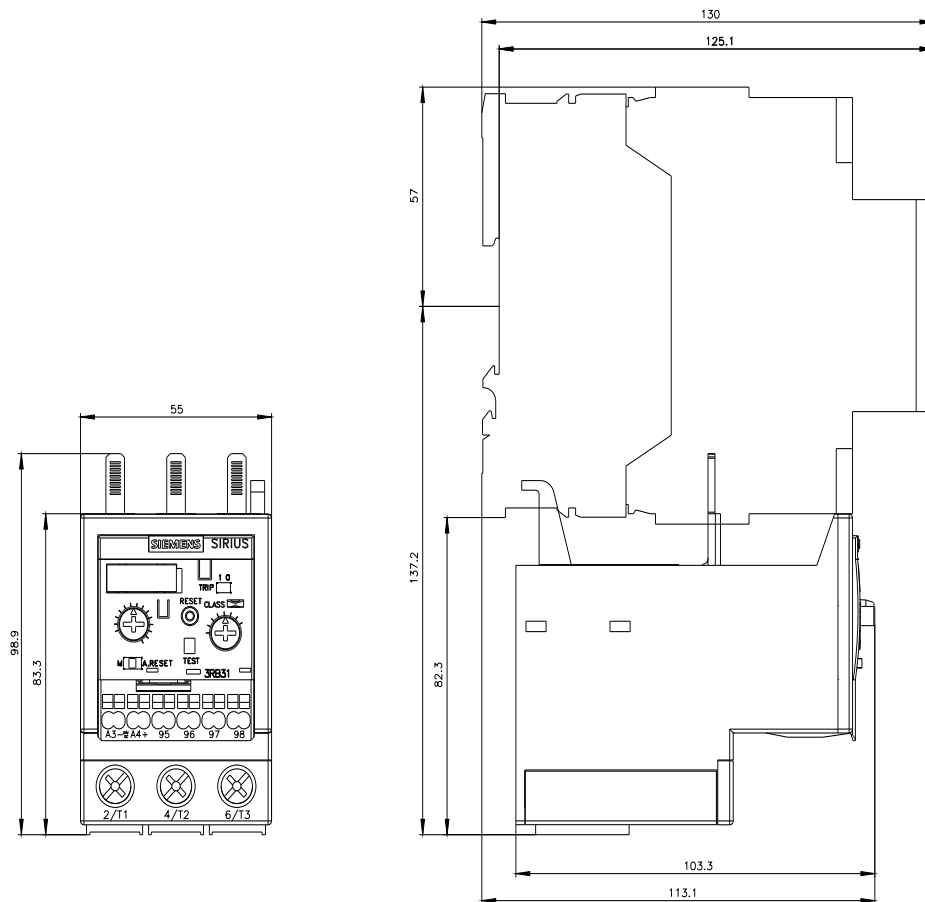
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RB3133-4UD0&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB3133-4UD0&lang=en)

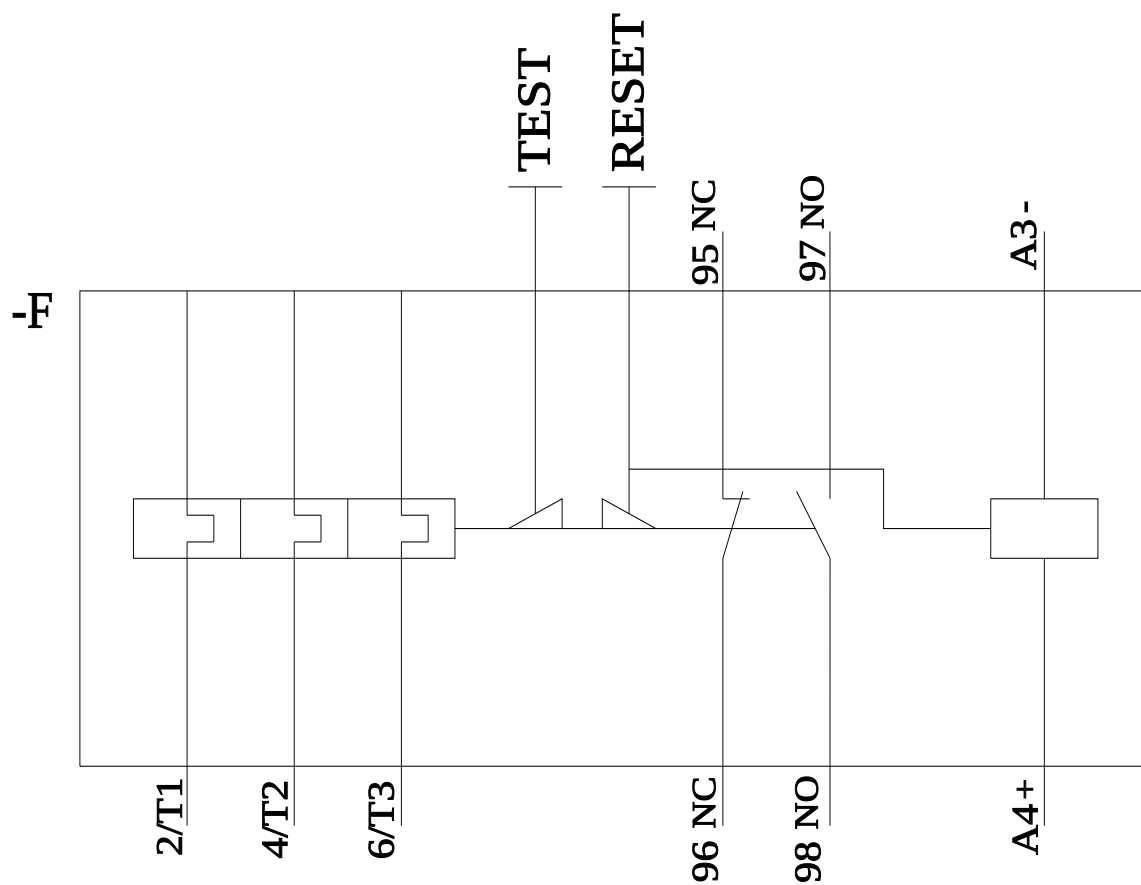
### Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RB3133-4UD0/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB3133-4UD0&objecttype=14&gridview=view1>





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