



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

|   |   |
|---|---|
| <b>product brand name</b>   | SIRIUS  |
| <b>product designation</b>  | solid-state overload relay  |
| <b>product type designation</b>   | 3RB3  |
| <b>General technical data</b>   |   |
| <b>size of overload relay</b>   | S2  |
| <b>size of contactor can be combined company-specific</b>                         | S2  |
| <b>power loss [W] for rated value of the current at AC in hot operating state</b> | 0.1 W   |
| • per pole  | 0.03 W  |
| <b>type of calculation of power loss current-dependent</b>                        | quadratic   |
| <b>insulation voltage with degree of pollution 3 at AC rated value</b>            | 690 V   |
| <b>surge voltage resistance rated value</b>                                       | 6 kV  |
| <b>maximum permissible voltage for protective separation</b>                      |   |
| • in networks with ungrounded 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 ungrounded star point between main and auxiliary circuit       | 600 V   |
| • in networks with grounded star point between main and auxiliary circuit         | 690 V   |
| <b>shock resistance</b>   | 15 g / 11 ms  |
| • according to IEC 60068-2-27   | 15 g / 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>  | 50 A  |
| <b>recovery time after overload trip</b>  |   |
| • with automatic reset typical  | 3 min   |
| • with remote-reset   | 0 min   |
| • with manual reset   | 0 min   |
| <b>reference code according to IEC 81346-2</b>                                    | F   |
| <b>Substance Prohibitance (day/month/year)</b>                                    | 10/15/2014  |
| <b>SVHC substance name</b>  | Lead CAS-No. 7439-92-1<br>Lead monoxide (lead oxide) CAS-No. 1317-36-8<br>2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5<br>Melamine CAS-No. 108-78-1<br>6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1 |
| <b>Net Weight</b>   | 0.294 kg  |
| <b>Ambient conditions</b>   |   |
| <b>installation altitude at height above sea level maximum</b>                    | 2 000 m   |
| <b>ambient temperature</b>  |   |
| • during operation  | -25 ... +60 °C  |

|   |  |
|---|--|
| <ul style="list-style-type: none"> <li>during storage</li> </ul>  | -40 ... +80 °C                             |
| <ul style="list-style-type: none"> <li>during transport</li> </ul>  | -40 ... +80 °C                             |
| <b>temperature compensation</b>   | -25 ... +60 °C                             |
| relative humidity during operation  | 10 ... 95 %                                |
| <b>Main circuit</b>   |  |
| <b>number of poles for main current circuit</b>   | 3  |
| <b>adjustable current response value current of the current-dependent overload release</b>                      | 12.5 ... 50 A                              |
| <b>operating voltage</b>  |  |
| <ul style="list-style-type: none"> <li>rated value</li> </ul>   | 690 V                                      |
| <ul style="list-style-type: none"> <li>for remote-reset function at DC</li> </ul>                               | 24 V                                       |
| <ul style="list-style-type: none"> <li>at AC-3e rated value maximum</li> </ul>                                  | 690 V                                      |
| <b>operating frequency rated value</b>  | 50 ... 60 Hz                               |
| <b>operational current rated value</b>  | 50 A                                       |
| operational current at AC-3e at 400 V rated value   | 50 A                                       |
| <b>operating power</b>  |  |
| <ul style="list-style-type: none"> <li>for 3-phase motors at 400 V at 50 Hz</li> </ul>                          | 7.5 ... 22 kW                              |
| <ul style="list-style-type: none"> <li>for AC motors at 500 V at 50 Hz</li> </ul>                               | 11 ... 30 kW                               |
| <ul style="list-style-type: none"> <li>for AC motors at 690 V at 50 Hz</li> </ul>                               | 11 ... 45 kW                               |
| <b>Auxiliary circuit</b>  |  |
| <b>design of the auxiliary switch</b>   | integrated                                 |
| <b>number of NC contacts for auxiliary contacts</b>   | 1  |
| <ul style="list-style-type: none"> <li>note</li> </ul>  | for contactor disconnection                |
| <b>number of NO contacts for auxiliary contacts</b>   | 1  |
| <ul style="list-style-type: none"> <li>note</li> </ul>  | for message "tripped"                      |
| number of CO contacts for auxiliary contacts  | 0  |
| <b>operational current of auxiliary contacts at AC-15</b>   |  |
| <ul style="list-style-type: none"> <li>at 24 V</li> </ul>   | 4 A  |
| <ul style="list-style-type: none"> <li>at 110 V</li> </ul>  | 4 A  |
| <ul style="list-style-type: none"> <li>at 120 V</li> </ul>  | 4 A  |
| <ul style="list-style-type: none"> <li>at 125 V</li> </ul>  | 4 A  |
| <ul style="list-style-type: none"> <li>at 230 V</li> </ul>  | 3 A  |
| <b>operational current of auxiliary contacts at DC-13</b>   |  |
| <ul style="list-style-type: none"> <li>at 24 V</li> </ul>   | 2 A  |
| <ul style="list-style-type: none"> <li>at 60 V</li> </ul>   | 0.55 A                                     |
| <ul style="list-style-type: none"> <li>at 110 V</li> </ul>  | 0.3 A                                      |
| <ul style="list-style-type: none"> <li>at 125 V</li> </ul>  | 0.3 A                                      |
| <ul style="list-style-type: none"> <li>at 220 V</li> </ul>  | 0.11 A                                     |
| <b>Protective and monitoring functions</b>  |  |
| <b>trip class</b>   | CLASS 5E, 10E, 20E and 30E adjustable      |
| <b>design of the overload release</b>   | electronic                                 |
| response value current of the grounding protection minimum  | 0.75 x IMotor                              |
| <b>response time of the grounding protection in settled state</b>   | 1 000 ms                                   |
| <b>operating range of the grounding protection relating to current set value</b>                                |  |
| <ul style="list-style-type: none"> <li>minimum</li> </ul>   | IMotor > lower current setting value       |
| <ul style="list-style-type: none"> <li>maximum</li> </ul>   | 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> </ul>  | 50 A                                       |
| <ul style="list-style-type: none"> <li>at 600 V rated value</li> </ul>  | 50 A                                       |
| <b>contact rating of auxiliary contacts according to UL</b>   | 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</li> </ul>              |  |
| <ul style="list-style-type: none"> <li>— with type of coordination 1 required</li> </ul>                        | gG: 250 A                                  |
| <ul style="list-style-type: none"> <li>— with type of coordination 2 required</li> </ul>                        | gG: 200 A                                  |
| <ul style="list-style-type: none"> <li>for short-circuit protection of the auxiliary switch required</li> </ul> | fuse gG: 6 A                               |
| <b>Installation/ mounting/ dimensions</b>   |  |

|   |   |
|---|---|
| <b>mounting position</b>  | any   |
| <b>fastening method</b>   | stand-alone installation  |
| <b>height</b>   | 81 mm   |
| <b>width</b>  | 55 mm   |
| <b>depth</b>  | 109 mm  |
| <b>required spacing</b>   |   |
| • for grounded parts  |   |
| — forwards  | 10 mm   |
| — backwards   | 0 mm  |
| — upwards   | 10 mm   |
| — at the side   | 10 mm   |
| — downwards   | 10 mm   |
| • for live parts  |   |
| — forwards  | 10 mm   |
| — backwards   | 0 mm  |
| — upwards   | 10 mm   |
| — downwards   | 10 mm   |
| — at the side   | 10 mm   |
| <b>Connections/ Terminals</b>   |   |
| <b>product component removable terminal for auxiliary and control circuit</b> | Yes   |
| <b>type of electrical connection</b>  |   |
| • for main current circuit  | straight-through transformers   |
| • for auxiliary and control circuit   | screw-type terminals  |
| <b>arrangement of electrical connectors for main current circuit</b>          | Top and bottom  |
| type of connectable conductor cross-sections for main contacts                |   |
| • solid or stranded   | 1x (1 ... 50 mm <sup>2</sup> ), 2x (1 ... 35 mm <sup>2</sup> )              |
| <b>type of connectable conductor cross-sections</b>                           |   |
| • for auxiliary contacts  |   |
| — solid   | 1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )          |
| — solid or stranded   | 1x (0,5 ... 4 mm <sup>2</sup> ), 2x (0,5 ... 2,5 mm <sup>2</sup> )          |
| — finely stranded with core end processing                                    | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )        |
| • for AWG cables for auxiliary contacts                                       | 1x (20 ... 14), 2x (20 ... 14)  |
| <b>tightening torque</b>  |   |
| • for auxiliary contacts with screw-type terminals                            | 0.8 ... 1.2 N·m   |
| <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>                           |   |
| • of the auxiliary and control contacts                                       | M3  |
| <b>Electrical Safety</b>  |   |
| <b>protection class IP on the front according to IEC 60529</b>                | IP20  |
| <b>touch protection on the front according to IEC 60529</b>                   | finger-safe, for vertical contact from the front                            |
| <b>Communication/ Protocol</b>  |   |
| <b>type of voltage supply via input/output link master</b>                    | No  |
| <b>Electromagnetic compatibility</b>  |   |
| <b>conducted interference</b>   |   |
| • due to burst according to IEC 61000-4-4                                     | 2 kV (power ports), 1 kV (signal ports) corresponds to degree of severity 3 |
| • due to conductor-earth surge according to IEC 61000-4-5                     | 2 kV (line to earth) corresponds to degree of severity 3                    |
| • due to conductor-conductor surge according to IEC 61000-4-5                 | 1 kV (line to line) corresponds to degree of severity 3                     |
| • due to high-frequency radiation according to IEC 61000-4-6                  | 10 V in frequency range 0.15 to 80 MHz, modulation 80 % AM with 1 kHz       |
| <b>field-based interference according to IEC 61000-4-3</b>                    | 10 V/m  |
| <b>electrostatic discharge according to IEC 61000-4-2</b>                     | 6 kV contact discharge / 8 kV air discharge                                 |
| <b>Display</b>  |   |
| display version for switching status  | Slide switch  |
| <b>Approvals Certificates</b>   |   |
| <b>Environment</b>  | <b>General Product Approval</b>   |

[Environmental Con-  
firmations](#)



| EMV                  | For use in hazard-<br>ous locations | Test Certificates                                  | Maritime application                     |                              |                     |
|----------------------|-------------------------------------|--|--|------------------------------|---------------------|
| <br>RCM              | <br>ATEX                            | <a href="#">Type Test Certificates/Test Report</a> | <a href="#">Special Test Certificate</a> |                              |                     |
|                      |                                     |  | <br>ABS                                  | <br>DNV                      |                     |
| Maritime application | other                               |  |  |                              |                     |
| <br>LRS              | <br>PRS                             | <br>RINA   | <a href="#">Confirmation</a>             | <a href="#">Confirmation</a> | <br>产品合格<br>QC PASS |

#### Further information

Information on the packaging

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

Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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=3RB3133-4UW1>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RB3133-4UW1>

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

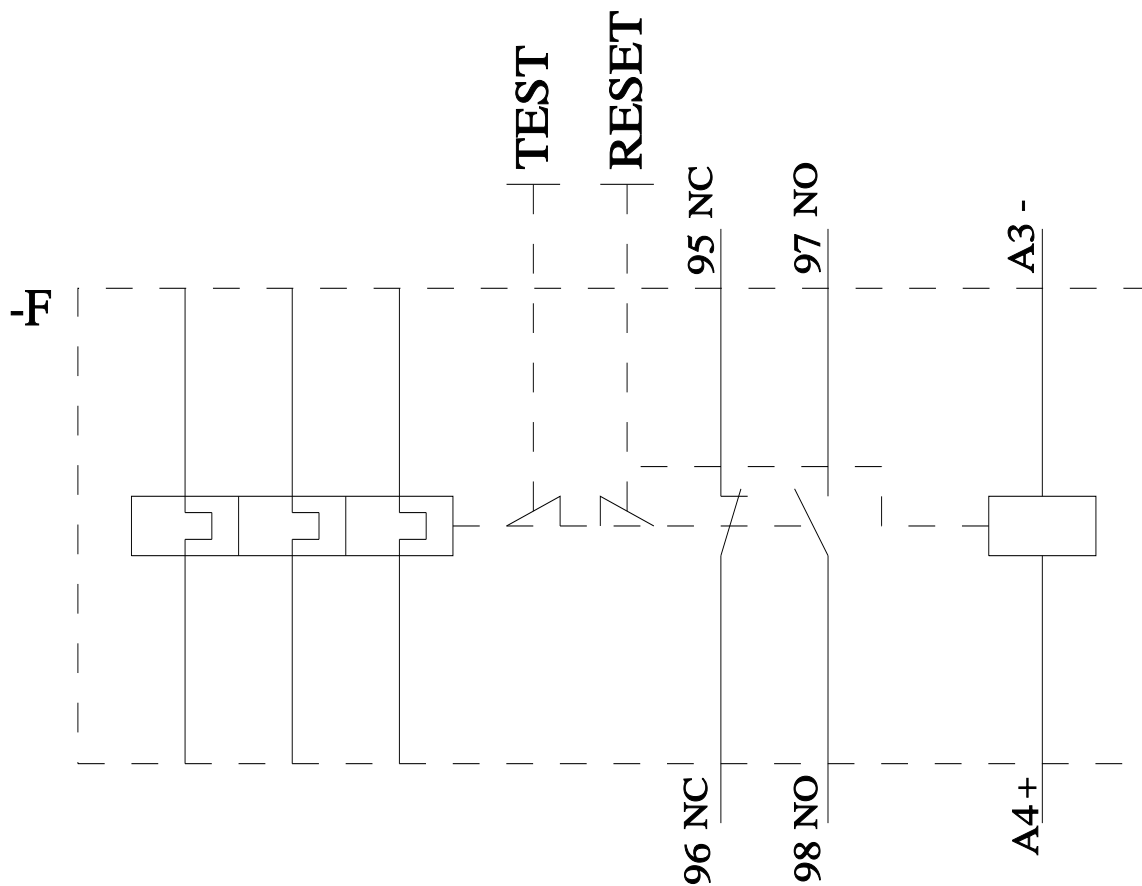
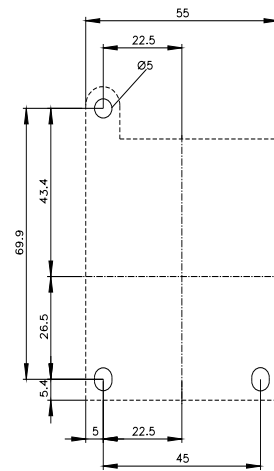
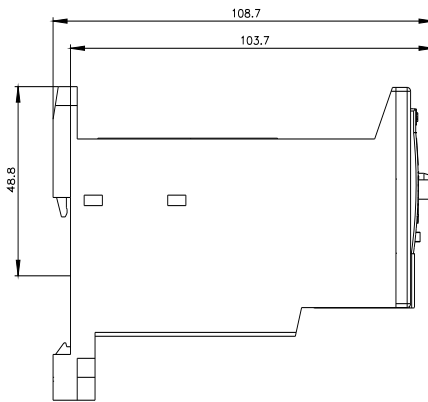
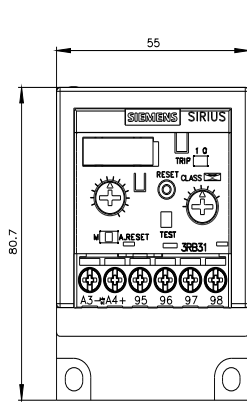
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Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB3133-4UW1>

Characteristic curves

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