



Overload relay 160...630 A for motor protection Size S10/S12, CLASS 5...30E Contactor mounting/stand-alone installation Main circuit: busbar connection Auxiliary circuit: Screw terminal Manual-Automatic-Reset Internal ground fault detection

|                          |                            |
|--------------------------|----------------------------|
| product brand name       | SIRIUS                     |
| product designation      | solid-state overload relay |
| product type designation | 3RB2                       |

### General technical data

|  |  |
|--|--|
| size of overload relay   | S10, S12   |
| size of contactor can be combined company-specific   | S10, S12   |
| insulation voltage with degree of pollution 3 at AC rated value  | 1 000 V  |
| surge voltage resistance rated value   | 8 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  | 630 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 06 ATEX 3001   |
| reference code according to IEC 81346-2  | F  |
| Substance Prohibitance (Date)  | 07/01/2006   |

### 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  | 160 ... 630 A              |
| operating voltage  |                            |
| <ul style="list-style-type: none"> <li>rated value</li> <li>for remote-reset function at DC</li> <li>at AC-3e rated value maximum</li> </ul> | 1 000 V<br>24 V<br>1 000 V |
| operating frequency rated value  | 50 ... 60 Hz               |

|  |  |
|--|--|
| <b>operational current rated value</b>   | 630 A  |
| operational current at AC-3e at 400 V rated value                                | 630 A  |
| <b>operating power</b>   |  |
| • for 3-phase motors at 400 V at 50 Hz   | 90 ... 355 kW                                |
| • for AC motors at 500 V at 50 Hz  | 132 ... 400 kW                               |
| • for AC motors at 690 V at 50 Hz  | 160 ... 560 kW                               |
| <b>Auxiliary circuit</b>   |  |
| <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"                        |
| number of CO contacts for auxiliary contacts                                     | 0  |
| <b>operational 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>operational 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                                       |
| <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> |  |
| • minimum  | IMotor > lower current setting value         |
| • maximum  | IMotor < upper current setting value x 3.5   |
| <b>UL/CSA ratings</b>  |  |
| <b>full-load current (FLA) for 3-phase AC motor</b>                              |  |
| • at 480 V rated value   | 630 A  |
| • at 600 V rated value   | 630 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>   |  |
| • for short-circuit protection of the main circuit                               |  |
| — with type of coordination 1 required   | gG: 800 A, Class L: 1600 A                   |
| — with type of assignment 2 required   | gG: 630 A                                    |
| • for short-circuit protection of the auxiliary switch required                  | fuse gG: 6 A                                 |
| <b>Installation/ mounting/ dimensions</b>  |  |
| <b>mounting position</b>   | any  |
| <b>fastening method</b>  | Contacteur mounting/stand-alone installation |
| <b>height</b>  | 119 mm                                       |
| <b>width</b>   | 120 mm                                       |
| <b>depth</b>   | 155 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   | busbar connection                            |
| • for auxiliary and control circuit  | screw-type terminals                         |
| <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 auxiliary contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— solid or stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>at AWG cables for auxiliary contacts</li> </ul> | 1x (0.5 ... 4 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )<br>1x (0,5 ... 4 mm <sup>2</sup> ), 2x (0,5 ... 2,5 mm <sup>2</sup> )<br>1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )<br>2x (20 ... 14) |
| <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>   | 20 ... 22 N·m<br>0.8 ... 1.2 N·m   |
| <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>   | M10<br>M3  |

**Safety related data**

|  |  |
|--|--|
| <b>protection class IP on the front according to IEC 60529</b> | IP00; IP20 with box terminal/cover                                       |
| <b>touch protection on the front according to IEC 60529</b>    | finger-safe, for vertical contact from the front with box terminal/cover |

**Communication/ Protocol**

|  |    |
|--|----|
| <b>type of voltage supply via input/output link master</b> | No |
|--|----|

**Electromagnetic compatibility**

|   |   |
|---|---|
| <b>conducted interference</b> <ul style="list-style-type: none"> <li>due to burst according to IEC 61000-4-4</li> <li>due to conductor-earth surge according to IEC 61000-4-5</li> <li>due to conductor-conductor surge according to IEC 61000-4-5</li> <li>due to high-frequency radiation according to IEC 61000-4-6</li> </ul> | 2 kV (power ports), 1 kV (signal ports) corresponds to degree of severity 3<br>2 kV (line to earth) corresponds to degree of severity 3<br>1 kV (line to line) corresponds to degree of severity 3<br>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   |

**Display**

|                                      |              |
|--------------------------------------|--------------|
| display version for switching status | Slide switch |
|--------------------------------------|--------------|

**Certificates/ approvals**

|                                 |            |
|---------------------------------|------------|
| <b>General Product Approval</b> | <b>EMC</b> |
|---------------------------------|------------|



[Confirmation](#)



|                                       |                                  |                          |                          |
|---------------------------------------|----------------------------------|--------------------------|--------------------------|
| <b>For use in hazardous locations</b> | <b>Declaration of Conformity</b> | <b>Test Certificates</b> | <b>Marine / Shipping</b> |
|---------------------------------------|----------------------------------|--------------------------|--------------------------|



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



|                          |              |
|--------------------------|--------------|
| <b>Marine / Shipping</b> | <b>other</b> |
|--------------------------|--------------|



[Miscellaneous](#)

[Confirmation](#)

**Further information**

Siemens has decided to exit the Russian market (see here).

<https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business>

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

**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=3RB2163-4MC2>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB2163-4MC2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RB2163-4MC2>

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

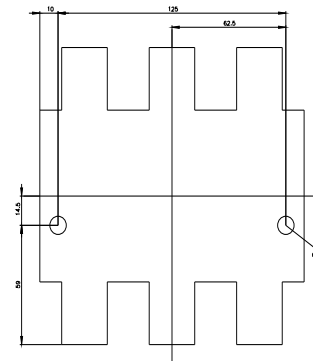
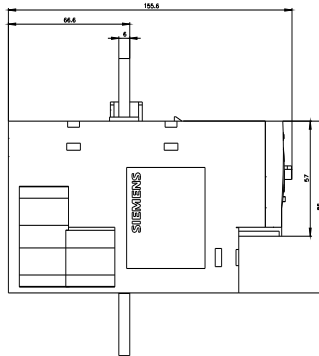
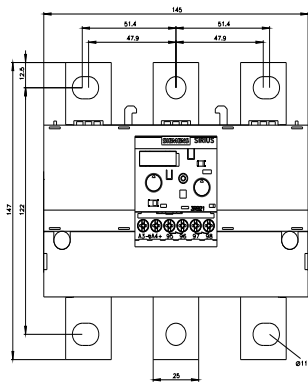
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RB2163-4MC2&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB2163-4MC2&lang=en)

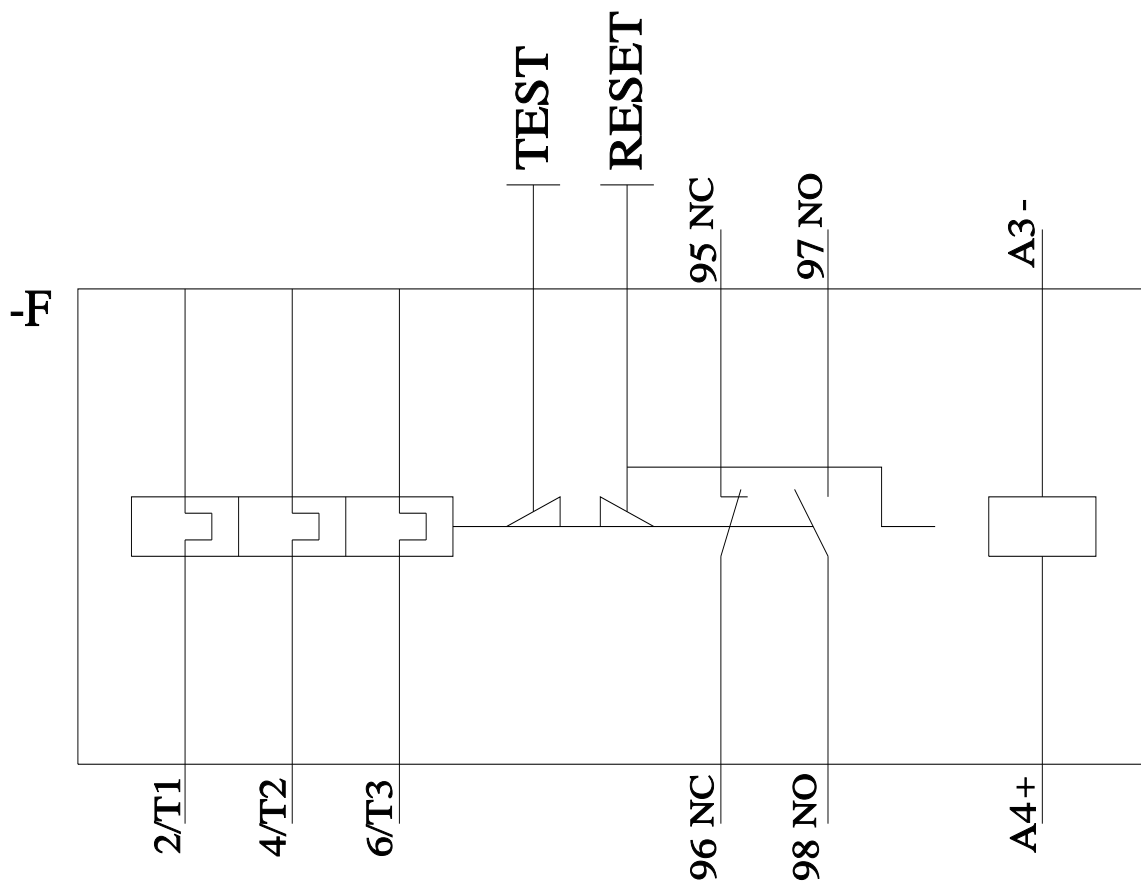
**Characteristic: Tripping characteristics, I<sup>t</sup>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RB2163-4MC2/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB2163-4MC2&objecttype=14&gridview=view1>





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