

Overload relay 12.5...50 A Electronic For motor protection Size S3, Class 10E Stand-alone installation Main circuit: Straight-through transformer Auxiliary circuit: Screw Manual-Automatic-Reset



|                                                                                |                            |
|--------------------------------------------------------------------------------|----------------------------|
| Product brand name                                                             | SIRIUS                     |
| Product designation                                                            | solid-state overload relay |
| Product type designation                                                       | 3RB3                       |
| General technical data                                                         |                            |
| Size of overload relay                                                         | S3                         |
| Size of contactor can be combined company-specific                             | S3                         |
| Power loss [W] for rated value of the current                                  |                            |
| • at AC in hot operating state                                                 | 0.2 W                      |
| • at AC in hot operating state per pole                                        | 0.07 W                     |
| 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 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> </ul>                                                            | IP20                                                                     |
| <ul style="list-style-type: none"> <li>• of the terminal</li> </ul>                                                         | IP20                                                                     |
| <b>Shock resistance</b>                                                                                                     | 8g / 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>                                                                                                      | 50 A                                                                     |
| <b>Recovery time</b>                                                                                                        |                                                                          |
| <ul style="list-style-type: none"> <li>• after overload trip with automatic reset typical</li> </ul>                        | 3 min                                                                    |
| <ul style="list-style-type: none"> <li>• after overload trip with remote-reset</li> </ul>                                   | 0 min                                                                    |
| <ul style="list-style-type: none"> <li>• after overload trip with manual reset</li> </ul>                                   | 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

|                                                                      |                |
|----------------------------------------------------------------------|----------------|
| <b>Installation altitude at height above sea level</b>               |                |
| <ul style="list-style-type: none"> <li>• maximum</li> </ul>          | 2 000 m        |
| <b>Ambient temperature</b>                                           |                |
| <ul style="list-style-type: none"> <li>• during operation</li> </ul> | -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 %    |

#### 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>            | 12.5 ... 50 A |
| <b>Operating voltage</b>                                                                     |               |
| <ul style="list-style-type: none"> <li>• rated value</li> </ul>                              | 1 000 V       |
| <ul style="list-style-type: none"> <li>• at AC-3 rated value maximum</li> </ul>              | 1 000 V       |
| <b>Operating frequency rated value</b>                                                       | 50 ... 60 Hz  |
| <b>Operating current rated value</b>                                                         | 50 A          |
| <b>Operating power</b>                                                                       |               |
| <ul style="list-style-type: none"> <li>• for three-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  |

#### Auxiliary circuit

|                                                                                                                              |                                           |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <b>Design of the auxiliary switch</b>                                                                                        | integrated                                |
| <b>Number of NC contacts for auxiliary contacts</b><br>• Note                                                                | 1<br>for contactor disconnection          |
| <b>Number of NO contacts for auxiliary contacts</b><br>• Note                                                                | 1<br>for message "tripped"                |
| <b>Number of CO contacts</b><br>• for auxiliary contacts                                                                     | 0                                         |
| <b>Operating current of auxiliary contacts at AC-15</b><br>• at 24 V<br>• at 110 V<br>• at 120 V<br>• at 125 V<br>• at 230 V | 4 A<br>4 A<br>4 A<br>4 A<br>3 A           |
| <b>Operating current of auxiliary contacts at DC-13</b><br>• at 24 V<br>• at 60 V<br>• at 110 V<br>• at 125 V<br>• at 220 V  | 2 A<br>0.55 A<br>0.3 A<br>0.3 A<br>0.11 A |

#### Protective and monitoring functions

|                                       |            |
|---------------------------------------|------------|
| <b>Trip class</b>                     | CLASS 10E  |
| <b>Design of the overload release</b> | electronic |

#### UL/CSA ratings

|                                                                                                             |              |
|-------------------------------------------------------------------------------------------------------------|--------------|
| <b>Full-load current (FLA) for three-phase AC motor</b><br>• at 480 V rated value<br>• at 600 V rated value | 50 A<br>50 A |
| <b>Contact rating of auxiliary contacts according to UL</b>                                                 | B600 / R300  |

#### Short-circuit protection

|                                                                                                                                                                                                                                           |                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>Design of the fuse link</b><br>• for short-circuit protection of the main circuit<br>— with type of coordination 1 required<br>— with type of assignment 2 required<br>• for short-circuit protection of the auxiliary switch required | gG: 200 A<br>gG: 200 A<br>fuse gG: 6 A |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|

#### Installation/ mounting/ dimensions

|                          |                          |
|--------------------------|--------------------------|
| <b>Mounting position</b> | any                      |
| <b>Mounting type</b>     | stand-alone installation |
| <b>Height</b>            | 106 mm                   |
| <b>Width</b>             | 70 mm                    |
| <b>Depth</b>             | 124 mm                   |

## Connections/ Terminals

|                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product function</b> <ul style="list-style-type: none"> <li>removable terminal for auxiliary and control circuit</li> </ul>                                                                                                                                                                                                                  | Yes                                                                                                                                                                                                                                |
| <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>                                                                                                                                                                              | straight-through transformers<br>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>— single or multi-stranded</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>at AWG conductors 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 auxiliary contacts with screw-type terminals</li> </ul>                                                                                                                                                                                                                     | 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> <ul style="list-style-type: none"> <li>of the auxiliary and control contacts</li> </ul>                                                                                                                                                                                                     | M3                                                                                                                                                                                                                                 |

## 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 acc. to IEC 61000-4-4</li> <li>due to conductor-earth surge acc. to IEC 61000-4-5</li> <li>due to conductor-conductor surge acc. to IEC 61000-4-5</li> <li>due to high-frequency radiation acc. 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-bound parasitic coupling acc. to IEC 61000-4-3</b>                                                                                                                                                                                                                                                   | 10 V/m                                                                                                                                                                                                                                                                      |
| <b>Electrostatic discharge acc. to IEC 61000-4-2</b>                                                                                                                                                                                                                                                          | 6 kV contact discharge / 8 kV air discharge                                                                                                                                                                                                                                 |

## Display

|                                                                                               |              |
|-----------------------------------------------------------------------------------------------|--------------|
| <b>Display version</b> <ul style="list-style-type: none"> <li>for switching status</li> </ul> | Slide switch |
|-----------------------------------------------------------------------------------------------|--------------|

## Certificates/ approvals

|                          |     |                                |
|--------------------------|-----|--------------------------------|
| General Product Approval | EMC | For use in hazardous locations |
|--------------------------|-----|--------------------------------|



|                           |                   |                   |
|---------------------------|-------------------|-------------------|
| Declaration of Conformity | Test Certificates | Marine / Shipping |
|---------------------------|-------------------|-------------------|



[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



|                   |       |
|-------------------|-------|
| Marine / Shipping | other |
|-------------------|-------|



[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=3RB3046-1UW1>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB3046-1UW1>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RB3046-1UW1>

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

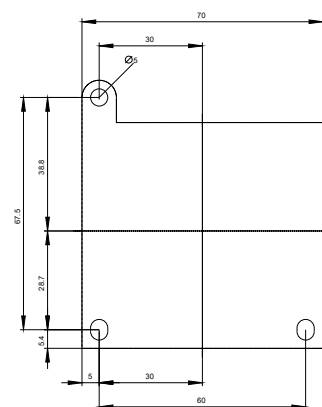
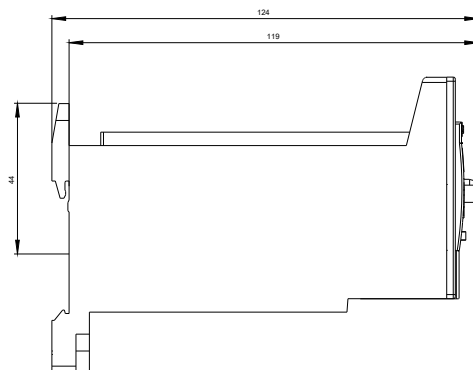
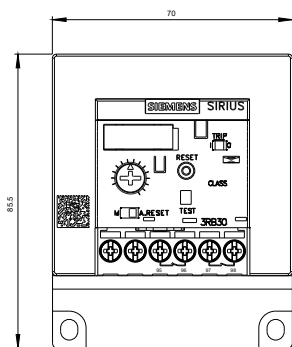
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RB3046-1UW1&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB3046-1UW1&lang=en)

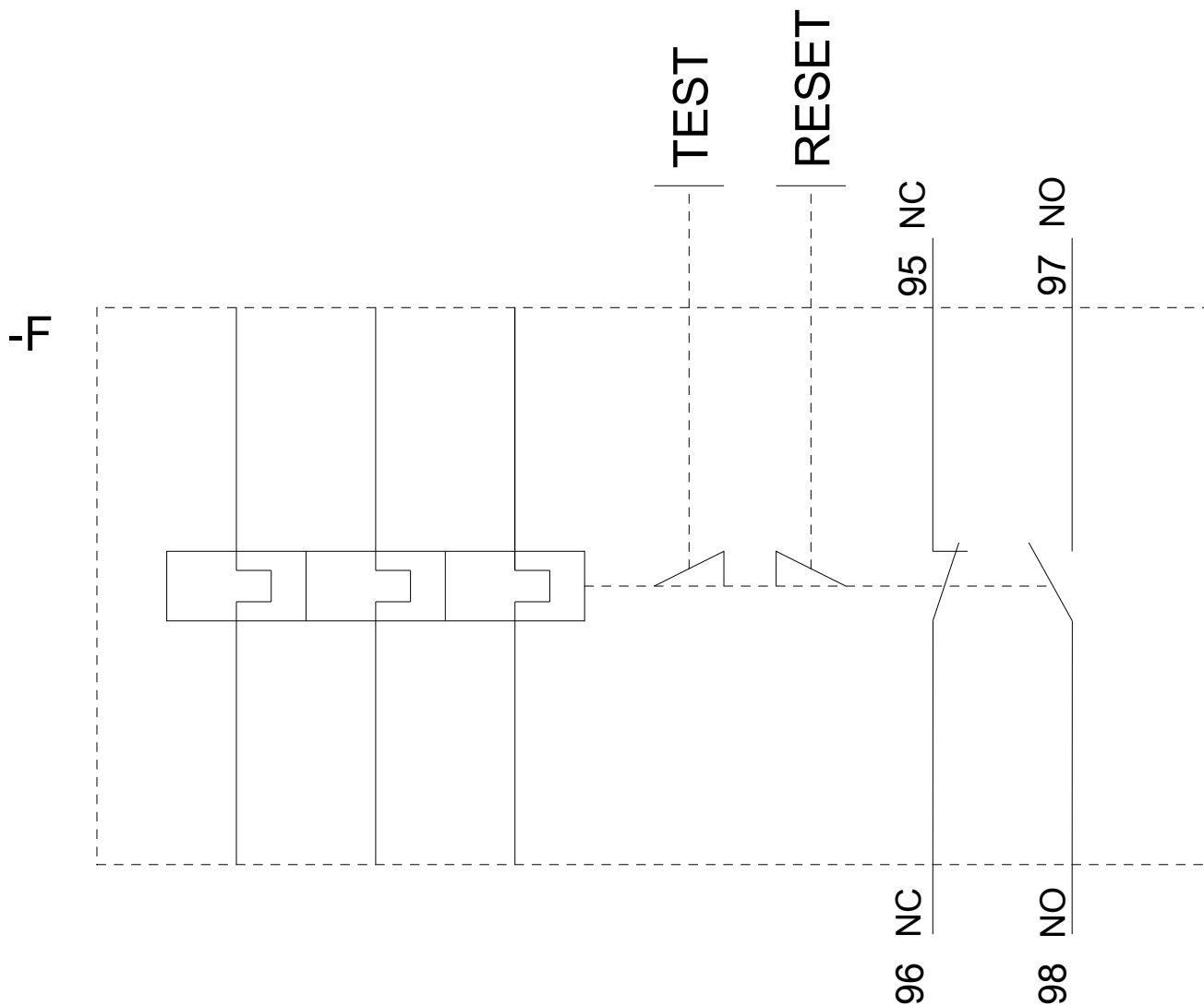
### Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RB3046-1UW1/char>

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

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB3046-1UW1&objecttype=14&gridview=view1>





last modified:

04/02/2020