



Overload relay 55...250 A for motor protection Size S10/S12, CLASS 5...30E  
 Contactor mounting/stand-alone installation Main circuit: busbar connection  
 Auxiliary circuit: Spring-type terminal Manual-Automatic-Reset Internal ground fault detection

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| product brand name   | SIRIUS   |
| product designation  | solid-state overload relay   |
| product type designation   | 3RB2   |
| <b>General technical data</b>  |  |
| 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 protective separation  |  |
| <ul style="list-style-type: none"> <li>in networks with ungrounded star point between auxiliary and auxiliary circuit</li> </ul> | 300 V  |
| <ul style="list-style-type: none"> <li>in networks with grounded star point between auxiliary and auxiliary circuit</li> </ul>   | 300 V  |
| <ul style="list-style-type: none"> <li>in networks with ungrounded star point between main and auxiliary circuit</li> </ul>      | 600 V  |
| <ul style="list-style-type: none"> <li>in networks with grounded star point between main and auxiliary circuit</li> </ul>        | 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  | 250 A  |
| recovery time after overload trip  |  |
| <ul style="list-style-type: none"> <li>with automatic reset typical</li> </ul>   | 3 min  |
| <ul style="list-style-type: none"> <li>with remote-reset</li> </ul>  | 0 min  |
| <ul style="list-style-type: none"> <li>with manual reset</li> </ul>  | 0 min  |
| reference code according to IEC 81346-2  | F  |
| Substance Prohibition (Date)   | 07/01/2006   |
| SVHC substance name  | Lead - 7439-92-1<br>Lead monoxide (lead oxide) - 1317-36-8<br>2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7<br>6,6'-di-tert-butyl-2,2'-methylene-di-p-cresol - 119-47-1 |
| Weight   | 1.613 kg   |
| <b>Ambient conditions</b>  |  |
| installation altitude at height above sea level maximum  | 2 000 m  |
| ambient temperature  |  |
| <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   |
| temperature compensation   | -25 ... +60 °C   |
| relative humidity during operation   | 10 ... 95 %  |
| <b>Main circuit</b>  |  |
| number of poles for main current circuit   | 3  |

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| <b>adjustable current response value current of the current-dependent overload release</b> | 55 ... 250 A                                 |
| <b>operating voltage</b>   |  |
| • rated value  | 1 000 V                                      |
| • for remote-reset function at DC  | 24 V   |
| • at AC-3e rated value maximum   | 1 000 V                                      |
| <b>operating frequency rated value</b>   | 50 ... 60 Hz                                 |
| <b>operational current rated value</b>   | 250 A  |
| operational current at AC-3e at 400 V rated value  | 250 A  |
| <b>operating power</b>   |  |
| • for 3-phase motors at 400 V at 50 Hz   | 30 ... 132 kW                                |
| • for AC motors at 500 V at 50 Hz  | 45 ... 160 kW                                |
| • for AC motors at 690 V at 50 Hz  | 55 ... 250 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   | 250 A  |
| • at 600 V rated value   | 250 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: 500 A, Class L: 700 A                    |
| — with type of coordination 2 required   | gG: 500 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  |

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| <b>type of electrical connection</b>   | busbar connection<br>spring-loaded terminals   |
| <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 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> <li>— finely stranded without core end processing</li> </ul> </li> <li>• for AWG cables for auxiliary contacts</li> </ul> | 2x (0.25 ... 1.5 mm <sup>2</sup> )<br>2x (0,25 ... 1,5 mm <sup>2</sup> )<br>2x (0.25 ... 1.5 mm <sup>2</sup> )<br>2x (0.25 ... 1.5 mm <sup>2</sup> )<br>2x (24 ... 16) |
| <b>tightening torque</b>   |  |
| <ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> </ul>  | 20 ... 22 N·m  |
| <b>design of the thread of the connection screw</b>  |  |
| <ul style="list-style-type: none"> <li>• for main contacts</li> </ul>  | M10  |

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| <b>Electrical Safety</b>                                       |  |
| <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 |

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

|   |   |
|---|---|
| <b>Electromagnetic compatibility</b>  |   |
| <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><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   |

|                                      |              |
|--------------------------------------|--------------|
| <b>Display</b>                       |              |
| display version for switching status | Slide switch |

|                                 |     |
|---------------------------------|-----|
| <b>Approvals Certificates</b>   |     |
| <b>General Product Approval</b> | EMV |



|            |                                       |                          |                             |
|------------|---------------------------------------|--------------------------|-----------------------------|
| <b>EMV</b> | <b>For use in hazardous locations</b> | <b>Test Certificates</b> | <b>Maritime application</b> |
|------------|---------------------------------------|--------------------------|-----------------------------|

[KC](#)



[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)



|                             |              |                    |
|-----------------------------|--------------|--------------------|
| <b>Maritime application</b> | <b>other</b> | <b>Environment</b> |
|-----------------------------|--------------|--------------------|



[Miscellaneous](#)

[Confirmation](#)

[Environmental Confirmations](#)

**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=3RB2163-4GF2>

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RB2163-4GF2>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RB2163-4GF2>

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

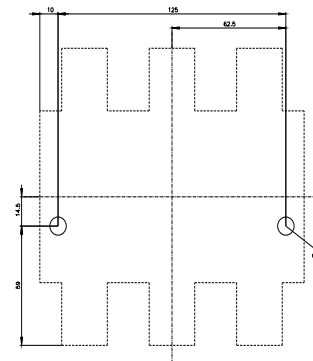
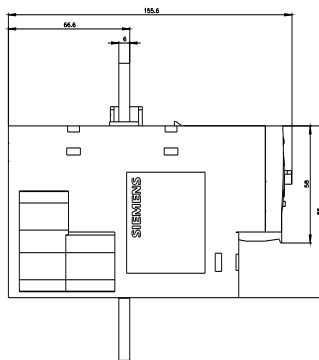
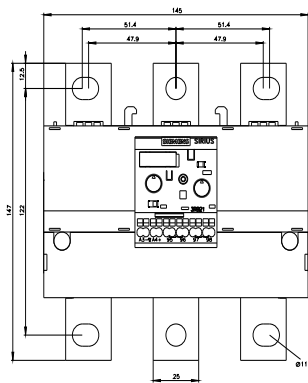
[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RB2163-4GF2&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RB2163-4GF2&lang=en)

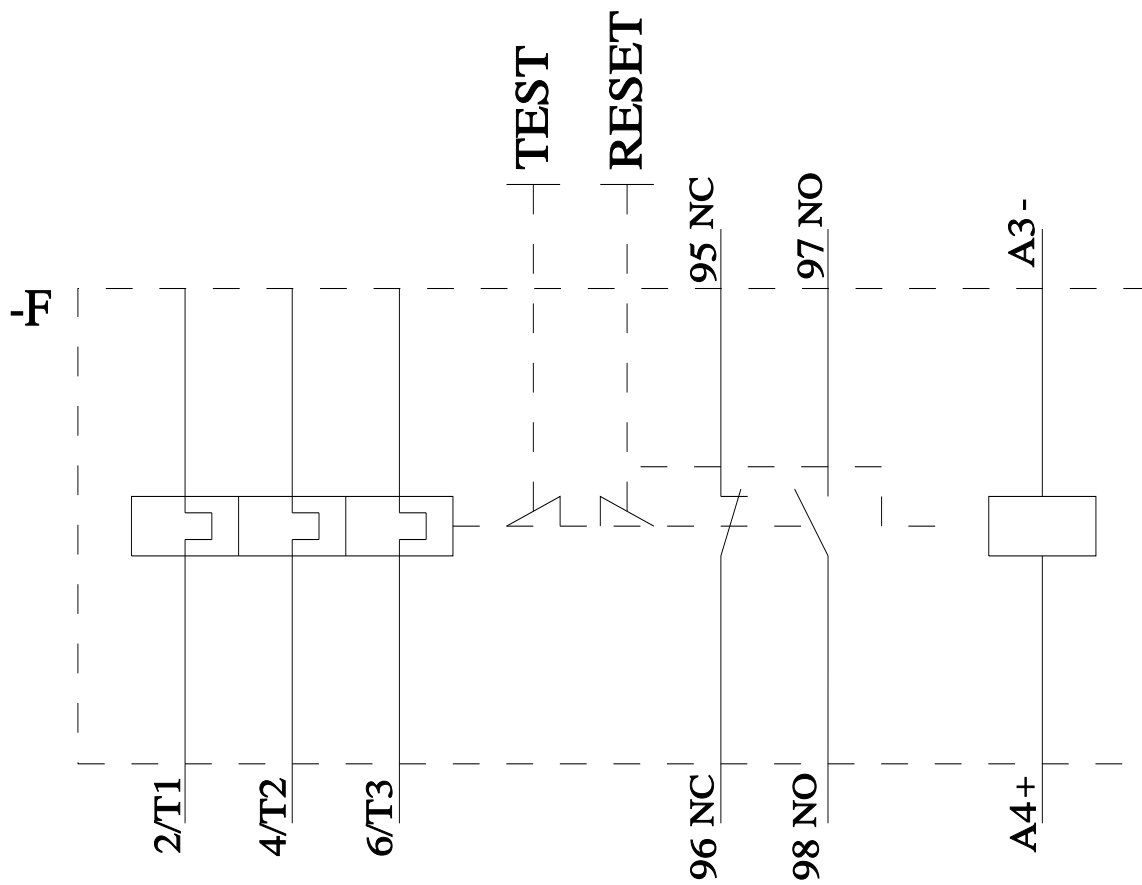
Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RB2163-4GF2/char>

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

<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RB2163-4GF2&objecttype=14&gridview=view1>





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