



Solid-state contactor 1-phase 3RF2 AC 51 / 40 A / 40 °C 48-460 V / 110-230 V AC screw terminal

|   |  |
|---|--|
| product brand name                                      | SIRIUS   |
| product designation                                     | solid-state contactor  |
| design of the product                                   | single-phase   |
| product type designation                                | 3RF23  |
| manufacturer's article number                           |  |
| • _1 of the accessories that can be ordered             | <a href="#">3RF2900-3PA88</a>  |
| • _4 of the accessories that can be ordered             | <a href="#">3RF2950-0GA36</a>  |
| product designation                                     |  |
| • _1 of the accessories that can be ordered             | terminal cover   |
| • _4 of the accessories that can be ordered             | load monitoring  |
| General technical data                                  |  |
| product function  | zero-point switching   |
| power loss [W] for rated value of the current           |  |
| • at AC in hot operating state                          | 44 W   |
| • at AC in hot operating state per pole                 | 44 W   |
| • without load current share typical                    | 3.5 W  |
| insulation voltage rated value                          | 600 V  |
| degree of pollution                                     | 3  |
| type of voltage   |  |
| • of the operating voltage                              | AC   |
| • of the control supply voltage                         | AC   |
| surge voltage resistance of main circuit rated value    | 6 kV   |
| protection class IP                                     | IP20   |
| protection class IP on the front according to IEC 60529 | IP20   |
| shock resistance according to IEC 60068-2-27            | 15g / 11 ms  |
| vibration resistance according to IEC 60068-2-6         | 2g   |
| reference code according to IEC 81346-2                 | Q  |
| Substance Prohibitance (Date)                           | 07/01/2006   |
| SVHC substance name                                     | Lead - 7439-92-1<br>Lead monoxide (lead oxide) - 1317-36-8<br>Dibutylbis(pentane-2,4-dionato-O,O')tin - 22673-19-4 |
| Weight  | 0.445 kg   |
| Main circuit  |  |
| number of poles for main current circuit                | 1  |
| number of NO contacts for main contacts                 | 1  |
| number of NC contacts for main contacts                 | 0  |
| type of voltage of the operating voltage                | AC   |
| operating voltage                                       |  |
| • at AC   |  |
| — at 50 Hz rated value                                  | 48 ... 460 V   |
| — at 60 Hz rated value                                  | 48 ... 460 V   |

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|--|--|
| <b>operating frequency rated value</b>   | 50 ... 60 Hz   |
| <b>operating range relative to the operating voltage at AC</b>                     |  |
| • at 50 Hz   | 40 ... 506 V   |
| • at 60 Hz   | 40 ... 506 V   |
| <b>operational current</b>   |  |
| • at AC-51 rated value   | 40 A   |
| • at AC-51 according to IEC 60947-4-3  | 33 A   |
| • according to UL 508 rated value  | 36 A   |
| <b>operational current minimum</b>   | 500 mA   |
| <b>rate of voltage rise at the thyristor for main contacts maximum permissible</b> | 1 000 V/μs   |
| <b>blocking voltage at the thyristor for main contacts maximum permissible</b>     | 1 200 V  |
| <b>reverse current of the thyristor</b>  | 10 mA  |
| <b>derating temperature</b>  | 40 °C  |
| <b>surge current resistance rated value</b>  | 1 200 A  |
| <b>I<sup>2</sup>t value maximum</b>  | 7 200 A <sup>2</sup> ·s  |
| <b>Control circuit/ Control</b>  |  |
| <b>type of voltage of the control supply voltage</b>                               | AC   |
| <b>control supply voltage 1 at AC</b>  |  |
| • at 50 Hz   | 110 ... 230 V  |
| • at 60 Hz   | 110 ... 230 V  |
| <b>control supply voltage frequency</b>  |  |
| • 1 rated value  | 50 Hz  |
| • 2 rated value  | 60 Hz  |
| <b>control supply voltage at AC</b>  |  |
| • at 50 Hz full-scale value for signal<0> recognition                              | 40 V   |
| • at 60 Hz full-scale value for signal<0> recognition                              | 40 V   |
| <b>control supply voltage</b>  |  |
| • at AC initial value for signal <1> detection                                     | 90 V   |
| <b>symmetrical line frequency tolerance</b>  | 5 Hz   |
| <b>control current at minimum control supply voltage</b>                           |  |
| • at AC  | 2 mA   |
| control current at AC rated value  | 15 mA  |
| <b>ON-delay time</b>   | 40 ms; additionally max. one half-wave   |
| <b>OFF-delay time</b>  | 40 ms; additionally max. one half-wave   |
| <b>Auxiliary circuit</b>   |  |
| <b>type of switching contact</b>   | normally open contact (NO)   |
| <b>number of NC contacts for auxiliary contacts</b>                                | 0  |
| <b>number of NO contacts for auxiliary contacts</b>                                | 0  |
| number of CO contacts for auxiliary contacts                                       | 0  |
| <b>Installation/ mounting/ dimensions</b>  |  |
| fastening method side-by-side mounting   | Yes  |
| <b>fastening method</b>  | screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 |
| <b>design of the thread of the screw for securing the equipment</b>                | M4   |
| <b>height</b>  | 100 mm   |
| <b>width</b>   | 67 mm  |
| <b>depth</b>   | 141 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   | screw-type terminals   |
| • for auxiliary and control circuit  | screw-type terminals   |
| <b>type of connectable conductor cross-sections</b>                                |  |
| • for main contacts  |  |
| — solid  | 2x (1.5 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> )                       |
| — finely stranded with core end processing   | 2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup>  |
| • for AWG cables for main contacts   | 2x (14 ... 10)   |
| <b>connectable conductor cross-section for main contacts</b>                       |  |

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• solid or stranded</li> <li>• finely stranded with core end processing</li> </ul>   | 1.5 ... 6 mm <sup>2</sup><br>1 ... 10 mm <sup>2</sup>   |
| <b>type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for auxiliary and control contacts <ul style="list-style-type: none"> <li>— solid</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 and control contacts</li> </ul>   | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )<br>1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )<br>1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )<br>1x (AWG 20 ... 12)  |
| AWG number as coded connectable conductor cross section for main contacts   | 10 ... 14   |
| <b>tightening torque</b> <ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>  | 2 ... 2.5 N·m<br>0.5 ... 0.6 N·m  |
| <b>tightening torque [lbf·in]</b> <ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>   | 18 ... 22 lbf·in<br>4.5 ... 5.3 lbf·in  |
| <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>  | M4<br>M3  |
| <b>stripped length of the cable</b> <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• for auxiliary and control contacts</li> </ul>   | 7 mm<br>7 mm  |
| <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>Ambient conditions</b>   |   |
| installation altitude at height above sea level maximum   | 1 000 m   |
| <b>ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul>   | -25 ... +60 °C<br>-55 ... +80 °C  |
| <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 / 5 kHz behavior criterion 2<br>2 kV behavior criterion 2<br>1 kV behavior criterion 2<br><br>140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1  |
| <b>field-based interference according to IEC 61000-4-3</b>  | 80 MHz ... 1 GHz 10 V/m, behavior criterion 1   |
| <b>electrostatic discharge according to IEC 61000-4-2</b>   | 4 kV contact discharging / 8 kV air discharging, behavior criterion 2   |
| <b>conducted HF interference emissions according to CISPR11</b>   | Class A for industrial environment  |
| <b>field-bound HF interference emission according to CISPR11</b>  | Class B for the domestic, business and commercial environments  |
| <b>Short-circuit protection, design of the fuse link</b>  |   |
| manufacturer's article number <ul style="list-style-type: none"> <li>• of gS fuse for semiconductor protection at NH design usable</li> <li>• of full range R fuse link for semiconductor protection at cylindrical design usable</li> <li>• of back-up R fuse link for semiconductor protection at NH design usable</li> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable</li> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul> | <a href="#">3NE1802-0</a><br><a href="#">5SE1350</a><br><a href="#">3NE8017-1</a><br><a href="#">3NC1450</a><br><a href="#">3NC2280</a>   |
| manufacturer's article number of the gG fuse <ul style="list-style-type: none"> <li>• at NH design usable</li> <li>• at cylindrical design 14 x 51 mm usable</li> <li>• at cylindrical design 22 x 58 mm usable</li> </ul>  | <a href="#">3NA6812: These fuses have a smaller rated current than the semiconductor relays</a><br><a href="#">3NW6112-1: These fuses have a smaller rated current than the semiconductor relays</a><br><a href="#">3NW6212-1: These fuses have a smaller rated current than the semiconductor relays</a> |
| manufacturer's article number   |   |

- of DIAZED fuse usable
- of NEOZED fuse usable

[5SB4111: These fuses have a smaller rated current than the semiconductor relays](#)

[5SE2335: These fuses have a smaller rated current than the semiconductor relays](#)

## Approvals Certificates

### General Product Approval

EMV

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### Test Certificates

other

Railway

Environment

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Confirmation](#)



[Special Test Certificate](#)

[Environmental Confirmations](#)

## 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=3RF2340-1AA24>

### Cax online generator

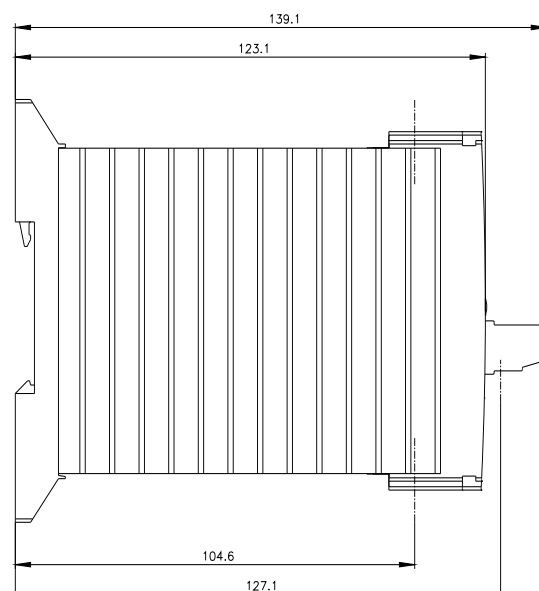
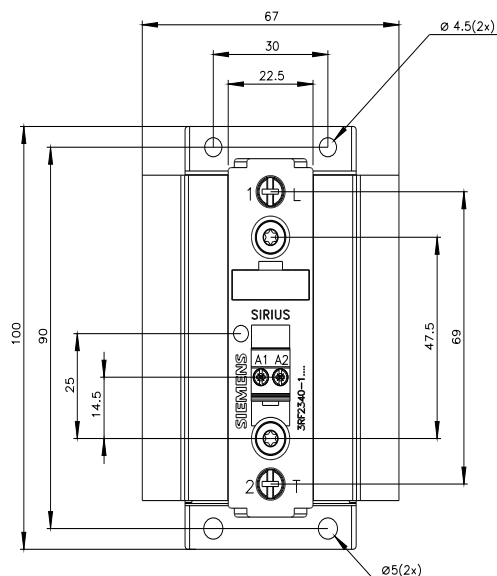
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2340-1AA24>

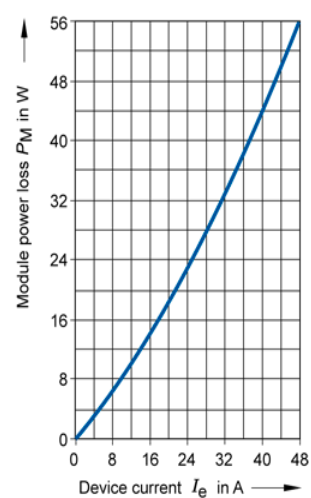
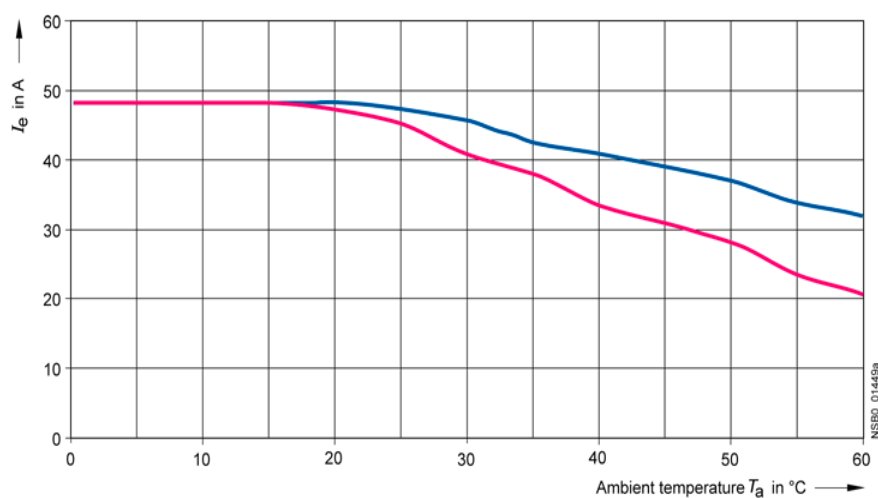
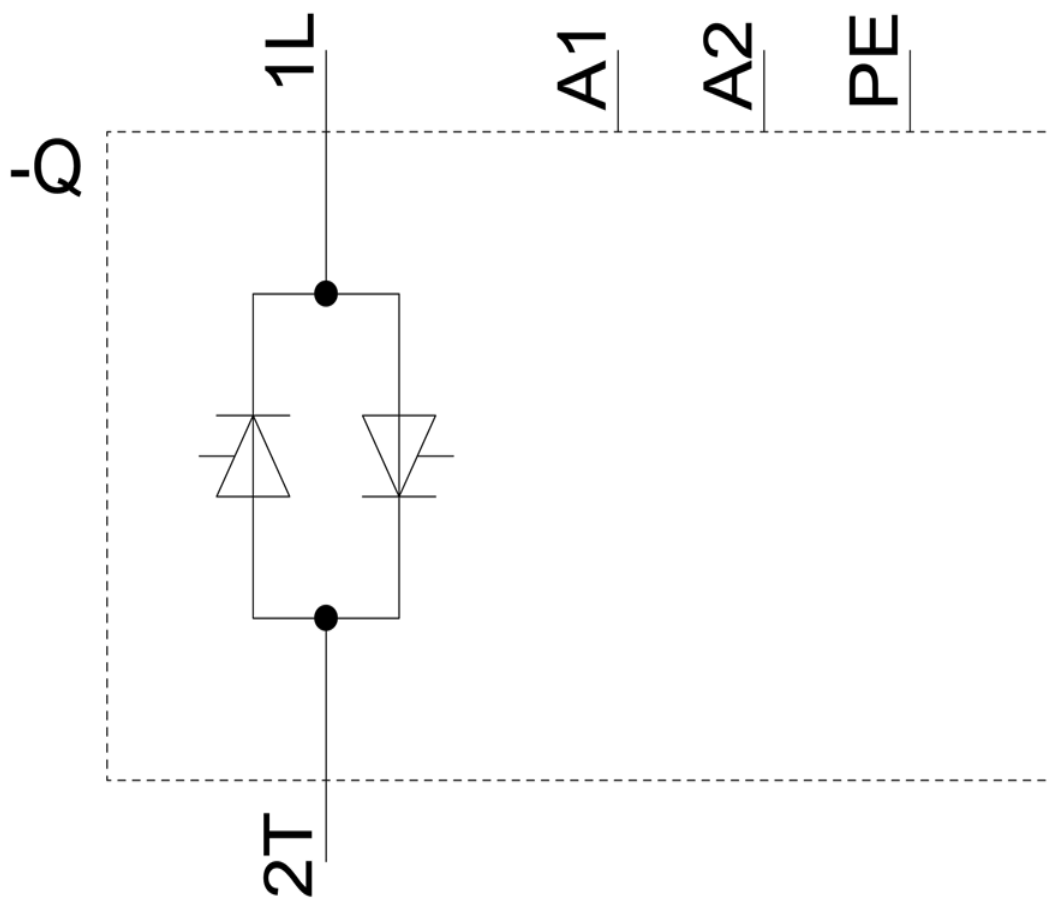
### Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2340-1AA24>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2340-1AA24&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2340-1AA24&lang=en)





—  $I_{max}$  Thermal limit current for individual and side-by-side mounting  
 —  $I_{IEC}$  Current according to IEC 947-4-3 for individual and side-by-side mounting

last modified:

8/12/2024

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