



Solid-state contactor 1-phase 3RF2 AC 51 / 20 A / 40 °C 24-230 V / 110-230 V AC short circuit-proof with B miniature circuit breaker

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| <b>product brand name</b>   | SIRIUS   |
| <b>product designation</b>  | solid-state contactor  |
| <b>design of the product</b>  | 1-pole   |
| <b>product type designation</b>   | 3RF23  |
| <b>manufacturer's article number</b>  |  |
| <ul style="list-style-type: none"> <li>• _1 of the accessories that can be ordered</li> <li>• _4 of the accessories that can be ordered</li> </ul>                              | <a href="#">3RF2900-3PA88</a><br><a href="#">3RF2920-0GA33</a>   |
| <b>product designation</b>  |  |
| <ul style="list-style-type: none"> <li>• _1 of the accessories that can be ordered</li> <li>• _4 of the accessories that can be ordered</li> </ul>                              | terminal cover<br>load monitoring  |
| <b>General technical data</b>   |  |
| <b>product function</b>   | short-circuit resistant with B-automatic device  |
| <b>power loss [W] for rated value of the current</b>  |  |
| <ul style="list-style-type: none"> <li>• at AC in hot operating state</li> <li>• at AC in hot operating state per pole</li> <li>• without load current share typical</li> </ul> | 20 W<br>20 W<br>3.5 W  |
| <b>insulation voltage rated value</b>   | 600 V  |
| <b>degree of pollution</b>  | 3  |
| surge voltage resistance of main circuit rated value  | 6 kV   |
| <b>protection class IP</b>  | IP00   |
| protection class IP on the front according to IEC 60529   | IP00   |
| <b>shock resistance according to IEC 60068-2-27</b>   | 15g / 11 ms  |
| <b>vibration resistance according to IEC 60068-2-6</b>  | 2g   |
| <b>reference code according to IEC 81346-2</b>  | Q  |
| <b>Substance Prohibitance (Date)</b>  | 05/28/2009   |
| <b>SVHC substance name</b>  | Lead - 7439-92-1<br>Lead monoxide (lead oxide) - 1317-36-8<br>Dibutylbis(pentane-2,4-dionato-O,O')tin - 22673-19-4 |
| <b>Weight</b>   | 0.22 kg  |
| <b>Main circuit</b>   |  |
| <b>number of poles for main current circuit</b>   | 1  |
| <b>number of NO contacts for main contacts</b>  | 1  |
| <b>number of NC contacts for main contacts</b>  | 0  |
| <b>type of voltage of the operating voltage</b>   | AC   |
| <b>operating voltage</b>  |  |
| <ul style="list-style-type: none"> <li>• at AC <ul style="list-style-type: none"> <li>— at 50 Hz rated value</li> <li>— at 60 Hz rated value</li> </ul> </li> </ul>             | 24 ... 230 V<br>24 ... 230 V   |
| <b>operating frequency rated value</b>  | 50 ... 60 Hz   |
| <b>operating range relative to the operating voltage at AC</b>  |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz</li> </ul>  | 20 ... 253 V   |

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| <ul style="list-style-type: none"> <li>at 60 Hz</li> </ul>  | 20 ... 253 V   |
| <b>operational current</b>  |  |
| <ul style="list-style-type: none"> <li>at AC-51 rated value</li> </ul>                                      | 20 A   |
| <ul style="list-style-type: none"> <li>at AC-51 according to IEC 60947-4-3</li> </ul>                       | 13.2 A   |
| <ul style="list-style-type: none"> <li>according to UL 508 rated value</li> </ul>                           | 17.6 A   |
| <b>operational current minimum</b>  | 500 mA   |
| <b>operational current of the MCB at AC rated value</b>   | 20 A   |
| <b>rate of voltage rise at the thyristor for main contacts maximum permissible</b>                          | 1 000 V/ $\mu$ s   |
| <b>blocking voltage at the thyristor for main contacts maximum permissible</b>                              | 800 V  |
| <b>reverse current of the thyristor</b>   | 10 mA  |
| <b>derating temperature</b>   | 40 °C  |
| <b>surge current resistance rated value</b>   | 1 150 A  |
| <b>I<sup>2</sup>t value maximum</b>   | 6 600 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>   |  |
| <ul style="list-style-type: none"> <li>at 50 Hz</li> </ul>  | 110 ... 230 V  |
| <ul style="list-style-type: none"> <li>at 60 Hz</li> </ul>  | 110 ... 230 V  |
| <b>control supply voltage frequency</b>   |  |
| <ul style="list-style-type: none"> <li>1 rated value</li> </ul>   | 50 Hz  |
| <ul style="list-style-type: none"> <li>2 rated value</li> </ul>   | 60 Hz  |
| <b>control supply voltage at AC</b>   |  |
| <ul style="list-style-type: none"> <li>at 50 Hz full-scale value for signal&lt;0&gt; recognition</li> </ul> | 40 V   |
| <ul style="list-style-type: none"> <li>at 60 Hz full-scale value for signal&lt;0&gt; recognition</li> </ul> | 40 V   |
| <b>control supply voltage</b>   |  |
| <ul style="list-style-type: none"> <li>at AC initial value for signal &lt;1&gt; detection</li> </ul>        | 90 V   |
| <b>symmetrical line frequency tolerance</b>   | 5 Hz   |
| <b>control current at minimum control supply voltage</b>  |  |
| <ul style="list-style-type: none"> <li>at AC</li> </ul>   | 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>   | 95 mm  |
| <b>width</b>  | 22.5 mm  |
| <b>depth</b>  | 120 mm   |
| <b>Connections/ Terminals</b>   |  |
| <b>product component removable terminal for auxiliary and control circuit</b>                               | Yes  |
| <b>type of electrical connection</b>  |  |
| <ul style="list-style-type: none"> <li>for main current circuit</li> </ul>                                  | Ring cable lug connection  |
| <ul style="list-style-type: none"> <li>for auxiliary and control circuit</li> </ul>                         | ring terminal lug connection   |
| <b>type of connectable conductor cross-sections</b>   |  |
| <ul style="list-style-type: none"> <li>for main contacts for JIS cable lug</li> </ul>                       | JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5   |
| <ul style="list-style-type: none"> <li>for DIN cable lug for main contacts</li> </ul>                       | DIN 46234 -5-2,5, -5-6, -5-10, -5-16, -5-25  |
| <b>type of connectable conductor cross-sections</b>   |  |
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts</li> </ul>                        |  |
| — solid   | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )                       |
| — finely stranded with core end processing  | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )                       |
| — finely stranded without core end processing   | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )                       |

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| <ul style="list-style-type: none"> <li>for AWG cables for auxiliary and control contacts</li> </ul>   | 1x (20 ... 12)  |
| <b>tightening torque</b>  |   |
| <ul style="list-style-type: none"> <li>for main contacts with screw-type terminals</li> </ul>   | 2 ... 2.5 N·m   |
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts with screw-type terminals</li> </ul>                                | 0.5 ... 0.6 N·m   |
| <b>tightening torque [lbf·in]</b>   |   |
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts with screw-type terminals</li> </ul>                                | 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> </ul>   | M5  |
| <ul style="list-style-type: none"> <li>of the auxiliary and control contacts</li> </ul>   | M3  |
| <b>stripped length of the cable</b>   |   |
| <ul style="list-style-type: none"> <li>for main contacts</li> </ul>   | 10 mm   |
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts</li> </ul>  | 7 mm  |
| <b>Electrical Safety</b>  |   |
| <b>protection class IP on the front according to IEC 60529</b>  | IP00; IP20 with cover   |
| <b>touch protection on the front according to IEC 60529</b>   | finger-safe, for vertical contact from the front with cover           |
| <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> </ul>  | -25 ... +60 °C  |
| <ul style="list-style-type: none"> <li>during storage</li> </ul>  | -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> </ul>   | 2 kV / 5 kHz behavior criterion 2                                     |
| <ul style="list-style-type: none"> <li>due to conductor-earth surge according to IEC 61000-4-5</li> </ul>                                     | 2 kV behavior criterion 2   |
| <ul style="list-style-type: none"> <li>due to conductor-conductor surge according to IEC 61000-4-5</li> </ul>                                 | 1 kV behavior criterion 2   |
| <ul style="list-style-type: none"> <li>due to high-frequency radiation according to IEC 61000-4-6</li> </ul>                                  | 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> </ul>                                 | <a href="#">3NE1814-0</a>   |
| <ul style="list-style-type: none"> <li>of full range R fuse link for semiconductor protection at cylindrical design usable</li> </ul>         | <a href="#">5SE1325</a>   |
| <ul style="list-style-type: none"> <li>of back-up R fuse link for semiconductor protection at NH design usable</li> </ul>                     | <a href="#">3NE8015-1</a>   |
| <ul style="list-style-type: none"> <li>of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable</li> </ul> | <a href="#">3NC1032</a>   |
| <ul style="list-style-type: none"> <li>of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable</li> </ul> | <a href="#">3NC1450</a>   |
| <ul style="list-style-type: none"> <li>of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul> | <a href="#">3NC2263</a>   |
| manufacturer's article number of the gG fuse  |   |
| <ul style="list-style-type: none"> <li>at NH design usable</li> </ul>   | <a href="#">3NA6807</a>   |
| <ul style="list-style-type: none"> <li>at cylindrical design 10 x 38 mm usable</li> </ul>   | <a href="#">3NW6007-1</a>   |
| <ul style="list-style-type: none"> <li>at cylindrical design 14 x 51 mm usable</li> </ul>   | <a href="#">3NW6107-1</a>   |
| <ul style="list-style-type: none"> <li>at cylindrical design 22 x 58 mm usable</li> </ul>   | <a href="#">3NW6207-1</a>   |
| manufacturer's article number   |   |
| <ul style="list-style-type: none"> <li>of DIAZED fuse usable</li> </ul>   | <a href="#">5SB2711</a>   |
| <ul style="list-style-type: none"> <li>of NEOZED fuse usable</li> </ul>   | <a href="#">5SE2320</a>   |

|                                 |                          |              |
|---------------------------------|--------------------------|--------------|
| <b>Approvals Certificates</b>   |                          |              |
| <b>General Product Approval</b> | <b>Test Certificates</b> | <b>other</b> |



[Type Test Certificates/Test Report](#)



[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=3RF2320-3DA22>

#### Cax online generator

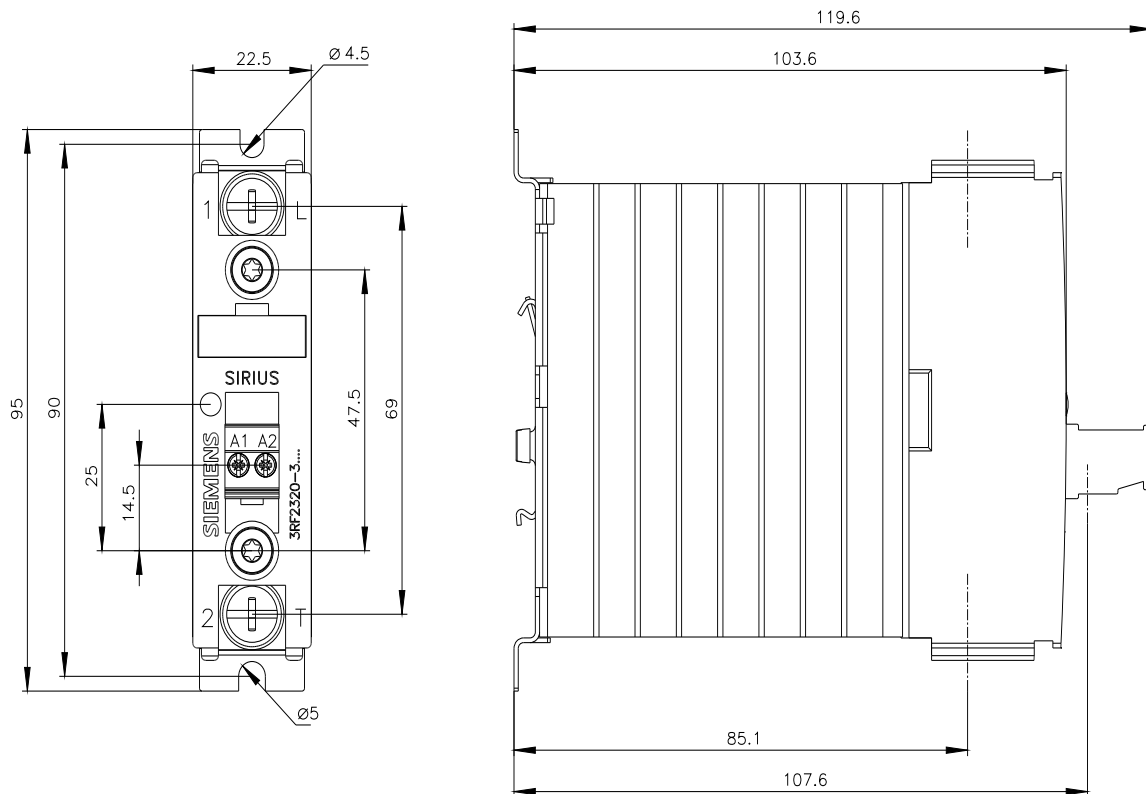
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2320-3DA22>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2320-3DA22>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2320-3DA22&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2320-3DA22&lang=en)







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