



Solid-state contactor 1-phase 3RF2 AC 51 / 20 A / 40 °C 48-460 V / 4-30 V  
DC screw terminal

<b>product brand name</b>	SIRIUS
<b>product designation</b>	solid-state contactor
<b>design of the product</b>	single-phase
<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>• _3 of the accessories that can be ordered</li> <li>• _4 of the accessories that can be ordered</li> <li>• _5 of the accessories that can be ordered</li> </ul>	<a href="#">3RF2900-3PA88</a> <a href="#">3RF2900-0EA18</a> <a href="#">3RF2920-0GA16</a> <a href="#">3RF2920-0FA08</a>
<b>product designation</b>	
<ul style="list-style-type: none"> <li>• _1 of the accessories that can be ordered</li> <li>• _3 of the accessories that can be ordered</li> <li>• _4 of the accessories that can be ordered</li> <li>• _5 of the accessories that can be ordered</li> </ul>	terminal cover converter load monitoring load monitoring, basis
<b>General technical data</b>	
<b>product function</b>	zero-point switching
power loss [W] for rated value of the current at AC in hot operating state	20 W
<ul style="list-style-type: none"> <li>• per pole</li> </ul>	20 W
<b>power loss [W] for rated value of the current without load current share typical</b>	0.6 W
insulation voltage rated value	600 V
<b>degree of pollution</b>	3
type of voltage of the control supply voltage	DC
surge voltage resistance of main circuit rated value	6 kV
shock resistance acc. to IEC 60068-2-27	15g / 11 ms
vibration resistance acc. to IEC 60068-2-6	2g
<b>reference code acc. to IEC 81346-2</b>	Q
Substance Prohibitance (Date)	28.05.2009 00:00:00
<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
operating voltage at AC	
<ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul>	48 ... 460 V 48 ... 460 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> <li>• at 60 Hz</li> </ul>	40 ... 506 V 40 ... 506 V
<b>operational current</b>	
<ul style="list-style-type: none"> <li>• at AC-51 rated value</li> <li>• at AC-51 acc. to IEC 60947-4-3</li> <li>• acc. to UL 508 rated value</li> </ul>	20 A 13.2 A 17.6 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>	600 A
<b>I<sup>2</sup>t value maximum</b>	1 800 A <sup>2</sup> ·s
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage 1</b>	
<ul style="list-style-type: none"> <li>• at DC rated value</li> <li>• at DC</li> </ul>	30 V 4 ... 30 V
<b>control supply voltage</b>	
<ul style="list-style-type: none"> <li>• at DC initial value for signal &lt;1&gt; detection</li> <li>• at DC full-scale value for signal&lt;0&gt; recognition</li> </ul>	4 V 1 V
<b>control current at minimum control supply voltage</b>	
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	18 mA
control current at DC rated value	20 mA
<b>ON-delay time</b>	1 ms; additionally max. one half-wave
<b>OFF-delay time</b>	1 ms; additionally max. one half-wave
<b>Auxiliary circuit</b>	
<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>	
<b>fastening method</b>	screw and snap-on mounting onto 35 mm standard mounting rail
<ul style="list-style-type: none"> <li>• side-by-side mounting</li> </ul>	Yes
<b>height</b>	95 mm
<b>width</b>	22.5 mm
<b>depth</b>	120 mm
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control circuit</li> </ul>	screw-type terminals screw-type terminals
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• at AWG cables for main contacts</li> </ul>	2x (1.5 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ) 2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup> 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> 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>• at 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> ) 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) 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>	<p>2 ... 2.5 N·m</p> <p>0.5 ... 0.6 N·m</p>
<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>	<p>18 ... 22 lbf·in</p> <p>4.5 ... 5.3 lbf·in</p>
<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>	<p>M4</p> <p>M3</p>
<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>	<p>7 mm</p> <p>7 mm</p>
<b>Safety related data</b>	
<b>protection class IP on the front acc. to IEC 60529</b>	IP20
<b>touch protection on the front acc. 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>	<p>-25 ... +60 °C</p> <p>-55 ... +80 °C</p>
<b>Electromagnetic compatibility</b>	
<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>	<p>2 kV / 5 kHz behavior criterion 2</p> <p>2 kV behavior criterion 2</p> <p>1 kV behavior criterion 2</p> <p>140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1</p>
<b>field-based interference acc. to IEC 61000-4-3</b>	80 MHz ... 1 GHz 10 V/m, behavior criterion 1
<b>electrostatic discharge acc. to IEC 61000-4-2</b>	4 kV contact discharging / 8 kV air discharging, behavior criterion 2
<b>conducted HF interference emissions acc. to CISPR11</b>	Class A for industrial environment
<b>field-bound HF interference emission acc. 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 10 x 38 mm 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>	<p><a href="#">3NE1814-0</a></p> <p><a href="#">5SE1325</a></p> <p><a href="#">3NE8015-1</a></p> <p><a href="#">3NC1032</a></p> <p><a href="#">3NC1450</a></p> <p><a href="#">3NC2263</a></p>
manufacturer's article number of the gG fuse	
<ul style="list-style-type: none"> <li>at NH design usable</li> <li>at cylindrical design 10 x 38 mm usable</li> <li>at cylindrical design 14 x 51 mm usable</li> <li>at cylindrical design 22 x 58 mm usable</li> </ul>	<p><a href="#">3NA6807</a></p> <p><a href="#">3NW6005-1: These fuses have a smaller rated current than the semiconductor relays</a></p> <p><a href="#">3NW6105-1: These fuses have a smaller rated current than the semiconductor relays</a></p> <p><a href="#">3NW6205-1: These fuses have a smaller rated current than the semiconductor relays</a></p>
manufacturer's article number	
<ul style="list-style-type: none"> <li>of DIAZED fuse usable</li> <li>of NEOZED fuse usable</li> </ul>	<p><a href="#">5SB171</a></p> <p><a href="#">5SE2320</a></p>
<b>Certificates/ approvals</b>	

[Miscellaneous](#)

EG-Konf.

## Test Certificates

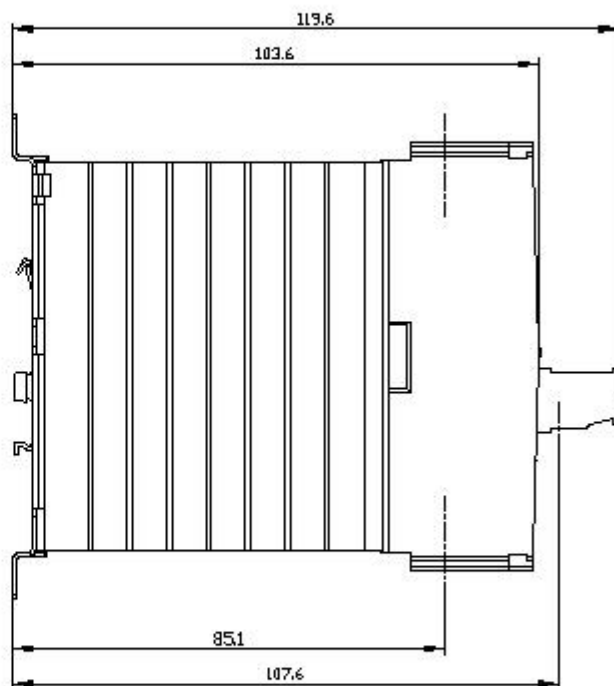
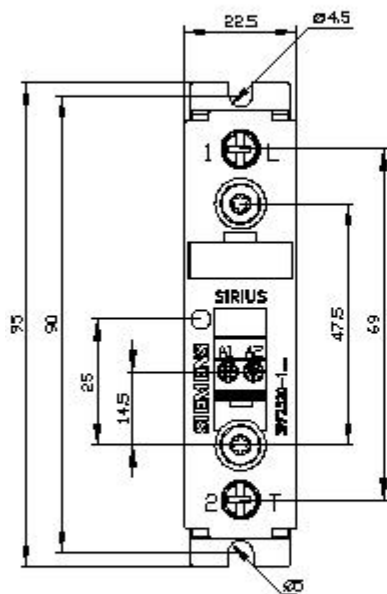
## other

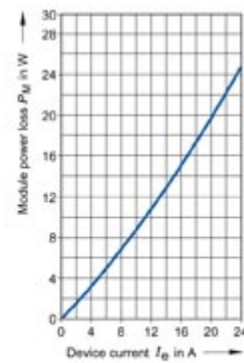
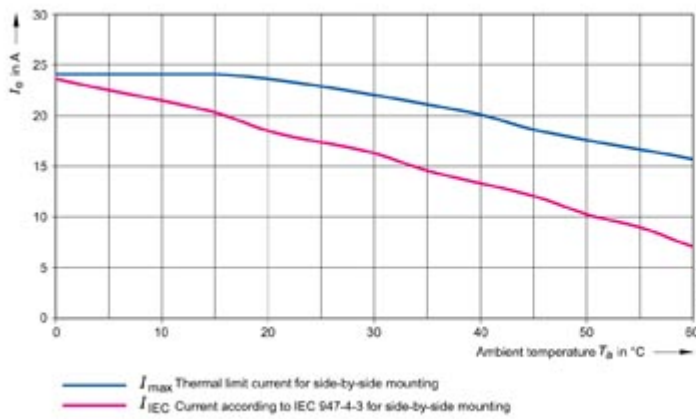
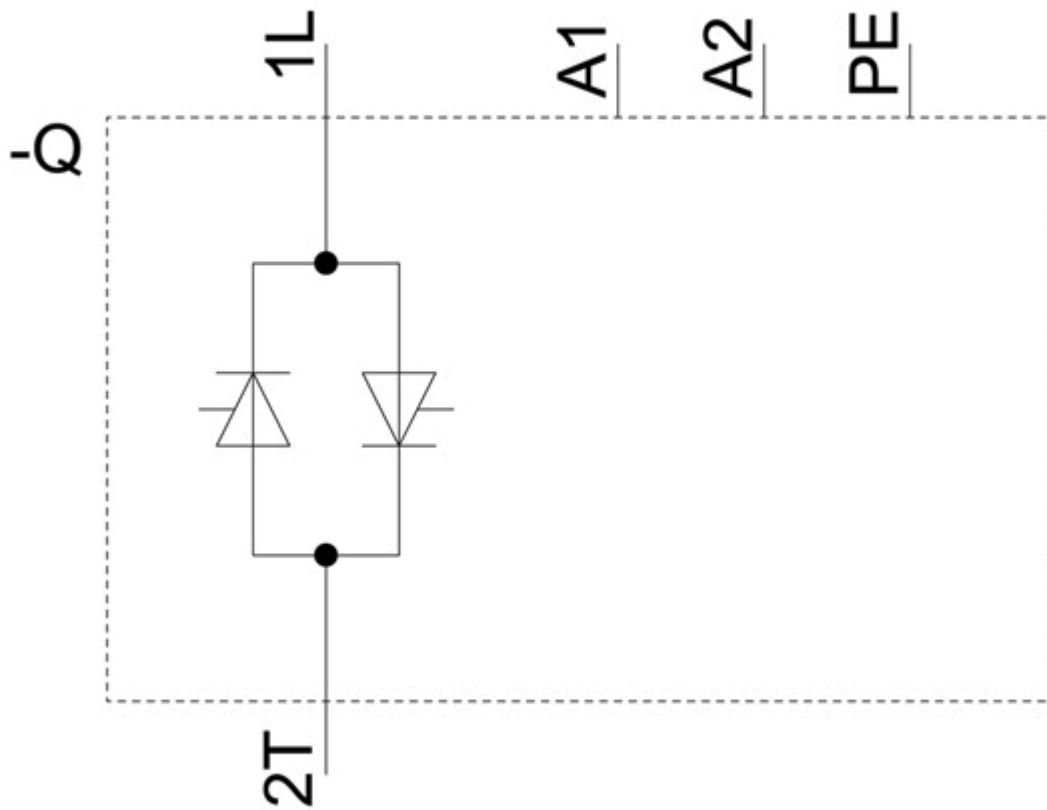
## Railway

[Special Test Certificate](#)[Type Test Certificates/Test Report](#)[Confirmation](#)[Vibration and Shock](#)

## 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=3RF2320-1AA44>**Cax online generator**<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2320-1AA44>**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**<https://support.industry.siemens.com/cs/ww/en/ps/3RF2320-1AA44>**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2320-1AA44&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2320-1AA44&lang=en)





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