

Solid-state contactor 1-phase 3RF2 AC 51 / 20 A / 40 °C  
48-460 V / 24 V AC/DC screw terminal



General technical data		
Product brand name		SIRIUS
Product designation		solid-state contactor
Product function		zero-point switching
Number of poles for main current circuit		1
Protection class IP		IP20
Product designation _1 of the accessories that can be ordered		terminal cover
Manufacturer's article number _1 of the accessories that can be ordered		<a href="#">3RF2900-3PA88</a>
Product designation _3 of the accessories that can be ordered		converter
Manufacturer's article number _3 of the accessories that can be ordered		<a href="#">3RF2900-0EA18</a>
Product designation _4 of the accessories that can be ordered		load monitoring
Manufacturer's article number _4 of the accessories that can be ordered		<a href="#">3RF2920-0GA16</a>
Ambient temperature		
<ul style="list-style-type: none"> <li>during operation</li> </ul>	°C	-25 ... +60

• during storage	°C	-55 ... +80
Installation altitude at height above sea level maximum	m	1 000
Vibration resistance acc. to IEC 60068-2-6		2g
Shock resistance acc. to IEC 60068-2-27		15g / 11 ms
Reference code acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750		K
Reference code acc. to DIN EN 61346-2		Q
Number of NC contacts for auxiliary contacts		0
Number of NO contacts for auxiliary contacts		0
Number of CO contacts for auxiliary contacts		0

#### Main circuit

Number of NO contacts for main contacts		1
Number of NC contacts for main contacts		0
Operating current		
• minimum	mA	500
• at AC-51 rated value	A	20
• at AC-51 acc. to IEC 60947-4-3	A	13.2
Derating temperature	°C	40
Power loss [W] total typical	W	20
Reverse current of the thyristor	mA	10
Blocking voltage at the thyristor for main contacts maximum permissible	V	1 200
Rate of voltage rise at the thyristor for main contacts maximum permissible	V/μs	1 000
Surge current resistance rated value	A	600
I <sup>2</sup> t value maximum	A <sup>2</sup> ·s	1 800
Operating voltage at AC		
• at 60 Hz rated value	V	48 ... 460
• at 50 Hz rated value	V	48 ... 460
Operating range relative to the operating voltage at AC		
• at 50 Hz	V	40 ... 506
• at 60 Hz	V	40 ... 506
Operating frequency rated value	Hz	50 ... 60
Insulation voltage rated value	V	600

#### Control circuit/ Control

Control supply voltage frequency		
• 1 rated value	Hz	50
• 2 rated value	Hz	60
Type of voltage of the control supply voltage		AC/DC
Control supply voltage 1		
• at DC		

— Initial rated value	V	15
— Final rated value	V	24
— rated value maximum permissible	V	30
• at AC		
— at 50 Hz Initial rated value	V	24
— at 50 Hz Final rated value	V	24
— at 60 Hz Initial rated value	V	24
— at 60 Hz Final rated value	V	24
<b>Control supply voltage</b>		
• at DC initial value for signal <1> detection	V	15
• at DC Full-scale value for signal<0> recognition	V	5
• at AC		
— initial value for signal <1> detection	V	14
— at 50 Hz Full-scale value for signal<0> recognition	V	5
— at 60 Hz Full-scale value for signal<0> recognition	V	5
<b>Symmetrical line frequency tolerance</b>	Hz	5
<b>Control current</b>		
• at minimum control supply voltage		
— at AC	mA	2
• at AC rated value	mA	15
• at DC rated value	mA	20

#### Installation/ mounting/ dimensions

<b>Mounting type</b>		screw and snap-on mounting onto 35 mm standard mounting rail
<b>Mounting type Side-by-side mounting</b>		Yes
<b>Design of the thread of the screw for securing the equipment</b>		M4
<b>Tightening torque of the screw for securing the equipment</b>	N·m	1.5
<b>Width</b>	mm	22.5
<b>Height</b>	mm	100
<b>Depth</b>	mm	123.5; 140.5 mm up to product revision E05

#### Connections/Terminals

<b>Type of electrical connection for main current circuit</b>		screw-type terminals
<b>Design of the thread of the connection screw for main contacts</b>		M4
<b>Tightening torque for main contacts with screw-type terminals</b>	N·m	2 ... 2.5
<b>Tightening torque [lbf·in] for main contacts with screw-type terminals</b>	lbf·in	18 ... 22

<b>Type of connectable conductor cross-sections for main contacts</b> <ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded <ul style="list-style-type: none"> <li>— with core end processing</li> </ul> </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>
<b>Type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• at AWG conductors <ul style="list-style-type: none"> <li>— for main contacts</li> <li>— for auxiliary and control contacts</li> </ul> </li> </ul>		2x (14 ... 10) 1x (AWG 20 ... 12)
<b>Type of connectable conductor cross-sections for auxiliary and control contacts</b> <ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded <ul style="list-style-type: none"> <li>— with core end processing</li> <li>— without core end processing</li> </ul> </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> )
<b>Connectable conductor cross-section</b> <ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— single or multi-stranded</li> <li>— finely stranded <ul style="list-style-type: none"> <li>— with core end processing</li> </ul> </li> </ul> </li> <li>• for auxiliary and control contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded <ul style="list-style-type: none"> <li>— with core end processing</li> <li>— without core end processing</li> </ul> </li> </ul> </li> </ul>	mm <sup>2</sup>  mm <sup>2</sup>  mm <sup>2</sup>  mm <sup>2</sup> mm <sup>2</sup>	1.5 ... 6  1 ... 10  0.5 ... 2.5  0.5 ... 2.5 0.5 ... 2.5
<b>AWG number as coded connectable conductor cross section</b> <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• for auxiliary and control contacts</li> </ul>		10 ... 14 20 ... 12
<b>Type of electrical connection for auxiliary and control current circuit</b>		screw-type terminals
<b>Design of the thread of the connection screw of the auxiliary and control contacts</b>		M3
<b>Wire stripping length of the cable</b> <ul style="list-style-type: none"> <li>• for main contacts</li> <li>• for auxiliary and control contacts</li> </ul>	mm mm	7 7
<b>Tightening torque for auxiliary and control contacts with screw-type terminals</b>	N·m	0.5 ... 0.6
<b>Tightening torque [lbf·in] for auxiliary and control contacts with screw-type terminals</b>	lbf·in	4.5 ... 5.3

#### Certificates/approvals

General Product Approval	EMC	Declaration of Conformity
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[Miscellaneous](#)

Test Certificates	other	Railway
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[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

[Confirmation](#)

[Vibration and Shock](#)

#### Further information

**Short-circuit protection, design of the fuse link**

[https://www.automation.siemens.com/cd-static/material/info/3RF23\\_eng.pdf](https://www.automation.siemens.com/cd-static/material/info/3RF23_eng.pdf)

**Information- and Downloadcenter (Catalogs, Brochures,...)**

<http://www.siemens.com/industrial-controls/catalogs>

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mfb=3RF2320-1AA14>

**Cax online generator**

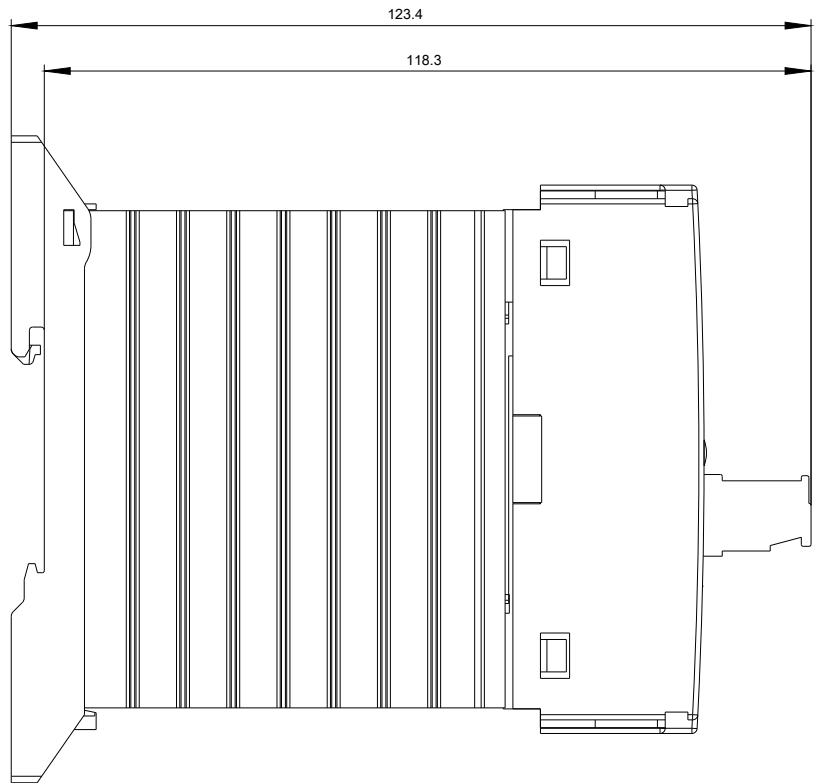
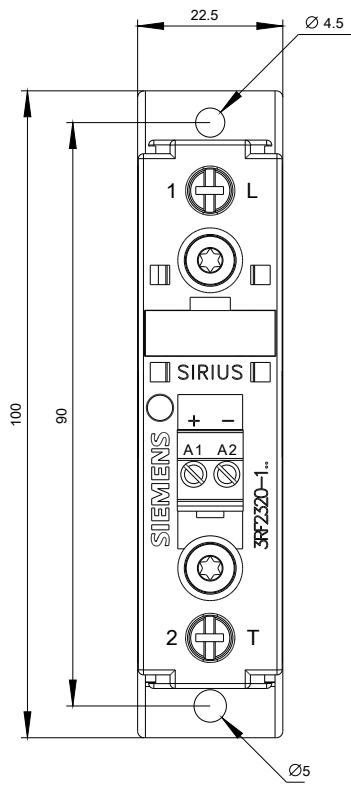
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3RF2320-1AA14>

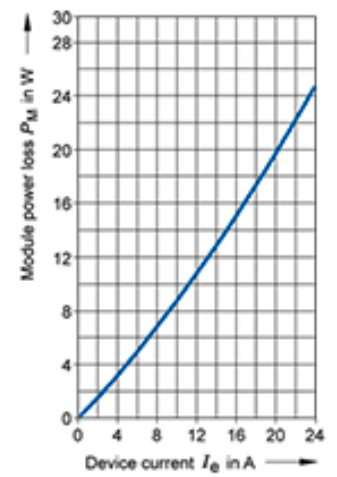
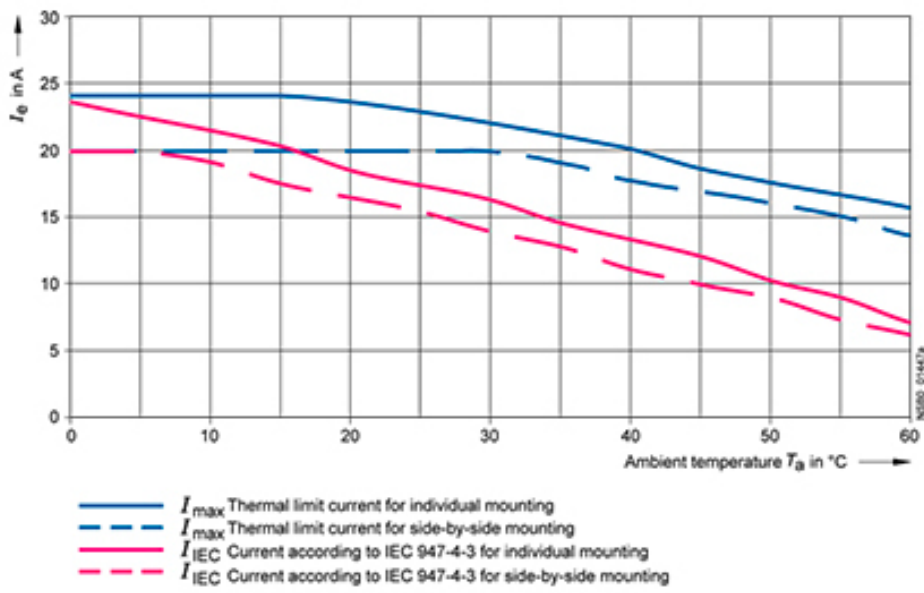
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2320-1AA14>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mfb=3RF2320-1AA14&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3RF2320-1AA14&lang=en)





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