

Semiconductor relay, 1-phase 3RF2 Width 22.5 mm, 20 A 48-460 V / 24 V DC screw terminal Instantaneous switching



General technical data		
Product brand name		SIRIUS
Product designation		solid-state relay
Product function		instantaneous 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 _2 of the accessories that can be ordered		power regulator
Manufacturer's article number _2 of the accessories that can be ordered		<a href="#">3RF2920-0HA16</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>
Product designation _5 of the accessories that can be ordered		load monitoring, basis
Manufacturer's article number _5 of the accessories that can be ordered		<a href="#">3RF2920-0FA08</a>
Ambient temperature		
• during operation	°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		
• rated value maximum	A	20
• at AC-51 rated value	A	20
• minimum	mA	100
Operating voltage at AC		
• at 50 Hz rated value	V	48 ... 460
• at 60 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
Relative symmetrical tolerance of the operating frequency	%	10
Insulation voltage rated value	V	600
Rate of voltage rise at the thyristor for main contacts maximum permissible	V/μs	500
Blocking voltage at the thyristor for main contacts maximum permissible	V	1 200
Reverse current of the thyristor	mA	10
Derating temperature	°C	40
Power loss [W] total typical	W	28.6

Power loss [V·A] maximum	V·A	28.6
Surge current resistance rated value	A	200
I <sup>2</sup> t value maximum	A <sup>2</sup> ·s	200
Short-circuit protection, design of the fuse link		

#### Control circuit/ Control

Type of voltage of the control supply voltage		DC
Control supply voltage 1		
• at DC		
— Initial rated value	V	15
— Final rated value	V	24
— rated value maximum permissible	V	30
Control supply voltage		
• at DC initial value for signal <1> detection	V	15
• at DC Full-scale value for signal<0> recognition	V	5
Control current		
• at minimum control supply voltage		
— at DC	mA	2
• at DC rated value	mA	15

#### Installation/ mounting/ dimensions






Mounting type		screw fixing
Mounting type Side-by-side mounting		Yes
Design of the thread of the screw for securing the equipment		M4
Tightening torque of the screw for securing the equipment	N·m	1.5
Width	mm	22.5
Height	mm	85
Depth	mm	48

#### Connections/Terminals

Type of electrical connection for main current circuit		screw-type terminals
Design of the thread of the connection screw for main contacts		M4
Tightening torque for main contacts with screw-type terminals	N·m	2 ... 2.5
Tightening torque [lbf·in] for main contacts with screw-type terminals	lbf·in	7 ... 10.3
Type of connectable conductor cross-sections		
• 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>
• at AWG conductors		

<ul style="list-style-type: none"> <li>— for main contacts</li> <li>— for auxiliary and control contacts</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>		2x (14 ... 10) 1x (AWG 20 ... 12)  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>	1.5 ... 6
	mm <sup>2</sup>	1 ... 10
	mm <sup>2</sup>	0.5 ... 2.5
	mm <sup>2</sup>	0.5 ... 2.5
	mm <sup>2</sup>	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>		14 ... 10 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	7
	mm	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	
					<a href="#">Miscellaneous</a>
CSA	UR		C-Tick	EG-Konf.	

Test Certificates		other	Railway
<a href="#">Type Test Certificates/Test Report</a>	<a href="#">Special Test Certificate</a>	<a href="#">Confirmation</a>	<a href="#">Vibration and Shock</a>

#### Further information

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

[https://www.automation.siemens.com/cd-static/material/info/3RF21\\_eng.pdf](https://www.automation.siemens.com/cd-static/material/info/3RF21_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?mlfb=3RF2120-1BA04>

##### Cax online generator

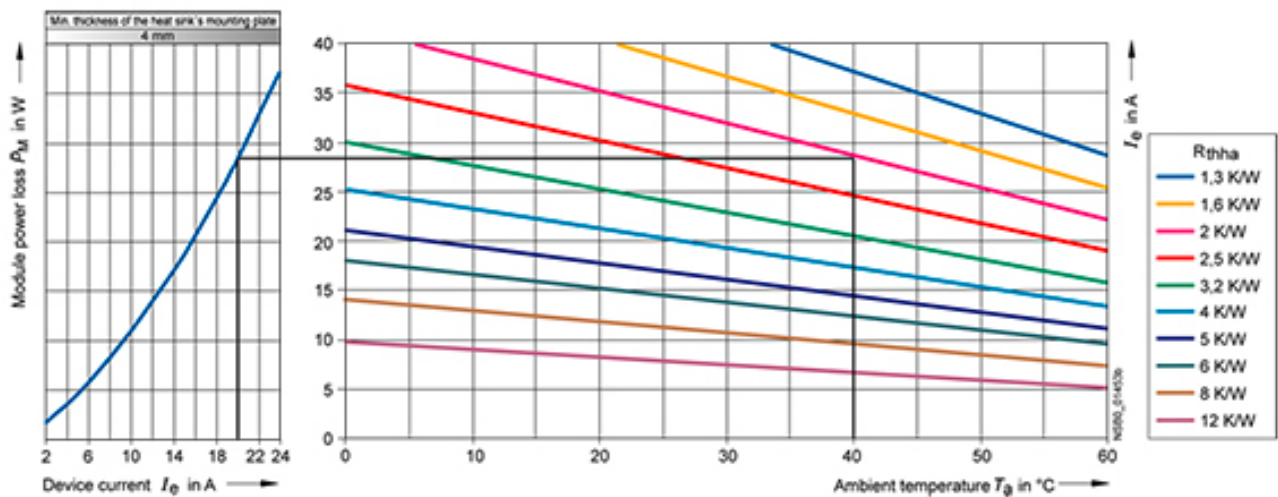
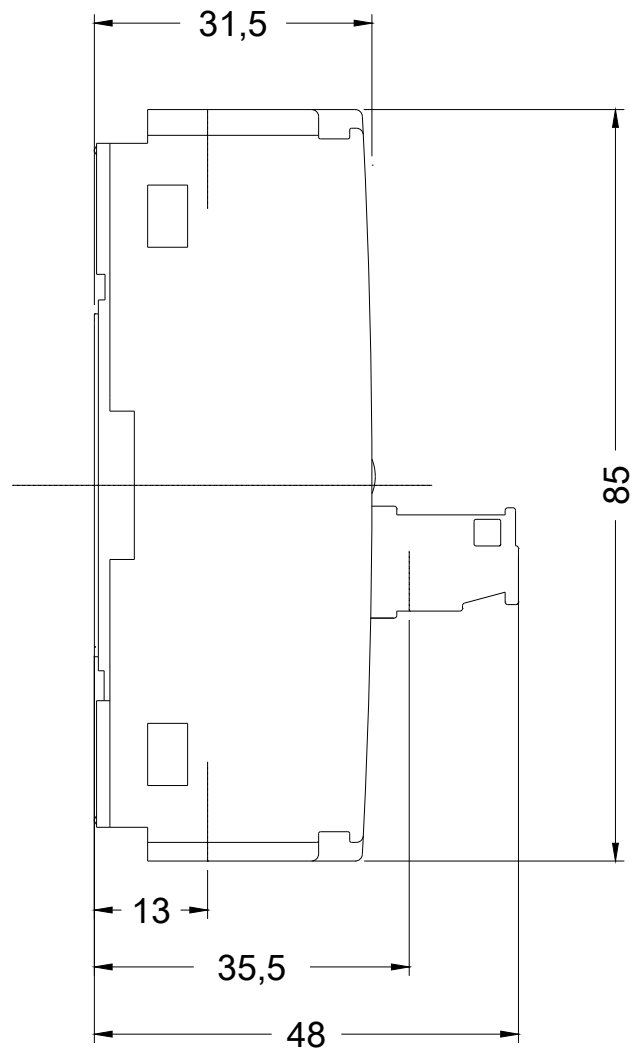
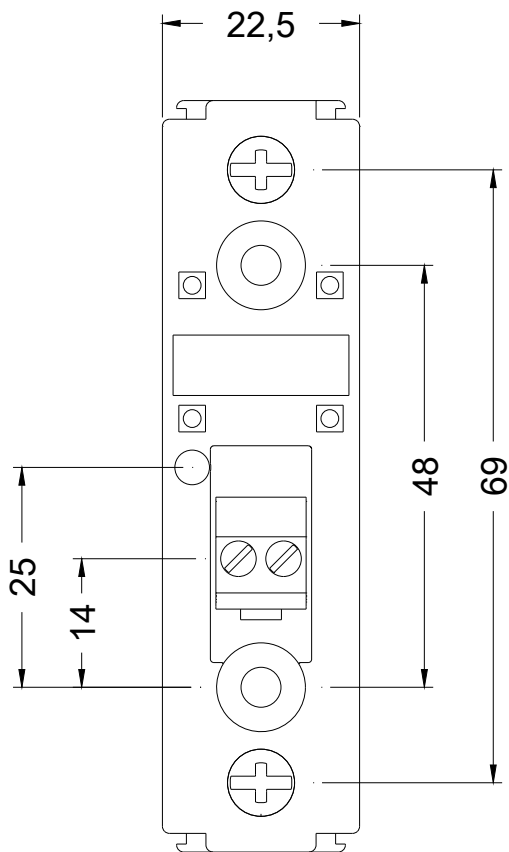
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2120-1BA04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2120-1BA04>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2120-1BA04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2120-1BA04&lang=en)



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