

Semiconductor relay, 1-phase 3RF2 Width 22.5 mm, 20 A 24-230 V / 4-30 V DC screw terminal



General technical data		
Product brand name		SIRIUS
Product designation		solid-state relay
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		3RF2900-3PA88
Product designation _2 of the accessories that can be ordered		power regulator
Manufacturer's article number _2 of the accessories that can be ordered		3RF2920-0HA13
Product designation _3 of the accessories that can be ordered		converter
Manufacturer's article number _3 of the accessories that can be ordered		3RF2900-0EA18
Product designation _4 of the accessories that can be ordered		load monitoring

Manufacturer's article number _4 of the accessories that can be ordered		3RF2920-0GA13
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		3RF2920-0FA08
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	24 ... 230
• at 60 Hz rated value	V	24 ... 230
Operating range relative to the operating voltage at AC		
• at 50 Hz	V	20 ... 253
• at 60 Hz	V	20 ... 253
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	800
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 ² t value maximum	A ² ·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		
<ul style="list-style-type: none"> • at DC <ul style="list-style-type: none"> — Initial rated value — Final rated value — rated value maximum permissible 	V V V	4 30 30
Control supply voltage		
<ul style="list-style-type: none"> • at DC initial value for signal <1> detection • at DC Full-scale value for signal<0> recognition 	V V	4 1
Control current		
<ul style="list-style-type: none"> • at minimum control supply voltage <ul style="list-style-type: none"> — at DC • at DC rated value 	mA mA	2 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		
<ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid — finely stranded <ul style="list-style-type: none"> — with core end processing • at AWG conductors 		2x (1.5 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²) 2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ²

<ul style="list-style-type: none"> — for main contacts — for auxiliary and control contacts • for auxiliary and control contacts <ul style="list-style-type: none"> — solid — finely stranded <ul style="list-style-type: none"> — with core end processing — without core end processing 		<p>2x (14 ... 10)</p> <p>1x (AWG 20 ... 12)</p> <p>1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)</p> <p>1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)</p> <p>1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²)</p>
Connectable conductor cross-section		
<ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — single or multi-stranded — finely stranded <ul style="list-style-type: none"> — with core end processing • for auxiliary and control contacts <ul style="list-style-type: none"> — solid — finely stranded <ul style="list-style-type: none"> — with core end processing — without core end processing 	mm ²	1.5 ... 6
	mm ²	1 ... 10
	mm ²	0.5 ... 2.5
	mm ²	0.5 ... 2.5
	mm ²	0.5 ... 2.5
AWG number as coded connectable conductor cross section		
<ul style="list-style-type: none"> • for main contacts • for auxiliary and control contacts 		<p>14 ... 10</p> <p>20 ... 12</p>
Type of electrical connection for auxiliary and control current circuit		screw-type terminals
Design of the thread of the connection screw of the auxiliary and control contacts		M3
Wire stripping length of the cable		
<ul style="list-style-type: none"> • for main contacts • for auxiliary and control contacts 	mm	7
	mm	7
Tightening torque for auxiliary and control contacts with screw-type terminals	N·m	0.5 ... 0.6
Tightening torque [lbf·in] for auxiliary and control contacts with screw-type terminals	lbf·in	4.5 ... 5.3

Certificates/approvals

General Product Approval		EMC	Declaration of Conformity	
 CSA	 UR		 C-Tick	 EG-Konf.

[Miscellaneous](#)

Test Certificates	other	Railway
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/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=3RF2120-1AA42>

Cax online generator

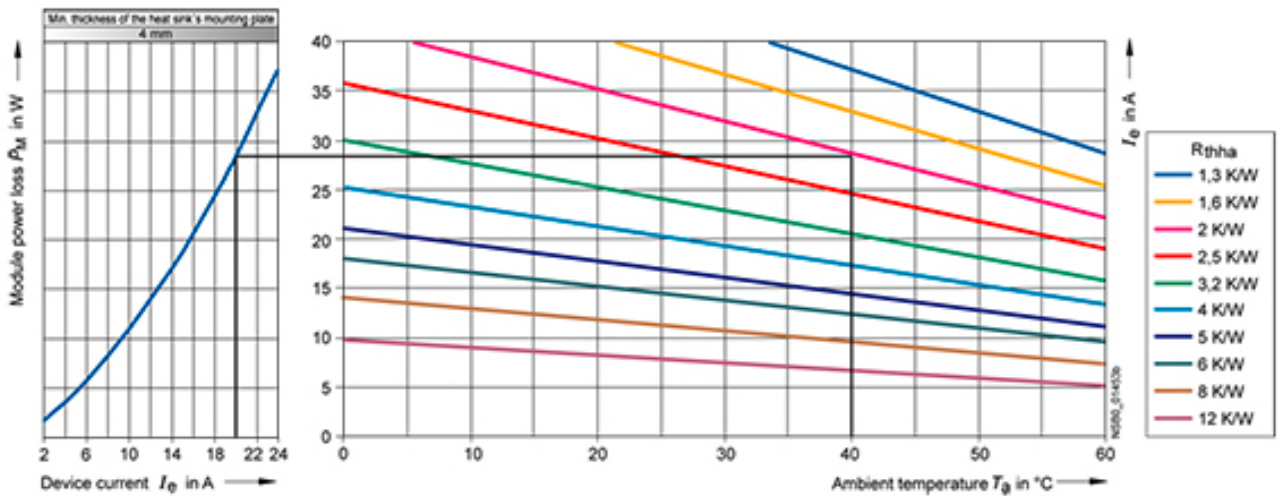
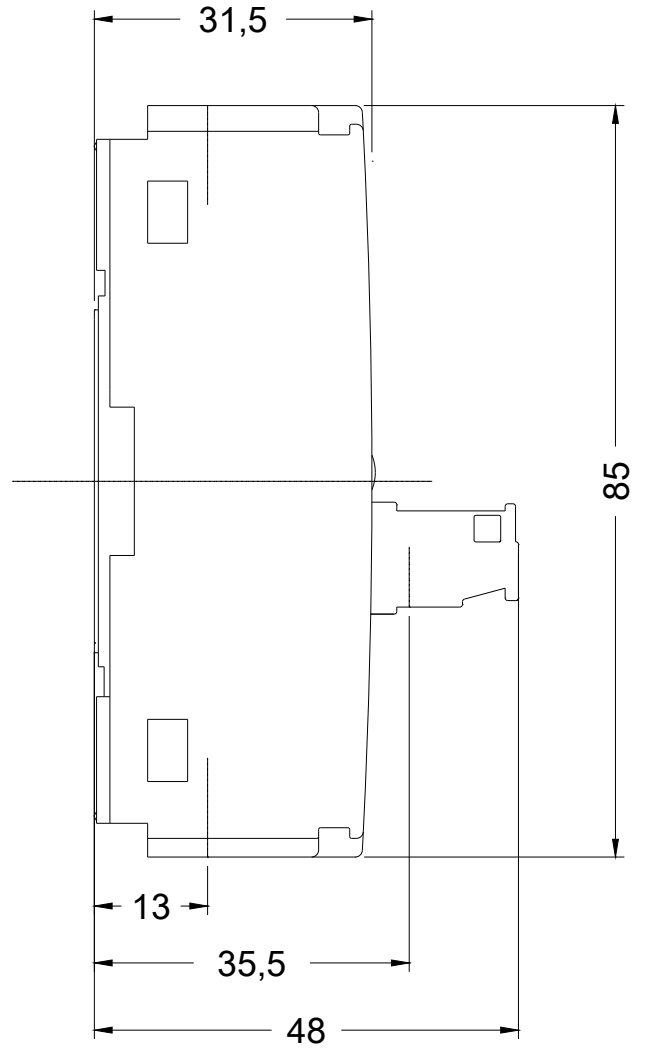
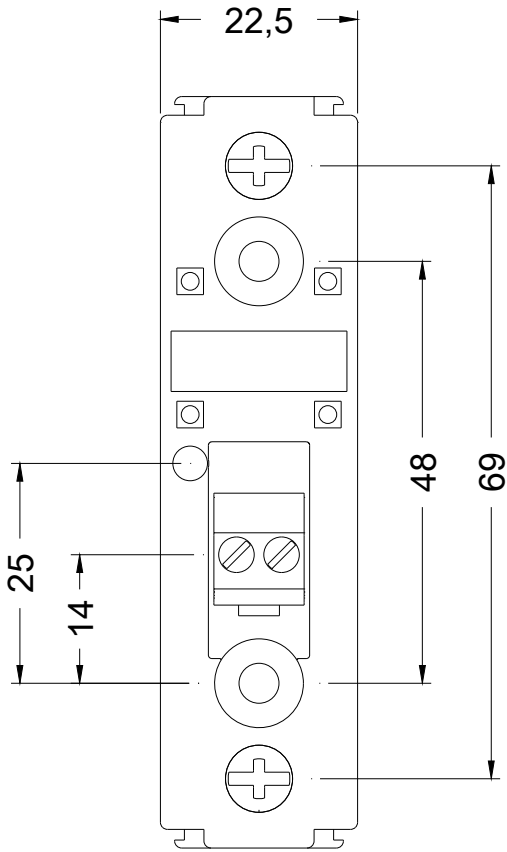
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2120-1AA42>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2120-1AA42>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2120-1AA42&lang=en



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