

SEMICONDUCTOR RELAY 3RF2, 1-PH. WIDTH  
22.5MM, 50 A 48-460 V / 110-230 V AC SPRING-  
LOADED 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
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
Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750		K
Equipment marking 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
<b>Operating current</b>		
• Rated value maximum	A	50
• at AC-51 Rated value	A	20
• minimum	mA	500
<b>Operating voltage at AC</b>		
• at 50 Hz Rated value	V	48 ... 460
• at 60 Hz Rated value	V	48 ... 460
<b>Operating range relative to the operating voltage at AC</b>		
• at 50 Hz	V	40 ... 506
• at 60 Hz	V	40 ... 506
<b>Operating frequency Rated value</b>	Hz	50 ... 60
<b>Relative symmetrical tolerance of the operating frequency</b>	%	10
<b>Insulation voltage Rated value</b>	V	600
<b>Rate of voltage rise at the thyristor for main contacts maximum permissible</b>	V/ $\mu$ s	1 000
<b>Blocking voltage at the thyristor for main contacts maximum permissible</b>	V	1 200
<b>Reverse current of the thyristor</b>	mA	10
<b>Derating temperature</b>	$^{\circ}$ C	40
<b>Active power loss total typical</b>	W	66
<b>Apparent power loss maximum</b>	V·A	66
<b>Surge current resistance Rated value</b>	A	600
<b>I<sup>2</sup>t value maximum</b>	A <sup>2</sup> ·s	1 800
<b>Short-circuit protection, design of the fuse link</b>		
Control circuit/ Control:		
<b>Control supply voltage frequency</b>		
• 1 Rated value	Hz	50
• 2 Rated value	Hz	60
<b>Type of voltage of the control supply voltage</b>		AC
<b>Control supply voltage 1</b>		
• at AC		
— at 50 Hz Initial rated value	V	110
— at 50 Hz Final rated value	V	230
— at 60 Hz Initial rated value	V	110
— at 60 Hz Final rated value	V	230
<b>Control supply voltage</b>		
• at AC		

— at 50 Hz Full-scale value for signal<0> recognition	V	40
— at 60 Hz Full-scale value for signal<0> recognition	V	40
<b>Symmetrical line frequency tolerance</b>	Hz	5
<b>Relative symmetrical tolerance of the supply voltage frequency</b>	%	10
<b>Control current</b>		
• at minimum control supply voltage		
— at AC	mA	2
• at AC Rated value	mA	15

**Installation/ mounting/ dimensions:**






<b>Mounting type</b>		screw fixing
<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	85
<b>Depth</b>	mm	48

**Connections/ Terminals:**

<b>Type of electrical connection for main current circuit</b>		spring-loaded terminals
<b>Tightening torque for main contacts with screw-type terminals</b>	N·m	2 ... 2.5
<b>Type of connectable conductor cross-section</b>		
• for main contacts		
— solid		2x (0.5 ... 2.5 mm <sup>2</sup> )
— finely stranded		
— with core end processing		2x (0.5 ... 1.5 mm <sup>2</sup> )
— without core end processing		2x (0.5 ... 2.5 mm <sup>2</sup> )
• for AWG conductors		
— for main contacts		2x (18 ... 14)
— for auxiliary and control contacts		1x (AWG 20 ... 12)
• for auxiliary and control contacts		
— solid		0.5 ... 1.5 mm <sup>2</sup>
— finely stranded		
— with core end processing		0.5 ... 2.5 mm <sup>2</sup>
— without core end processing		0.5 ... 2.5 mm <sup>2</sup>
<b>Connectable conductor cross-section</b>		
• for main contacts		
— single or multi-stranded	mm <sup>2</sup>	0.5 ... 2.5

— finely stranded		
— with core end processing	mm <sup>2</sup>	0.5 ... 1.5
— without core end processing	mm <sup>2</sup>	0.5 ... 2.5
• for auxiliary and control contacts		
— solid	mm <sup>2</sup>	0.5 ... 1.5
— finely stranded		
— with core end processing	mm <sup>2</sup>	0.5 ... 2.5
— without core end processing	mm <sup>2</sup>	0.5 ... 2.5
<b>AWG number as coded connectable conductor cross section</b>		
• for main contacts		18 ... 14
• for auxiliary and control contacts		20 ... 12
<b>Type of electrical connection for auxiliary and control current circuit</b>		spring-loaded terminals
<b>Wire stripping length of the cable</b>		
• for main contacts	mm	10
• for auxiliary and control contacts	mm	10

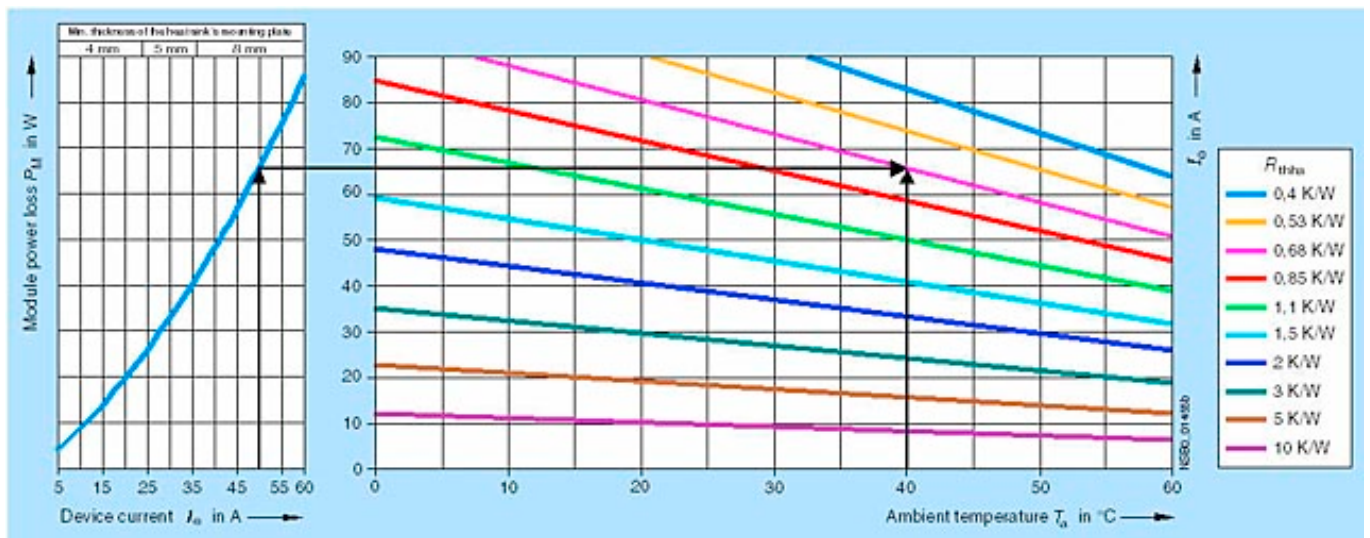
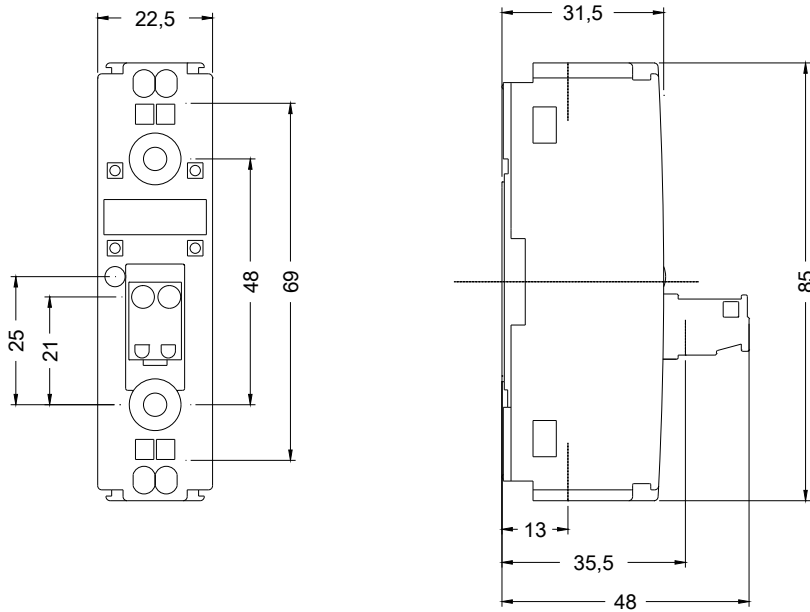
#### Certificates/ approvals:

General Product Approval	EMC	Declaration of Conformity	Test Certificates
 CSA	 UR	 EAC	 C-TICK
		 EG-Konf.	<a href="#">Typprüfbescheinigung/Werkszeugnis</a>

Test Certificates	other
<a href="#">spezielle Prüfbescheinigungen</a>	<a href="#">Umweltbestätigung</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)
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