

Semiconductor relay, 1-phase 3RF2 Overall width 22.5 mm, 90 A 24-230 V / 24 V DC Spring-type terminal



<b>Product brand name</b>	SIRIUS
<b>Product designation</b>	solid-state relay
<b>Product type designation</b>	3RF21
<b>Manufacturer's article number</b>	
<ul style="list-style-type: none"> <li>• _3 / of the accessories that can be ordered</li> </ul>	<a href="#">3RF2900-0EA18</a>
<b>Product designation</b>	
<ul style="list-style-type: none"> <li>• _3 / of the accessories that can be ordered</li> </ul>	converter

General technical data	
<b>Product function</b>	zero-point switching
<b>Power loss [V·A] / maximum</b>	118 V·A
Power loss [W] / for rated value of the current / at AC / in hot operating state	118 W
<b>Insulation voltage</b>	
<ul style="list-style-type: none"> <li>• rated value</li> </ul>	600 V
<b>Protection class IP</b>	IP20
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 DIN 40719 extended according to IEC 204-2 / acc. to IEC 750</b>	K

Reference code / acc. to DIN EN 81346-2	Q
Reference code / acc. to DIN EN 61346-2	Q
<b>Main circuit</b>	
Number of poles / for main current circuit	1
Number of NO contacts / for main contacts	1
Number of NC contacts / for main contacts	0
Operating voltage / at AC	
• at 50 Hz / rated value	24 ... 230 V
• at 60 Hz / rated value	24 ... 230 V
Operating frequency / rated value	50 ... 60 Hz
Relative symmetrical tolerance / of the operating frequency	10 %
Operating range relative to the operating voltage / at AC	
• at 50 Hz	20 ... 253 V
• at 60 Hz	20 ... 253 V
Operating current / minimum	500 mA
Operating current	
• at AC-1 / at 400 V / rated value	90 A
• at AC-51 / rated value	20 A
Rate of voltage rise / at the thyristor / for main contacts / maximum permissible	1 000 V/ $\mu$ s
Blocking voltage / at the thyristor / for main contacts / maximum permissible	800 V
Reverse current / of the thyristor	10 mA
Derating temperature	40 °C
Surge current resistance / rated value	1 150 A
I <sup>2</sup> t value / maximum	6 600 A <sup>2</sup> ·s
<b>Control circuit/ Control</b>	
Type of voltage / of the control supply voltage	DC
Control supply voltage / 1	
• at DC / rated value	30 V
• at DC	15 ... 24 V
Control supply voltage	
• at DC / initial value for signal <1> detection	15 V
• at DC / Full-scale value for signal <0> recognition	5 V
Control current / at minimum control supply voltage	
• at DC	2 mA
Control current / at DC / rated value	15 mA
Switch-on delay time	1 ms; additionally max. one half-wave
Off-delay time	1 ms; additionally max. one half-wave
Number of NC contacts / for auxiliary contacts	0

Number of NO contacts / for auxiliary contacts	0
Number of CO contacts / for auxiliary contacts	0

### Installation/ mounting/ dimensions

<b>Mounting type</b>	screw fixing
• Side-by-side mounting	Yes
<b>Height</b>	85 mm
<b>Width</b>	22.5 mm
<b>Depth</b>	48 mm
<b>Installation altitude / at height above sea level / maximum</b>	1 000 m

### Connections/ Terminals

<b>Type of connectable conductor cross-sections</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> )
— finely stranded / without core end processing	2x (0.5 ... 2.5 mm <sup>2</sup> )
• at AWG conductors / for main contacts	2x (18 ... 14)
<b>Type of connectable conductor cross-sections</b>	
• 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>
— finely stranded / without core end processing	0.5 ... 2.5 mm <sup>2</sup>
• at AWG conductors / for auxiliary and control contacts	1x (AWG 20 ... 12)
Tightening torque / for main contacts / with screw-type terminals	2 ... 2.5 N·m
<b>Wire stripping length / of the cable</b>	
• for main contacts	10 mm
• for auxiliary and control contacts	10 mm

### Ambient conditions

<b>Ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C

### Electromagnetic compatibility

<b>Conducted interference</b>	
• due to burst / acc. to IEC 61000-4-4	2 kV / 5 kHz behavior criterion 2
• due to conductor-earth surge / acc. to IEC 61000-4-5	2 kV behavior criterion 2
• due to conductor-conductor surge / acc. to IEC 61000-4-5	1 kV behavior criterion 2

<ul style="list-style-type: none"> <li>• due to high-frequency radiation / acc. to IEC 61000-4-6</li> </ul>	140 dBuV in the frequency range 0.15 ... 80 MHz, 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

#### Further information

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

[www.siemens.com/sirius/catalogs](http://www.siemens.com/sirius/catalogs)

##### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF2190-2AA02>

##### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2190-2AA02>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2190-2AA02>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2190-2AA02&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2190-2AA02&lang=en)

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

[https://www.automation.siemens.com/cd-static/material/info/3RF20\\_eng.pdf](https://www.automation.siemens.com/cd-static/material/info/3RF20_eng.pdf)

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