



Semiconductor relay, 1-phase 3RF2 Overall width 22.5 mm, 50 A 48-600 V / 24 V DC Spring-type terminal

product brand name	SIRIUS
product designation	solid-state relay
design of the product	single-phase
product type designation	3RF21
manufacturer's article number	
<ul style="list-style-type: none"> <li>_3 of the accessories that can be ordered</li> </ul>	<a href="#">3RF2900-0EA18</a>
product designation	
<ul style="list-style-type: none"> <li>_3 of the accessories that can be ordered</li> </ul>	converter
<b>General technical data</b>	
product function	zero-point switching
power loss [V·A] maximum	66 VA
power loss [W] for rated value of the current	
<ul style="list-style-type: none"> <li>at AC in hot operating state</li> </ul>	66 W
<ul style="list-style-type: none"> <li>at AC in hot operating state per pole</li> </ul>	66 W
<ul style="list-style-type: none"> <li>without load current share typical</li> </ul>	0.4 W
insulation voltage rated value	600 V
type of voltage	
<ul style="list-style-type: none"> <li>of the operating voltage</li> </ul>	AC
<ul style="list-style-type: none"> <li>of the control supply voltage</li> </ul>	DC
surge voltage resistance of main circuit rated value	6 kV
shock resistance according to IEC 60068-2-27	15g / 11 ms
vibration resistance according to IEC 60068-2-6	2g
reference code according to DIN 40719 extended according to IEC 204-2 according to IEC 750	K
reference code according to EN 61346-2	Q
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/28/2009
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
<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
type of voltage of the operating voltage	AC
operating voltage	
<ul style="list-style-type: none"> <li>at AC</li> </ul>	
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>at 50 Hz rated value</li> </ul> </li> </ul>	48 ... 600 V
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>at 60 Hz rated value</li> </ul> </li> </ul>	48 ... 600 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	

<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	40 ... 660 V
<b>operational current rated value maximum</b>	50 A
<b>operational current</b>	
<ul style="list-style-type: none"> <li>• at AC-51 rated value</li> <li>• according to UL 508 rated value</li> </ul>	20 A
<b>ampacity maximum</b>	50 A
<b>operational current minimum</b>	500 mA
<b>rate of voltage rise at the thyristor for main contacts maximum permissible</b>	1 000 V/μs
<b>blocking voltage at the thyristor for main contacts maximum permissible</b>	1 600 V
<b>reverse current of the thyristor</b>	10 mA
<b>derating temperature</b>	40 °C
<b>surge current resistance rated value</b>	600 A
<b>I<sup>2</sup>t value maximum</b>	1 800 A <sup>2</sup> ·s

#### Control circuit/ Control

<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage 1 at DC</b>	
<ul style="list-style-type: none"> <li>• rated value maximum permissible</li> <li>•</li> </ul>	30 V
<b>control supply voltage</b>	
<ul style="list-style-type: none"> <li>• at DC initial value for signal &lt;1&gt; detection</li> <li>• at DC full-scale value for signal&lt;0&gt; recognition</li> </ul>	15 V
<b>control current at minimum control supply voltage</b>	
<ul style="list-style-type: none"> <li>• at DC</li> </ul>	13 mA
control current at DC rated value	15 mA
<b>ON-delay time</b>	1 ms; additionally max. one half-wave
<b>OFF-delay time</b>	1 ms; additionally max. one half-wave

#### Auxiliary circuit

<b>type of switching contact</b>	normally open contact (NO)
<b>number of NC contacts for auxiliary contacts</b>	0
<b>number of NO contacts for auxiliary contacts</b>	0
number of CO contacts for auxiliary contacts	0

#### Installation/ mounting/ dimensions

fastening method side-by-side mounting	Yes
<b>fastening method</b>	screw fixing
<b>design of the thread of the screw for securing the equipment</b>	M4
<b>tightening torque of fixing screw maximum</b>	1.5 N·m
<b>tightening torque [lbf·in] of fixing screw maximum</b>	13 lbf·in
<b>height</b>	85 mm
<b>width</b>	22.5 mm
<b>depth</b>	48 mm

#### Connections/ Terminals

<b>product component removable terminal for auxiliary and control circuit</b>	Yes
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for auxiliary and control circuit</li> </ul>	spring-loaded terminals
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded with core end processing</li> <li>— finely stranded without core end processing</li> </ul> </li> <li>• for AWG cables for main contacts</li> </ul>	2x (0.5 ... 2.5 mm <sup>2</sup> )
<b>connectable conductor cross-section for main contacts</b>	
<ul style="list-style-type: none"> <li>• solid or stranded</li> <li>• finely stranded with core end processing</li> <li>• finely stranded without core end processing</li> </ul>	2x (0.5 ... 1.5 mm <sup>2</sup> )
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for auxiliary and control contacts</li> </ul>	2x (0.5 ... 2.5 mm <sup>2</sup> )
	2x (18 ... 14)

— 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>
• for AWG cables for auxiliary and control contacts	1x (AWG 20 ... 12)
AWG number as coded connectable conductor cross section for main contacts	18 ... 14
<b>tightening torque</b>	
• for main contacts with screw-type terminals	2 ... 2.5 N·m
<b>stripped length of the cable</b>	
• for main contacts	10 mm
• for auxiliary and control contacts	10 mm

<b>Electrical Safety</b>	
<b>protection class IP on the front according to IEC 60529</b>	IP20
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front

<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	1 000 m
<b>ambient temperature</b>	
• during operation	-25 ... +60 °C
• during storage	-55 ... +80 °C

<b>Electromagnetic compatibility</b>	
<b>conducted interference</b>	
• due to burst according to IEC 61000-4-4	2 kV / 5 kHz behavior criterion 2
• due to conductor-earth surge according to IEC 61000-4-5	2 kV behavior criterion 2
• due to conductor-conductor surge according to IEC 61000-4-5	1 kV behavior criterion 2
• due to high-frequency radiation according to IEC 61000-4-6	140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1
<b>field-based interference according to IEC 61000-4-3</b>	80 MHz ... 1 GHz 10 V/m, behavior criterion 1
<b>electrostatic discharge according to IEC 61000-4-2</b>	4 kV contact discharging / 8 kV air discharging, behavior criterion 2
<b>conducted HF interference emissions according to CISPR11</b>	Class A for industrial environment
<b>field-bound HF interference emission according to CISPR11</b>	Class B for the domestic, business and commercial environments

<b>Short-circuit protection, design of the fuse link</b>	
manufacturer's article number	
• of gS fuse for semiconductor protection at NH design usable	<a href="#">3NE1803-0</a>
• of back-up R fuse link for semiconductor protection at NH design usable	<a href="#">3NE8017-1</a>
• of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable	<a href="#">3NC1450</a>
• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable	<a href="#">3NC2250</a>
manufacturer's article number of the gG fuse	
• at NH design usable	<a href="#">3NA6807-6: These fuses have a smaller rated current than the semiconductor relays</a>

<b>Approvals Certificates</b>	
<b>General Product Approval</b>	EMV



[Confirmation](#)



<b>Test Certificates</b>	<b>other</b>	<b>Railway</b>	<b>Environment</b>
--------------------------	--------------	----------------	--------------------

[Special Test Certificate](#)

[Type Test Certificates/Test Report](#)

[Confirmation](#)



[Special Test Certificate](#)

[Environmental Confirmations](#)

<b>Further information</b>
----------------------------

**Information on the packaging**  
<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF2150-2AA06>

Cax online generator

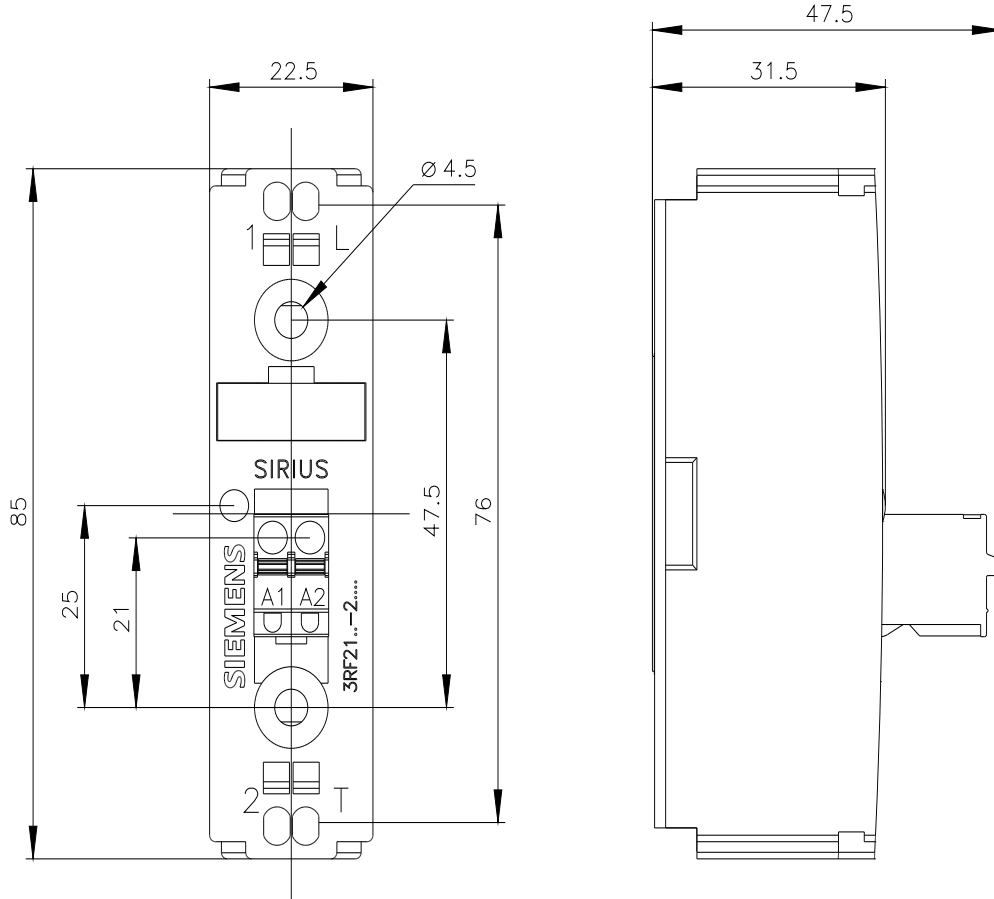
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2150-2AA06>

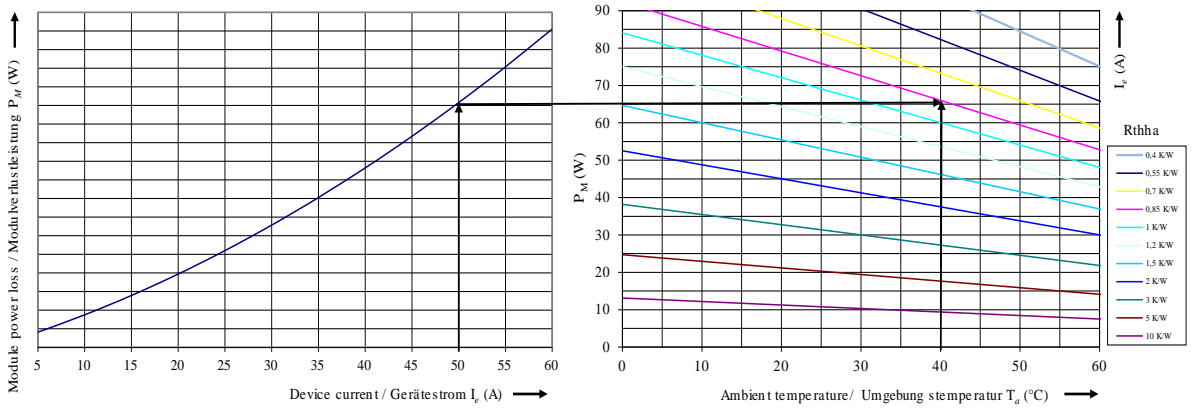
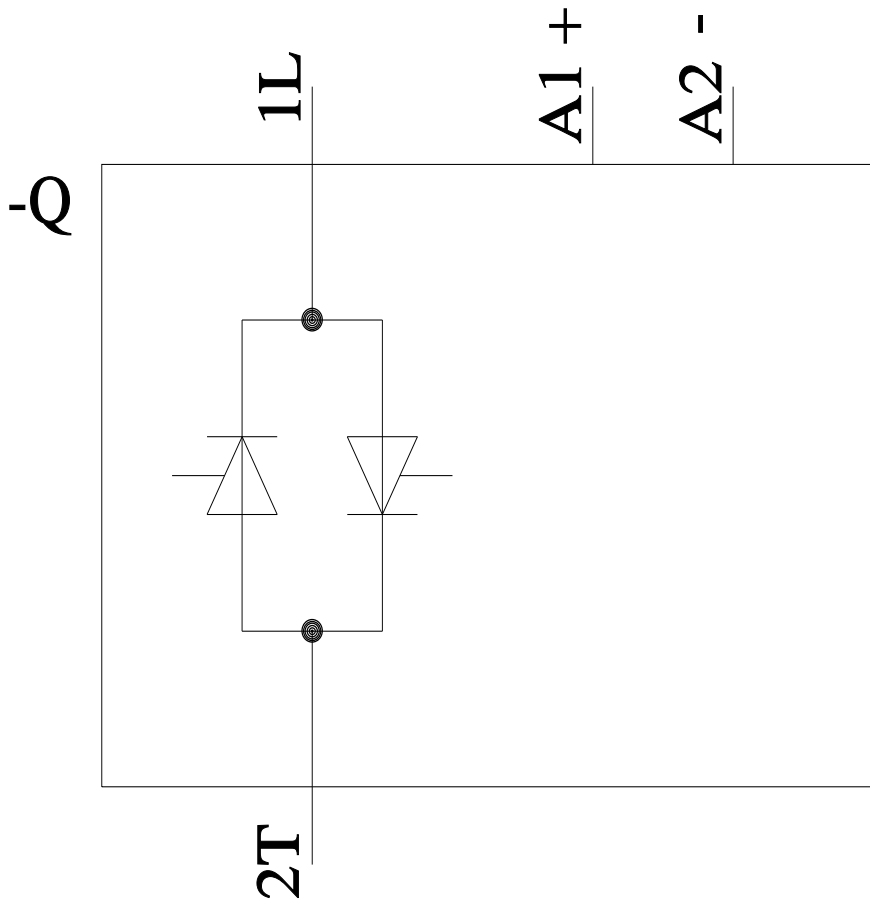
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2150-2AA06>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2150-2AA06&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2150-2AA06&lang=en)





last modified:

8/12/2024