



Semiconductor relay, 1-phase 3RF2 Overall width 22.5 mm, 50 A 24-230 V / 24 V DC screw terminal

<b>product brand name</b>	SIRIUS
<b>product designation</b>	solid-state relay
<b>design of the product</b>	single-phase
<b>product type designation</b>	3RF21
<b>manufacturer's article number</b>	
<ul style="list-style-type: none"> <li>• _1 of the accessories that can be ordered</li> <li>• _2 of the accessories that can be ordered</li> <li>• _3 of the accessories that can be ordered</li> <li>• _4 of the accessories that can be ordered</li> <li>• _5 of the accessories that can be ordered</li> </ul>	<a href="#">3RF2900-3PA88</a> <a href="#">3RF2950-0HA13</a> <a href="#">3RF2900-0EA18</a> <a href="#">3RF2950-0GA13</a> <a href="#">3RF2920-0FA08</a>
<b>product designation</b>	
<ul style="list-style-type: none"> <li>• _1 of the accessories that can be ordered</li> <li>• _2 of the accessories that can be ordered</li> <li>• _3 of the accessories that can be ordered</li> <li>• _4 of the accessories that can be ordered</li> <li>• _5 of the accessories that can be ordered</li> </ul>	terminal cover power regulator converter load monitoring load monitoring, basis
<b>General technical data</b>	
<b>product function</b>	zero-point switching
<b>power loss [V·A] maximum</b>	66 V·A
power loss [W] for rated value of the current at AC in hot operating state	66 W
<ul style="list-style-type: none"> <li>• per pole</li> </ul>	66 W
<b>power loss [W] for rated value of the current without load current share typical</b>	0.4 W
insulation voltage rated value	600 V
type of voltage of the control supply voltage	DC
surge voltage resistance of main circuit rated value	6 kV
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 IEC 81346-2</b>	Q
Substance Prohibitance (Date)	28.05.2009
<b>Main circuit</b>	
<b>number of poles for main current circuit</b>	1
<b>number of NO contacts for main contacts</b>	1
<b>number of NC contacts for main contacts</b>	0
operating voltage at AC	
<ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul>	24 ... 230 V 24 ... 230 V
<b>operating frequency rated value</b>	50 ... 60 Hz
<b>relative symmetrical tolerance of the operating</b>	10 %

<b>frequency</b>	
<b>operating range relative to the operating voltage at AC</b>	
• at 50 Hz	20 ... 253 V
• at 60 Hz	20 ... 253 V
<b>operational current</b>	
• at AC-51 rated value	50 A
• acc. to UL 508 rated value	50 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>	800 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
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage 1</b>	
• at DC rated value	30 V
• at DC	15 ... 24 V
<b>control supply voltage</b>	
• at DC initial value for signal <1> detection	15 V
• at DC full-scale value for signal<0> recognition	5 V
<b>control current at minimum control supply voltage</b>	
• at DC	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
<b>Auxiliary circuit</b>	
<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
<b>Installation/ mounting/ dimensions</b>	
<b>fastening method</b>	screw fixing
• side-by-side mounting	Yes
<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
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
• for main current circuit	screw-type terminals
• for auxiliary and control circuit	screw-type terminals
<b>type of connectable conductor cross-sections</b>	
• 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 cables for main contacts	2x (14 ... 10)
<b>connectable conductor cross-section for main contacts</b>	
• solid or stranded	1.5 ... 6 mm <sup>2</sup>
• finely stranded with core end processing	1 ... 10 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>	
• for auxiliary and control contacts	
— solid	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
— finely stranded with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
— finely stranded without core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )

<ul style="list-style-type: none"> <li>at AWG cables for auxiliary and control contacts</li> </ul>	1x (AWG 20 ... 12)		
AWG number as coded connectable conductor cross section for main contacts	14 ... 10		
<b>tightening torque</b> <ul style="list-style-type: none"> <li>for main contacts with screw-type terminals</li> <li>for auxiliary and control contacts with screw-type terminals</li> </ul>	2 ... 2.5 N·m 0.5 ... 0.6 N·m		
<b>tightening torque [lbf·in]</b> <ul style="list-style-type: none"> <li>for main contacts with screw-type terminals</li> <li>for auxiliary and control contacts with screw-type terminals</li> </ul>	7 ... 10.3 lbf·in 4.5 ... 5.3 lbf·in		
<b>design of the thread of the connection screw</b> <ul style="list-style-type: none"> <li>for main contacts</li> <li>of the auxiliary and control contacts</li> </ul>	M4 M3		
<b>stripped length of the cable</b> <ul style="list-style-type: none"> <li>for main contacts</li> <li>for auxiliary and control contacts</li> </ul>	7 mm 7 mm		
<b>Safety related data</b>			
<b>protection class IP on the front acc. to IEC 60529</b>	IP20		
<b>touch protection on the front acc. 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> <ul style="list-style-type: none"> <li>during operation</li> <li>during storage</li> </ul>	-25 ... +60 °C -55 ... +80 °C		
<b>Electromagnetic compatibility</b>			
<b>conducted interference</b> <ul style="list-style-type: none"> <li>due to burst acc. to IEC 61000-4-4</li> <li>due to conductor-earth surge acc. to IEC 61000-4-5</li> <li>due to conductor-conductor surge acc. to IEC 61000-4-5</li> <li>due to high-frequency radiation acc. to IEC 61000-4-6</li> </ul>	2 kV / 5 kHz behavior criterion 2 2 kV behavior criterion 2 1 kV behavior criterion 2 140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1		
<b>field-based interference acc. to IEC 61000-4-3</b>	80 MHz ... 1 GHz 10 V/m, 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		
<b>Short-circuit protection, design of the fuse link</b>			
manufacturer's article number <ul style="list-style-type: none"> <li>of gS fuse for semiconductor protection at NH design usable</li> <li>of full range R fuse link for semiconductor protection at cylindrical design usable</li> <li>of back-up R fuse link for semiconductor protection at NH design usable</li> <li>of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable</li> <li>of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul>	<a href="#">3NE1817-0</a> <a href="#">5SE1350</a> <a href="#">3NE8017-1</a> <a href="#">3NC1450</a> <a href="#">3NC2263</a>		
manufacturer's article number of the gG fuse <ul style="list-style-type: none"> <li>at NH design usable</li> <li>at cylindrical design 14 x 51 mm usable</li> <li>at cylindrical design 22 x 58 mm usable</li> </ul>	<a href="#">3NA6810: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NW6107-1: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NW6207-1: These fuses have a smaller rated current than the semiconductor relays</a>		
manufacturer's article number <ul style="list-style-type: none"> <li>of DIAZED fuse usable</li> </ul>	<a href="#">5SB2711: These fuses have a smaller rated current than the semiconductor relays</a>		
<b>Certificates/ approvals</b>			
<b>General Product Approval</b>	<b>EMC</b>	<b>Declaration of Conformity</b>	<b>Test Certificates</b>



[Type Test Certificates/Test Report](#)

Test Certificates	other	Railway
-------------------	-------	---------

[Special Test Certificate](#)

[Confirmation](#)



[Vibration and Shock](#)

### Further information

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=3RF2150-1AA02>

Cax online generator

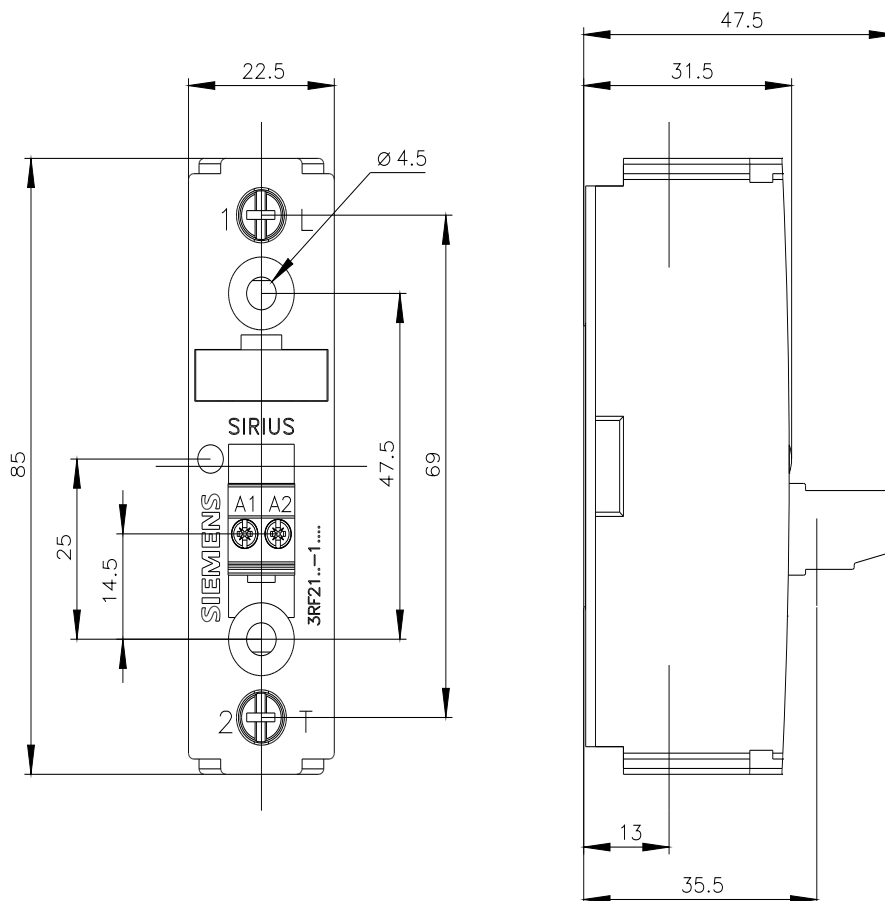
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2150-1AA02>

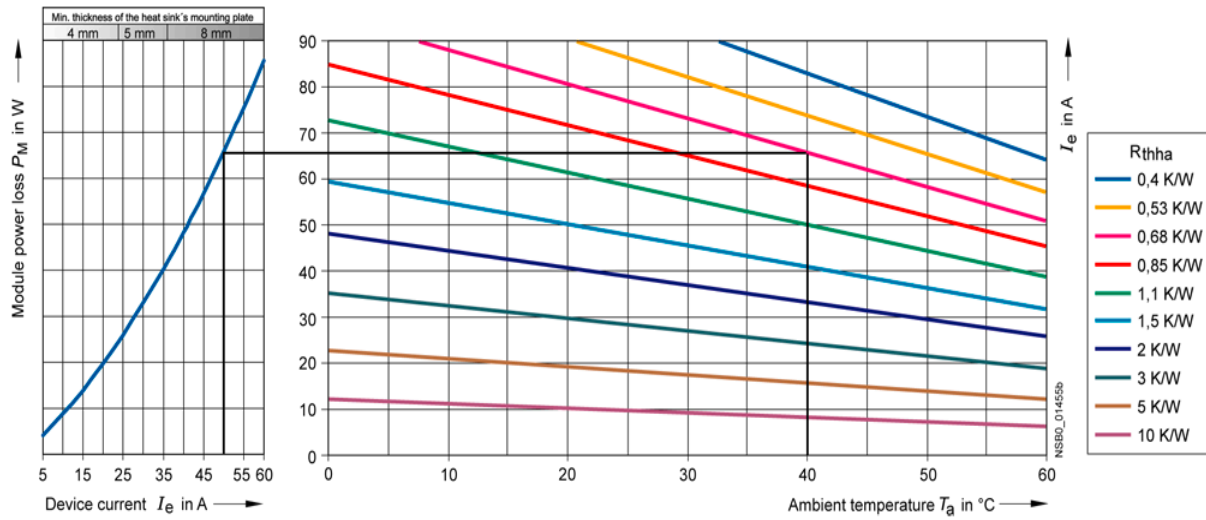
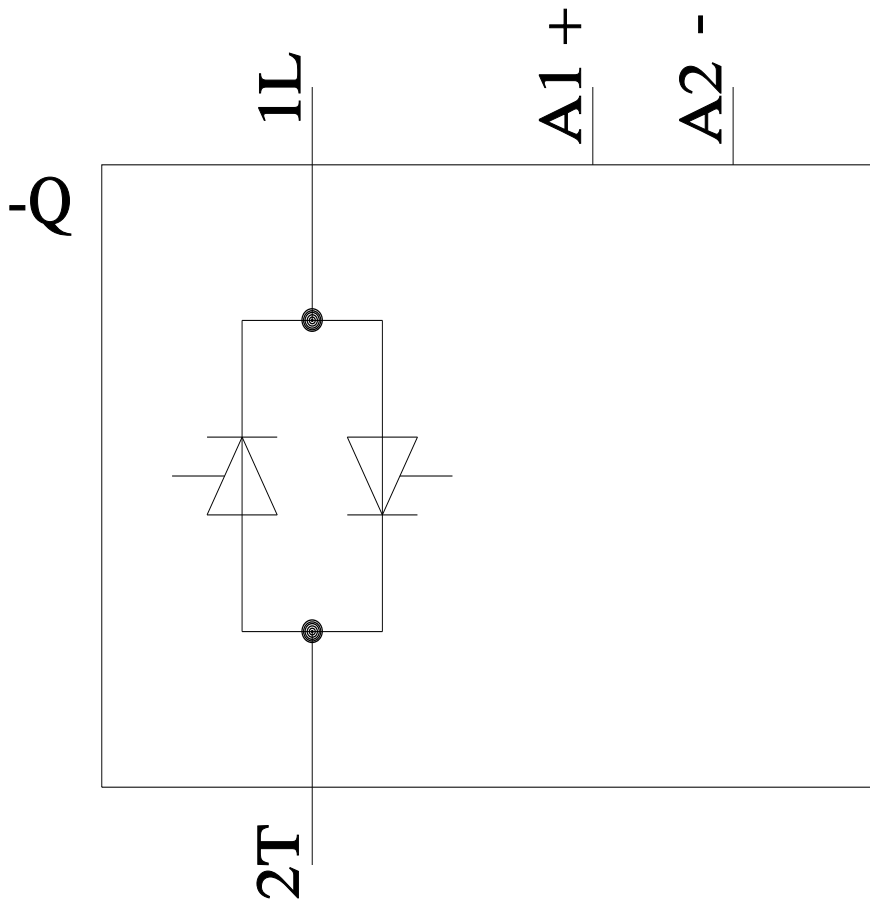
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2150-1AA02>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2150-1AA02&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2150-1AA02&lang=en)





last modified:

1/12/2022