



semiconductor relay, 3-phase 3RF2 55 A / 40 °C 48-600 V / 4-30 V DC 2-phase controlled spring-loaded terminal blocking voltage 1200 V for mounting on available cooling surfaces

<b>product brand name</b>	SIRIUS
<b>product designation</b>	solid-state relay
<b>design of the product</b>	2-pole controlled
<b>product type designation</b>	3RF22
<b>manufacturer's article number</b>	
<ul style="list-style-type: none"> <li>• _2 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>• _2 of the accessories that can be ordered</li> </ul>	converter
<b>General technical data</b>	
<b>product function</b>	zero-point switching
<b>power loss [W] for rated value of the current</b>	
<ul style="list-style-type: none"> <li>• at AC in hot operating state</li> </ul>	151 W
<ul style="list-style-type: none"> <li>• at AC in hot operating state per pole</li> </ul>	151 W
<ul style="list-style-type: none"> <li>• without load current share typical</li> </ul>	0.5 W
<b>insulation voltage rated value</b>	600 V
surge voltage resistance of main circuit rated value	6 kV
<b>protection class IP</b>	IP20
protection class IP on the front according to IEC 60529	IP20
<b>shock resistance according to IEC 60068-2-27</b>	15g / 11 ms
<b>vibration resistance according to IEC 60068-2-6</b>	2g
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (Date)</b>	07/01/2006
<b>SVHC substance name</b>	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
<b>Weight</b>	0.135 kg
<b>Main circuit</b>	
<b>number of poles for main current circuit</b>	3
<b>number of NO contacts for main contacts</b>	2
<b>number of NC contacts for main contacts</b>	0
<b>type of voltage of the operating voltage</b>	AC
<b>operating voltage</b>	
<ul style="list-style-type: none"> <li>• at AC <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>— at 60 Hz rated value</li> </ul>	48 ... 600 V
<b>operating frequency rated value</b>	50 ... 60 Hz
<b>relative symmetrical tolerance of the operating frequency</b>	10 %
<b>operating range relative to the operating voltage at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz</li> </ul>	40 ... 660 V
<ul style="list-style-type: none"> <li>• at 60 Hz</li> </ul>	40 ... 660 V
<b>operational current rated value maximum</b>	55 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 20 A
<b>operational current minimum</b>	500 mA
<b>rate of voltage rise at the thyristor for main contacts maximum permissible</b>	100 V/ $\mu$ s
<b>blocking voltage at the thyristor for main contacts maximum permissible</b>	1 200 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 at DC</b>	4 ... 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>	4 V 1 V
<b>control current at minimum control supply voltage</b>	
<ul style="list-style-type: none"> <li>at DC</li> </ul>	22 mA
control current at DC rated value	30 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>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
<b>Installation/ mounting/ dimensions</b>	
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>	95 mm
<b>width</b>	45 mm
<b>depth</b>	47 mm
<b>Connections/ Terminals</b>	
<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 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> ) 2x (0.5 ... 1.5 mm <sup>2</sup> ) 2x (0.5 ... 2.5 mm <sup>2</sup> ) 2x (18 ... 14)
<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>	0.5 ... 2.5 mm <sup>2</sup> 0.5 ... 1.5 mm <sup>2</sup> 0.5 ... 2.5 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>for auxiliary and control contacts <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 auxiliary and control contacts</li> </ul>	0.5 ... 1.5 mm <sup>2</sup> 0.5 ... 2.5 mm <sup>2</sup> 0.5 ... 2.5 mm <sup>2</sup> 1x (20 ... 12)
<b>AWG number as coded connectable conductor cross section for main contacts</b>	10 ... 14

<b>tightening torque</b> • for main contacts with screw-type terminals	2 ... 2.5 N·m
<b>design of the thread of the connection screw</b> • for main contacts	M4
<b>stripped length of the cable</b> • for main contacts • for auxiliary and control contacts	10 mm 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 • during storage	-25 ... +60 °C -55 ... +80 °C

<b>Electromagnetic compatibility</b>	
<b>conducted interference</b> • due to burst according to IEC 61000-4-4 • due to conductor-earth surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to high-frequency radiation according to IEC 61000-4-6	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>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 A for industrial environment

<b>Short-circuit protection, design of the fuse link</b>	
manufacturer's article number • of full range R fuse link for semiconductor protection at NH design usable • of back-up R fuse link for semiconductor protection at NH design usable • of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable • of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable	<a href="#">3NE1803-0: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NE8018-1</a> <a href="#">3NC1450: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NC2250: These fuses have a smaller rated current than the semiconductor relays</a>
manufacturer's article number of the gG fuse at NH design usable • up to 460 V • up to 600 V	<a href="#">3NA3807-6: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NA3805-6: These fuses have a smaller rated current than the semiconductor relays</a>

**Approvals Certificates**

<b>General Product Approval</b>	<b>EMV</b>	<b>Test Certificates</b>
 EG-Konf.   UR   RCM		<a href="#">Type Test Certificates/Test Report</a>

<b>other</b>	<b>Environment</b>
 <a href="#">Confirmation</a> 	<a href="#">Environmental Confirmations</a>

**Further information**

Information on the packaging  
<https://support.industry.siemens.com/cs/ww/en/view/109813875>  
Information for data generation and storage  
<https://support.industry.siemens.com/cs/ww/en/view/109995012>  
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=3RF2255-2AB45>

Cax online generator

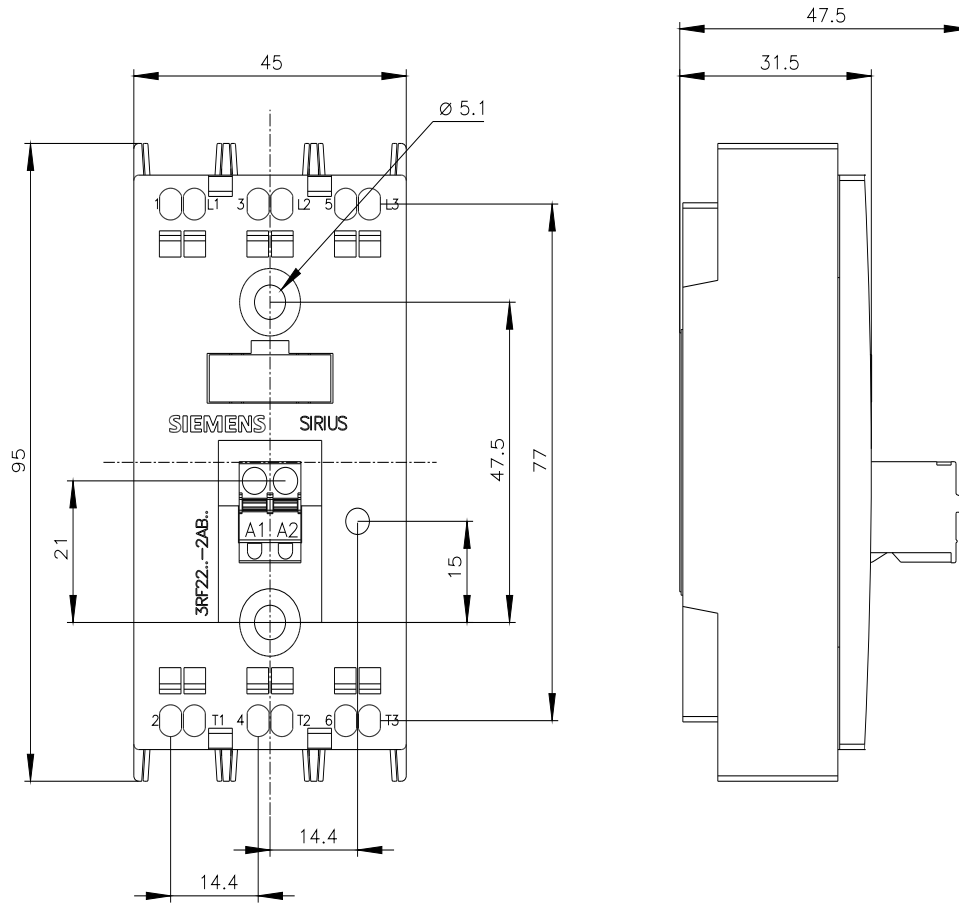
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2255-2AB45>

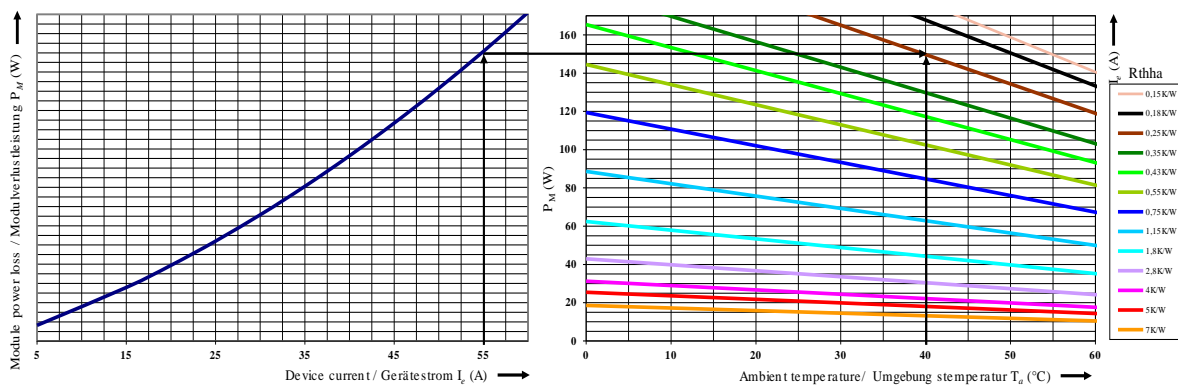
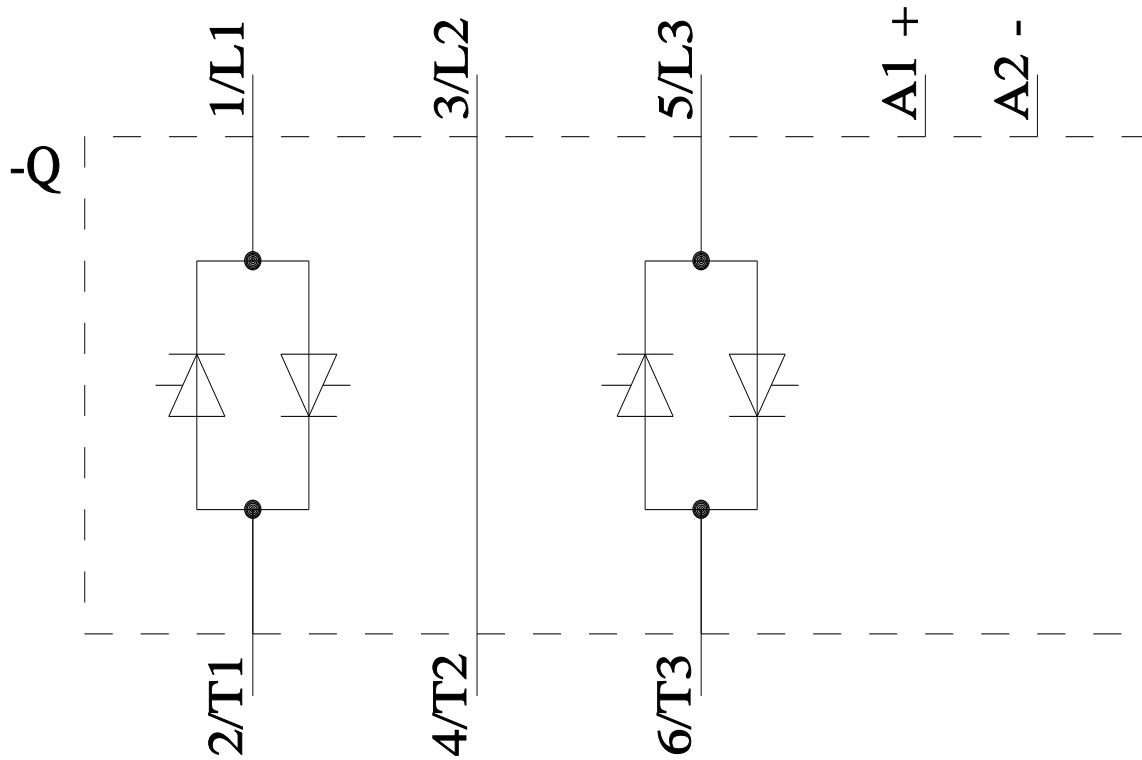
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2255-2AB45>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2255-2AB45&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2255-2AB45&lang=en)





last modified:

8/4/2025