



semiconductor relay, 1-pole 3RF3 width 45 mm, 25 A 24-230 V / 110-230 V AC screw terminal

<b>product brand name</b>	SIRIUS
<b>product designation</b>	solid-state relay
<b>product type designation</b>	3RF30
<b>manufacturer's article number</b>	
<ul style="list-style-type: none"> <li>_1 of the accessories that can be ordered</li> </ul>	<a href="#">3RF3900-0WA88</a>
<b>product designation</b>	
<ul style="list-style-type: none"> <li>_1 of the accessories that can be ordered</li> </ul>	heat conducting foil
<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>	30 W
<ul style="list-style-type: none"> <li>at AC in hot operating state per pole</li> </ul>	30 W
<ul style="list-style-type: none"> <li>without load current share typical</li> </ul>	3.5 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>	01/15/2024
<b>SVHC substance name</b>	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
<b>Net Weight</b>	0.077 kg
<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
<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>	24 ... 230 V
<ul style="list-style-type: none"> <li>at 60 Hz rated value</li> </ul>	24 ... 230 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>	20 ... 253 V
<ul style="list-style-type: none"> <li>at 60 Hz</li> </ul>	20 ... 253 V
<b>operational current rated value maximum</b>	25 A

<b>operational current</b>	
<ul style="list-style-type: none"> <li>• at AC-1 at 400 V rated value</li> <li>• at AC-51 rated value</li> <li>• at AC-51 according to IEC 60947-4-3</li> <li>• according to UL 508 rated value</li> </ul>	<p>25 A</p> <p>25 A</p> <p>25 A</p> <p>25 A</p>
<b>rate of voltage rise at the thyristor for main contacts maximum permissible</b>	1 000 V/ $\mu$ s
<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>	260 A
<b>I<sup>2</sup>t value maximum</b>	360 A <sup>2</sup> ·s
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	AC
<b>control supply voltage at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	<p>110 ... 230 V</p> <p>110 ... 230 V</p>
<b>control supply voltage 1 at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz</li> <li>• at 60 Hz</li> </ul>	<p>110 ... 230 V</p> <p>110 ... 230 V</p>
<b>control supply voltage frequency</b>	
<ul style="list-style-type: none"> <li>• 1 rated value</li> <li>• 2 rated value</li> </ul>	<p>50 Hz</p> <p>60 Hz</p>
<b>control supply voltage at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz full-scale value for signal&lt;0&gt; recognition</li> <li>• at 60 Hz full-scale value for signal&lt;0&gt; recognition</li> </ul>	<p>40 V</p> <p>40 V</p>
<b>control supply voltage</b>	
<ul style="list-style-type: none"> <li>• at AC initial value for signal &lt;1&gt; detection</li> </ul>	90 V
<b>symmetrical line frequency tolerance</b>	5 Hz
<b>operating range factor control supply voltage rated value at AC at 50 Hz</b>	
<ul style="list-style-type: none"> <li>• initial value</li> </ul>	0.82
<b>operating range factor control supply voltage rated value at AC at 60 Hz</b>	
<ul style="list-style-type: none"> <li>• initial value</li> </ul>	0.82
<b>control current at minimum control supply voltage</b>	
<ul style="list-style-type: none"> <li>• at AC</li> </ul>	2 mA
<b>control current at AC rated value</b>	15 mA
<b>ON-delay time</b>	40 ms; additionally max. one half-wave
<b>OFF-delay time</b>	40 ms; additionally max. one half-wave
<b>Auxiliary circuit</b>	
<b>number of CO contacts for auxiliary contacts</b>	0
<b>Installation/ mounting/ dimensions</b>	
<b>fastening method side-by-side mounting</b>	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>	58 mm
<b>width</b>	45 mm
<b>depth</b>	48 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>	<p>screw-type terminals</p> <p>screw-type terminals</p>
<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> </ul> </li> <li>• for AWG cables for main contacts</li> </ul>	<p>2x (1 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 6 mm<sup>2</sup>)</p> <p>2x (1 ... 2.5 mm<sup>2</sup>), 2x (2.5 ... 6 mm<sup>2</sup>), 1x 10 mm<sup>2</sup></p> <p>2x (14 ... 10)</p>
<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> </ul>	<p>1.5 ... 6 mm<sup>2</sup></p> <p>1 ... 10 mm<sup>2</sup></p>
<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>	<p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1 mm<sup>2</sup>)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1 mm<sup>2</sup>)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1 mm<sup>2</sup>)</p> <p>1x (20 ... 12)</p>
<b>AWG number as coded connectable conductor cross section for main contacts</b>	<p>14 ... 8</p>
<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>	<p>2 ... 2.5 N·m</p> <p>0.5 ... 0.6 N·m</p>
<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>	<p>18 ... 22 lbf·in</p> <p>4.5 ... 5.3 lbf·in</p>
<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>	<p>M4</p> <p>M3</p>
<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>	<p>10 mm</p> <p>7 mm</p>
<b>Electrical Safety</b>	
<b>protection class IP on the front according to IEC 60529</b>	<p>IP20</p>
<b>touch protection on the front according to IEC 60529</b>	<p>finger-safe, for vertical contact from the front</p>
<b>Ambient conditions</b>	
<b>installation altitude at height above sea level maximum</b>	<p>1 000 m</p>
<b>ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage</li> </ul>	<p>-25 ... +60 °C</p> <p>-55 ... +80 °C</p>
<b>Electromagnetic compatibility</b>	
<b>conducted interference</b> <ul style="list-style-type: none"> <li>• due to burst according to IEC 61000-4-4</li> <li>• due to conductor-earth surge according to IEC 61000-4-5</li> <li>• due to conductor-conductor surge according to IEC 61000-4-5</li> <li>• due to high-frequency radiation according to IEC 61000-4-6</li> </ul>	<p>2 kV / 5 kHz behavior criterion 2</p> <p>2 kV behavior criterion 2</p> <p>1 kV behavior criterion 2</p> <p>140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1</p>
<b>field-based interference according to IEC 61000-4-3</b>	<p>80 MHz ... 1 GHz 10 V/m, behavior criterion 1</p>
<b>electrostatic discharge according to IEC 61000-4-2</b>	<p>4 kV contact discharging / 8 kV air discharging, behavior criterion 2</p>
<b>conducted HF interference emissions according to CISPR11</b>	<p>Class A for industrial environment</p>
<b>field-bound HF interference emission according to CISPR11</b>	<p>Class B for the domestic, business and commercial environments</p>
<b>Short-circuit protection, design of the fuse link</b>	
<b>manufacturer's article number</b> <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 10 x 38 mm usable</li> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable</li> </ul>	<p><a href="#">3NE1815-0</a></p> <p><a href="#">5SE1325</a></p> <p><a href="#">3NE8015-1</a></p> <p><a href="#">3NC1020: These fuses have a smaller rated current than the semiconductor relays</a></p> <p><a href="#">3NC1430</a></p>

<ul style="list-style-type: none"> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul>	<a href="#">3NC2225</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 10 x 38 mm 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="#">3NA6803: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NW6001-1: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NW6101-1: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NW6208-1: 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> <li>• of NEOZED fuse usable</li> </ul>	<a href="#">5SB251: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">5SE2313-2A: These fuses have a smaller rated current than the semiconductor relays</a>

**last modified:**

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