



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

product brand name	SIRIUS
product designation	solid-state relay
design of the product	2-pole controlled
product type designation	3RF22
manufacturer's article number	
• _2 of the accessories that can be ordered	<a href="#">3RF2900-0EA18</a>
product designation	
• _2 of the accessories that can be ordered	converter
General technical data	
product function	zero-point switching
power loss [W] for rated value of the current	
• at AC in hot operating state	81 W
• at AC in hot operating state per pole	81 W
• without load current share typical	0.9 W
insulation voltage rated value	600 V
surge voltage resistance of main circuit rated value	6 kV
protection class IP	IP00
protection class IP on the front according to IEC 60529	IP00
shock resistance according to IEC 60068-2-27	15g / 11 ms
vibration resistance according to IEC 60068-2-6	2g
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	07/01/2006
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
Net Weight	0.14 kg
Main circuit	
number of poles for main current circuit	3
number of NO contacts for main contacts	2
number of NC contacts for main contacts	0
type of voltage of the operating voltage	AC
operating voltage	
• at AC	
— at 50 Hz rated value	48 ... 600 V
— at 60 Hz rated value	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	
• at 50 Hz	40 ... 660 V
• at 60 Hz	40 ... 660 V

<b>operational current rated value maximum</b>	30 A
<b>operational current</b>	
• at AC-1 at 400 V rated value	30 A
• at AC-51 rated value	30 A
• according to UL 508 rated value	30 A
<b>rate of voltage rise at the thyristor for main contacts maximum permissible</b>	500 V/μs
<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>	300 A
<b>I<sup>2</sup>t value maximum</b>	450 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>	
• at DC initial value for signal <1> detection	4 V
• at DC full-scale value for signal<0> recognition	1 V
<b>control current at minimum control supply voltage</b>	
• at DC	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>	
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>	
• for main current circuit	Ring cable lug connection
• for auxiliary and control circuit	screw-type terminals
<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 mm <sup>2</sup> )
— finely stranded with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )
— finely stranded without core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1 mm <sup>2</sup> )
• for AWG cables for auxiliary and control contacts	1x (20 ... 12)
<b>tightening torque</b>	
• for main contacts with screw-type terminals	2 ... 2.5 N·m
• for auxiliary and control contacts with screw-type terminals	0.5 ... 0.6 N·m
<b>tightening torque [lbf·in]</b>	
• for main contacts with screw-type terminals	18 ... 22 lbf·in
• for auxiliary and control contacts with screw-type terminals	4.5 ... 5.3 lbf·in
<b>design of the thread of the connection screw</b>	
• for main contacts	M4
• of the auxiliary and control contacts	M3
<b>stripped length of the cable</b>	

<ul style="list-style-type: none"> <li>• for main contacts</li> </ul>	10 mm
<ul style="list-style-type: none"> <li>• for auxiliary and control contacts</li> </ul>	7 mm
<b>Electrical Safety</b>	
<b>protection class IP on the front according to IEC 60529</b>	IP00
<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> </ul>	-25 ... +60 °C
<ul style="list-style-type: none"> <li>• during storage</li> </ul>	-55 ... +80 °C
<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> </ul>	2 kV / 5 kHz behavior criterion 2
<ul style="list-style-type: none"> <li>• due to conductor-earth surge according to IEC 61000-4-5</li> </ul>	2 kV behavior criterion 2
<ul style="list-style-type: none"> <li>• due to conductor-conductor surge according to IEC 61000-4-5</li> </ul>	1 kV behavior criterion 2
<ul style="list-style-type: none"> <li>• due to high-frequency radiation according to IEC 61000-4-6</li> </ul>	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 <ul style="list-style-type: none"> <li>• of full range R fuse link for semiconductor protection at NH 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> <li>• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li> </ul>	<a href="#">3NE1814-0: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NE8003-1</a> <a href="#">3NC1025: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NC1430</a> <a href="#">3NC2232</a>
manufacturer's article number of the gG fuse at NH design usable <ul style="list-style-type: none"> <li>• up to 460 V</li> <li>• up to 600 V</li> </ul>	<a href="#">3NA3803-6: These fuses have a smaller rated current than the semiconductor relays</a> <a href="#">3NA3803-6: These fuses have a smaller rated current than the semiconductor relays</a>
<b>last modified:</b>	8/4/2025 