








solid-state contactor 3-phase 3RF2 AC 51 / 22 A / 40 °C 48-600 V / 4-30 V  
DC 2-phase controlled screw terminal blocking voltage 1200 V

<b>product brand name</b>	SIRIUS
<b>product designation</b>	solid-state contactor
<b>design of the product</b>	two-phase controlled
<b>product type designation</b>	3RF24
<b>manufacturer's article number</b>	
• _2 of the accessories that can be ordered	<a href="#">3RF2900-0EA18</a>
<b>product designation</b>	
• _2 of the accessories that can be ordered	converter
<b>General technical data</b>	
<b>product function</b>	zero-point switching
power loss [W] for rated value of the current at AC in hot operating state	44 W
• per pole	14.67 W
<b>power loss [W] for rated value of the current without load current share typical</b>	0.9 W
insulation voltage rated value	600 V
<b>degree of pollution</b>	3
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)	01.07.2006 00:00:00
<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
operating voltage at AC	
• at 50 Hz rated value	48 ... 600 V
• at 60 Hz rated value	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>	
• at 50 Hz	40 ... 660 V
• at 60 Hz	40 ... 660 V
<b>operational current</b>	
• at AC-51 rated value	22 A

<ul style="list-style-type: none"> <li>• at AC-51 acc. to IEC 60947-4-3</li> <li>• acc. to UL 508 rated value</li> </ul>	15 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>	1 200 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</b> <ul style="list-style-type: none"> <li>• at DC rated value</li> <li>• at DC</li> </ul>	30 V 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>symmetrical line frequency tolerance</b>	5 Hz
<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>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> <ul style="list-style-type: none"> <li>• side-by-side mounting</li> </ul>	screw and snap-on mounting onto 35 mm standard mounting rail Yes
<b>height</b>	100 mm
<b>width</b>	45 mm
<b>depth</b>	117 mm
<b>Connections/ Terminals</b>	
<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>	screw-type terminals screw-type 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> </ul> </li> <li>• at AWG cables for main contacts</li> </ul>	2x (1.5 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ) 2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup> 2x (14 ... 10)
<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>• at AWG cables for auxiliary and control contacts</li> </ul>	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> ) 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</li> </ul>	2 ... 2.5 N·m 0.5 ... 0.6 N·m

terminals					
<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>	18 ... 22 lbf·in 7.5 ... 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>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 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 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><li>• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li></ul>	<a href="#">3NE1814-0</a>  <a href="#">5SE1320: Maximum operating voltage 400 V!</a>  <a href="#">3NE8015-1</a>  <a href="#">3NC1032</a>  <a href="#">3NC1450</a>  <a href="#">3NC2250</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></ul>	<a href="#">3NA3805: 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>			
				<a href="#">Miscellaneous</a>	
Test Certificates	other				

#### 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=3RF2420-1AB45>

Cax online generator

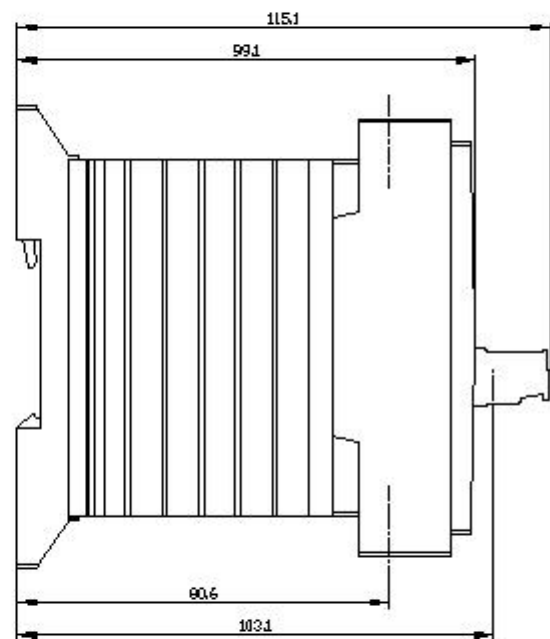
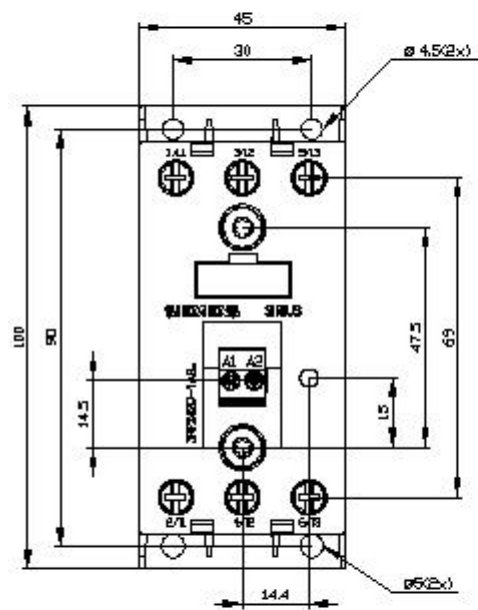
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2420-1AB45>

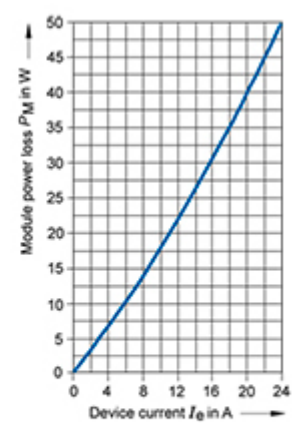
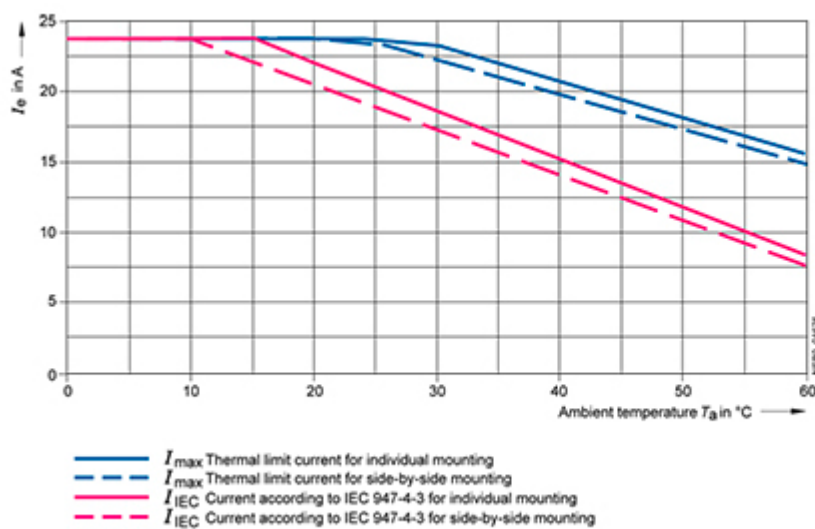
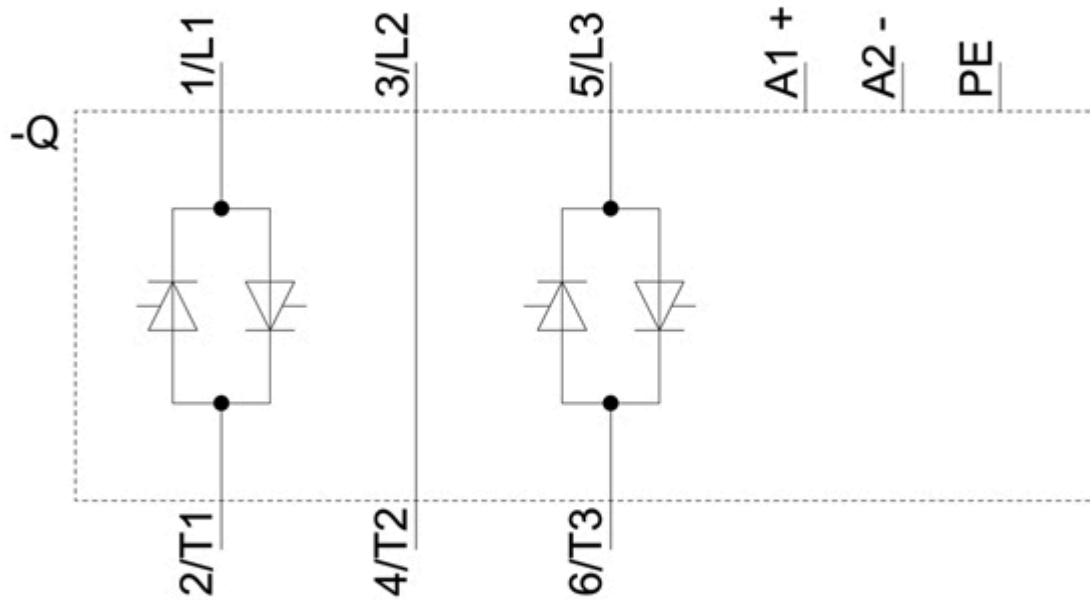
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2420-1AB45>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2420-1AB45&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2420-1AB45&lang=en)





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