



Solid-state contactor 3-phase 3RF3 AC 53 / 12.5 A / 40 °C 48-480 V / 110-230 V  
AC 2-phase controlled Instantaneous switching screw terminal

<b>product brand name</b>	SIRIUS
<b>product designation</b>	solid-state contactor
<b>design of the product</b>	2-pole controlled
<b>product type designation</b>	3RF34
<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> </ul>	<a href="#">3RA2921-1BA00</a> <a href="#">3RF3900-QQA88</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> </ul>	Link module Connection adapter
<b>General technical data</b>	
<b>certificate of suitability</b>	CE / UL / CSA / CCC / C-Tick (RCM)
<b>product function</b>	instantaneous 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> <li>• at AC in hot operating state per pole</li> <li>• without load current share typical</li> </ul>	22 W 7.33 W 3.5 W
<b>type of calculation of power loss current-dependent</b>	linear
<b>insulation voltage rated value</b>	600 V
<b>degree of pollution</b>	3
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>	15 g / 11 ms
<b>vibration resistance according to IEC 60068-2-6</b>	2 g
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (Date)</b>	05/28/2009
<b>SVHC substance name</b>	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8
<b>Net Weight</b>	0.496 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> <li>— at 60 Hz rated value</li> </ul> </li> </ul>	48 ... 480 V 48 ... 480 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 ... 506 V
• at 60 Hz	40 ... 506 V
<b>operational current</b>	
• at AC-3 at 400 V rated value	12.5 A
• at AC-53a at 400 V at ambient temperature 40 °C rated value	12.5 A
<b>operational current minimum</b>	500 mA
<b>operating power</b>	
• at AC-3 at 400 V rated value	5.5 kW
<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>	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>	1 200 A
<b>I<sup>2</sup>t value maximum</b>	7 200 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>	
• at 50 Hz	110 ... 230 V
• at 60 Hz	110 ... 230 V
<b>control supply voltage at AC</b>	
• at 50 Hz full-scale value for signal<0> recognition	40 V
• at 60 Hz full-scale value for signal<0> recognition	40 V
• initial value for signal <1> detection	90 V
<b>control supply voltage frequency</b>	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
<b>relative symmetrical tolerance of the control supply voltage frequency</b>	10 %
<b>symmetrical line frequency tolerance</b>	5 Hz
<b>operating range factor control supply voltage rated value at AC at 50 Hz</b>	
• initial value	0.82
• full-scale value	1.1
<b>operating range factor control supply voltage rated value at AC at 60 Hz</b>	
• initial value	0.82
• full-scale value	1.1
<b>control current at minimum control supply voltage</b>	
• at AC	2 mA
control current at AC rated value	15 mA
<b>ON-delay time</b>	5 ms
<b>OFF-delay time</b>	30 ms; additionally max. one half-wave
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	vertical
fastening method side-by-side mounting	Yes
<b>fastening method</b>	screw and snap-on mounting onto 35 mm DIN rail
<b>design of the thread of the screw for securing the equipment</b>	M4
<b>height</b>	95 mm
<b>width</b>	90 mm
<b>depth</b>	100.8 mm
required spacing with side-by-side mounting	
• upwards	70 mm
• downwards	50 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 (1.5 ... 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 (18 ... 14)</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>	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>	<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>7.5 ... 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>UL/CSA ratings</b>	
<b>full-load current (FLA) for 3-phase AC motor</b>	
<ul style="list-style-type: none"> <li>• at 480 V rated value</li> </ul>	7.6 A
yielded mechanical performance [hp] for 3-phase AC motor	
<ul style="list-style-type: none"> <li>• at 200/208 V rated value</li> <li>• at 220/230 V rated value</li> <li>• at 460/480 V rated value</li> </ul>	<p>2 hp</p> <p>2 hp</p> <p>5 hp</p>
<b>Safety related data</b>	
proportion of dangerous failures with high demand rate according to SN 31920	50 %
<b>MTTF with high demand rate</b>	76 a
IEC 61508	
T1 value for proof test interval or service life according to IEC 61508	20 a
Electrical Safety	
<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>	
<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> </ul>	<p>2 kV / 5 kHz, behavior criterion 2</p> <p>2 kV, behavior criterion 2</p>

<ul style="list-style-type: none"> <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>	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

### Short-circuit protection, design of the fuse link

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="#">3NE1818-0</a> <a href="#">5SE1363</a> <a href="#">3NE8021-1</a> <a href="#">3NC1032</a> <a href="#">3NC1450</a> <a href="#">3NC2280</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 22 x 58 mm usable</li> </ul>	<a href="#">3NA3810-6</a> <a href="#">3NW6010-1</a> <a href="#">3NW6210-1</a>

### Approvals Certificates

<b>Environment</b>	<b>General Product Approval</b>
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[Environmental Conformations](#)



<b>General Product Approval</b>	<b>EMV</b>	<b>Test Certificates</b>	<b>other</b>
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[Type Test Certificates/Test Report](#)

[Confirmation](#)

[Confirmation](#)



### 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=3RF3412-1BB24>

**Cax online generator**

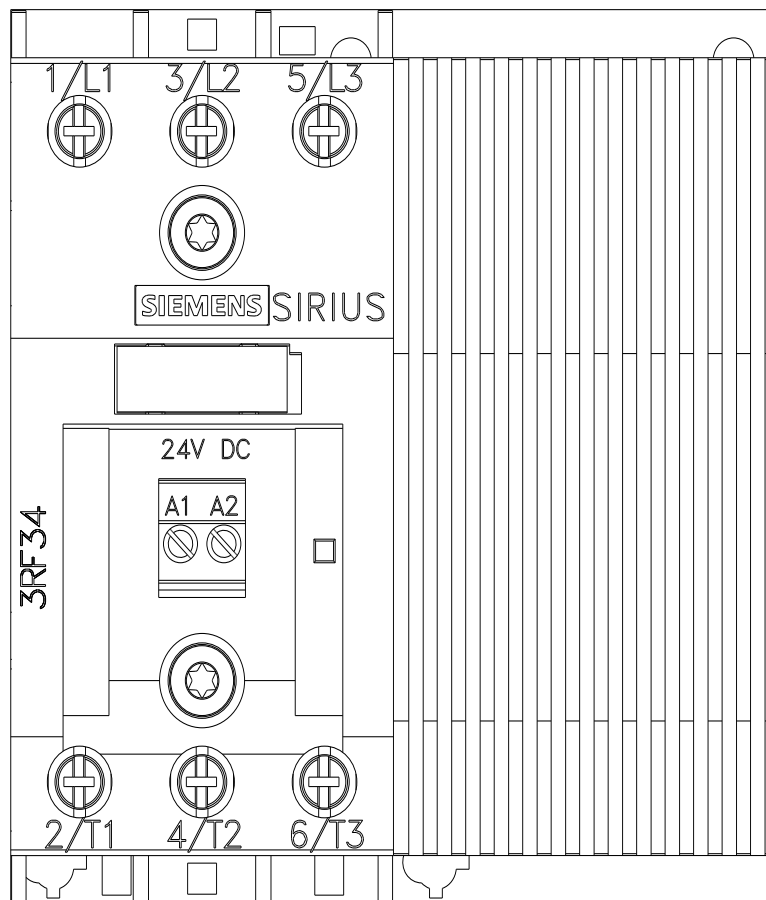
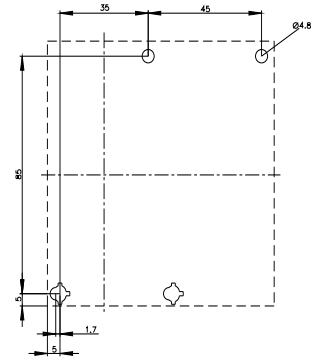
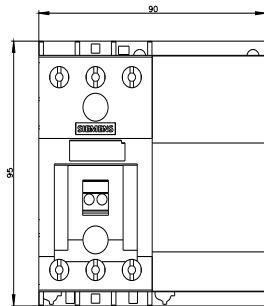
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3412-1BB24>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF3412-1BB24>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF3412-1BB24&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3412-1BB24&lang=en)





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