

SOLID-STATE CONTACTOR 3-PH 3RF3 AC53 12.5A  
 40 DEGREES C 48-480V / 110-230V AC 2-PH.  
 CONTROLLED INSTANTANEOUS SCREW  
 TERMINALS



### General technical data

product brandname		SIRIUS
Product designation _2 of the accessories that can be ordered		Connection adapter
Product designation _1 of the accessories that can be ordered		Link module
Manufacturer's article number		
• _1 of the accessories that can be ordered		<a href="#">3RA2921-1BA00</a>
• _2 of the accessories that can be ordered		<a href="#">3RF3900-0QA88</a>
Protection class IP		IP20
Insulation voltage rated value	V	600
Installation altitude at height above sea level maximum	m	1 000
Ambient temperature		
• during storage	°C	-55 ... +80
• during operation	°C	-25 ... +60
Shock resistance acc. to IEC 60068-2-27		15g / 11 ms
Vibration resistance acc. to IEC 60068-2-6		2g
Surge current resistance rated value	A	1 200

Power loss [W] total typical	W	22
Equipment marking acc. to DIN 40719 extended according to IEC 204-2 acc. to IEC 750		K
Equipment marking acc. to DIN EN 61346-2		Q
Product function		instantaneous switching

#### Main circuit

Number of poles for main current circuit		3
Number of NO contacts for main contacts		2
Operating frequency rated value	Hz	60 ... 50
Operating voltage at AC		
• at 60 Hz rated value	V	48 ... 480
• at 50 Hz rated value	V	48 ... 480
Operating current		
• minimum	mA	500
• at AC-53a at 400 V at ambient temperature 40 °C rated value	A	12.5
Operating range relative to the operating voltage at AC		
• at 50 Hz	V	40 ... 506
• at 60 Hz	V	40 ... 506
Operating power at AC-3 at 400 V rated value	kW	5.5
Derating temperature	°C	40
Symmetrical line frequency tolerance	Hz	5
Relative symmetrical tolerance of the operating frequency	%	10
I <sup>2</sup> t value maximum	A <sup>2</sup> ·s	7 200
Rate of voltage rise at the thyristor for main contacts maximum permissible	V/μs	1 000
Blocking voltage at the thyristor for main contacts maximum permissible	V	1 200
Reverse current of the thyristor	mA	10

#### Control circuit/ Control

Type of voltage of the control supply voltage		AC
Control supply voltage frequency		
• 1 rated value	Hz	50
• 2 rated value	Hz	60
Relative symmetrical tolerance		
• of the control supply voltage frequency	%	10
• of the supply voltage frequency	%	10
Control supply voltage 1		
• at AC		
— at 50 Hz Initial rated value	V	90
— at 50 Hz Final rated value	V	253

— at 60 Hz Initial rated value	V	90
— at 60 Hz Final rated value	V	253
<b>Control supply voltage at AC</b>		
• initial value for signal <1> detection	V	90
• at 50 Hz Full-scale value for signal<0> recognition	V	40
• at 60 Hz Full-scale value for signal<0> recognition	V	40
<b>Control current</b>		
• at AC rated value	mA	15
• at minimum control supply voltage		
— at AC	mA	2
<b>switching times</b>		
• ON delay		5 ms
• OFF delay		30 ms + in addition max. one half-wave

### Installation/ mounting/ dimensions

<b>Mounting position</b>		vertical
<b>Mounting type</b>		screw and snap-on mounting onto 35 mm standard mounting rail
<b>Mounting type Side-by-side mounting</b>		Yes
<b>Tightening torque of the screw for securing the equipment</b>	N·m	1.5
<b>Design of the thread of the screw for securing the equipment</b>		M4
<b>Width</b>	mm	90
<b>Height</b>	mm	95
<b>Depth</b>	mm	100.8
<b>Required spacing with side-by-side mounting</b>		
• upwards	mm	70
• downwards	mm	50

### Connections/Terminals

<b>Type of electrical connection</b>		
• for main current circuit		screw-type terminals
• for auxiliary and control current circuit		screw-type terminals
<b>Design of the thread of the connection screw</b>		
• for main contacts		M4
• of the auxiliary and control contacts		M3
<b>Product function removable terminal for auxiliary and control circuit</b>		Yes
<b>Type of connectable conductor cross-sections</b>		
• for main contacts		
— solid		2x (0.5 ... 2.5 mm <sup>2</sup> )

<ul style="list-style-type: none"> <li>— finely stranded</li> <li>— with core end processing</li> <li>• at AWG conductors               <ul style="list-style-type: none"> <li>— for main contacts</li> <li>— for auxiliary and control contacts</li> </ul> </li> <li>• for auxiliary and control contacts               <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded                   <ul style="list-style-type: none"> <li>— with core end processing</li> <li>— without core end processing</li> </ul> </li> </ul> </li> </ul>		<p>2x (0.5 ... 1.5 mm<sup>2</sup>)</p> <p>2x (18 ... 14)</p> <p>1x (AWG 20 ... 12)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.0 mm<sup>2</sup>)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.0 mm<sup>2</sup>)</p> <p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.0 mm<sup>2</sup>)</p>
<b>Tightening torque</b>		
<ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> </ul>	N·m	2 ... 2.5
<ul style="list-style-type: none"> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>	N·m	0.5 ... 0.6
<b>Tightening torque [lbf·in]</b>		
<ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> </ul>	lbf·in	18 ... 22
<ul style="list-style-type: none"> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>	lbf·in	7.5 ... 5.3
<b>Wire stripping length of the cable</b>		
<ul style="list-style-type: none"> <li>• for main contacts</li> </ul>	mm	7
<ul style="list-style-type: none"> <li>• for auxiliary and control contacts</li> </ul>	mm	7

#### UL/CSA ratings

<b>Full-load current (FLA) for three-phase AC motor</b>		
<ul style="list-style-type: none"> <li>• at 480 V rated value</li> </ul>	A	7.6
<b>Yielded mechanical performance [hp] for three-phase AC motor</b>		
<ul style="list-style-type: none"> <li>• at 200/208 V rated value</li> </ul>	hp	2
<ul style="list-style-type: none"> <li>• at 220/230 V rated value</li> </ul>	hp	2
<ul style="list-style-type: none"> <li>• at 460/480 V rated value</li> </ul>	hp	5

#### Certificates/approvals

General Product Approval	EMC	Declaration of Conformity
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Test Certificates	other
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[Type Test Certificates/Test Report](#)

[Environmental Confirmations](#)

[Confirmation](#)

### Further information

**Information- and Downloadcenter (Catalogs, Brochures,...)**

<http://www.siemens.com/industrial-controls/catalogs>

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF3412-1BB24>

**Cax online generator**

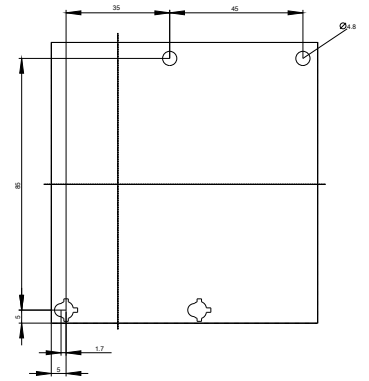
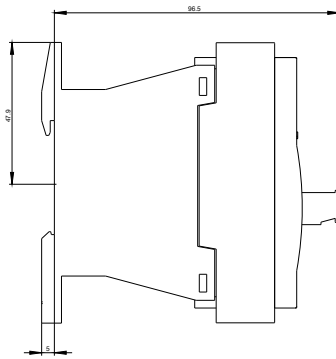
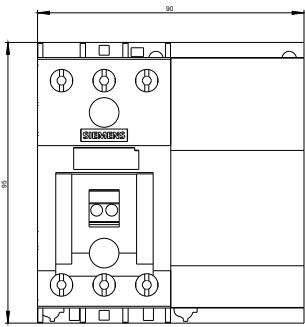
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3412-1BB24>

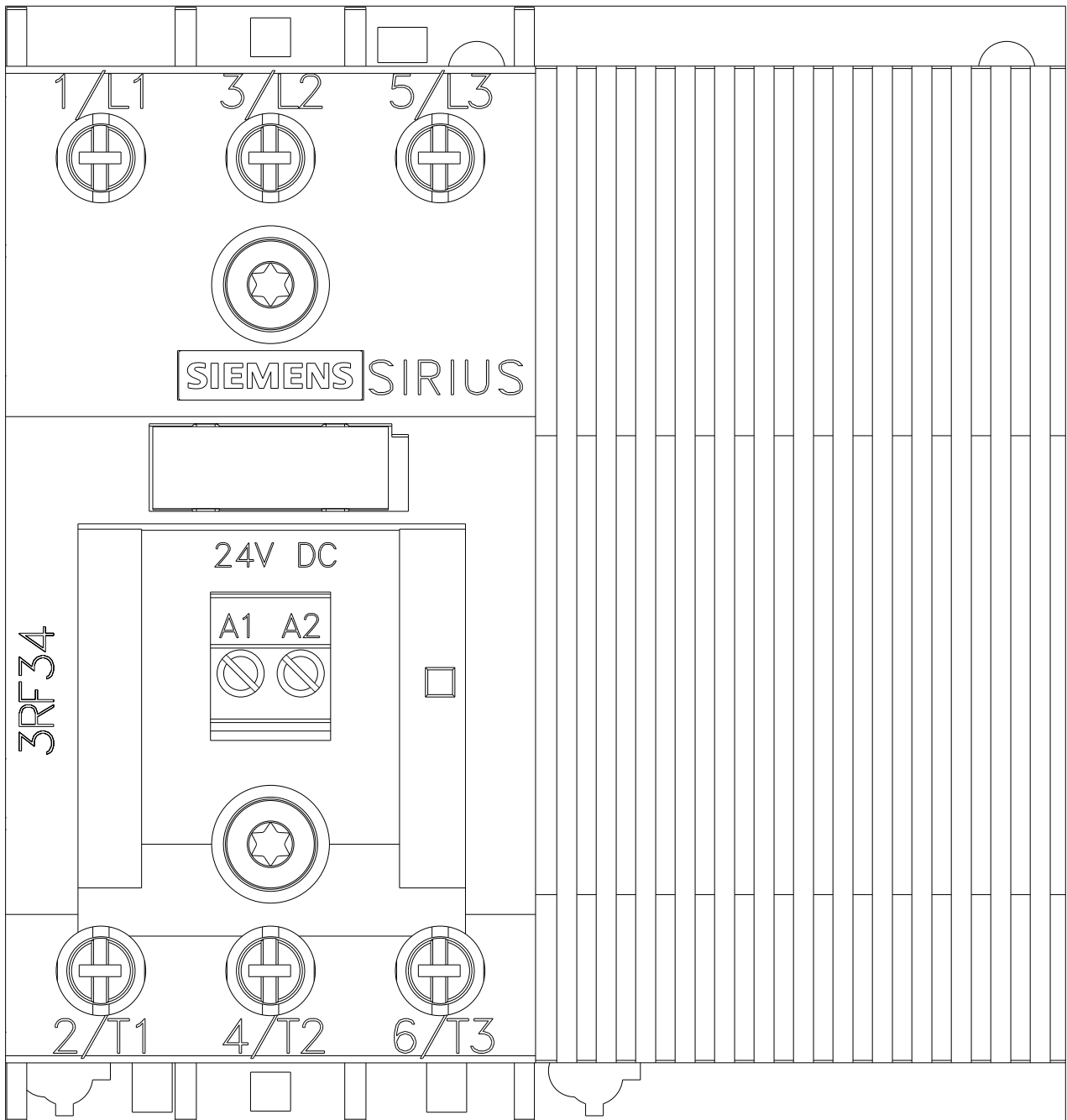
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**

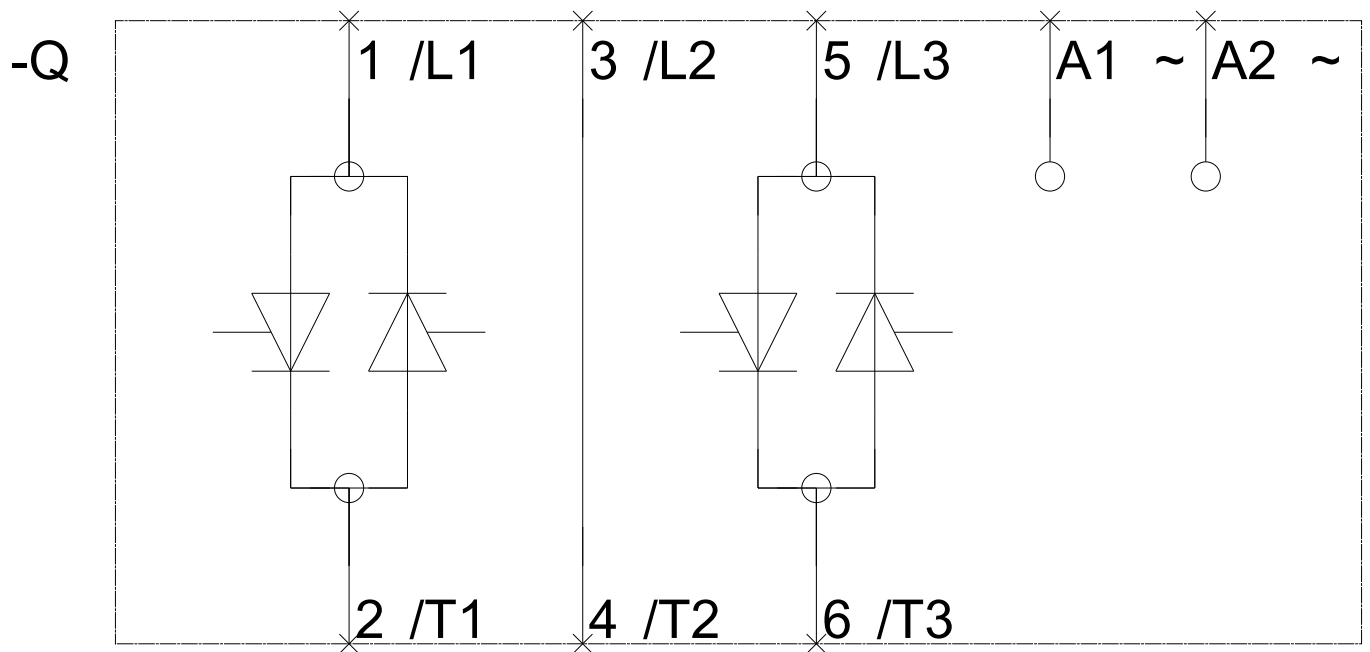
<https://support.industry.siemens.com/cs/ww/en/ps/3RF3412-1BB24>

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

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







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