

Solid-state contactor 3-phase 3RF3 AC 53 / 5.2 A / 40 °C 48-600 V / 24 V DC 2-phase controlled Instantaneous switching screw terminal



<b>Product brand name</b>	SIRIUS
<b>Product designation</b>	solid-state contactor
<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="#">3RF3900-0QA88</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

General technical data	
<b>Product function</b>	instantaneous switching
<b>Power loss [W] / total / typical</b>	10 W
Power loss [W] / for rated value of the current / at AC / in hot operating state	10 W
<b>Insulation voltage</b>	
<ul style="list-style-type: none"> <li>• rated value</li> </ul>	600 V
<b>Protection class IP</b>	IP20
Shock resistance / acc. to IEC 60068-2-27	15g / 11 ms
Vibration resistance / acc. to IEC 60068-2-6	2g

Reference code / acc. to DIN 40719 extended according to IEC 204-2 / acc. to IEC 750	K
Reference code / acc. to DIN EN 81346-2	Q
Reference code / acc. to DIN EN 61346-2	Q

### 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
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
Operating current / minimum	500 mA
Operating current	
• at AC-3 / at 400 V / rated value	5.2 A
• at AC-53a / at 400 V / at ambient temperature 40 °C / rated value	5.2 A
Operating power	
• at AC-3 / at 400 V / rated value	2.2 kW
Rate of voltage rise / at the thyristor / for main contacts / maximum permissible	1 000 V/ $\mu$ s
Blocking voltage / at the thyristor / for main contacts / maximum permissible	1 600 V
Reverse current / of the thyristor	10 mA
Derating temperature	40 °C
Surge current resistance / rated value	600 A
I <sup>2</sup> t value / maximum	1 800 A <sup>2</sup> ·s

### Control circuit/ Control

Type of voltage / of the control supply voltage	DC
Control supply voltage / 1	
• at DC / rated value	24 V
Control supply voltage	
• at DC / initial value for signal <1> detection	15 V
• at DC / Full-scale value for signal <0> recognition	5 V
Symmetrical line frequency tolerance	5 Hz

<b>Operating range factor control supply voltage rated value / at DC</b>	
• initial value	0.63
• Full-scale value	1.25
<b>Control current / at minimum control supply voltage</b>	
• at DC	2 mA
Control current / at DC / rated value	15 mA
<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

### Installation/ mounting/ dimensions

<b>Mounting position</b>	vertical
<b>Mounting type</b>	screw and snap-on mounting onto 35 mm standard mounting rail
• Side-by-side mounting	Yes
<b>Height</b>	95 mm
<b>Width</b>	45 mm
<b>Depth</b>	100.8 mm
Required spacing / with side-by-side mounting	
• upwards	70 mm
• downwards	50 mm
<b>Installation altitude / at height above sea level / maximum</b>	1 000 m

### Connections/ Terminals

Product function / removable terminal for auxiliary and control circuit	Yes
Type of electrical connection	
• for main current circuit	screw-type terminals
• for auxiliary and control current circuit	screw-type terminals
<b>Type of connectable conductor cross-sections</b>	
• for main contacts	
— solid	2x (1.5 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> )
— finely stranded / with core end processing	2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup>
• at AWG conductors / for main contacts	2x (14 ... 10)
<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 ... 1.0 mm <sup>2</sup> )
— finely stranded / with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
— finely stranded / without core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
• at AWG conductors / for auxiliary and control contacts	1x (AWG 20 ... 12)

Tightening torque / for main contacts / with screw-type terminals	2 ... 2.5 N·m
<b>Tightening torque / for auxiliary and control contacts / with screw-type terminals</b>	0.5 ... 0.6 N·m
<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>Wire stripping 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

### 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> <li>• at 600 V / rated value</li> </ul>	3.4 A 2.7 A
<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> <li>• at 220/230 V / rated value</li> <li>• at 460/480 V / rated value</li> <li>• at 575/600 V / rated value</li> </ul>	0.5 hp 0.75 hp 2 hp 2 hp

### Safety related data

Proportion of dangerous failures / with high demand rate / acc. to SN 31920	50 %
<b>MTTF / with high demand rate</b>	76 y
<b>T1 value / for proof test interval or service life / acc. to IEC 61508</b>	20 y

### Ambient conditions

<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

### Electromagnetic compatibility

<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> </ul>	2 kV / 5 kHz behavior criterion 2 2 kV behavior criterion 2 1 kV behavior criterion 2

<ul style="list-style-type: none"> <li>• due to high-frequency radiation / acc. to IEC 61000-4-6</li> </ul>	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

#### Further information

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

[www.siemens.com/sirius/catalogs](http://www.siemens.com/sirius/catalogs)

##### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF3405-1BB06>

##### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3405-1BB06>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF3405-1BB06>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF3405-1BB06&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3405-1BB06&lang=en)

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

[https://www.automation.siemens.com/cd-static/material/info/3RF20\\_eng.pdf](https://www.automation.siemens.com/cd-static/material/info/3RF20_eng.pdf)

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