



Solid-state contactor 3-phase 3RF3 AC 53 / 16 A / 40 °C 48-480 V / 110-230 V AC 2-phase controlled Instantaneous switching Spring-type terminal

<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>	3RF34
<b>General technical data</b>	
<b>product function</b>	instantaneous switching
power loss [W] for rated value of the current at AC in hot operating state	28 W
• per pole	9.33 W
<b>power loss [W] for rated value of the current without load current share typical</b>	3.5 W
insulation voltage rated value	600 V
type of voltage of the control supply voltage	AC
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>certificate of suitability</b>	CE / UL / CSA / CCC / C-Tick (RCM)
<b>reference code acc. to IEC 81346-2</b>	Q
Substance Prohibition (Date)	28.05.2009 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 ... 480 V
• at 60 Hz rated value	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	16 A
• at AC-53a at 400 V at ambient temperature 40 °C rated value	16 A
<b>operational current minimum</b>	500 mA
<b>operating power</b>	
• at AC-3 at 400 V rated value	7.5 kW
<b>rate of voltage rise at the thyristor for main contacts</b>	1 000 V/μs

maximum permissible	
blocking voltage at the thyristor for main contacts maximum permissible	1 200 V
reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	1 150 A
I <sup>2</sup> t value maximum	6 600 A <sup>2</sup> ·s
<b>Control circuit/ Control</b>	
type of voltage of the control supply voltage	AC
control supply voltage 1 at AC	
• at 50 Hz	110 ... 230 V
• at 60 Hz	110 ... 230 V
control supply voltage frequency	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
relative symmetrical tolerance of the control supply voltage frequency	10 %
control supply voltage at AC	
• at 50 Hz full-scale value for signal<0> recognition	40 V
• at 60 Hz full-scale value for signal<0> recognition	40 V
control supply voltage	
• at AC initial value for signal <1> detection	90 V
symmetrical line frequency tolerance	5 Hz
operating range factor control supply voltage rated value at AC at 50 Hz	
• initial value	0.82
• full-scale value	1.1
operating range factor control supply voltage rated value at AC at 60 Hz	
• initial value	0.82
• full-scale value	1.1
control current at minimum control supply voltage	
• at AC	2 mA
control current at AC rated value	15 mA
ON-delay time	5 ms
OFF-delay time	30 ms; additionally max. one half-wave
<b>Auxiliary circuit</b>	
number of NC contacts for auxiliary contacts	0
number of NO contacts for auxiliary contacts	0
number of CO contacts for auxiliary contacts	0
<b>Installation/ mounting/ dimensions</b>	
mounting position	vertical
fastening method	screw and snap-on mounting onto 35 mm standard mounting rail
• side-by-side mounting	Yes
height	95 mm
width	90 mm
depth	100.8 mm
required spacing with side-by-side mounting	
• upwards	70 mm
• downwards	50 mm
<b>Connections/ Terminals</b>	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection	
• for main current circuit	spring-loaded terminals
• for auxiliary and control circuit	spring-loaded terminals
type of connectable conductor cross-sections	
• for main contacts	
— solid	2x (0.5 ... 2.5 mm <sup>2</sup> )
— finely stranded with core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> )
— finely stranded without core end processing	2x (0.5 ... 2.5 mm <sup>2</sup> )

<ul style="list-style-type: none"> <li>at AWG cables for main contacts</li> </ul>	2x (18 ... 14)
<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>	0.5 ... 1.5 mm <sup>2</sup> 0.5 ... 2.5 mm <sup>2</sup> 0.5 ... 2.5 mm <sup>2</sup> 1x (AWG 20 ... 12)
AWG number as coded connectable conductor cross section for main contacts	14 ... 10
<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>	10 mm 10 mm
<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>	2 hp 2 hp 5 hp
<b>Safety related data</b>	
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
<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</li> </ul>	<a href="#">3NE1818-0</a> <a href="#">5SE1363</a> <a href="#">3NE8022-1</a> <a href="#">3NC1032</a> <a href="#">3NC1450</a> <a href="#">3NC2280</a>

at cylindrical design 22 x 58 mm usable	
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 14 x 51 mm usable</li> <li>• at cylindrical design 22 x 58 mm usable</li> </ul>	<a href="#">3NA3812-6</a> <a href="#">3NW6010-1</a> <a href="#">3NW6116-1</a> <a href="#">3NW6210-1</a>
manufacturer's article number	
<ul style="list-style-type: none"> <li>• of DIAZED fuse usable</li> </ul>	<a href="#">5SB322</a>

**Certificates/ approvals**

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

[Confirmation](#)

**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=3RF3416-2BB24>

Cax online generator

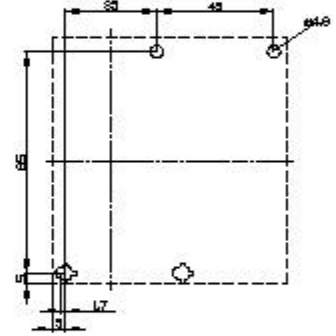
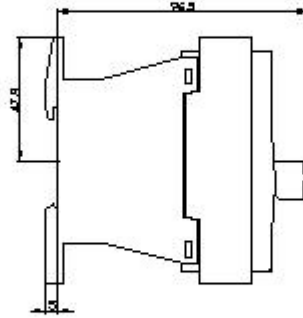
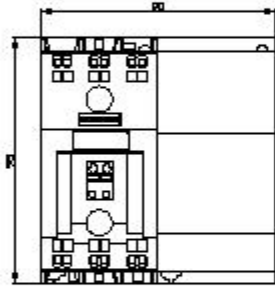
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3416-2BB24>

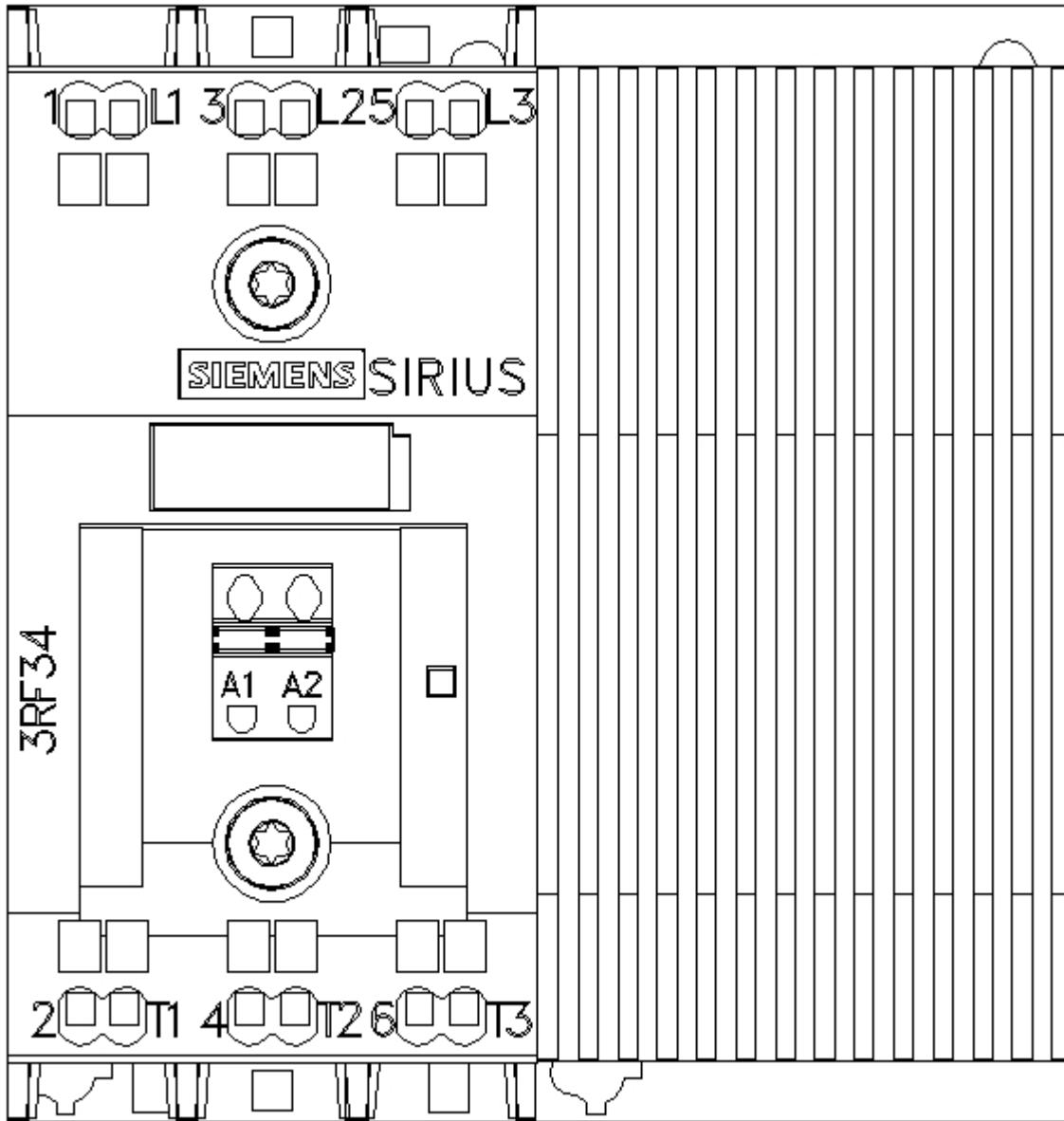
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

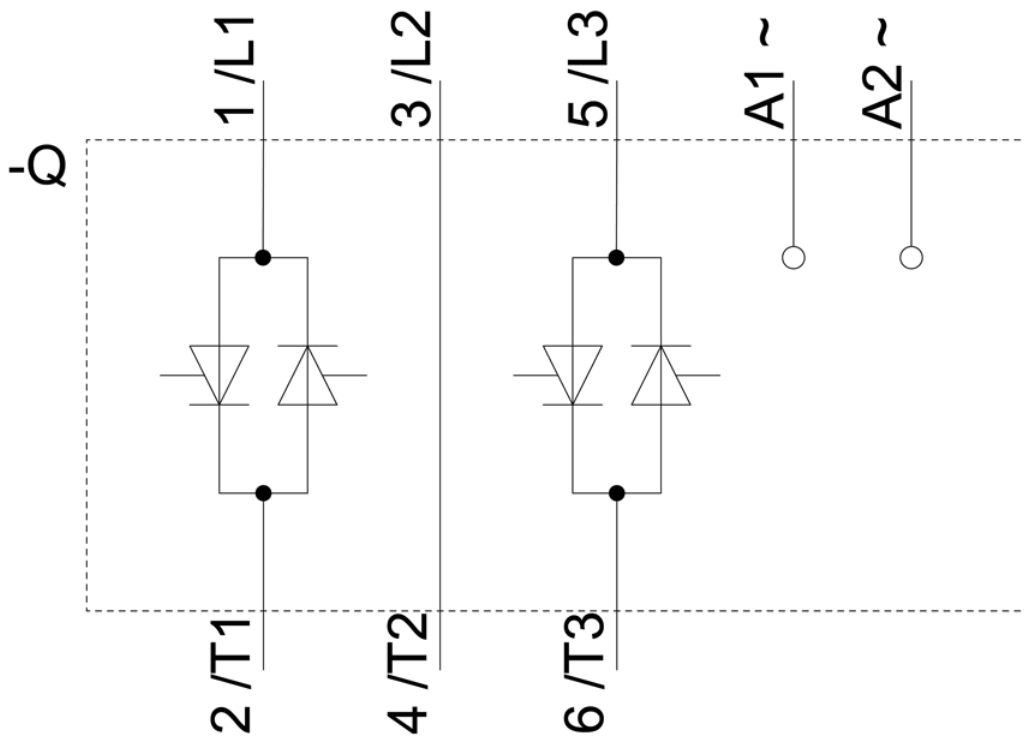
<https://support.industry.siemens.com/cs/ww/en/ps/3RF3416-2BB24>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF3416-2BB24&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3416-2BB24&lang=en)







last modified:

3/11/2021 