



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 Spring-type terminal

product brand name	SIRIUS
product designation	solid-state contactor
design of the product	2-pole controlled
product type designation	3RF34
General technical data	
certificate of suitability	CE / UL / CSA / CCC / C-Tick (RCM)
product function	instantaneous switching
power loss [W] for rated value of the current	
• at AC in hot operating state	22 W
• at AC in hot operating state per pole	7.33 W
• without load current share typical	3.5 W
insulation voltage rated value	600 V
surge voltage resistance of main circuit rated value	6 kV
protection class IP	IP20
protection class IP on the front according to IEC 60529	IP20
shock resistance according to IEC 60068-2-27	15g / 11 ms
vibration resistance according to IEC 60068-2-6	2g
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/28/2009
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8
Weight	0.484 kg
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
type of voltage of the operating voltage	AC
operating voltage	
• at AC	
— at 50 Hz rated value	48 ... 480 V
— at 60 Hz rated value	48 ... 480 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 ... 506 V
• at 60 Hz	40 ... 506 V
operational current	
• 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
operational current minimum	500 mA

operating power	
<ul style="list-style-type: none"> at AC-3 at 400 V rated value 	5.5 kW
rate of voltage rise at the thyristor for main contacts maximum permissible	1 000 V/ μ s
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	1 200 A
I²t value maximum	7 200 A ² ·s
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage at AC	
<ul style="list-style-type: none"> at 50 Hz at 60 Hz 	110 ... 230 V 110 ... 230 V
control supply voltage frequency	
<ul style="list-style-type: none"> 1 rated value 2 rated value 	50 Hz 60 Hz
relative symmetrical tolerance of the control supply voltage frequency	10 %
control supply voltage at AC	
<ul style="list-style-type: none"> at 50 Hz full-scale value for signal<0> recognition at 60 Hz full-scale value for signal<0> recognition 	40 V 40 V
control supply voltage	
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> initial value full-scale value 	0.82 1.1
operating range factor control supply voltage rated value at AC at 60 Hz	
<ul style="list-style-type: none"> initial value full-scale value 	0.82 1.1
control current at minimum control supply voltage	
<ul style="list-style-type: none"> 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
Auxiliary circuit	
type of switching contact	normally open contact (NO)
number of NC contacts for auxiliary contacts	0
number of NO contacts for auxiliary contacts	0
number of CO contacts for auxiliary contacts	0
Installation/ mounting/ dimensions	
mounting position	vertical
fastening method side-by-side mounting	Yes
fastening method	screw and snap-on mounting onto 35 mm DIN rail
design of the thread of the screw for securing the equipment	M4
height	95 mm
width	90 mm
depth	100.8 mm
required spacing with side-by-side mounting	
<ul style="list-style-type: none"> upwards downwards 	70 mm 50 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection	
<ul style="list-style-type: none"> for main current circuit for auxiliary and control circuit 	spring-loaded terminals spring-loaded terminals
type of connectable conductor cross-sections	

<ul style="list-style-type: none"> • for main contacts <ul style="list-style-type: none"> — solid — finely stranded with core end processing — finely stranded without core end processing • for AWG cables for main contacts 	<p>2x (0.5 ... 2.5 mm²)</p> <p>2x (0.5 ... 1.5 mm²)</p> <p>2x (0.5 ... 2.5 mm²)</p> <p>2x (18 ... 14)</p>
connectable conductor cross-section for main contacts <ul style="list-style-type: none"> • solid or stranded • finely stranded with core end processing • finely stranded without core end processing 	<p>0.5 ... 2.5 mm²</p> <p>0.5 ... 1.5 mm²</p> <p>0.5 ... 2.5 mm²</p>
type of connectable conductor cross-sections <ul style="list-style-type: none"> • for auxiliary and control contacts <ul style="list-style-type: none"> — solid — finely stranded with core end processing — finely stranded without core end processing • for AWG cables for auxiliary and control contacts 	<p>0.5 ... 1.5 mm²</p> <p>0.5 ... 2.5 mm²</p> <p>0.5 ... 2.5 mm²</p> <p>1x (20 ... 12)</p>
AWG number as coded connectable conductor cross section for main contacts	<p>14 ... 10</p>
stripped length of the cable <ul style="list-style-type: none"> • for main contacts • for auxiliary and control contacts 	<p>10 mm</p> <p>10 mm</p>
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor <ul style="list-style-type: none"> • at 480 V rated value 	<p>7.6 A</p>
yielded mechanical performance [hp] for 3-phase AC motor <ul style="list-style-type: none"> • at 200/208 V rated value • at 220/230 V rated value • at 460/480 V rated value 	<p>2 hp</p> <p>2 hp</p> <p>5 hp</p>
Safety related data	
proportion of dangerous failures with high demand rate according to SN 31920	<p>50 %</p>
MTTF with high demand rate	<p>76 a</p>
IEC 61508	
T1 value for proof test interval or service life according to IEC 61508	<p>20 a</p>
Electrical Safety	
protection class IP on the front according to IEC 60529	<p>IP20</p>
touch protection on the front according to IEC 60529	<p>finger-safe, for vertical contact from the front</p>
Ambient conditions	
installation altitude at height above sea level maximum	<p>1 000 m</p>
ambient temperature <ul style="list-style-type: none"> • during operation • during storage 	<p>-25 ... +60 °C</p> <p>-55 ... +80 °C</p>
Electromagnetic compatibility	
conducted interference <ul style="list-style-type: none"> • due to burst according to IEC 61000-4-4 • due to conductor-earth surge according to IEC 61000-4-5 • due to conductor-conductor surge according to IEC 61000-4-5 • due to high-frequency radiation according to IEC 61000-4-6 	<p>2 kV / 5 kHz behavior criterion 2</p> <p>2 kV behavior criterion 2</p> <p>1 kV behavior criterion 2</p> <p>140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1</p>
electrostatic discharge according to IEC 61000-4-2	<p>4 kV contact discharging / 8 kV air discharging, behavior criterion 2</p>
conducted HF interference emissions according to CISPR11	<p>Class A for industrial environment</p>
field-bound HF interference emission according to CISPR11	<p>Class A for industrial environment</p>
Short-circuit protection, design of the fuse link	
manufacturer's article number <ul style="list-style-type: none"> • of full range R fuse link for semiconductor protection at NH design usable • of full range R fuse link for semiconductor protection at cylindrical design usable • of back-up R fuse link for semiconductor protection at NH design usable • of back-up R fuse link for semiconductor protection at 	<p>3NE1818-0</p> <p>5SE1363</p> <p>3NE8021-1</p> <p>3NC1032</p>

- cylindrical design 10 x 38 mm usable
- of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable
- of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable

[3NC1450](#)

[3NC2280](#)

manufacturer's article number of the gG fuse

- at NH design usable
- at cylindrical design 10 x 38 mm usable
- at cylindrical design 22 x 58 mm usable

[3NA3810-6](#)

[3NW6010-1](#)

[3NW6210-1](#)

Approvals Certificates

General Product Approval

EMV



EG-Konf.



UL



RCM

Test Certificates

other

Environment

[Type Test Certificates/Test Report](#)



[Confirmation](#)

[Environmental Confirmations](#)

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=3RF3412-2BB24>

Cax online generator

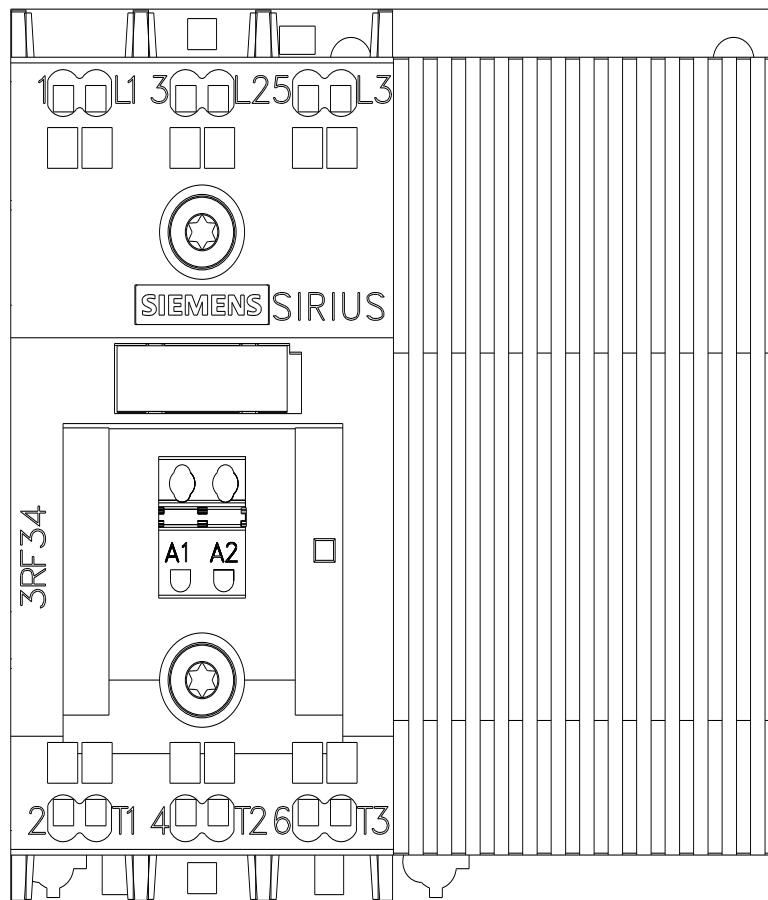
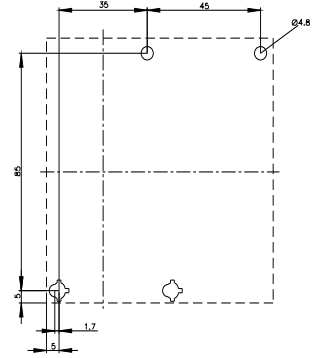
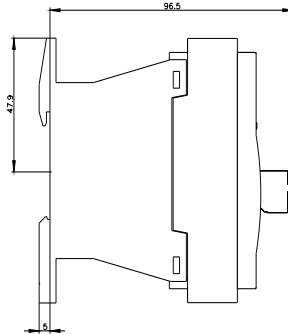
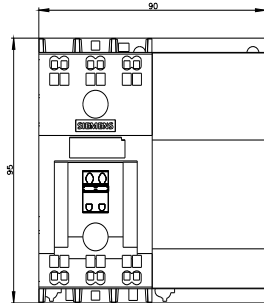
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3412-2BB24>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF3412-2BB24>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3412-2BB24&lang=en





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