



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

product brand name

product designation

design of the product

product type designation

manufacturer's article number

- _1 of the accessories that can be ordered
- _2 of the accessories that can be ordered

product designation

- _1 of the accessories that can be ordered
- _2 of the accessories that can be ordered

SIRIUS

solid-state contactor

two-phase controlled

3RF34

[3RA2921-1BA00](#)

[3RF3900-0QA88](#)

Link module

Connection adapter

General technical data

product function

instantaneous switching

power loss [W] for rated value of the current

- at AC in hot operating state
- at AC in hot operating state per pole
- without load current share typical

22 W

7.33 W

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 according to IEC 60068-2-27

15g / 11 ms

vibration resistance according to IEC 60068-2-6

2g

certificate of suitability

CE / UL / CSA / CCC / C-Tick (RCM)

reference code according to IEC 81346-2

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Substance Prohibitance (Date)

05/28/2009

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
- at 60 Hz rated value

48 ... 480 V

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
- at 60 Hz

40 ... 506 V

40 ... 506 V

operational current

- at AC-3 at 400 V rated value
- at AC-53a at 400 V at ambient temperature 40 °C rated value

12.5 A

12.5 A

operational current minimum

500 mA

operating power	5.5 kW
at AC-3 at 400 V rated value	1 000 V/μs
rate of voltage rise at the thyristor for main contacts 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	1 200 A
I²t value maximum	7 200 A ² ·s
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage 1 at AC	
- at 50 Hz - at 60 Hz	110 ... 230 V
control supply voltage frequency	110 ... 230 V
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	
- 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	
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 - full-scale value	0.82
	1.1
operating range factor control supply voltage rated value at AC at 60 Hz	
- initial value - full-scale value	0.82
	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
Auxiliary circuit	
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	screw and snap-on mounting onto 35 mm DIN rail
side-by-side mounting	Yes
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	
- upwards - downwards	70 mm
	50 mm
Connections/ Terminals	
product component removable terminal for auxiliary and control circuit	Yes
type of electrical connection	
- for main current circuit - for auxiliary and control circuit	screw-type terminals
	screw-type terminals
type of connectable conductor cross-sections	
- for main contacts — solid	2x (0.5 ... 2.5 mm ²)

— finely stranded with core end processing • at AWG cables for main contacts	2x (0.5 ... 1.5 mm ²) 2x (18 ... 14)
connectable conductor cross-section for main contacts • solid or stranded • finely stranded with core end processing	1.5 ... 6 mm ² 1 ... 10 mm ²
type of connectable conductor cross-sections • for auxiliary and control contacts — solid — finely stranded with core end processing — finely stranded without core end processing • at AWG cables for auxiliary and control contacts	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²) 1x (AWG 20 ... 12) 14 ... 10
AWG number as coded connectable conductor cross section for main contacts	
tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals	2 ... 2.5 N·m 0.5 ... 0.6 N·m
tightening torque [lbf·in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals	18 ... 22 lbf·in 7.5 ... 5.3 lbf·in
design of the thread of the connection screw • for main contacts • of the auxiliary and control contacts	M4 M3
stripped length of the cable • for main contacts • for auxiliary and control contacts	7 mm 7 mm
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor • at 480 V rated value	7.6 A
yielded mechanical performance [hp] for 3-phase AC motor • at 200/208 V rated value • at 220/230 V rated value • at 460/480 V rated value	2 hp 2 hp 5 hp
Safety related data	
proportion of dangerous failures with high demand rate according to SN 31920	50 %
MTTF with high demand rate	76 y
T1 value for proof test interval or service life according to IEC 61508	20 y
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
Ambient conditions	
installation altitude at height above sea level maximum	1 000 m
ambient temperature • during operation • during storage	-25 ... +60 °C -55 ... +80 °C
Electromagnetic compatibility	
conducted interference • 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	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
electrostatic discharge according to IEC 61000-4-2	4 kV contact discharging / 8 kV air discharging, behavior criterion 2
conducted HF interference emissions according to CISPR11	Class A for industrial environment
field-bound HF interference emission according to CISPR11	Class A for industrial environment
Short-circuit protection, design of the fuse link	

manufacturer's article number

- 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 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

[3NE1818-0](#)

[5SE1363](#)

[3NE8021-1](#)

[3NC1032](#)

[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](#)

Certificates/ approvals

General Product Approval

EMC



[Confirmation](#)



Declaration of Conformity

Test Certificates

other



EG-Konf.



[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=3RF3412-1BB24>

Cax online generator

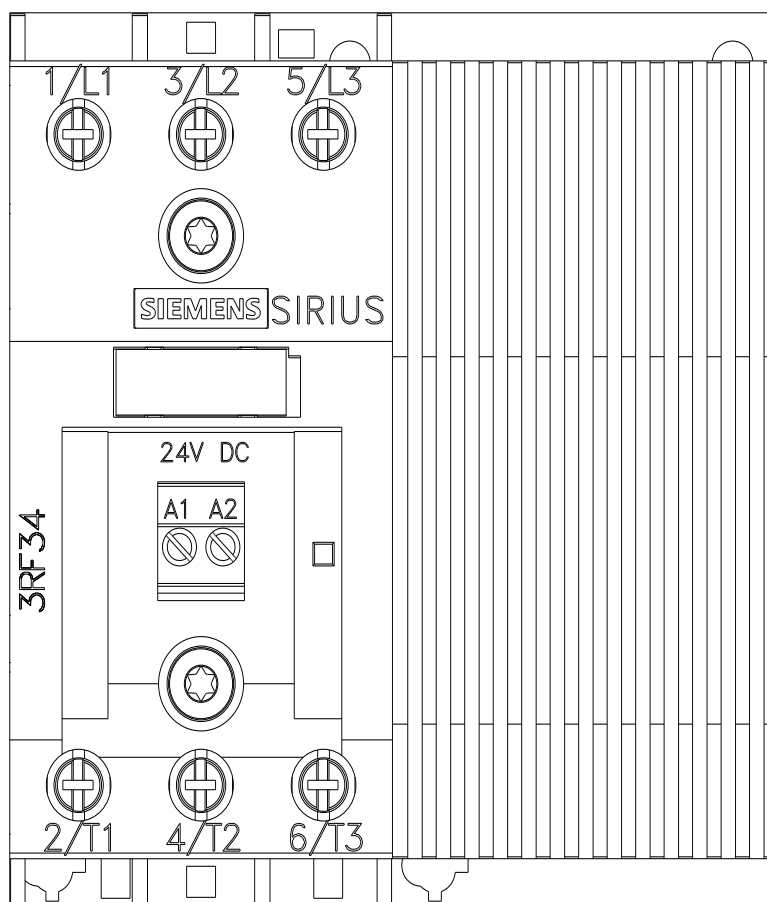
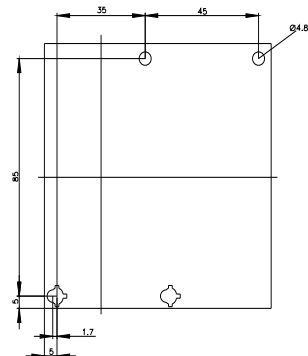
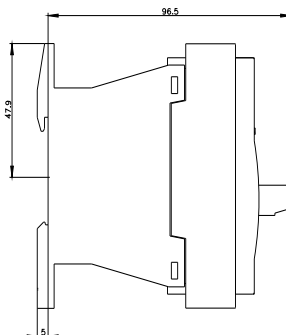
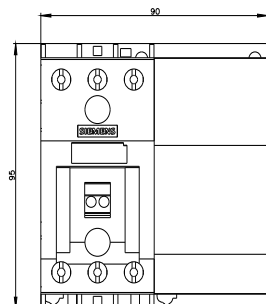
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3412-1BB24>

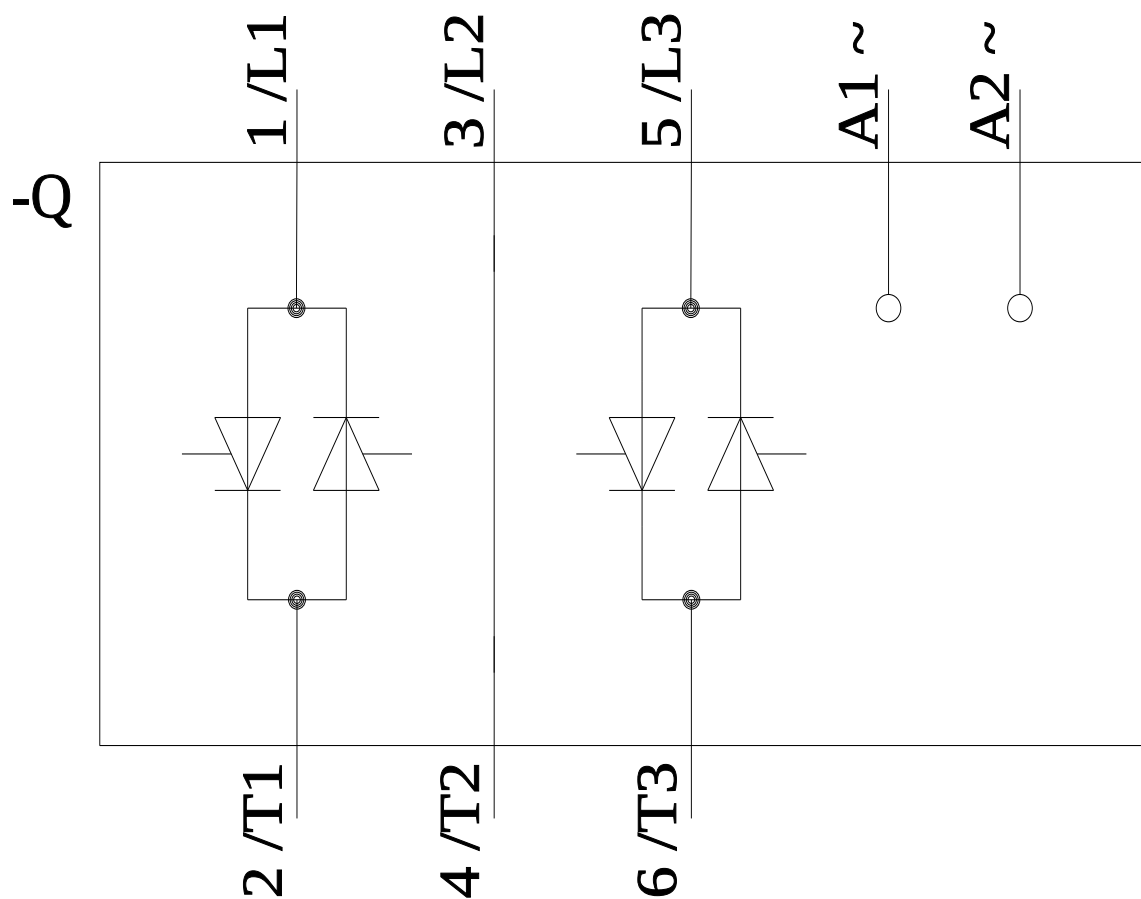
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<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





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