



Solid-state contactor 3-phase 3RF3 AC 53 / 12.5 A / 40 °C 48-600 V / 24 V DC 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	22 W
• at AC in hot operating state per pole	7.33 W
• without load current share typical	0.4 W
insulation voltage rated value	600 V
type of voltage of the control supply voltage	DC
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	Q
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	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
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	5.5 kW
<ul style="list-style-type: none"> 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	1 600 V
reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	1 150 A
I²t value maximum	6 600 A ² ·s

Control circuit/ Control

type of voltage of the control supply voltage	DC
control supply voltage 1	24 V
<ul style="list-style-type: none"> at DC rated value 	
control supply voltage	15 V
<ul style="list-style-type: none"> at DC initial value for signal <1> detection at DC full-scale value for signal<0> recognition 	5 V
symmetrical line frequency tolerance	5 Hz
operating range factor control supply voltage rated value at DC	
<ul style="list-style-type: none"> initial value full-scale value 	0.63 1.25
control current at minimum control supply voltage	2 mA
<ul style="list-style-type: none"> at DC 	15 mA
control current at DC rated value	
ON-delay time	1 ms
OFF-delay time	1 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
<ul style="list-style-type: none"> 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	
<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 	screw-type terminals screw-type 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 at AWG cables for main contacts 	2x (1.5 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²) 2x (1 ... 2.5 mm ²), 2x (2.5 ... 6 mm ²), 1x 10 mm ² 2x (14 ... 10)
connectable conductor cross-section for main contacts	
<ul style="list-style-type: none"> solid or stranded finely stranded with core end processing 	1.5 ... 6 mm ² 1 ... 10 mm ²
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 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)

AWG number as coded connectable conductor cross section for main contacts	14 ... 10
tightening torque	
<ul style="list-style-type: none"> for main contacts with screw-type terminals 	2 ... 2.5 N·m
<ul style="list-style-type: none"> for auxiliary and control contacts with screw-type terminals 	0.5 ... 0.6 N·m
tightening torque [lbf-in]	
<ul style="list-style-type: none"> for main contacts with screw-type terminals 	18 ... 22 lbf-in
<ul style="list-style-type: none"> for auxiliary and control contacts with screw-type terminals 	7.5 ... 5.3 lbf-in
design of the thread of the connection screw	
<ul style="list-style-type: none"> for main contacts 	M4
<ul style="list-style-type: none"> of the auxiliary and control contacts 	M4
stripped length of the cable	
<ul style="list-style-type: none"> for main contacts 	7 mm
<ul style="list-style-type: none"> for auxiliary and control contacts 	7 mm

UL/CSA ratings

full-load current (FLA) for 3-phase AC motor	
<ul style="list-style-type: none"> at 480 V rated value 	7.6 A
<ul style="list-style-type: none"> at 600 V rated value 	6.1 A
yielded mechanical performance [hp] for 3-phase AC motor	
<ul style="list-style-type: none"> at 200/208 V rated value 	2 hp
<ul style="list-style-type: none"> at 220/230 V rated value 	2 hp
<ul style="list-style-type: none"> at 460/480 V rated value 	5 hp
<ul style="list-style-type: none"> at 575/600 V rated value 	5 hp

Safety related data

proportion of dangerous failures with high demand rate according to SN 31920	50 %
MTTF with high demand rate	76 a
T1 value for proof test interval or service life according to IEC 61508	20 a
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	
<ul style="list-style-type: none"> during operation 	-25 ... +60 °C
<ul style="list-style-type: none"> during storage 	-55 ... +80 °C

Electromagnetic compatibility

conducted interference	
<ul style="list-style-type: none"> due to burst according to IEC 61000-4-4 	2 kV / 5 kHz behavior criterion 2
<ul style="list-style-type: none"> due to conductor-earth surge according to IEC 61000-4-5 	2 kV behavior criterion 2
<ul style="list-style-type: none"> due to conductor-conductor surge according to IEC 61000-4-5 	1 kV behavior criterion 2
<ul style="list-style-type: none"> due to high-frequency radiation according to IEC 61000-4-6 	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	
<ul style="list-style-type: none"> of full range R fuse link for semiconductor protection at NH design usable 	3NE1817-0
<ul style="list-style-type: none"> of back-up R fuse link for semiconductor protection at NH design usable 	3NE8021-1
<ul style="list-style-type: none"> of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable 	3NC1032
<ul style="list-style-type: none"> of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable 	3NC1450
<ul style="list-style-type: none"> of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable 	3NC2280

manufacturer's article number of the gG fuse

- at NH design usable

3NA3810-6

Certificates/ approvals

General Product Approval

EMC



[Confirmation](#)



Declaration of Conformity

Test Certificates

other



[Type Test Certificates/Test Report](#)

[Confirmation](#)

Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3RF3412-1BB06>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF3412-1BB06>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF3412-1BB06>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF3412-1BB06&lang=en





