



Solid-state contactor 1-phase 3RF2 AC 51 / 20 A / 40 °C 48-600 V / 24 V
DC Ring cable connection

product brand name	SIRIUS
product designation	solid-state contactor
design of the product	single-phase
product type designation	3RF23
manufacturer's article number	
• _1 of the accessories that can be ordered • _3 of the accessories that can be ordered • _4 of the accessories that can be ordered	3RF2900-3PA88 3RF2900-0EA18 3RF2920-0GA16
product designation	
• _1 of the accessories that can be ordered • _3 of the accessories that can be ordered • _4 of the accessories that can be ordered	terminal cover converter load monitoring
General technical data	
product function	zero-point 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	20 W 20 W 0.4 W
insulation voltage rated value	600 V
degree of pollution	3
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
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	05/28/2009
Main circuit	
number of poles for main current circuit	1
number of NO contacts for main contacts	1
number of NC contacts for main contacts	0
operating voltage at AC	
• at 50 Hz rated value • at 60 Hz rated value	48 ... 600 V 48 ... 600 V
operating frequency rated value	50 ... 60 Hz
operating range relative to the operating voltage at AC	
• at 50 Hz • at 60 Hz	40 ... 660 V 40 ... 660 V
operational current	
• at AC-51 rated value • at AC-51 according to IEC 60947-4-3 • according to UL 508 rated value	20 A 13.2 A 17.6 A

operational current minimum	500 mA
rate of voltage rise at the thyristor for main contacts maximum permissible	1 000 V/μs
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 ² t value maximum	1 800 A ² ·s
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage 1	30 V
• at DC rated value	15 ... 24 V
• at DC	
control supply voltage	15 V
• at DC initial value for signal <1> detection	5 V
• at DC full-scale value for signal<0> recognition	
control current at minimum control supply voltage	13 mA
• at DC	15 mA
control current at DC rated value	
ON-delay time	1 ms; additionally max. one half-wave
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	
fastening method	screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715
• side-by-side mounting	Yes
design of the thread of the screw for securing the equipment	M4
height	95 mm
width	22.5 mm
depth	120 mm
Connections/ Terminals	
type of electrical connection	Ring cable lug connection ring terminal lug connection
• for main current circuit	
• for auxiliary and control circuit	
type of connectable conductor cross-sections	JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5 DIN 46234 -5-2,5, -5-6, -5-10, -5-16, -5-25
• for main contacts for JIS cable lug	
• for DIN cable lug for main contacts	
type of connectable conductor cross-sections	
• for auxiliary and control contacts	
— solid	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
— finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
— finely stranded without core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
• at AWG cables for auxiliary and control contacts	1x (AWG 20 ... 12)
tightening torque	2 ... 2.5 N·m
• for main contacts with screw-type terminals	0.5 ... 0.6 N·m
• for auxiliary and control contacts with screw-type terminals	
tightening torque [lbf·in]	4.5 ... 5.3 lbf·in
• for auxiliary and control contacts with screw-type terminals	
design of the thread of the connection screw	M5
• for main contacts	M3
• of the auxiliary and control contacts	
stripped length of the cable	
• for main contacts	10 mm
• for auxiliary and control contacts	10 mm
Safety related data	
protection class IP on the front according to IEC 60529	IP00; IP20 with cover

touch protection on the front according to IEC 60529

finger-safe, for vertical contact from the front with cover

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

field-based interference according to IEC 61000-4-3

80 MHz ... 1 GHz 10 V/m, 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 B for the domestic, business and commercial environments

Short-circuit protection, design of the fuse link

manufacturer's article number

- of gS fuse 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
- at NH design usable

[3NE1814-0](#)

[5SE1325](#)

[3NE8015-1](#)

[3NC1032](#)

[3NC1450](#)

[3NC2250](#)

[3NA6807-6](#)

Certificates/ approvals

General Product Approval

EMC

Declaration of
Conformity



[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>

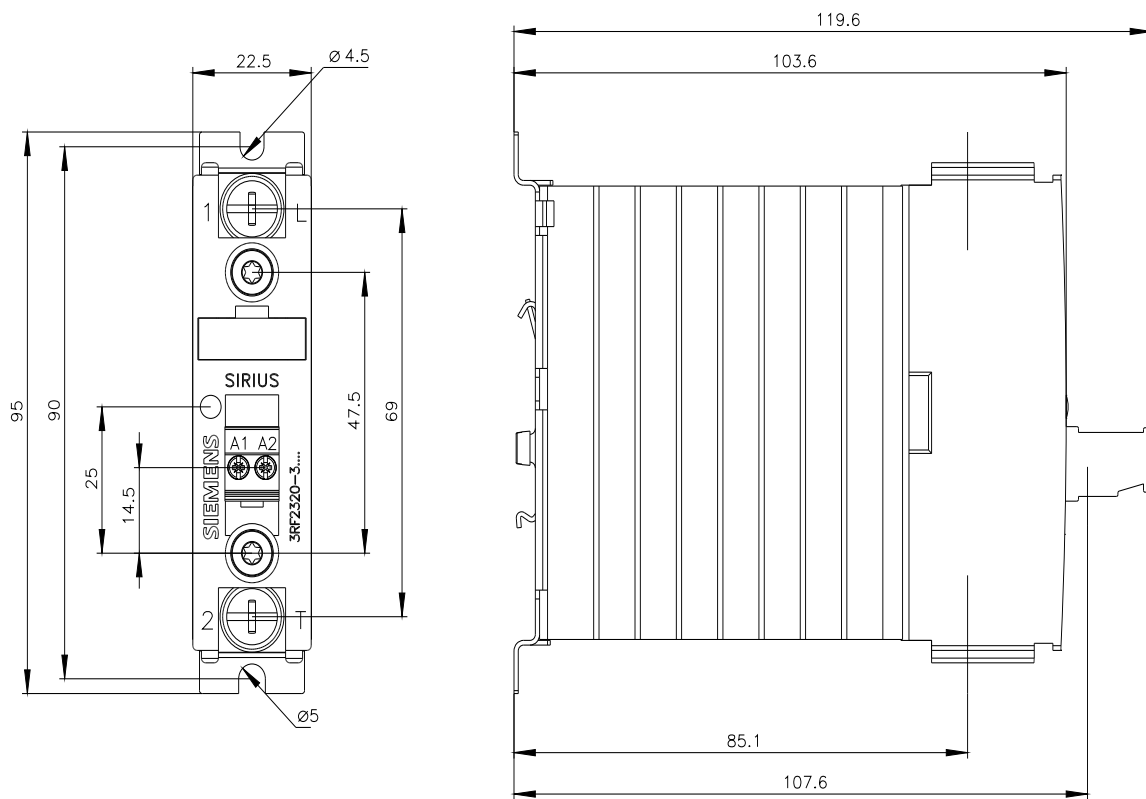
Industry Mall (Online ordering system)

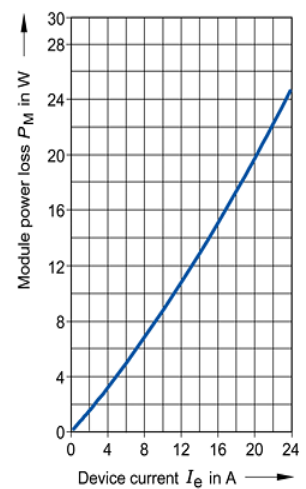
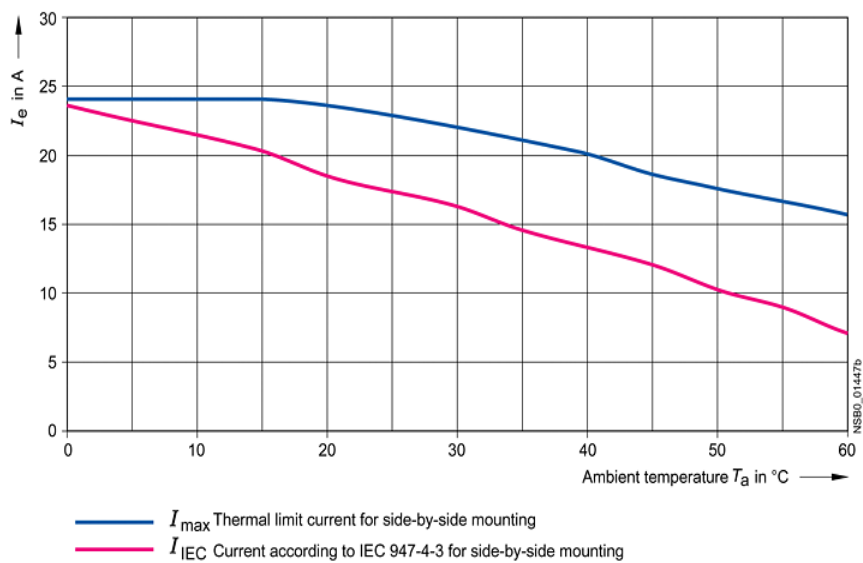
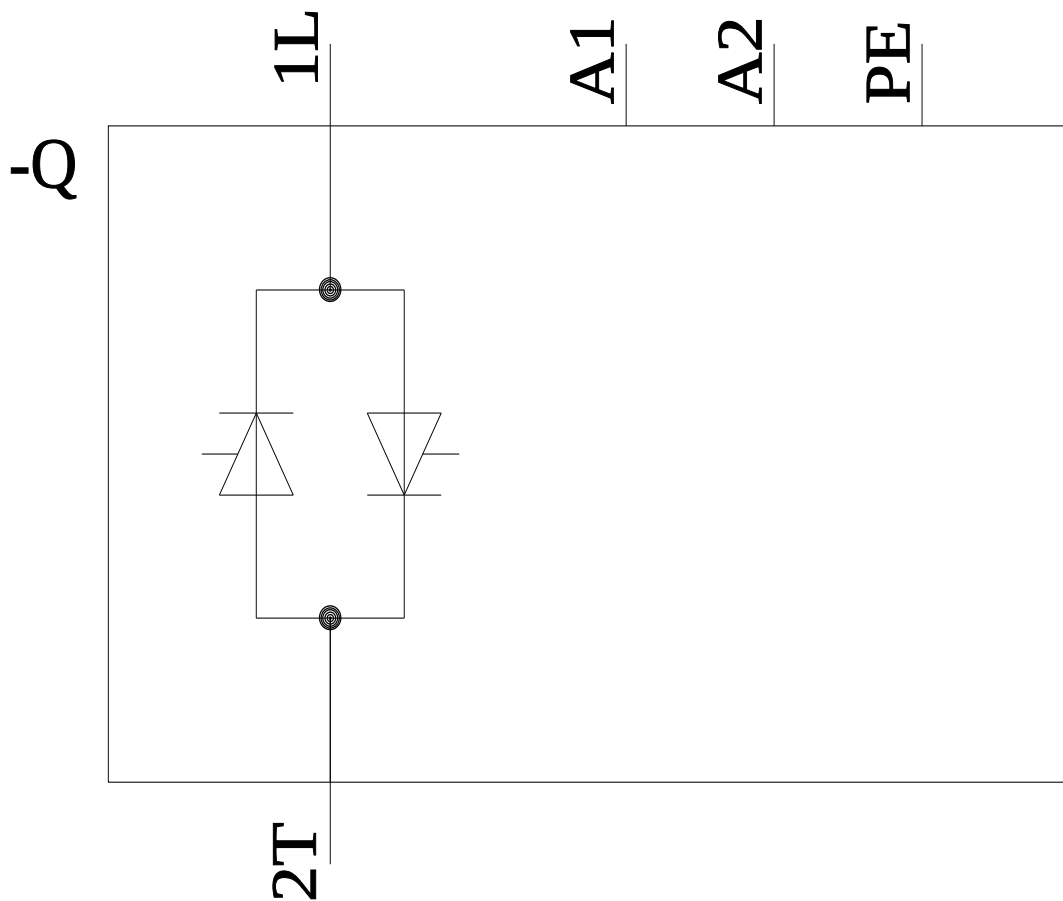
<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF2320-3AA06>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2320-3AA06>

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





last modified:

1/26/2022