



Solid-state contactor 1-phase 3RF2 AC 51 / 20 A / 40 °C 48-460 V / 24 V
DC short circuit-proof with B miniature circuit breaker

product brand name
product designation
design of the product
product type designation
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
- _5 of the accessories that can be ordered

product designation

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SIRIUS
solid-state contactor
single-phase
3RF23

[3RF2900-3PA88](#)
[3RF2900-0EA18](#)
[3RF2920-0GA16](#)
[3RF2920-0FA08](#)

terminal cover
converter
load monitoring
load monitoring, basis

General technical data

product function	short-circuit resistant with B-automatic device
power loss [W] for rated value of the current	
• at AC in hot operating state	20 W
• at AC in hot operating state per pole	20 W
• without load current share typical	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	48 ... 460 V
• at 60 Hz rated value	48 ... 460 V
operating frequency rated value	50 ... 60 Hz
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-51 rated value	20 A

<ul style="list-style-type: none"> • at AC-51 according to IEC 60947-4-3 • according to UL 508 rated value 	13.2 A
operational current minimum	17.6 A
operational current of the MCB at AC rated value	500 mA
rate of voltage rise at the thyristor for main contacts maximum permissible	20 A
blocking voltage at the thyristor for main contacts maximum permissible	1 000 V/ μ s
reverse current of the thyristor	1 200 V
derating temperature	10 mA
surge current resistance rated value	40 °C
I^{2t} value maximum	1 150 A
	6 600 A ² ·s
Control circuit/ Control	
type of voltage of the control supply voltage	DC
control supply voltage 1	30 V
<ul style="list-style-type: none"> • at DC rated value • at DC 	15 ... 24 V
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
control current at minimum control supply voltage	13 mA
<ul style="list-style-type: none"> • at DC 	15 mA
control current at DC rated value	1 ms; additionally max. one half-wave
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
<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	22.5 mm
depth	120 mm
Connections/ Terminals	
type of electrical connection	screw-type terminals
<ul style="list-style-type: none"> • for main current circuit • for auxiliary and control circuit 	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	10 ... 14
tightening torque	
<ul style="list-style-type: none"> • 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]	

<ul style="list-style-type: none"> • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals 	18 ... 22 lbf-in 4.5 ... 5.3 lbf-in	
design of the thread of the connection screw <ul style="list-style-type: none"> • for main contacts • of the auxiliary and control contacts 	M4 M3	
stripped length of the cable <ul style="list-style-type: none"> • for main contacts • for auxiliary and control contacts 	7 mm 7 mm	
Safety related data		
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 • during storage 	-25 ... +60 °C -55 ... +80 °C	
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 	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 <ul style="list-style-type: none"> • 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 	3NE1814-0 5SE1325 3NE8015-1 3NC1032 3NC1450 3NC2263	
manufacturer's article number of the gG fuse <ul style="list-style-type: none"> • at NH design usable • at cylindrical design 10 x 38 mm usable • at cylindrical design 14 x 51 mm usable • at cylindrical design 22 x 58 mm usable 	3NA6807 3NW6005-1 ; These fuses have a smaller rated current than the semiconductor relays 3NW6105-1 ; These fuses have a smaller rated current than the semiconductor relays 3NW6205-1 ; These fuses have a smaller rated current than the semiconductor relays	
manufacturer's article number <ul style="list-style-type: none"> • of DIAZED fuse usable • of NEOZED fuse usable 	5SB2711 5SE2320	
Certificates/ approvals		
General Product Approval	EMC	Declaration of Conformity



[Confirmation](#)



Declaration of Conformity	Test Certificates	other	Railway
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[Type Test Certificates/Test Report](#)

[Special Test Certificate](#)

[Confirmation](#)



[Vibration and Shock](#)

Further information

Siemens has decided to exit the Russian market (see here).

<https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business>

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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?mfb=3RF2320-1DA04>

Cax online generator

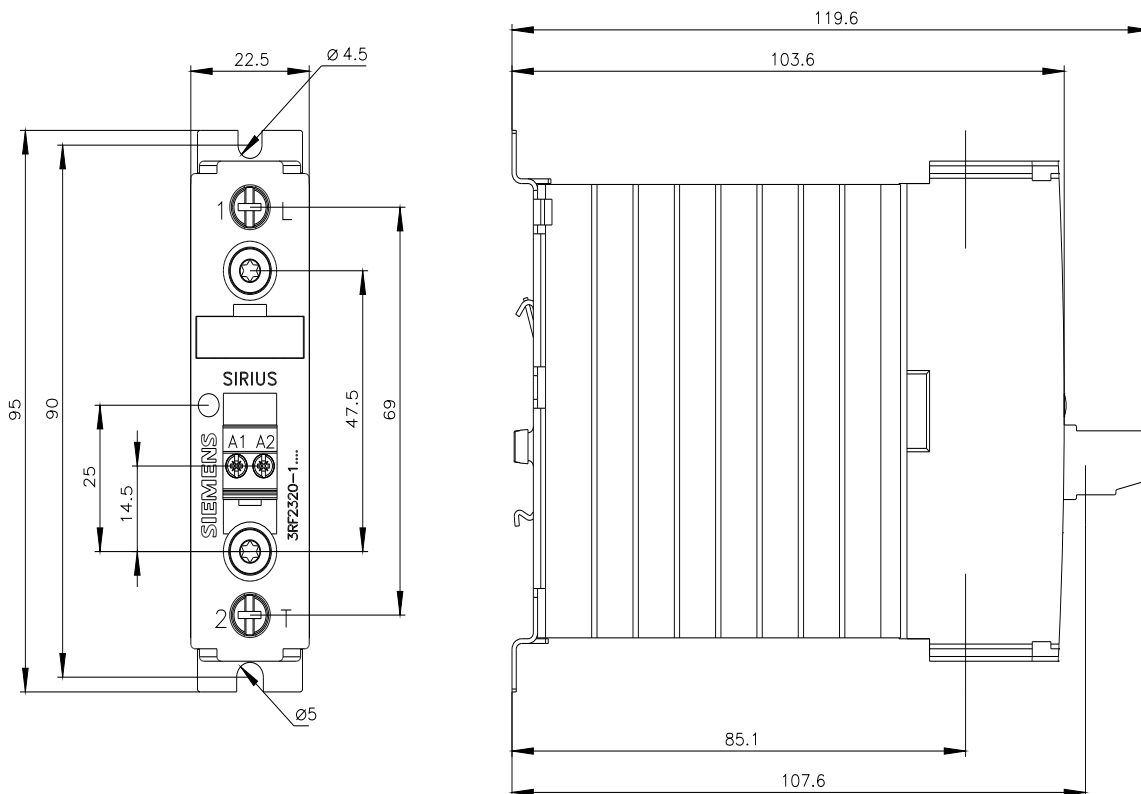
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3RF2320-1DA04>

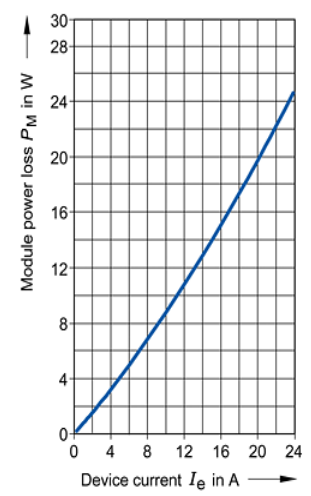
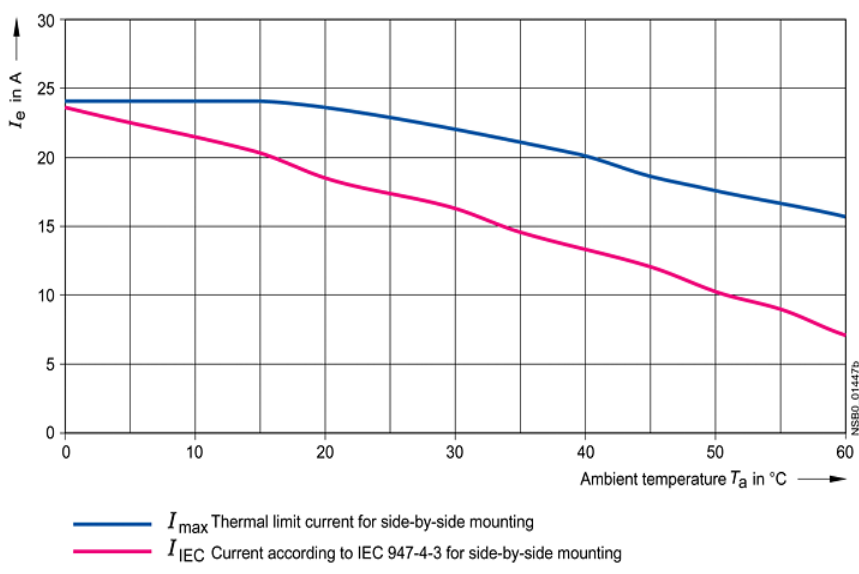
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2320-1DA04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3RF2320-1DA04&lang=en





last modified:

1/26/2022