



Solid-state contactor 1-phase 3RF2 AC 51 / 20 A / 40 °C 24-230 V / 110-230 V AC 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
- _4 of the accessories that can be ordered

[3RF2900-3PA88](#)

[3RF2920-0GA33](#)

product designation

- _1 of the accessories that can be ordered
- _4 of the accessories that can be ordered

terminal cover

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

3.5 W

insulation voltage rated value

600 V

degree of pollution

3

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

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

24 ... 230 V

24 ... 230 V

operating frequency rated value

50 ... 60 Hz

operating range relative to the operating voltage at AC

- at 50 Hz
- at 60 Hz

20 ... 253 V

20 ... 253 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

1 000 V/μs

maximum permissible

blocking voltage at the thyristor for main contacts maximum permissible	800 V
reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	600 A
I²t value maximum	1 800 A ² ·s
Control circuit/ Control	
type of voltage of the control supply voltage	AC
control supply voltage 1 at AC	
• at 50 Hz	110 ... 230 V
• at 60 Hz	110 ... 230 V
control supply voltage frequency	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
control supply voltage at AC	
• at 50 Hz full-scale value for signal<0> recognition	40 V
• at 60 Hz full-scale value for signal<0> recognition	40 V
control supply voltage	
• at AC initial value for signal <1> detection	90 V
symmetrical line frequency tolerance	5 Hz
control current at minimum control supply voltage	
• at AC	2 mA
control current at AC rated value	15 mA
ON-delay time	40 ms; additionally max. one half-wave
OFF-delay time	40 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	
• for main current circuit	Ring cable lug connection
• for auxiliary and control circuit	ring terminal lug connection
type of connectable conductor cross-sections	
• for main contacts for JIS cable lug	JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5
• for DIN cable lug for main contacts	DIN 46234 -5-2,5, -5-6, -5-10, -5-16, -5-25
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	
• for main contacts with screw-type terminals	2 ... 2.5 N·m
• for auxiliary and control contacts with screw-type terminals	0.5 ... 0.6 N·m
tightening torque [lbf·in]	
• for auxiliary and control contacts with screw-type terminals	4.5 ... 5.3 lbf·in
design of the thread of the connection screw	
• for main contacts	M5
• of the auxiliary and control contacts	M3
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		-25 ... +60 °C
• during storage		-55 ... +80 °C
Electromagnetic compatibility		
conducted interference		
• due to burst according to IEC 61000-4-4		2 kV / 5 kHz behavior criterion 2
• due to conductor-earth surge according to IEC 61000-4-5		2 kV behavior criterion 2
• due to conductor-conductor surge according to IEC 61000-4-5		1 kV behavior criterion 2
• due to high-frequency radiation according to IEC 61000-4-6		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		3NE1814-0
• of full range R fuse link for semiconductor protection at cylindrical design usable		5SE1325
• of back-up R fuse link for semiconductor protection at NH design usable		3NE8015-1
• of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable		3NC1032
• of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable		3NC1450
• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable		3NC2263
manufacturer's article number of the gG fuse		
• at NH design usable		3NA6807
• at cylindrical design 10 x 38 mm usable		3NW6007-1
• at cylindrical design 14 x 51 mm usable		3NW6107-1
• at cylindrical design 22 x 58 mm usable		3NW6207-1
manufacturer's article number		
• of DIAZED fuse usable		5SB2711
• of NEOZED fuse usable		5SE2320
Certificates/ approvals		
General Product Approval		EMC
 Confirmation    		Declaration of Conformity

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=3RF2320-3AA22>

Cax online generator

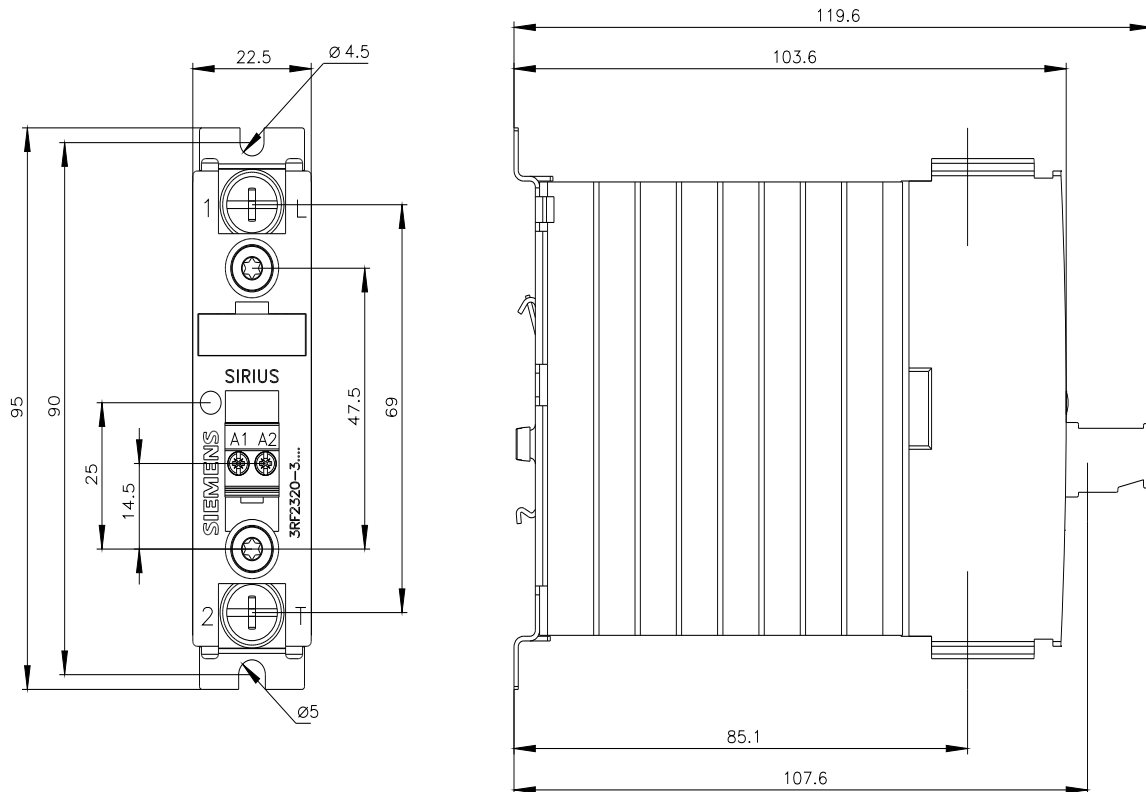
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2320-3AA22>

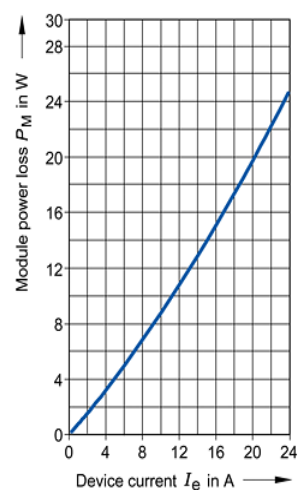
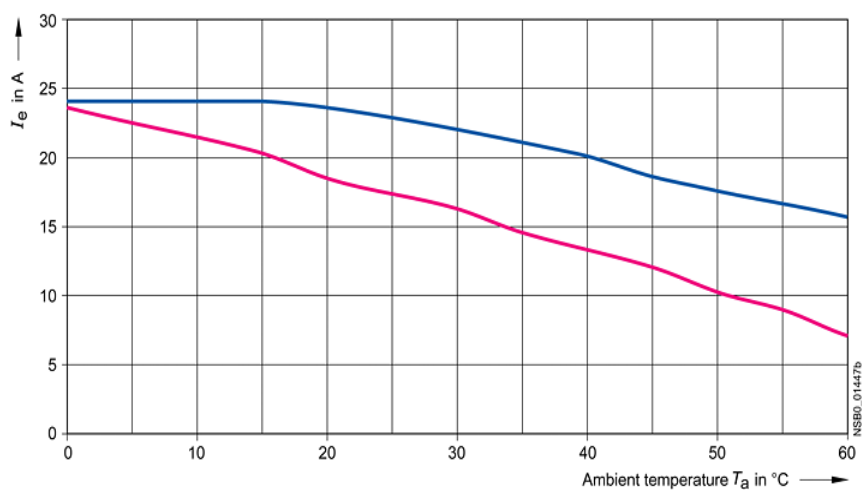
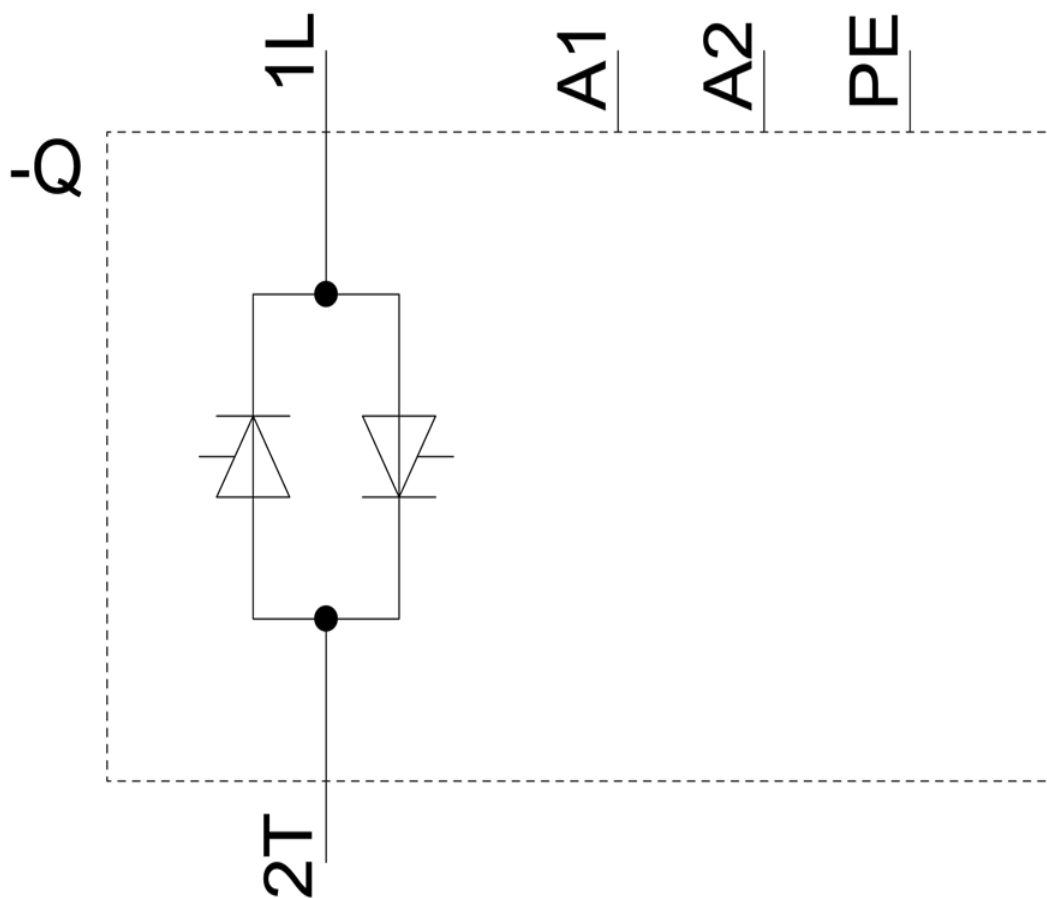
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2320-3AA22>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2320-3AA22&lang=en





— I_{max} Thermal limit current for side-by-side mounting
— I_{IEC} Current according to IEC 947-4-3 for side-by-side mounting

last modified:

1/26/2022

