SIEMENS

Data sheet 3RF2310-1AA12



Solid-state contactor 1-phase 3RF2 AC 51 / 10.5 A / 40 $^{\circ}$ C 24-230 V / 24 V AC/DC 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
- _3 of the accessories that can be ordered
- _4 of the accessories that can be ordered

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

SIRIUS

solid-state contactor

single-phase

3RF23

3RF2900-3PA88

3RF2900-0EA18

3RF2920-0GA13

terminal cover

converter

load monitoring

General technical data

product function

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

insulation voltage rated value

degree of pollution

type of voltage of the control supply voltage surge voltage resistance of main circuit rated value

shock resistance according to IEC 60068-2-27 vibration resistance according to IEC 60068-2-6 reference code according to IEC 81346-2

Substance Prohibitance (Date)

zero-point switching

11 W

600 V

6 kV

15g / 11 ms

Q

05/28/2009

Main circuit

number of poles for main current circuit number of NO contacts for main contacts number of NC contacts for main contacts

operating voltage at AC

- at 50 Hz rated value
- at 60 Hz rated value

operating frequency rated value

operating range relative to the operating voltage at AC

- at 50 Hz
- at 60 Hz

operational current

- at AC-51 rated value
- at AC-51 according to IEC 60947-4-3
- according to UL 508 rated value

11 W

0.5 W

AC/DC

2g

1 1

0

24 ... 230 V

24 ... 230 V

50 ... 60 Hz

20 ... 253 V

20 ... 253 V

10.5 A

7.5 A

9.6 A

anarational aurrent minimum	100 mA
operational current minimum	100 mA
rate of voltage rise at the thyristor for main contacts maximum permissible	500 V/μs
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	200 A
I2t value maximum	200 A ² ·s
Control circuit/ Control	2007.0
type of voltage of the control supply voltage	AC/DC
	AOIDO
control supply voltage 1 at AC • at 50 Hz	24 24 V
• at 60 Hz	24 24 V 24 24 V
	24 24 V
control supply voltage frequency • 1 rated value	E0 H-
	50 Hz
• 2 rated value	60 Hz
control supply voltage 1	00.14
at DC rated value	30 V
• at DC	15 24 V
control supply voltage at AC	5.V
at 50 Hz full-scale value for signal<0> recognition	5 V
at 60 Hz full-scale value for signal<0> recognition	5 V
control supply voltage	
 at AC initial value for signal <1> detection 	14 V
 at DC initial value for signal <1> detection 	15 V
 at DC full-scale value for signal<0> recognition 	5 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
control current at DC rated value	20 mA
ON-delay time	1 ms; additionally max. one half-wave
OFF-delay time	15 ms; additionally max. one half-wave
OFF-delay time Auxiliary circuit	15 ms; additionally max. one half-wave
	15 ms; additionally max. one half-wave 0
Auxiliary circuit	
Auxiliary circuit number of NC contacts for auxiliary contacts	0
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts	0 0
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions	0 0 0
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts	0 0
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions	0 0 0 screw fixing and snap-on mounting on standard mounting rail 35 mm
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts lnstallation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the	0 0 0 screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts lnstallation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment	0 0 0 screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height	0 0 0 screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts lnstallation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height width	0 0 0 screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm 22.5 mm
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height	0 0 0 screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm
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Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts lnstallation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height width depth Connections/ Terminals	0 0 0 screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm 22.5 mm
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height width depth Connections/ Terminals type of electrical connection	o o o screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm 22.5 mm 88 mm
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Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts linstallation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit	0 0 0 screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm 22.5 mm 88 mm
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections	0 0 0 screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm 22.5 mm 88 mm
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts	o o screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm 22.5 mm 88 mm screw-type terminals screw-type terminals
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Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts — solid — finely stranded with core end processing	screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm 22.5 mm 88 mm screw-type terminals screw-type terminals 2x (1.5 2.5 mm²), 2x (2.5 6 mm²) 2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts number of CO contacts for auxiliary contacts Installation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts — solid — finely stranded with core end processing • at AWG cables for main contacts connectable conductor cross-section for main	screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm 22.5 mm 88 mm screw-type terminals screw-type terminals 2x (1.5 2.5 mm²), 2x (2.5 6 mm²) 2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
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Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts linstallation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts — solid — finely stranded with core end processing • at AWG cables for main contacts connectable conductor cross-section for main contacts • solid or stranded • finely stranded with core end processing	screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm 22.5 mm 88 mm screw-type terminals screw-type terminals $2x (1.5 2.5 mm^2), 2x (2.5 6 mm^2)$ $2x (1 2.5 mm^2), 2x (2.5 6 mm^2), 1x 10 mm^2$ $2x (14 10)$ 1.5 6 mm²
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Auxiliary circuit number of NC contacts for auxiliary contacts number of NO contacts for auxiliary contacts number of CO contacts for auxiliary contacts linstallation/ mounting/ dimensions fastening method • side-by-side mounting design of the thread of the screw for securing the equipment height width depth Connections/ Terminals type of electrical connection • for main current circuit • for auxiliary and control circuit type of connectable conductor cross-sections • for main contacts — solid — finely stranded with core end processing • at AWG cables for main contacts connectable conductor cross-section for main contacts • solid or stranded • finely stranded with core end processing	screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715 Yes M4 95 mm 22.5 mm 88 mm screw-type terminals screw-type terminals 2x (1.5 2.5 mm²), 2x (2.5 6 mm²) 2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm² 2x (14 10) 1.5 6 mm² 1 10 mm²
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 finely stranded without core end processing 	1x (0.5 2.5 mm²), 2x (0.5 1.0 mm²)
 at AWG cables for auxiliary and control contacts 	1x (AWG 20 12)
AWG number as coded connectable conductor cross	10 14
section for main contacts	
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 main contacts with screw-type terminals	18 22 lbf·in
 for auxiliary and control contacts with screw-type 	4.5 5.3 lbf·in
terminals	
design of the thread of the connection screw	
 for main contacts 	M4
 of the auxiliary and control contacts 	M3
stripped length of the cable	
 for main contacts 	7 mm
 for auxiliary and control contacts 	7 mm
Safety related data	
protection class IP on the front according to IEC	IP20
60529	
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	-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	2 kV behavior criterion 2
61000-4-5	
 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	Class A for industrial environment
CISPR11 field-bound HF interference emission according to	Class B for the domestic, business and commercial environments
CISPR11	
Short-circuit protection, design of the fuse link	
manufacturer's article number	
 of gS fuse for semiconductor protection at NH design usable 	<u>3NE1813-0</u>
 of full range R fuse link for semiconductor protection at cylindrical design usable 	<u>5SE1316</u>
 of back-up R fuse link for semiconductor protection at NH design usable 	<u>3NE8015-1</u>
 of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable 	3NC1020
 of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable 	3NC1430
 of back-up R fuse link for semiconductor protection 	3NC2225
at cylindrical design 22 x 58 mm usable	
manufacturer's article number of the gG fuse	2NAC902
at NH design usable at sulindrical design 10 x 39 mm usable	3NA6803
at cylindrical design 10 x 38 mm usable	3NW6001-1; These fuses have a smaller rated current than the semiconductor relays
at cylindrical design 14 x 51 mm usable	<u>3NW6101-1</u> ; These fuses have a smaller rated current than the semiconductor relays
manufacturer's article number	
of NEOZED fuse usable	<u>5SE2306</u> ; These fuses have a smaller rated current than the semiconductor relays
Certificates/ approvals	



Confirmation









Declaration of Conformity

Test Certificates

other

Railway



Type Test Certificates/Test Report

Special Test Certificate

Confirmation



Vibration and Shock

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=3RF2310-1AA12

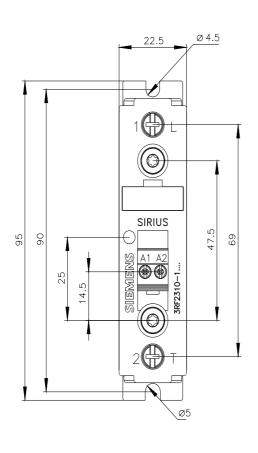
Cax online generator

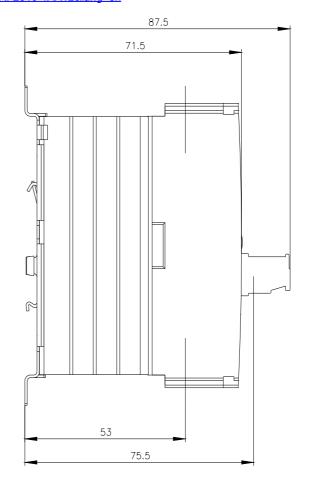
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2310-1AA12

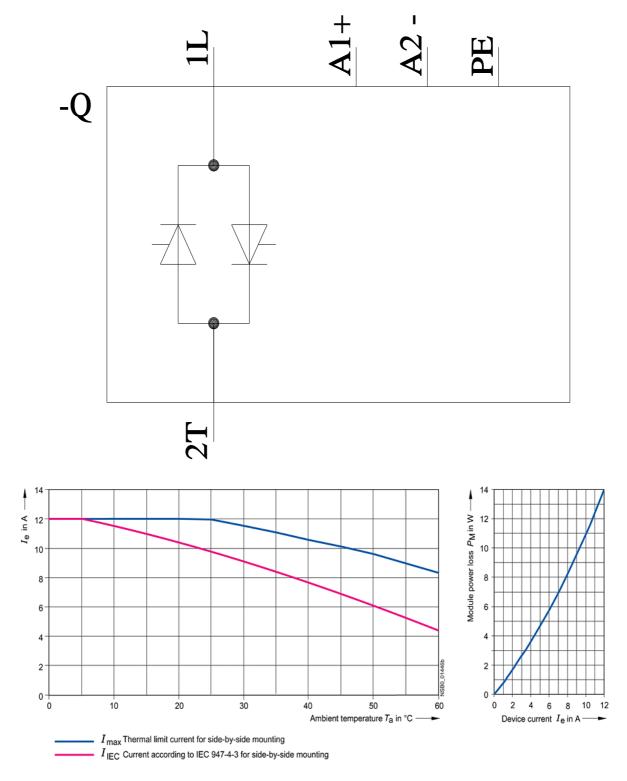
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RF2310-1AA12

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax de.aspx?mlfb=3RF2310-1AA12&lang=en







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