



Solid-state contactor 1-phase 3RF2 AC 51 / 10 A / 40 °C 48-460 V / 24 V
DC screw terminal

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 _5 of the accessories that can be ordered	3RF2900-3PA88 3RF2900-0EA18 3RF2920-0GA16 3RF2920-0FA08
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 _5 of the accessories that can be ordered	terminal cover converter load monitoring load monitoring, basis
General technical data	
product function	zero-point switching
power loss [W] for rated value of the current at AC in hot operating state	11 W
per pole	11 W
power loss [W] for rated value of the current 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 acc. to IEC 60068-2-27	15g / 11 ms
vibration resistance acc. to IEC 60068-2-6	2g
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	28.05.2009 00:00:00
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 ... 460 V 48 ... 460 V
operating frequency rated value	50 ... 60 Hz
operating range relative to the operating voltage at AC	

• at 50 Hz • at 60 Hz	40 ... 506 V 40 ... 506 V
operational current	
• at AC-51 rated value • at AC-51 acc. to IEC 60947-4-3 • acc. to UL 508 rated value	10.5 A 7.5 A 9.6 A
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	1 200 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	
type of voltage of the control supply voltage	DC
control supply voltage 1	
• at DC rated value • at DC rated value • at DC	24 V 30 V 15 ... 24 V
control supply voltage	
• at DC initial value for signal <1> detection • at DC full-scale value for signal<0> recognition	15 V 5 V
control current at minimum control supply voltage	
• at DC	13 mA
control current at DC rated value	15 mA
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 and snap-on mounting onto 35 mm standard mounting rail
• side-by-side mounting	Yes
height	95 mm
width	22.5 mm
depth	88 mm
Connections/ Terminals	
type of electrical connection	
• for main current circuit • for auxiliary and control circuit	screw-type terminals screw-type terminals
type of connectable conductor cross-sections	
• for main contacts — 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	
• solid or stranded • finely stranded with core end processing	1.5 ... 6 mm ² 1 ... 10 mm ²
type of connectable conductor cross-sections	
• for auxiliary and control contacts — 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 • 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] • 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 • for main contacts • of the auxiliary and control contacts	M4 M3
stripped length of the cable • for main contacts • for auxiliary and control contacts	7 mm 7 mm
Safety related data	
protection class IP on the front acc. to IEC 60529	IP20
touch protection on the front acc. 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 • during storage	-25 ... +60 °C -55 ... +80 °C
Electromagnetic compatibility	
conducted interference • due to burst acc. to IEC 61000-4-4 • due to conductor-earth surge acc. to IEC 61000-4-5 • due to conductor-conductor surge acc. to IEC 61000-4-5 • due to high-frequency radiation acc. 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 acc. to IEC 61000-4-3	80 MHz ... 1 GHz 10 V/m, behavior criterion 1
electrostatic discharge acc. to IEC 61000-4-2	4 kV contact discharging / 8 kV air discharging, behavior criterion 2
conducted HF interference emissions acc. to CISPR11	Class A for industrial environment
field-bound HF interference emission acc. 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	3NE1813-0 5SE1316 3NE8015-1 3NC1016 3NC1420 3NC2220
manufacturer's article number of the gG fuse • at NH design usable • at cylindrical design 10 x 38 mm usable • at cylindrical design 14 x 51 mm usable	3NA6801 3NW6001-1: These fuses have a smaller rated current than the semiconductor relays 3NW6101-1: These fuses have a smaller rated current than the semiconductor relays
manufacturer's article number • of DIAZED fuse usable • of NEOZED fuse usable	5SB141 5SE2306: These fuses have a smaller rated current than the semiconductor relays
Certificates/ approvals	

General Product Approval	EMC	Declaration of Conformity
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[Miscellaneous](#)

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

[Special Test Certificate](#)

[Confirmation](#)

[Vibration and Shock](#)

Further information

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=3RF2310-1AA04>

Cax online generator

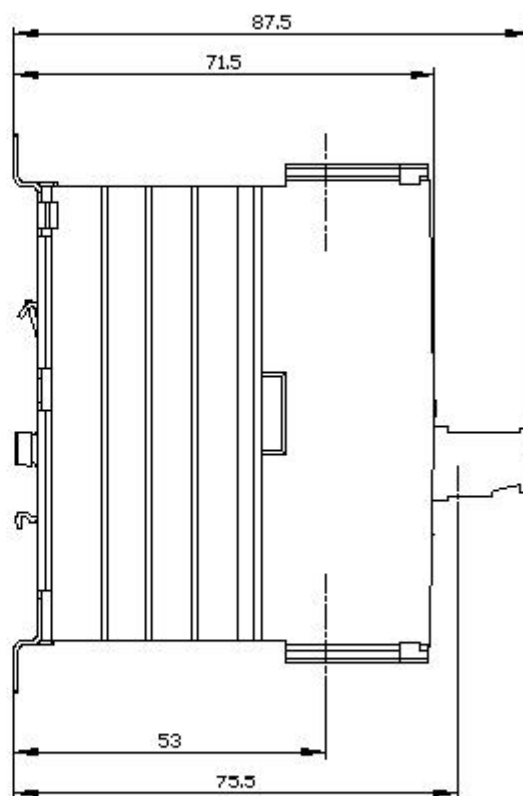
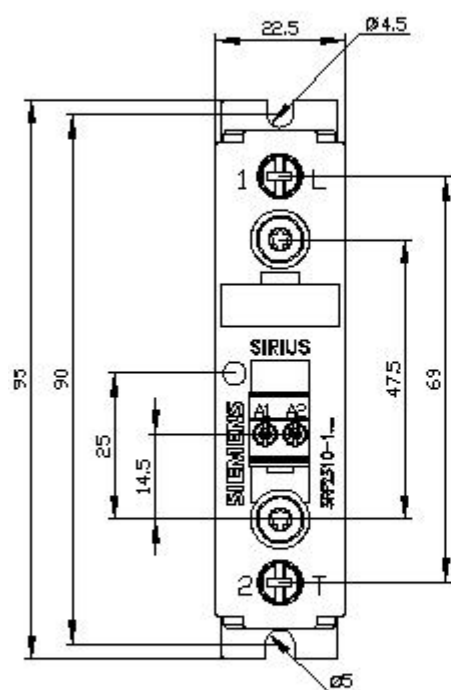
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2310-1AA04>

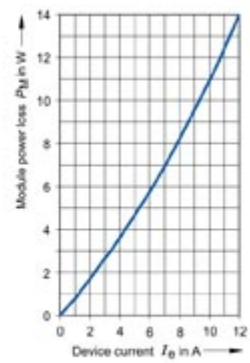
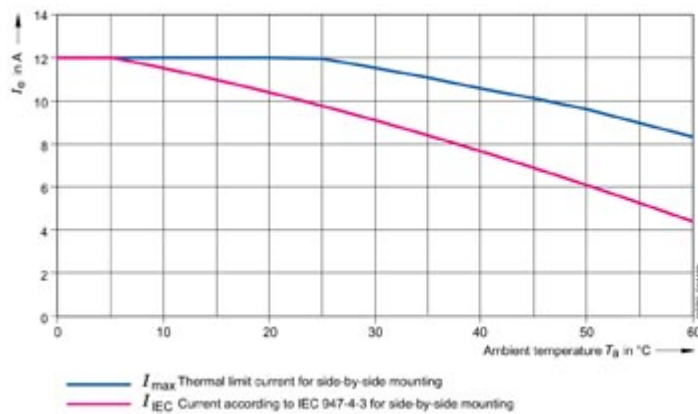
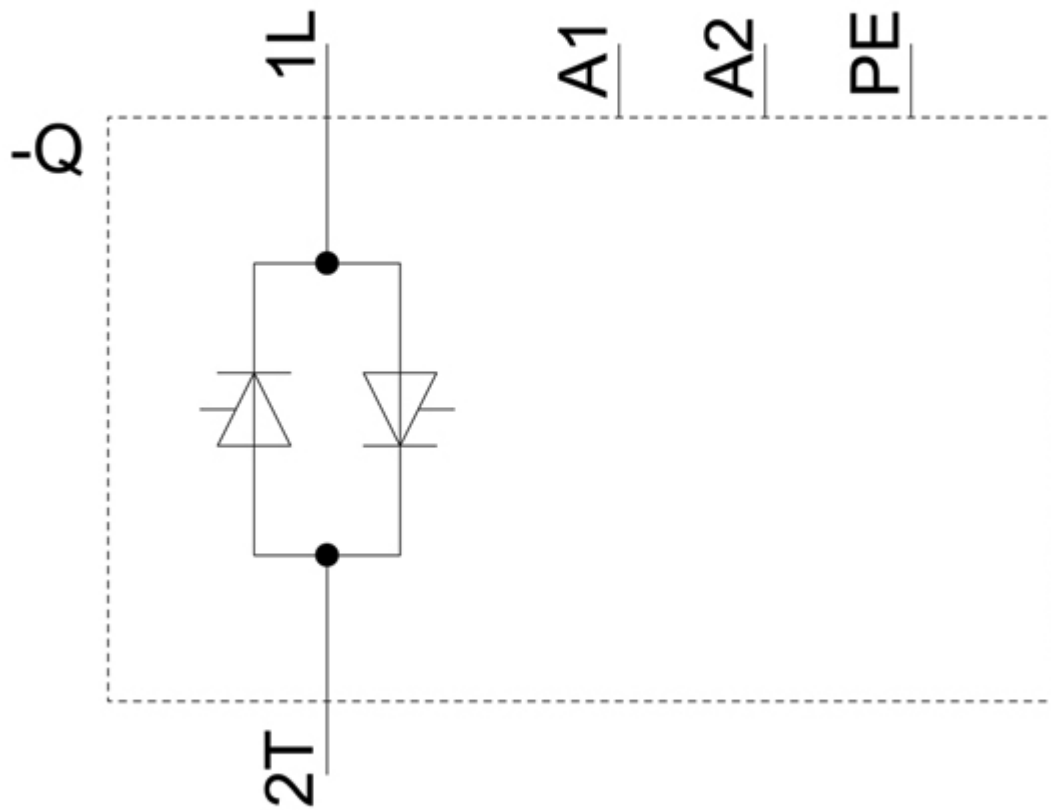
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2310-1AA04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2310-1AA04&lang=en





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5/6/2021 