

Solid-state contactor 1-phase 3RF2 AC 15 / 30 A / 40 °C 48-460 V / 24 V
DC Instantaneous switching Phased-out product, no successor available!

product brand name	SIRIUS
product designation	solid-state contactor
product type designation	3RF23
manufacturer's article number	
<ul style="list-style-type: none"> • _1 of the accessories that can be ordered • _2 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 3RF2990-0HA16 3RF2900-0EA18 3RF2990-0GA16
product designation	
<ul style="list-style-type: none"> • _1 of the accessories that can be ordered • _2 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 power regulator converter load monitoring

General technical data

product function	instantaneous switching
power loss [W] for rated value of the current	
<ul style="list-style-type: none"> • at AC in hot operating state • at AC in hot operating state per pole • without load current share typical 	117 W 117 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	
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	40 ... 506 V 40 ... 506 V
operational current	
<ul style="list-style-type: none"> • at AC-51 rated value • at AC-51 according to IEC 60947-4-3 • according to UL 508 rated value 	88 A 88 A 30 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	1 200 V
reverse current of the thyristor	10 mA
derating temperature	40 °C
surge current resistance rated value	1 150 A
I²t value maximum	6 600 A ² ·s

Control circuit/ Control

type of voltage of the control supply voltage	DC
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control supply voltage 1	
• at DC rated value	30 V
• at DC	15 ... 24 V
control supply voltage	
• at DC initial value for signal <1> detection	15 V
• at DC full-scale value for signal<0> recognition	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
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
• side-by-side mounting	Yes
design of the thread of the screw for securing the equipment	M4
height	200 mm
width	180 mm
depth	163 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
- due to high-frequency radiation according to IEC 61000-4-6

field-based interference according to IEC 61000-4-3
electrostatic discharge according to IEC 61000-4-2
conducted HF interference emissions according to CISPR11

field-bound HF interference emission according to CISPR11

1 kV behavior criterion 2

140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1

80 MHz ... 1 GHz 10 V/m, behavior criterion 1

4 kV contact discharging / 8 kV air discharging, behavior criterion 2
 Class A for industrial environment

Class B for the domestic, business and commercial environments

Short-circuit protection, design of the fuse link

manufacturer's article number

- of full range R fuse link for semiconductor protection at NH 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 22 x 58 mm usable

manufacturer's article number

- of NEOZED fuse usable

[3NE1021-2](#)

[3NE8021-1](#)

[3NC2280](#); These fuses have a smaller rated current than the semiconductor relays

[5SE2335](#); These fuses have a smaller rated current than the semiconductor relays

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=3RF2390-3BA04>

Cax online generator

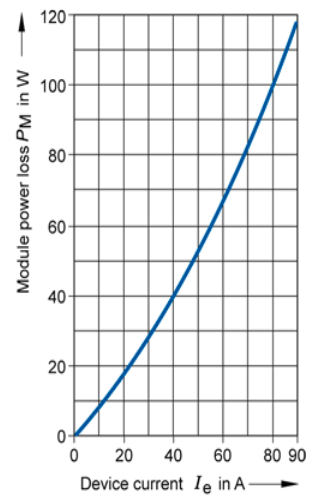
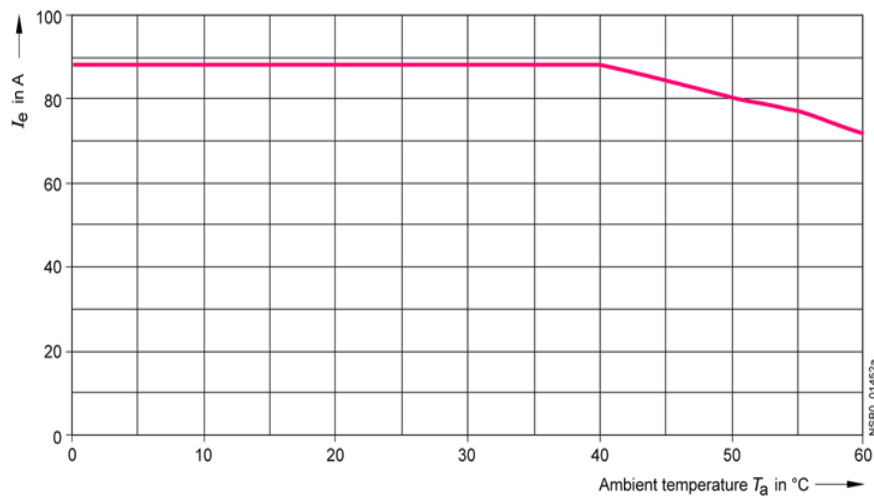
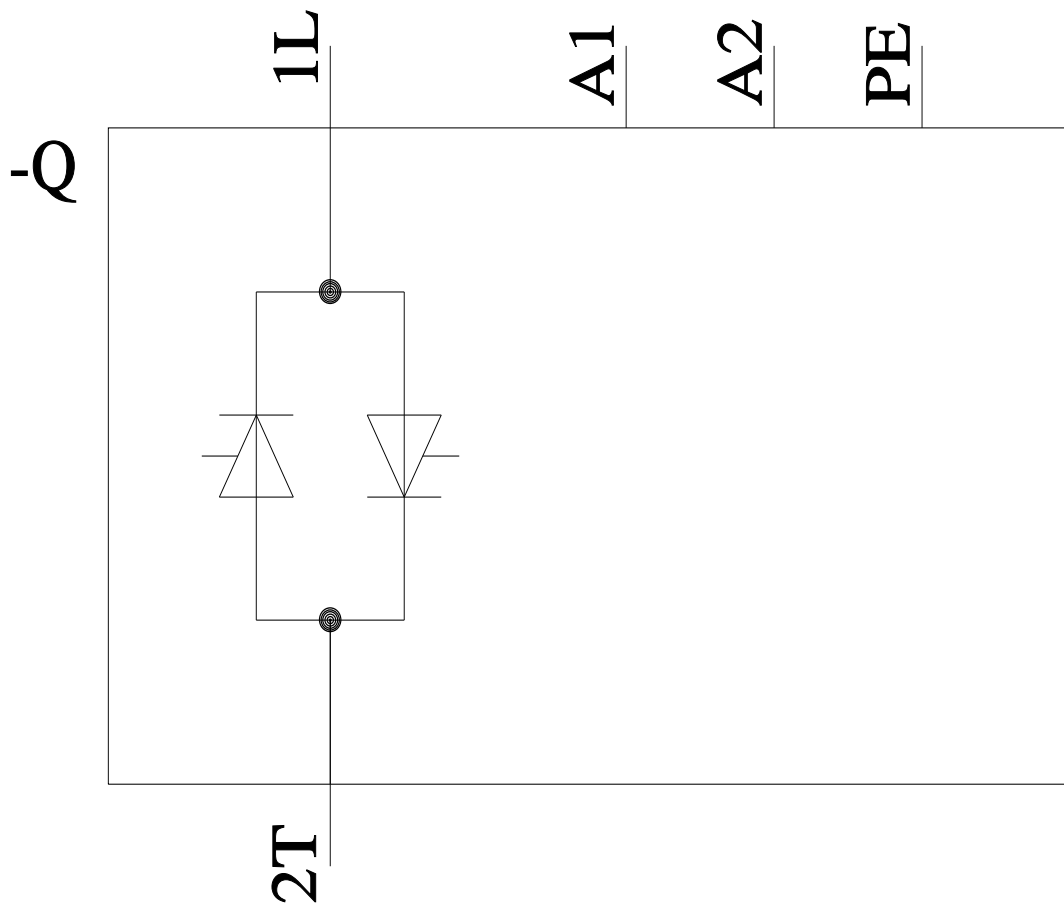
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2390-3BA04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2390-3BA04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2390-3BA04&lang=en



— I_{IEC} Current according to IEC 947-4-3 for individual and side-by-side mounting

last modified:

1/26/2022