

Solid-state contactor 1-phase 3RF2 AC 51 / 50 A / 40 °C 48-460 V /
4-30 V DC Ring cable connection



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 • _3 / of the accessories that can be ordered • _4 / of the accessories that can be ordered 	3RF2900-3PA88 3RF2900-0EA18 3RF2950-0GA16
Product designation	
<ul style="list-style-type: none"> • _1 / 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 converter load monitoring

General technical data

Product function	zero-point switching
Power loss [W] / total / typical	54 W
Power loss [W] / for rated value of the current / at AC / in hot operating state	54 W
Insulation voltage	
<ul style="list-style-type: none"> • rated value 	600 V
Degree of pollution	3

Protection class IP	IP00
Shock resistance / acc. to IEC 60068-2-27	15g / 11 ms
Vibration resistance / acc. to IEC 60068-2-6	2g
Reference code / acc. to DIN 40719 extended according to IEC 204-2 / acc. to IEC 750	K
Reference code / acc. to DIN EN 81346-2	Q
Reference code / acc. to DIN EN 61346-2	Q

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
Operating current / minimum	500 mA
Operating current	
• at AC-1 / at 400 V / rated value	50 A
• at AC-51 / rated value	50 A
Rate of voltage rise / at the thyristor / for main contacts / maximum permissible	1 000 V/ μ s
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
Control supply voltage / 1	
• at DC / rated value	30 V
• at DC	4 ... 30 V
Control supply voltage	
• at DC / initial value for signal <1> detection	4 V
• at DC / Full-scale value for signal <0> recognition	1 V
Control current / at DC / rated value	20 mA
Switch-on delay time	1 ms; additionally max. one half-wave
Off-delay time	1 ms; additionally max. one half-wave

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

Mounting type	screw and snap-on mounting onto 35 mm standard mounting rail
<ul style="list-style-type: none"> • Side-by-side mounting 	Yes
Height	100 mm
Width	67.5 mm
Depth	142 mm; 156.0 mm up to product revision E05
Installation altitude / at height above sea level / maximum	1 000 m

Connections/ Terminals

Type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit • for auxiliary and control current circuit 	Ring cable lug connection ring cable connection
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for main contacts / for JIS cable lug • for DIN cable lug / for main contacts 	JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5 DIN 46234 -5-2,5, -5-6, -5-10, -5-16, -5-25
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 conductors / 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)
Tightening torque / for main contacts / with screw-type terminals	2 ... 2.5 N·m
Tightening torque / for auxiliary and control contacts / with screw-type terminals	0.5 ... 0.6 N·m
Tightening torque [lbf·in]	
<ul style="list-style-type: none"> • for auxiliary and control contacts / with screw-type terminals 	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 	M5 M3
Wire stripping length / of the cable	
<ul style="list-style-type: none"> • for main contacts • for auxiliary and control contacts 	10 mm 10 mm

Ambient conditions

Ambient temperature	
<ul style="list-style-type: none"> • during operation 	-25 ... +60 °C

- during storage

-55 ... +80 °C

Electromagnetic compatibility

Conducted interference	
<ul style="list-style-type: none"> • due to burst / acc. to IEC 61000-4-4 	2 kV / 5 kHz behavior criterion 2
<ul style="list-style-type: none"> • due to conductor-earth surge / acc. to IEC 61000-4-5 	2 kV behavior criterion 2
<ul style="list-style-type: none"> • due to conductor-conductor surge / acc. to IEC 61000-4-5 	1 kV behavior criterion 2
<ul style="list-style-type: none"> • due to high-frequency radiation / acc. to IEC 61000-4-6 	140 dBuV in the frequency range 0.15 ... 80 MHz, 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

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

www.siemens.com/sirius/catalogs

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RF2350-3AA44>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2350-3AA44>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2350-3AA44>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2350-3AA44&lang=en

Short-circuit protection, design of the fuse link

https://www.automation.siemens.com/cd-static/material/info/3RF20_eng.pdf

Short-circuit protection, design of the fuse link

https://www.automation.siemens.com/cd-static/material/info/3RF21_eng.pdf

Short-circuit protection, design of the fuse link

https://www.automation.siemens.com/cd-static/material/info/3RF22_eng.pdf

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