

Solid-state contactor 1-phase 3RF2 AC 51 / 50 A / 40 °C 24-230 V /
24 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 3RF2950-0GA13
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] / 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 EN 81346-2	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	24 ... 230 V
• at 60 Hz / rated value	24 ... 230 V
Operating frequency / rated value	50 ... 60 Hz
Operating range relative to the operating voltage / at AC	
• at 50 Hz	20 ... 253 V
• at 60 Hz	20 ... 253 V
Operating current	
• at AC-51 / rated value	50 A
• acc. to UL 508 / rated value	45 A
Operating 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	800 V
Reverse current / of the thyristor	10 mA
Derating temperature	40 °C
Surge current resistance / rated value	1 150 A
I ² t 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	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
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
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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 connectable conductor cross-sections	
<ul style="list-style-type: none"> • for main contacts / for JIS cable lug 	JIS C 2805 R 2-5, 5,5-5, 8-5, 14-5
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • for auxiliary and control contacts 	
<ul style="list-style-type: none"> — solid 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
<ul style="list-style-type: none"> — finely stranded / with core end processing 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
<ul style="list-style-type: none"> — finely stranded / without core end processing 	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.0 mm ²)
<ul style="list-style-type: none"> • at AWG conductors / for auxiliary and control contacts 	1x (AWG 20 ... 12)
Tightening torque	
<ul style="list-style-type: none"> • for main contacts / with screw-type terminals 	2 ... 2.5 N·m
<ul style="list-style-type: none"> • 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 	M5
<ul style="list-style-type: none"> • of the auxiliary and control contacts 	M3
Wire stripping length / of the cable	
<ul style="list-style-type: none"> • for main contacts 	10 mm
<ul style="list-style-type: none"> • for auxiliary and control contacts 	10 mm

Ambient conditions

Ambient temperature	
<ul style="list-style-type: none"> • during operation 	-25 ... +60 °C
<ul style="list-style-type: none"> • 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 • due to conductor-conductor surge / acc. to IEC 61000-4-5 • due to high-frequency radiation / acc. to IEC 61000-4-6 	<p>2 kV behavior criterion 2</p> <p>1 kV behavior criterion 2</p> <p>140 dBuV in the frequency range 0.15 ... 80 MHz, behavior criterion 1</p>
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

<p>Manufacturer's article number</p> <ul style="list-style-type: none"> • of gS fuse for semiconductor protection / at NH design • of full range R fuse link for semiconductor protection / at cylindrical design • of back-up R fuse link for semiconductor protection / at NH design • of back-up R fuse link for semiconductor protection / at cylindrical design 14 x 51 mm • of back-up R fuse link for semiconductor protection / at cylindrical design 22 x 58 mm 	<p>3NE1817-0</p> <p>5SE1363</p> <p>3NE1817-0</p> <p>3NC1450</p> <p>3NC2200</p>
<p>Manufacturer's article number / of the gG fuse</p> <ul style="list-style-type: none"> • at cylindrical design 22 x 58 mm 	<p>3NW6217-1; These fuses have a smaller rated current than the semiconductor relays</p>
<p>Manufacturer's article number</p> <ul style="list-style-type: none"> • of DIAZED fuse • of NEOZED fuse 	<p>5SB321</p> <p>5SE2335; These fuses have a smaller rated current than the semiconductor relays</p>

Certificates/ approvals

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

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

[Confirmation](#)



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=3RF2350-3AA02>

Cax online generator
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2350-3AA02>

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
<https://support.industry.siemens.com/cs/ww/en/ps/3RF2350-3AA02>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2350-3AA02&lang=en





