



Solid-state contactor 1-phase 3RF2 AC 51 / 20 A / 40 °C 48-600 V / 24 V DC  
Spring-type terminal

product brand name	SIRIUS
product designation	solid-state contactor
design of the product	1-pole
product type designation	3RF23
manufacturer's article number	
• _3 of the accessories that can be ordered	<a href="#">3RF2900-0EA18</a>
product designation	
• _3 of the accessories that can be ordered	converter
<b>General technical data</b>	
product function	zero-point switching
power loss [W] for rated value of the current	
• at AC in hot operating state	20 W
• at AC in hot operating state per pole	20 W
• without load current share typical	0.4 W
insulation voltage rated value	600 V
degree of pollution	3
surge voltage resistance of main circuit rated value	6 kV
protection class IP	IP20
protection class IP on the front according to IEC 60529	IP20
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
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Dibutylbis(pentane-2,4-dionato-O,O')tin - 22673-19-4
Net Weight	0.19 kg
<b>Main circuit</b>	
number of poles for main current circuit	1
number of NO contacts for main contacts	1
number of NC contacts for main contacts	0
type of voltage of the operating voltage	AC
operating voltage	
• at AC	
— at 50 Hz rated value	48 ... 600 V
— at 60 Hz rated value	48 ... 600 V
operating frequency rated value	50 ... 60 Hz
operating range relative to the operating voltage at AC	
• at 50 Hz	40 ... 660 V
• at 60 Hz	40 ... 660 V

<b>operational current</b>	
• at AC-1 at 400 V rated value	20 A
• at AC-51 rated value	20 A
• at AC-51 according to IEC 60947-4-3	13.2 A
• according to UL 508 rated value	17.6 A
<b>rate of voltage rise at the thyristor for main contacts maximum permissible</b>	1 000 V/μs
<b>blocking voltage at the thyristor for main contacts maximum permissible</b>	1 600 V
<b>reverse current of the thyristor</b>	10 mA
<b>derating temperature</b>	40 °C
<b>surge current resistance rated value</b>	600 A
<b>I<sub>2t</sub> value maximum</b>	1 800 A <sup>2</sup> ·s
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	DC
<b>control supply voltage 1 at DC rated value maximum permissible</b>	30 V
<b>control supply voltage 1 at DC</b>	15 ... 24 V
<b>control supply voltage</b>	
• at DC initial value for signal <1> detection	15 V
• at DC full-scale value for signal <0> recognition	5 V
<b>control current at minimum control supply voltage</b>	
• at DC	13 mA
<b>control current at DC rated value</b>	15 mA
<b>ON-delay time</b>	1 ms; additionally max. one half-wave
<b>OFF-delay time</b>	1 ms; additionally max. one half-wave
<b>Auxiliary circuit</b>	
<b>number of CO contacts for auxiliary contacts</b>	0
<b>Installation/ mounting/ dimensions</b>	
<b>fastening method side-by-side mounting</b>	Yes
<b>fastening method</b>	screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715
<b>design of the thread of the screw for securing the equipment</b>	M4
<b>height</b>	95 mm
<b>width</b>	22.5 mm
<b>depth</b>	120 mm
<b>Connections/ Terminals</b>	
<b>product component removable terminal for auxiliary and control circuit</b>	Yes
<b>type of electrical connection</b>	
• for main current circuit	spring-loaded terminals
• for auxiliary and control circuit	spring-loaded terminals
<b>type of connectable conductor cross-sections</b>	
• for main contacts	
— solid	2x (0.5 ... 2.5 mm <sup>2</sup> )
— finely stranded with core end processing	2x (0.5 ... 1.5 mm <sup>2</sup> )
— finely stranded without core end processing	2x (0.5 ... 2.5 mm <sup>2</sup> )
• for AWG cables for main contacts	2x (18 ... 14)
<b>connectable conductor cross-section for main contacts</b>	
• solid or stranded	0.5 ... 2.5 mm <sup>2</sup>
• finely stranded with core end processing	0.5 ... 0.5 mm <sup>2</sup>
• finely stranded without core end processing	0.5 ... 2.5 mm <sup>2</sup>
<b>type of connectable conductor cross-sections</b>	
• for auxiliary and control contacts	
— solid	0.5 ... 1.5 mm <sup>2</sup>
— finely stranded with core end processing	0.5 ... 2.5 mm <sup>2</sup>
— finely stranded without core end processing	0.5 ... 2.5 mm <sup>2</sup>
• for AWG cables for auxiliary and control contacts	1x (20 ... 12)
<b>AWG number as coded connectable conductor cross section for main contacts</b>	14 ... 18

stripped length of the cable	10 mm 10 mm				
Electrical Safety					
protection class IP on the front according to IEC 60529	IP20				
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 61000-4-5	2 kV behavior criterion 2				
• 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 CISPR11	Class A for industrial environment				
field-bound HF interference emission according 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	<a href="#">3NE1814-0</a>				
• of full range R fuse link for semiconductor protection at cylindrical design usable	<a href="#">5SE1325</a>				
• of back-up R fuse link for semiconductor protection at NH design usable	<a href="#">3NE8015-1</a>				
• of back-up R fuse link for semiconductor protection at cylindrical design 10 x 38 mm usable	<a href="#">3NC1032</a>				
• of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable	<a href="#">3NC1450</a>				
• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable	<a href="#">3NC2250</a>				
manufacturer's article number of the gG fuse					
• at NH design usable	<a href="#">3NA6807-6</a>				
Approvals Certificates					
General Product Approval	EMV	Test Certificates			
					<a href="#">Type Test Certificates/Test Report</a>
Test Certificates	other	Railway	Environment		
<a href="#">Special Test Certificate</a>		<a href="#">Confirmation</a>		<a href="#">Special Test Certificate</a>	<a href="#">Environmental Confirmations</a>

#### Further information

Information on the packaging  
<https://support.industry.siemens.com/cs/ww/en/view/109813875>

Information for data generation and storage  
<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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=3RF2320-2AA06>

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RF2320-2AA06>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RF2320-2AA06>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RF2320-2AA06&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RF2320-2AA06&lang=en)



