








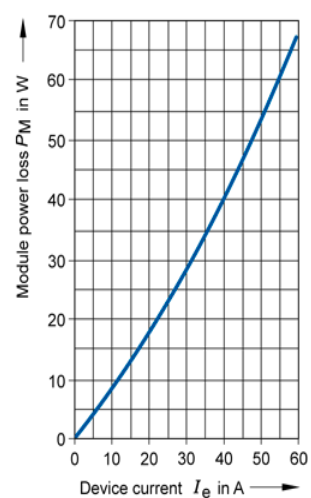
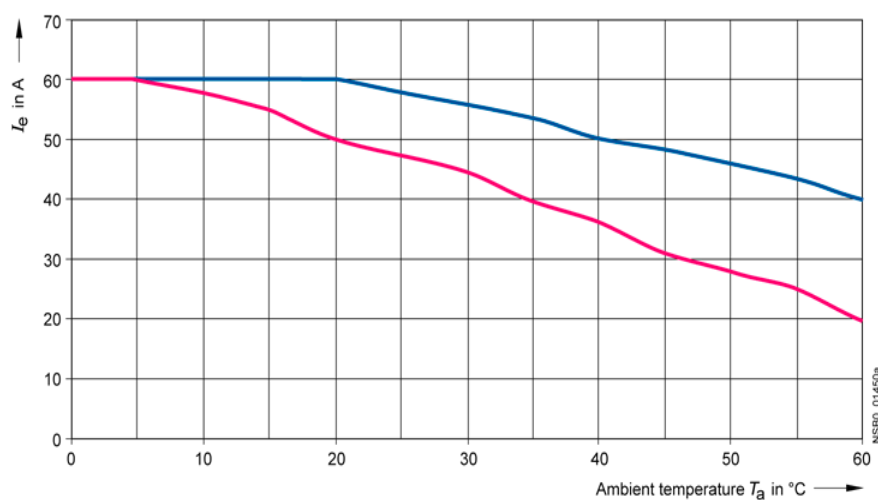
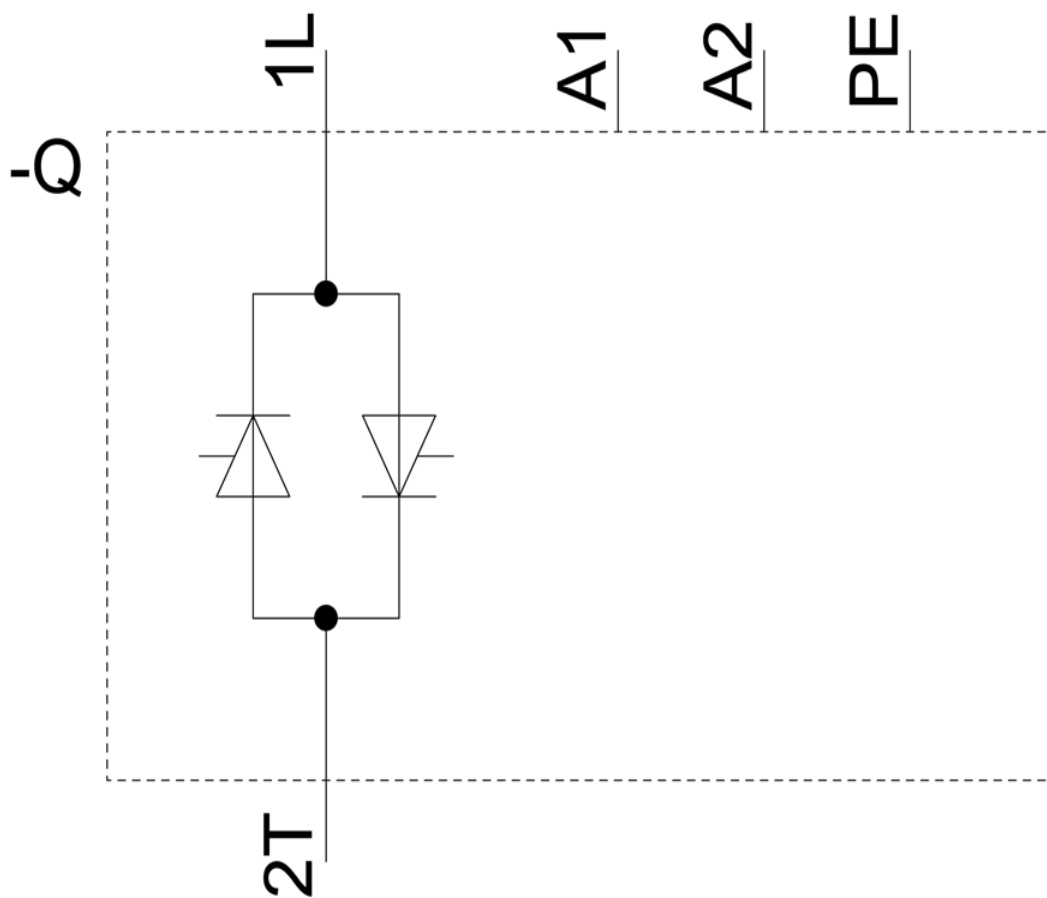
Solid-state contactor 1-phase 3RF2 AC 51 / 50 A / 40 °C 48-460 V / 110-230 V AC  
Ring cable connection

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	<a href="#">3RF2900-3PA88</a>
• _4 of the accessories that can be ordered	<a href="#">3RF2950-0GA36</a>
product designation	
• _1 of the accessories that can be ordered	terminal cover
• _4 of the accessories that can be ordered	load monitoring
<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	54 W
• at AC in hot operating state per pole	54 W
• without load current share typical	3.5 W
insulation voltage rated value	600 V
degree of pollution	3
type of voltage	
• of the operating voltage	AC
• of the control supply voltage	AC
surge voltage resistance of main circuit rated value	6 kV
protection class IP	IP00
protection class IP on the front according to IEC 60529	IP00
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)	07/01/2006
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
Weight	0.48 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 ... 460 V
— at 60 Hz rated value	48 ... 460 V

<b>operating frequency rated value</b>	50 ... 60 Hz
<b>operating range relative to the operating voltage at AC</b>	
• at 50 Hz	40 ... 506 V
• at 60 Hz	40 ... 506 V
<b>operational current</b>	
• at AC-51 rated value	50 A
• at AC-51 according to IEC 60947-4-3	36 A
• according to UL 508 rated value	45 A
<b>operational current minimum</b>	500 mA
<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>	1 200 V
<b>reverse current of the thyristor</b>	10 mA
<b>derating temperature</b>	40 °C
<b>surge current resistance rated value</b>	1 150 A
<b>I<sup>2</sup>t value maximum</b>	6 600 A <sup>2</sup> ·s
<b>Control circuit/ Control</b>	
<b>type of voltage of the control supply voltage</b>	AC
<b>control supply voltage 1 at AC</b>	
• at 50 Hz	110 ... 230 V
• at 60 Hz	110 ... 230 V
<b>control supply voltage frequency</b>	
• 1 rated value	50 Hz
• 2 rated value	60 Hz
<b>control supply voltage at AC</b>	
• at 50 Hz full-scale value for signal<0> recognition	40 V
• at 60 Hz full-scale value for signal<0> recognition	40 V
<b>control supply voltage</b>	
• at AC initial value for signal <1> detection	90 V
<b>symmetrical line frequency tolerance</b>	5 Hz
<b>control current at minimum control supply voltage</b>	
• at AC	2 mA
control current at AC rated value	15 mA
<b>ON-delay time</b>	40 ms; additionally max. one half-wave
<b>OFF-delay time</b>	40 ms; additionally max. one half-wave
<b>Auxiliary circuit</b>	
<b>type of switching contact</b>	normally open contact (NO)
<b>number of NC contacts for auxiliary contacts</b>	0
<b>number of NO contacts for auxiliary contacts</b>	0
number of CO contacts for auxiliary contacts	0
<b>Installation/ mounting/ dimensions</b>	
fastening method side-by-side mounting	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>	100 mm
<b>width</b>	67 mm
<b>depth</b>	141 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	Ring cable lug connection
• for auxiliary and control circuit	ring terminal lug connection
<b>type of connectable conductor cross-sections</b>	
• 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
<b>type of connectable conductor cross-sections</b>	
• for auxiliary and control contacts	
— solid	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )

<ul style="list-style-type: none"><li>— finely stranded with core end processing</li><li>— finely stranded without core end processing</li><li>• for AWG cables for auxiliary and control contacts</li></ul>	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²) 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.0 mm²) 1x (AWG 20 ... 12)				
<b>tightening torque</b> <ul style="list-style-type: none"><li>• for main contacts with screw-type terminals</li><li>• for auxiliary and control contacts with screw-type terminals</li></ul>	2 ... 2.5 N·m 0.5 ... 0.6 N·m				
<b>tightening torque [lbf·in]</b> <ul style="list-style-type: none"><li>• for auxiliary and control contacts with screw-type terminals</li></ul>	4.5 ... 5.3 lbf·in				
<b>design of the thread of the connection screw</b> <ul style="list-style-type: none"><li>• for main contacts</li><li>• of the auxiliary and control contacts</li></ul>	M5 M3				
<b>stripped length of the cable</b> <ul style="list-style-type: none"><li>• for main contacts</li><li>• for auxiliary and control contacts</li></ul>	10 mm 10 mm				
<b>Electrical Safety</b>					
<b>protection class IP on the front according to IEC 60529</b>	IP00; IP20 with cover				
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front with cover				
<b>Ambient conditions</b>					
installation altitude at height above sea level maximum	1 000 m				
<b>ambient temperature</b> <ul style="list-style-type: none"><li>• during operation</li><li>• during storage</li></ul>	-25 ... +60 °C -55 ... +80 °C				
<b>Electromagnetic compatibility</b>					
<b>conducted interference</b> <ul style="list-style-type: none"><li>• due to burst according to IEC 61000-4-4</li><li>• due to conductor-earth surge according to IEC 61000-4-5</li><li>• due to conductor-conductor surge according to IEC 61000-4-5</li><li>• due to high-frequency radiation according to IEC 61000-4-6</li></ul>	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				
<b>field-based interference according to IEC 61000-4-3</b>	80 MHz ... 1 GHz 10 V/m, behavior criterion 1				
<b>electrostatic discharge according to IEC 61000-4-2</b>	4 kV contact discharging / 8 kV air discharging, behavior criterion 2				
<b>conducted HF interference emissions according to CISPR11</b>	Class A for industrial environment				
<b>field-bound HF interference emission according to CISPR11</b>	Class B for the domestic, business and commercial environments				
<b>Short-circuit protection, design of the fuse link</b>					
manufacturer's article number <ul style="list-style-type: none"><li>• of gS fuse for semiconductor protection at NH design usable</li><li>• of full range R fuse link for semiconductor protection at cylindrical design usable</li><li>• of back-up R fuse link for semiconductor protection at NH design usable</li><li>• of back-up R fuse link for semiconductor protection at cylindrical design 14 x 51 mm usable</li><li>• of back-up R fuse link for semiconductor protection at cylindrical design 22 x 58 mm usable</li></ul>	<a href="#">3NE1817-0</a> <a href="#">5SE1363</a> <a href="#">3NE1817-0</a> <a href="#">3NC1450</a> <a href="#">3NC2280</a>				
manufacturer's article number <ul style="list-style-type: none"><li>• of NEOZED fuse usable</li></ul>	<a href="#">5SE2335: These fuses have a smaller rated current than the semiconductor relays</a>				
<b>Approvals Certificates</b>					
<b>General Product Approval</b>	<b>EMV</b>	<b>Test Certificates</b>			
 EG-Konf.		 UL		 RCM	<a href="#">Type Test Certificates/Test Report</a>
<b>other</b>	<b>Environment</b>				





—  $I_{max}$  Thermal limit current for individual and side-by-side mounting  
 —  $I_{IEC}$  Current according to IEC 947-4-3 for individual and side-by-side mounting

last modified:

4/2/2025

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