



Solid-state contactor 1-phase 3RF2 AC 15 / 6 A / 40 °C 24-230 V / 110-230 V AC Instantaneous switching

**product brand name**  
**product designation**  
**design of the product**  
**product type designation**  
**manufacturer's article number**

- \_1 of the accessories that can be ordered
- \_2 of the accessories that can be ordered
- \_4 of the accessories that can be ordered

**product designation**

- \_1 of the accessories that can be ordered
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SIRIUS  
solid-state contactor  
single-phase  
3RF23

[3RF2900-3PA88](#)  
[3RF2920-0HA33](#)  
[3RF2920-0GA33](#)

terminal cover  
power regulator  
load monitoring

### General technical data

**product function** instantaneous switching  
**power loss [W] for rated value of the current without load current share typical** 3.5 W  
**insulation voltage rated value** 600 V  
**degree of pollution** 3  
**type of voltage of the control supply voltage** AC  
**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 Prohibition (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**  

- 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

**operational current**  

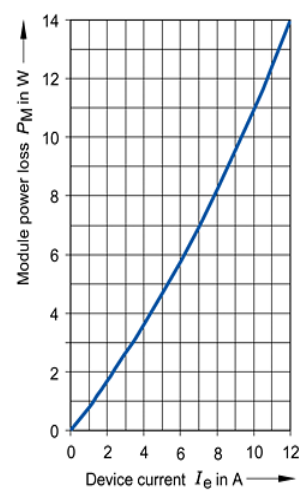
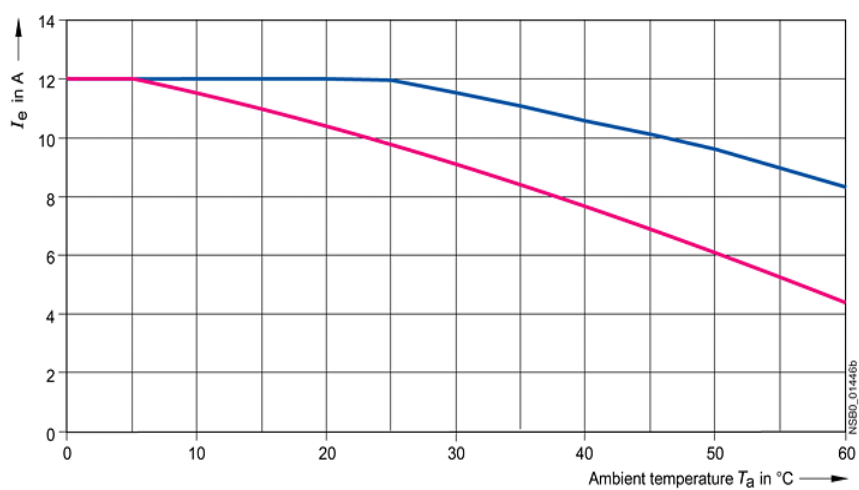
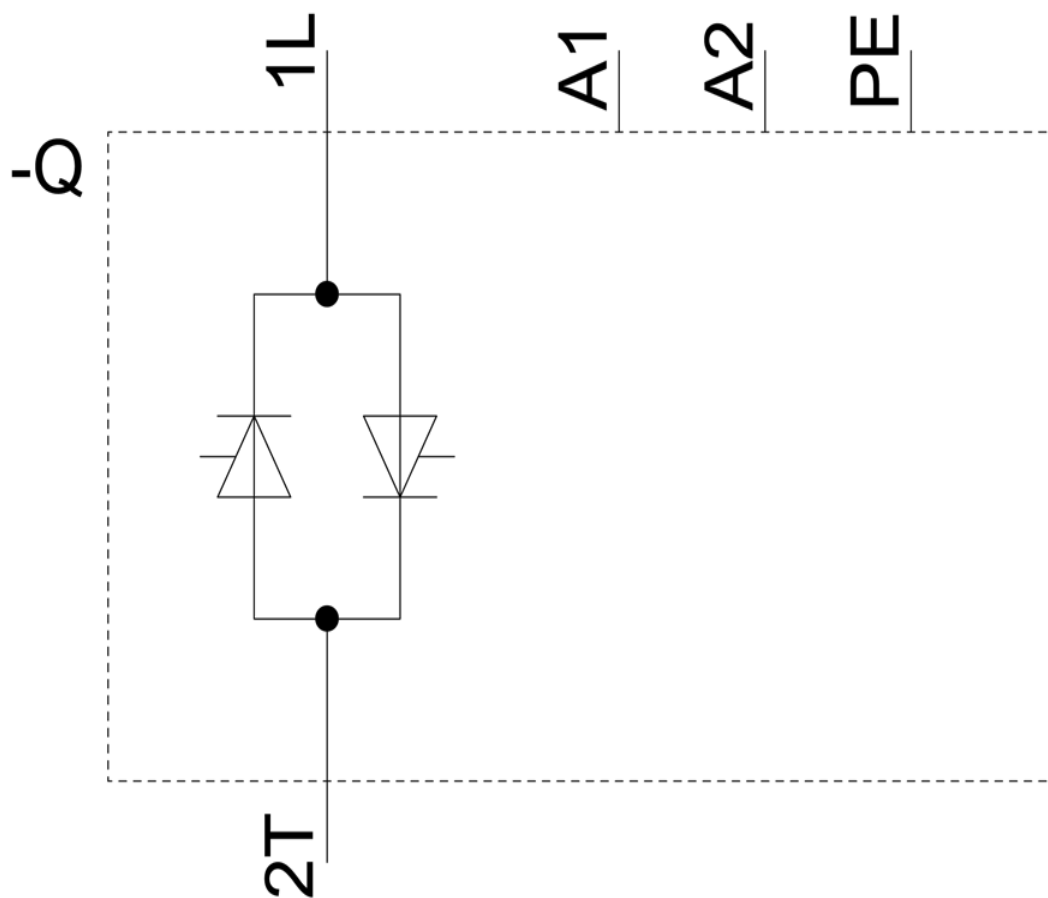
- at AC-51 rated value 10.5 A
- at AC-51 according to IEC 60947-4-3 7.5 A
- according to UL 508 rated value 6 A

**operational current minimum** 100 mA  
**rate of voltage rise at the thyristor for main contacts maximum permissible** 500 V/μs

<b>blocking voltage at the thyristor for main contacts</b>	800 V
<b>maximum permissible reverse current of the thyristor</b>	10 mA
<b>derating temperature</b>	40 °C
<b>surge current resistance rated value</b>	200 A
<b>I<sup>2</sup>t value maximum</b>	200 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
<b>OFF-delay time</b>	40 ms; additionally max. one half-wave
<b>Auxiliary circuit</b>	
<b>number of NC contacts for auxiliary contacts</b>	0
<b>number of NO contacts for auxiliary contacts</b>	0
<b>number of CO contacts for auxiliary contacts</b>	0
<b>Installation/ mounting/ dimensions</b>	
<b>fastening method</b>	screw fixing and snap-on mounting on standard mounting rail 35 mm according to IEC 60715
• side-by-side mounting	Yes
<b>height</b>	95 mm
<b>width</b>	22.5 mm
<b>depth</b>	88 mm
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
• for main current circuit	screw-type terminals
• for auxiliary and control circuit	screw-type terminals
<b>type of connectable conductor cross-sections</b>	
• for main contacts	
— solid	2x (1.5 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> )
— finely stranded with core end processing	2x (1 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6 mm <sup>2</sup> ), 1x 10 mm <sup>2</sup>
• at AWG cables for main contacts	2x (14 ... 10)
<b>connectable conductor cross-section for main contacts</b>	
• solid or stranded	1.5 ... 6 mm <sup>2</sup>
• finely stranded with core end processing	1 ... 10 mm <sup>2</sup>
<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> )
— finely stranded with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
— finely stranded without core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.0 mm <sup>2</sup> )
• at AWG cables for auxiliary and control contacts	1x (AWG 20 ... 12)
AWG number as coded connectable conductor cross section for main contacts	10 ... 14
<b>tightening torque</b>	
• 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
<b>tightening torque [lbf·in]</b>	
• for main contacts with screw-type terminals	18 ... 22 lbf·in
• for auxiliary and control contacts with screw-type	4.5 ... 5.3 lbf·in

terminals					
<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>	M4 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>	7 mm 7 mm				
<b>Safety related data</b>					
<b>protection class IP on the front according to IEC 60529</b>	IP20				
<b>touch protection on the front according to IEC 60529</b>	finger-safe, for vertical contact from the front				
<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 10 x 38 mm 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="#">3NE1813-0</a> <a href="#">5SE1316</a> <a href="#">3NE8015-1</a> <a href="#">3NC1020</a> <a href="#">3NC1430</a> <a href="#">3NC2225</a>				
manufacturer's article number of the gG fuse <ul style="list-style-type: none"><li>• at NH design usable</li><li>• at cylindrical design 10 x 38 mm usable</li></ul>	<a href="#">3NA6803</a> <a href="#">3NW6001-1: These fuses have a smaller rated current than the semiconductor relays</a>				
<ul style="list-style-type: none"><li>• at cylindrical design 14 x 51 mm usable</li></ul>	<a href="#">3NW6101-1: These fuses have a smaller rated current than the semiconductor relays</a>				
manufacturer's article number <ul style="list-style-type: none"><li>• of NEOZED fuse usable</li></ul>	<a href="#">5SE2306: These fuses have a smaller rated current than the semiconductor relays</a>				
<b>Certificates/ approvals</b>					
<b>General Product Approval</b>	<b>EMC</b>	<b>Declaration of Conformity</b>			
	<a href="#">Confirmation</a>				
<b>Declaration of</b>	<b>Test Certificates</b>	<b>other</b>	<b>Railway</b>		





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

last modified:

1/26/2022

