

SIRIUS soft starter 200-480 V 93 A, 110-250 V AC Screw terminals  
Thermistor input



<b>Product brand name</b>	SIRIUS
<b>Product category</b>	Hybrid switching devices
<b>Product designation</b>	Soft starter
<b>Manufacturer's article number</b>	<ul style="list-style-type: none"> <li>• of HMI module usable <a href="#">3RW5980-0HS00</a></li> <li>• of HMI-Modul high-feature usable <a href="#">3RW5980-0HF00</a></li> <li>• of communication module PROFINET standard usable <a href="#">3RW5980-0CS00</a></li> <li>• of communication module PROFIBUS usable <a href="#">3RW5980-0CP00</a></li> <li>• of communication module Modbus TCP usable <a href="#">3RW5980-0CT00</a></li> <li>• of circuit breaker usable at 400 V <a href="#">3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 15 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 500 V <a href="#">3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 10 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 400 V at inside-delta circuit <a href="#">3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 15 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 500 V at inside-delta circuit <a href="#">3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 10 kA, CLASS 10</a></li> <li>• of the gG fuse usable up to 690 V <a href="#">3NA3136-6; Type of coordination 1, Iq = 65 kA</a></li> <li>• of the gG fuse usable at inside-delta circuit up to 500 V <a href="#">3NA3136-6; Type of coordination 1, Iq = 65 kA</a></li> </ul>

- of full range R fuse link for semiconductor protection usable up to 690 V
- of back-up R fuse link for semiconductor protection usable up to 690 V

[3NE1224-0; Type of coordination 2, Iq = 65 kA](#)

[3NE4124; Type of coordination 2, Iq = 65 kA](#)

#### General technical data

<b>Starting voltage [%]</b>	30 ... 100 %
<b>Start-up ramp time of soft starter</b>	0 ... 20 s
<b>Current limiting value [%] adjustable</b>	130 ... 700 %
<b>Product component</b>	
• is supported HMI-Standard	Yes
• is supported HMI-High Feature	Yes
<b>Product feature integrated bypass contact system</b>	Yes
<b>Number of controlled phases</b>	3
<b>Trip class</b>	CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2
<b>Insulation voltage</b>	
• rated value	600 V
<b>Impulse voltage rated value</b>	6 kV
<b>Blocking voltage of the thyristor maximum</b>	1 400 V
<b>Service factor</b>	1
<b>Surge voltage resistance rated value</b>	6 kV
<b>maximum permissible voltage for safe isolation</b>	
• between main and auxiliary circuit	600 V
<b>Protection class IP</b>	IP00
<b>Usage category acc. to IEC 60947-4-2</b>	AC 53a
<b>Shock resistance</b>	15 g / 11 ms, from 12 g / 11 ms with potential contact lifting
<b>Reference code acc. to DIN EN 81346-2</b>	Q
<b>Product function</b>	
• ramp-up (soft starting)	Yes
• ramp-down (soft stop)	Yes
• Soft Torque	Yes
• Adjustable current limitation	Yes
• pump ramp down	Yes
• Intrinsic device protection	Yes
• motor overload protection	Yes; Full motor protection (thermistor motor protection and electronic motor overload protection)
• Evaluation of thermistor motor protection	Yes; Type A PTC or Klixon / Thermoclick
• inside-delta circuit	Yes
• Auto-reset	Yes
• Manual RESET	Yes
• remote reset	Yes; By turning off the control supply voltage
• communication function	Yes
• via software configurable	Yes

• PROFINET	Yes; in connection with the PROFINET Standard communication module
• firmware update	Yes
• removable terminal for control circuit	Yes
• analog output	No

## Power Electronics

<b>Operating current</b>	
• at 40 °C rated value	93 A
• at 50 °C rated value	82.5 A
• at 60 °C rated value	75.5 A
<b>Operating current at inside-delta circuit</b>	
• at 40 °C rated value	161 A
• at 50 °C rated value	143 A
• at 60 °C rated value	131 A
<b>Operating voltage</b>	
• rated value	200 ... 480 V
• at inside-delta circuit rated value	200 ... 480 V
<b>Relative negative tolerance of the operating voltage</b>	-15 %
<b>Relative positive tolerance of the operating voltage</b>	10 %
<b>Relative negative tolerance of the operating voltage at inside-delta circuit</b>	-15 %
<b>Relative positive tolerance of the operating voltage at inside-delta circuit</b>	10 %
<b>Operating power for three-phase motors</b>	
• at 230 V at 40 °C rated value	22 kW
• at 230 V at inside-delta circuit at 40 °C rated value	45 kW
• at 400 V at 40 °C rated value	45 kW
• at 400 V at inside-delta circuit at 40 °C rated value	90 kW
<b>Operating frequency 1 rated value</b>	50 Hz
<b>Operating frequency 2 rated value</b>	60 Hz
<b>Relative negative tolerance of the operating frequency</b>	-10 %
<b>Relative positive tolerance of the operating frequency</b>	10 %
<b>Adjustable motor current</b>	
• minimum	40.5 A
• at inside-delta circuit minimum	70.1 A
<b>Minimum load [%]</b>	15 %; Relative to smallest settable le
<b>Power loss [W] for rated value of the current at AC</b>	
• at 40 °C to power-up	40 W
• at 50 °C to power-up	37 W
• at 60 °C to power-up	35 W

Control circuit/ Control	
Type of voltage of the control supply voltage	AC
Control supply voltage at AC	
• at 50 Hz	110 ... 250 V
• at 60 Hz	110 ... 250 V
Relative negative tolerance of the control supply voltage at AC at 50 Hz	-15 %
Relative positive tolerance of the control supply voltage at AC at 50 Hz	10 %
Relative negative tolerance of the control supply voltage at AC at 60 Hz	-15 %
Relative positive tolerance of the control supply voltage at AC at 60 Hz	10 %
Control supply voltage frequency	50 ... 60 Hz
Relative negative tolerance of the control supply voltage frequency	-10 %
Relative positive tolerance of the control supply voltage frequency	10 %
Control supply current in standby mode rated value	30 mA
Holding current in the by-pass mode operating rated value	75 mA
Starting current at close of by-pass contact maximum	2.5 A
Inrush current peak at connect of control supply voltage maximum	12.2 A
Duration of inrush current peak at connect of control supply voltage	2.2 ms
Design of the overvoltage protection	Varistor
Design of short-circuit protection for control circuit	4 A gG fuse (I <sub>cu</sub> =1 kA), 6 A quick-acting fuse (I <sub>cu</sub> =1 kA), C1 miniature circuit breaker (I <sub>cu</sub> = 600 A), C6 miniature circuit breaker (I <sub>cu</sub> = 300 A); Is not part of scope of supply

Inputs/ Outputs	
Number of digital inputs	1
Number of inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
Number of digital outputs	3
• not parameterizable	2
Digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)
Number of analog outputs	0
Switching capacity current of the relay outputs	
• at AC-15 at 250 V rated value	3 A
• at DC-13 at 24 V rated value	1 A

Installation/ mounting/ dimensions	
Mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
(mounting type)	screw fixing

<b>Height</b>	306 mm
<b>Width</b>	185 mm
<b>Depth</b>	203 mm
<b>Required spacing with side-by-side mounting</b>	
• forwards	10 mm
• Backwards	0 mm
• upwards	100 mm
• downwards	75 mm
• at the side	5 mm
<b>Installation altitude at height above sea level maximum</b>	5 000 m; Derating as of 1000 m, see catalog
<b>Weight without packaging</b>	6.9 kg

### Connections/Terminals

<b>Type of electrical connection</b>	
• for main current circuit	screw-type terminals
• for control circuit	screw-type terminals
<b>Type of connectable conductor cross-sections</b>	
• for main contacts for box terminal using the front clamping point solid	1x (2.5 ... 16 mm <sup>2</sup> )
• for main contacts for box terminal using the front clamping point finely stranded with core end processing	1x (2.5 ... 50 mm <sup>2</sup> )
• for main contacts for box terminal using the front clamping point stranded	1x (10 ... 70 mm <sup>2</sup> )
• at AWG conductors for main contacts for box terminal using the front clamping point	1x (10 ... 2/0)
• for main contacts for box terminal using the back clamping point solid	1x (2.5 ... 16 mm <sup>2</sup> )
• at AWG conductors for main contacts for box terminal using the back clamping point	1x (10 ... 2/0)
• for main contacts for box terminal using both clamping points solid	2x (2.5 ... 16 mm <sup>2</sup> )
• for main contacts for box terminal using both clamping points finely stranded with core end processing	2x (2.5 ... 35 mm <sup>2</sup> )
• for main contacts for box terminal using both clamping points stranded	2x (6 ... 16 mm <sup>2</sup> ), 2x (10 ... 50 mm <sup>2</sup> )
• for main contacts for box terminal using the back clamping point finely stranded with core end processing	1x (2.5 ... 50 mm <sup>2</sup> )
• for main contacts for box terminal using the back clamping point stranded	1x (10 ... 70 mm <sup>2</sup> )
<b>Type of connectable conductor cross-sections</b>	
• for control circuit solid	1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )

<ul style="list-style-type: none"> <li>• for control circuit finely stranded with core end processing</li> <li>• at AWG conductors for control circuit solid</li> </ul>	<p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.5 mm<sup>2</sup>)</p> <p>1x (20 ... 12), 2x (20 ... 14)</p>
<b>Wire length</b> <ul style="list-style-type: none"> <li>• between soft starter and motor maximum</li> <li>• at the digital inputs at AC maximum</li> </ul>	<p>800 m</p> <p>100 m</p>

### Ambient conditions

<b>Ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage and transport</li> </ul>	<p>-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above</p> <p>-40 ... +80 °C</p>
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<b>Environmental category</b> <ul style="list-style-type: none"> <li>• during operation acc. to IEC 60721</li> <li>• during storage acc. to IEC 60721</li> <li>• during transport acc. to IEC 60721</li> </ul>	<p>3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6</p> <p>1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4</p> <p>2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)</p>
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### Communication/ Protocol



<b>Communication module is supported</b> <ul style="list-style-type: none"> <li>• PROFINET standard</li> <li>• Modbus TCP</li> <li>• PROFIBUS</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p>
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### UL/CSA ratings

<b>Manufacturer's article number</b> <ul style="list-style-type: none"> <li>• of fuse <ul style="list-style-type: none"> <li>— at Standard Faults usable up to 575/600 V according to UL</li> <li>— at High Faults usable up to 575/600 V according to UL</li> <li>— at Standard Faults usable at inside-delta circuit up to 575/600 V according to UL</li> <li>— at High Faults usable at inside-delta circuit up to 575/600 V according to UL</li> </ul> </li> </ul>	<p>Type: Class RK5 / K5, max. 300 A; I<sub>q</sub> = 10 kA</p> <p>Type: Class J / L, max. 250 A; I<sub>q</sub> = 100 kA</p> <p>Type: Class RK5 / K5, max. 300 A; I<sub>q</sub> = 10 kA</p> <p>Type: Class J / L, max. 250 A; I<sub>q</sub> = 100 kA</p>
<b>Operating power [hp] for three-phase motors</b> <ul style="list-style-type: none"> <li>• at 200/208 V at 50 °C rated value</li> <li>• at 220/230 V at 50 °C rated value</li> <li>• at 460/480 V at 50 °C rated value</li> <li>• at 200/208 V at inside-delta circuit at 50 °C rated value</li> <li>• at 220/230 V at inside-delta circuit at 50 °C rated value</li> <li>• at 460/480 V at inside-delta circuit at 50 °C rated value</li> </ul>	<p>25 hp</p> <p>30 hp</p> <p>60 hp</p> <p>40 hp</p> <p>50 hp</p> <p>100 hp</p>

General Product Approval			Declaration of Conformity	
 CCC	 CSA	 UL		 EG-Konf.

[Miscellaneous](#)

Test Certificates	Marine / Shipping	other
<a href="#">Type Test Certificates/Test Report</a>	 LRS	 PRS

[Confirmation](#)

## Further information

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

<http://www.siemens.com/industrial-controls/catalogs>

### Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5227-1TC14>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5227-1TC14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-1TC14>

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

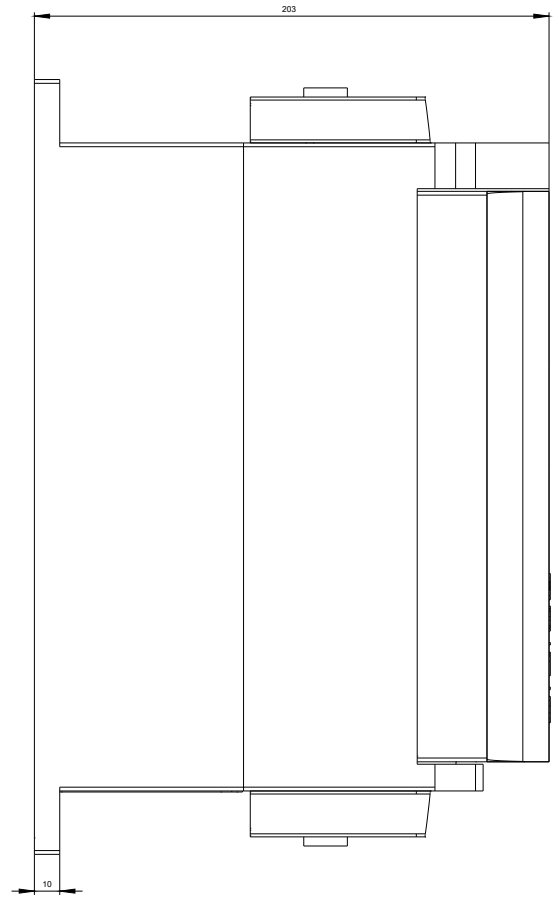
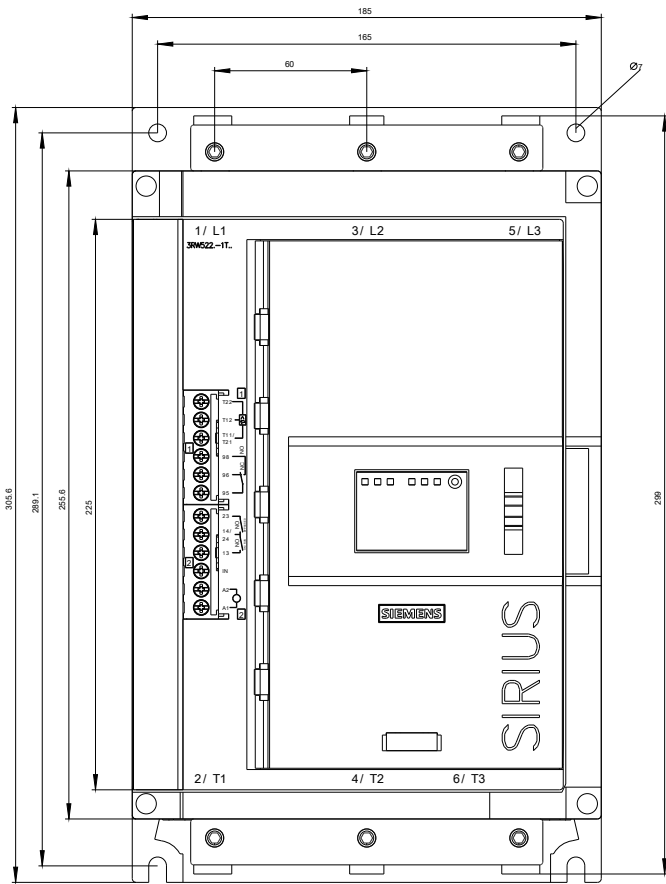
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5227-1TC14&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5227-1TC14&lang=en)

### Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

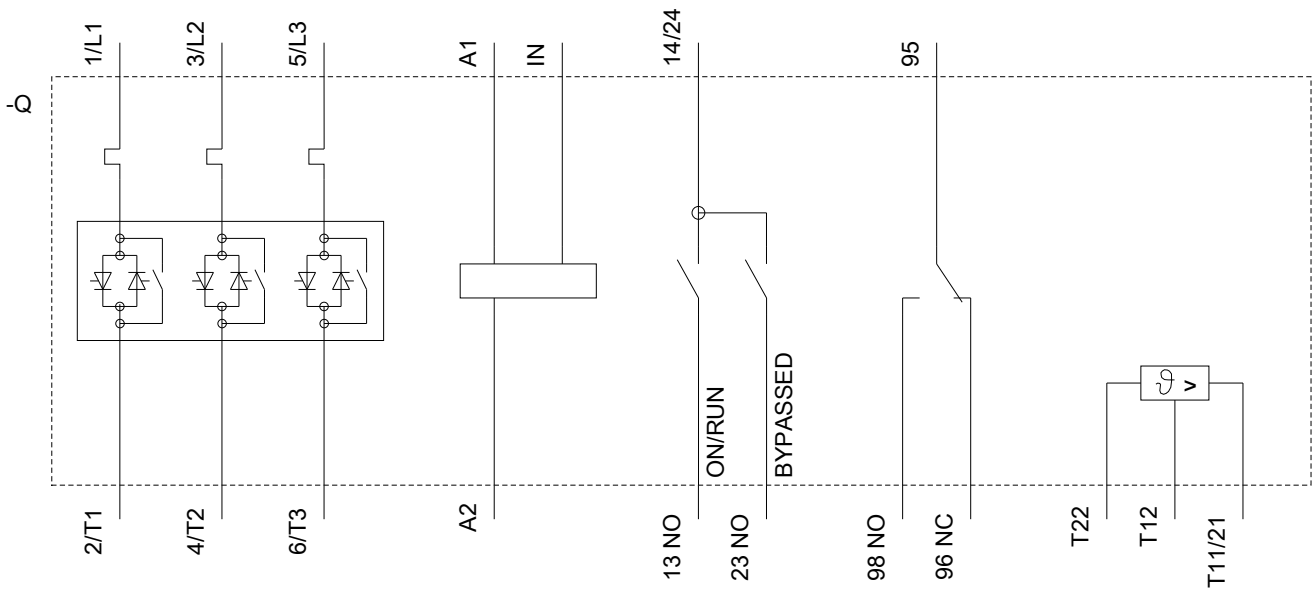
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-1TC14/char>

### Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5227-1TC14&objecttype=14&gridview=view1>







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