

SIRIUS soft starter 400-600 V 470 A, 24 V AC/DC spring-type terminals Analog output



Figure similar

<b>Product brand name</b>	SIRIUS
<b>Product category</b>	Hybrid switching devices
<b>Product designation</b>	Soft starter
<b>Product type designation</b>	3RW50
<b>Manufacturer's article number</b>	<ul style="list-style-type: none"> <li>• of HMI module usable <a href="#">3RW5980-0HS01</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 communication module Modbus RTU usable <a href="#">3RW5980-0CR00</a></li> <li>• of communication module Ethernet/IP <a href="#">3RW5980-0CE00</a></li> <li>• of circuit breaker usable at 400 V <a href="#">3VA2580-6HN32-0AA0; Type of assignment 1, Iq = 65 kA</a></li> <li>• of circuit breaker usable at 500 V <a href="#">3VA2580-6HN32-0AA0; Type of assignment 1, Iq = 65 kA</a></li> <li>• of the gG fuse usable up to 690 V <a href="#">2x3NA3365-6; Type of coordination 1, Iq = 65 kA</a></li> <li>• of full range R fuse link for semiconductor protection usable up to 690 V <a href="#">3NE1 436-2; Type of coordination 2, Iq = 65 kA</a></li> </ul>

- of back-up R fuse link for semiconductor protection usable up to 690 V
- of line contactor usable up to 480 V
- of line contactor usable up to 690 V

[3NE3 340-8; Type of coordination 2, I<sub>q</sub> = 65 kA](#)

3RT1076

3RT1076

#### General technical data

<b>Starting voltage [%]</b>	30 ... 100 %
<b>Stopping voltage [%]</b>	50 ... 50 %
<b>Start-up ramp time of soft starter</b>	0 ... 20 s
<b>Stopping time of soft starter</b>	0 ... 20 s
<b>Current limiting value [%] adjustable</b>	130 ... 700 %
<b>Accuracy class acc. to IEC 61557-12</b>	5 %
<b>Certificate of suitability</b>	
• CE marking	Yes
• UL approval	Yes
• CSA-approval	Yes
<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>	2
<b>Trip class</b>	CLASS 10A / 10E (preset) / 20E; acc. to IEC 60947-4-2
<b>Recovery time</b>	300 s
<b>Insulation voltage</b>	
• rated value	600 V
<b>Degree of pollution</b>	3, acc. to IEC 60947-4-2
<b>Impulse voltage rated value</b>	6 V
<b>Blocking voltage of the thyristor maximum</b>	1 600 V
<b>Service factor</b>	1
<b>Protection class IP</b>	IP00; IP20 with additional terminal covers for vertical touching from the front
<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; Electronic motor overload protection
• Evaluation of thermistor motor protection	No
• Auto-reset	Yes
• Manual RESET	Yes

• remote reset	Yes; By turning off the control supply voltage
• communication function	Yes
• operating measured value display	Yes; Only in conjunction with special accessories
• error logbook	Yes; Only in conjunction with special accessories
• via software parameterizable	No
• via software configurable	Yes
• PROFINET energy	Yes; in connection with the PROFINET Standard communication module
• voltage ramp	Yes
• torque control	No
• analog output	Yes; 4 ... 20 mA (default) / 0 ... 10 V (parameterizable with High Feature HMI)

## Power Electronics

<b>Operating current</b>	
• at 40 °C rated value	470 A
• at 50 °C rated value	416 A
• at 60 °C rated value	380 A
<b>Operating voltage</b>	
• rated value	200 ... 600 V
<b>Relative negative tolerance of the operating voltage</b>	-15 %
<b>Relative positive tolerance of the operating voltage</b>	10 %
<b>Operating power for three-phase motors</b>	
• at 230 V at 40 °C rated value	132 kW
• at 400 V at 40 °C rated value	250 kW
• at 500 V at 40 °C rated value	315 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>	
• at rotary encoding switch on switch position 1	200 A
• at rotary encoding switch on switch position 2	218 A
• at rotary encoding switch on switch position 3	236 A
• at rotary encoding switch on switch position 4	254 A
• at rotary encoding switch on switch position 5	272 A
• at rotary encoding switch on switch position 6	290 A
• at rotary encoding switch on switch position 7	308 A
• at rotary encoding switch on switch position 8	326 A
• at rotary encoding switch on switch position 9	344 A
• at rotary encoding switch on switch position 10	362 A
• at rotary encoding switch on switch position 11	380 A

<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 12</li> <li>• at rotary encoding switch on switch position 13</li> <li>• at rotary encoding switch on switch position 14</li> <li>• at rotary encoding switch on switch position 15</li> <li>• at rotary encoding switch on switch position 16</li> <li>• minimum</li> </ul>	<p>398 A</p> <p>416 A</p> <p>434 A</p> <p>452 A</p> <p>470 A</p> <p>200 A</p>
<b>Minimum load [%]</b>	15 %; Relative to smallest settable le
<b>Power loss [W] for rated value of the current at AC</b>	
<ul style="list-style-type: none"> <li>• at 40 °C to power-up</li> <li>• at 50 °C to power-up</li> <li>• at 60 °C to power-up</li> </ul>	<p>56 W</p> <p>44 W</p> <p>37 W</p>
<b>Power loss [W] at AC at AC</b>	
<ul style="list-style-type: none"> <li>• at 40 °C during startup</li> <li>• at 50 °C during startup</li> <li>• at 60 °C during startup</li> </ul>	<p>5 344 W</p> <p>4 438 W</p> <p>3 876 W</p>
<b>Type of the motor protection</b>	Electronic, tripping in the event of thermal overload of the motor

Control circuit/ Control	
<b>Type of voltage of the control supply voltage</b>	AC/DC
<b>Control supply voltage at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul>	<p>24 V</p> <p>24 V</p>
<b>Relative negative tolerance of the control supply voltage at AC at 50 Hz</b>	-20 %
<b>Relative positive tolerance of the control supply voltage at AC at 50 Hz</b>	20 %
<b>Relative negative tolerance of the control supply voltage at AC at 60 Hz</b>	-20 %
<b>Relative positive tolerance of the control supply voltage at AC at 60 Hz</b>	20 %
<b>Control supply voltage frequency</b>	50 ... 60 Hz
<b>Relative negative tolerance of the control supply voltage frequency</b>	-10 %
<b>Relative positive tolerance of the control supply voltage frequency</b>	10 %
<b>Control supply voltage</b>	
<ul style="list-style-type: none"> <li>• at DC rated value</li> </ul>	24 V
<b>Relative negative tolerance of the control supply voltage at DC</b>	-20 %
<b>Relative positive tolerance of the control supply voltage at DC</b>	20 %
<b>Control supply current in standby mode rated value</b>	160 mA
<b>Holding current in the by-pass mode operating rated value</b>	490 mA

Starting current at close of by-pass contact maximum	7.6 A
Inrush current peak at connect of control supply voltage maximum	3.3 A
Duration of inrush current peak at connect of control supply voltage	12.1 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	0
Number of digital outputs	3
<ul style="list-style-type: none"> <li>not parameterizable</li> </ul>	2
Digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)
Number of analog outputs	1

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
Height	230 mm
Width	160 mm
Depth	282 mm
Required spacing with side-by-side mounting	
<ul style="list-style-type: none"> <li>forwards</li> </ul>	10 mm
<ul style="list-style-type: none"> <li>Backwards</li> </ul>	0 mm
<ul style="list-style-type: none"> <li>upwards</li> </ul>	100 mm
<ul style="list-style-type: none"> <li>downwards</li> </ul>	75 mm
<ul style="list-style-type: none"> <li>at the side</li> </ul>	5 mm
Installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see manual
Weight without packaging	7.3 kg

Connections/ Terminals	
Type of electrical connection	
<ul style="list-style-type: none"> <li>for main current circuit</li> </ul>	busbar connection
<ul style="list-style-type: none"> <li>for control circuit</li> </ul>	spring-loaded terminals
Width of connection bar maximum	45 mm
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> <li>for main contacts for box terminal using the front clamping point solid</li> </ul>	95 ... 300 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>for main contacts for box terminal using the front clamping point finely stranded with core end processing</li> </ul>	70 ... 240 mm <sup>2</sup>

<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the front clamping point finely stranded without core end processing</li> </ul>	70 ... 240 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the front clamping point stranded</li> </ul>	95 ... 300 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• at AWG conductors for main contacts for box terminal using the front clamping point</li> </ul>	3/0 ... 600 kcmil
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point solid</li> </ul>	120 ... 240 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• at AWG conductors for main contacts for box terminal using the back clamping point</li> </ul>	250 ... 500 kcmil
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points solid</li> </ul>	min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points finely stranded with core end processing</li> </ul>	min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points finely stranded without core end processing</li> </ul>	min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points stranded</li> </ul>	min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point finely stranded with core end processing</li> </ul>	120 ... 185 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point finely stranded without core end processing</li> </ul>	120 ... 185 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point stranded</li> </ul>	120 ... 240 mm <sup>2</sup>
<b>Type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• at AWG conductors for main current circuit solid</li> </ul>	2/0 ... 500 kcmil
<ul style="list-style-type: none"> <li>• for DIN cable lug for main contacts stranded</li> </ul>	50 ... 240 mm <sup>2</sup>
<ul style="list-style-type: none"> <li>• for DIN cable lug for main contacts finely stranded</li> </ul>	70 ... 240 mm <sup>2</sup>
<b>Type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for control circuit solid</li> </ul>	2x (0.25 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• for control circuit finely stranded with core end processing</li> </ul>	2x (0.25 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• at AWG conductors for control circuit solid</li> </ul>	2x (24 ... 16)
<ul style="list-style-type: none"> <li>• at AWG conductors for control circuit finely stranded with core end processing</li> </ul>	2x (24 ... 16)
<b>Wire length</b>	
<ul style="list-style-type: none"> <li>• between soft starter and motor maximum</li> </ul>	800 m
<ul style="list-style-type: none"> <li>• at the digital inputs at AC maximum</li> </ul>	1 000 m

<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>	<p>14 ... 24 N·m</p> <p>0.8 ... 1.2 N·m</p>
<b>Tightening torque [lbf·in]</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>	<p>124 ... 210 lbf·in</p> <p>7 ... 10.3 lbf·in</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>
<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>
EMC emitted interference	acc. to IEC 60947-4-2: Class A

### Communication/ Protocol

<b>Communication module is supported</b>	
<ul style="list-style-type: none"> <li>• PROFINET standard</li> <li>• EtherNet/IP</li> <li>• Modbus RTU</li> <li>• Modbus TCP</li> <li>• PROFIBUS</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

### UL/CSA ratings

<b>Manufacturer's article number</b>	
<ul style="list-style-type: none"> <li>• <b>of the fuse</b> <ul style="list-style-type: none"> <li>— usable for Standard Faults up to 575/600 V according to UL</li> <li>— usable for High Faults up to 575/600 V according to UL</li> </ul> </li> </ul>	<p>Type: Class L, max. 1600 A; I<sub>q</sub> = 30 kA</p> <p>Type: Class L, max. 1200 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 575/600 V at 50 °C rated value</li> </ul>	<p>100 hp</p> <p>125 hp</p> <p>250 hp</p> <p>300 hp</p>


### ATEX

<b>Certificate of suitability</b>	
<ul style="list-style-type: none"> <li>• ATEX</li> </ul>	Yes

• IECEx	Yes
Hardware fault tolerance acc. to IEC 61508 relating to ATEX	0
PFDAvg with low demand rate acc. to IEC 61508 relating to ATEX	0.09
PFHD with high demand rate acc. to EN 62061 relating to ATEX	0.000009 1/h
Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX	SIL1
T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX	3 y

Certificates/ approvals

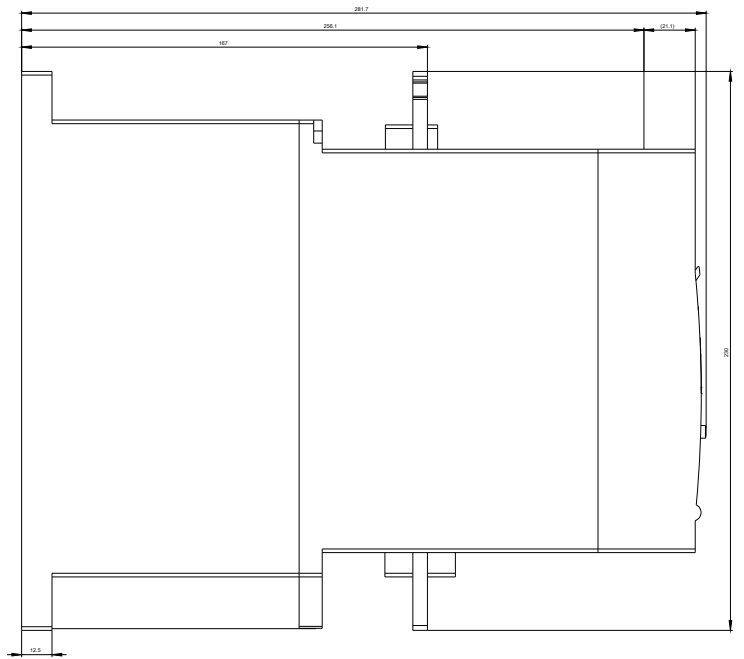
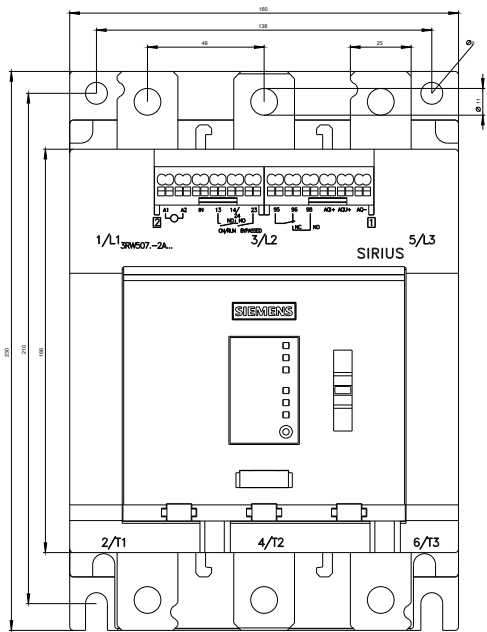
<b>General Product Approval</b>	<b>For use in hazardous locations</b>
 CCC  CSA  UL	 EAC  IECEx  ATEX

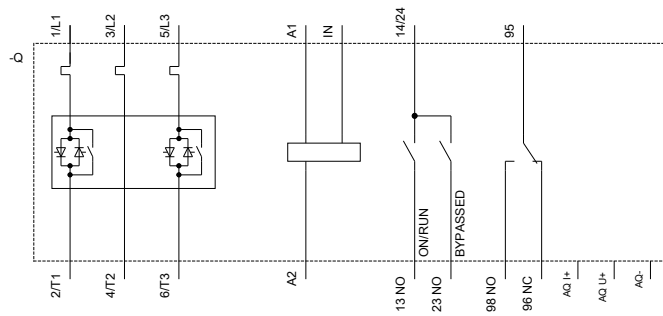
<b>Declaration of Conformity</b>	<b>Test Certificates</b>	<b>other</b>
 EG-Konf.	<a href="#">Miscellaneous</a> <a href="#">Type Test Certificates/Test Report</a>	<a href="#">Confirmation</a>

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=3RW5076-2AB05>
- Cax online generator**  
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5076-2AB05>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**  
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5076-2AB05>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**  
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5076-2AB05&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5076-2AB05&lang=en)
- Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**  
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5076-2AB05/char>
- Characteristic: Installation altitude**  
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5076-2AB05&objecttype=14&gridview=view1>







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3RW50.-.A.\_IEC.DXF

Format / Size: Hybrid quer

**last modified:**

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