

SIRIUS soft starter 200-480 V 840 A, 24 V AC/DC Screw terminals



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>	3RW55
<b>Manufacturer's article number</b>	<ul style="list-style-type: none"> <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 PROFINET high-feature usable <a href="#">3RW5950-0CH00</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="#">3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 500 V <a href="#">3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 400 V at inside-delta circuit <a href="#">3VA2716-7AB05-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> </ul>

- of circuit breaker usable at 500 V at inside-delta circuit
- of the gG fuse usable up to 690 V
- 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

[3VA2716-7AB05-0AA0; Type of coordination 1, I<sub>q</sub> = 65 kA, CLASS 10](#)

2x3NA3365-6; Type of coordination 1, I<sub>q</sub> = 65 kA

[3NB3351-1KK26; Type of coordination 2, I<sub>q</sub> = 65 kA](#)

[3NC3343-1U; Type of coordination 2, I<sub>q</sub> = 65 kA](#)

## General technical data

<b>Starting voltage [%]</b>	20 ... 100 %
<b>Stopping voltage [%]</b>	50 ... 50 %
<b>Start-up ramp time of soft starter</b>	0 ... 360 s
<b>Stopping time of soft starter</b>	0 ... 360 s
<b>Start torque [%]</b>	10 ... 100 %
<b>Stopping torque [%]</b>	10 ... 100 %
<b>Torque limit [%]</b>	20 ... 200 %
<b>Current limiting value [%] adjustable</b>	125 ... 800 %
<b>Breakaway voltage [%] adjustable</b>	40 ... 100 %
<b>Breakaway time adjustable</b>	0 ... 2 s
<b>Number of parameter sets</b>	3
<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>	
• HMI-High Feature	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 / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2
<b>Current unbalance limiting value [%]</b>	10 ... 60 %
<b>Ground-fault monitoring limiting value [%]</b>	10 ... 95 %
<b>Recovery time after overload trip adjustable</b>	60 ... 1 800 s
<b>Buffering time in the event of power failure</b>	
• for main current circuit	100 ms
• for control circuit	100 ms
<b>Idle time adjustable</b>	0 ... 255 s
<b>Insulation voltage</b>	
• rated value	480 V
<b>Degree of pollution</b>	3, acc. to IEC 60947-4-2
<b>Impulse voltage rated value</b>	6 kV
<b>Blocking voltage of the thyristor maximum</b>	1 400 V
<b>Service factor</b>	1.15

<b>Surge voltage resistance rated value</b>	6 kV
<b>maximum permissible voltage for safe isolation</b>	
<ul style="list-style-type: none"> <li>• between main and auxiliary circuit</li> </ul>	480 V; does not apply for thermistor connection
<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 6 g / 11 ms with potential contact lifting
<b>Vibration resistance</b>	15 mm up to 6 Hz; 2 g up to 500 Hz
<b>Reference code acc. to DIN EN 81346-2</b>	Q
<b>Product function</b>	
<ul style="list-style-type: none"> <li>• ramp-up (soft starting)</li> <li>• ramp-down (soft stop)</li> <li>• breakaway pulse</li> <li>• Adjustable current limitation</li> <li>• creep speed in both directions of rotation</li> <li>• pump ramp down</li> <li>• DC braking</li> <li>• motor heating</li> <li>• slave pointer function</li> <li>• trace function</li> <li>• Intrinsic device protection</li> <li>• motor overload protection</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes; Full motor protection (thermistor motor protection and electronic motor overload protection) / When using the motor overload protection according to ATEX, an upstream contactor is required in inside-delta circuit.</p> <p>Yes; Type A PTC or Klixon / Thermoclick</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>No</p> <p>Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<ul style="list-style-type: none"> <li>• Evaluation of thermistor motor protection</li> <li>• inside-delta circuit</li> <li>• Auto-reset</li> <li>• Manual RESET</li> <li>• remote reset</li> <li>• communication function</li> <li>• operating measured value display</li> <li>• event list</li> <li>• error logbook</li> <li>• via software parameterizable</li> <li>• via software configurable</li> <li>• screw terminal</li> <li>• spring-type terminal</li> <li>• PROFlenergy</li> <li>• firmware update</li> <li>• removable terminal for control circuit</li> <li>• voltage ramp</li> </ul>	

• torque control	Yes
• combined braking	Yes
• analog output	Yes; 4 ... 20 mA (default) / 0 ... 10 V
• programmable control inputs/outputs	Yes
• condition monitoring	Yes
• automatic parameterisation	Yes
• application wizards	Yes
• alternative run-down	Yes
• emergency operation mode	Yes
• reversing operation	Yes
• soft starting at heavy starting conditions	Yes

## Power Electronics

<b>Operating current</b>	
• at 40 °C rated value	840 A
• at 40 °C rated value minimum	168 A
• at 50 °C rated value	748 A
• at 60 °C rated value	670 A
<b>Operating current at inside-delta circuit</b>	
• at 40 °C rated value	1 454 A
• at 50 °C rated value	1 295 A
• at 60 °C rated value	1 160 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	250 kW
• at 230 V at inside-delta circuit at 40 °C rated value	450 kW
• at 400 V at 40 °C rated value	450 kW
• at 400 V at inside-delta circuit at 40 °C rated value	800 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>Minimum load [%]</b>	10 %; Relative to set I <sub>e</sub>
<b>Power loss [W] for rated value of the current at AC</b>	
• at 40 °C to power-up	252 W
• at 50 °C to power-up	205 W
• at 60 °C to power-up	164 W
<b>Power loss [W] at AC at AC</b>	
• at 40 °C during startup	14 441 W
• at 50 °C during startup	12 187 W
• at 60 °C during startup	10 405 W
<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>	
• at 50 Hz rated value	24 V
• at 60 Hz rated value	24 V
<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>	
• at DC rated value	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>	440 mA
<b>Holding current in the by-pass mode operating rated value</b>	1 100 mA
<b>Starting current at close of by-pass contact maximum</b>	6.7 A
<b>Inrush current peak at connect of control supply voltage maximum</b>	7.5 A
<b>Duration of inrush current peak at connect of control supply voltage</b>	20 ms
<b>Design of the overvoltage protection</b>	Varistor

<b>Design of short-circuit protection for control circuit</b>	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
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### Inputs/ Outputs

<b>Number of digital inputs</b>	4
• parameterizable	4
<b>Number of inputs for thermistor connection</b>	1; Type A PTC or Klixon / Thermoclick
<b>Number of digital outputs</b>	4
• parameterizable	3
• not parameterizable	1
<b>Digital output version</b>	3 normally-open contacts (NO) / 1 changeover contact (CO)
<b>Number of analog outputs</b>	1
<b>Switching capacity current of the relay outputs</b>	
• at AC-15 at 250 V rated value	3 A
• at DC-13 at 24 V rated value	1 A

### Installation/ mounting/ dimensions

<b>Mounting position</b>	Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°)
<b>Mounting type</b>	screw fixing
<b>Height</b>	764 mm
<b>Width</b>	478 mm
<b>Depth</b>	241 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>	45 kg

### Connections/ Terminals

<b>Type of electrical connection</b>	
• for main current circuit	busbar connection
• for control circuit	screw-type terminals
<b>Width of connection bar maximum</b>	55 mm
<b>Type of connectable conductor cross-sections</b>	
• for DIN cable lug for main contacts stranded	2x (50 ... 240 mm <sup>2</sup> )
• for DIN cable lug for main contacts finely stranded	2x (70 ... 240 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 DC maximum</li> </ul>	<p>800 m</p> <p>1 000 m</p>
<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>20 ... 35 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>177 ... 310 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>• PROFINET high-feature</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> <p>Yes</p>
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### UL/CSA ratings

<b>Manufacturer's article number</b> <ul style="list-style-type: none"> <li>• of the fuse <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 J / L, max. 2500 A; Iq = 42 kA</p> <p>Type: Class J / L, max. 2500 A; Iq = 100 kA</p>
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— usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class J / L, max. 2500 A; I <sub>q</sub> = 42 kA
— usable for High Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class J / L, max. 2500 A; I <sub>q</sub> = 100 kA
<b>Operating power [hp] for three-phase motors</b>	
• at 200/208 V at 50 °C rated value	250 hp
• at 220/230 V at 50 °C rated value	300 hp
• at 460/480 V at 50 °C rated value	600 hp
• at 200/208 V at inside-delta circuit at 50 °C rated value	450 hp
• at 220/230 V at inside-delta circuit at 50 °C rated value	550 hp
• at 460/480 V at inside-delta circuit at 50 °C rated value	1 150 hp
<b>Contact rating of auxiliary contacts according to UL</b>	R300-B300

### Safety related data

<b>Electromagnetic compatibility</b>	acc. to IEC 60947-4-2
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### ATEX

<b>Certificate of suitability</b>	
• ATEX	Yes
• IECEx	Yes
• according to ATEX directive 2014/34/EU	BVS 18 ATEX F 003 X
<b>Type of protection according to ATEX directive 2014/34/EU</b>	II (2)G [Ex eb Gb] [Ex db Gb] [Ex pxb Gb], II (2)D [Ex tb Db] [Ex pxb Db], I (M2) [Ex db Mb]
<b>Hardware fault tolerance acc. to IEC 61508 relating to ATEX</b>	0
<b>PFDA<sub>avg</sub> with low demand rate acc. to IEC 61508 relating to ATEX</b>	0.008
<b>PFHD with high demand rate acc. to EN 62061 relating to ATEX</b>	0.0000005 1/h
<b>Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX</b>	SIL1
<b>T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX</b>	3 y

### Certificates/ approvals

General Product Approval	EMC	For use in hazardous locations
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Declaration of Conformity	Test Certificates	Marine / Shipping	other
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[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



[Confirmation](#)

### 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=3RW5554-6HA04>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5554-6HA04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5554-6HA04>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5554-6HA04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5554-6HA04&lang=en)

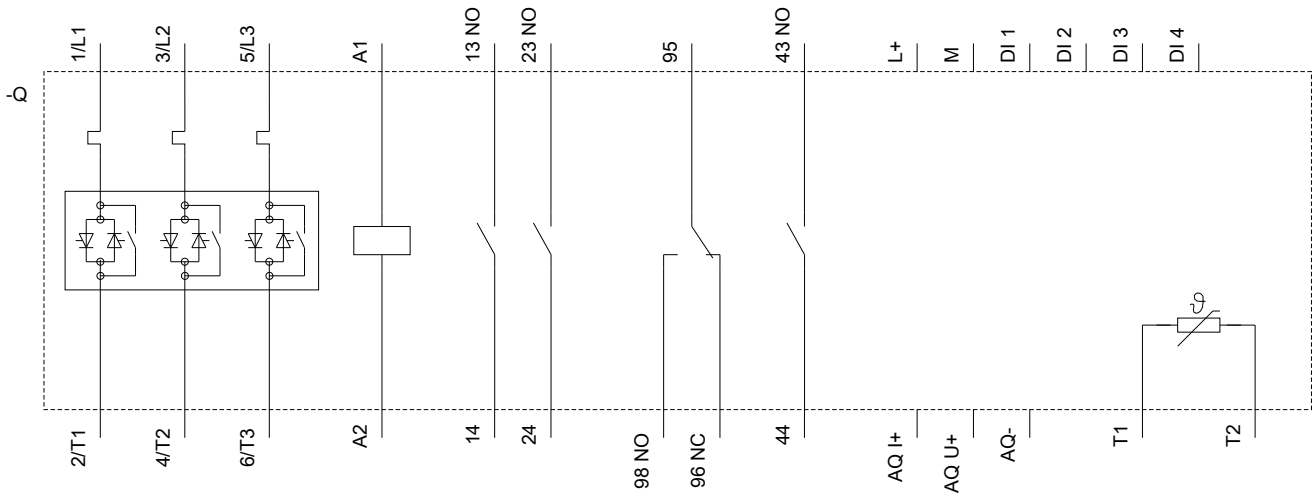
**Characteristic: Tripping characteristics, I<sup>t</sup>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5554-6HA04/char>

**Characteristic: Installation altitude**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5554-6HA04&objecttype=14&gridview=view1>





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