

SIRIUS soft starter 200-480 V 32 A, 24 V AC/DC Screw terminals



<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-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="#">3RV2032-4VA10; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 500 V <a href="#">3RV2032-4VA10; 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="#">3RV2032-4JA10; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 500 V at inside-delta circuit <a href="#">3RV2032-4JA10; Type of coordination 1, Iq = 10 kA, CLASS 10</a></li> <li>• of the gG fuse usable up to 690 V <a href="#">3NA3824-6; 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="#">3NA3824-6; 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="#">3NE1818-0; Type of coordination 2, Iq = 65 kA</a></li> </ul>

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

[3NE8022-1; Type of coordination 2, Iq = 65 kA](#)

### General technical data

<b>Starting voltage [%]</b>	20 ... 100 %
<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>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>Insulation voltage</b>	
• rated value	480 V
<b>Impulse voltage rated value</b>	6 kV
<b>Blocking voltage of the thyristor maximum</b>	1 600 V
<b>Service factor</b>	1.15
<b>Surge voltage resistance rated value</b>	6 kV
<b>maximum permissible voltage for safe isolation</b>	
• between main and auxiliary circuit	480 V
<b>Protection class IP</b>	IP00
<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
• breakaway pulse	Yes
• Adjustable current limitation	Yes
• creep speed in both directions of rotation	Yes
• pump ramp down	Yes
• DC braking	Yes
• motor heating	Yes

• slave pointer function	Yes
• trace function	Yes
• Intrinsic device protection	Yes
• motor overload protection	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.
• 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
• communication function	Yes
• operating measured value display	Yes
• event list	Yes
• error logbook	Yes
• via software parameterizable	Yes
• via software configurable	Yes
• PROFINergy	Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules
• firmware update	Yes
• removable terminal for control circuit	Yes
• combined braking	Yes
• analog output	Yes; 4 ... 20 mA (default) / 0 ... 10 V
• programmable control input-/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	32 A
• at 50 °C rated value	28.4 A
• at 60 °C rated value	26 A
<b>Operating current at inside-delta circuit</b>	
• at 40 °C rated value	55.4 A
• at 50 °C rated value	49 A
• at 60 °C rated value	45 A
<b>Operating voltage</b>	

<ul style="list-style-type: none"> <li>• rated value</li> </ul>	200 ... 480 V
<ul style="list-style-type: none"> <li>• at inside-delta circuit rated value</li> </ul>	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>	
<ul style="list-style-type: none"> <li>• at 230 V at 40 °C rated value</li> </ul>	7.5 kW
<ul style="list-style-type: none"> <li>• at 230 V at inside-delta circuit at 40 °C rated value</li> </ul>	15 kW
<ul style="list-style-type: none"> <li>• at 400 V at 40 °C rated value</li> </ul>	15 kW
<ul style="list-style-type: none"> <li>• at 400 V at inside-delta circuit at 40 °C rated value</li> </ul>	22 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>	
<ul style="list-style-type: none"> <li>• minimum</li> </ul>	6.5 A
<ul style="list-style-type: none"> <li>• at inside-delta circuit minimum</li> </ul>	11.3 A
<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>	
<ul style="list-style-type: none"> <li>• at 40 °C to power-up</li> </ul>	10 W
<ul style="list-style-type: none"> <li>• at 50 °C to power-up</li> </ul>	9 W
<ul style="list-style-type: none"> <li>• at 60 °C to power-up</li> </ul>	8 W
<b>Control circuit/ Control</b>	
<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> </ul>	24 V
<ul style="list-style-type: none"> <li>• at 60 Hz rated value</li> </ul>	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 %

Relative positive tolerance of the control supply voltage frequency	10 %
Control supply voltage <ul style="list-style-type: none"> <li>• at DC rated value</li> </ul>	24 V
Relative negative tolerance of the control supply voltage at DC	-20 %
Relative positive tolerance of the control supply voltage at DC	20 %
Control supply current in standby mode rated value	420 mA
Holding current in the by-pass mode operating rated value	820 mA
Starting current at close of by-pass contact maximum	0.91 A
Inrush current peak at connect of control supply voltage maximum	7.5 A
Duration of inrush current peak at connect of control supply voltage	20 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 <ul style="list-style-type: none"> <li>• parameterizable</li> </ul>	4 4
Number of inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
Number of digital outputs <ul style="list-style-type: none"> <li>• parameterizable</li> <li>• not parameterizable</li> </ul>	4 3 1
Digital output version	3 normally-open contacts (NO) / 1 changeover contact (CO)
Number of analog outputs	1
Switching capacity current of the relay outputs <ul style="list-style-type: none"> <li>• at AC-15 at 250 V rated value</li> <li>• at DC-13 at 24 V rated value</li> </ul>	3 A 1 A

Installation/ mounting/ dimensions	
Mounting position	Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°)
Mounting type	screw fixing
Height	275 mm
Width	170 mm
Depth	152 mm
Required spacing with side-by-side mounting <ul style="list-style-type: none"> <li>• forwards</li> <li>• Backwards</li> <li>• upwards</li> </ul>	10 mm 0 mm 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
<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>	2.6 kg

### Connections/Terminals

<b>Type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> </ul>	screw-type terminals
<ul style="list-style-type: none"> <li>• for control circuit</li> </ul>	screw-type terminals
<b>Type of connectable conductor cross-sections</b>	
<ul style="list-style-type: none"> <li>• for main contacts <ul style="list-style-type: none"> <li>— solid</li> </ul> </li> </ul>	2x (1.0 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 10 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>— finely stranded with core end processing</li> </ul>	2x (1.0 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6.0 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>	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> </ul>	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• at AWG conductors for control circuit solid</li> </ul>	1x (20 ... 12), 2x (20 ... 14)
<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 DC maximum</li> </ul>	1 000 m

### Ambient conditions

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

### Communication/ Protocol

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

### UL/CSA ratings

<b>Manufacturer's article number</b>	
<ul style="list-style-type: none"> <li>• of fuse at Standard Faults usable up to 575/600 V according to UL</li> </ul>	Type: Class RK5 / K5, max. 125 A; I <sub>q</sub> = 5 kA

- of fuse at Standard Faults usable at inside-delta circuit up to 575/600 V according to UL

Type: Class RK5 / K5, max. 125 A; Iq = 5 kA

#### Operating power [hp] for three-phase motors

- |   |        |
|---|--------|
| • at 200/208 V at 50 °C rated value                         | 7.5 hp |
| • at 220/230 V at 50 °C rated value                         | 10 hp  |
| • at 460/480 V at 50 °C rated value                         | 20 hp  |
| • at 200/208 V at inside-delta circuit at 50 °C rated value | 15 hp  |
| • at 220/230 V at inside-delta circuit at 50 °C rated value | 15 hp  |
| • at 460/480 V at inside-delta circuit at 50 °C rated value | 30 hp  |

#### Contact rating of auxiliary contacts according to UL

R300-B300

#### General Product Approval

#### Declaration of Conformity

#### Test Certificates



CCC



CSA



UL



EG-Konf.

[Type Test Certificates/Test Report](#)

Marine / Shipping

other



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=3RW5516-1HA04>

##### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5516-1HA04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5516-1HA04>

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

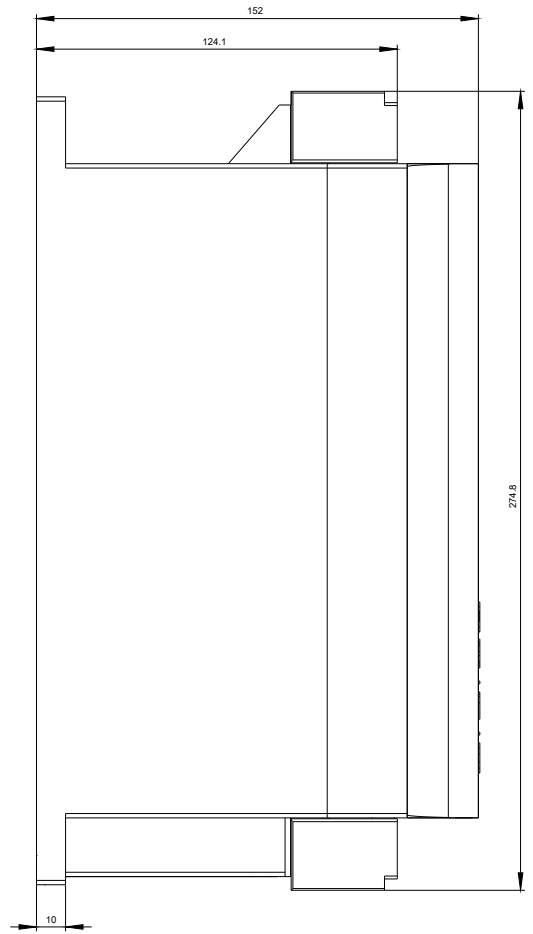
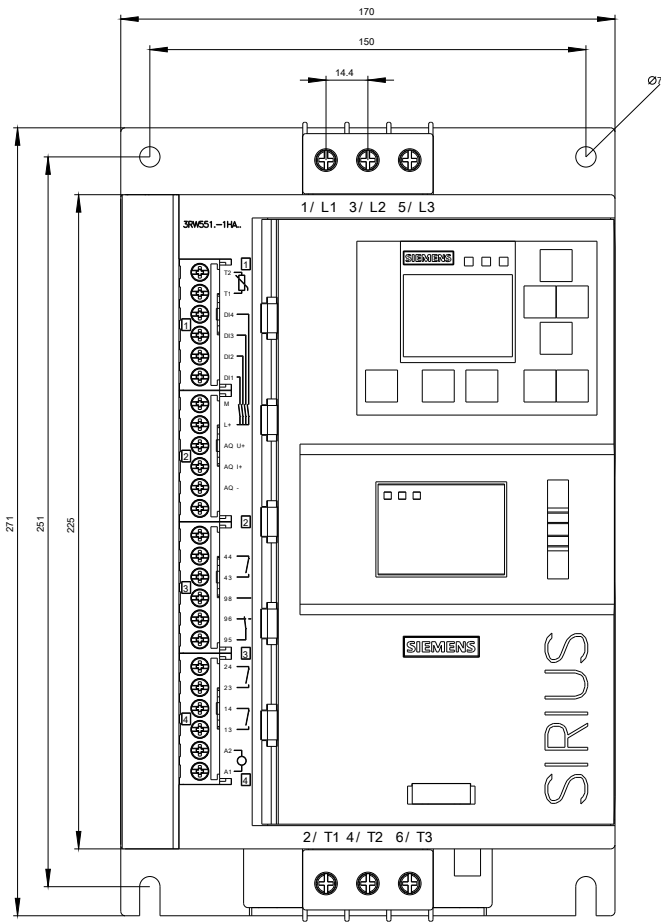
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5516-1HA04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5516-1HA04&lang=en)

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

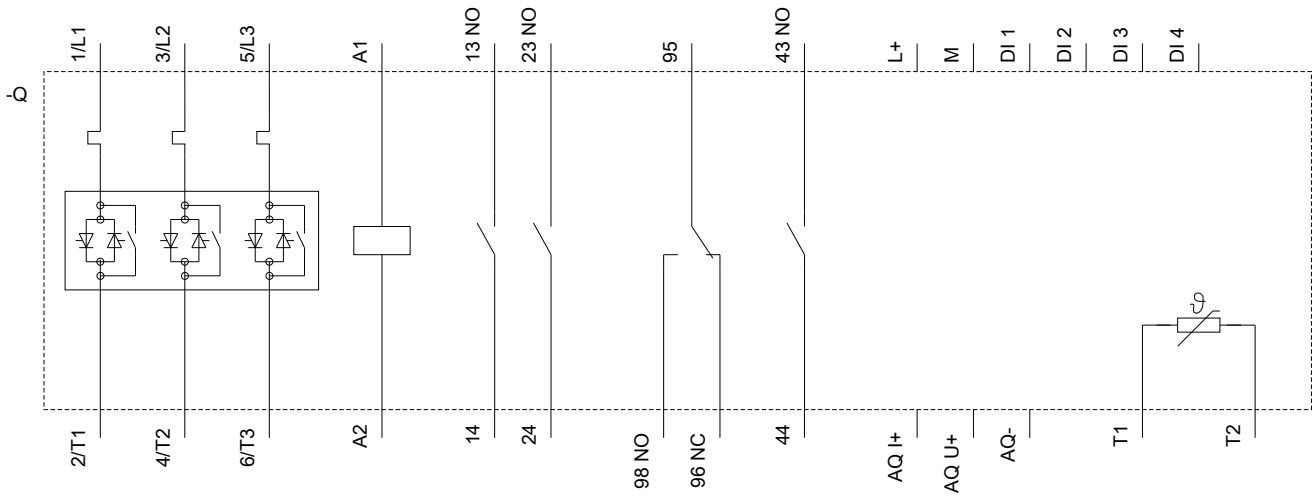
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5516-1HA04/char>

##### Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5516-1HA04&objecttype=14&gridview=view1>







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