

SIRIUS soft starter 200-480 V 250 A, 24 V AC/DC Screw terminals



Product brand name	SIRIUS
Product category	Hybrid switching devices
Product designation	Soft starter
Manufacturer's article number	<ul style="list-style-type: none"> • of HMI-Modul high-feature usable 3RW5980-0HF00 • of communication module PROFINET standard usable 3RW5980-0CS00 • of communication module PROFIBUS usable 3RW5980-0CP00 • of communication module Modbus TCP usable 3RW5980-0CT00 • of circuit breaker usable at 400 V 3VA2440-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V 3VA2440-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 400 V at inside-delta circuit 3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V at inside-delta circuit 3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of the gG fuse usable up to 690 V 2x3NA3354-6; Type of coordination 1, Iq = 65 kA • of the gG fuse usable at inside-delta circuit up to 500 V 2x3NA3354-6; Type of coordination 1, Iq = 65 kA • of full range R fuse link for semiconductor protection usable up to 690 V 3NE1331-0; Type of coordination 2, Iq = 65 kA

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

[3NE3335; Type of coordination 2, Iq = 65 kA](#)

General technical data

Starting voltage [%]	20 ... 100 %
Start-up ramp time of soft starter	0 ... 360 s
Stopping time of soft starter	0 ... 360 s
Start torque [%]	10 ... 100 %
Stopping torque [%]	10 ... 100 %
Torque limit [%]	20 ... 200 %
Current limiting value [%] adjustable	125 ... 800 %
Breakaway voltage [%] adjustable	40 ... 100 %
Breakaway time adjustable	0 ... 2 s
Number of parameter sets	3
Accuracy class acc. to IEC 61557-12	5 %
Product component	
• HMI-High Feature	Yes
• is supported HMI-High Feature	Yes
Product feature integrated bypass contact system	Yes
Number of controlled phases	3
Trip class	CLASS 10A / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2
Current unbalance limiting value [%]	10 ... 60 %
Ground-fault monitoring limiting value [%]	10 ... 95 %
Recovery time after overload trip adjustable	60 ... 1 800 s
Insulation voltage	
• rated value	480 V
Impulse voltage rated value	6 kV
Blocking voltage of the thyristor maximum	1 400 V
Service factor	1.15
Surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
• between main and auxiliary circuit	480 V
Protection class IP	IP00
Reference code acc. to DIN EN 81346-2	Q
Product function	
• 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

Operating current	
• at 40 °C rated value	250 A
• at 50 °C rated value	220 A
• at 60 °C rated value	200 A
Operating current at inside-delta circuit	
• at 40 °C rated value	433 A
• at 50 °C rated value	381 A
• at 60 °C rated value	346 A
Operating voltage	

<ul style="list-style-type: none"> • rated value 	200 ... 480 V
<ul style="list-style-type: none"> • at inside-delta circuit rated value 	200 ... 480 V
Relative negative tolerance of the operating voltage	-15 %
Relative positive tolerance of the operating voltage	10 %
Relative negative tolerance of the operating voltage at inside-delta circuit	-15 %
Relative positive tolerance of the operating voltage at inside-delta circuit	10 %
Operating power for three-phase motors	
<ul style="list-style-type: none"> • at 230 V at 40 °C rated value 	75 kW
<ul style="list-style-type: none"> • at 230 V at inside-delta circuit at 40 °C rated value 	132 kW
<ul style="list-style-type: none"> • at 400 V at 40 °C rated value 	132 kW
<ul style="list-style-type: none"> • at 400 V at inside-delta circuit at 40 °C rated value 	250 kW
Operating frequency 1 rated value	50 Hz
Operating frequency 2 rated value	60 Hz
Relative negative tolerance of the operating frequency	-10 %
Relative positive tolerance of the operating frequency	10 %
Adjustable motor current	
<ul style="list-style-type: none"> • minimum 	50 A
<ul style="list-style-type: none"> • at inside-delta circuit minimum 	86.6 A
Minimum load [%]	10 %; Relative to set I _e
Power loss [W] for rated value of the current at AC	
<ul style="list-style-type: none"> • at 40 °C to power-up 	75 W
<ul style="list-style-type: none"> • at 50 °C to power-up 	66 W
<ul style="list-style-type: none"> • at 60 °C to power-up 	60 W

Control circuit/ Control	
Type of voltage of the control supply voltage	AC/DC
Control supply voltage at AC	
<ul style="list-style-type: none"> • at 50 Hz rated value 	24 V
<ul style="list-style-type: none"> • at 60 Hz rated value 	24 V
Relative negative tolerance of the control supply voltage at AC at 50 Hz	-20 %
Relative positive tolerance of the control supply voltage at AC at 50 Hz	20 %
Relative negative tolerance of the control supply voltage at AC at 60 Hz	-20 %
Relative positive tolerance of the control supply voltage at AC at 60 Hz	20 %
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 voltage <ul style="list-style-type: none"> • at DC rated value 	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	440 mA
Holding current in the by-pass mode operating rated value	720 mA
Starting current at close of by-pass contact maximum	6.7 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 _{cu} =1 kA), 6 A quick-acting fuse (I _{cu} =1 kA), C1 miniature circuit breaker (I _{cu} = 600 A), C6 miniature circuit breaker (I _{cu} = 300 A); Is not part of scope of supply

Inputs/ Outputs

Number of digital inputs <ul style="list-style-type: none"> • parameterizable 	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"> • parameterizable • not parameterizable 	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"> • at AC-15 at 250 V rated value • at DC-13 at 24 V rated value 	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	393 mm
Width	210 mm
Depth	203 mm
Required spacing with side-by-side mounting <ul style="list-style-type: none"> • forwards • Backwards • upwards 	10 mm 0 mm 100 mm

<ul style="list-style-type: none"> • downwards • at the side 	<p>75 mm</p> <p>5 mm</p>
Installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see catalog
Weight without packaging	10.2 kg

Connections/Terminals

Type of electrical connection <ul style="list-style-type: none"> • for main current circuit • for control circuit 	<p>busbar connection</p> <p>screw-type terminals</p>
Type of connectable conductor cross-sections <ul style="list-style-type: none"> • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded 	<p>2x (50 ... 240 mm²)</p> <p>2x (70 ... 240 mm²)</p>
Type of connectable conductor cross-sections <ul style="list-style-type: none"> • for control circuit solid • for control circuit finely stranded with core end processing • at AWG conductors for control circuit solid 	<p>1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²)</p> <p>1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)</p> <p>1x (20 ... 12), 2x (20 ... 14)</p>
Wire length <ul style="list-style-type: none"> • between soft starter and motor maximum • at the digital inputs at DC maximum 	<p>800 m</p> <p>1 000 m</p>

Ambient conditions

Ambient temperature <ul style="list-style-type: none"> • during operation • during storage and transport 	<p>-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above</p> <p>-25 ... +80 °C</p>
Environmental category <ul style="list-style-type: none"> • during operation acc. to IEC 60721 • during storage acc. to IEC 60721 • during transport acc. to IEC 60721 	<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>

Communication/ Protocol

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

Manufacturer's article number <ul style="list-style-type: none"> • of fuse at Standard Faults usable up to 575/600 V according to UL 	Type: Class J / L, max. 800 A; Iq = 18 kA
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- of fuse at Standard Faults usable at inside-delta circuit up to 575/600 V according to UL

Type: Class J / L, max. 800 A; Iq = 18 kA

Operating power [hp] for three-phase motors

- | | |
|---|--------|
| • at 200/208 V at 50 °C rated value | 60 hp |
| • at 220/230 V at 50 °C rated value | 75 hp |
| • at 460/480 V at 50 °C rated value | 150 hp |
| • at 200/208 V at inside-delta circuit at 50 °C rated value | 125 hp |
| • at 220/230 V at inside-delta circuit at 50 °C rated value | 150 hp |
| • at 460/480 V at inside-delta circuit at 50 °C rated value | 300 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=3RW5544-6HA04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5544-6HA04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5544-6HA04>

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

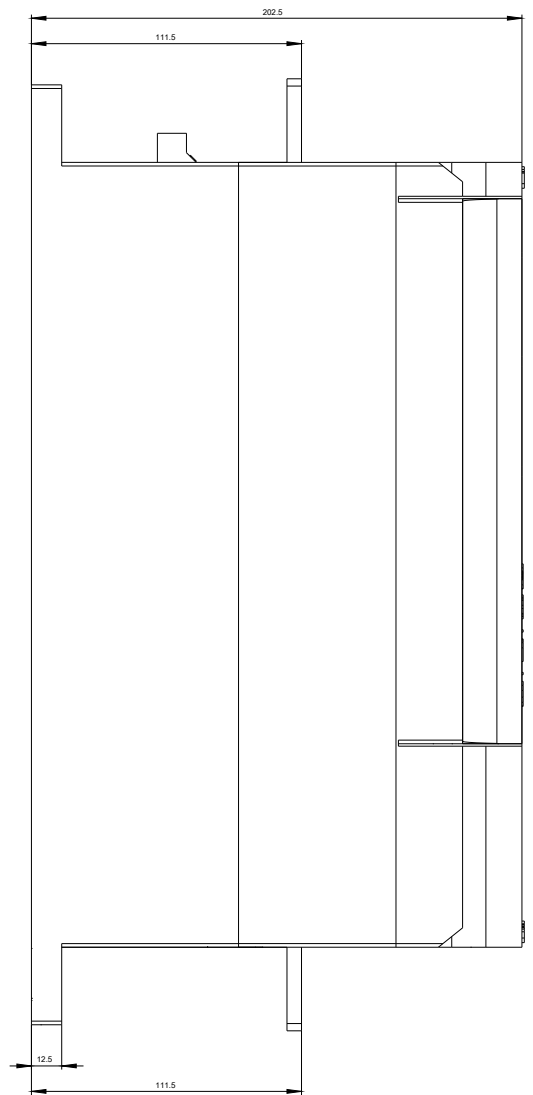
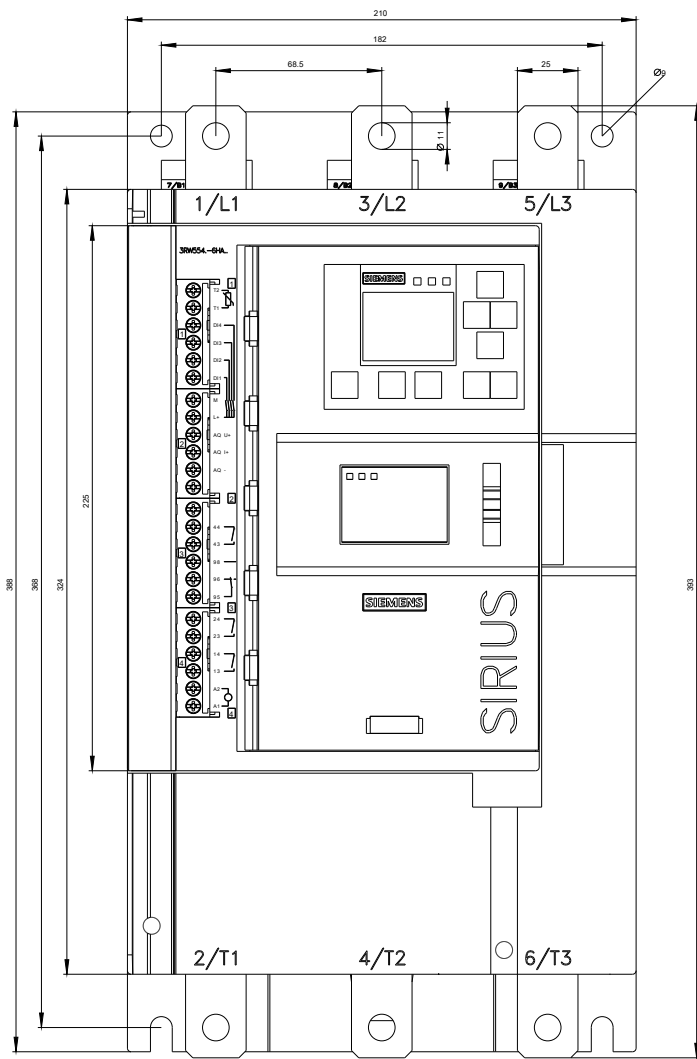
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5544-6HA04&lang=en

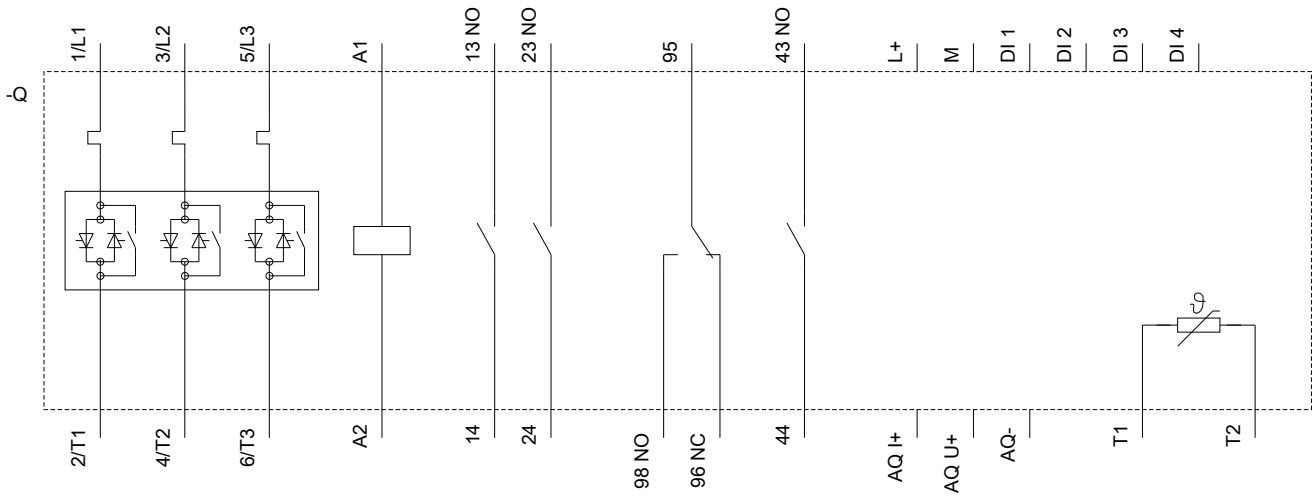
Characteristic: Tripping characteristics, I^t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5544-6HA04/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5544-6HA04&objecttype=14&gridview=view1>





last modified:

03/20/2019