

SIRIUS soft starter 200-690 V 315 A, 110-250 V AC spring-type terminals



Product brand name	SIRIUS
Product category	Hybrid switching devices
Product designation	Soft starter
Manufacturer's article number	• of HMI-Modul high-feature usable • of communication module PROFINET standard usable • of communication module PROFIBUS usable • of communication module Modbus TCP usable • of circuit breaker usable at 400 V • of circuit breaker usable at 500 V • of circuit breaker usable at 400 V at inside-delta circuit • of circuit breaker usable at 500 V at inside-delta circuit • of the gG fuse usable up to 690 V • of the gG fuse usable at inside-delta circuit up to 500 V • of full range R fuse link for semiconductor protection usable up to 690 V

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 ... 1 000 %
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 %
• Recovery time after overload trip adjustable	60 ... 1 800 s
Idle time adjustable	0 ... 255 s
Insulation voltage	
• rated value	690 V
Degree of pollution	3
Impulse voltage rated value	8 kV
Blocking voltage of the thyristor maximum	1 800 V
Service factor	1.15
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
• torque control	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
• voltage ramp	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	No
• 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
• PROFINET	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	315 A
• at 50 °C rated value	279 A
• at 60 °C rated value	255 A
Operating current at inside-delta circuit	
• at 40 °C rated value	545 A
• at 50 °C rated value	483 A
• at 60 °C rated value	442 A
Operating voltage	
• rated value	200 ... 690 V
• at inside-delta circuit rated value	200 ... 600 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	
• at 230 V at 40 °C rated value	90 kW
• at 230 V at inside-delta circuit at 40 °C rated value	160 kW
• at 400 V at 40 °C rated value	160 kW
• at 400 V at inside-delta circuit at 40 °C rated value	315 kW
• at 500 V at 40 °C rated value	200 kW
• at 500 V at inside-delta circuit at 40 °C rated value	355 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	
• minimum	63 A
• at inside-delta circuit minimum	109.1 A
Minimum load [%]	10 %; Relative to set I _e
Power loss [W] for rated value of the current at AC	
• at 40 °C to power-up	95 W
• at 50 °C to power-up	84 W
• at 60 °C to power-up	77 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 %
Design of the overvoltage protection	Varistor
Design of short-circuit protection for control circuit	4 A gG fuse (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu= 600 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of scope of supply

Inputs/ Outputs

Number of digital inputs	4
• with fail-safe	0
• parameterizable	4
Number of digital outputs	4
• with fail-safe	0
• parameterizable	3
• not parameterizable	1
Digital output version	3 normally-open contacts (NO) / 1 changeover contact (CO)
Number of inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
Number of analog outputs	1
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	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	
• forwards	10 mm
• Backwards	0 mm
• upwards	100 mm
• downwards	75 mm
• at the side	5 mm
Installation altitude at height above sea level maximum	2 000 m; Derating as of 1000 m, see catalog
Weight without packaging	10.2 kg

Connections/Terminals

Type of electrical connection	
• for main current circuit	busbar connection
• for control circuit	spring-loaded terminals
Type of connectable conductor cross-sections	
• for DIN cable lug for main contacts stranded	2x (50 ... 240 mm²)

• for DIN cable lug for main contacts finely stranded	2x (70 ... 240 mm²)
Type of connectable conductor cross-sections at AWG conductors for control circuit • solid • finely stranded with core end processing	2x (24 ... 16) 2x (24 ... 16)
Wire length • between soft starter and motor maximum • at the digital inputs at DC maximum	800 m 1 000 m

Ambient conditions

Ambient temperature • during operation • during storage and transport	-25 ... +60 °C -25 ... +80 °C
Environmental category • during operation acc. to IEC 60721 • during storage acc. to IEC 60721 • during transport acc. to IEC 60721	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4 2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)

Communication/ Protocol

Communication module is supported • PROFINET standard • Modbus TCP • PROFIBUS	Yes Yes Yes
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UL/CSA ratings

Manufacturer's article number • of the fuse usable up to 575/600 V according to UL • of the fuse usable at inside-delta circuit up to 575/600 V according to UL	Type: Class J / L, max. 1000 A; Standard fault, Iq = 18 kA Type: Class J / L, max. 1000 A
Operating power [hp] for three-phase motors • at 200/208 V at 50 °C rated value • at 220/230 V at 50 °C rated value • at 460/480 V at 50 °C rated value • at 575/600 V at 50 °C rated value • at 200/208 V at inside-delta circuit at 50 °C rated value • at 220/230 V at inside-delta circuit at 50 °C rated value • at 460/480 V at inside-delta circuit at 50 °C rated value	75 hp 100 hp 200 hp 250 hp 150 hp 200 hp 400 hp

- at 575/600 V at inside-delta circuit at 50 °C
rated value

500 hp

Contact rating of auxiliary contacts according to UL

R300-B300

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=3RW5545-2HA16>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5545-2HA16>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5545-2HA16>

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

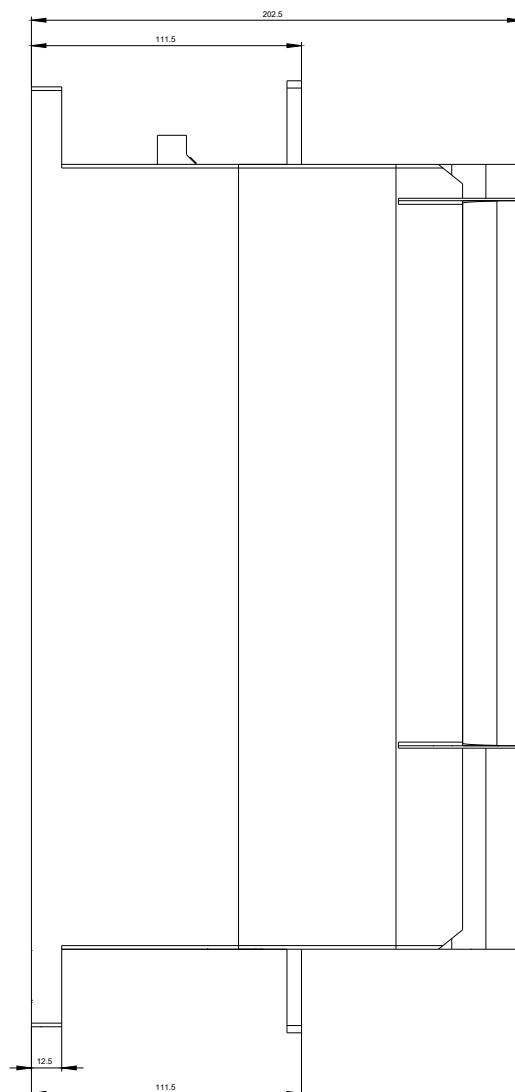
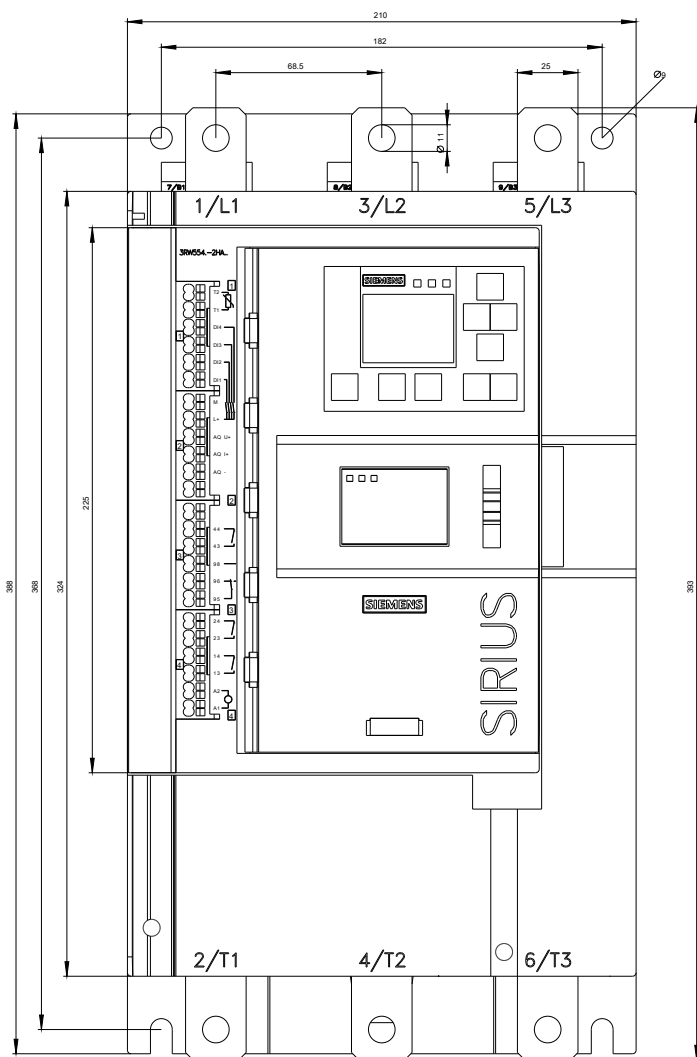
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5545-2HA16&lang=en

Characteristic: Tripping characteristics, I_t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5545-2HA16/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5545-2HA16&objecttype=14&gridview=view1>



last modified:

07/04/2018