

SIRIUS soft starter 200-480 V 18 A, 24 V AC/DC 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

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

[3NE8020-1; Type of coordination 2, I_q = 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 ... 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	600 V
Degree of pollution	3
Impulse voltage rated value	6 kV
Blocking voltage of the thyristor maximum	1 600 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) / 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	18 A
• at 50 °C rated value	15.9 A
• at 60 °C rated value	13.8 A

Operating current at inside-delta circuit

• at 40 °C rated value	31.1 A
• at 50 °C rated value	28 A
• at 60 °C rated value	23.9 A

Operating voltage

• rated value	200 ... 480 V
• 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	
• at 230 V at 40 °C rated value	4 kW
• at 230 V at inside-delta circuit at 40 °C rated value	7.5 kW
• at 400 V at 40 °C rated value	7.5 kW
• at 400 V at inside-delta circuit at 40 °C rated value	15 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	3.5 A
• at inside-delta circuit minimum	6.1 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	5 W
• at 50 °C to power-up	5 W
• at 60 °C to power-up	4 W

Control circuit/ Control	
Type of voltage of the control supply voltage	AC/DC
Control supply voltage at AC	
• at 50 Hz rated value	24 V
• 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 • 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 %
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 (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 • with fail-safe • parameterizable	4 0 4
Number of digital outputs • with fail-safe • parameterizable • not parameterizable	4 0 3 1
Digital output version	3 normally-open contacts (NO) / 1 changeover contact (CO)
Number of inputs for thermistor connection	1; Type A PTC or Klaxon / Thermoclick
Number of analog outputs	1
Switching capacity current of the relay outputs • 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	275 mm
Width	170 mm
Depth	152 mm
Required spacing with side-by-side mounting • forwards • Backwards • upwards • downwards • at the side	10 mm 0 mm 100 mm 75 mm 5 mm

Installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see catalog
Weight without packaging	2.3 kg

Connections/Terminals

Type of electrical connection • for main current circuit • for control circuit	screw-type terminals spring-loaded terminals
Type of connectable conductor cross-sections • for main contacts — solid — finely stranded with core end processing	2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 10 mm ²) 2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 6.0 mm ²)
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 RK5 / K5, max. 70 A; Standard fault, I _q = 5 kA Type: Class RK5 / K5, max. 70 A
Operating power [hp] for three-phase motors • at 200/208 V at 50 °C rated value	3 hp

- at 220/230 V at 50 °C rated value 5 hp
- at 460/480 V at 50 °C rated value 10 hp
- at 200/208 V at inside-delta circuit at 50 °C rated value 7.5 hp
- at 220/230 V at inside-delta circuit at 50 °C rated value 7.5 hp
- at 460/480 V at inside-delta circuit at 50 °C rated value 20 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=3RW5514-3HA04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5514-3HA04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5514-3HA04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5514-3HA04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5514-3HA04/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5514-3HA04&objecttype=14&gridview=view1>

