



SIRIUS soft starter 200-480 V 93 A, 24 V AC/DC Screw terminals
Thermistor input

product brand name

product category

product designation

product type designation

manufacturer's article number

- of standard HMI module usable
- of high feature HMI module usable
- of communication module PROFINET standard usable
- of communication module PROFIBUS usable
- of communication module Modbus TCP usable
- of communication module Modbus RTU usable
- of communication module Ethernet/IP
- 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

SIRIUS

Hybrid switching devices

Soft starter

3RW52

[3RW5980-0HS00](#)

[3RW5980-0HF00](#)

[3RW5980-0CS00](#)

[3RW5980-0CP00](#)

[3RW5980-0CT00](#)

[3RW5980-0CR00](#)

[3RW5980-0CE00](#)

[3VA2216-7MN32-0AA0: Type of coordination 1, I_q = 15 kA, CLASS 10](#)

[3VA2216-7MN32-0AA0: Type of coordination 1, I_q = 10 kA, CLASS 10](#)

[3VA2220-7MN32-0AA0: Type of coordination 1, I_q = 15 kA, CLASS 10](#)

[3VA2220-7MN32-0AA0: Type of coordination 1, I_q = 10 kA, CLASS 10](#)

[3NA3136-6: Type of coordination 1, I_q = 65 kA](#)

[3NA3136-6: Type of coordination 1, I_q = 65 kA](#)

[3NE1224-0: Type of coordination 2, I_q = 65 kA](#)

[3NE4124: Type of coordination 2, I_q = 65 kA](#)

General technical data

starting voltage [%]

30 ... 100 %

stopping voltage [%]

50 %; non-adjustable

start-up ramp time of soft starter

0 ... 20 s

current limiting value [%] adjustable

130 ... 700 %

certificate of suitability

- CE marking
- UL approval
- CSA approval

Yes

Yes

Yes

product component

- HMI-High Feature
- is supported HMI-Standard
- is supported HMI-High Feature

No

Yes

Yes

product feature integrated bypass contact system

Yes

number of controlled phases

3

trip class

CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2

buffering time in the event of power failure

• for main current circuit • for control circuit	100 ms
insulation voltage rated value	100 ms
degree of pollution	600 V
impulse voltage rated value	3, acc. to IEC 60947-4-2
blocking voltage of the thyristor maximum	6 kV
service factor	1 400 V
surge voltage resistance rated value	1
maximum permissible voltage for safe isolation	6 kV
• between main and auxiliary circuit	600 V
shock resistance	15 g / 11 ms, from 12 g / 11 ms with potential contact lifting
vibration resistance	15 mm to 6 Hz; 2g to 500 Hz
utilization category according to IEC 60947-4-2	AC 53a
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	02/15/2018
product function	
• ramp-up (soft starting) • ramp-down (soft stop) • Soft Torque • adjustable current limitation • pump ramp down • intrinsic device protection • motor overload protection	Yes
	Yes
	Yes
	Yes
	Yes
	Yes
	Yes; Full motor protection (thermistor motor protection and electronic motor overload protection)
	Yes; Type A PTC or Klaxon / Thermoclick
• evaluation of thermistor motor protection • inside-delta circuit • auto-RESET • manual RESET • remote reset • communication function • operating measured value display • error logbook • via software parameterizable • via software configurable • PROFlenergy	Yes
	Yes
	Yes
	Yes
	Yes; By turning off the control supply voltage
	Yes
	Yes; Only in conjunction with special accessories
	Yes; Only in conjunction with special accessories
	No
	Yes
	Yes; in connection with the PROFINET Standard communication module
	Yes
• firmware update • removable terminal for control circuit • torque control • analog output	Yes
	No
	No

Power Electronics

operational current	
• at 40 °C rated value • at 50 °C rated value • at 60 °C rated value	93 A
	82.5 A
	75.5 A
operational current at inside-delta circuit	
• at 40 °C rated value • at 50 °C rated value • at 60 °C rated value	161 A
	143 A
	131 A
operating voltage	
• rated value • at inside-delta circuit rated value	200 ... 480 V
	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 3-phase motors	
• at 230 V at 40 °C rated value • at 230 V at inside-delta circuit at 40 °C rated value • at 400 V at 40 °C rated value • at 400 V at inside-delta circuit at 40 °C rated value	22 kW
	45 kW
	45 kW
	90 kW
Operating frequency 1 rated value	50 Hz

Operating frequency 2 rated value**relative negative tolerance of the operating frequency****relative positive tolerance of the operating frequency****adjustable motor current**

• at rotary coding switch on switch position 1	40.5 A
• at rotary coding switch on switch position 2	44 A
• at rotary coding switch on switch position 3	47.5 A
• at rotary coding switch on switch position 4	51 A
• at rotary coding switch on switch position 5	54.5 A
• at rotary coding switch on switch position 6	58 A
• at rotary coding switch on switch position 7	61.5 A
• at rotary coding switch on switch position 8	65 A
• at rotary coding switch on switch position 9	68.5 A
• at rotary coding switch on switch position 10	72 A
• at rotary coding switch on switch position 11	75.5 A
• at rotary coding switch on switch position 12	79 A
• at rotary coding switch on switch position 13	82.5 A
• at rotary coding switch on switch position 14	86 A
• at rotary coding switch on switch position 15	89.5 A
• at rotary coding switch on switch position 16	93 A
• minimum	40.5 A

adjustable motor current

• for inside-delta circuit at rotary coding switch on switch position 1	70.1 A
• for inside-delta circuit at rotary coding switch on switch position 2	76.2 A
• for inside-delta circuit at rotary coding switch on switch position 3	82.3 A
• for inside-delta circuit at rotary coding switch on switch position 4	88.3 A
• for inside-delta circuit at rotary coding switch on switch position 5	94.4 A
• for inside-delta circuit at rotary coding switch on switch position 6	100 A
• for inside-delta circuit at rotary coding switch on switch position 7	107 A
• for inside-delta circuit at rotary coding switch on switch position 8	113 A
• for inside-delta circuit at rotary coding switch on switch position 9	119 A
• for inside-delta circuit at rotary coding switch on switch position 10	125 A
• for inside-delta circuit at rotary coding switch on switch position 11	131 A
• for inside-delta circuit at rotary coding switch on switch position 12	137 A
• for inside-delta circuit at rotary coding switch on switch position 13	143 A
• for inside-delta circuit at rotary coding switch on switch position 14	149 A
• for inside-delta circuit at rotary coding switch on switch position 15	155 A
• for inside-delta circuit at rotary coding switch on switch position 16	161 A
• at inside-delta circuit minimum	70.1 A

minimum load [%]15 %; Relative to smallest settable I_e**power loss [W] for rated value of the current at AC**

• at 40 °C after startup	40 W
• at 50 °C after startup	37 W
• at 60 °C after startup	35 W

power loss [W] at AC at current limitation 350 %

• at 40 °C during startup	1 270 W
• at 50 °C during startup	1 077 W
• at 60 °C during startup	959 W

Control circuit/ Control

type of voltage of the control supply voltage
control supply voltage at AC

AC/DC

• at 50 Hz rated value • at 60 Hz rated value	24 V
relative negative tolerance of the control supply voltage at AC at 50 Hz	24 V
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	20 %
relative negative tolerance of the control supply voltage frequency	50 ... 60 Hz
relative positive tolerance of the control supply voltage frequency	-10 %
control supply voltage	10 %
• 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	160 mA
holding current in bypass operation rated value	380 mA
locked-rotor current at close of bypass contact maximum	7.6 A
inrush current peak at application of control supply voltage maximum	3.3 A
duration of inrush current peak at application of control supply voltage	12.1 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	1
number of digital outputs	3
• not parameterizable	2
digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)
number of analog outputs	0
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	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
fastening method	screw fixing
height	306 mm
width	185 mm
depth	203 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
weight without packaging	6.9 kg

Connections/ Terminals

type of electrical connection	
• for main current circuit • for control circuit	box terminal
width of connection bar maximum	screw-type terminals
wire length for thermistor connection	25 mm
• with conductor cross-section = 0.5 mm² maximum • with conductor cross-section = 1.5 mm² maximum • with conductor cross-section = 2.5 mm² maximum	50 m
	150 m
	250 m
type of connectable conductor cross-sections	

• for main contacts for box terminal using the front clamping point solid • for main contacts for box terminal using the front clamping point finely stranded with core end processing • for main contacts for box terminal using the front clamping point stranded • at AWG cables for main contacts for box terminal using the front clamping point • for main contacts for box terminal using the back clamping point solid • at AWG cables for main contacts for box terminal using the back clamping point • for main contacts for box terminal using both clamping points solid • for main contacts for box terminal using both clamping points finely stranded with core end processing • for main contacts for box terminal using both clamping points stranded • for main contacts for box terminal using the back clamping point finely stranded with core end processing • for main contacts for box terminal using the back clamping point stranded	1x (2.5 ... 16 mm ²) 1x (2.5 ... 50 mm ²) 1x (10 ... 70 mm ²) 1x (10 ... 2/0) 1x (2.5 ... 16 mm ²) 1x (10 ... 2/0) 2x (2.5 ... 16 mm ²) 2x (2.5 ... 35 mm ²) 2x (6 ... 16 mm ²), 2x (10 ... 50 mm ²) 1x (2.5 ... 50 mm ²) 1x (10 ... 70 mm ²)
type of connectable conductor cross-sections • for control circuit solid • for control circuit finely stranded with core end processing • at AWG cables for control circuit solid	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²) 1x (20 ... 12), 2x (20 ... 14)
wire length • between soft starter and motor maximum • at the digital inputs at AC maximum • at the digital inputs at DC maximum	800 m 100 m 1 000 m
tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals	4.5 ... 6 N·m 0.8 ... 1.2 N·m
tightening torque [lbf·in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals	40 ... 53 lbf·in 7 ... 10.3 lbf·in
Ambient conditions	
installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see catalog
ambient temperature • during operation • during storage and transport	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above -40 ... +80 °C
environmental category • during operation according to IEC 60721 • during storage according to IEC 60721 • during transport according 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) acc. to IEC 60947-4-2: Class A
EMC emitted interference	
Communication/ Protocol	
communication module is supported • PROFINET standard • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS	Yes Yes Yes Yes Yes
UL/CSA ratings	
manufacturer's article number • of circuit breaker — usable for Standard Faults at 460/480 V according to UL	Siemens type: 3VA51, max. 125 A; I _q = 10 kA

- usable for High Faults at 460/480 V according to UL
- usable for Standard Faults at 460/480 V at inside-delta circuit according to UL
- usable for High Faults at 460/480 V at inside-delta circuit according to UL
- usable for Standard Faults at 575/600 V according to UL
- usable for Standard Faults at 575/600 V at inside-delta circuit according to UL

• of the fuse

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

operating power [hp] for 3-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 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

contact rating of auxiliary contacts according to UL

Siemens type: 3VA51, max. 125 A; I_q max = 65 kA

Siemens type: 3VA51, max. 125 A; I_q = 10 kA

Siemens type: 3VA51, max. 125 A; I_q max = 65 kA

Siemens type: 3VA51, max. 125 A; I_q = 10 kA

Siemens type: 3VA51, max. 125 A; I_q = 10 kA

Type: Class RK5 / K5, max. 300 A; I_q = 10 kA

Type: Class J / L, max. 250 A; I_q = 100 kA

Type: Class RK5 / K5, max. 300 A; I_q = 10 kA

Type: Class J / L, max. 250 A; I_q = 100 kA

25 hp

30 hp

60 hp

40 hp

50 hp

100 hp

R300-B300

Safety related data

protection class IP on the front according to IEC 60529

IP00; IP20 with cover

touch protection on the front according to IEC 60529
electromagnetic compatibility

finger-safe, for vertical contact from the front with cover
in accordance with IEC 60947-4-2

Certificates/ approvals

General Product Approval

EMC



[Confirmation](#)



Declaration of Conformity

Test Certificates

Marine / Shipping



[Type Test Certificates/Test Report](#)



Marine / Shipping

other



[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?mifb=3RW5227-1TC04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5227-1TC04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-1TC04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5227-1TC04&lang=en

Characteristic: Tripping characteristics, I_t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-1TC04/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5227-1TC04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

<https://support.industry.siemens.com/cs/ww/en/view/101494917>



