



SIRIUS soft starter 200-480 V 315 A, 110-250 V AC Screw terminals

product brand name

product category

product designation

product type designation

manufacturer's article number

- of high feature HMI module usable
- of communication module PROFINET standard usable
- of communication module PROFINET high-feature 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

3RW55

[3RW5980-0HF00](#)

[3RW5980-0CS00](#)

[3RW5950-0CH00](#)

[3RW5980-0CP00](#)

[3RW5980-0CT00](#)

[3RW5980-0CR00](#)

[3RW5980-0CE00](#)

[3VA2440-7MN32-0AA0](#); Type of coordination 1, I_q = 65 kA, CLASS 10

[3VA2440-7MN32-0AA0](#); Type of coordination 1, I_q = 65 kA, CLASS 10

[3VA2580-6HN32-0AA0](#); Type of coordination 1, I_q = 65 kA, CLASS 10

[3VA2580-6HN32-0AA0](#); Type of coordination 1, I_q = 65 kA, CLASS 10

2x3NA3365-6; Type of coordination 1, I_q = 65 kA

2x3NA3365-6; Type of coordination 1, I_q = 65 kA

[3NE1334-2](#); Type of coordination 2, I_q = 65 kA

Type of coordination 2, I_q = 65 kA

General technical data

starting voltage [%]

20 ... 100 %

stopping voltage [%]

50 %; non-adjustable

start-up ramp time of soft starter

0 ... 360 s

ramp-down time of soft starter

0 ... 360 s

start torque [%]

10 ... 100 %

stopping torque [%]

10 ... 100 %

torque limitation [%]

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 according to IEC 61557-12

5 %

certificate of suitability

- CE marking
- UL approval

Yes

Yes

<ul style="list-style-type: none"> • CSA approval 	Yes
product component	Yes
<ul style="list-style-type: none"> • HMI-High Feature 	Yes
<ul style="list-style-type: none"> • is supported HMI-High Feature 	Yes
product feature integrated bypass contact system	3
number of controlled phases	CLASS 10A / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2
trip class	10 ... 60 %
current unbalance limiting value [%]	10 ... 95 %
ground-fault monitoring limiting value [%]	
buffering time in the event of power failure	
<ul style="list-style-type: none"> • for main current circuit 	100 ms
<ul style="list-style-type: none"> • for control circuit 	100 ms
idle time adjustable	0 ... 255 s
insulation voltage rated value	480 V
degree of pollution	3, acc. to IEC 60947-4-2
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	
<ul style="list-style-type: none"> • between main and auxiliary circuit 	480 V; does not apply for thermistor connection
shock resistance	15 g / 11 ms, from 6 g / 11 ms with potential contact lifting
vibration resistance	15 mm up to 6 Hz; 2 g up to 500 Hz
recovery time after overload trip adjustable	60 ... 1 800 s
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	
<ul style="list-style-type: none"> • ramp-up (soft starting) 	Yes
<ul style="list-style-type: none"> • ramp-down (soft stop) 	Yes
<ul style="list-style-type: none"> • breakaway pulse 	Yes
<ul style="list-style-type: none"> • adjustable current limitation 	Yes
<ul style="list-style-type: none"> • creep speed in both directions of rotation 	Yes
<ul style="list-style-type: none"> • pump ramp down 	Yes
<ul style="list-style-type: none"> • DC braking 	Yes
<ul style="list-style-type: none"> • motor heating 	Yes
<ul style="list-style-type: none"> • slave pointer function 	Yes
<ul style="list-style-type: none"> • trace function 	Yes
<ul style="list-style-type: none"> • intrinsic device protection 	Yes
<ul style="list-style-type: none"> • 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.
<ul style="list-style-type: none"> • evaluation of thermistor motor protection 	Yes; Type A PTC or Klixon / Thermoclick
<ul style="list-style-type: none"> • inside-delta circuit 	Yes
<ul style="list-style-type: none"> • auto-RESET 	Yes
<ul style="list-style-type: none"> • manual RESET 	Yes
<ul style="list-style-type: none"> • remote reset 	Yes
<ul style="list-style-type: none"> • communication function 	Yes
<ul style="list-style-type: none"> • operating measured value display 	Yes
<ul style="list-style-type: none"> • event list 	Yes
<ul style="list-style-type: none"> • error logbook 	Yes
<ul style="list-style-type: none"> • via software parameterizable 	Yes
<ul style="list-style-type: none"> • via software configurable 	Yes
<ul style="list-style-type: none"> • screw terminal 	Yes
<ul style="list-style-type: none"> • spring-loaded terminal 	No
<ul style="list-style-type: none"> • PROFInergy 	Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules
<ul style="list-style-type: none"> • firmware update 	Yes
<ul style="list-style-type: none"> • removable terminal for control circuit 	Yes
<ul style="list-style-type: none"> • voltage ramp 	Yes
<ul style="list-style-type: none"> • torque control 	Yes
<ul style="list-style-type: none"> • combined braking 	Yes
<ul style="list-style-type: none"> • analog output 	Yes; 4 ... 20 mA (default) / 0 ... 10 V
<ul style="list-style-type: none"> • programmable control inputs/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

operational current

• at 40 °C rated value	315 A
• at 40 °C rated value minimum	63 A
• at 50 °C rated value	279 A
• at 60 °C rated value	255 A

operational current at inside-delta circuit

• at 40 °C rated value	546 A
• at 50 °C rated value	483 A
• at 60 °C rated value	442 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 3-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

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 %

minimum load [%]

10 %; Relative to set le

power loss [W] for rated value of the current at AC

• at 40 °C after startup	95 W
• at 50 °C after startup	84 W
• at 60 °C after startup	77 W

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

• at 40 °C during startup	4 966 W
• at 50 °C during startup	4 153 W
• at 60 °C during startup	3 646 W

type of the motor protection

Electronic, tripping in the event of thermal overload of the motor

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 %

control supply current in standby mode rated value

100 mA

holding current in bypass operation rated value

150 mA

inrush current by closing the bypass contacts maximum	0.87 A
inrush current peak at application of control supply voltage maximum	43 A
duration of inrush current peak at application of control supply voltage	1.6 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	4
• parameterizable	4
• number of digital outputs	4
• number of digital outputs parameterizable	3
• number of digital outputs not parameterizable	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	
• 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°)
fastening method	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
weight without packaging	10.2 kg
Connections/ Terminals	
type of electrical connection	
• for main current circuit	busbar connection
• for control circuit	screw-type terminals
width of connection bar maximum	45 mm
wire length for thermistor connection	
• with conductor cross-section = 0.5 mm² maximum	50 m
• with conductor cross-section = 1.5 mm² maximum	150 m
• with conductor cross-section = 2.5 mm² maximum	250 m
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	
• for control circuit solid	1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²)
• for control circuit finely stranded with core end processing	1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
• at AWG cables for control circuit solid	1x (20 ... 12), 2x (20 ... 14)
wire length	
• between soft starter and motor maximum	800 m
• at the digital inputs at DC maximum	1 000 m
tightening torque	
• for main contacts with screw-type terminals	14 ... 24 N·m
• for auxiliary and control contacts with screw-type terminals	0.8 ... 1.2 N·m
tightening torque [lbf·in]	
• for main contacts with screw-type terminals	124 ... 210 lbf·in
• for auxiliary and control contacts with screw-type terminals	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	
<ul style="list-style-type: none"> during operation 	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above
<ul style="list-style-type: none"> during storage and transport 	-40 ... +80 °C
environmental category	
<ul style="list-style-type: none"> during operation according to IEC 60721 	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"> during storage according to IEC 60721 	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
<ul style="list-style-type: none"> during transport according to IEC 60721 	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
EMC emitted interference	
acc. to IEC 60947-4-2: Class A	
Communication/ Protocol	
communication module is supported	
<ul style="list-style-type: none"> PROFINET standard 	Yes
<ul style="list-style-type: none"> PROFINET high-feature 	Yes
<ul style="list-style-type: none"> EtherNet/IP 	Yes
<ul style="list-style-type: none"> Modbus RTU 	Yes
<ul style="list-style-type: none"> Modbus TCP 	Yes
<ul style="list-style-type: none"> PROFIBUS 	Yes
UL/CSA ratings	
manufacturer's article number	
<ul style="list-style-type: none"> of circuit breaker <ul style="list-style-type: none"> — usable for Standard Faults at 460/480 V according to UL — 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 High Faults at 575/600 V at inside-delta circuit according to UL — usable for Standard Faults at 575/600 V at inside-delta circuit according to UL 	<p>Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq = 18 kA</p> <p>Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq max = 65 kA</p> <p>Siemens type: 3VA54, max. 600 A; Iq = 18 kA</p> <p>Siemens type: 3VA54, max. 600 A; Iq max = 65 kA</p> <p>Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq = 18 kA</p> <p>Siemens type: 3VA54, max. 600 A; Iq max = 65 kA</p> <p>Siemens type: 3VA54, max. 600 A; Iq = 18 kA</p>
<ul style="list-style-type: none"> of the fuse <ul style="list-style-type: none"> — 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 	<p>Type: Class J / L, max. 1000 A; Iq = 18 kA</p> <p>Type: Class J / L, max. 1000 A; Iq = 100 kA</p> <p>Type: Class J / L, max. 1000 A; Iq = 18 kA</p> <p>Type: Class J / L, max. 1000 A; Iq = 100 kA</p>
operating power [hp] for 3-phase motors	
<ul style="list-style-type: none"> at 200/208 V at 50 °C rated value 	75 hp
<ul style="list-style-type: none"> at 220/230 V at 50 °C rated value 	100 hp
<ul style="list-style-type: none"> at 460/480 V at 50 °C rated value 	200 hp
<ul style="list-style-type: none"> at 200/208 V at inside-delta circuit at 50 °C rated value 	150 hp
<ul style="list-style-type: none"> at 220/230 V at inside-delta circuit at 50 °C rated value 	200 hp
<ul style="list-style-type: none"> at 460/480 V at inside-delta circuit at 50 °C rated value 	400 hp
contact rating of auxiliary contacts according to UL	
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	
finger-safe, for vertical contact from the front with cover	
electromagnetic compatibility	
acc. to IEC 60947-4-2	
ATEX	
certificate of suitability	
<ul style="list-style-type: none"> ATEX 	Yes
<ul style="list-style-type: none"> IECEx 	Yes
<ul style="list-style-type: none"> according to ATEX directive 2014/34/EU 	BVS 18 ATEX F 003 X

type of protection according to ATEX directive 2014/34/EU	II (2)G [Ex eb Gb] [Ex db Gb] [Ex pxb Gb], II (2)D [Ex tb Db] [Ex pxb Db], I (M2) [Ex db Mb]
hardware fault tolerance according to IEC 61508 relating to ATEX	0
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.008
PFHD with high demand rate according to EN 62061 relating to ATEX	5E-7 1/h
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL1
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 a

Certificates/ approvals

General Product Approval	EMC
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[Confirmation](#)



For use in hazardous locations	Declaration of Conformity	Test Certificates	Marine / Shipping
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[Type Test Certificates/Test Report](#)



Marine / Shipping	other
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[Confirmation](#)

Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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?mlfb=3RW5545-6HA14>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5545-6HA14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5545-6HA14>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5545-6HA14&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

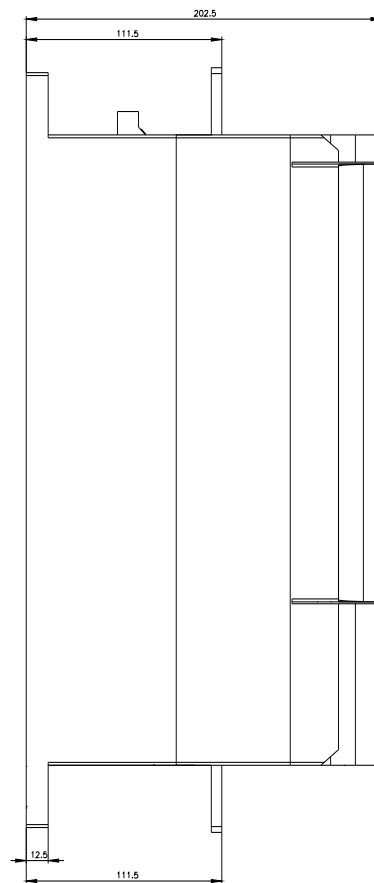
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5545-6HA14/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5545-6HA14&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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



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