



Figure similar

SIRIUS soft starter 200-480 V 63 A, 24 V AC/DC Screw terminals Fail-safe

product brand name

SIRIUS

product category

Hybrid switching devices

product designation

Failsafe soft starters

product type designation

3RW55

manufacturer's article number

[3RW5980-0HF00](#)

- 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
- of the redundant contactor for applications > SIL 1 according to EN 62061
- of the redundant contactor for applications > SIL 1 at inside-delta circuit according to EN 62061
- of the redundant contactor for applications > SIL 1 according to EN ISO 13849-1
- of the redundant contactor for applications > SIL 1 at inside-delta circuit according to EN ISO 13849-1

[3RW5980-0CS00](#)

[3RW5950-0CH00](#)

[3RW5980-0CP00](#)

[3RW5980-0CT00](#)

[3RW5980-0CR00](#)

[3RW5980-0CE00](#)

[3VA2163-7MN32-0AA0](#); Type of coordination 1, $I_q = 65 \text{ kA}$, CLASS 10

[3VA2163-7MN32-0AA0](#); Type of coordination 1, $I_q = 20 \text{ kA}$, CLASS 10

[3VA2110-7MN32-0AA0](#); Type of coordination 1, $I_q = 65 \text{ kA}$, CLASS 10

[3VA2110-7MN32-0AA0](#); Type of coordination 1, $I_q = 65 \text{ kA}$, CLASS 10

[3NA3830-6](#); Type of coordination 1, $I_q = 65 \text{ kA}$

[3NA3830-6](#); Type of coordination 1, $I_q = 65 \text{ kA}$

[3NE1022-0](#); Type of coordination 2, $I_q = 65 \text{ kA}$

[3NE3227](#); Type of coordination 2, $I_q = 65 \text{ kA}$

[3RT2046](#)

[3RT2046](#)

[3RT1055](#)

[3RT1055](#)

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	Yes
• UL approval	Yes
• CSA approval	Yes
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 %
buffering time in the event of power failure	
• for main current circuit	100 ms
• 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	
• 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)	11/22/2019
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
• evaluation of thermistor motor 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.
• inside-delta circuit	Yes; Type A PTC or Klixon / Thermoclick
• 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
• screw terminal	Yes
• spring-loaded terminal	No
• PROFlenergy	Yes; in connection with the PROFINET Standard and PROFINET High-

● firmware update	Yes
● removable terminal for control circuit	Yes
● voltage ramp	Yes
● torque control	Yes
● combined braking	Yes
● analog output	Yes; 4 ... 20 mA (default) / 0 ... 10 V
● 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	63 A
● at 40 °C rated value minimum	13 A
● at 50 °C rated value	55.5 A
● at 60 °C rated value	50.5 A
operational current at inside-delta circuit	
● at 40 °C rated value	109 A
● at 50 °C rated value	96 A
● at 60 °C rated value	87.5 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	18.5 kW
● at 230 V at inside-delta circuit at 40 °C rated value	30 kW
● at 400 V at 40 °C rated value	30 kW
● at 400 V at inside-delta circuit at 40 °C rated value	55 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 I_e
power loss [W] for rated value of the current at AC	
● at 40 °C after startup	19 W
● at 50 °C after startup	17 W
● at 60 °C after startup	15 W
power loss [W] at AC at current limitation 350 %	
● at 40 °C during startup	1 056 W
● at 50 °C during startup	732 W
● at 60 °C during startup	647 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/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 %
control supply current in standby mode rated value	440 mA
holding current in bypass operation rated value	870 mA
inrush current by closing the bypass contacts maximum	6.3 A
inrush current peak at application of control supply voltage maximum	7.5 A
duration of inrush current peak at application 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	4
• with fail-safe	1
• parameterizable	4
number of digital outputs	3
• Number of digital outputs with fail-safe	1
• number of digital outputs parameterizable	2
• number of digital outputs not parameterizable	1
digital output version	2 normally-open contacts (NO) / 1 normally-closed contact (NC) / 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

Response times

OFF-delay time with safety-related request when switched off via control inputs maximum	100 ms
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Installation/ mounting/ dimensions

mounting position	Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°)
fastening method	screw fixing
height	306 mm
width	185 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	5.9 kg

Connections/ Terminals

type of electrical connection	box terminal screw-type terminals
• for main current circuit	
• for control circuit	
width of connection bar maximum	25 mm
wire length for thermistor connection	
• with conductor cross-section = 0.5 mm ² maximum	50 m
• with conductor cross-section = 1.5 mm ² maximum	150 m
• with conductor cross-section = 2.5 mm ² maximum	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 mm²)
1x (2.5 ... 50 mm²)
1x (10 ... 70 mm²)
1x (10 ... 2/0)
1x (2.5 ... 16 mm²)
1x (10 ... 2/0)
2x (2.5 ... 16 mm²)
2x (2.5 ... 35 mm²)
2x (6 ... 16 mm²), 2x (10 ... 50 mm²)
1x (2.5 ... 50 mm²)
1x (10 ... 70 mm²)
1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²)
1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)
1x (20 ... 12), 2x (20 ... 14)
800 m
1 000 m
4.5 ... 6 N·m
0.8 ... 1.2 N·m
40 ... 53 lbf·in
7 ... 10.3 lbf·in

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

wire length

- between soft starter and motor maximum
- at the digital inputs at DC maximum

tightening torque

- for main contacts with screw-type terminals
- for auxiliary and control contacts with screw-type terminals

tightening torque [lbf·in]

- for main contacts with screw-type terminals
- for auxiliary and control contacts with screw-type terminals

Ambient conditions

installation altitude at height above sea level maximum
ambient temperature

- during operation
- during storage and transport

environmental category

- during operation according to IEC 60721
- during storage according to IEC 60721
- during transport according to IEC 60721

EMC emitted interference

2 000 m; Derating as of 1000 m, see catalog
-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above
-40 ... +80 °C
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

Communication/ Protocol

communication module is supported

- PROFINET standard
- PROFINET high-feature
- EtherNet/IP
- Modbus RTU
- Modbus TCP
- PROFIBUS

Yes
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: 3RV2742, max. 70 A or 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 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

• **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; Iq max = 65 kA

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

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

Siemens type: 3RV2742, max. 70 A or 3VA51, max. 125 A; Iq = 10 kA

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

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

Type: Class RK5 / K5, max. 200 A; Iq = 10 kA

Type: Class J / L, max. 225 A; Iq = 100 kA

Type: Class RK5 / K5, max. 200 A; Iq = 10 kA

Type: Class J / L, max. 225 A; Iq = 100 kA

15 hp

20 hp

40 hp

30 hp

30 hp

75 hp

R300-B300

Safety related data

safety device type according to IEC 61508-2

Type B

B10d value

1 000 000

Safety Integrity Level (SIL)

SIL1

- according to IEC 61508

SIL Claim Limit (subsystem) according to EN 62061

SIL 1

performance level (PL) according to EN ISO 13849-1

c

category according to EN ISO 13849-1

2

stop category according to EN 60204-1

0

Safe failure fraction (SFF)

60 %

average diagnostic coverage level (DCavg)

90 %

diagnostics test interval by internal test function maximum

1 000 s

PFHD with high demand rate according to EN 62061

1E-6 1/h

PFDavg with low demand rate according to IEC 61508

0.09

hardware fault tolerance according to IEC 61508

0

T1 value for proof test interval or service life according to IEC 61508

20 a

safe state

Open load circuit

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

Yes

- ATEX

Yes

- IECEx

BVS 18 ATEX F 003 X

- 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]

type of protection according to ATEX directive 2014/34/EU

0

hardware fault tolerance according to IEC 61508 relating to ATEX

0.008

PFDavg with low demand rate according to IEC 61508 relating to ATEX

5E-7 1/h

relating to ATEX
 Safety Integrity Level (SIL) according to IEC 61508
 relating to ATEX
 T1 value for proof test interval or service life
 according to IEC 61508 relating to ATEX

SIL1

3 a

Certificates/ approvals

General Product Approval



[Confirmation](#)



CCC



TÜV



UL



EMC	For use in hazardous locations	Declaration of Conformity	Test Certificates	Marine / Shipping
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RCM



IECEx



ATEX



EG-Konf.

[Type Test Certificates/Test Report](#)



ABS

Marine / Shipping

other



LRS



[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=3RW5525-1HF04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5525-1HF04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5525-1HF04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5525-1HF04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

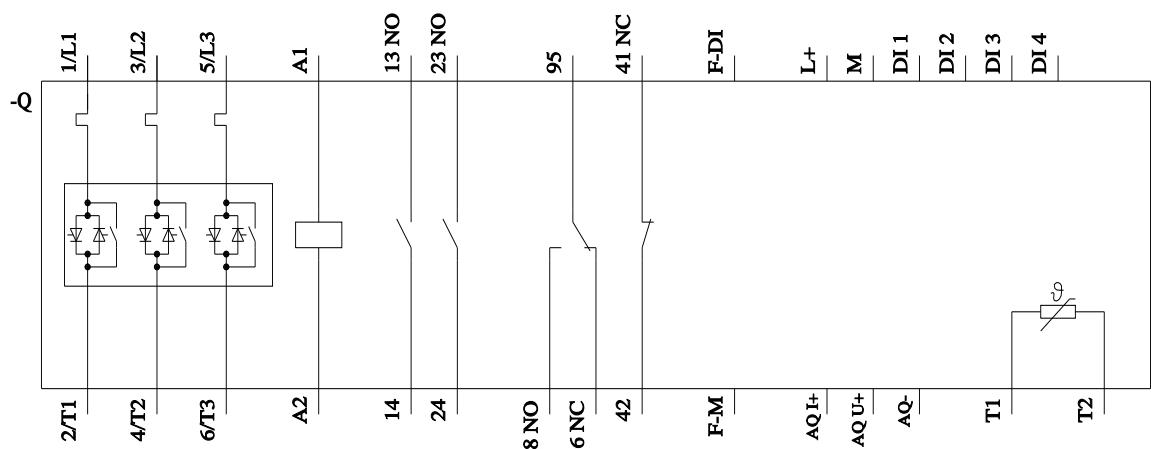
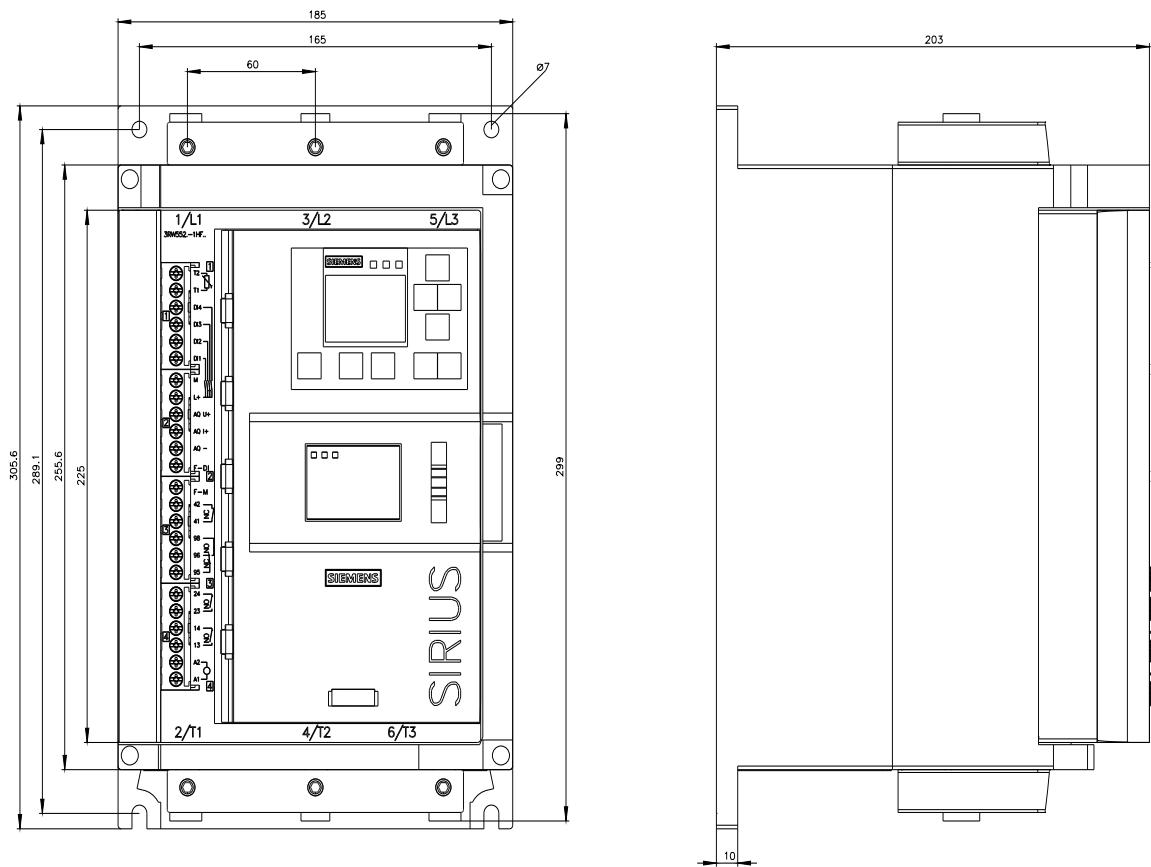
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5525-1HF04/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5525-1HF04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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



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