



SIRIUS soft starter 200-690 V 93 A, 24 V AC/DC Screw terminals

product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW55
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
	3RW5980-0HF00 3RW5980-0CS00 3RW5950-0CH00 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 3NE3227: Type of coordination 2, I_q = 65 kA
General technical data	
starting voltage [%]	20 ... 100 %
stopping voltage [%]	50 ... 50 %
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 acc. 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	690 V
degree of pollution	3, acc. to IEC 60947-4-2
impulse voltage rated value	8 kV
blocking voltage of the thyristor maximum	1 800 V
service factor	1.15
surge voltage resistance rated value	8 kV
maximum permissible voltage for safe isolation	
• between main and auxiliary circuit	690 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 acc. to IEC 60947-4-2	AC 53a
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	15.02.2018
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; 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	Yes; Only up to 600 V operating voltage
• 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
• PROFinergy	Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules
• firmware update	Yes
• removable terminal for control circuit	Yes
• voltage ramp	Yes

• torque control • combined braking • analog output • programmable control inputs/outputs • condition monitoring • automatic parameterisation • application wizards • alternative run-down • emergency operation mode • reversing operation • soft starting at heavy starting conditions	Yes Yes Yes; 4 ... 20 mA (default) / 0 ... 10 V Yes Yes Yes Yes Yes Yes Yes Yes
Power Electronics	
operational current	
• at 40 °C rated value • at 40 °C rated value minimum • at 50 °C rated value • at 60 °C rated value	93 A 19 A 83 A 76 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 ... 690 V 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 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 • at 500 V at 40 °C rated value • at 500 V at inside-delta circuit at 40 °C rated value • at 690 V at 40 °C rated value	22 kW 45 kW 45 kW 90 kW 55 kW 110 kW 90 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 • at 50 °C after startup • at 60 °C after startup	28 W 25 W 23 W
power loss [W] at AC at current limitation 350 %	
• at 40 °C during startup • at 50 °C during startup • at 60 °C during startup	1 258 W 1 065 W 948 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 • at 60 Hz rated value	24 V 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
locked-rotor current at close of bypass contact 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 (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 • parameterizable	4 4
• number of digital outputs • number of digital outputs parameterizable • number of digital outputs not parameterizable	4 3 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 • 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°)
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	7.15 kg
Connections/ Terminals	
type of electrical connection • for main current circuit • for control circuit	box terminal screw-type terminals
width of connection bar maximum	25 mm
wire length for thermistor connection • 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	1x (2.5 ... 16 mm²)

clamping point solid	
for main contacts for box terminal using the front clamping point finely stranded with core end processing	1x (2.5 ... 50 mm ²)
for main contacts for box terminal using the front clamping point stranded	1x (10 ... 70 mm ²)
at AWG cables for main contacts for box terminal using the front clamping point	1x (10 ... 2/0)
for main contacts for box terminal using the back clamping point solid	1x (2.5 ... 16 mm ²)
at AWG cables for main contacts for box terminal using the back clamping point	1x (10 ... 2/0)
for main contacts for box terminal using both clamping points solid	2x (2.5 ... 16 mm ²)
for main contacts for box terminal using both clamping points finely stranded with core end processing	2x (2.5 ... 35 mm ²)
for main contacts for box terminal using both clamping points stranded	2x (6 ... 16 mm ²), 2x (10 ... 50 mm ²)
for main contacts for box terminal using the back clamping point finely stranded with core end processing	1x (2.5 ... 50 mm ²)
for main contacts for box terminal using the back clamping point stranded	1x (10 ... 70 mm ²)
type of connectable conductor cross-sections	
for control circuit solid	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²)
for control circuit finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
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	4.5 ... 6 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	40 ... 53 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	2 000 m; Derating as of 1000 m, see catalog
ambient temperature	
during operation	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above
during storage and transport	-40 ... +80 °C
environmental category	
during operation acc. to IEC 60721	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6
during storage acc. to IEC 60721	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
during transport acc. 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	
PROFINET standard	Yes
PROFINET high-feature	Yes
EtherNet/IP	Yes
Modbus RTU	Yes
Modbus TCP	Yes
PROFIBUS	Yes
UL/CSA ratings	
manufacturer's article number	
of circuit breaker	

— 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	Siemens type: 3VA51, max. 125 A; I _q = 10 kA
• 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	Siemens type: 3VA51, max. 125 A; I _q max = 65 kA
operating power [hp] for 3-phase motors	Siemens type: 3VA51, max. 125 A; I _q = 10 kA
• 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 • at 575/600 V at inside-delta circuit at 50 °C rated value	Siemens type: 3VA51, max. 125 A; I _q max = 65 kA
contact rating of auxiliary contacts according to UL	Siemens type: 3VA51, max. 125 A; I _q = 10 kA
Safety related data	Siemens type: 3VA51, max. 125 A; I _q max = 65 kA
protection class IP on the front acc. to IEC 60529	Type: Class RK5 / K5, max. 300 A; I _q = 10 kA
touch protection on the front acc. to IEC 60529	Type: Class J / L, max. 250 A; I _q = 100 kA
electromagnetic compatibility	Type: Class RK5 / K5, max. 300 A; I _q = 10 kA
ATEX	Type: Class J / L, max. 250 A; I _q = 100 kA
certificate of suitability	
• ATEX • IECEx • according to ATEX directive 2014/34/EU	25 hp
type of protection according to ATEX directive 2014/34/EU	30 hp
hardware fault tolerance acc. to IEC 61508 relating to ATEX	60 hp
PFDavg with low demand rate acc. to IEC 61508 relating to ATEX	75 hp
PFHD with high demand rate acc. to EN 62061 relating to ATEX	40 hp
Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX	50 hp
T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX	100 hp
Certificates/ approvals	125 hp
General Product Approval	R300-B300
EMC	
For use in hazardous locations	



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



EG-Konf.

[Type Test Certificates/Test Report](#)


ABS

BUREAU
VERITAS

LRS

Marine / Shipping	other
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[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?mlfb=3RW5527-1HA06>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5527-1HA06>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5527-1HA06>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5527-1HA06&lang=en

Characteristic: Tripping characteristics, I_t, Let-through current

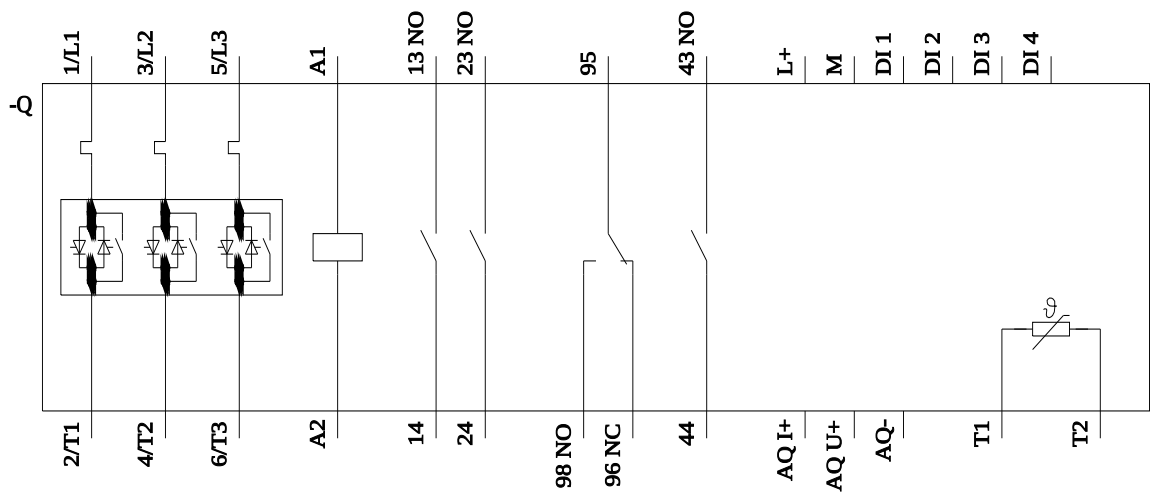
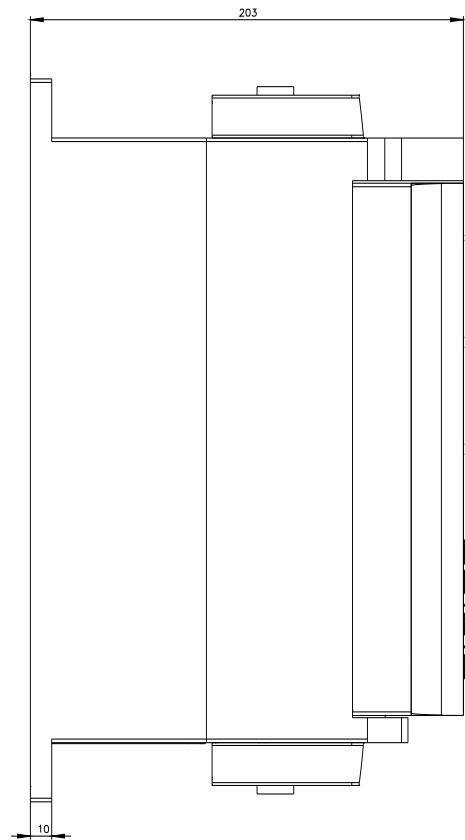
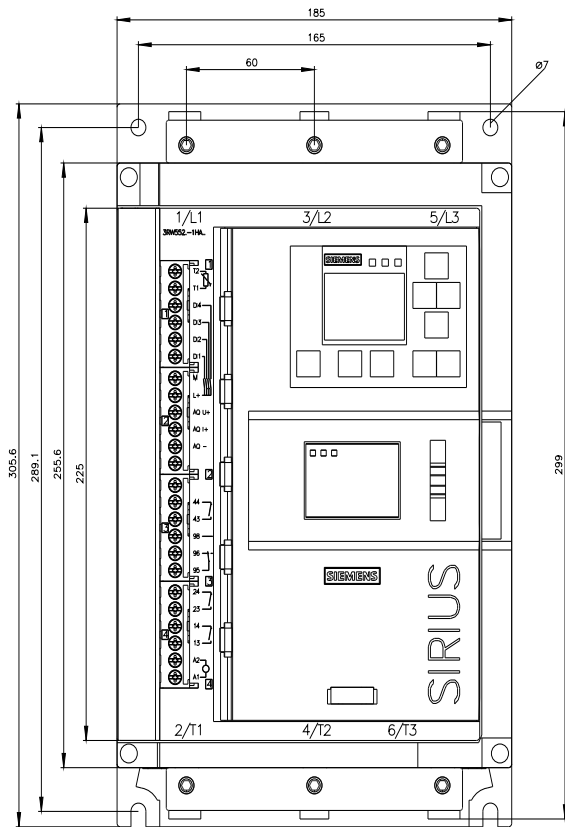
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5527-1HA06/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5527-1HA06&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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



last modified:

8/11/2021 