



SIRIUS soft starter 200-690 V 93 A, 110-250 V AC Screw terminals

product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW55
manufacturer's article number	<ul style="list-style-type: none"> • of high feature HMI module usable 3RW5980-0HF00 • of communication module PROFINET standard usable 3RW5980-0CS00 • of communication module PROFINET high-feature usable 3RW5950-0CH00 • of communication module PROFIBUS usable 3RW5980-0CP00 • of communication module Modbus TCP usable 3RW5980-0CT00 • of communication module Modbus RTU usable 3RW5980-0CR00 • of communication module Ethernet/IP 3RW5980-0CE00 • of circuit breaker usable at 400 V 3VA2216-7MN32-0AA0; Type of coordination 1, I_q = 15 kA, CLASS 10 • of circuit breaker usable at 500 V 3VA2216-7MN32-0AA0; Type of coordination 1, I_q = 10 kA, CLASS 10 • of circuit breaker usable at 400 V at inside-delta circuit 3VA2220-7MN32-0AA0; Type of coordination 1, I_q = 15 kA, CLASS 10 • of circuit breaker usable at 500 V at inside-delta circuit 3VA2220-7MN32-0AA0; Type of coordination 1, I_q = 10 kA, CLASS 10 • of the gG fuse usable up to 690 V 3NA3136-6; Type of coordination 1, I_q = 65 kA • of the gG fuse usable at inside-delta circuit up to 500 V 3NA3136-6; Type of coordination 1, I_q = 65 kA • of full range R fuse link for semiconductor protection usable up to 690 V 3NE1224-0; Type of coordination 2, I_q = 65 kA • of back-up R fuse link for semiconductor protection usable up to 690 V 3NE3227; 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	



- 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 (dc) ... 10 V
 Yes
 Yes
 Yes
 Yes
 Yes
 Yes
 Yes
 Yes
 Yes
 Yes

Power Electronics

operational current	
• at 40 °C rated value	93 A
• at 40 °C rated value minimum	19 A
• at 50 °C rated value	82.5 A
• at 60 °C rated value	75.5 A
operational current at inside-delta circuit	
• at 40 °C rated value	161 A
• at 50 °C rated value	143 A
• at 60 °C rated value	131 A
operating voltage	
• rated value	200 ... 690 V
• at inside-delta circuit rated value	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	22 kW
• at 230 V at inside-delta circuit at 40 °C rated value	45 kW
• at 400 V at 40 °C rated value	45 kW
• at 400 V at inside-delta circuit at 40 °C rated value	90 kW
• at 500 V at 40 °C rated value	55 kW
• at 500 V at inside-delta circuit at 40 °C rated value	110 kW
• at 690 V at 40 °C rated value	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	28 W
• at 50 °C after startup	25 W
• at 60 °C after startup	23 W
power loss [W] at AC at current limitation 350 %	
• at 40 °C during startup	1 258 W
• at 50 °C during startup	1 065 W
• at 60 °C during startup	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
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	180 mA
locked-rotor current at close of bypass contact maximum	0.8 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	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	7.15 kg
Connections/ Terminals	
type of electrical connection	
• for main current circuit	box terminal
• for control circuit	screw-type terminals
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	1x (2.5 ... 16 mm ²)
• 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	1x (10 ... 2/0)



<p>using the front clamping point</p> <ul style="list-style-type: none"> • 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 	<p>1x (2.5 ... 16 mm²)</p> <p>1x (10 ... 2/0)</p> <p>2x (2.5 ... 16 mm²)</p> <p>2x (2.5 ... 35 mm²)</p> <p>2x (6 ... 16 mm²), 2x (10 ... 50 mm²)</p> <p>1x (2.5 ... 50 mm²)</p> <p>1x (10 ... 70 mm²)</p>
<p>type of connectable conductor cross-sections</p> <ul style="list-style-type: none"> • for control circuit solid • for control circuit finely stranded with core end processing • at AWG cables for control circuit solid 	<p>1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²)</p> <p>1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)</p> <p>1x (20 ... 12), 2x (20 ... 14)</p>
<p>wire length</p> <ul style="list-style-type: none"> • between soft starter and motor maximum • at the digital inputs at DC maximum 	<p>800 m</p> <p>1 000 m</p>
<p>tightening torque</p> <ul style="list-style-type: none"> • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals 	<p>4.5 ... 6 N·m</p> <p>0.8 ... 1.2 N·m</p>
<p>tightening torque [lbf·in]</p> <ul style="list-style-type: none"> • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals 	<p>40 ... 53 lbf·in</p> <p>7 ... 10.3 lbf·in</p>
Ambient conditions	
<p>installation altitude at height above sea level maximum</p>	<p>2 000 m; Derating as of 1000 m, see catalog</p>
<p>ambient temperature</p> <ul style="list-style-type: none"> • during operation • during storage and transport 	<p>-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above</p> <p>-40 ... +80 °C</p>
<p>environmental category</p> <ul style="list-style-type: none"> • during operation according to IEC 60721 • during storage according to IEC 60721 • during transport according to IEC 60721 	<p>3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6</p> <p>1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4</p> <p>2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)</p>
<p>EMC emitted interference</p>	<p>acc. to IEC 60947-4-2: Class A, Class B on request</p>
Communication/ Protocol	
<p>communication module is supported</p> <ul style="list-style-type: none"> • PROFINET standard • PROFINET high-feature • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
UL/CSA ratings	
<p>manufacturer's article number</p> <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- 	<p>Siemens type: 3VA51, max. 125 A; Iq = 10 kA</p> <p>Siemens type: 3VA51, max. 125 A; Iq max = 65 kA</p> <p>Siemens type: 3VA51, max. 125 A; Iq = 10 kA</p> <p>Siemens type: 3VA51, max. 125 A; Iq max = 65 kA</p>



<p>delta circuit according to UL</p> <ul style="list-style-type: none"> — 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>• of the fuse</p> <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>Siemens type: 3VA51, max. 125 A; I_q = 10 kA</p> <p>Siemens type: 3VA51, max. 125 A; I_q max = 65 kA</p> <p>Siemens type: 3VA51, max. 125 A; I_q = 10 kA</p> <p>Type: Class RK5 / K5, max. 300 A; I_q = 10 kA</p> <p>Type: Class J / L, max. 250 A; I_q = 100 kA</p> <p>Type: Class RK5 / K5, max. 300 A; I_q = 10 kA</p> <p>Type: Class J / L, max. 250 A; I_q = 100 kA</p>
<p>operating power [hp] for 3-phase motors</p> <ul style="list-style-type: none"> • 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 	<p>25 hp</p> <p>30 hp</p> <p>60 hp</p> <p>75 hp</p> <p>40 hp</p> <p>50 hp</p> <p>100 hp</p> <p>125 hp</p>
<p>contact rating of auxiliary contacts according to UL</p>	<p>R300-B300</p>
<p>Safety related data</p>	
<p>protection class IP on the front according to IEC 60529</p>	<p>IP00; IP20 with cover</p>
<p>touch protection on the front according to IEC 60529</p>	<p>finger-safe, for vertical contact from the front with cover</p>
<p>electromagnetic compatibility</p>	<p>acc. to IEC 60947-4-2</p>
<p>ATEX</p>	
<p>certificate of suitability</p> <ul style="list-style-type: none"> • ATEX • IECEx • according to ATEX directive 2014/34/EU 	<p>Yes</p> <p>Yes</p> <p>BVS 18 ATEX F 003 X</p>
<p>type of protection according to ATEX directive 2014/34/EU</p>	<p>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]</p>
<p>hardware fault tolerance according to IEC 61508 relating to ATEX</p>	<p>0</p>
<p>PFDAvg with low demand rate according to IEC 61508 relating to ATEX</p>	<p>0.008</p>
<p>PFHD with high demand rate according to EN 62061 relating to ATEX</p>	<p>5E-7 1/h</p>
<p>Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX</p>	<p>SIL1</p>
<p>T1 value for proof test interval or service life according to IEC 61508 relating to ATEX</p>	<p>3 s</p>
<p>Certificates/ approvals</p>	
<p>General Product Approval</p>	<p>EMC</p>
<p></p>	<p></p>
<p>Confirmation</p>	<p></p>
	<p></p>
	<p></p>
<p>For use in hazardous locations</p>	<p>Declaration of Conformity</p>
	<p>Test Certificates</p>
	<p>Marine / Shipping</p>



Type Test Certificates/Test Reports



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?mlfb=3RW5527-1HA16>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5527-1HA16>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5527-1HA16>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5527-1HA16&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

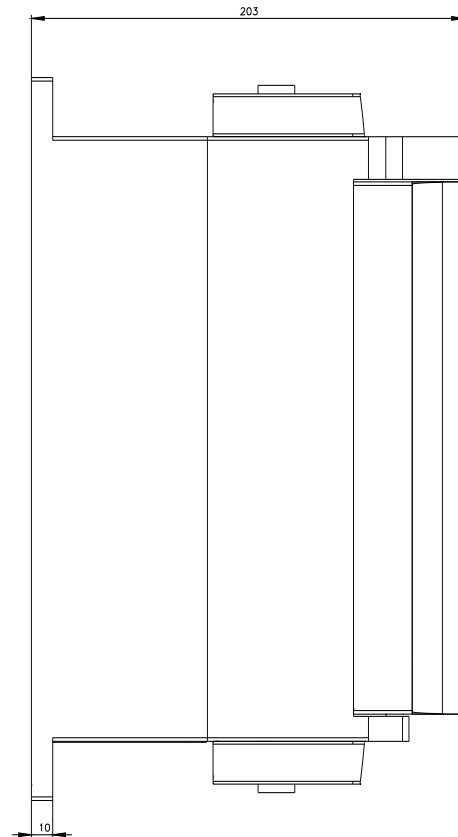
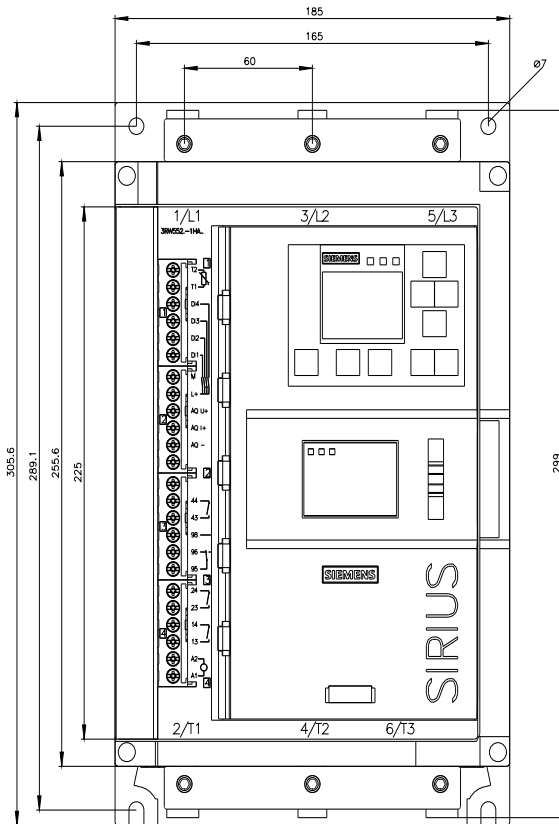
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5527-1HA16/char>

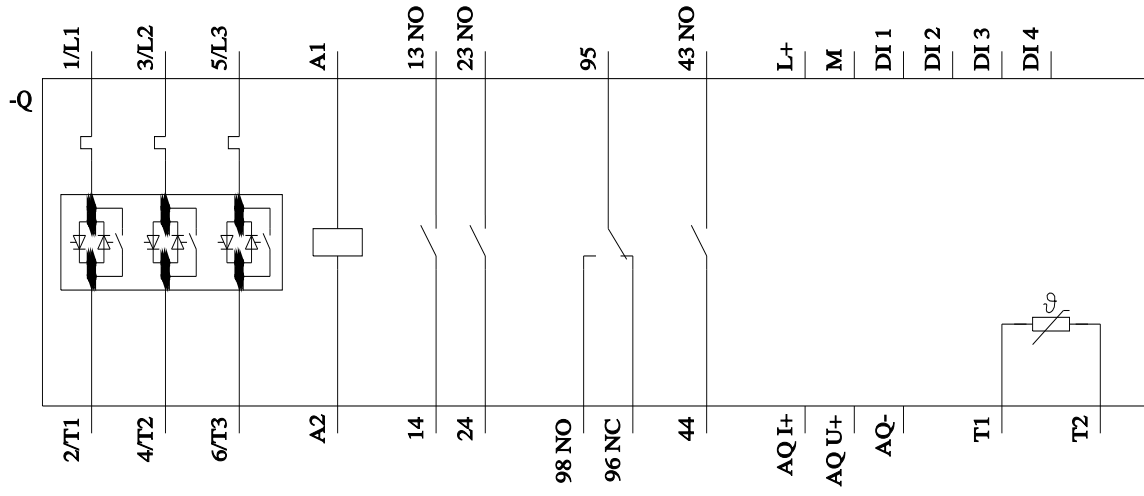
Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5527-1HA16&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





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