



SIRIUS soft starter 200-480 V 143 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	<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 3VA2220-7MN32-0AA0: Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 400 V at inside-delta circuit 3VA2325-7MN32-0AA0: Type of coordination 1, Iq = 65 kA, CLASS 10 • of the gG fuse usable up to 690 V 3NA3244-6: Type of coordination 1, Iq = 65 kA • of the gG fuse usable at inside-delta circuit up to 500 V 3NA3244-6: Type of coordination 1, Iq = 65 kA • of full range R fuse link for semiconductor protection usable up to 690 V 3NE1227-0: Type of coordination 2, Iq = 65 kA • of back-up R fuse link for semiconductor protection usable up to 690 V 3NE3233: Type of coordination 2, Iq = 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	Yes
<ul style="list-style-type: none"> • CE marking 	Yes

<ul style="list-style-type: none"> • UL approval 	Yes
<ul style="list-style-type: none"> • CSA approval 	Yes
product component	
<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	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	
<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 acc. to IEC 60947-4-2	AC 53a
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	15.02.2018 00:00:00
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-type terminal 	No
<ul style="list-style-type: none"> • 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	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	143 A
• at 40 °C rated value minimum	29 A
• at 50 °C rated value	128 A
• at 60 °C rated value	118 A
operational current at inside-delta circuit	
• at 40 °C rated value	248 A
• at 50 °C rated value	222 A
• at 60 °C rated value	204 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	37 kW
• at 230 V at inside-delta circuit at 40 °C rated value	75 kW
• at 400 V at 40 °C rated value	75 kW
• at 400 V at inside-delta circuit at 40 °C rated value	132 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	43 W
• at 50 °C after startup	38 W
• at 60 °C after startup	35 W
power loss [W] at AC at current limitation 350 %	
• at 40 °C during startup	2 115 W
• at 50 °C during startup	1 795 W
• at 60 °C during startup	1 593 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
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 (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 inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
• 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	8.5 kg
Connections/ Terminals	
type of electrical connection	
• for main current circuit	busbar connection
• 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

<ul style="list-style-type: none"> with conductor cross-section = 1.5 mm² maximum with conductor cross-section = 2.5 mm² maximum 	150 m 250 m
type of connectable conductor cross-sections <ul style="list-style-type: none"> for DIN cable lug for main contacts stranded for DIN cable lug for main contacts finely stranded 	2x (16 ... 95 mm ²) 2x (25 ... 120 mm ²)
type of connectable conductor cross-sections <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 	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 <ul style="list-style-type: none"> between soft starter and motor maximum at the digital inputs at DC maximum 	800 m 1 000 m
tightening torque <ul style="list-style-type: none"> for main contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals 	10 ... 14 N·m 0.8 ... 1.2 N·m
tightening torque [lbf·in] <ul style="list-style-type: none"> for main contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals 	89 ... 124 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 <ul style="list-style-type: none"> during operation during storage and transport 	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above -40 ... +80 °C
environmental category <ul style="list-style-type: none"> during operation acc. to IEC 60721 during storage acc. to IEC 60721 during transport acc. 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)
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 PROFINET high-feature EtherNet/IP Modbus RTU Modbus TCP PROFIBUS 	Yes Yes Yes Yes Yes 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 of the fuse <ul style="list-style-type: none"> usable for Standard Faults up to 575/600 V 	Siemens type: 3VA52, max. 250 A; I _q = 10 kA Siemens type: 3VA52, max. 250 A; I _q max = 65 kA Siemens type: 3VA52, max. 250 A; I _q = 10 kA Siemens type: 3VA52, max. 250 A; I _q max = 65 kA Siemens type: 3VA52, max. 250 A; I _q = 10 kA Siemens type: 3VA52, max. 250 A; I _q max = 65 kA Siemens type: 3VA52, max. 250 A; I _q = 10 kA Type: Class RK5 / K5, max. 350 A; I _q = 10 kA

<p>according to UL</p> <ul style="list-style-type: none"> — 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. 350 A; Iq = 100 kA</p> <p>Type: Class RK5 / K5, max. 350 A; Iq = 10 kA</p> <p>Type: Class J / L, max. 350 A; Iq = 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 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 	<p>40 hp</p> <p>40 hp</p> <p>100 hp</p> <p>75 hp</p> <p>75 hp</p> <p>150 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 acc. to IEC 60529</p>	<p>IP00; IP20 with cover</p>				
<p>touch protection on the front acc. 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 acc. to IEC 61508 relating to ATEX</p>	<p>0</p>				
<p>PFDavg with low demand rate acc. to IEC 61508 relating to ATEX</p>	<p>0.008</p>				
<p>PFHD with high demand rate acc. to EN 62061 relating to ATEX</p>	<p>0.0000005 1/h</p>				
<p>Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX</p>	<p>SIL1</p>				
<p>T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX</p>	<p>3 y</p>				
<p>Certificates/ approvals</p>					
<p>General Product Approval</p>	<p>EMC</p>	<p>For use in hazardous locations</p>			
					
<p>For use in hazardous locations</p>	<p>Declaration of Conformity</p>	<p>Test Certificates</p>	<p>Marine / Shipping</p>		
		<p>Type Test Certificates/Test Report</p>			
<p>Marine / Shipping</p>	<p>other</p>				



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?mfb=3RW5535-6HA04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3RW5535-6HA04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5535-6HA04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mfb=3RW5535-6HA04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

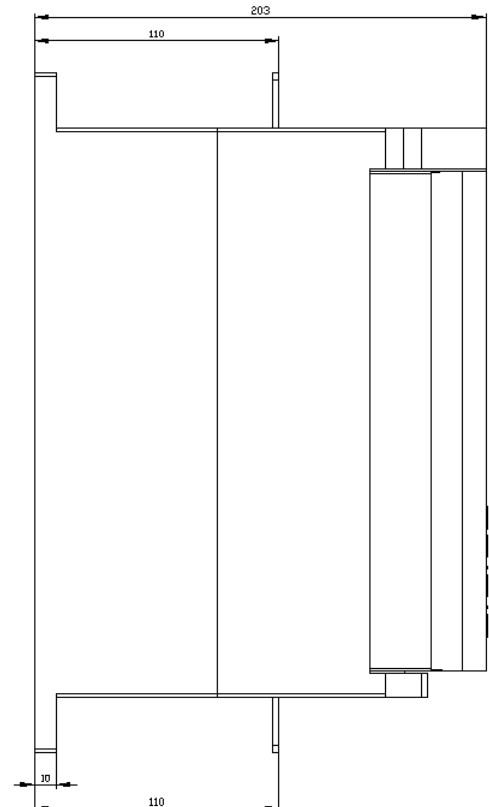
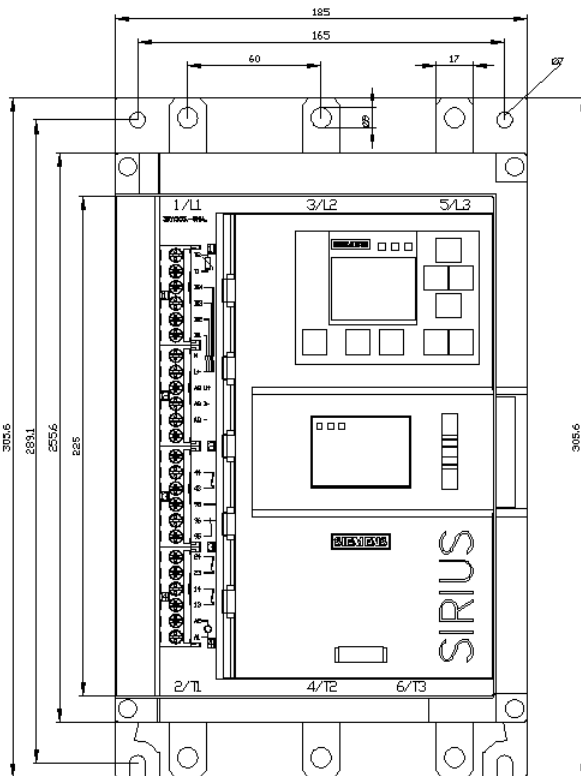
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5535-6HA04/char>

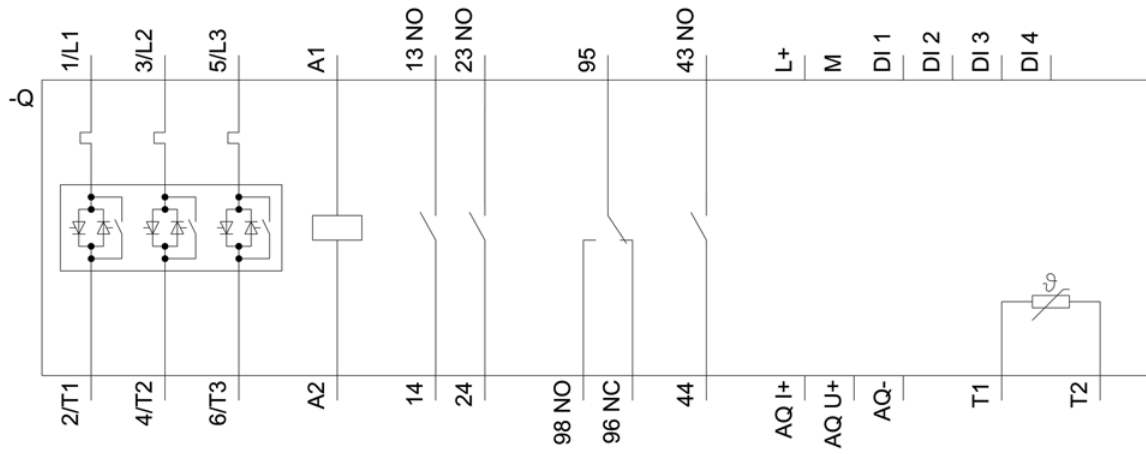
Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mfb=3RW5535-6HA04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





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