

SIRIUS soft starter 200-480 V 13 A, 110-250 V AC spring-type 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 HMI-Modul high-feature 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 3RV2032-4TA10; Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V 3RV2032-4TA10; Type of coordination 1, Iq = 18 kA, CLASS 10 • of circuit breaker usable at 400 V at inside-delta circuit 3RV2032-4DA10; Type of coordination 1, Iq = 65 kA, CLASS 10 	

- 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

[3RV2032-4DA10; Type of coordination 1, I_q = 18 kA, CLASS 10](#)

[3NA3820-6; Type of coordination 1, I_q = 65 kA](#)

[3NA3820-6; Type of coordination 1, I_q = 65 kA](#)

[3NE1815-0; Type of coordination 2, I_q = 65 kA](#)

[3NE8017-1; 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
Stopping time of soft starter	0 ... 360 s
Start torque [%]	10 ... 100 %
Stopping torque [%]	10 ... 100 %
Torque limit [%]	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 %
Recovery time after overload trip adjustable	60 ... 1 800 s
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	1 600 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
protection class IP	IP00
Usage category acc. to IEC 60947-4-2	AC 53a
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
reference code acc. to DIN EN 81346-2	Q
• Product function ramp-up (soft starting)	Yes
• Product function ramp-down (soft stop)	Yes
• Product function breakaway pulse	Yes
• Product function adjustable current limitation	Yes
• Product function creep speed in both directions of rotation	Yes
• Product function pump ramp down	Yes
• Product function DC braking	Yes
• Product function motor heating	Yes
• Product function slave pointer function	Yes
• Product function trace function	Yes
• product function intrinsic device protection	Yes
• product function 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.
• Product function Evaluation of thermistor motor protection	Yes; Type A PTC or Klixon / Thermoclick
• Product function inside-delta circuit	Yes
• Product function Auto-reset	Yes
• Product function Manual RESET	Yes
• Product function remote reset	Yes
• product function communication function	Yes
• Product function operating measured value display	Yes
• Product function event list	Yes
• Product function error logbook	Yes
• Product function via software parameterizable	Yes
• Product function via software configurable	Yes
• Product function screw terminal	No
• Product function spring-type terminal	Yes
• Product function PROFINET energy	Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules

• product function firmware update	Yes
• Product function removable terminal for control circuit	Yes
• Product function voltage ramp	Yes
• Product function torque control	Yes
• Product function combined braking	Yes
• Product function analog output	Yes; 4 ... 20 mA (default) / 0 ... 10 V
• Product function programmable control inputs/outputs	Yes
• Product function condition monitoring	Yes
• Product function automatic parameterisation	Yes
• Product function application wizards	Yes
• Product function alternative run-down	Yes
• Product function emergency operation mode	Yes
• Product function reversing operation	Yes
• Product function soft starting at heavy starting conditions	Yes

Power Electronics

• operating current at 40 °C rated value	13 A
• Operating current at 40 °C rated value minimum	2.5 A
• operating current at 50 °C rated value	11.5 A
• operating current at 60 °C rated value	10.5 A
Operating current at inside-delta circuit	
• at 40 °C rated value	22.5 A
• at 50 °C rated value	19.9 A
• at 60 °C rated value	18.2 A
• operating voltage rated value	200 ... 480 V
• Operating voltage 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 three-phase motors	
• at 230 V at 40 °C rated value	3 kW
• at 230 V at inside-delta circuit at 40 °C rated value	5.5 kW
• at 400 V at 40 °C rated value	5.5 kW
• at 400 V at inside-delta circuit at 40 °C rated value	11 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	4 W
• at 50 °C after Startup	3 W
• at 60 °C after Startup	3 W
Power loss [W] at AC at AC	
• at 40 °C during startup	198 W
• at 50 °C during startup	166 W
• at 60 °C during startup	148 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
• Control supply voltage at AC 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 the by-pass mode operating rated value	165 mA
Starting current at close of by-pass contact maximum	0.2 A
Inrush current peak at connect of control supply voltage maximum	43 A
Duration of inrush current peak at connect 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	
<ul style="list-style-type: none"> • number of digital inputs 	4
<ul style="list-style-type: none"> • Number of digital inputs parameterizable 	4
Number of inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
<ul style="list-style-type: none"> • number of digital outputs 	4
<ul style="list-style-type: none"> • Number of digital outputs parameterizable 	3
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • at AC-15 at 250 V rated value 	3 A
<ul style="list-style-type: none"> • 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°)
mounting type	screw fixing
height	275 mm
width	170 mm
depth	152 mm
required spacing with side-by-side mounting	
<ul style="list-style-type: none"> • forwards 	10 mm
<ul style="list-style-type: none"> • backwards 	0 mm
<ul style="list-style-type: none"> • upwards 	100 mm
<ul style="list-style-type: none"> • downwards 	75 mm
<ul style="list-style-type: none"> • at the side 	5 mm
installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see catalog
weight without packaging	2.3 kg

Connections/ Terminals	
<ul style="list-style-type: none"> • type of electrical connection for main current circuit 	screw-type terminals
<ul style="list-style-type: none"> • Type of electrical connection for control circuit 	spring-loaded terminals
<ul style="list-style-type: none"> • type of connectable conductor cross-sections for main contacts 	
<ul style="list-style-type: none"> — solid 	2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 10 mm ²)
<ul style="list-style-type: none"> — finely stranded with core end processing 	2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 6.0 mm ²)
<ul style="list-style-type: none"> • Type of connectable conductor cross-sections at AWG conductors for main current circuit solid 	2x (16 ... 12), 2x (14 ... 8)
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for control circuit solid 	2x (0.25 ... 1.5 mm ²)
<ul style="list-style-type: none"> • for control circuit finely stranded with core end processing 	2x (0.25 ... 1.5 mm ²)

<ul style="list-style-type: none"> • at AWG conductors for control circuit solid • at AWG conductors for control circuit finely stranded with core end processing 	<p>2x (24 ... 16)</p> <p>2x (24 ... 16)</p>
Wire length <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>
<ul style="list-style-type: none"> • tightening torque for main contacts with screw-type terminals • Tightening torque for auxiliary and control contacts with screw-type terminals 	<p>2 ... 2.5 N·m</p> <p>0.8 ... 1.2 N·m</p>
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 	<p>18 ... 22 lbf·in</p> <p>7 ... 10.3 lbf·in</p>

Ambient conditions

ambient temperature <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>
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 	<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>
EMC emitted interference	acc. to IEC 60947-4-2: Class A, Class B on request

Communication/ Protocol

Communication module is supported <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>
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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 	<p>Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; I_q = 5 kA</p> <p>Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; I_q max = 65 kA</p>
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<ul style="list-style-type: none"> — 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: 3RV2742, max. 40 A or 3VA51, max. 40 A; I_q = 5 kA</p> <p>Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; I_q max = 65 kA</p> <p>Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; I_q = 5 kA</p> <p>Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; I_q max = 65 kA</p> <p>Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; I_q = 5 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 RK5 / K5, max. 50 A; I_q = 5 kA</p> <p>Type: Class J / L, max. 50 A; I_q = 100 kA</p> <p>Type: Class RK5 / K5, max. 50 A; I_q = 5 kA</p> <p>Type: Class J / L, max. 50 A; I_q = 100 kA</p>
<p>Operating power [hp] for three-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>2 hp</p> <p>3 hp</p> <p>7.5 hp</p> <p>5 hp</p> <p>5 hp</p> <p>10 hp</p>
<p>contact rating of auxiliary contacts according to UL</p>	<p>R300-B300</p>
Safety related data	
<p>Electromagnetic compatibility</p>	<p>acc. to IEC 60947-4-2</p>
ATEX	
<ul style="list-style-type: none"> • certificate of suitability ATEX • certificate of suitability IECEx • certificate of suitability 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>

PFHD with high demand rate acc. to EN 62061 relating to ATEX	0.0000005 1/h
Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX	SIL1
T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX	3 y

Certificates/ approvals

General Product Approval	EMC	For use in hazardous locations
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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- 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=3RW5513-3HA14>

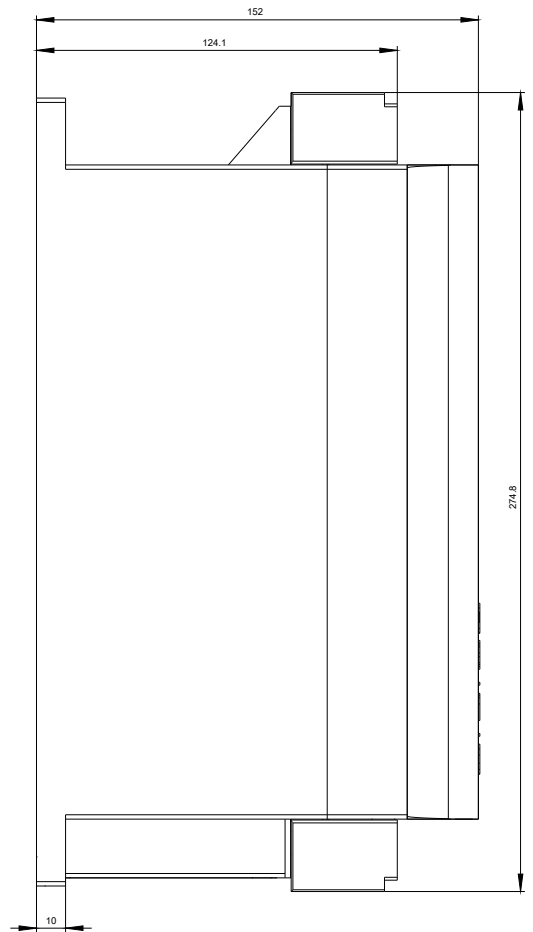
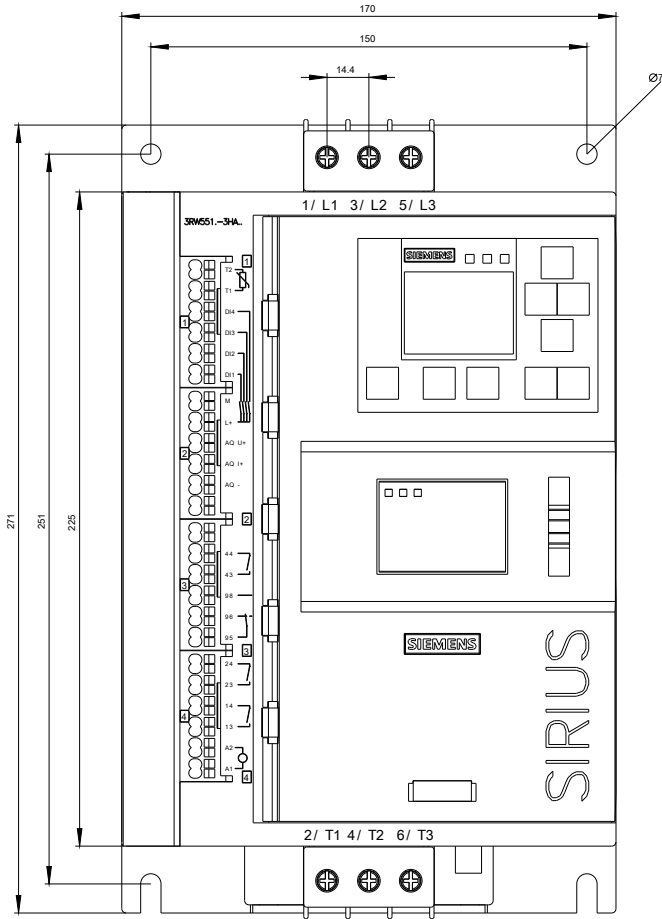
Cax online generator
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5513-3HA14>

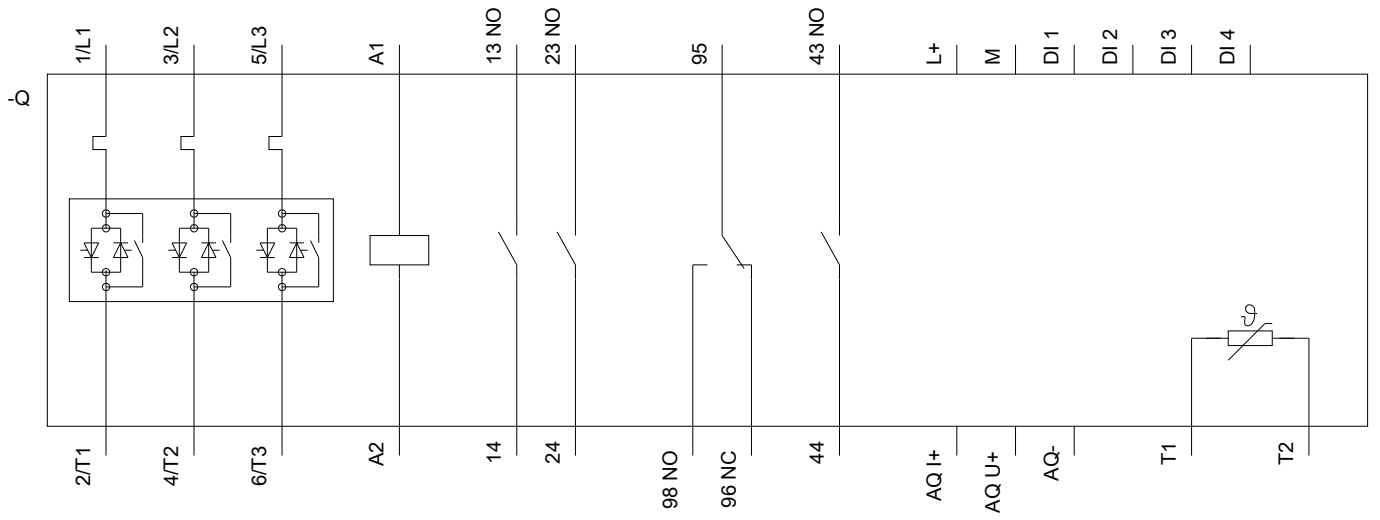
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5513-3HA14>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5513-3HA14&lang=en

Characteristic: Tripping characteristics, I^{Δt}, Let-through current
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5513-3HA14/char>

Characteristic: Installation altitude
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5513-3HA14&objecttype=14&gridview=view1>





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