



SIRIUS soft starter 200-480 V 171 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• 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
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












- [3RW5980-0HF00](#)
- [3RW5980-0CS00](#)
- [3RW5950-0CH00](#)
- [3RW5980-0CP00](#)
- [3RW5980-0CT00](#)
- [3RW5980-0CR00](#)
- [3RW5980-0CE00](#)
- [3VA2325-7MN32-0AA0: Type of coordination 1, Iq = 30 kA, CLASS 10](#)
- [3VA2325-7MN32-0AA0: Type of coordination 1, Iq = 10 kA, CLASS 10](#)
- [3VA2440-7MN32-0AA0: Type of coordination 1, Iq = 30 kA, CLASS 10](#)
- [3VA2440-7MN32-0AA0: Type of coordination 1, Iq = 10 kA, CLASS 10](#)
- [3NA3365-6: Type of coordination 1, Iq = 65 kA](#)
- [3NA3365-6: Type of coordination 1, Iq = 65 kA](#)
- [3NE1230-0: Type of coordination 2, Iq = 65 kA](#)
- [3NE3334-0B: Type of coordination 2, Iq = 65 kA](#)

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	1 400 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
utilization 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 IEC 81346-2	Q
Substance Prohibitance (Date)	15.02.2018 00:00:00
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) / When using the motor overload protection according to ATEX, an upstream contactor is required in inside-delta circuit.
• evaluation of thermistor motor protection	Yes; Type A PTC or Klixon / Thermoclick
• inside-delta circuit	Yes
• 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

<ul style="list-style-type: none"> • spring-type terminal • PROFenergy • firmware update • removable terminal for control circuit • voltage ramp • 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 	No Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules Yes Yes Yes Yes Yes Yes; 4 ... 20 mA (default) / 0 ... 10 V Yes Yes Yes Yes Yes Yes Yes Yes Yes
Power Electronics	
operational current	
<ul style="list-style-type: none"> • at 40 °C rated value • at 40 °C rated value minimum • at 50 °C rated value • at 60 °C rated value 	171 A 34 A 153 A 141 A
operational current at inside-delta circuit	
<ul style="list-style-type: none"> • at 40 °C rated value • at 50 °C rated value • at 60 °C rated value 	296 A 265 A 244 A
operating voltage	
<ul style="list-style-type: none"> • rated value • at inside-delta circuit rated value 	200 ... 480 V 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	
<ul style="list-style-type: none"> • 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 	45 kW 90 kW 90 kW 160 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	
<ul style="list-style-type: none"> • at 40 °C after startup • at 50 °C after startup • at 60 °C after startup 	51 W 46 W 42 W
power loss [W] at AC at current limitation 350 %	
<ul style="list-style-type: none"> • at 40 °C during startup • at 50 °C during startup • at 60 °C during startup 	2 393 W 2 038 W 1 814 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	
<ul style="list-style-type: none"> • at 50 Hz rated value 	24 V

<ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • parameterizable 	4 4
number of inputs for thermistor connection	1; Type A PTC or Klaxon / Thermoclick
<ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • forwards • backwards • upwards • downwards • at the side 	10 mm 0 mm 100 mm 75 mm 5 mm
weight without packaging	9.1 kg
Connections/ Terminals	
type of electrical connection <ul style="list-style-type: none"> • for main current circuit • for control circuit 	busbar connection 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 DIN cable lug for main contacts stranded	2x (16 ... 95 mm ²)
• for DIN cable lug for main contacts finely stranded	2x (25 ... 120 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	10 ... 14 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	89 ... 124 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	5 000 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	Siemens type: 3VA52, max. 250 A; Iq = 10 kA
— usable for High Faults at 460/480 V according to UL	Siemens type: 3VA52, max. 250 A; Iq max = 65 kA
— usable for Standard Faults at 460/480 V at inside-delta circuit according to UL	Siemens type: 3VA52, max. 250 A; Iq = 10 kA
— usable for High Faults at 460/480 V at inside-delta circuit according to UL	Siemens type: 3VA52, max. 250 A; Iq max = 65 kA
— usable for Standard Faults at 575/600 V according to UL	Siemens type: 3VA52, max. 250 A; Iq = 10 kA
— usable for High Faults at 575/600 V at inside-delta circuit according to UL	Siemens type: 3VA52, max. 250 A; Iq max = 65 kA
— usable for Standard Faults at 575/600 V at	Siemens type: 3VA52, max. 250 A; Iq = 10 kA

inside-delta circuit according to UL		
<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	Type: Class RK5 / K5, max. 400 A; Iq = 10 kA	
	Type: Class J / L, max. 350 A; Iq = 100 kA	
	Type: Class RK5 / K5, max. 400 A; Iq = 10 kA	
	Type: Class J / L, max. 350 A; Iq = 100 kA	
operating power [hp] for 3-phase motors <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	50 hp 50 hp 100 hp 75 hp 100 hp 200 hp	
contact rating of auxiliary contacts according to UL	R300-B300	
Safety related data		
protection class IP on the front acc. to IEC 60529	IP00; IP20 with cover	
touch protection on the front acc. 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 <ul style="list-style-type: none">• ATEX• IECEx• according to ATEX directive 2014/34/EU	Yes Yes BVS 18 ATEX F 003 X	
type of protection 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]	
hardware fault tolerance acc. to IEC 61508 relating to ATEX	0	
PFDavg with low demand rate acc. to IEC 61508 relating to ATEX	0.008	
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		
<div><div> CSA</div><div> CCC</div><div> UL</div><div></div><div> RCM</div><div> ATEX</div></div>		
For use in hazardous locations	Declaration of Conformity	Test Certificates
		Type Test Certificates/Test Report
<div><div> IECEX</div><div> EG-Konf.</div></div>	<div><div> ABS</div><div> BUREAU VERITAS</div><div> LRS</div></div>	Marine / Shipping
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=3RW5536-6HA04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5536-6HA04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5536-6HA04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5536-6HA04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5536-6HA04/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5536-6HA04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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

