

Siemens
EcoTech



SIRIUS soft starter 200-480 V 720 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 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 3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 3VA2716-7AB05-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 3VA2716-7AB05-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 2x3NA3365-6; Type of coordination 1, Iq = 65 kA 3NB3351-1KK26; Type of coordination 2, Iq = 65 kA 3NC3343-1U; Type of coordination 2, Iq = 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	5 (based on IEC 61557-12)
certificate of suitability	
• CE marking • UL approval • CSA approval	Yes Yes 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
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	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 protective separation	
• 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
recovery time after overload trip adjustable	60 ... 1 800 s
utilization category according to IEC 60947-4-2	AC 53a
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	02/11/2019
SVHC substance name	Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) covering any of its individual anti- and syn-isomers or any combination thereof - - Dicyclohexyl phthalate (DCHP) - 84-61-7 Lead titanium trioxide - 12060-00-3
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
• 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 • 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	Yes Yes 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	720 A 144 A 641 A 580 A
operational current at inside-delta circuit	
• at 40 °C rated value • at 50 °C rated value • at 60 °C rated value	1 247 A 1 110 A 1 005 A
operating voltage	
• 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	
• 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	200 kW 400 kW 400 kW 710 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 • at 50 °C after startup • at 60 °C after startup	216 W 170 W 139 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	11 534 W 9 773 W 8 497 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	1 100 mA
inrush current by closing the bypass contacts maximum	6.7 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	764 mm
width	478 mm
depth	241 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	45 kg
Connections/ Terminals	
type of electrical connection • for main current circuit • for control circuit	busbar connection screw-type terminals
width of connection bar maximum	55 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 DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded	2x (50 ... 240 mm²) 2x (70 ... 240 mm²)
type of connectable conductor cross-sections • for control circuit solid	1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²)

• for control circuit finely stranded with core end processing • for AWG cables for control circuit solid	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²) 1x (20 ... 12), 2x (20 ... 14)
wire length • between soft starter and motor maximum • at the digital inputs at DC maximum	800 m 1 000 m
tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals	20 ... 35 N·m 0.8 ... 1.2 N·m
tightening torque [lbf·in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals	177 ... 310 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 • during operation • during storage and transport	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above -40 ... +80 °C
environmental category • during operation according to IEC 60721 • during storage according to IEC 60721 • during transport according 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)
Environmental footprint	
Siemens Eco Profile (SEP)	Siemens EcoTech
EMC emitted interference	acc. to IEC 60947-4-2: Class A
Communication/ Protocol	
communication module is supported • 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 • 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	Type: Class J / L, max. 2000 A; Iq = 42 kA Type: Class J / L, max. 2000 A; Iq = 100 kA Type: Class J / L, max. 2000 A; Iq = 42 kA Type: Class J / L, max. 2000 A; Iq = 100 kA
operating power [hp] for 3-phase motors • 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	200 hp 250 hp 500 hp 400 hp 450 hp 950 hp
contact rating of auxiliary contacts according to UL	R300-B300
Electrical Safety	
protection class IP on the front according to IEC 60529	IP00
ATEX	
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL1
PFHD with high demand rate according to IEC 61508 relating to ATEX	5E-7 1/h
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.008
hardware fault tolerance according to IEC 61508 relating to	0

ATEX	
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 a
certificate of suitability • 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]

Approvals Certificates

General Product Approval



[Confirmation](#)



EG-Konf.



CCC



UL

General Product Approval	EMV	For use in hazardous locations	Test Certificates
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[KC](#)



ATEX



IECEx

[Type Test Certificates/Test Report](#)

Marine / Shipping	other	Environment
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ABS



BUREAU
VERITAS



LRS



PRS

[Confirmation](#)

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Environment



[Environmental Confirmations](#)

Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3RW5553-6HA04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5553-6HA04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5553-6HA04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5553-6HA04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5553-6HA04/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5553-6HA04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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

