

Siemens
EcoTech



SIRIUS soft starter 200-480 V 18 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 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 	<ul style="list-style-type: none"> 3RW5980-0HF00 3RW5980-0CS00 3RW5950-0CH00 3RW5980-0CP00 3RW5980-0CT00 3RW5980-0CR00 3RW5980-0CE00 3RV2032-4DA10; Type of coordination 1, Iq = 65 kA, CLASS 10 3RV2032-4DA10; Type of coordination 1, Iq = 15 kA, CLASS 10 3RV2032-4EA10; Type of coordination 1, Iq = 65 kA, CLASS 10 3RV2032-4EA10; Type of coordination 1, Iq = 15 kA, CLASS 10 3NA3820-6; Type of coordination 1, Iq = 65 kA 3NA3820-6; Type of coordination 1, Iq = 65 kA 3NE1802-0; Type of coordination 2, Iq = 65 kA 3NE8020-1; 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	
<ul style="list-style-type: none"> • CE marking • UL approval 	<p>Yes</p> <p>Yes</p>

<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
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	1 600 V
service factor	1.15
surge voltage resistance rated value	6 kV
maximum permissible voltage for protective separation	
<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
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)	02/15/2018
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 Dibutylbis(pentane-2,4-dionato-O,O')tin - 22673-19-4 Dodecamethylcyclohexasiloxane (D6) - 540-97-6 Lead titanium trioxide - 12060-00-3
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 Klaxon / 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 	No
<ul style="list-style-type: none"> • spring-loaded terminal 	Yes
<ul style="list-style-type: none"> • PROFInergy 	Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules
<ul style="list-style-type: none"> • firmware update 	Yes
<ul style="list-style-type: none"> • 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	18 A
• at 40 °C rated value minimum	3.5 A
• at 50 °C rated value	15.9 A
• at 60 °C rated value	13.8 A
operational current at inside-delta circuit	
• at 40 °C rated value	31.5 A
• at 50 °C rated value	28 A
• at 60 °C rated value	23.9 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	4 kW
• at 230 V at inside-delta circuit at 40 °C rated value	7.5 kW
• at 400 V at 40 °C rated value	7.5 kW
• at 400 V at inside-delta circuit at 40 °C rated value	15 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	5 W
• at 50 °C after startup	5 W
• at 60 °C after startup	4 W
power loss [W] at AC at current limitation 350 %	
• at 40 °C during startup	266 W
• at 50 °C during startup	229 W
• at 60 °C during startup	188 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	10 %

AC at 60 Hz	
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	165 mA
inrush current by closing the bypass contacts maximum	0.2 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	275 mm
width	170 mm
depth	152 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	2.3 kg

Connections/ Terminals

type of electrical connection	
• for main current circuit	screw-type terminals
• for control circuit	spring-loaded terminals
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	
— solid	2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 10 mm ²)
— finely stranded with core end processing	2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 6.0 mm ²)
• for AWG cables for main current circuit solid	2x (16 ... 12), 2x (14 ... 8)
type of connectable conductor cross-sections	
• for control circuit solid	2x (0.25 ... 1.5 mm ²)
• for control circuit finely stranded with core end processing	2x (0.25 ... 1.5 mm ²)
• for AWG cables for control circuit solid	2x (24 ... 16)
• for AWG cables for control circuit finely stranded with core end processing	2x (24 ... 16)
wire length	
• between soft starter and motor maximum	800 m

<ul style="list-style-type: none"> at the digital inputs at DC maximum 	1 000 m
tightening torque	
<ul style="list-style-type: none"> for main contacts with screw-type terminals 	2 ... 2.5 N·m
<ul style="list-style-type: none"> for auxiliary and control contacts with screw-type terminals 	0.8 ... 1.2 N·m
tightening torque [lbf·in]	
<ul style="list-style-type: none"> for main contacts with screw-type terminals 	18 ... 22 lbf·in
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> during operation 	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above
<ul style="list-style-type: none"> during storage and transport 	-40 ... +80 °C
environmental category	
<ul style="list-style-type: none"> during operation according to IEC 60721 	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6
<ul style="list-style-type: none"> during storage according to IEC 60721 	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
<ul style="list-style-type: none"> during transport according to IEC 60721 	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, Class B on request
Communication/ Protocol	
communication module is supported	
<ul style="list-style-type: none"> PROFINET standard 	Yes
<ul style="list-style-type: none"> PROFINET high-feature 	Yes
<ul style="list-style-type: none"> EtherNet/IP 	Yes
<ul style="list-style-type: none"> Modbus RTU 	Yes
<ul style="list-style-type: none"> Modbus TCP 	Yes
<ul style="list-style-type: none"> PROFIBUS 	Yes
UL/CSA ratings	
manufacturer's article number	
<ul style="list-style-type: none"> of circuit breaker usable for Standard Faults <ul style="list-style-type: none"> at 460/480 V according to UL 60/480 V according to UL at 460/480 V at inside-delta circuit according to UL 60/480 V at inside-delta circuit according to UL at 575/600 V according to UL 75/600 V at inside-delta circuit according to UL 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 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: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA</p> <p>Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; Iq max = 65 kA</p> <p>Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA</p> <p>Siemens type: 3VA51, max. 35 A; Iq max = 65 kA</p> <p>Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA</p> <p>Siemens type: 3VA51, max. 35 A; Iq max = 65 kA</p> <p>Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA</p> <p>Type: Class RK5 / K5, max. 70 A; Iq = 5 kA</p> <p>Type: Class J / L, max. 70 A; Iq = 100 kA</p> <p>Type: Class RK5 / K5, max. 70 A; Iq = 5 kA</p> <p>Type: Class J / L, max. 70 A; Iq = 100 kA</p>
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 	<p>3 hp</p> <p>5 hp</p> <p>10 hp</p> <p>7.5 hp</p> <p>7.5 hp</p> <p>20 hp</p>
contact rating of auxiliary contacts according to UL	R300-B300
Electrical Safety	
protection class IP on the front according to IEC 60529	IP20
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front
ATEX	
Safety Integrity Level (SIL) according to IEC 61508 relating	SIL1

to ATEX	
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 ATEX	0
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 a
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]

Approvals Certificates

General Product Approval



[Confirmation](#)



EMV	For use in hazardous locations	Test Certificates	Marine / Shipping
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[KC](#)



[Type Test Certificates/Test Report](#)



Marine / Shipping	other	Environment
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[Confirmation](#)



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=3RW5514-3HA14>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5514-3HA14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5514-3HA14>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5514-3HA14&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5514-3HA14/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5514-3HA14&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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



