

Siemens
EcoTech



SIRIUS soft starter 200-600 V 32 A, 24 V AC/DC Screw terminals Analog output



product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW52
manufacturer's article number	• of standard HMI module usable 3RW5980-0HS00 • of high feature HMI module usable 3RW5980-0HF00 • of communication module PROFINET standard usable 3RW5980-0CS00 • 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 3RV2032-4VA10: Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V 3RV2032-4VA10: Type of coordination 1, Iq = 10 kA, CLASS 10 • of circuit breaker usable at 400 V at inside-delta circuit 3RV2032-4JA10: Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V at inside-delta circuit 3RV2032-4JA10: Type of coordination 1, Iq = 10 kA, CLASS 10 • of the gG fuse usable up to 690 V 3NA3824-6: Type of coordination 1, Iq = 65 kA • of the gG fuse usable at inside-delta circuit up to 500 V 3NA3824-6: Type of coordination 1, Iq = 65 kA • of full range R fuse link for semiconductor protection usable up to 690 V 3NE1818-0: Type of coordination 2, Iq = 65 kA • of back-up R fuse link for semiconductor protection usable up to 690 V 3NE8022-1: Type of coordination 2, Iq = 65 kA

General technical data	
starting voltage [%]	30 ... 100 %
stopping voltage [%]	50 %; non-adjustable
start-up ramp time of soft starter	0 ... 20 s
current limiting value [%] adjustable	130 ... 700 %
certificate of suitability	• CE marking Yes • UL approval Yes • CSA approval Yes
product component	• HMI-High Feature No • is supported HMI-Standard Yes • is supported HMI-High Feature Yes
product feature integrated bypass contact system	Yes
number of controlled phases	3
buffering time in the event of power failure	

• for main current circuit • for control circuit	100 ms
insulation voltage rated value	600 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
surge voltage resistance rated value	6 kV
maximum permissible voltage for protective separation • between main and auxiliary circuit	600 V
shock resistance	15 g / 11 ms, from 12 g / 11 ms with potential contact lifting
vibration resistance	15 mm to 6 Hz; 2g to 500 Hz
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 Diboron trioxide - 1303-86-2
Weight	2.3 kg
product function • ramp-up (soft starting) • ramp-down (soft stop) • Soft Torque • adjustable current limitation • pump ramp down • intrinsic device protection • motor overload protection • evaluation of thermistor motor protection • inside-delta circuit • auto-RESET • manual RESET • remote reset • communication function • operating measured value display • error logbook • via software parameterizable • via software configurable • PROFInergy • firmware update • removable terminal for control circuit • torque control • analog output	Yes Yes Yes Yes Yes Yes Yes; Electronic motor overload protection No Yes Yes Yes Yes; By turning off the control supply voltage Yes Yes; Only in conjunction with special accessories Yes; Only in conjunction with special accessories No Yes Yes; in connection with the PROFINET Standard communication module Yes Yes No Yes; 4 ... 20 mA (default) / 0 ... 10 V (parameterizable with High Feature HMI)
Power Electronics	
operational current • at 40 °C rated value • at 50 °C rated value • at 60 °C rated value	32 A 28.4 A 26 A
operational current at inside-delta circuit • at 40 °C rated value • at 50 °C rated value • at 60 °C rated value	55.4 A 49 A 45 A
operating voltage • rated value • at inside-delta circuit rated value	200 ... 600 V 200 ... 600 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	7.5 kW
• at 230 V at inside-delta circuit at 40 °C rated value	15 kW
• at 400 V at 40 °C rated value	15 kW
• at 400 V at inside-delta circuit at 40 °C rated value	22 kW
• at 500 V at 40 °C rated value	18.5 kW
• at 500 V at inside-delta circuit at 40 °C rated value	30 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 %
adjustable motor current	
• at rotary coding switch on switch position 1	14 A
• at rotary coding switch on switch position 2	15.2 A
• at rotary coding switch on switch position 3	16.4 A
• at rotary coding switch on switch position 4	17.6 A
• at rotary coding switch on switch position 5	18.8 A
• at rotary coding switch on switch position 6	20 A
• at rotary coding switch on switch position 7	21.2 A
• at rotary coding switch on switch position 8	22.4 A
• at rotary coding switch on switch position 9	23.6 A
• at rotary coding switch on switch position 10	24.8 A
• at rotary coding switch on switch position 11	26 A
• at rotary coding switch on switch position 12	27.2 A
• at rotary coding switch on switch position 13	28.4 A
• at rotary coding switch on switch position 14	29.6 A
• at rotary coding switch on switch position 15	30.8 A
• at rotary coding switch on switch position 16	32 A
• minimum	14 A
adjustable motor current	
• for inside-delta circuit at rotary coding switch on switch position 1	24.2 A
• for inside-delta circuit at rotary coding switch on switch position 2	26.3 A
• for inside-delta circuit at rotary coding switch on switch position 3	28.4 A
• for inside-delta circuit at rotary coding switch on switch position 4	30.5 A
• for inside-delta circuit at rotary coding switch on switch position 5	32.6 A
• for inside-delta circuit at rotary coding switch on switch position 6	34.6 A
• for inside-delta circuit at rotary coding switch on switch position 7	36.7 A
• for inside-delta circuit at rotary coding switch on switch position 8	38.8 A
• for inside-delta circuit at rotary coding switch on switch position 9	40.9 A
• for inside-delta circuit at rotary coding switch on switch position 10	43 A
• for inside-delta circuit at rotary coding switch on switch position 11	45 A
• for inside-delta circuit at rotary coding switch on switch position 12	47.1 A
• for inside-delta circuit at rotary coding switch on switch position 13	49.2 A
• for inside-delta circuit at rotary coding switch on switch position 14	51.3 A
• for inside-delta circuit at rotary coding switch on switch position 15	53.3 A
• for inside-delta circuit at rotary coding switch on switch position 16	55.4 A
• at inside-delta circuit minimum	24.2 A
minimum load [%]	15 %; Relative to smallest settable Ie
power loss [W] for rated value of the current at AC	
• at 40 °C after startup	22 W

• at 50 °C after startup • at 60 °C after startup	21 W 20 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	531 W 449 W 395 W
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	160 mA
holding current in bypass operation rated value	360 mA
inrush current by closing the bypass contacts maximum	0.75 A
inrush current peak at application of control supply voltage maximum	3.3 A
duration of inrush current peak at application of control supply voltage	12.1 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	1
number of digital outputs	3
• not parameterizable	2
digital output version	2 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	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
fastening method	screw fixing
height	275 mm
width	170 mm
depth	152 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	2.3 kg
Connections/ Terminals	

type of electrical connection	
- for main current circuit - for control circuit	screw-type terminals screw-type terminals
type of connectable conductor cross-sections	
- for main contacts — solid — finely stranded with core end processing - for AWG cables for main current circuit solid	2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 10 mm ²) 2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 6.0 mm ²) 2x (16 ... 12), 2x (14 ... 8)
type of connectable conductor cross-sections	
- for control circuit solid - for control circuit finely stranded with core end processing - for 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	
- between soft starter and motor maximum - at the digital inputs at AC maximum - at the digital inputs at DC maximum	800 m 100 m 1 000 m
tightening torque	
- for main contacts with screw-type terminals - for auxiliary and control contacts with screw-type terminals	2 ... 2.5 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	18 ... 22 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	
global warming potential [CO2 eq] total	185 kg
global warming potential [CO2 eq] during manufacturing	37.2 kg
global warming potential [CO2 eq] during sales	0.66 kg
global warming potential [CO2 eq] during operation	152 kg
global warming potential [CO2 eq] after end of life	-4.19 kg
Siemens Eco Profile (SEP)	Siemens EcoTech
Electromagnetic compatibility	
EMC emitted interference	acc. to IEC 60947-4-2: Class A
Communication/ Protocol	
communication module is supported	
- PROFINET standard - EtherNet/IP - Modbus RTU - Modbus TCP - PROFIBUS	Yes Yes Yes Yes Yes
UL/CSA ratings	
manufacturer's article number	
- of circuit breaker usable for Standard Faults - 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 - at 575/600 V at inside-delta circuit according to UL - of the fuse - usable for Standard Faults up to 575/600 V	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; Iq = 5 kA Siemens type: 3RV2742, max. 40 A or 3VA51, max. 60 A; Iq max = 65 kA Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; Iq = 5 kA Siemens type: 3VA51, max. 60 A; Iq max = 65 kA Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; Iq = 5 kA Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; Iq = 5 kA Type: Class RK5 / K5, max. 125 A; Iq = 5 kA

according to UL	Type: Class J / L, max. 125 A; Iq = 100 kA
— usable for High Faults up to 575/600 V according to UL	Type: Class RK5 / K5, max. 125 A; Iq = 5 kA
— usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class J / L, max. 125 A; Iq = 100 kA
— usable for High Faults at inside-delta circuit up to 575/600 V according to UL	
operating power [hp] for 3-phase motors	
• at 200/208 V at 50 °C rated value	7.5 hp
• at 220/230 V at 50 °C rated value	10 hp
• at 460/480 V at 50 °C rated value	20 hp
• at 575/600 V at 50 °C rated value	25 hp
• at 200/208 V at inside-delta circuit at 50 °C rated value	15 hp
• at 220/230 V at inside-delta circuit at 50 °C rated value	15 hp
• at 460/480 V at inside-delta circuit at 50 °C rated value	30 hp
• at 575/600 V at inside-delta circuit at 50 °C rated value	40 hp
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
Approvals Certificates	
General Product Approval	



[Confirmation](#)



EG-Konf.



UL



EMV	Test Certificates	Marine / Shipping
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RCM

[KC](#)

[Type Test Certificates/Test Report](#)



ABS



BUREAU
VERITAS



LRS

Marine / Shipping	other	Environment
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PRS

[Confirmation](#)

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[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=3RW5216-1AC05>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5216-1AC05>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5216-1AC05>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5216-1AC05&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5216-1AC05/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5216-1AC05&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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



