



SIRIUS soft starter 200-480 V 470 A, 110-250 V AC 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	<ul style="list-style-type: none"> • 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 3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V 3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 400 V at inside-delta circuit 3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V at inside-delta circuit 3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of the gG fuse usable up to 690 V 2x3NA3365-6; Type of coordination 1, Iq = 65 kA • of the gG fuse usable at inside-delta circuit up to 500 V 2x3NA3365-6; Type of coordination 1, Iq = 65 kA • of full range R fuse link for semiconductor protection usable up to 690 V 3NE1436-2; Type of coordination 2, Iq = 65 kA • of back-up R fuse link for semiconductor protection usable up to 690 V 3NE3340-8; 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	100 ms
• 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; 2 g to 500 Hz
utilization category according to IEC 60947-4-2	AC 53a
reference code according to IEC 81346-2	Q
Substance Prohibitance (day/month/year)	02/15/2018
SVHC substance name	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol CAS-No. 79-94-7 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1 Dibutylbis(pentane-2,4-dionato-O,O')tin CAS-No. 22673-19-4
Net Weight	11.854 kg
product function	
• ramp-up (soft starting)	Yes
• soft stopping	Yes
• Soft Torque	Yes
• adjustable current limitation	Yes
• pump stop	Yes
• intrinsic device protection	Yes
• motor overload protection	Yes; Electronic motor overload protection
• evaluation of thermistor motor protection	No
• inside-delta circuit	Yes
• auto-RESET	Yes
• manual RESET	Yes
• remote reset	Yes; By turning off the control supply voltage
• communication function	Yes
• operating measured value display	Yes; Only in conjunction with special accessories
• error logbook	Yes; Only in conjunction with special accessories
• via software parameterizable	No
• via software configurable	Yes
• PROFInergy	Yes; in connection with the PROFINET Standard communication module
• firmware update	Yes
• removable terminal for control circuit	Yes
• torque control	No
• analog output	Yes; 4 ... 20 mA (default) / 0 ... 10 V (parameterizable with High Feature HMI)
Power Electronics	
operational current	
• at 40 °C rated value	470 A
• at 50 °C rated value	416 A
• at 60 °C rated value	380 A
operational current at inside-delta circuit	
• at 40 °C rated value	814 A
• at 50 °C rated value	721 A
• at 60 °C rated value	658 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	132 kW
• at 230 V at inside-delta circuit at 40 °C rated value	250 kW
• at 400 V at 40 °C rated value	250 kW
• at 400 V at inside-delta circuit at 40 °C rated value	400 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	200 A
• at rotary coding switch on switch position 2	218 A
• at rotary coding switch on switch position 3	236 A
• at rotary coding switch on switch position 4	254 A
• at rotary coding switch on switch position 5	272 A
• at rotary coding switch on switch position 6	290 A
• at rotary coding switch on switch position 7	308 A
• at rotary coding switch on switch position 8	326 A
• at rotary coding switch on switch position 9	344 A
• at rotary coding switch on switch position 10	362 A
• at rotary coding switch on switch position 11	380 A
• at rotary coding switch on switch position 12	398 A
• at rotary coding switch on switch position 13	416 A
• at rotary coding switch on switch position 14	434 A
• at rotary coding switch on switch position 15	452 A
• at rotary coding switch on switch position 16	470 A
• minimum	200 A
adjustable motor current	
• for inside-delta circuit at rotary coding switch on switch position 1	346 A
• for inside-delta circuit at rotary coding switch on switch position 2	378 A
• for inside-delta circuit at rotary coding switch on switch position 3	409 A
• for inside-delta circuit at rotary coding switch on switch position 4	440 A
• for inside-delta circuit at rotary coding switch on switch position 5	471 A
• for inside-delta circuit at rotary coding switch on switch position 6	502 A
• for inside-delta circuit at rotary coding switch on switch position 7	533 A
• for inside-delta circuit at rotary coding switch on switch position 8	565 A
• for inside-delta circuit at rotary coding switch on switch position 9	596 A
• for inside-delta circuit at rotary coding switch on switch position 10	627 A
• for inside-delta circuit at rotary coding switch on switch position 11	658 A
• for inside-delta circuit at rotary coding switch on switch position 12	689 A
• for inside-delta circuit at rotary coding switch on switch position 13	721 A
• for inside-delta circuit at rotary coding switch on switch position 14	752 A
• for inside-delta circuit at rotary coding switch on switch position 15	783 A
• for inside-delta circuit at rotary coding switch on switch	814 A

position 16	
• at inside-delta circuit minimum	346 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	153 W
• at 50 °C after startup	137 W
• at 60 °C after startup	126 W
power loss [W] at AC at current limitation 350 %	
• at 40 °C during startup	7 903 W
• at 50 °C during startup	6 604 W
• at 60 °C during startup	5 794 W
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 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	30 mA
holding current in bypass operation rated value	100 mA
inrush current by closing the bypass contacts maximum	2.2 A
inrush current peak at application of control supply voltage maximum	12.2 A
duration of inrush current peak at application of control supply voltage	2.2 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	3 A
• at DC-13 at 24 V rated value	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	393 mm
width	210 mm
depth	203 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	9.9 kg
Connections/ Terminals	
type of electrical connection	busbar connection
<ul style="list-style-type: none"> • for main current circuit • for control circuit 	screw-type terminals
width of connection bar maximum	45 mm
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded 	2x (50 ... 240 mm ²) 2x (70 ... 240 mm ²)
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • between soft starter and motor maximum • at the digital inputs at AC maximum 	800 m 100 m
tightening torque	
<ul style="list-style-type: none"> • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals 	14 ... 24 N·m 0.8 ... 1.2 N·m
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 	124 ... 210 lbf·in 7 ... 10.3 lbf·in
Ambient conditions	
installation altitude at height above sea level maximum	5 000 m
ambient temperature	
<ul style="list-style-type: none"> • during operation • during storage and transport 	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above -40 ... +80 °C
environmental category	
<ul style="list-style-type: none"> • 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)
Electromagnetic compatibility	
EMC emitted interference	acc. to IEC 60947-4-2: Class A
Communication/ Protocol	
communication module is supported	
<ul style="list-style-type: none"> • PROFINET standard • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS 	Yes Yes Yes Yes Yes
UL/CSA ratings	
manufacturer's article number	
<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 J / L, max. 1600 A; Iq = 30 kA Type: Class J / L, max. 1200 A; Iq = 100 kA Type: Class J / L, max. 1600 A; Iq = 30 kA Type: Class J / L, max. 1200 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 	150 hp 150 hp 350 hp 250 hp 250 hp

• at 460/480 V at inside-delta circuit at 50 °C rated value	600 hp
contact rating of auxiliary contacts according to UL	R300-B300
Electrical Safety	
protection class IP on the front according to IEC 60529	IP00; IP20 with cover
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with cover

Approvals Certificates

Environmental Product Declaration	
• global warming potential [CO2 eq] / during manufacturing	84.2 kg
• global warming potential [CO2 eq] / during sales	2.81 kg
• global warming potential [CO2 eq] / during operation	721 kg
• global warming potential [CO2 eq] / after end of life	-21.8 kg
• global warming potential [CO2 eq] / total	786 kg

Environment	General Product Approval
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[Environmental Confirmations](#)



General Product Approval	EMV	Test Certificates	Maritime application
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Maritime application	other
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other



Further information

- Information on the packaging**
<https://support.industry.siemens.com/cs/ww/en/view/109813875>
- Information for data generation and storage**
<https://support.industry.siemens.com/cs/ww/en/view/109995012>
- 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=3RW5247-6AC14>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5247-6AC14>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5247-6AC14&lang=en
- Cax online generator**
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5247-6AC14>
- Characteristic curves**
https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP="HAUPT"></mmp_prod_no>
- Characteristic: Tripping characteristics, I²t, Let-through current**
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5247-6AC14/char>
- Characteristic: Installation altitude**
https://www.automation.siemens.com/bilddb/index.aspx?gridview=view2&objkey=G_NSB0_XX_01704&showdetail=true&view=Search
- Simulation Tool for Soft Starters (STS)**
<https://support.industry.siemens.com/cs/ww/en/view/101494917>



