

Siemens
EcoTech



SIRIUS soft starter 200-480 V 143 A, 24 V AC/DC Screw terminals Thermistor input



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 • of high feature HMI module usable • of communication module PROFINET standard 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 400 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"> 3RW5980-0HS00 3RW5980-0HF00 3RW5980-0CS00 3RW5980-0CP00 3RW5980-0CT00 3RW5980-0CR00 3RW5980-0CE00 3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 3VA2325-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 3NA3244-6; Type of coordination 1, Iq = 65 kA 3NA3244-6; Type of coordination 1, Iq = 65 kA 3NE1227-0; Type of coordination 2, Iq = 65 kA 3NE3334-0B; 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	
<ul style="list-style-type: none"> • CE marking • UL approval • CSA approval 	<ul style="list-style-type: none"> Yes Yes Yes
product component	
<ul style="list-style-type: none"> • HMI-High Feature • is supported HMI-Standard • is supported HMI-High Feature 	<ul style="list-style-type: none"> No Yes Yes
product feature integrated bypass contact system	Yes
number of controlled phases	3
buffering time in the event of power failure	
<ul style="list-style-type: none"> • for main current circuit • for control circuit 	<ul style="list-style-type: none"> 100 ms 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	1 400 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 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol - 119-47-1 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 Dibutylbis(pentane-2,4-dionato-O,O')tin - 22673-19-4
Weight	7.769 kg
product function	
• ramp-up (soft starting)	Yes
• ramp-down (soft stop)	Yes
• Soft Torque	Yes
• adjustable current limitation	Yes
• pump ramp down	Yes
• intrinsic device protection	Yes
• motor overload protection	Yes; Full motor protection (thermistor motor protection and electronic motor overload protection)
• 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; 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
• PROFenergy	Yes; in connection with the PROFINET Standard communication module
• firmware update	Yes
• removable terminal for control circuit	Yes
• torque control	No
• analog output	No
Power Electronics	
operational current	
• at 40 °C rated value	143 A
• at 50 °C rated value	128 A
• at 60 °C rated value	118 A
operational current at inside-delta circuit	
• at 40 °C rated value	248 A
• at 50 °C rated value	222 A
• at 60 °C rated value	204 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	

<ul style="list-style-type: none"> • at 230 V at 40 °C rated value 	37 kW
<ul style="list-style-type: none"> • at 230 V at inside-delta circuit at 40 °C rated value 	75 kW
<ul style="list-style-type: none"> • at 400 V at 40 °C rated value 	75 kW
<ul style="list-style-type: none"> • at 400 V at inside-delta circuit at 40 °C rated value 	132 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	
<ul style="list-style-type: none"> • at rotary coding switch on switch position 1 	68 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 2 	73 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 3 	78 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 4 	83 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 5 	88 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 6 	93 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 7 	98 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 8 	103 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 9 	108 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 10 	113 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 11 	118 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 12 	123 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 13 	128 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 14 	133 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 15 	138 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 16 	143 A
<ul style="list-style-type: none"> • minimum 	68 A
adjustable motor current	
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 1 	118 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 2 	126 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 3 	135 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 4 	144 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 5 	152 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 6 	161 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 7 	170 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 8 	178 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 9 	187 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 10 	196 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 11 	204 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 12 	213 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 13 	222 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 14 	230 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 15 	239 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 16 	248 A
<ul style="list-style-type: none"> • at inside-delta circuit minimum 	118 A
minimum load [%]	15 %; Relative to smallest settable I _e
power loss [W] for rated value of the current at AC	
<ul style="list-style-type: none"> • at 40 °C after startup 	55 W
<ul style="list-style-type: none"> • at 50 °C after startup 	50 W
<ul style="list-style-type: none"> • at 60 °C after startup 	47 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 	2 127 W 1 807 W 1 605 W
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 • 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	380 mA
inrush current by closing the bypass contacts maximum	7.6 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 (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	1
number of digital outputs	3
<ul style="list-style-type: none"> • not parameterizable 	2
digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)
number of analog outputs	0
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	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
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	6.6 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)
• for 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 AC maximum	100 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 according 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 according to IEC 60721	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
• during transport according to IEC 60721	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
Environmental footprint	
global warming potential [CO ₂ eq] total	296 kg
global warming potential [CO ₂ eq] during manufacturing	67.7 kg
global warming potential [CO ₂ eq] during sales	1.84 kg
global warming potential [CO ₂ eq] during operation	242 kg
global warming potential [CO ₂ eq] after end of life	-15.7 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	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; I _q = 10 kA
— 60/480 V according to UL	Siemens type: 3VA52, max. 250 A; I _q max = 65 kA
— at 460/480 V at inside-delta circuit according to UL	Siemens type: 3VA52, max. 250 A; I _q = 10 kA
— 60/480 V at inside-delta circuit according to UL	Siemens type: 3VA52, max. 250 A; I _q max = 65 kA
— at 575/600 V according to UL	Siemens type: 3VA52, max. 250 A; I _q = 10 kA
— at 575/600 V at inside-delta circuit according to UL	Siemens type: 3VA52, max. 250 A; I _q = 10 kA
• of the fuse	
— usable for Standard Faults up to 575/600 V	Type: Class RK5 / K5, max. 350 A; I _q = 10 kA

<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Type: Class J / L, max. 350 A; Iq = 100 kA Type: Class RK5 / K5, max. 350 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 	<ul style="list-style-type: none"> 40 hp 40 hp 100 hp 75 hp 75 hp 150 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

General Product Approval	EMV
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EMV	Test Certificates	Maritime application			
KC	Type Test Certificates/Test Report				

other	Environment	
Confirmation		
		Environmental Confirmations

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=3RW5235-6TC04>
- Cax online generator**
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5235-6TC04>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5235-6TC04>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5235-6TC04&lang=en
- Characteristic: Tripping characteristics, I_t, Let-through current**
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5235-6TC04/char>
- Characteristic: Installation altitude**
<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5235-6TC04&objecttype=14&gridview=view1>
- Simulation Tool for Soft Starters (STS)**
<https://support.industry.siemens.com/cs/ww/en/view/101494917>



