



SIRIUS soft starter 200-480 V 250 A, 24 V AC/DC spring-type 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 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 3VA2440-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V 3VA2440-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 400 V at inside-delta circuit 3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V at inside-delta circuit 3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 • of the gG fuse usable up to 690 V 2x3NA3354-6; Type of coordination 1, Iq = 65 kA • of the gG fuse usable at inside-delta circuit up to 500 V 2x3NA3354-6; Type of coordination 1, Iq = 65 kA • of full range R fuse link for semiconductor protection usable up to 690 V 3NE1331-0; Type of coordination 2, Iq = 65 kA • of back-up R fuse link for semiconductor protection usable up to 690 V 3NE3336; 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	11.523 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; Full motor protection (thermistor motor protection and electronic motor overload protection)
• evaluation of thermistor motor protection	Yes; Type A PTC or Klaxon / 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
• PROFInergy	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	250 A
• at 50 °C rated value	220 A
• at 60 °C rated value	200 A
operational current at inside-delta circuit	
• at 40 °C rated value	433 A
• at 50 °C rated value	381 A
• at 60 °C rated value	346 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	75 kW
• at 230 V at inside-delta circuit at 40 °C rated value	132 kW
• at 400 V at 40 °C rated value	132 kW
• at 400 V at inside-delta circuit at 40 °C rated value	250 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	100 A
• at rotary coding switch on switch position 2	110 A
• at rotary coding switch on switch position 3	120 A
• at rotary coding switch on switch position 4	130 A
• at rotary coding switch on switch position 5	140 A
• at rotary coding switch on switch position 6	150 A
• at rotary coding switch on switch position 7	160 A
• at rotary coding switch on switch position 8	170 A
• at rotary coding switch on switch position 9	180 A
• at rotary coding switch on switch position 10	190 A
• at rotary coding switch on switch position 11	200 A
• at rotary coding switch on switch position 12	210 A
• at rotary coding switch on switch position 13	220 A
• at rotary coding switch on switch position 14	230 A
• at rotary coding switch on switch position 15	240 A
• at rotary coding switch on switch position 16	250 A
• minimum	100 A
adjustable motor current	
• for inside-delta circuit at rotary coding switch on switch position 1	173 A
• for inside-delta circuit at rotary coding switch on switch position 2	191 A
• for inside-delta circuit at rotary coding switch on switch position 3	208 A
• for inside-delta circuit at rotary coding switch on switch position 4	225 A
• for inside-delta circuit at rotary coding switch on switch position 5	242 A
• for inside-delta circuit at rotary coding switch on switch position 6	260 A
• for inside-delta circuit at rotary coding switch on switch position 7	277 A
• for inside-delta circuit at rotary coding switch on switch position 8	294 A
• for inside-delta circuit at rotary coding switch on switch position 9	312 A
• for inside-delta circuit at rotary coding switch on switch position 10	329 A
• for inside-delta circuit at rotary coding switch on switch position 11	346 A
• for inside-delta circuit at rotary coding switch on switch position 12	364 A
• for inside-delta circuit at rotary coding switch on switch position 13	381 A
• for inside-delta circuit at rotary coding switch on switch position 14	398 A
• for inside-delta circuit at rotary coding switch on switch position 15	416 A

<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 16 	433 A
<ul style="list-style-type: none"> • at inside-delta circuit minimum 	173 A
minimum load [%]	15 %; Relative to smallest settable Ie
power loss [W] for rated value of the current at AC	
<ul style="list-style-type: none"> • at 40 °C after startup 	87 W
<ul style="list-style-type: none"> • at 50 °C after startup 	78 W
<ul style="list-style-type: none"> • at 60 °C after startup 	72 W
power loss [W] at AC at current limitation 350 %	
<ul style="list-style-type: none"> • at 40 °C during startup 	3 818 W
<ul style="list-style-type: none"> • at 50 °C during startup 	3 188 W
<ul style="list-style-type: none"> • at 60 °C during startup 	2 799 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 	24 V
<ul style="list-style-type: none"> • at 60 Hz rated value 	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	470 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 (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
<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 	3 A
<ul style="list-style-type: none"> • 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	

<ul style="list-style-type: none"> • forwards • backwards • upwards • downwards • at the side 	<p>10 mm</p> <p>0 mm</p> <p>100 mm</p> <p>75 mm</p> <p>5 mm</p>
weight without packaging	9.9 kg
Connections/ Terminals	
type of electrical connection	
<ul style="list-style-type: none"> • for main current circuit • for control circuit 	<p>busbar connection</p> <p>spring-loaded terminals</p>
width of connection bar maximum	45 mm
wire length for thermistor connection	
<ul style="list-style-type: none"> • with conductor cross-section = 0.5 mm² maximum • with conductor cross-section = 1.5 mm² maximum • with conductor cross-section = 2.5 mm² maximum 	<p>50 m</p> <p>150 m</p> <p>250 m</p>
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 	<p>2x (50 ... 240 mm²)</p> <p>2x (70 ... 240 mm²)</p>
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 • for AWG cables for control circuit finely stranded with core end processing 	<p>2x (0.25 ... 1.5 mm²)</p> <p>2x (0.25 ... 1.5 mm²)</p> <p>2x (24 ... 16)</p> <p>2x (24 ... 16)</p>
wire length	
<ul style="list-style-type: none"> • between soft starter and motor maximum • at the digital inputs at AC maximum • at the digital inputs at DC maximum 	<p>800 m</p> <p>100 m</p> <p>1 000 m</p>
tightening torque	
<ul style="list-style-type: none"> • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals 	<p>14 ... 24 N·m</p> <p>0.8 ... 1.2 N·m</p>
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 	<p>124 ... 210 lbf·in</p> <p>7 ... 10.3 lbf·in</p>
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 	<p>-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above</p> <p>-40 ... +80 °C</p>
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 	<p>3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6</p> <p>1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4</p> <p>2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)</p>
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 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
UL/CSA ratings	
manufacturer's article number	
<ul style="list-style-type: none"> • of circuit breaker usable for Standard Faults <p>— at 460/480 V according to UL</p>	Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; I _q = 18 kA

- 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 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

Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq max = 65 kA
 Siemens type: 3VA54, max. 600 A; Iq = 18 kA
 Siemens type: 3VA54, max. 600 A; Iq max = 65 kA
 Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq = 18 kA
 Siemens type: 3VA54, max. 600 A; Iq = 18 kA

Type: Class J / L, max. 800 A; Iq = 18 kA
 Type: Class J / L, max. 800 A; Iq = 100 kA
 Type: Class J / L, max. 800 A; Iq = 18 kA
 Type: Class J / L, max. 800 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

60 hp
 75 hp
 150 hp
 125 hp
 150 hp
 300 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

[Environmental Confirmations](#)



General Product Approval

EMV

Test Certificates

Maritime application



Maritime application

other



other



