



SIRIUS soft starter 200-480 V 93 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 • 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 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 	3RW5980-0HS00 3RW5980-0HF00 3RW5980-0CS00 3RW5980-0CP00 3RW5980-0CT00 3RW5980-0CR00 3RW5980-0CE00 3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 15 kA, CLASS 10 3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 10 kA, CLASS 10 3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 15 kA, CLASS 10 3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 10 kA, CLASS 10 3NA3136-6; Type of coordination 1, Iq = 65 kA 3NA3136-6; Type of coordination 1, Iq = 65 kA 3NE1224-0; Type of coordination 2, Iq = 65 kA 3NE4124; 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 	Yes Yes Yes
product component	
<ul style="list-style-type: none"> • HMI-High Feature • is supported HMI-Standard • is supported HMI-High Feature 	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 	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	
<ul style="list-style-type: none"> • 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	7.979 kg
product function	
<ul style="list-style-type: none"> ● ramp-up (soft starting) ● soft stopping ● Soft Torque ● adjustable current limitation ● pump stop ● 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 	<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> ● at 40 °C rated value ● at 50 °C rated value ● at 60 °C rated value 	<ul style="list-style-type: none"> 93 A 82.5 A 75.5 A
operational current at inside-delta circuit	
<ul style="list-style-type: none"> ● at 40 °C rated value ● at 50 °C rated value ● at 60 °C rated value 	<ul style="list-style-type: none"> 161 A 143 A 131 A
operating voltage	
<ul style="list-style-type: none"> ● rated value ● at inside-delta circuit rated value 	<ul style="list-style-type: none"> 200 ... 480 V 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 ● at 230 V at inside-delta circuit at 40 °C rated value ● at 400 V at 40 °C rated value ● at 400 V at inside-delta circuit at 40 °C rated value 	<ul style="list-style-type: none"> 22 kW 45 kW 45 kW 90 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	40.5 A
• at rotary coding switch on switch position 2	44 A
• at rotary coding switch on switch position 3	47.5 A
• at rotary coding switch on switch position 4	51 A
• at rotary coding switch on switch position 5	54.5 A
• at rotary coding switch on switch position 6	58 A
• at rotary coding switch on switch position 7	61.5 A
• at rotary coding switch on switch position 8	65 A
• at rotary coding switch on switch position 9	68.5 A
• at rotary coding switch on switch position 10	72 A
• at rotary coding switch on switch position 11	75.5 A
• at rotary coding switch on switch position 12	79 A
• at rotary coding switch on switch position 13	82.5 A
• at rotary coding switch on switch position 14	86 A
• at rotary coding switch on switch position 15	89.5 A
• at rotary coding switch on switch position 16	93 A
• minimum	40.5 A
adjustable motor current	
• for inside-delta circuit at rotary coding switch on switch position 1	70.09 A
• for inside-delta circuit at rotary coding switch on switch position 2	76.2 A
• for inside-delta circuit at rotary coding switch on switch position 3	82.3 A
• for inside-delta circuit at rotary coding switch on switch position 4	88.3 A
• for inside-delta circuit at rotary coding switch on switch position 5	94.4 A
• for inside-delta circuit at rotary coding switch on switch position 6	100 A
• for inside-delta circuit at rotary coding switch on switch position 7	107 A
• for inside-delta circuit at rotary coding switch on switch position 8	113 A
• for inside-delta circuit at rotary coding switch on switch position 9	119 A
• for inside-delta circuit at rotary coding switch on switch position 10	125 A
• for inside-delta circuit at rotary coding switch on switch position 11	131 A
• for inside-delta circuit at rotary coding switch on switch position 12	137 A
• for inside-delta circuit at rotary coding switch on switch position 13	143 A
• for inside-delta circuit at rotary coding switch on switch position 14	149 A
• for inside-delta circuit at rotary coding switch on switch position 15	155 A
• for inside-delta circuit at rotary coding switch on switch position 16	161 A
• at inside-delta circuit minimum	70.09 A
minimum load [%]	15 %; Relative to smallest settable le
power loss [W] for rated value of the current at AC	
• at 40 °C after startup	40 W
• at 50 °C after startup	37 W
• at 60 °C after startup	35 W
power loss [W] at AC at current limitation 350 %	
• at 40 °C during startup	1 270 W
• at 50 °C during startup	1 077 W
• at 60 °C during startup	959 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	75 mA
inrush current by closing the bypass contacts maximum	2.5 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 (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
• 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	306 mm
width	185 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	6.9 kg
Connections/ Terminals	
type of electrical connection	
• for main current circuit	box terminal
• for control circuit	screw-type terminals
width of connection bar maximum	25 mm
type of connectable conductor cross-sections for main contacts for box terminal	
• using the front clamping point solid	1x (2.5 ... 16 mm ²)
• using the front clamping point finely stranded with core end processing	1x (2.5 ... 50 mm ²)

<ul style="list-style-type: none"> • using the front clamping point stranded • using the back clamping point solid • r box terminal using the back clamping point • using both clamping points solid • using both clamping points finely stranded with core end processing • using both clamping points stranded • using the back clamping point finely stranded with core end processing • using the back clamping point stranded 	<p>1x (10 ... 70 mm²)</p> <p>1x (2.5 ... 16 mm²)</p> <p>1x (10 ... 2/0)</p> <p>2x (2.5 ... 16 mm²)</p> <p>2x (2.5 ... 35 mm²)</p> <p>2x (6 ... 16 mm²), 2x (10 ... 50 mm²)</p> <p>1x (2.5 ... 50 mm²)</p> <p>1x (10 ... 70 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 	<p>1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²)</p> <p>1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)</p> <p>1x (20 ... 12), 2x (20 ... 14)</p>
wire length <ul style="list-style-type: none"> • between soft starter and motor maximum • at the digital inputs at AC maximum 	<p>800 m</p> <p>100 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>4.5 ... 6 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>40 ... 53 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 <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 — 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 	<p>Siemens type: 3VA51, max. 125 A; I_q = 10 kA</p> <p>Siemens type: 3VA51, max. 125 A; I_q max = 65 kA</p> <p>Siemens type: 3VA51, max. 125 A; I_q = 10 kA</p> <p>Siemens type: 3VA51, max. 125 A; I_q max = 65 kA</p> <p>Siemens type: 3VA51, max. 125 A; I_q = 10 kA</p> <p>Siemens type: 3VA51, max. 125 A; I_q = 10 kA</p> <p>Type: Class RK5 / K5, max. 300 A; I_q = 10 kA</p> <p>Type: Class J / L, max. 250 A; I_q = 100 kA</p> <p>Type: Class RK5 / K5, max. 300 A; I_q = 10 kA</p>

— usable for High Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class J / L, max. 250 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
• at 200/208 V at 50 °C rated value	25 hp
• at 220/230 V at 50 °C rated value	30 hp
• at 460/480 V at 50 °C rated value	60 hp
• at 200/208 V at inside-delta circuit at 50 °C rated value	40 hp
• at 220/230 V at inside-delta circuit at 50 °C rated value	50 hp
• at 460/480 V at inside-delta circuit at 50 °C rated value	100 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	67.7 kg
• global warming potential [CO2 eq] / during sales	1.84 kg
• global warming potential [CO2 eq] / during operation	242 kg
• global warming potential [CO2 eq] / after end of life	-15.7 kg
• global warming potential [CO2 eq] / total	296 kg

Environment	General Product Approval
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[Environmental Confirmations](#)







General Product Approval	EMV	Test Certificates	Maritime application
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[Type Test Certificates/Test Report](#)



Maritime application	other
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[Confirmation](#) [Confirmation](#)

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=3RW5227-1AC14>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-1AC14>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5227-1AC14&lang=en
- Cax online generator**
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5227-1AC14>
- Characteristic curves**
[https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP="HAUPT"></mmp_prod_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)
- Characteristic: Tripping characteristics, I²t, Let-through current**
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-1AC14/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>



