

Siemens
EcoTech



SIRIUS soft starter 200-480 V 93 A, 24 V AC/DC spring-type 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 	<ul style="list-style-type: none"> 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 	<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 	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; 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	7.807 kg
product function <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • at 40 °C rated value • at 50 °C rated value • at 60 °C rated value 	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 	161 A 143 A 131 A
operating voltage <ul style="list-style-type: none"> • rated value • at inside-delta circuit rated value 	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	
• at 230 V at 40 °C rated value	22 kW
• at 230 V at inside-delta circuit at 40 °C rated value	45 kW
• at 400 V at 40 °C rated value	45 kW
• at 400 V at inside-delta circuit at 40 °C rated value	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	70.1 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	70.1 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 %	
<ul style="list-style-type: none"> at 40 °C during startup at 50 °C during startup at 60 °C during startup 	1 270 W 1 077 W 959 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	1
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	6.9 kg
Connections/ Terminals	
type of electrical connection	
<ul style="list-style-type: none"> for main current circuit 	box terminal

<ul style="list-style-type: none"> • for control circuit 	spring-loaded terminals
width of connection bar maximum	25 mm
type of connectable conductor cross-sections for main contacts for box terminal	
<ul style="list-style-type: none"> • using the front clamping point solid 	1x (2.5 ... 16 mm ²)
<ul style="list-style-type: none"> • 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 	1x (10 ... 70 mm ²)
<ul style="list-style-type: none"> • using the back clamping point solid 	1x (2.5 ... 16 mm ²)
<ul style="list-style-type: none"> • for box terminal using the back clamping point 	1x (10 ... 2/0)
<ul style="list-style-type: none"> • using both clamping points solid 	2x (2.5 ... 16 mm ²)
<ul style="list-style-type: none"> • using both clamping points finely stranded with core end processing 	2x (2.5 ... 35 mm ²)
<ul style="list-style-type: none"> • using both clamping points stranded 	2x (6 ... 16 mm ²), 2x (10 ... 50 mm ²)
<ul style="list-style-type: none"> • using the back clamping point finely stranded with core end processing 	1x (2.5 ... 50 mm ²)
<ul style="list-style-type: none"> • using the back clamping point stranded 	1x (10 ... 70 mm ²)
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for control circuit solid 	2x (0.25 ... 1.5 mm ²)
<ul style="list-style-type: none"> • for control circuit finely stranded with core end processing 	2x (0.25 ... 1.5 mm ²)
<ul style="list-style-type: none"> • for AWG cables for control circuit solid 	2x (24 ... 16)
<ul style="list-style-type: none"> • for AWG cables for control circuit finely stranded with core end processing 	2x (24 ... 16)
wire length	
<ul style="list-style-type: none"> • between soft starter and motor maximum 	800 m
<ul style="list-style-type: none"> • at the digital inputs at AC maximum 	100 m
<ul style="list-style-type: none"> • at the digital inputs at DC maximum 	1 000 m
tightening torque	
<ul style="list-style-type: none"> • for main contacts with screw-type terminals 	4.5 ... 6 N·m
<ul style="list-style-type: none"> • for auxiliary and control contacts with screw-type terminals 	0.8 ... 1.2 N·m
tightening torque [lbf·in]	
<ul style="list-style-type: none"> • for main contacts with screw-type terminals 	40 ... 53 lbf·in
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • during operation 	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above
<ul style="list-style-type: none"> • during storage and transport 	-40 ... +80 °C
environmental category	
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • during storage according to IEC 60721 	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • PROFINET standard 	Yes
<ul style="list-style-type: none"> • EtherNet/IP 	Yes
<ul style="list-style-type: none"> • Modbus RTU 	Yes
<ul style="list-style-type: none"> • Modbus TCP 	Yes
<ul style="list-style-type: none"> • PROFIBUS 	Yes
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 — usable for High 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> <p>Type: Class J / L, max. 250 A; I_q = 100 kA</p>

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 	<p>25 hp</p> <p>30 hp</p> <p>60 hp</p> <p>40 hp</p> <p>50 hp</p> <p>100 hp</p>

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
--------------------------	-----



EMV	Test Certificates	Maritime application
-----	-------------------	----------------------

[KC](#)

[Type Test Certificates/Test Report](#)



other	Environment
-------	-------------



[Confirmation](#)

Siemens EcoTech



[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=3RW5227-3AC04>

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5227-3AC04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-3AC04>

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

https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5227-3AC04&lang=en

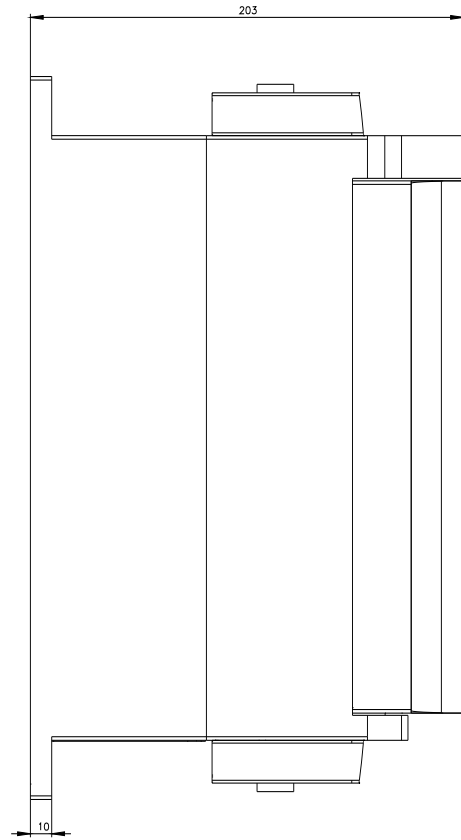
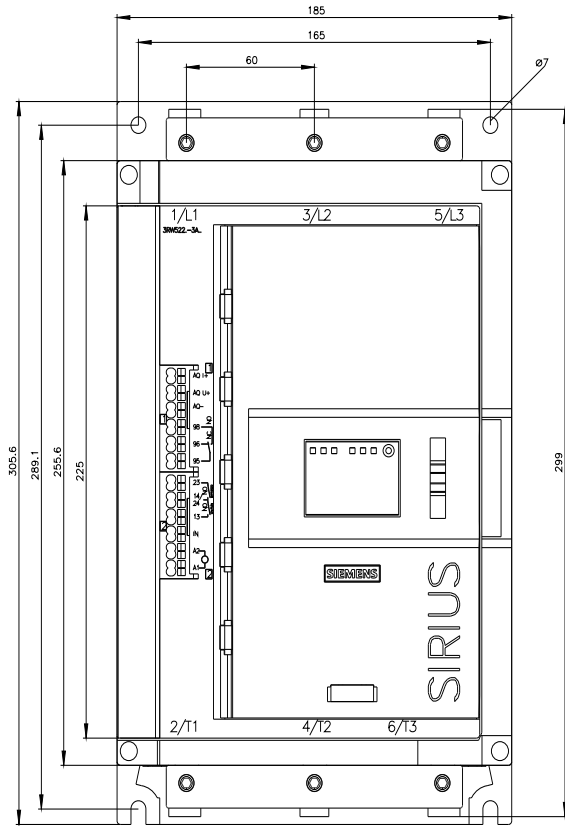
Characteristic: Tripping characteristics, I²t, Let-through current
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-3AC04/char>

Characteristic: Installation altitude

<https://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5227-3AC04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





last modified:

4/2/2025 

