



SIRIUS soft starter 200-480 V 32 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 3RV2032-4VA10: Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V 3RV2032-4VA10: Type of coordination 1, Iq = 10 kA, CLASS 10 • of circuit breaker usable at 400 V at inside-delta circuit 3RV2032-4JA10: Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V at inside-delta circuit 3RV2032-4JA10: Type of coordination 1, Iq = 10 kA, CLASS 10 • of the gG fuse usable up to 690 V 3NA3824-6: Type of coordination 1, Iq = 65 kA • of the gG fuse usable at inside-delta circuit up to 500 V 3NA3824-6: Type of coordination 1, Iq = 65 kA • of full range R fuse link for semiconductor protection usable up to 690 V 3NE1818-0: Type of coordination 2, Iq = 65 kA • of back-up R fuse link for semiconductor protection usable up to 690 V 3NE8022-1: Type of coordination 2, Iq = 65 kA
General technical data	
starting voltage [%]	30 ... 100 %
stopping voltage [%]	50 ... 50 %
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 Yes • UL approval Yes • CSA approval Yes
product component is supported	<ul style="list-style-type: none"> • HMI-Standard Yes • HMI-High Feature Yes
product feature integrated bypass contact system	Yes
number of controlled phases	3
trip class	CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2

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 safe isolation	
• 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 acc. to IEC 60947-4-2	AC 53a
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	15.02.2018 00:00:00
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
• 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	32 A
• at 50 °C rated value	28 A
• at 60 °C rated value	26 A
operational current at inside-delta circuit	
• at 40 °C rated value	55.4 A
• at 50 °C rated value	49 A
• at 60 °C rated value	45 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	7.5 kW

<ul style="list-style-type: none"> • at 230 V at inside-delta circuit at 40 °C rated value 	15 kW
<ul style="list-style-type: none"> • at 400 V at 40 °C rated value 	15 kW
<ul style="list-style-type: none"> • at 400 V at inside-delta circuit at 40 °C rated value 	22 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 	14 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 2 	15.2 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 3 	16.4 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 4 	17.6 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 5 	18.8 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 6 	20 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 7 	21.2 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 8 	22.4 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 9 	23.6 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 10 	24.8 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 11 	26 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 12 	27.2 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 13 	28.4 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 14 	29.6 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 15 	30.8 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 16 	32 A
<ul style="list-style-type: none"> • minimum 	14 A
adjustable motor current	
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 1 	24.2 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 2 	26.3 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 3 	28.4 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 4 	30.5 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 5 	32.6 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 6 	34.6 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 7 	36.7 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 8 	38.8 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 9 	40.9 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 10 	43 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 11 	45 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 12 	47.1 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 13 	49.2 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 14 	51.3 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 15 	53.3 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 16 	55.4 A
<ul style="list-style-type: none"> • at inside-delta circuit minimum 	24.2 A
minimum load [%]	15 %; Relative to smallest settable le
power loss [W] for rated value of the current at AC	
<ul style="list-style-type: none"> • at 40 °C after startup 	22 W
<ul style="list-style-type: none"> • at 50 °C after startup 	21 W
<ul style="list-style-type: none"> • at 60 °C after startup 	20 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 	531 W 449 W 395 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	
<ul style="list-style-type: none"> 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	360 mA
locked-rotor current at close of bypass contact maximum	0.75 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 inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
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	275 mm
width	170 mm
depth	152 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	2.3 kg
Connections/ Terminals	
type of electrical connection	
<ul style="list-style-type: none"> for main current circuit for control circuit 	screw-type terminals spring-loaded terminals
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 	50 m 150 m 250 m
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> for main contacts <ul style="list-style-type: none"> — solid — finely stranded with core end processing at AWG cables for main current circuit solid 	2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 10 mm ²) 2x (1.0 ... 2.5 mm ²), 2x (2.5 ... 6.0 mm ²) 2x (16 ... 12), 2x (14 ... 8)
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 at AWG cables for control circuit solid at AWG cables for control circuit finely stranded with core end processing 	2x (0.25 ... 1.5 mm ²) 2x (0.25 ... 1.5 mm ²) 2x (24 ... 16) 2x (24 ... 16)
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 	800 m 100 m 1 000 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 	2 ... 2.5 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 	18 ... 22 lbf·in 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 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 acc. to IEC 60721 during storage acc. to IEC 60721 during transport acc. 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)
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 circuit breaker <ul style="list-style-type: none"> — usable for Standard Faults at 460/480 V according to UL — usable for High Faults at 460/480 V according to UL — usable for Standard Faults at 460/480 V at inside-delta circuit according to UL 	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; I _q = 5 kA Siemens type: 3RV2742, max.40 A or 3VA51, max. 60 A; I _q max = 65 kA Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; I _q = 5 kA

- usable for High Faults at 460/480 V at inside-delta circuit according to UL
- usable for Standard Faults at 575/600 V according to UL
- usable for Standard Faults 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: 3VA51, max. 60 A; I_q max = 65 kA

Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; I_q = 5 kA

Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; I_q = 5 kA

Type: Class RK5 / K5, max. 125 A; I_q = 5 kA

Type: Class J / L, max. 125 A; I_q = 100 kA

Type: Class RK5 / K5, max. 125 A; I_q = 5 kA

Type: Class J / L, max. 125 A; I_q = 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

7.5 hp
10 hp
20 hp
15 hp
15 hp
30 hp

contact rating of auxiliary contacts according to UL

R300-B300

Safety related data

protection class IP on the front acc. to IEC 60529

IP20

touch protection on the front acc. to IEC 60529

finger-safe, for vertical contact from the front

electromagnetic compatibility

in accordance with IEC 60947-4-2

Certificates/ approvals

General Product Approval

EMC

Declaration of Conformity



Test Certificates

Marine / Shipping

[Type Test Certificates/Test Report](#)



other

[Confirmation](#)

Further information

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=3RW5216-3TC04>

Cax online generator

<http://support.automation.siemens.com/WWW/CAXorder/default.aspx?lang=en&mlfb=3RW5216-3TC04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5216-3TC04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5216-3TC04&lang=en

Characteristic: Tripping characteristics, I_t, Let-through current

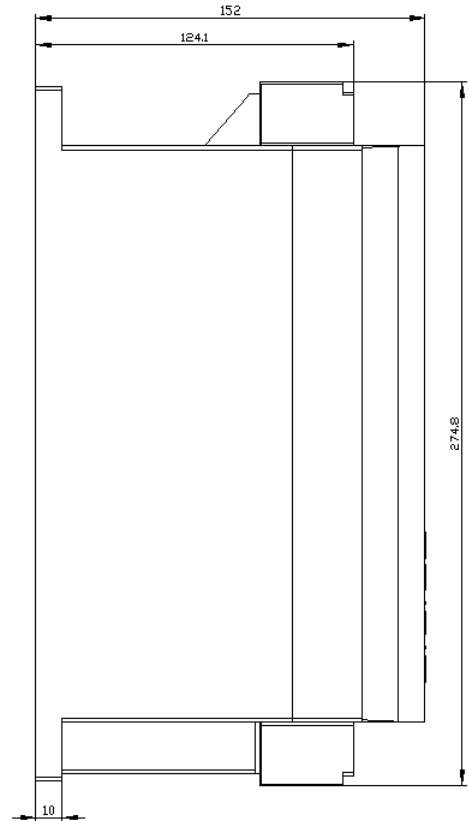
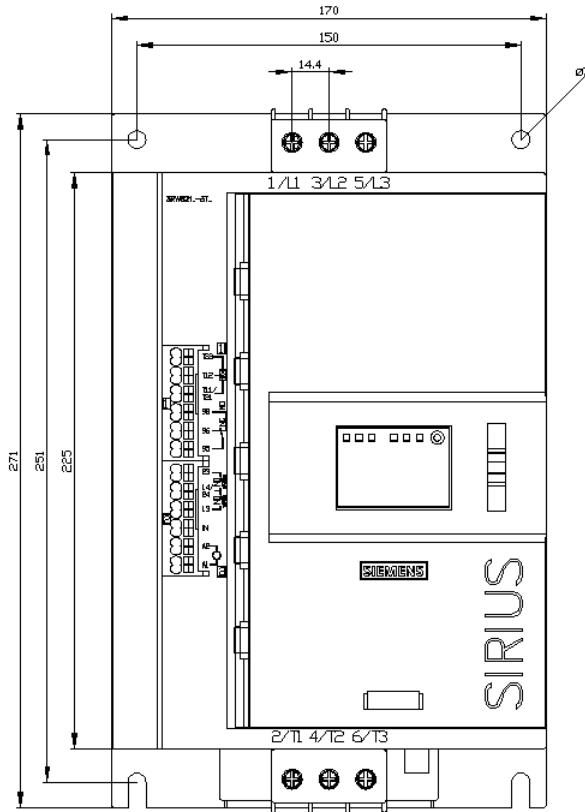
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5216-3TC04/char>

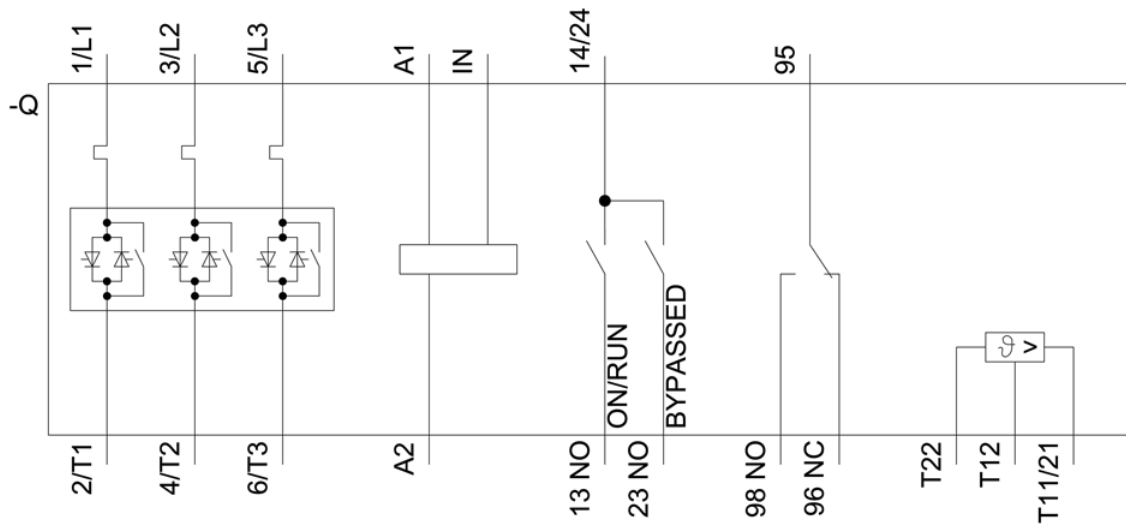
Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5216-3TC04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





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