



SIRIUS soft starter 200-480 V 47 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 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 3RV2032-4JA10: Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V 3RV2032-4JA10: Type of coordination 1, Iq = 10 kA, CLASS 10 • of circuit breaker usable at 400 V at inside-delta circuit 3RV2032-4RA10: Type of coordination 1, Iq = 65 kA, CLASS 10 • of circuit breaker usable at 500 V at inside-delta circuit 3RV2032-4RA10: 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 3NE1021-2: Type of coordination 2, Iq = 65 kA • of back-up R fuse link for semiconductor protection usable up to 690 V 3NE8024-1: 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	
• CE marking	Yes
• UL approval	Yes
• CSA approval	Yes
product component is supported	
• 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	1 400 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	47 A
• at 50 °C rated value	42 A
• at 60 °C rated value	36 A
operational current at inside-delta circuit	
• at 40 °C rated value	81.4 A
• at 50 °C rated value	72 A
• at 60 °C rated value	62.7 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	11 kW

<ul style="list-style-type: none"> • at 230 V at inside-delta circuit at 40 °C rated value 	22 kW
<ul style="list-style-type: none"> • at 400 V at 40 °C rated value 	22 kW
<ul style="list-style-type: none"> • at 400 V at inside-delta circuit at 40 °C rated value 	45 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 	20 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 2 	21.8 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 3 	23.6 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 4 	25.4 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 5 	27.2 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 6 	29 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 7 	30.8 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 8 	32.6 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 9 	34.4 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 10 	36.2 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 11 	38 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 12 	39.8 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 13 	41.6 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 14 	43.4 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 15 	45.2 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 16 	47 A
<ul style="list-style-type: none"> • minimum 	20 A
adjustable motor current	
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 1 	34.6 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 2 	37.8 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 3 	40.9 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 4 	44 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 5 	47.1 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 6 	50.2 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 7 	53.3 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 8 	56.5 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 9 	59.6 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 10 	62.7 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 11 	65.8 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 12 	68.9 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 13 	72.1 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 14 	75.2 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 15 	78.3 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 16 	81.4 A
<ul style="list-style-type: none"> • at inside-delta circuit minimum 	34.6 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 	26 W
<ul style="list-style-type: none"> • at 50 °C after startup 	24 W
<ul style="list-style-type: none"> • at 60 °C after startup 	23 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 	606 W 522 W 438 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	380 mA
locked-rotor current at close of bypass contact 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 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	+/- 10° rotation possible and can be tilted forward or backward on vertical mounting surface
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	5.2 kg
Connections/ Terminals	
type of electrical connection	box terminal
<ul style="list-style-type: none"> for main current circuit for control circuit 	screw-type terminals
width of connection bar maximum	25 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 	50 m 150 m 250 m
type of connectable conductor cross-sections	
<ul style="list-style-type: none"> for main contacts for box terminal using the front clamping point solid for main contacts for box terminal using the front clamping point finely stranded with core end processing for main contacts for box terminal using the front clamping point stranded at AWG cables for main contacts for box terminal using the front clamping point for main contacts for box terminal using the back clamping point solid at AWG cables for main contacts for box terminal using the back clamping point for main contacts for box terminal using both clamping points solid for main contacts for box terminal using both clamping points finely stranded with core end processing for main contacts for box terminal using both clamping points stranded for main contacts for box terminal using the back clamping point finely stranded with core end processing for main contacts for box terminal using the back clamping point stranded 	1x (2.5 ... 16 mm ²) 1x (2.5 ... 50 mm ²) 1x (10 ... 70 mm ²) 1x (10 ... 2/0) 1x (2.5 ... 16 mm ²) 1x (10 ... 2/0) 2x (2.5 ... 16 mm ²) 2x (2.5 ... 35 mm ²) 2x (6 ... 16 mm ²), 2x (10 ... 50 mm ²) 1x (2.5 ... 50 mm ²) 1x (10 ... 70 mm ²)
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 	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²) 1x (20 ... 12), 2x (20 ... 14)
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 	4.5 ... 6 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 	40 ... 53 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		
• 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: 3RV2742, max. 70 A or 3VA51, max. 90 A; Iq = 5 kA	
— usable for High Faults at 460/480 V according to UL	Siemens type: 3VA51, max. 60 A; Iq max = 65 kA	
— usable for Standard Faults at 460/480 V at inside-delta circuit according to UL	Siemens type: 3VA51, max. 90 A; Iq = 5 kA	
— usable for High Faults at 460/480 V at inside-delta circuit according to UL	Siemens type: 3VA51, max. 60 A; Iq max = 65 kA	
— usable for Standard Faults at 575/600 V according to UL	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 90 A; Iq = 5 kA	
— usable for Standard Faults at 575/600 V at inside-delta circuit according to UL	Siemens type: 3VA51, max. 90 A; Iq = 5 kA	
• of the fuse		
— usable for Standard Faults up to 575/600 V according to UL	Type: Class RK5 / K5, max. 175 A; Iq = 5 kA	
— usable for High Faults up to 575/600 V according to UL	Type: Class J / L, max. 175 A; Iq = 100 kA	
— usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class RK5 / K5, max. 175 A; Iq = 5 kA	
— usable for High Faults at inside-delta circuit up to 575/600 V according to UL	Type: Class J / L, max. 175 A; Iq = 100 kA	
operating power [hp] for 3-phase motors		
• at 200/208 V at 50 °C rated value	10 hp	
• at 220/230 V at 50 °C rated value	10 hp	
• at 460/480 V at 50 °C rated value	30 hp	
• at 200/208 V at inside-delta circuit at 50 °C rated value	20 hp	
• at 220/230 V at inside-delta circuit at 50 °C rated value	25 hp	
• at 460/480 V at inside-delta circuit at 50 °C rated value	50 hp	
contact rating of auxiliary contacts according to UL	R300-B300	
Safety related data		
protection class IP on the front acc. to IEC 60529	IP00; IP20 with cover	
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front with cover	
electromagnetic compatibility	in accordance with IEC 60947-4-2	
Certificates/ approvals		
General Product Approval	EMC	Declaration of Conformity
		
		
<small>CSA</small>	<small>CCC</small>	<small>UL</small>
<small>EG-Konf.</small>		
Test Certificates	Marine / Shipping	



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=3RW5224-1TC04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5224-1TC04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-1TC04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5224-1TC04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

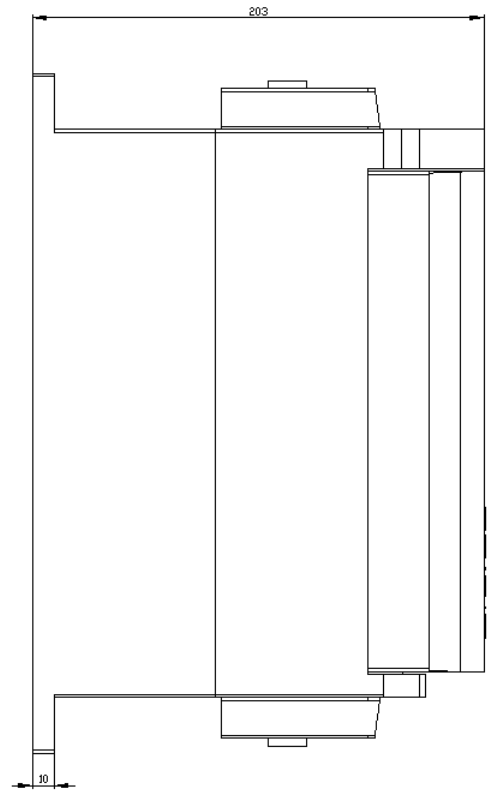
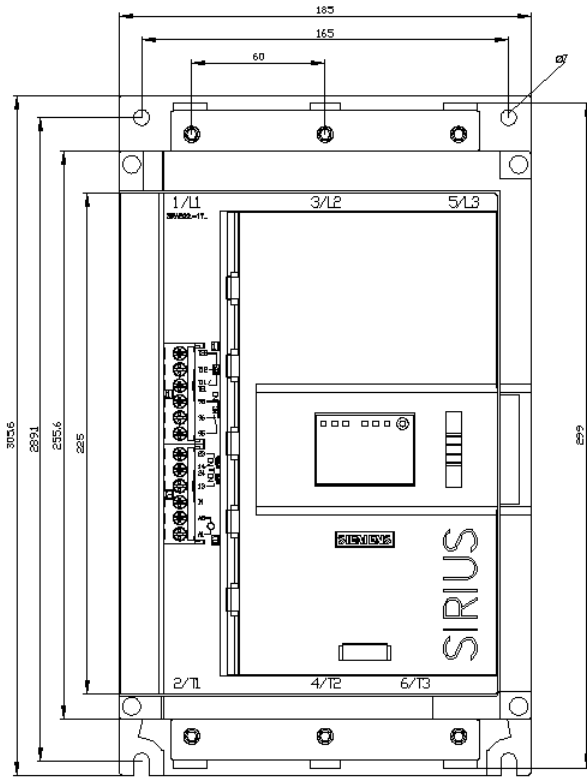
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-1TC04/char>

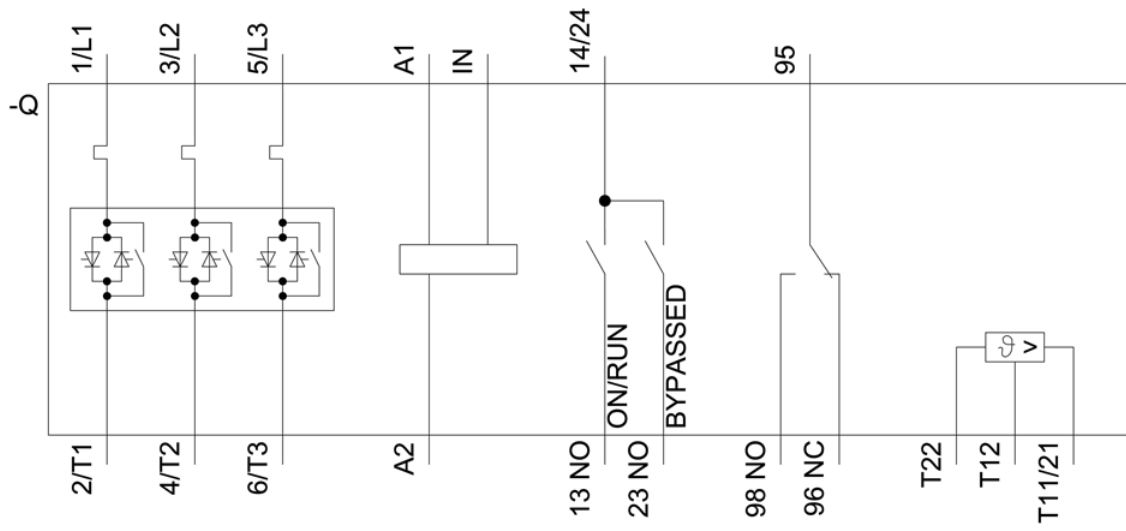
Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5224-1TC04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





last modified:

8/10/2021 

