SIEMENS

product brand name product category

Data sheet 3RW5227-3TC04

SIRIUS

Hybrid switching devices



SIRIUS soft starter 200-480 V 93 A, 24 V AC/DC spring-type terminals Thermistor input

product designation	Soft starter
product type designation	3RW52
manufacturer's article number	
 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 	3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 15 kA, CLASS 10
 of circuit breaker usable at 500 V 	3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 10 kA, CLASS 10
 of circuit breaker usable at 400 V at inside-delta circuit 	3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 15 kA, CLASS 10
• of circuit breaker usable at 500 V at inside-delta circuit	3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 10 kA, CLASS 10
 of the gG fuse usable up to 690 V 	3NA3136-6; Type of coordination 1, Iq = 65 kA
• of the gG fuse usable at inside-delta circuit up to 500 V	3NA3136-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1224-0; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	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	
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
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
	100 ms

in a viation, valtage, noted valve	COD V
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	
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
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
PROFlenergy	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	93 A
• at 50 °C rated value	82.5 A
at 60 °C rated value	75.5 A
operational current at inside-delta circuit	
• at 40 °C rated value	161 A
• at 50 °C rated value	143 A
at 60 °C rated value	131 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	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 % -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
djustable 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 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 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 for inside-delta circuit at rotary coding switch on switch 	100 A 107 A
position 7 • for inside-delta circuit at rotary coding switch on switch	113 A
position 8 • for inside-delta circuit at rotary coding switch on switch	119 A
position 9 • for inside-delta circuit at rotary coding switch on switch	125 A
position 10 • for inside-delta circuit at rotary coding switch on switch	131 A
position 11 • for inside-delta circuit at rotary coding switch on switch	137 A
position 12for inside-delta circuit at rotary coding switch on switch	143 A
position 13 • for inside-delta circuit at rotary coding switch on switch	149 A
for inside-delta circuit at rotary coding switch on switch	155 A
 position 15 for inside-delta circuit at rotary coding switch on switch position 16 	161 A
at inside-delta circuit minimum	70.1 A
	15 %; Relative to smallest settable le
ninimum load [%] bower loss [W] for rated value of the current at AC	10 70, I CHARITY TO STITULIOSE SCHADIC IC
at 40 °C after startup	40 W
at 40 °C after startup at 50 °C after startup	37 W
·	
at 60 °C after startup According to AC at current limitation 350 %	35 W
power loss [W] at AC at current limitation 350 %	4 070 W
at 40 °C during startup	1 270 W
at 50 °C during startup	1 077 W
at 60 °C during startup	959 W
ontrol circuit/ Control	

control supply voltage at AC	***
at 50 Hz rated value	24 V
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	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 (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
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	
• 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
forwardsbackwards	10 mm 0 mm
• backwards	0 mm
backwardsupwards	0 mm 100 mm
backwardsupwardsdownwards	0 mm 100 mm 75 mm
backwardsupwardsdownwardsat the side	0 mm 100 mm 75 mm 5 mm
 backwards upwards downwards at the side weight without packaging	0 mm 100 mm 75 mm 5 mm
 backwards upwards downwards at the side weight without packaging Connections/ Terminals	0 mm 100 mm 75 mm 5 mm
backwards upwards downwards at the side weight without packaging Connections/ Terminals type of electrical connection	0 mm 100 mm 75 mm 5 mm 6.9 kg
 backwards upwards downwards at the side weight without packaging Connections/ Terminals type of electrical connection for main current circuit 	0 mm 100 mm 75 mm 5 mm 6.9 kg
backwards upwards downwards at the side weight without packaging Connections/ Terminals type of electrical connection for main current circuit for control circuit	0 mm 100 mm 75 mm 5 mm 6.9 kg box terminal spring-loaded terminals
backwards upwards downwards at the side weight without packaging Connections/ Terminals type of electrical connection for main current circuit for control circuit width of connection bar maximum	0 mm 100 mm 75 mm 5 mm 6.9 kg box terminal spring-loaded terminals

* with conductor cross-sections = 2.5 mm² maximum yeps of connectables conductor cross-sections • for main contacts for box terminal using the front damping point solid • for main contacts for box terminal using the front damping point finely standed with core end processing • for main contacts for box terminal using the front camping point solid • for main contacts for box terminal using the back camping point solid • for main contacts for box terminal using the back camping point solid • for main contacts for box terminal using both clamping points solid • for main contacts for box terminal using both clamping points solid • for main contacts for box terminal using both clamping points solid • for main contacts for box terminal using both clamping points solid • for main contacts for box terminal using both clamping points shelp standed with core end processing • for main contacts for box terminal using both clamping points finely standed will using both clamping point standed * for main contacts for box terminal using both clamping point standed * for main contacts for box terminal using both clamping point standed * for main contacts for box terminal using both clamping point standed * for main contacts for box terminal using both clamping point standed * for main contacts for box terminal using both clamping point standed * for main contacts for box terminal using both clamping point standed * for main contacts for box terminal using both clamping point standed * for main contacts for box terminal using both clamping point standed * for main contacts for box terminal using both clamping point standed * for main contacts for box terminal using both clamping point standed * for main contacts for box terminal using both clamping point standed * for main contacts for		
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clamping point saild is for main contacts for box terminal using the front clamping point finely strained with core end processing in the processing of the	type of connectable conductor cross-sections	
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Formation contacts for box terminal using the back clamping point finely stranded with core end processing of formation contacts for box terminal using the back clamping point stranded with core end processing of connectable conductor cross-sections of control circuit linely stranded with core end processing of control circuit linely stranded with core end processing of control circuit finely stranded with core end processing of control circuit finely stranded with core end processing of control circuit finely stranded with core end processing of control circuit finely stranded with core end processing of control circuit finely stranded with core end processing of control contacts with strater and motor maximum and the digital inputs at Comaximum and the digital inputs at Comaximum and the digital inputs at DC maximum and the digital inputs at DC maximum and the digital inputs at DC maximum and the digital inputs at Control contacts with screw-type terminals and control contacts with screw-type		2x (2.5 35 mm²)
clamping point finely stranded with core end processing of for main contacts for box terminal using the back clamping point stranded type of connectable conductor cross-sections of or control circuit finely stranded with core end processing of for AWG cables for control circuit finely stranded with core end processing of AWG cables for control circuit finely stranded with core end processing of AWG cables for control circuit finely stranded with core end processing of the AWG cables for control circuit finely stranded with core end processing of the AWG cables for control circuit finely stranded with core end processing of the AWG cables for control circuit finely stranded with core end processing of the AWG cables for control circuit finely stranded with core end processing of the AWG cables for control circuit finely stranded with core end processing of the AWG cables for control circuit finely stranded with core end processing of the AWG cables for control circuit finely stranded with core end processing of the AWG cables for control circuit finely stranded with core end processing of the AWG cables for control cortacts with screw-type terminals of the for auxiliary and control contacts with screw-type terminals of a finely stranded or a finely stranded with screw-type terminals of a finely stranded with screw-type		2x (6 16 mm²), 2x (10 50 mm²)
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• for control circuit solid • for control circuit finely stranded with core end processing • for AWC cables for control circuit finely stranded with core end processing wire longth • between soft starter and motor maximum • at the digital inputs at DC maximum • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals tightening torque [libf in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals tightening torque [libf in] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals installation altitude at height above sea level maximum 5 000 m; Derating as of 1000 m, see catalog ambient temperature • during operation • during storage and transport • during storage and transport • during storage and transport • during storage according to IEC 60721 3/46 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get limb the devices), 3M6 • during storage according to IEC 60721 EMC emitted interference communication module is supported • PROFIRIET standard • Yes • PROFIBUS ULICSA ratings manufacturer's article number • of circuit breaker — usable for Standard Faults at 460/480 V according to ULICSA ratings Signer stype: 3VA51, max. 125 A; Iq = 10 kA	•	1x (10 70 mm²)
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• for AWG cables for control circuit solid • for AWG cables for control circuit finely stranded with core end processing wiro length • between soft starter and motor maximum • at the digital inputs at AC maximum • at the digital inputs at DC maximum • at the digital inputs at DC maximum • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and control contacts with screw-type • during operation • during operation • during storage and transport • during storage according to IEC 60721 • during transport according to IEC 60721 • durin	 for control circuit finely stranded with core end processing 	
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at the digital inputs at DC maximum tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals • for auxiliary and co	 between soft starter and motor maximum 	800 m
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tightening torque • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type • terminals tightening torque [IbFin] • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type • terminals Ambient conditions installation altitude at height above sea level maximum • during operation • during storage and transport • during storage and transport • during storage according to IEC 60721 • during storage according to IEC 60721 • during transport according to IEC 60721 • during transport according to IEC 60721 • during transport according to IEC 60721 • Ambient temperature • during storage according to IEC 60721 • Auxiliary transport according to IEC 60721 • Auxiliar	at the digital inputs at DC maximum	1 000 m
• for main contacts with screw-type terminals • for auxillary and control contacts with screw-type terminals tightening torque [lbf·in] • for main contacts with screw-type terminals • for auxillary and control contacts with screw-type terminals • for auxillary and control contacts with screw-type terminals Ambient conditions installation altitude at height above sea level maximum ambient temperature • during operation • during operation • during operation according to IEC 60721 • during operation according to IEC 60721 • during storage according to IEC 60721 • during transport according to IEC 60721 • PROFINET standard • PROFINES Modbus RTU • Modbus RTU • Yes • PROFINES manufacturer's article number • of circuit breaker — usable for Standard Faults at 460/480 V according to UL Slemens type: 3VA51, max. 125 A; Iq = 10 kA		
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— usable for Standard Faults at 460/480 V according to UL Siemens type: 3VA51, max. 125 A; Iq = 10 kA		
	— usable for Standard Faults at 460/480 V according	Siemens type: 3VA51, max. 125 A; Iq = 10 kA
		Siemens type: 3VA51, max. 125 A; Iq max = 65 kA

- usable for Standard Faults at 460/480 V at inside-Siemens type: 3VA51, max. 125 A; Iq = 10 kA delta circuit according to UL - usable for High Faults at 460/480 V at inside-delta Siemens type: 3VA51, max. 125 A; Iq max = 65 kA circuit according to UL - usable for Standard Faults at 575/600 V according Siemens type: 3VA51, max. 125 A; Iq = 10 kA - usable for Standard Faults at 575/600 V at inside-Siemens type: 3VA51, max. 125 A; Iq = 10 kA delta circuit according to UL • of the fuse - usable for Standard Faults up to 575/600 V Type: Class RK5 / K5, max. 300 A; Iq = 10 kA according to UL usable for High Faults up to 575/600 V according to Type: Class J / L, max. 250 A; Iq = 100 kA UL - usable for Standard Faults at inside-delta circuit up Type: Class RK5 / K5, max. 300 A; Iq = 10 kA to 575/600 V according to UL - usable for High Faults at inside-delta circuit up to Type: Class J / L, max. 250 A; Iq = 100 kA 575/600 V according to UL 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 R300-B300 contact rating of auxiliary contacts according to UL 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 electromagnetic compatibility in accordance with IEC 60947-4-2

Certificates/ approvals

General Product Approval







Confirmation







Declaration of Conformity

Test Certificates

Marine / Shipping





Type Test Certificates/Test Report







Marine / Shipping

other



Confirmation

Further information

Siemens has decided to exit the Russian market (see here).

 $\underline{\text{https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business}}$

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RW5227-3TC04

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RW5227-3TC04}$

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-3TC04

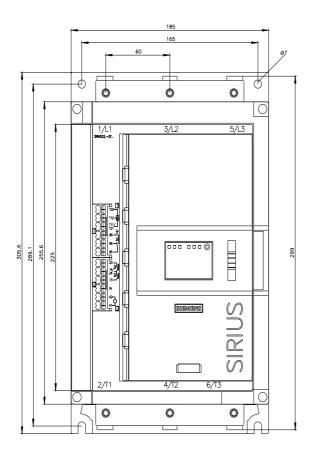
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5227-3TC04&lang=en

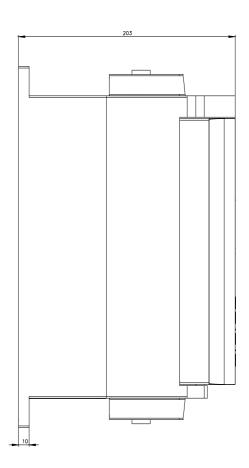
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-3TC04/char

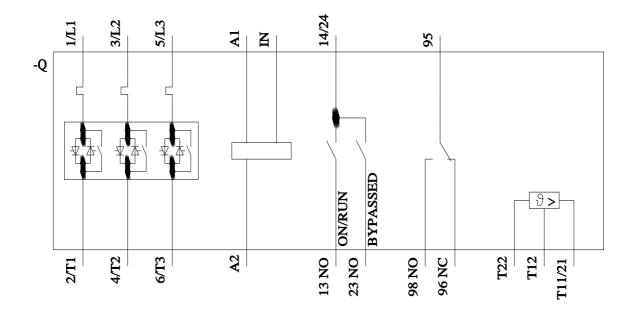
Characteristic: Installation altitude

Simulation Tool for Soft Starters (STS)

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







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