SIEMENS

Data sheet

3RW5227-1TC05



SIRIUS soft starter 200-600 V 93 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	
 of standard HMI module usable 	<u>3RW5980-0HS00</u>
 of high feature HMI module usable 	<u>3RW5980-0HF00</u>
 of communication module PROFINET standard usable 	<u>3RW5980-0CS00</u>
 of communication module PROFIBUS usable 	<u>3RW5980-0CP00</u>
 of communication module Modbus TCP usable 	<u>3RW5980-0CT00</u>
 of communication module Modbus RTU usable 	<u>3RW5980-0CR00</u>
 of communication module Ethernet/IP 	<u>3RW5980-0CE00</u>
 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 	<u>3NA3136-6; Type of coordination 1, Iq = 65 kA</u>
\bullet of the gG fuse usable at inside-delta circuit up to 500 V	<u>3NA3136-6; Type of coordination 1, Iq = 65 kA</u>
 of full range R fuse link for semiconductor protection usable up to 690 V 	<u>3NE1224-0: Type of coordination 2. Iq = 65 kA</u>
 of back-up R fuse link for semiconductor protection usable up to 690 V 	<u>3NE4124; Type of coordination 2, Iq = 65 kA</u>
eneral 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

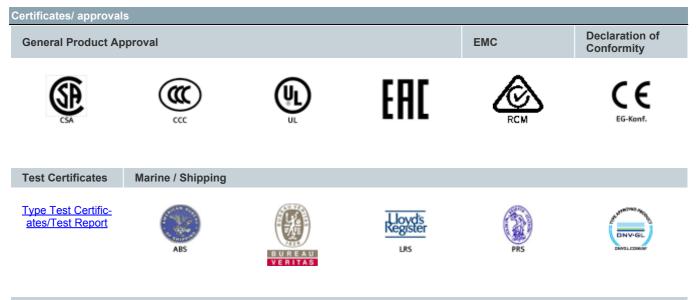
number of controlled phases	3
trip class	 CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2
buffering time in the event of power failure	
for main current circuit	100 ms
for control circuit	100 ms
insulation voltage rated value	600 V
degree of pollution	3, acc. to IEC 60947-4-2
impulse voltage rated value	6 kV
blocking voltage of the thyristor maximum	1 800 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-up (soft starting) ramp-down (soft stop) 	Yes
Soft Torque	Yes
adjustable current limitation	Yes
pump ramp down	Yes
	Yes
intrinsic device protection	Yes; Full motor protection (thermistor motor protection and electronic
 motor overload protection 	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	83 A
• at 60 °C rated value	76 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	200 600 V
 at inside-delta circuit rated value 	200 600 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	-15 %
inside-delta circuit	

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
 at 500 V at 40 °C rated value 	55 kW
 at 500 V at inside-delta circuit at 40 °C rated value 	110 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 for inside delta circuit at rotary coding switch on 	119 A
 for inside-delta circuit at rotary coding switch on switch position 10 for inside-delta circuit at rotary coding switch on 	125 A 131 A
 for inside-delta circuit at rotary coding switch on switch position 11 for inside-delta circuit at rotary coding switch on 	137 A
 for inside-delta circuit at rotary coding switch on for inside-delta circuit at rotary coding switch on 	137 A 143 A
 for inside-delta circuit at rotary coding switch on for inside-delta circuit at rotary coding switch on 	149 A
 for inside-delta circuit at rotary coding switch on for inside-delta circuit at rotary coding switch on 	149 A 155 A
switch position 15	

 for inside-delta circuit at rotary coding switch on 	161 A
switch position 16	
 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 %	
• 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/DC
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	-20 %
voltage at AC at 50 Hz	20.70
relative positive tolerance of the control supply	20 %
voltage at AC at 50 Hz	
relative negative tolerance of the control supply _voltage at AC at 60 Hz	-20 %
relative positive tolerance of the control supply	20 %
voltage at AC at 60 Hz	50 0011-
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
locked-rotor current at close of bypass contact	7.6 A
maximum inrush current peak at application of control supply voltage	3.3 A
maximum	
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 inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
number of digital outputs	3
not parameterizable	2
digital output version	2 2 normally-open contacts (NO) / 1 changeover contact (CO)
number of analog outputs	
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 	1A
• at DC-13 at 24 V rated value	
	with vortical mounting outface 1/00° ratetable with vartical mounting
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	
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
wire length for thermistor connection	
 with conductor cross-section = 0.5 mm² maximum 	50 m
 with conductor cross-section = 1.5 mm² maximum 	150 m
 with conductor cross-section = 2.5 mm² maximum 	250 m
type of connectable conductor cross-sections	
 for main contacts for box terminal using the front clamping point solid 	1x (2.5 16 mm²)
 for main contacts for box terminal using the front clamping point finely stranded with core end processing 	1x (2.5 50 mm²)
 for main contacts for box terminal using the front clamping point stranded 	1x (10 70 mm²)
 at AWG cables for main contacts for box terminal using the front clamping point 	1x (10 2/0)
 for main contacts for box terminal using the back clamping point solid 	1x (2.5 16 mm²)
 at AWG cables for main contacts for box terminal using the back clamping point 	1x (10 2/0)
 for main contacts for box terminal using both clamping points solid 	2x (2.5 16 mm²)
 for main contacts for box terminal using both clamping points finely stranded with core end processing 	2x (2.5 35 mm²)
 for main contacts for box terminal using both clamping points stranded 	2x (6 16 mm²), 2x (10 50 mm²)
 for main contacts for box terminal using the back clamping point finely stranded with core end processing 	1x (2.5 50 mm²)
 for main contacts for box terminal using the back clamping point stranded 	1x (10 70 mm²)
type of connectable conductor cross-sections	
 for control circuit solid 	1x (0.5 4.0 mm²), 2x (0.5 2.5 mm²)
 for control circuit finely stranded with core end processing 	1x (0.5 2.5 mm²), 2x (0.5 1.5 mm²)
 at AWG cables for control circuit solid 	1x (20 12), 2x (20 14)
wire length	
 between soft starter and motor maximum 	800 m
 at the digital inputs at AC maximum 	100 m
 at the digital inputs at DC maximum 	1 000 m
tightening torque	
 for main contacts with screw-type terminals 	4.5 6 N·m
 for auxiliary and control contacts with screw-type terminals 	0.8 1.2 N·m
tightening torque [lbf⋅in]	
 for main contacts with screw-type terminals 	40 53 lbf·in
 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	
 during operation 	-25 +60 °C; Please observe derating at temperatures of 40 °C or above
 during storage and transport 	-40 +80 °C
environmental category	
• during operation acc. to IEC 60721	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6
 during storage acc. to IEC 60721 	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
 during transport acc. to IEC 60721 	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
JL/CSA ratings	
manufacturer's article number	
 of circuit breaker usable for Standard Faults at 460/480 V according to UL 	Siemens type: 3VA51, max. 125 A; lq = 10 kA
— usable for High Faults at 460/480 V according to UL	Siemens type: 3VA51, max. 125 A; lq max = 65 kA
 usable for Standard Faults at 460/480 V at inside-delta circuit according to UL 	Siemens type: 3VA51, max. 125 A; Iq = 10 kA
 — usable for High Faults at 460/480 V at inside- delta circuit according to UL 	Siemens type: 3VA51, max. 125 A; lq max = 65 kA
— usable for Standard Faults at 575/600 V according to UL	Siemens type: 3VA51, max. 125 A; lq = 10 kA
 — usable for Standard Faults at 575/600 V at inside-delta circuit according to UL 	Siemens type: 3VA51, max. 125 A; Iq = 10 kA
of the fuse	
 — usable for Standard Faults up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 300 A; Iq = 10 kA
 — usable for High Faults up to 575/600 V according to UL 	Type: Class J / L, max. 250 A; lq = 100 kA
 — usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 300 A; lq = 10 kA
 — usable for High Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class J / L, max. 250 A; lq = 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 575/600 V at 50 °C rated value 	75 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
 at 575/600 V at inside-delta circuit at 50 °C rated value 	125 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



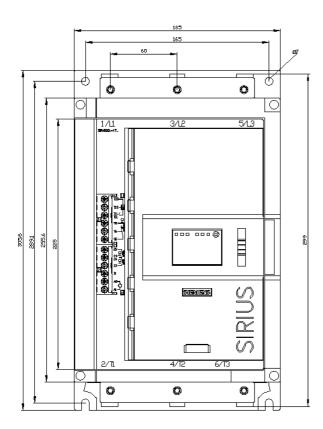
other

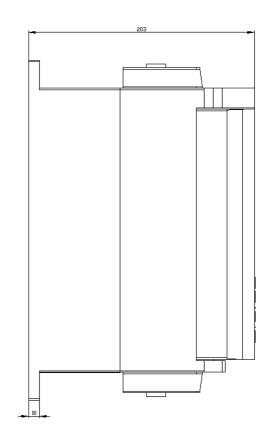
Confirmation

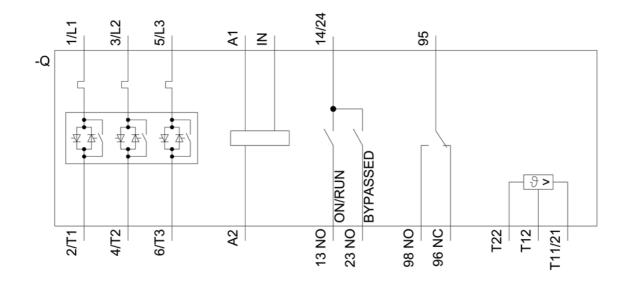
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last modified:

8/10/2021 🖸