SIEMENS

product brand name

Data sheet 3RW5227-1AC14

SIRIUS



SIRIUS soft starter 200-480 V 93 A, 110-250 V AC Screw terminals Analog output

- product brand name	311103
product category	Hybrid switching devices
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 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

product feature integrated bypass contact system

Yes

Yes

number of controlled phaces	3
number of controlled phases trip class	
<u> </u>	CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2
buffering time in the event of power failure	100
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; Electronic motor overload protection
 evaluation of thermistor motor protection 	No
• 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	Yes; 4 20 mA (default) / 0 10 V (parameterizable with High Feature HMI)
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	200 480 V
at inside-delta circuit rated value	200 480 V
relative positive televance of the energting veltage	-15 %
relative negative tolerance of the operating voltage	
relative negative tolerance of the operating voltage	10 %
	10 % -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	40.071
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 for inside delta circuit at rotary coding switch on	149 A
for inside-delta circuit at rotary coding switch on switch position 15 for inside-delta circuit at rotary coding switch on	155 A 161 A
 for inside-delta circuit at rotary coding switch on switch position 16 	101 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	10 70, Notative to sitialiest settable le
• 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 %	33 VV
• at 40 °C during startup	1 270 W
at 40 °C during startup at 50 °C during startup	1 077 W
at 50 °C during startup at 60 °C during startup	959 W
Control circuit/ Control	303 W
	40
type of voltage of the control supply voltage	AC
control supply voltage at AC	440 050 //
• at 50 Hz	110 250 V 110 250 V
• at 60 Hz	
relative negative tolerance of the control supply voltage at AC at 50 Hz	-15 %
relative positive tolerance of the control supply voltage at AC at 50 Hz	10 %
relative negative tolerance of the control supply voltage at AC at 60 Hz	-15 %
relative positive tolerance of the control supply voltage at AC at 60 Hz	10 %
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 current in standby mode rated value	30 mA
holding current in bypass operation rated value	75 mA
locked-rotor current at close of bypass contact	2.5 A
maximum inrush current peak at application of control supply voltage	12.2 A
maximum duration of inrush current peak at application of control	2.2 ms
supply voltage	
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	0
number of digital outputs	3
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	
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
backwards	0 mm
• upwards	100 mm
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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
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
tightening torque	45 011
for main contacts with screw-type terminals for avviliant and control contacts with across these	4.5 6 N·m 0.8 1.2 N·m
 for auxiliary and control contacts with screw-type terminals 	0.0 1.2 IN III
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
UL/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; Iq = 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; lq = 10 kA
 usable for High Faults at 460/480 V at inside- delta circuit according to UL 	Siemens type: 3VA51, max. 125 A; Iq 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; Iq = 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; Iq = 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; Iq = 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 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
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	
	Declaration of

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=3RW5227-1AC14

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5227-1AC14

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-1AC14

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5227-1AC14&lang=en

Characteristic: Tripping characteristics, I2t, Let-through current

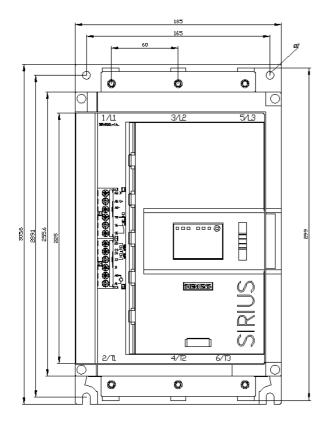
https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-1AC14/char

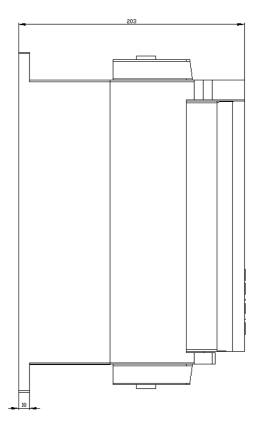
Characteristic: Installation altitude

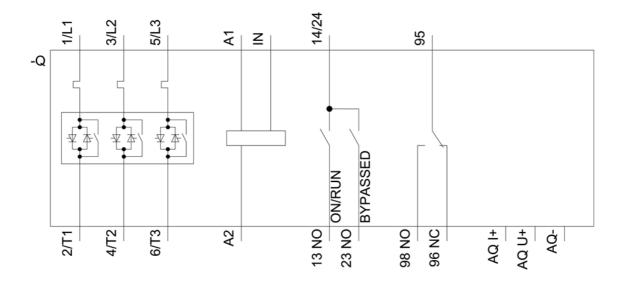
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5227-1AC14&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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