SIEMENS

Data sheet 3RW5226-1AC14

SIRIUS soft starter 200-480 V 77 A, 110-250 V AC Screw terminals
Analog output

Product brand name	SIRIUS
Product category	Hybrid switching devices
Product designation	Soft starter
Product type designation	3RW52
Manufacturer's article number	
• of HMI module usable	3RW5980-0HS00
• of HMI-Modul high-feature 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	3VA2110-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
• of circuit breaker usable at 500 V	3VA2110-7MN32-0AA0; Type of coordination 1, Iq = 20 kA, CLASS 10
• of circuit breaker usable at 400 V at inside-delta circuit	3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
• of circuit breaker usable at 500 V at inside-delta circuit	3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 20 kA, CLASS 10

• of the gG fuse usable up to 690 V	3NA3132-6; Type of coordination 1, Iq = 65 kA
• of the gG fuse usable at inside-delta circuit up to 500 V	3NA3132-6; 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	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
• 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
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
Protection class IP	IP00
Usage category acc. to IEC 60947-4-2	AC 53a
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
Reference code acc. to DIN EN 81346-2	Q
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
• PROFIenergy	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	
Operating current	
• at 40 °C rated value	77 A
• at 50 °C rated value	68 A
• at 60 °C rated value	62 A
Operating current at inside-delta circuit	
• at 40 °C rated value	133 A
• at 50 °C rated value	118 A
• at 60 °C rated value	107 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 three-phase motors	
• at 230 V at 40 °C rated value	22 kW
• at 230 V at inside-delta circuit at 40 °C rated value	37 kW
• at 400 V at 40 °C rated value	37 kW

• at 400 V at inside-delta circuit at 40 °C rated value	75 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 encoding switch on switch position 1	32 A
• at rotary encoding switch on switch position 3	38 A
• at rotary encoding switch on switch position 4	41 A
• at rotary encoding switch on switch position 5	44 A
• at rotary encoding switch on switch position 6	47 A
• at rotary encoding switch on switch position 7	50 A
• at rotary encoding switch on switch position 8	53 A
• at rotary encoding switch on switch position 9	56 A
• at rotary encoding switch on switch position 10	59 A
• at rotary encoding switch on switch position 11	62 A
• at rotary encoding switch on switch position 12	65 A
• at rotary encoding switch on switch position 13	68 A
• at rotary encoding switch on switch position 14	71 A
• at rotary encoding switch on switch position 15	74 A
• at rotary encoding switch on switch position 16	77 A
• minimum	32 A
• at inside-delta circuit minimum	55.4 A
Adjustable motor current for inside-delta circuit	
• at rotary encoding switch on switch position 1	55.4 A
• at rotary encoding switch on switch position 2	60.6 A
• at rotary encoding switch on switch position 3	65.8 A
• at rotary encoding switch on switch position 4	71 A
• at rotary encoding switch on switch position 5	76.2 A
• at rotary encoding switch on switch position 6	81.4 A
• at rotary encoding switch on switch position 7	86.6 A
• at rotary encoding switch on switch position 8	91.8 A
• at rotary encoding switch on switch position 9	97 A
• at rotary encoding switch on switch position 10	102 A
• at rotary encoding switch on switch position 11	107 A
• at rotary encoding switch on switch position 12	113 A
• at rotary encoding switch on switch position 13	118 A
• at rotary encoding switch on switch position 14	123 A
• at rotary encoding switch on switch position 15	128 A
• at rotary encoding switch on switch position 16	133 A

Minimum load [%]	15 %; Relative to smallest settable Ie
Power loss [W] for rated value of the current at AC	
• at 40 °C to power-up	35 W
• at 50 °C to power-up	32 W
• at 60 °C to power-up	31 W
Power loss [W] at AC at AC	
• at 40 °C during startup	1 107 W
• at 50 °C during startup	933 W
• at 60 °C during startup	826 W

Control circuit/ Control

Type of voltage of the control supply voltage	AC
Control supply voltage at AC	
• at 50 Hz	110 ... 250 V
• at 60 Hz	110 ... 250 V
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 the by-pass mode operating rated value	75 mA
Starting current at close of by-pass contact maximum	2.5 A
Inrush current peak at connect of control supply voltage maximum	12.2 A
Duration of inrush current peak at connect of control supply voltage	2.2 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	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
Mounting type	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
• downwards	75 mm
• at the side	5 mm
Installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see catalog
Weight without packaging	5.6 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 conductors 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 conductors 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 conductors 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	
• 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

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; Iq 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; Iq max = 65 kA
— usable for Standard Faults at 575/600 V according to UL	Siemens type: 3VA51, max. 125 A; Iq = 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. 250 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. 250 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 three-phase motors	
• at 200/208 V at 50 °C rated value	20 hp
• at 220/230 V at 50 °C rated value	25 hp
• at 460/480 V at 50 °C rated value	50 hp
• at 200/208 V at inside-delta circuit at 50 °C rated value	30 hp
• at 220/230 V at inside-delta circuit at 50 °C rated value	40 hp
• at 460/480 V at inside-delta circuit at 50 °C rated value	75 hp
Contact rating of auxiliary contacts according to UL	R300-B300

Safety related data

Electromagnetic compatibility	in accordance with IEC 60947-4-2

Certificates/ approvals

General Product Approval				EMC	Declaration of Conformity
CCC	CSA	UL	EAC	RCM	EG-Konf.

Declaration of Conformity	Test Certificates	Marine / Shipping			
Miscellaneous	Type Test Certificates/Test Report	ABS	LRS	PRS	DNVGL.COM/AF

other
Confirmation

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
www.siemens.com/ic10

Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5226-1AC14

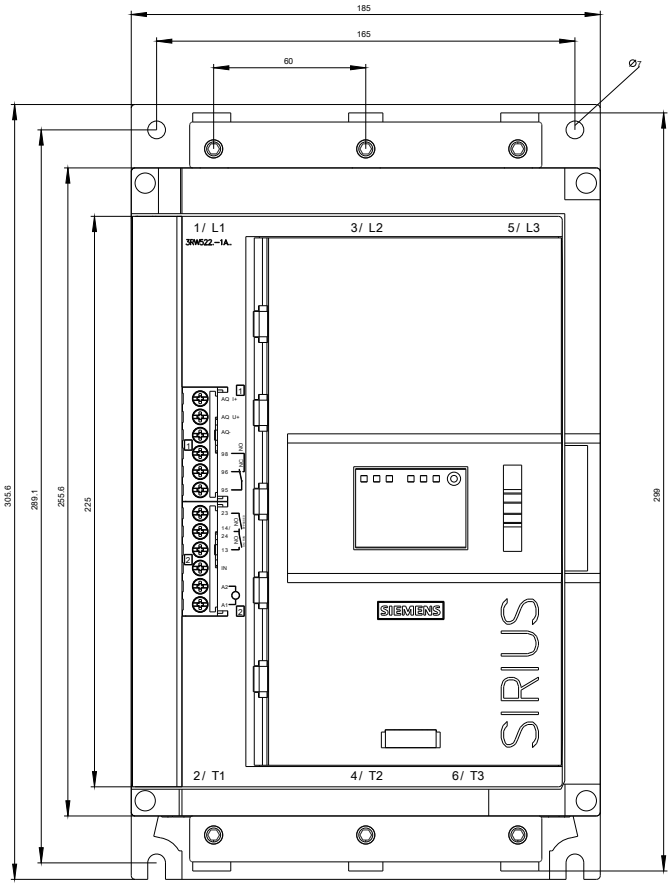
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5226-1AC14

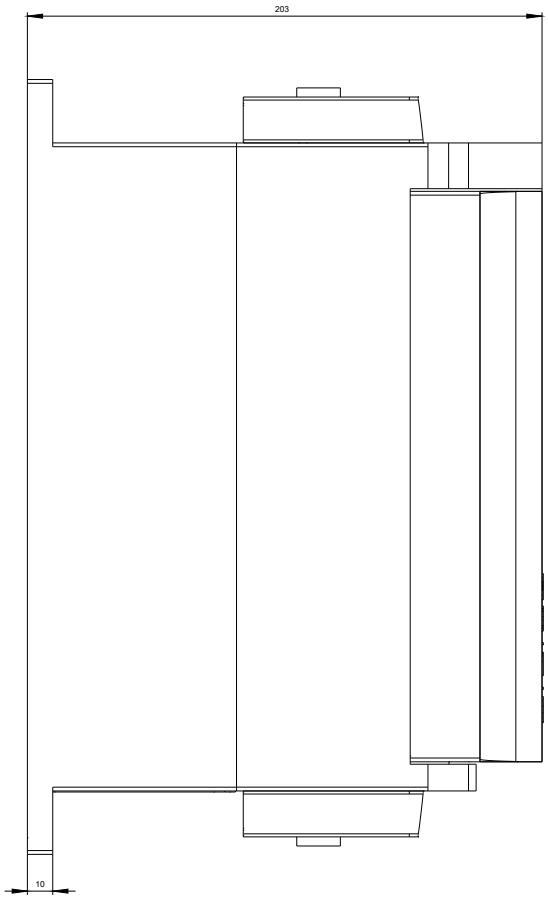
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RW5226-1AC14

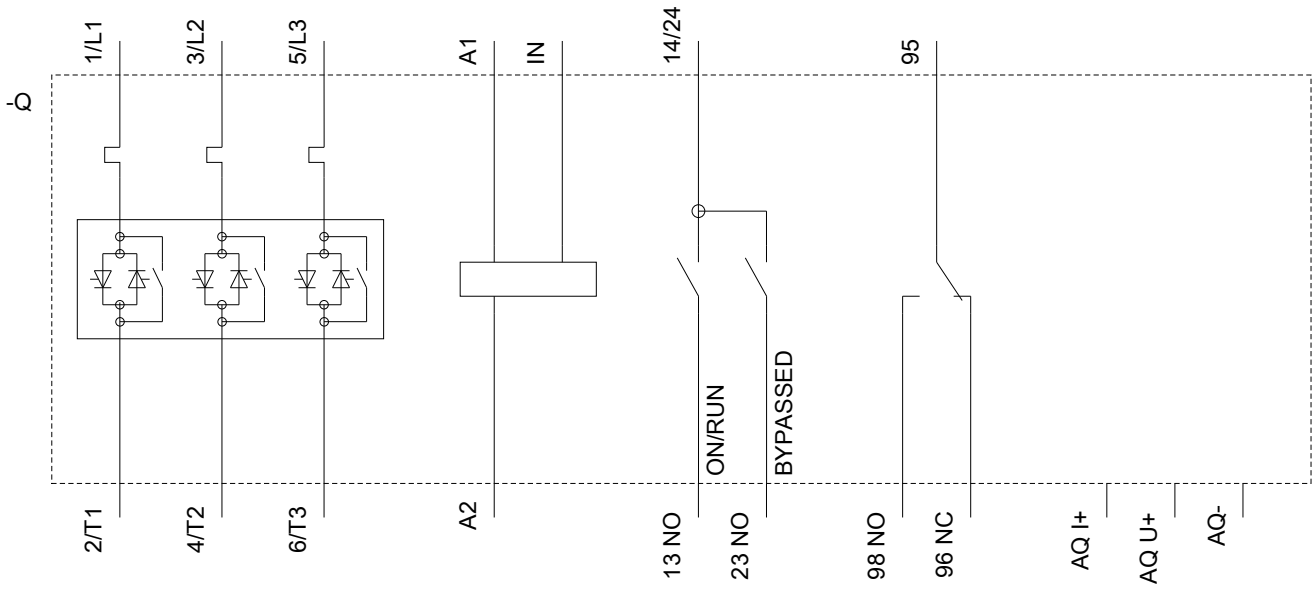
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5226-1AC14&lang=en

Characteristic: Tripping characteristics, I^2t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RW5226-1AC14/char

Characteristic: Installation altitude
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5226-1AC14&objecttype=14&gridview=view1







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