SIEMENS

Data sheet 3RW5214-3TC05

SIRIUS soft starter 200-600 V 18 A, 24 V AC/DC spring-type 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 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	3RV2032-4DA10; Type of coordination 1, Iq = 65 kA, CLASS 10
• of circuit breaker usable at 500 V	3RV2032-4DA10; Type of coordination 1, Iq = 15 kA, CLASS 10
• of circuit breaker usable at 400 V at inside-delta circuit	3RV2032-4EA10; Type of coordination 1, Iq = 65 kA, CLASS 10
• of circuit breaker usable at 500 V at inside-delta circuit	3RV2032-4EA10; Type of coordination 1, Iq = 15 kA, CLASS 10

• of the gG fuse usable up to 690 V	3NA3820-6; Type of coordination 1, Iq = 65 kA
• of the gG fuse usable at inside-delta circuit up to 500 V	3NA3820-6; Type of coordination 1, Iq = 65 kA
• of full range R fuse link for semiconductor protection usable up to 690 V	3NE1802-0; Type of coordination 2, Iq = 65 kA
• of back-up R fuse link for semiconductor protection usable up to 690 V	3NE8020-1; 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	1 600 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	IP20
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; 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
• PROFIenergy	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

Operating current	
• at 40 °C rated value	18 A
• at 50 °C rated value	15.9 A
• at 60 °C rated value	13.8 A
Operating current at inside-delta circuit	
• at 40 °C rated value	31.5 A
• at 50 °C rated value	28 A
• at 60 °C rated value	23.9 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 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	4 kW
• at 230 V at inside-delta circuit at 40 °C rated value	7.5 kW
• at 400 V at 40 °C rated value	7.5 kW

• at 400 V at inside-delta circuit at 40 °C rated value	15 kW
• at 500 V at 40 °C rated value	11 kW
• at 500 V at inside-delta circuit at 40 °C rated value	18.5 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	7.5 A
• at rotary encoding switch on switch position 3	8.9 A
• at rotary encoding switch on switch position 4	9.6 A
• at rotary encoding switch on switch position 5	10.3 A
• at rotary encoding switch on switch position 6	11 A
• at rotary encoding switch on switch position 7	11.7 A
• at rotary encoding switch on switch position 8	12.4 A
• at rotary encoding switch on switch position 9	13.1 A
• at rotary encoding switch on switch position 10	13.8 A
• at rotary encoding switch on switch position 11	14.5 A
• at rotary encoding switch on switch position 12	15.2 A
• at rotary encoding switch on switch position 13	15.9 A
• at rotary encoding switch on switch position 14	16.6 A
• at rotary encoding switch on switch position 15	17.3 A
• at rotary encoding switch on switch position 16	18 A
• minimum	7.5 A
• at inside-delta circuit minimum	13 A
Adjustable motor current for inside-delta circuit	
• at rotary encoding switch on switch position 1	13 A
• at rotary encoding switch on switch position 2	14.2 A
• at rotary encoding switch on switch position 3	15.4 A
• at rotary encoding switch on switch position 4	16.6 A
• at rotary encoding switch on switch position 5	17.8 A
• at rotary encoding switch on switch position 6	19.1 A
• at rotary encoding switch on switch position 7	20.3 A
• at rotary encoding switch on switch position 8	21.5 A
• at rotary encoding switch on switch position 9	22.7 A
• at rotary encoding switch on switch position 10	23.9 A
• at rotary encoding switch on switch position 11	25.1 A
• at rotary encoding switch on switch position 12	26.3 A
• at rotary encoding switch on switch position 13	27.5 A

• at rotary encoding switch on switch position 14	28.8 A
• at rotary encoding switch on switch position 15	30 A
• at rotary encoding switch on switch position 16	31.2 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	17 W
• at 50 °C to power-up	17 W
• at 60 °C to power-up	16 W
Power loss [W] at AC at AC	
• at 40 °C during startup	276 W
• at 50 °C during startup	241 W
• at 60 °C during startup	200 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 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 the by-pass mode operating rated value	360 mA
Starting current at close of by-pass contact maximum	0.75 A
Inrush current peak at connect of control supply voltage maximum	3.3 A
Duration of inrush current peak at connect 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 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	+/- 10° rotation possible and can be tilted forward or backward on vertical mounting surface
Mounting type	screw fixing
Height	275 mm
Width	170 mm
Depth	152 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	2.1 kg

Connections/ Terminals

Type of electrical connection	
• for main current circuit	screw-type terminals
• for control circuit	spring-loaded terminals
Type of connectable conductor cross-sections	
• for main contacts	
— solid	2x (1.0 ... 2.5 mm²), 2x (2.5 ... 10 mm²)
— finely stranded with core end processing	2x (1.0 ... 2.5 mm²), 2x (2.5 ... 6.0 mm²)
• at AWG conductors for main current circuit solid	2x (16 ... 12), 2x (14 ... 8)
Type of connectable conductor cross-sections	
• for control circuit solid	2x (0.25 ... 1.5 mm²)

• for control circuit finely stranded with core end processing	2x (0.25 ... 1.5 mm²)
• at AWG conductors for control circuit solid	2x (24 ... 16)
• at AWG conductors for control circuit finely stranded with core end processing	2x (24 ... 16)
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	2 ... 2.5 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	18 ... 22 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: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA

— usable for High Faults at 460/480 V according to UL	Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; Iq max = 65 kA
— usable for Standard Faults at 460/480 V at inside-delta circuit according to UL	Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA
— usable for High Faults at 460/480 V at inside-delta circuit according to UL	Siemens type: 3VA51, max. 35 A; Iq max = 65 kA
— usable for Standard Faults at 575/600 V according to UL	Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA
— usable for Standard Faults at 575/600 V at inside-delta circuit according to UL	Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA
• **of the fuse**	
— usable for Standard Faults up to 575/600 V according to UL	Type: Class RK5 / K5, max. 70 A; Iq = 5 kA
— usable for High Faults up to 575/600 V according to UL	Type: Class J / L, max. 70 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. 70 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. 70 A; Iq = 100 kA
Operating power [hp] for three-phase motors	
• at 200/208 V at 50 °C rated value	3 hp
• at 220/230 V at 50 °C rated value	5 hp
• at 460/480 V at 50 °C rated value	10 hp
• at 575/600 V at 50 °C rated value	10 hp
• at 200/208 V at inside-delta circuit at 50 °C rated value	7.5 hp
• at 220/230 V at inside-delta circuit at 50 °C rated value	7.5 hp
• at 460/480 V at inside-delta circuit at 50 °C rated value	20 hp
• at 575/600 V at inside-delta circuit at 50 °C rated value	25 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=3RW5214-3TC05

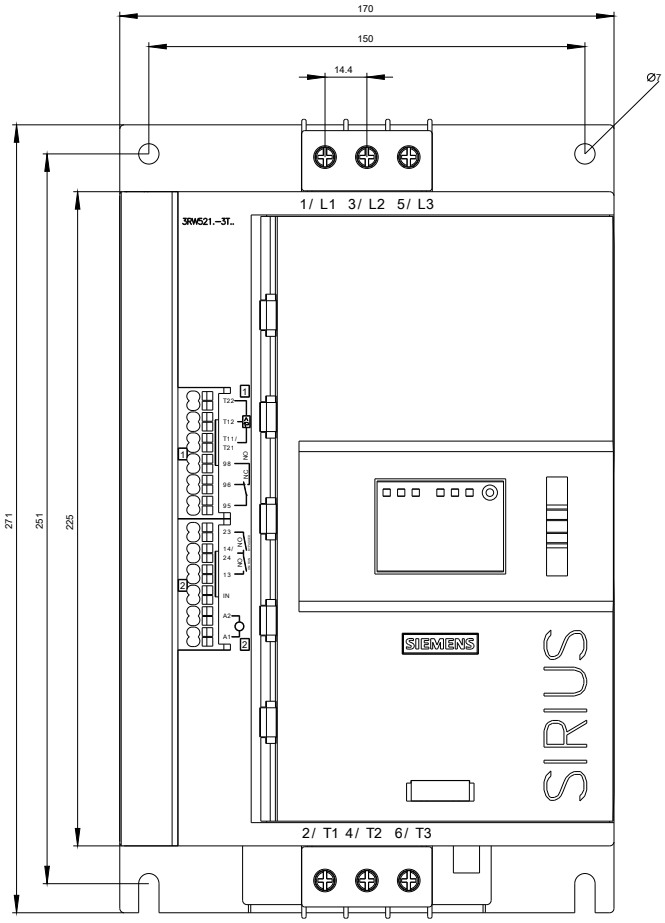
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5214-3TC05

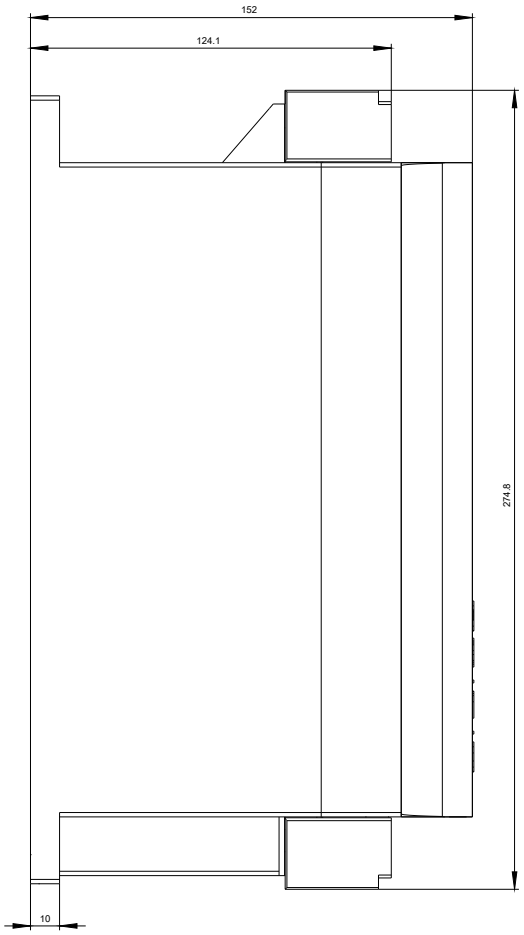
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RW5214-3TC05

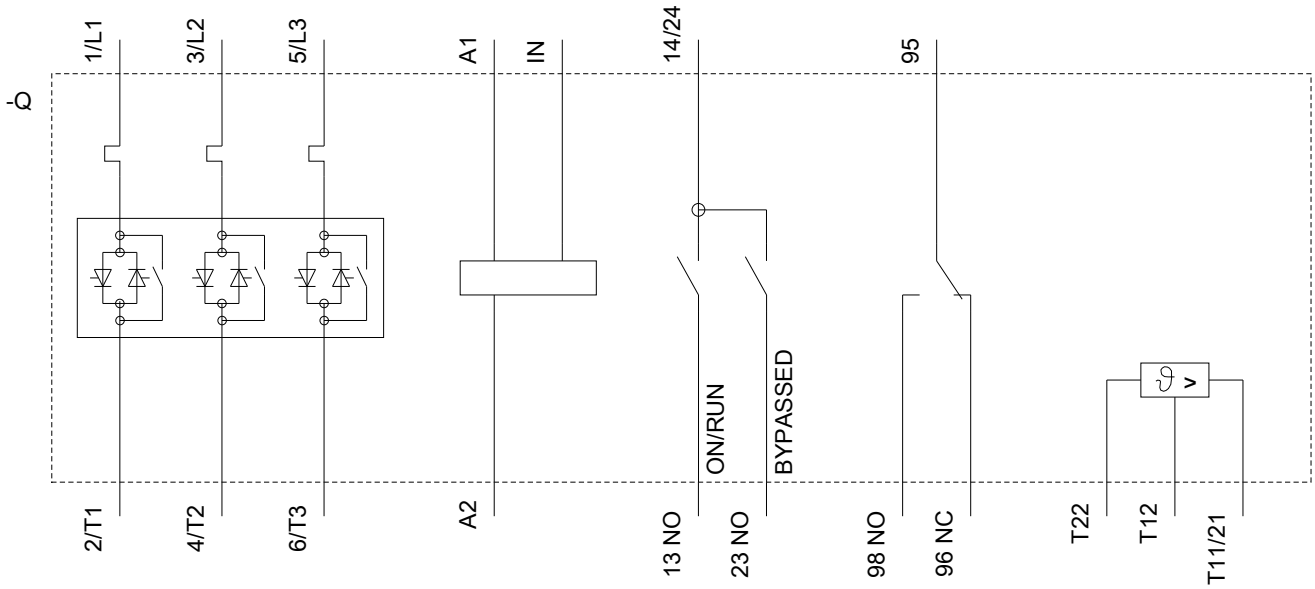
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5214-3TC05&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RW5214-3TC05/char

Characteristic: Installation altitude
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5214-3TC05&objecttype=14&gridview=view1







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