SIEMENS

Data sheet 3RW5225-1AC04

SIRIUS soft starter 200-480 V 63 A, 24 V AC/DC Screw terminals
Analog output

Product brand name	SIRIUS
Product category	Hybrid switching devices
Product designation	Soft starter
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 circuit breaker usable at 400 V	3VA2163-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
• of circuit breaker usable at 500 V	3VA2163-7MN32-0AA0; Type of coordination 1, Iq = 20 kA, CLASS 10
• of circuit breaker usable at 400 V at inside-delta circuit	3VA2110-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
• of circuit breaker usable at 500 V at inside-delta circuit	3VA2110-7MN32-0AA0; Type of coordination 1, Iq = 20 kA, CLASS 10
• of the gG fuse usable up to 690 V	3NA3830-6; Type of coordination 1, Iq = 65 kA
• of the gG fuse usable at inside-delta circuit up to 500 V	3NA3830-6; Type of coordination 1, Iq = 65 kA

• of full range R fuse link for semiconductor protection usable up to 690 V	3NE1022-0; 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 %
Start-up ramp time of soft starter	0 ... 20 s
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
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
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
• via software configurable	Yes
• firmware update	Yes

• removable terminal for control circuit	Yes
• analog output	Yes; 4 ... 20 mA (default) / 0 ... 10 V (parameterizable with High Feature HMI)

Power Electronics

Operating current	
• at 40 °C rated value	63 A
• at 50 °C rated value	55.5 A
• at 60 °C rated value	50.5 A
Operating current at inside-delta circuit	
• at 40 °C rated value	109 A
• at 50 °C rated value	96 A
• at 60 °C rated value	87.5 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	18.5 kW
• at 230 V at inside-delta circuit at 40 °C rated value	30 kW
• at 400 V at 40 °C rated value	30 kW
• at 400 V at inside-delta circuit at 40 °C rated value	55 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	
• minimum	25.5 A
• at inside-delta circuit minimum	44.2 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	31 W
• at 50 °C to power-up	29 W
• at 60 °C to power-up	27 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	380 mA
Starting current at close of by-pass contact maximum	7.6 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	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	+/- 10° rotation possible and can be tilted forward or backward on vertical mounting surface
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	screw-type terminals
• for control circuit	screw-type terminals
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
• at the digital inputs at DC maximum	1 000 m

Ambient conditions

Ambient temperature	
• during operation	-25 ... +60 °C
• 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)

Communication/ Protocol

Communication module is supported	
• PROFINET standard	Yes
• Modbus TCP	Yes
• PROFIBUS	Yes

UL/CSA ratings

Manufacturer's article number	
• of fuse at Standard Faults usable up to 575/600 V according to UL	Type: Class RK5 / K5, max. 200 A; Iq = 10 kA
• of fuse at Standard Faults usable at inside-delta circuit up to 575/600 V according to UL	Type: Class RK5 / K5, max. 200 A; Iq = 10 kA
Operating power [hp] for three-phase motors	
• at 200/208 V at 50 °C rated value	15 hp
• at 220/230 V at 50 °C rated value	20 hp
• at 460/480 V at 50 °C rated value	40 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	30 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

General Product Approval				Declaration of Conformity	Test Certificates
CCC	CSA	UL	EAC	EG-Konf.	Type Test Certificates/Test Report

Marine / Shipping	other
PRS	Confirmation

Further information

Information- and Downloadcenter (Catalogs, Brochures,…)
http://www.siemens.com/industrial-controls/catalogs

Industry Mall (Online ordering system)
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5225-1AC04

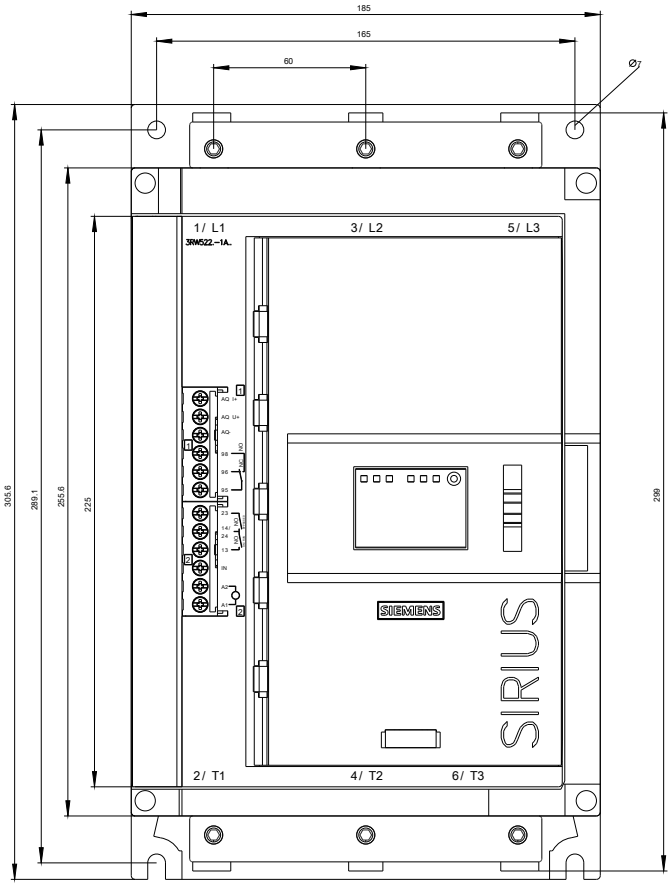
Cax online generator
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5225-1AC04

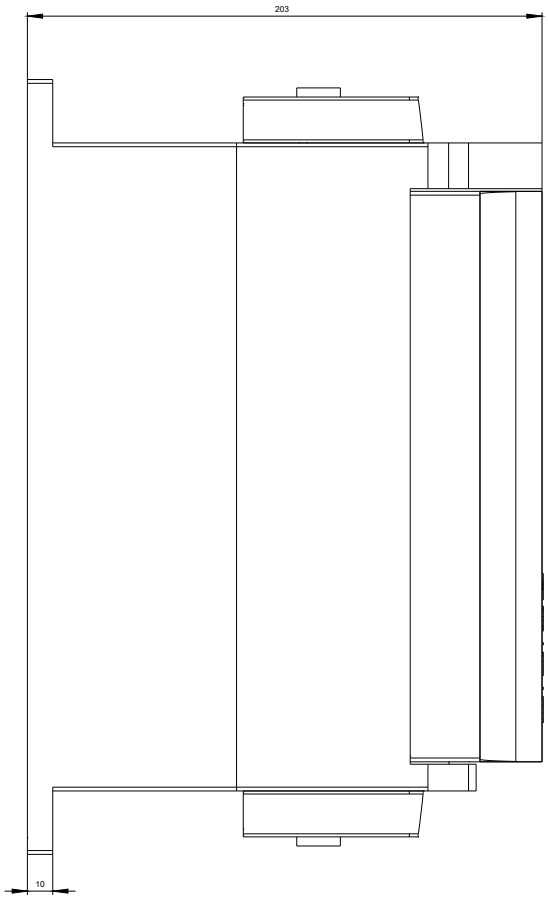
Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
https://support.industry.siemens.com/cs/ww/en/ps/3RW5225-1AC04

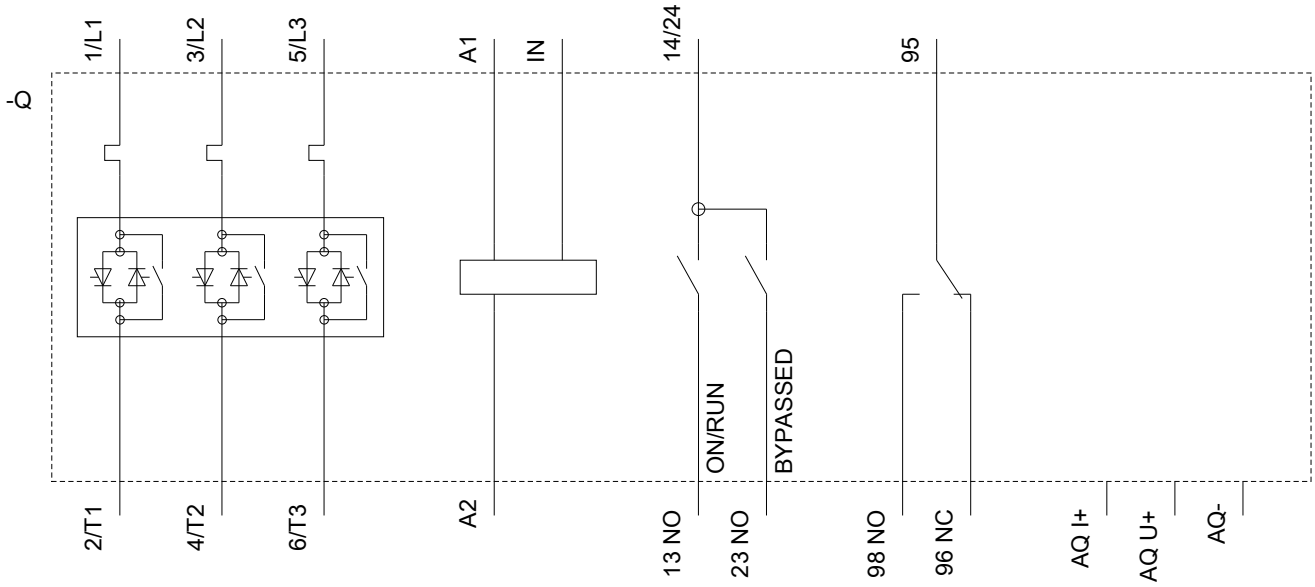
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5225-1AC04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RW5225-1AC04/char

Characteristic: Installation altitude
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5225-1AC04&objecttype=14&gridview=view1







last modified: 02/15/2019