SIEMENS

Data sheet

3RW5216-3AC04



SIRIUS soft starter 200-480 V 32 A, 24 V AC/DC spring-type 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 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 	3RV2032-4VA10; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V 	3RV2032-4VA10; Type of coordination 1, Iq = 10 kA, CLASS 10
 of circuit breaker usable at 400 V at inside-delta circuit 	<u>3RV2032-4JA10: Type of coordination 1, Iq = 65 kA, CLASS 10</u>
 of circuit breaker usable at 500 V at inside-delta circuit 	<u>3RV2032-4JA10; Type of coordination 1, Iq = 10 kA, CLASS 10</u>
 of the gG fuse usable up to 690 V 	3NA3824-6; Type of coordination 1. Iq = 65 kA
 of the gG fuse usable at inside-delta circuit up to 500 V 	<u>3NA3824-6; Type of coordination 1, Iq = 65 kA</u>
 of full range R fuse link for semiconductor protection usable up to 690 V 	<u>3NE1818-0; Type of coordination 2, Iq = 65 kA</u>
 of back-up R fuse link for semiconductor protection usable up to 690 V 	<u>3NE8022-1; Type of coordination 2, Iq = 65 kA</u>
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	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
	600 V
insulation voltage rated value 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
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
	15.02.2018 00:00:00
Substance Prohibitance (Date) product function	10.02.2010 00.00.00
ramp-up (soft starting)	Yes
	Yes
ramp-down (soft stop)Soft Torque	Yes
 Solit Forque adjustable current limitation 	Yes
-	Yes
pump ramp down	
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	32 A
• at 50 °C rated value	28 A
at 60 °C rated value	26 A
operational current at inside-delta circuit	
• at 40 °C rated value	55.4 A
• at 50 °C rated value	49 A
at 60 °C rated value	45 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 3-phase motors	
 at 230 V at 40 °C rated value 	7.5 kW
 at 230 V at inside-delta circuit at 40 °C rated value 	15 kW
 at 400 V at 40 °C rated value 	15 kW
 at 400 V at inside-delta circuit at 40 °C rated value 	22 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 	14 A
 at rotary coding switch on switch position 2 	15.2 A
 at rotary coding switch on switch position 3 	16.4 A
 at rotary coding switch on switch position 4 	17.6 A
 at rotary coding switch on switch position 5 	18.8 A
 at rotary coding switch on switch position 6 	20 A
 at rotary coding switch on switch position 7 	21.2 A
 at rotary coding switch on switch position 8 	22.4 A
 at rotary coding switch on switch position 9 	23.6 A
 at rotary coding switch on switch position 10 	24.8 A
 at rotary coding switch on switch position 11 	26 A
 at rotary coding switch on switch position 12 	27.2 A
 at rotary coding switch on switch position 13 	28.4 A
 at rotary coding switch on switch position 14 	29.6 A
 at rotary coding switch on switch position 15 	30.8 A
 at rotary coding switch on switch position 16 	32 A
• minimum	14 A
adjustable motor current	
 for inside-delta circuit at rotary coding switch on switch position 1 	24.2 A
 for inside-delta circuit at rotary coding switch on switch position 2 	26.3 A
 for inside-delta circuit at rotary coding switch on switch position 3 	28.4 A
 for inside-delta circuit at rotary coding switch on switch position 4 	30.5 A
 for inside-delta circuit at rotary coding switch on switch position 5 	32.6 A
 for inside-delta circuit at rotary coding switch on switch position 6 	34.6 A
 for inside-delta circuit at rotary coding switch on switch position 7 	36.7 A
 for inside-delta circuit at rotary coding switch on switch position 8 	38.8 A
 for inside-delta circuit at rotary coding switch on switch position 9 	40.9 A
 for inside-delta circuit at rotary coding switch on switch position 10 	43 A
 for inside-delta circuit at rotary coding switch on switch position 11 for inside delta circuit at rotary coding switch on 	45 A
 for inside-delta circuit at rotary coding switch on switch position 12 for inside delta circuit at rotary coding switch on 	47.1 A
 for inside-delta circuit at rotary coding switch on switch position 13 for inside-delta circuit at rotary coding switch on 	49.2 A 51.3 A
 for inside-delta circuit at rotary coding switch on switch position 14 for inside-delta circuit at rotary coding switch on 	53.3 A
 for inside-delta circuit at rotary coding switch on switch position 15 for inside-delta circuit at rotary coding switch on 	55.4 A
switch position 16	

 at inside-delta circuit minimum 	24.2 A
• at inside-delta circuit minimum minimum load [%]	24.2 A 15 %; Relative to smallest settable le
power loss [W] for rated value of the current at AC	
• at 40 °C after startup	22 W
• at 50 °C after startup	22 W 21 W
• at 60 °C after startup	20 W
power loss [W] at AC at current limitation 350 %	20 W
• at 40 °C during startup	531 W
• at 50 °C during startup	449 W
 at 60 °C during startup at 60 °C during startup 	395 W
Control circuit/ Control	333 W
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 24 V
relative negative tolerance of the control supply	-20 %
voltage at AC at 50 Hz	
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 bypass operation rated value	360 mA
locked-rotor current at close of bypass contact maximum	0.75 A
inrush current peak at application of control supply voltage maximum	3.3 A
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	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	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
weight without packaging	2.3 kg
Connections/ Terminals	2.0 Kg
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 mm ²), 2x (2.5 10 mm ²)
— finely stranded with core end processing	2x (1.0 2.5 mm ²), 2x (2.5 6.0 mm ²)
at AWG cables 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 	2x (0.25 1.5 mm²)
processing	2x (24 16)
at AWG cables for control circuit solid	2x (24 16)
 at AWG cables 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
	0.8 1.2 N·m
 for auxiliary and control contacts with screw-type terminals 	0.0 1.2 10111
tightening torque [lbf·in]	
 for main contacts with screw-type terminals 	18 22 lbf·in
 for auxiliary and control contacts with screw-type 	7 10.3 lbf·in
terminals	
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 RTO Modbus TCP	Yes
MODUS ICP 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. 70 A or 3VA51, max. 100 A; lq = 5 kA
— usable for High Faults at 460/480 V according to UL	Siemens type: 3RV2742, max.40 A or 3VA51, max. 60 A; lq max = 65 kA
 — usable for Standard Faults at 460/480 V at inside-delta circuit according to UL 	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; Iq = 5 kA
 — usable for High Faults at 460/480 V at inside- delta circuit according to UL 	Siemens type: 3VA51, max. 60 A; lq max = 65 kA
 — usable for Standard Faults at 575/600 V according to UL 	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; lq = 5 kA
 — usable for Standard Faults at 575/600 V at inside-delta circuit according to UL 	Siemens type: 3RV2742, max. 70 A or 3VA51, max. 100 A; lq = 5 kA
 of the fuse 	
 — usable for Standard Faults up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 125 A; lq = 5 kA
 — usable for High Faults up to 575/600 V according to UL 	Type: Class J / L, max. 125 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. 125 A; lq = 5 kA
 — usable for High Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class J / L, max. 125 A; lq = 100 kA
operating power [hp] for 3-phase motors	
• at 200/208 V at 50 °C rated value	7.5 hp
 at 220/230 V at 50 °C rated value 	10 hp
 at 460/480 V at 50 °C rated value 	20 hp
 at 200/208 V at inside-delta circuit at 50 °C rated value 	15 hp
 at 220/230 V at inside-delta circuit at 50 °C rated value 	15 hp
at 460/480 V at inside-delta circuit at 50 °C rated value	30 hp
contact rating of auxiliary contacts according to UL	R300-B300
Safety related data	
protection class IP on the front acc. to IEC 60529	IP20
touch protection on the front acc. to IEC 60529	finger-safe, for vertical contact from the front
electromagnetic compatibility	in accordance with IEC 60947-4-2
Certificates/ approvals	
General Product Approval	EMC Declaration of Conformity
(Sh (C) (h)	FAI 🙆 CE
CSA CCC UL	RCM EG-Konf.
Test Out Francisco Having / Obiesing	
Test Certificates Marine / Shipping	
Type Test Certific- ates/Test Report	Lips PRS
VERITAS	
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=3RW5216-3AC04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5216-3AC04

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5216-3AC04

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5216-3AC04&lang=en

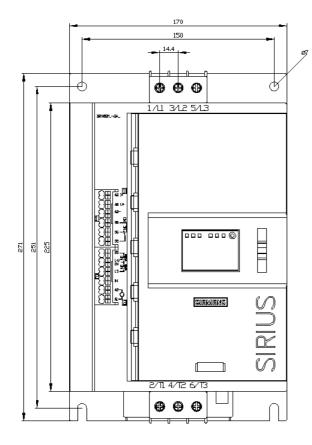
Characteristic: Tripping characteristics, I²t, Let-through current

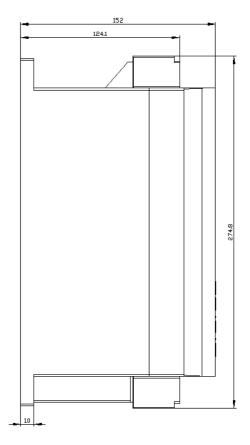
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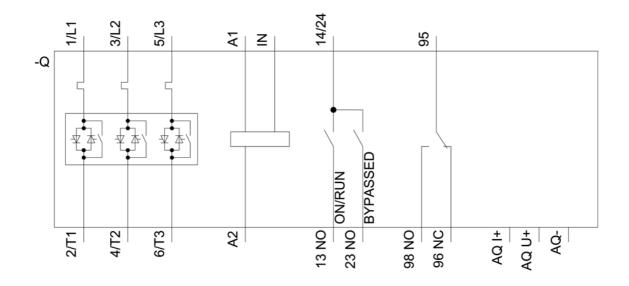
Characteristic: Installation altitude

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5216-3AC04&objecttype=14&gridview=view1 Simulation Tool for Soft Starters (STS)

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







last modified:

8/10/2021 🖸