SIEMENS

Data sheet 3RW5225-1TC04



SIRIUS soft starter 200-480 V 63 A, 24 V AC/DC Screw 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 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 	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 %
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

• for main current circuit • for control control • for control circuit • for control control • for control circuit • for control control • for control circuit • for co					
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operational current at inside-delta circuit	0.000 0.0000 0.0000	JIA			
• at 40 °C rated value 109 A	•	109 A			
• at 50 °C rated value 96 A					
• at 50 °C rated value 87.5 A					
operating voltage		01.07			
• rated value 200 480 V		200 480 V			
• at inside-delta circuit rated value 200 480 V					
relative negative tolerance of the operating voltage -15 %					
relative negative tolerance of the operating voltage 10 %					
relative positive tolerance of the operating voltage at relative negative negative tolerance of the operating voltage at relative negative tolerance of the operating voltage at relative negative nega					
inside-delta circuit					
relative positive tolerance of the operating voltage at inside-delta circuit		10 %			
operating power for 3-phase motors	operating power for 3-phase motors				
• at 230 V at 40 °C rated value 18.5 kW	at 230 V at 40 °C rated value	18.5 kW			

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at 230 V at inside-delta circuit at 40 °C rated value t 400 V 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	
 at rotary coding switch on switch position 1 	25.5 A
 at rotary coding switch on switch position 2 	28 A
 at rotary coding switch on switch position 3 	30.5 A
 at rotary coding switch on switch position 4 	33 A
 at rotary coding switch on switch position 5 	35.5 A
 at rotary coding switch on switch position 6 	38 A
 at rotary coding switch on switch position 7 	40.5 A
 at rotary coding switch on switch position 8 	43 A
 at rotary coding switch on switch position 9 	45.5 A
 at rotary coding switch on switch position 10 	48 A
 at rotary coding switch on switch position 11 	50.5 A
 at rotary coding switch on switch position 12 	53 A
 at rotary coding switch on switch position 13 	55.5 A
 at rotary coding switch on switch position 14 	58 A
 at rotary coding switch on switch position 15 	60.5 A
 at rotary coding switch on switch position 16 	63 A
minimum	25.5 A
adjustable motor current	
 for inside-delta circuit at rotary coding switch on switch position 1 	44.2 A
 for inside-delta circuit at rotary coding switch on switch position 2 	48.5 A
 for inside-delta circuit at rotary coding switch on switch position 3 	52.8 A
 for inside-delta circuit at rotary coding switch on switch position 4 	57.2 A
 for inside-delta circuit at rotary coding switch on switch position 5 	61.5 A
 for inside-delta circuit at rotary coding switch on switch position 6 	65.8 A
 for inside-delta circuit at rotary coding switch on switch position 7 	70.1 A
 for inside-delta circuit at rotary coding switch on switch position 8 	74.5 A
 for inside-delta circuit at rotary coding switch on switch position 9 	78.8 A
 for inside-delta circuit at rotary coding switch on switch position 10 	83.1 A
 for inside-delta circuit at rotary coding switch on switch position 11 	87.5 A
for inside-delta circuit at rotary coding switch on switch position 12 for inside delta circuit at rotary coding switch on	91.8 A
for inside-delta circuit at rotary coding switch on switch position 13	96.1 A
for inside-delta circuit at rotary coding switch on switch position 14	100 A
for inside-delta circuit at rotary coding switch on switch position 15 for inside delta circuit at rotary coding switch on	105 A
for inside-delta circuit at rotary coding switch on switch position 16 the delta circuit religious.	109 A
at inside-delta circuit minimum	44.2 A
minimum load [%]	15 %; Relative to smallest settable le
power loss [W] for rated value of the current at AC	24 14/
• at 40 °C after startup	31 W
• at 50 °C after startup	29 W
at 60 °C after startup	27 W

power loss [W] at AC at current limitation 350 %	222.14		
at 40 °C during startup	882 W		
at 50 °C during startup	744 W		
at 60 °C during startup	659 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	10 %		
voltage frequency			
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	380 mA		
locked-rotor current at close of bypass contact maximum	7.6 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	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		
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		
downwards	75 mm		
at the side	5 mm		

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		
wire length for thermistor connection			
 with conductor cross-section = 0.5 mm² maximum 	50 m		
 with conductor cross-section = 1.5 mm² maximum 	150 m		
• with conductor cross-section = 2.5 mm² maximum	250 m		
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 for main contacts for box terminal using both	1x (10 2/0)		
for main contacts for box terminal using both clamping points solid for main contacts for box terminal using both	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		
at the digital inputs at DC maximum dightaning targue	1 000 m		
tightening torque	4.5 6.N.m		
 for main contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals 	4.5 6 N·m 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			
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: Clas	s A		
Communication/ Protocol	200. 10 120 000 ft 1 2. Older /t			
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, ma	ax. 70 A or 3VA51, max	x. 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: 3RV2742, max. 70 A or 3VA51, max. 125 A; Iq = 10 k			
 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. 200 A; Iq = 10 kA			
 usable for High Faults up to 575/600 V according to UL 	Type: Class J / L, max. 225 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. 200 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. 225 A; Iq = 100 kA			
operating power [hp] for 3-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			
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				
General Product Approval		EMC	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=3RW5225-1TC04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5225-1TC04

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5225-1TC04

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5225-1TC04&lang=en

Characteristic: Tripping characteristics, I2t, Let-through current

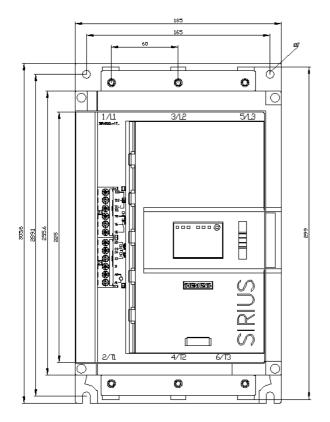
https://support.industry.siemens.com/cs/ww/en/ps/3RW5225-1TC04/char

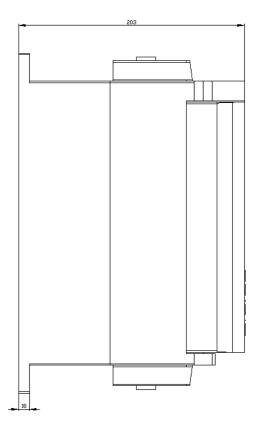
Characteristic: Installation altitude

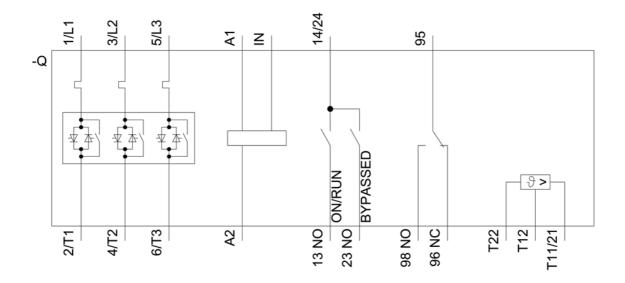
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5225-1TC04&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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