SIEMENS

Data sheet

3RW5056-2TB04



SIRIUS soft starter 200-480 V 171 A, 24 V AC/DC Spring-loaded terminals Thermistor input

Fi	gι	re	si	mi	lar

product brand name	SIRIUS
product brand name	
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW50
manufacturer's article number	
of standard HMI module usable	<u>3RW5980-0HS01</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 	<u>3VA2220-7MN32-0AA0; Type of assignment 1, Iq = 20 kA</u>
 of circuit breaker usable at 500 V 	<u>3VA2220-7MN32-0AA0: Type of assignment 1. lq = 20 kA</u>
 of the gG fuse usable up to 690 V 	<u>3NA3244-6; Type of coordination 1, Iq = 65 kA</u>
 of full range R fuse link for semiconductor protection usable up to 690 V 	<u>3NE1 230-0: Type of coordination 2. Iq = 65 kA</u>
 of back-up R fuse link for semiconductor protection usable up to 690 V 	<u>3NE3 335; Type of coordination 2, Iq = 65 kA</u>
 of line contactor usable up to 480 V 	<u>3RT1056</u>
 of line contactor usable up to 690 V 	<u>3RT1064</u>
General technical data	
starting voltage [%]	30 100 %
stopping voltage [%]	50 %; non-adjustable
start-up ramp time of soft starter	0 20 s
ramp-down 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	
HMI-High Feature	No
 is supported HMI-Standard 	Yes
 is supported HMI-High Feature 	Yes
product feature integrated bypass contact system	Yes
number of controlled phases	2
trip class	CLASS 10A / 10E (preset) / 20E; acc. to IEC 60947-4-2
trip class buffering time in the event of power failure	CLASS 10A / 10E (preset) / 20E; acc. to IEC 60947-4-2

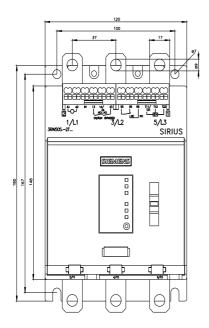
for control circuit	100 ms
insulation voltage rated value	600 V
degree of pollution	3. acc. to IEC 60947-4-2
impulse voltage rated value	6 kV
blocking voltage of the thyristor maximum	1 400 V
service factor	1
surge voltage resistance rated value	6 kV
maximum permissible voltage for protective separation	0 KV
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 according to IEC 60947-4-2	AC-53a
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	09/23/2019
product function	0012012010
• ramp-up (soft starting)	Yes
• ramp-down (soft stop)	Yes
Soft Torque	Yes
	Yes
 adjustable current limitation pump ramp down 	Yes
	Yes
intrinsic device protection motor overload protection	Yes; Full motor protection (thermistor motor protection and electronic motor
motor overload protection	overload protection)
evaluation of thermistor motor protection	Yes; Type A PTC or Klixon / Thermoclick
• 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
voltage ramp	Yes
torque control	No
analog output	No
Power Electronics	
operational current	
• at 40 °C rated value	171 A
• at 50 °C rated value	153 A
• at 60 °C rated value	141 A
operating voltage	200 400 \/
• rated value	200 480 V
relative negative tolerance of the operating voltage	-15 %
relative positive tolerance of the operating voltage	10 %
operating power for 3-phase motors	45 MM
• at 230 V at 40 °C rated value	45 kW
at 400 V at 40 °C rated value	90 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	81 A
 at rotary coding switch on switch position 1 at rotary coding switch on switch position 2 	
at rotary coding switch on switch position 2	87 A
at rotary coding switch on switch position 3	93 A
at rotary coding switch on switch position 4	99 A 105 A
at rotary coding switch on switch position 5	105 A
 at rotary coding switch on switch position 6 	111 A
at rotary coding switch on switch position 7	117 A
 at rotary coding switch on switch position 8 	123 A

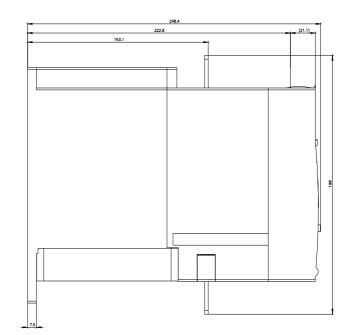
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• at rotary coding satisfor on switch position 16 117 k • minimum (ad [%] 15 %; Relative to smallest settable to power loss [W] for rated value of the current at AC 20 W • at 40 °C dater startup 20 W • at 40 °C dater startup 20 W • at 40 °C during startup 175 t W • at 60 °C during startup 175 t W • at 60 °C during startup 175 t W • at 60 °C during startup 1308 W type of the motor protection Electronic, tupping in the event of thermal overload of the motor Control supply voltage at AC 424 V • at 60 °C during startup 24 V • at 60 °C rated value 20 %	 at rotary coding switch on switch position 14 	159 A			
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DC Introduct control supply current in standby mode rated value 160 mA holding current in bypass operation rated value 360 mA inrush current by closing the bypass contacts maximum 7.6 A inrush current peak at application of control supply voltage 3.3 A duration of inrush current peak at application of control supply 12.1 ms duration of inrush current peak at application of control supply 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 1 number of digital inputs 1 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 3 A	0 11 9 0	-20 %			
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inrush current by closing the bypass contacts 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 3.3 A duration of inrush current peak at application of control supply voltage 12.1 ms voltage Varistor 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= 800 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of scope of supply Inputs/ Outputs 1 number of digital inputs 1 number of digital outputs 3 e 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 3 A	control supply current in standby mode rated value	160 mA			
inrush current peak at application of control supply voltage 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 1 number of digital inputs 1 number of digital outputs 3 e 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 3 A	holding current in bypass operation rated value	360 mA			
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voltagedesign of the overvoltage protectionVaristordesign of short-circuit protection for control circuit4 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 supplyInputs/ Outputs1number of digital inputs1number of digital outputs3• not parameterizable2digital output version2 normally-open contacts (NO) / 1 changeover contact (CO)number of analog outputs0switching capacity current of the relay outputs3 A		3.3 A			
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 1 number of digital inputs 1 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 3 A		12.1 ms			
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 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 3 A	design of the overvoltage protection	Varistor			
number of digital inputs 1 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 3 A	design of short-circuit protection for control circuit	breaker (Icu= 600 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of			
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 3 A	Inputs/ Outputs				
• 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 3 A	number of digital inputs	1			
digital output version 2 normally-open contacts (NO) / 1 changeover contact (CO) number of analog outputs 0 switching capacity current of the relay outputs 3 A	number of digital outputs	3			
number of analog outputs 0 switching capacity current of the relay outputs • at AC-15 at 250 V rated value 3 A	not parameterizable	2			
switching capacity current of the relay outputs • at AC-15 at 250 V rated value 3 A	digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)			
• at AC-15 at 250 V rated value 3 A	number of analog outputs	0			
	switching capacity current of the relay outputs				
	• at AC-15 at 250 V rated value	3 A			
• at DG-13 at 24 V rated value 1 A	• at DC-13 at 24 V rated value	1 A			
Installation/ mounting/ dimensions	Installation/ mounting/ dimensions				

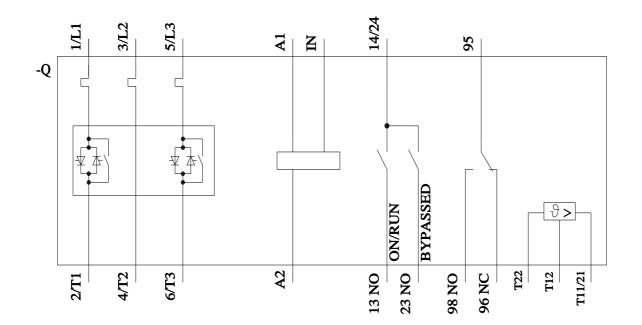
mounting position	with vertical mounting surface $\pm/-90^{\circ}$ rotatable, with vertical mounting surface
for the size of the state	+/- 22.5° tiltable to the front and back
fastening method	screw fixing
height	198 mm
width	120 mm
depth	249 mm
required spacing with side-by-side mounting	
• forwards	10 mm
• backwards	0 mm
• upwards	100 mm
downwards	75 mm
at the side	5 mm
weight without packaging	5.2 kg
connections/ Terminals	
type of electrical connection	
for main current circuit	busbar connection
• for control circuit	spring-loaded terminals
width of connection bar maximum	25 mm
wire length for thermistor connection	50 m
• with conductor cross-section = 0.5 mm ² maximum	50 m
• with conductor cross-section = 1.5 mm ² maximum	150 m
with conductor cross-section = 2.5 mm ² maximum	250 m
 type of connectable conductor cross-sections for main contacts for box terminal using the front clamping point solid 	16 120 mm²
 for main contacts for box terminal using the front clamping point finely stranded with core end processing 	16 120 mm²
• for main contacts for box terminal using the front clamping point finely stranded without core end processing	10 120 mm²
 for main contacts for box terminal using the front clamping point stranded 	16 70 mm²
• for main contacts for box terminal using the back clamping point solid	16 120 mm ²
 for AWG cables for main contacts for box terminal using the back clamping point 	6 250 kcmil
 for main contacts for box terminal using both clamping points solid for main contacts for box terminal using both clamping 	max. 1x 95 mm², 1x 120 mm²
 for main contacts for box terminal using both clamping points finely stranded with core end processing for main contacts for box terminal using both clamping 	max. 1x 95 mm², 1x 120 mm² max. 1x 95 mm², 1x 120 mm²
 for main contacts for box terminal using both clamping points finely stranded without core end processing for main contacts for box terminal using both clamping 	max. 2x 120 mm ²
 for main contacts for box terminal using the back 	16 120 mm ²
clamping point finely stranded with core end processingfor main contacts for box terminal using the back	10 120 mm ²
clamping point finely stranded without core end processingfor main contacts for box terminal using the back	16 120 mm²
clamping point stranded	
type of connectable conductor cross-sections	
 for AWG cables for main current circuit solid 	4 250 kcmil
 for DIN cable lug for main contacts stranded 	16 95 mm²
 for DIN cable lug for main contacts finely stranded 	25 120 mm²
type of connectable conductor cross-sections	
for control circuit solid	2x (0.25 1.5 mm ²)
for control circuit finely stranded with core end processing	2x (0.25 1.5 mm ²)
 for AWG cables for control circuit solid for AWG cables for control circuit finely stranded with core end processing 	2x (24 16) 2x (24 16)
wire length	
between soft starter and motor maximum	800 m
 at the digital inputs at AC maximum 	1 000 m
tightening forgue	
tightening torque orque or main contacts with screw-type terminals	10 14 N·m

terminals		
tightening torque [lbf·in]		
 for main contacts with screw-type terminals 	89 124 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 Manual	
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 according to IEC 60721 	3K6 (no ice formation, only occasional condensation), 30 (sand must not get into the devices), 3M6	C3 (no salt mist), 3S2
during storage according to IEC 60721	1K6 (only occasional condensation), 1C2 (no salt mist), inside the devices), 1M4	IS2 (sand must not get
 during transport according 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: 3VA5225, max. 250 A; lq = 10 kA	
	Siemens type: 3VA52, max. 250 A; lq max = 65 kA	
of the fuse		
 — usable for Standard Faults up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 400 A; lq = 10 kA	
— usable for High Faults up to 575/600 V according to UL	Type: Class J, max. 350 A; lq = 100 kA	
operating power [hp] for 3-phase motors		
 at 200/208 V at 50 °C rated value 	50 hp	
 at 220/230 V at 50 °C rated value 	50 hp	
 at 460/480 V at 50 °C rated value 	100 hp	
Safety related data		
protection class IP on the front according to IEC 60529	IP00; IP20 with cover	
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with cover	
ATEX		
certificate of suitability		
• ATEX	Yes	
• IECEx	Yes	
• UKEX	Yes	
hardware fault tolerance according to IEC 61508 relating to ATEX	0	
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.09	
PFHD with high demand rate according to EN 62061 relating to ATEX	9E-6 1/h	
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL1	
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 а	
Certificates/ approvals		
General Product Approval		For use in hazard- ous locations

SP SP	CCC CCC	<u>Confirmation</u>	UL u	EHC	K ATEX	
For use in hazardou	s locations	Declaration of Conform	nity	Test Certificates	Marine / Shipping	
IECEx	Explosion Protection Certificate	UK CA	CE EG-Konf.	Type Test Certific- ates/Test Report	ABS	
Marine / Shipping		other				
Lloyds Register uts	PRS	<u>Confirmation</u>				
	Further information Siemens has decided to exit the Russian market (see here). https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business					
Please contact your lo	cal Siemens office on the			end to import or offer to sup	ply these products to an	
Information on the p						
	wnloadcenter (Catalogs,					
Industry Mall (Online ordering system)						
https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5056-2TB04 Cax online generator http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5056-2TB04						
Service&Support (Manuals, Certificates, Characteristics, FAQs,) https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-2TB04						
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros,) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5056-2TB04⟨=en						
Characteristic: Tripping characteristics, I ² t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-2TB04/char						
Characteristic: Installation altitude http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5056-2TB04&objecttype=14&gridview=view1						
Simulation Tool for Soft Starters (STS) https://support.industry.siemens.com/cs/ww/en/view/101494917						







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