SIEMENS



3RW5077-2TB05

Data sheet



SIRIUS soft starter 200-600 V 570 A, 24 V AC/DC Spring-loaded terminals Thermistor input

Figure	similar	
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product brand name	SIRIUS	
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 	3VA2580-6HN32-0AA0; Type of assignment 1, lq = 65 kA	
 of circuit breaker usable at 500 V 	<u>3VA2580-6HN32-0AA0; Type of assignment 1, lq = 65 kA</u>	
 of the gG fuse usable up to 690 V 	2x3NA3365-6; Type of coordination 1, Iq = 65 kA	
 of full range R fuse link for semiconductor protection usable up to 690 V 	<u>3NE1 437-2; Type of coordination 2, Iq = 65 kA</u>	
 of back-up R fuse link for semiconductor protection usable up to 690 V 	<u>3NE3 340-8: Type of coordination 2. Iq = 65 kA</u>	
 of line contactor usable up to 480 V 	3TF68	
 of line contactor usable up to 690 V 	3TF68	
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 %	
accuracy class according to IEC 61557-12	5 %	
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 (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	
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	
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		
 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	
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	570 A	
• at 50 °C rated value	504 A	
• at 60 °C rated value	460 A	
operating voltage		
rated value	200 600 V	
relative negative tolerance of the operating voltage	-15 %	
relative positive tolerance of the operating voltage	10 %	
operating power for 3-phase motors		
 at 230 V at 40 °C rated value 	160 kW	
• at 400 V at 40 °C rated value	315 kW	
• at 500 V at 40 °C rated value	355 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	240 A	
 at rotary coding switch on switch position 2 	262 A	

 at rotary coding switch on switch position 3 	 284 A 306 A 328 A Dientudong
 at rotary coding switch on switch position 4 	306 A
 at rotary coding switch on switch position 5 	328 A
 at rotary coding switch on switch position 6 	350 A
 at rotary coding switch on switch position 7 	372 A
 at rotary coding switch on switch position 8 	394 A
 at rotary coding switch on switch position 9 	416 A
 at rotary coding switch on switch position 10 	438 A
 at rotary coding switch on switch position 11 	460 A
 at rotary coding switch on switch position 12 	482 A
 at rotary coding switch on switch position 13 	504 A
 at rotary coding switch on switch position 14 	526 A
 at rotary coding switch on switch position 15 	548 A
 at rotary coding switch on switch position 16 	570 A
• minimum	240 A
minimum load [%]	15 %: Relative to smallest settable le
power loss [W] for rated value of the current at AC	
• at 40 °C after startup	73 W
• at 50 °C after startup	57 W
• at 60 °C after startup	47 W
power loss [W] at AC at current limitation 350 %	
• at 40 °C during startup	7 019 W
• at 50 °C during startup	5 801 W
• at 60 °C during startup	5 048 W
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor
Control circuit/ Control	
	AC/DC
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	24.1/
at 50 Hz rated value	24 V 24 V
at 60 Hz rated value	-20 %
relative negative tolerance of the control supply voltage at AC at 50 Hz	-20 %
relative positive tolerance of the control supply	20 %
voltage at AC at 50 Hz	
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	490 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
A Long	

number of digital outputs	³ diontudong
not parameterizable	3 2 2 normally-open co
digital output version	
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	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
fastening method	screw fixing
height	230 mm
width	160 mm
depth	282 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	7.3 kg
Connections/ Terminals	
type of electrical connection	
for main current circuit	busbar connection
 for control circuit 	spring-loaded terminals
width of connection bar maximum	35 mm; with connection cover 3RT1966-4EA1 maximum length 45 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 	95 300 mm²
 for main contacts for box terminal using the front clamping point finely stranded with core end processing 	70 240 mm²
 for main contacts for box terminal using the front clamping point finely stranded without core end processing 	70 240 mm²
 for main contacts for box terminal using the front clamping point stranded 	95 300 mm²
 at AWG cables for main contacts for box terminal using the front clamping point 	3/0 600 kcmil
 for main contacts for box terminal using the back clamping point solid 	120 240 mm²
• at AWG cables for main contacts for box terminal using the back clamping point	250 500 kcmil
for main contacts for box terminal using both clamping points solid	min. 2x 70 mm², max. 2x 240 mm²
 for main contacts for box terminal using both clamping points finely stranded with core end processing 	min. 2x 50 mm², max. 2x 185 mm²
 for main contacts for box terminal using both clamping points finely stranded without core end processing 	min. 2x 50 mm², max. 2x 185 mm²
 for main contacts for box terminal using both clamping points stranded 	min. 2x 70 mm², max. 2x 240 mm²
 for main contacts for box terminal using the back clamping point finely stranded with core end processing 	120 185 mm²
 for main contacts for box terminal using the back clamping point finely stranded without core end processing 	120 185 mm²
 for main contacts for box terminal using the back clamping point stranded 	120 240 mm²

type of connectable conductor cross-sections 20200 mm? • of POL cables for main cortacts stranded 20200 mm? • of row cables for frame increates stranded 20200 mm? • of row carbon dicula finely stranded with core and processing 27200 mm? • of row carbon dicula finely stranded with core and processing 27200 mm? • of row carbon dicula finely stranded with core and processing 27200 mm? • of row carbon dicula finely stranded with core and processing 27200 mm? • of row carbon dicula finely stranded with core and processing 27200 mm? • of row carbon dicula finely stranded with core and processing 27200 mm? • of row carbon dicula finely stranded with core and processing 27201 mm? • of row carbon dicula finely stranded with core and processing 10.00 m • of row carbon dicula finely stranded with core and processing 10.00 m • of row carbon dicula strandom dicula strandom moximum 10.00 m • of row carbon dicula strandom d		
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ambient temperature -25 +60 °C; Please observe derating at temperatures of 40 °C or above • during storage and transport -40 +80 °C • during storage according to IEC 60721 3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 • 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 • Reformation undurer's article number Yes • of the fuse Yes — usable for Standard Faults up to 575/600 V according to U. Yes: Class L, max. 1200 A; Iq = 30 kA • at 200/208 V at 50 °C rated value 150 hp • at 200/208 V at 50 °C rated value 150 hp • at 200/208 V at 50 °C rated value 200 hp • at 200/208 V at 50 °C rated value 500 hp • at 200/208 V at 50 °C rated value 500 hp • at 460/480 V at 50 °C rated value 500 hp Safe	Ambient conditions	
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• during storage and transport -40 +80 °C • environmental category • during operation according to IEC 60721 • during storage according to IEC 60721 3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 • during transport according to IEC 60721 3K6 (no ice formation, only occasional condensation), 1S2 (sand must not get inside the devices), 3M6 • during transport according to IEC 60721 2K2, 2C1, 2S1, 2W2 (max, fall height 0.3 m) EMC emitted interference acc. to IEC 60947-4-2: Class A Communication/ Protocol acc. to IEC 60947-4-2: Class A Communication module is supported • PROFINET standard • RPOFINET standard Yes • Modbus TCP Yes • UL/CSA ratings Yes manufacturer's article number • of the fuse - usable for Standard Faults up to 575/600 V according to U. Type: Class L, max. 1600 A; Iq = 30 kA - usable for Standard Faults up to 575/600 V according to U. Type: Class L, max. 1200 A; Iq = 100 kA operating power (hpi for 3-phase motors 150 hp • at 200/208 V at 50 °C rated value 200 hp • at 200/208 V at 50 °C rated value 200 hp • at 200/208 V at 50 °C rated value 500 hp Safety related data IPO0; IP20 with cover protection on the front according to IEC 60529 <	ambient temperature	
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EMC emitted interference acc. to IEC 60947-4-2: Class A Communication / Protocol communication module is supported • PROFINET standard Yes • Modbus RTU Yes • DVICSA ratings Yes manufacturer's article number - • of the fuse -		not get inside the devices), 1M4
Communication/ Protocol communication module is supported • PROFINET standard Yes • EtherNet/IP Yes • Modbus RTU Yes • Modbus TCP Yes • PROFIBUS Yes UL/CSA ratings Yes manufacturer's article number of the fuse - usable for Standard Faults up to 575/600 V Type: Class L, max. 1600 A; Iq = 30 kA according to UL - usable for Standard Faults up to 575/600 V - usable for High Faults up to 575/600 V Type: Class L, max. 1200 A; Iq = 100 kA operating power (hp) for 3-phase motors 150 hp • at 200/208 V at 50 °C rated value 150 hp • at 460/480 V at 50 °C rated value 200 hp • at 575/600 V at 50 °C rated value 400 hp • at 575/600 V at 50 °C rated value 500 hp Safety related data IP00; IP20 with cover go22 touch protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 finger-safe, for vertical contact from the front with cover 6252 certificate of suitability Yes		
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operating power [hp] for 3-phase motors 150 hp • at 200/208 V at 50 °C rated value 150 hp • at 220/230 V at 50 °C rated value 200 hp • at 460/480 V at 50 °C rated value 400 hp • at 575/600 V at 50 °C rated value 500 hp Safety related data 500 hp protection class IP on the front according to IEC 60529 IP00; IP20 with cover 60529 finger-safe, for vertical contact from the front with cover ATEX Yes	— usable for High Faults up to 575/600 V	Type: Class L, max. 1200 A; lq = 100 kA
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• at 575/600 V at 50 °C rated value 500 hp Safety related data	• at 220/230 V at 50 °C rated value	200 hp
Safety related data IP00; IP20 with cover protection class IP on the front according to IEC 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 Yes	• at 460/480 V at 50 °C rated value	400 hp
protection class IP on the front according to IEC IP00; IP20 with cover 60529 finger-safe, for vertical contact from the front with cover ATEX certificate of suitability • ATEX Yes	• at 575/600 V at 50 °C rated value	500 hp
60529 finger-safe, for vertical contact from the front with cover ATEX certificate of suitability ATEX Yes 	Safety related data	
ATEX certificate of suitability • ATEX Yes		IP00; IP20 with cover
certificate of suitability Yes	touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with cover
• ATEX Yes	ATEX	
	certificate of suitability	
• IECEx Yes	• ATEX	Yes
	• IECEx	Yes

hardware fault tolera relating to ATEX	ance according to IE	C 61508	0		N dion	tudong
PFDavg with low de relating to ATEX	mand rate according	to IEC 61508	0.09		Junen	cuuvny
PFHD with high dem relating to ATEX	nand rate according t	to EN 62061	9E-6 1/h	1		
Safety Integrity Leve relating to ATEX	el (SIL) according to	IEC 61508	SIL1			
	est interval or service 508 relating to ATEX		3 у			
Certificates/ approval	ls					
General Product Ap	oproval					For use in hazard- ous locations
		<u>Confirmatio</u>	<u>on</u>	U	EHC	IECEx
For use in hazard- ous locations	Declaration of Conformity	Test Certifica	ates N	Marine / Shipping		
KEx ATEX	CE EG-Konf.	<u>Type Test Cer</u> ates/Test Rep		ABS	Lloyds Register urs	PRS

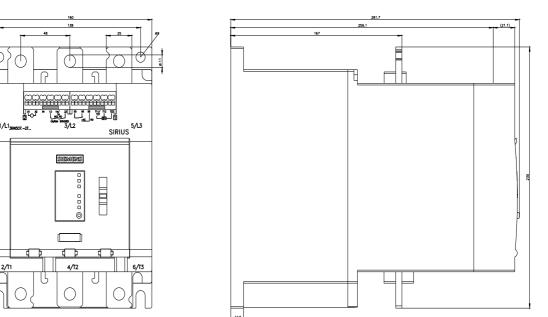
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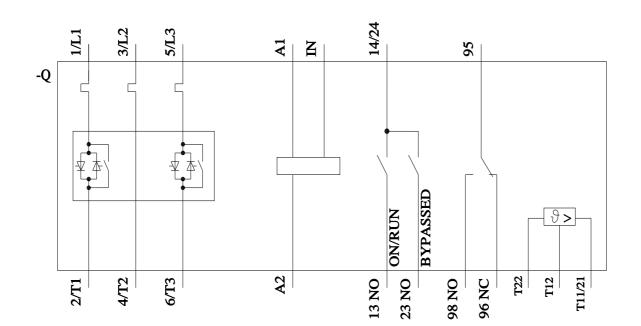
Confirmation

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Characteristic: Tripping characteristics, I ² t, Let-through current
https://support.industry.siemens.com/cs/ww/en/ps/3RW5077-2TB05/char
Characteristic: Installation altitude
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5077-2TB05&objecttype=14&gridview=view1
Simulation Tool for Soft Starters (STS)

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







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