SIEMENS

Data sheet 3RW5077-6TB14

SIRIUS



SIRIUS soft starter 200-480 V 570 A, 110-250 V AC Screw terminals Thermistor input



product category	Hybrid switching devices	
product designation	Soft starter	
product type designation	3RW50	
manufacturer's article number		
 of standard HMI module usable 	3RW5980-0HS01	
 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 	3VA2580-6HN32-0AA0; Type of assignment 1, Iq = 65 kA	
 of circuit breaker usable at 500 V 	3VA2580-6HN32-0AA0; Type of assignment 1, Iq = 65 kA	
 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 	3NE1 437-2; Type of coordination 2, Iq = 65 kA	
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NE3 340-8; Type of coordination 2, Iq = 65 kA	
 of line contactor usable up to 480 V 	3TF68	
 of line contactor usable up to 690 V 	3TF68	
Seneral 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	
buffering time in the event of power failure		

for main current circuit	100 ms	
for control circuit	100 ms	
insulation voltage rated value	100 ms 600 V	
degree of pollution	3, acc. to IEC 60947-4-2	
impulse voltage rated value	3, acc. to IEC 60947-4-2	
blocking voltage of the thyristor maximum	1 600 V	
service factor	1 600 V	
surge voltage resistance rated value	6 kV	
maximum permissible voltage for protective separation	ONV	
between main and auxiliary circuit	600 V	
shock resistance	15 g / 11 ms, from 12 g / 11 ms with potential contact lifting	
utilization category according to IEC 60947-4-2	AC-53a	
reference code according to IEC 81346-2	Q	
Substance Prohibitance (Date)	09/23/2019	
SVHC substance name	Lead - 7439-92-1	
Sylle substance name	Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol - 79-94-7 1,6,7,8,9,14,15,16,17,17,18,18- Dodecachloropentacyclo[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"™) covering any of its individual anti- and syn-isomers or any combination thereof Dicyclohexyl phthalate (DCHP) - 84-61-7 Dodecamethylcyclohexasiloxane (D6) - 540-97-6	
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	200 480 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	
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
 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 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	Electronic, tripping in the event of thermal overload of the motor
type of voltage of the control supply voltage	AC
	AC
control supply voltage at AC	440 250 //
• at 50 Hz	110 250 V
• at 60 Hz	110 250 V
relative negative tolerance of the control supply voltage at AC at 50 Hz	-15 %
relative positive tolerance of the control supply voltage at AC at 50 Hz	10 %
relative negative tolerance of the control supply voltage at AC at 60 Hz	-15 %
relative positive tolerance of the control supply voltage at AC at 60 Hz	10 %
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 current in standby mode rated value	30 mA
holding current in bypass operation rated value	105 mA
inrush current by closing the bypass contacts maximum	2.2 A
inrush current peak at application of control supply voltage maximum	12.2 A
duration of inrush current peak at application of control supply voltage	2.2 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 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 AC-15 at 250 V rated value at DC-13 at 24 V rated value 	3 A 1 A

estallation/ 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	
onnections/ Terminals		
type of electrical connection		
for main current circuit	busbar connection	
for control circuit	screw-type terminals	
width of connection bar maximum	35 mm; with connection cover 3RT1966-4EA1 maximum length 45 mm	
wire length for thermistor connection	55, War some said sever out 1000 4EAT maximum longer 40 mm	
with conductor cross-section = 0.5 mm² maximum	50 m	
with conductor cross-section = 0.5 min maximum with conductor cross-section = 1.5 mm² maximum	150 m	
with conductor cross-section = 1.5 mm maximum with conductor cross-section = 2.5 mm² maximum	250 m	
type of connectable conductor cross-sections for main	200 111	
contacts for box terminal		
using the front clamping point solid	95 300 mm²	
using the front clamping point finely stranded with core end processing	70 240 mm²	
using the front clamping point finely stranded without core end processing	70 240 mm²	
 using the front clamping point stranded 	95 300 mm²	
 using the back clamping point solid 	120 240 mm²	
 r box terminal using the back clamping point 	250 500 kcmil	
 using both clamping points solid 	min. 2x 70 mm², max. 2x 240 mm²	
 using both clamping points finely stranded with core end processing 	min. 2x 50 mm², max. 2x 185 mm²	
 using both clamping points finely stranded without core end processing 	min. 2x 50 mm², max. 2x 185 mm²	
 using both clamping points stranded 	min. 2x 70 mm², max. 2x 240 mm²	
 using the back clamping point finely stranded with core end processing 	120 185 mm²	
 using the back clamping point finely stranded without core end processing 	120 185 mm²	
using the back clamping point stranded	120 240 mm²	
type of connectable conductor cross-sections		
 for AWG cables for main current circuit solid 	2/0 500 kcmil	
 for DIN cable lug for main contacts stranded 	50 240 mm²	
for DIN cable lug for main contacts finely stranded	70 240 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)	
for 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	1 000 m	
tightening torque		
• for main contacts with screw-type terminals	14 24 N·m	
for auxiliary and control contacts with screw-type terminals	0.8 1.2 N·m	
tightening torque [lbf·in]		
• for main contacts with screw-type terminals	124 210 lbf·in	

Ambient conditions		
installation altitude at height above sea level maximum	5 000 m; derating as of 1000 m, see Manual	
	5 000 III, derating as of 1000 III, see Mandal	
ambient temperature	05 100 °0. Plana abanda dankin akkananan af 40 °0 an aband	
during operation	-25 +60 °C; Please observe derating at temperatures of 40 °C or above -40 +80 °C	
during storage and transport	-40 +80 C	
environmental category	01/0 (f	
during operation 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 storage according to IEC 60721	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), $1M4$	
during transport according to IEC 60721	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)	
Environmental footprint		
Siemens Eco Profile (SEP)	Siemens EcoTech	
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 the fuse		
 usable for Standard Faults up to 575/600 V according to UL 	Type: Class L, max. 1600 A; Iq = 30 kA	
 usable for High Faults up to 575/600 V according to UL 	Type: Class L, max. 1200 A; Iq = 100 kA	
operating power [hp] for 3-phase motors		
• 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	
Electrical Safety		
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		
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL1	
PFHD with high demand rate according to IEC 61508 relating to ATEX	9E-6 1/h	
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.09	
hardware fault tolerance according to IEC 61508 relating to ATEX	0	
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 a	
certificate of suitability		
• ATEX	Yes	
• IECEx	Yes	
• UKEX	Yes	
Approvals Certificates		

General Product Approval









Confirmation



General Product Approval	For use in hazardous locations	Test Certificates
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Miscellaneous

Type Test Certificates/Test Report

Marine / Shipping

other

Environment







Confirmation







Environment

Environmental Confirmations

Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RW5077-6TB14

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5077-6TB14

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5077-6TB14

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

 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5077-6TB14\&lang=en}}$

Characteristic: Tripping characteristics, I2t, Let-through current

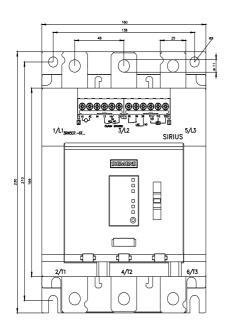
https://support.industry.siemens.com/cs/ww/en/ps/3RW5077-6TB14/char

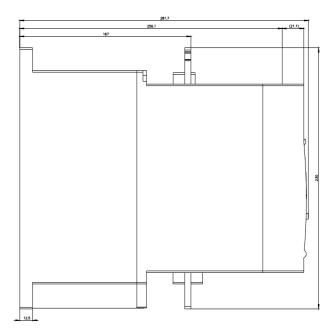
Characteristic: Installation altitude

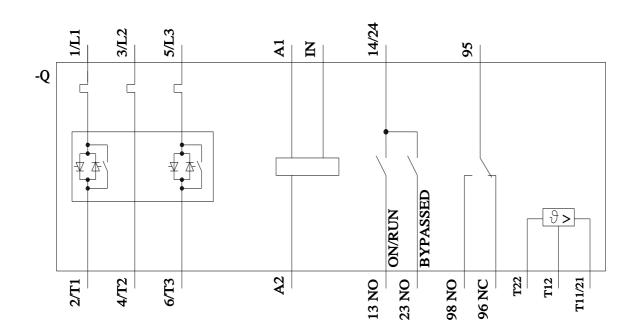
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5077-6TB14&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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