SIEMENS

Data sheet

3RW5076-2TB04



SIRIUS soft starter 200-480 V 470 A, 24 V AC/DC Spring-loaded terminals Thermistor input

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 	<u>3VA2580-6HN32-0AA0; Type of assignment 1, lq = 65 kA</u>			
 of circuit breaker usable at 500 V 	3VA2580-6HN32-0AA0; Type of assignment 1, lq = 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 	<u>3NE1 436-2; 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 	<u>3RT1076</u>			
 of line contactor usable up to 690 V 	<u>3RT1076</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			
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					
blocking voltage of the thyristor maximum	1 600 V				
service factor	1				
surge voltage resistance rated value	1 6 kV				
maximum permissible voltage for protective separation					
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 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" ^M) covering any of its individual anti- and syn-isomers or any combination thereof Dicyclohexyl phthalate (DCHP) - 84-61-7				
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 Yes; Only in conjunction with special accessories				
error logbook via software parameterizable	No				
 via software parameterizable 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	470 A				
● at 50 °C rated value	416 A				
• at 60 °C rated value	380 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	132 kW				
• at 400 V at 40 °C rated value	250 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 	200 A				

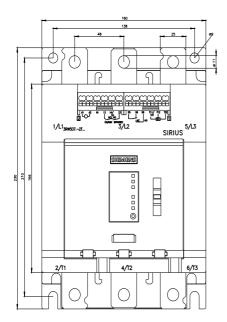
 at rotary coding switch on switch position 2 	218 A				
 at rotary coding switch on switch position 3 	236 A				
 at rotary coding switch on switch position 4 	254 A				
 at rotary coding switch on switch position 5 	254 A 272 A				
 at rotary coding switch on switch position 6 	290 A				
at rotary coding switch on switch position 7	308 A				
 at rotary coding switch on switch position 8 	326 A				
 at rotary coding switch on switch position 9 	344 A				
 at rotary coding switch on switch position 10 	362 A				
 at rotary coding switch on switch position 11 	380 A				
 at rotary coding switch on switch position 12 	398 A				
 at rotary coding switch on switch position 13 	416 A				
 at rotary coding switch on switch position 14 	434 A				
 at rotary coding switch on switch position 15 	452 A				
 at rotary coding switch on switch position 16 	470 A				
• minimum	200 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	56 W				
• at 50 °C after startup	44 W				
• at 60 °C after startup	37 W				
power loss [W] at AC at current limitation 350 %					
• at 40 °C during startup	5 344 W				
• at 50 °C during startup	4 438 W				
• at 60 °C during startup	3 876 W				
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor				
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 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				
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	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 digital outputs	3				

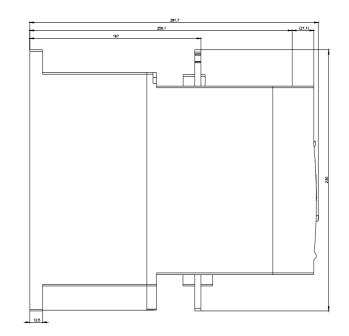
not parameterizable	2			
digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)			
number of analog outputs	0			
switching capacity current of the relay outputs				
• at AC-15 at 250 V rated value	3 A			
• at DC-13 at 24 V rated value	1A			
Installation/ mounting/ dimensions				
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 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	95 300 mm ²			
 using the front clamping point finely stranded with core end processing 	70 240 mm ²			
using the front clamping point finely stranded without core end processing	70 240 mm ²			
using the front clamping point stranded	95 300 mm ²			
using the back clamping point solid	120 240 mm ²			
r box terminal using the back clamping point	250 500 kcmil			
 using both clamping points solid using both clamping points finely stranded with core end processing 	min. 2x 70 mm², max. 2x 240 mm² 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 mm ²			
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	2x (0.25 1.5 mm²)			
 for control circuit finely stranded with core end processing 	2x (0.25 1.5 mm²)			
 for AWG cables for control circuit solid 	2x (24 16)			
for 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 	1 000 m			

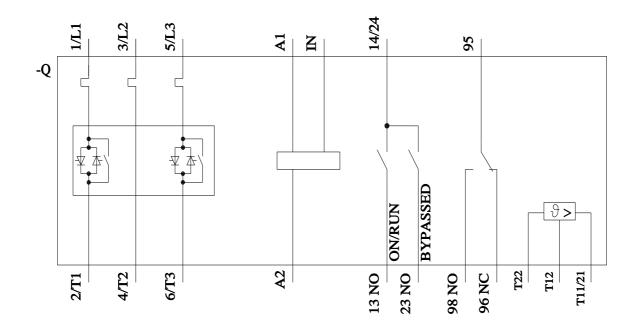
tightening torque				
 for main contacts with screw-type terminals 	14 24 N·m			
 for auxiliary and control contacts with screw-type terminals 	0.8 1.2 N·m			
tightening torque [lbf·in]				
 for main contacts with screw-type terminals 	124 210 lbf·in			
 for auxiliary and control contacts with screw-type 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 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), $3C3$ (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; lq = 30 kA			
— usable for High Faults up to 575/600 V according to UL	Type: Class L, max. 1200 A; lq = 100 kA			
operating power [hp] for 3-phase motors	150 hr			
at 200/208 V at 50 °C rated value	150 hp			
 at 220/230 V at 50 °C rated value at 460/480 V at 50 °C rated value 	150 hp			
Electrical Safety	350 hp			
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			
	Vee			
• UKEX	Yes			

(SP) Em	CE EG-Konf.	UK CA	<u>Confirmation</u>		EHC		
EMV	For use in hazardous	locations		Test Certificates	Marine / Shipping		
KC	KEX ATEX	IECEx	<u>Miscellaneous</u>	Type Test Certific- ates/Test Report	ABS		
Marine / Shipping		other	Environment				
Lloyds Register us	PRS	<u>Confirmation</u>	Siemens EcoTech	EPD	Environmental Con- firmations		
https://support.industry Information- and Dov	Further information Information on the packaging https://support.industry.siemens.com/cs/ww/en/view/109813875 Information- and Downloadcenter (Catalogs, Brochures,)						
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http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5076-2TB04 Service&Support (Manuals, Certificates, Characteristics, FAQs,) https://support.industry.siemens.com/cs/ww/en/ps/3RW5076-2TB04							
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Characteristic: Installation altitude http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5076-2TB04&objecttype=14&gridview=view1 Simulation Tool for Soft Starters (STS)							

Simulation Tool for Soft Starters (STS) https://support.industry.siemens.com/cs/ww/en/view/101494917







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