SIEMENS

product brand name

Data sheet 3RW5246-6TC04

SIRIUS



SIRIUS soft starter 200-480 V 370 A, 24 V AC/DC Screw terminals Thermistor input

product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW52
manufacturer's article number	
 of standard HMI module usable 	<u>3RW5980-0HS00</u>
 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 	3VA2440-7MN32-0AA0; Type of coordination 1, lq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V 	3VA2440-7MN32-0AA0; Type of coordination 1, lq = 65 kA, CLASS 10
 of circuit breaker usable at 400 V at inside-delta circuit 	3VA2580-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V at inside-delta circuit 	3VA2580-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of the gG fuse usable up to 690 V 	2x3NA3365-6; Type of coordination 1, Iq = 65 kA
 of the gG fuse usable at inside-delta circuit up to 500 V 	2x3NA3365-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1334-2; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NE3336; 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
start-up ramp time of soft starter current limiting value [%] adjustable	0 20 s 130 700 %
current limiting value [%] adjustable	

CSA approval

• HMI-Standard

• HMI-High Feature

product component is supported

product feature integrated bypass contact system

Yes

Yes

Yes

Yes

number of controlled phases	3
trip class	CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2
buffering time in the event of power failure	CLASS TOA (default) / TOE / 20L, acc. to ILC 00347-4-2
• for main current circuit	100 ms
for control circuit	100 ms
	600 V
insulation voltage rated value	3, acc. to IEC 60947-4-2
degree of pollution	
impulse voltage rated value	6 kV
blocking voltage of the thyristor maximum	1 600 V
service factor	_ 1 _ 6 kV
surge voltage resistance rated value	O KV
maximum permissible voltage for safe isolation	600 V
between main and auxiliary circuit 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 AC 53a
utilization category acc. to IEC 60947-4-2 reference code acc. to IEC 81346-2	Q
	15.02.2018 00:00:00
Substance Prohibitance (Date) product function	10.02.2010 00.00.00
• ramp-up (soft starting)	Yes
• ramp-down (soft stop)	Yes
Soft Torque adjustable current limitation	Yes Yes
adjustable current limitation	
• 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
inside-delta circuit	Yes
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
• firmware update	Yes
 removable terminal for control circuit 	Yes
torque control	No
analog output	No
Power Electronics	
operational current	
• at 40 °C rated value	370 A
at 50 °C rated value	328 A
at 60 °C rated value	300 A
operational current at inside-delta circuit	
at 40 °C rated value	641 A
at 50 °C rated value	568 A
at 60 °C rated value	519 A
operating voltage	
• rated value	200 480 V
at inside-delta circuit rated value	200 480 V
relative negative tolerance of the operating voltage	-15 %
relative positive tolerance of the operating voltage	10 %
relative negative tolerance of the operating voltage at	-15 %
inside-delta circuit	

relative positive tolerance of the operating voltage at inside-delta circuit	10 %
operating power for 3-phase motors	
 at 230 V at 40 °C rated value 	110 kW
 at 230 V at inside-delta circuit at 40 °C rated value 	200 kW
 at 400 V at 40 °C rated value 	200 kW
 at 400 V at inside-delta circuit 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 	160 A
 at rotary coding switch on switch position 2 	174 A
 at rotary coding switch on switch position 3 	188 A
 at rotary coding switch on switch position 4 	202 A
 at rotary coding switch on switch position 5 	216 A
 at rotary coding switch on switch position 6 	230 A
at rotary coding switch on switch position 7	244 A
at rotary coding switch on switch position 8	258 A
 at rotary coding switch on switch position 9 	272 A
at rotary coding switch on switch position 10	286 A
at rotary coding switch on switch position 11	300 A
at rotary coding switch on switch position 12	314 A
at rotary coding switch on switch position 13	328 A
at rotary coding switch on switch position 14	342 A
at rotary coding switch on switch position 15	356 A
at rotary coding switch on switch position 16	370 A
• minimum	160 A
adjustable motor current	10071
for inside-delta circuit at rotary coding switch on switch position 1	277 A
 for inside-delta circuit at rotary coding switch on switch position 2 	301 A
 for inside-delta circuit at rotary coding switch on switch position 3 	326 A
 for inside-delta circuit at rotary coding switch on switch position 4 	350 A
 for inside-delta circuit at rotary coding switch on switch position 5 	374 A
 for inside-delta circuit at rotary coding switch on switch position 6 	398 A
 for inside-delta circuit at rotary coding switch on switch position 7 	423 A
 for inside-delta circuit at rotary coding switch on switch position 8 	447 A
 for inside-delta circuit at rotary coding switch on switch position 9 	471 A
 for inside-delta circuit at rotary coding switch on switch position 10 	495 A
for inside-delta circuit at rotary coding switch on switch position 11	520 A
for inside-delta circuit at rotary coding switch on switch position 12	544 A
for inside-delta circuit at rotary coding switch on switch position 13	568 A
for inside-delta circuit at rotary coding switch on switch position 14	592 A
for inside-delta circuit at rotary coding switch on switch position 15	617 A
 for inside-delta circuit at rotary coding switch on switch position 16 	641 A

at inside-delta circuit minimum	277 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	123 W
at 50 °C after startup at 50 °C after startup	110 W
at 60 °C after startup	102 W
power loss [W] at AC at current limitation 350 %	
• at 40 °C during startup	5 575 W
at 50 °C during startup	4 706 W
at 60 °C during startup	4 157 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 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	470 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	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
fastening method	screw fixing
height	393 mm

required spacing with side-by-side mountling below/wards vuywards vuywards vuywards vulwards	width	210 mm
Fedure of spacing with side-by-side mounting		
		200 11111
		10 mm
• downwards		
* downwards * downwards * weight without packaging * sm **small connections** **Formal connections** **Formal courser circuit** **for control circuit** **with conductor cross-section = 0.5 mm² maximum **with conductor cross-section = 1.5 mm² maximum **with conductor cross-section = 2.5 mm² maximum **with conductor cross-sections** **for IDN cable lug for main contacts firely stranded **for IDN cable lug for main contacts firely stranded **for Control circuit finely stranded with core end processing **for control circuit solid **for control circuit solid **for control circuit solid **for a waitage and transport **for main contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for a waitage and control contacts with screw-type terminals **for waitage and transport **during poreration **during poreration **during poreration **during poreration **during poreration act to IEC 60721 **during poreration act t		
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Communication Communicatio	_	
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ambient temperature • during operation • during storage and transport • during operation acc. to IEC 60721 • during operation acc. to IEC 60721 • during storage acc. to IEC 60721 • during transport acc. to IEC 60721 • during transport acc. to IEC 60721 • PROFINET standard • PROFINET standard • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS • PROFIBUS	Ambient conditions	
 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 communication/ Protocol emunication module is supported PROFINET standard EtherNet/IP Modbus RTU Modbus TCP PROFIBUS Yes PROFIBUS	installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see catalog
above -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: Class A Communication/ Protocol communication module is supported • PROFINET standard • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS ACC. TO IEC 60947-4-2: Ves Yes • PROFIBUS	ambient temperature	
environmental category • during operation acc. to IEC 60721 • during storage acc. to IEC 60721 • during storage acc. to IEC 60721 • during transport acc. to IEC 60721 EMC emitted interference • PROFINET standard • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS AK6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 IK6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4 • LK2, 2C1, 2S1, 2M2 (max. fall height 0.3 m) acc. to IEC 60947-4-2: Class A Communication/ Protocol Yes • PROFINET standard Yes • Modbus RTU • Modbus TCP • PROFIBUS	during operation	above
 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: Class A Communication/ Protocol communication module is supported PROFINET standard EtherNet/IP Modbus RTU Modbus TCP PROFIBUS Yes PROFIBUS 	during storage and transport	-40 +80 °C
mist), 3S2 (sand must not get into the devices), 3M6 • during storage acc. to IEC 60721 • during transport acc. to IEC 60721 • during transport acc. to IEC 60721 EMC emitted interference communication / Protocol communication module is supported • PROFINET standard • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS mist), 3S2 (sand must not get into the devices), 3M6 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 3M6 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 3M6 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 3M6 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 3M6 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get into the devices), 1M4 2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m) acc. to IEC 60947-4-2: Class A Communication module is supported • PROFINET standard Yes Yes • Modbus TCP • PROFIBUS		
not get inside the devices), 1M4 • during transport acc. to IEC 60721 EMC emitted interference acc. to IEC 60947-4-2: Class A Communication/ Protocol communication module is supported • PROFINET standard • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS not get inside the devices), 1M4 2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m) acc. to IEC 60947-4-2: Class A Yes Yes Yes Yes Yes Yes Yes Y	5 ·	
EMC emitted interference acc. to IEC 60947-4-2: Class A Communication/ Protocol communication module is supported • PROFINET standard • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS Acc. to IEC 60947-4-2: Class A Yes Yes Yes Yes Yes Yes Yes	 during storage acc. to IEC 60721 	
communication/ Protocol communication module is supported • PROFINET standard Yes • EtherNet/IP Yes • Modbus RTU Yes • Modbus TCP Yes • PROFIBUS Yes	during transport acc. to IEC 60721	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
communication module is supported • PROFINET standard Yes • EtherNet/IP Yes • Modbus RTU Yes • Modbus TCP Yes • PROFIBUS Yes	EMC emitted interference	acc. to IEC 60947-4-2: Class A
 PROFINET standard EtherNet/IP Modbus RTU Modbus TCP PROFIBUS Yes Yes Yes 	Communication/ Protocol	
 EtherNet/IP Modbus RTU Modbus TCP PROFIBUS Yes Yes Yes 	communication module is supported	
 Modbus RTU Modbus TCP PROFIBUS Yes Yes 	 PROFINET standard 	Yes
Modbus TCPPROFIBUSYes	EtherNet/IP	Yes
PROFIBUS Yes	 Modbus RTU 	Yes
	Modbus TCP	Yes
JL/CSA ratings	• 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 J / L, max. 1200 A; Iq = 18 kA
 usable for High Faults up to 575/600 V according to UL 	Type: Class J / L, max. 1200 A; Iq = 100 kA
 usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class J / L, max. 1200 A; Iq = 18 kA
 usable for High Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class J / L, max. 1200 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
 at 200/208 V at 50 °C rated value 	100 hp
 at 220/230 V at 50 °C rated value 	125 hp
 at 460/480 V at 50 °C rated value 	250 hp
 at 200/208 V at inside-delta circuit at 50 °C rated value 	200 hp
 at 220/230 V at inside-delta circuit at 50 °C rated value 	200 hp
 at 460/480 V at inside-delta circuit at 50 °C rated value 	450 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 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=3RW5246-6TC04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5246-6TC04

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5246-6TC04

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5246-6TC04&lang=en

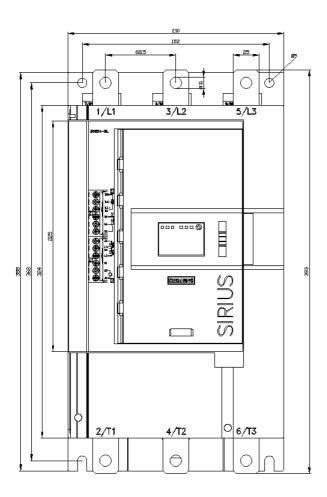
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RW5246-6TC04/char

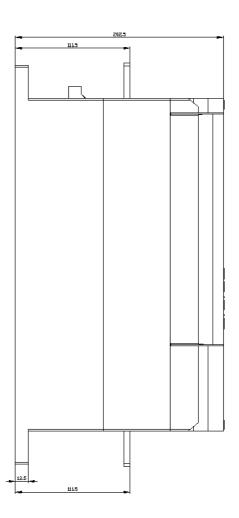
Characteristic: Installation altitude

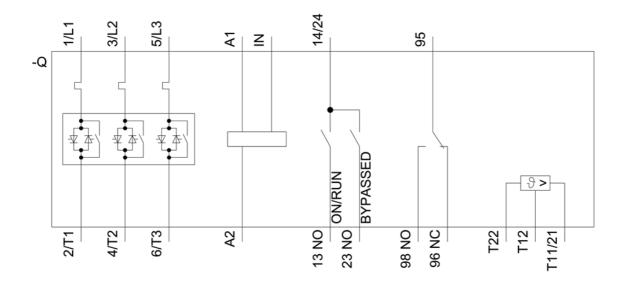
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5246-6TC04&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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