SIEMENS

product brand name

Data sheet 3RW5246-6AC05

SIRIUS



SIRIUS soft starter 200-600 V 370 A, 24 V AC/DC Screw terminals Analog output

product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW52
manufacturer's article number	
 of standard HMI module usable 	3RW5980-0HS00
 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, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 500 V 	3VA2440-7MN32-0AA0; Type of coordination 1, Iq = 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
eneral technical data	
starting voltage [%]	30 100 %
stopping voltage [%]	50 50 %
start-up ramp time of soft starter	0 20 s
current limiting value [%] adjustable	130 700 %
certificate of suitability	
CE marking	Yes
UL approval	Yes

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	
<u> </u>	CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2
buffering time in the event of power failure	400
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 acc. to IEC 60947-4-2	AC 53a
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	15.02.2018 00:00:00
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; Electronic motor overload protection
 evaluation of thermistor motor protection 	No
• 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	Yes; 4 20 mA (default) / 0 10 V (parameterizable with High Feature HMI)
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	200 600 V
at inside-delta circuit rated value	200 600 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	10 %
inside-delta circuit	
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
 at 500 V at 40 °C rated value 	250 kW
at 500 V at inside-delta circuit at 40 °C rated value	450 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	
 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 for inside delta circuit at rotary coding switch or swit	398 A
for inside-delta circuit at rotary coding switch on switch position 7 for inside delta circuit at rotary coding switch or swit	423 A
for inside-delta circuit at rotary coding switch on switch position 8 for inside delta circuit at rotary coding switch on	447 A
for inside-delta circuit at rotary coding switch on switch position 9 for inside delta circuit at rotary coding switch on switch on the circuit at rotary coding switch coding switch coding switch coding switch coding switch coding switch codi	471 A
for inside-delta circuit at rotary coding switch on switch position 10 for inside delta circuit at rotary coding switch on	495 A
for inside-delta circuit at rotary coding switch on switch position 11 for inside-delta circuit at rotary coding switch on	520 A 544 A
 for inside-delta circuit at rotary coding switch on switch position 12 for inside-delta circuit at rotary coding switch on 	568 A
ior inside-delta circuit at rotary coding switch on switch position 13 for inside-delta circuit at rotary coding switch on	592 A
switch position 14 for inside-delta circuit at rotary coding switch on	617 A
switch position 15	

• for inside-delta circuit at rotary coding switch on	641 A
switch position 16	
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 	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	-20 %
voltage at AC at 50 Hz	
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	7.6 A
inrush current peak at application of control supply voltage	3.3 A
maximum	
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	0
number of digital outputs	3
not parameterizable	2
digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)
number of analog outputs	1
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	
	with vortical mounting ourfees 1/00° retatable with vertical mounting
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
width	210 mm
depth	203 mm
required spacing with side-by-side mounting	203 111111
• forwards	10 mm
backwards	0 mm
upwards	100 mm
downwards	75 mm
at the side	5 mm
weight without packaging	9.9 kg
Connections/ Terminals	9.9 kg
type of electrical connection • for main current circuit	busbar connection
for control circuit	
width of connection bar maximum	screw-type terminals 45 mm
	45 111111
type of connectable conductor cross-sections	2v (50 240 mm²)
for DIN cable lug for main contacts stranded for DIN cable lug for main contacts finely stranded	2x (50 240 mm²)
for DIN cable lug for main contacts finely stranded	2x (70 240 mm²)
type of connectable conductor cross-sections • for control circuit solid	1v (0 F 4 0 mm²) 2v (0 F 2 F mm²)
	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)
at AWG cables for control circuit solid	1x (20 12), 2x (20 14)
wire length	(202), 2 (20)
between soft starter and motor maximum	800 m
at the digital inputs at AC maximum	100 m
at the digital inputs at DC maximum	1 000 m
tightening torque	1 000 111
for main contacts with screw-type terminals	14 24 N·m
for auxiliary and control contacts with screw-type	0.8 1.2 N·m
terminals	0.0 1.2 14 111
tightening torque [lbf·in]	
 for main contacts with screw-type terminals 	124 210 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 catalog
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 acc. to IEC 60721 	3K6 (no ice formation, only occasional condensation), 3C3 (no salt
a during storage case to IEO 00704	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	Yes
EtherNet/IP	Yes
Modbus RTU	Yes
Modbus TCP	Yes
PROFIBUS	Yes
	160
UL/CSA ratings	
manufacturer's article number	
 of the fuse usable for Standard Faults up to 575/600 V 	Type: Class J / L, max. 1200 A; Iq = 18 kA

according to LII	
according to UL	
 — 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 575/600 V at 50 °C rated value 	300 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
 at 575/600 V at inside-delta circuit at 50 °C rated value 	600 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=3RW5246-6AC05

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5246-6AC05

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5246-6AC05

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5246-6AC05&lang=en

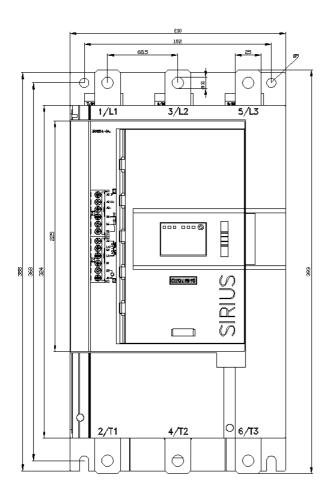
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RW5246-6AC05/char

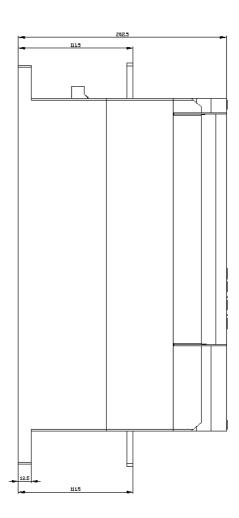
Characteristic: Installation altitude

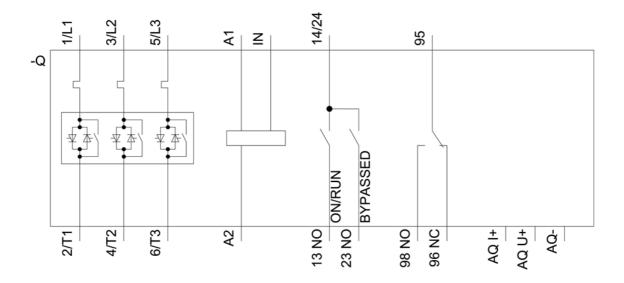
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5246-6AC05&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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