SIEMENS

Data sheet 3RW5246-2AC05



SIRIUS soft starter 200-600 V 370 A, 24 V AC/DC spring-type 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

General 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	Yes
product component is supported	
 HMI-Standard 	Yes
HMI-High Feature	Yes
product feature integrated bypass contact system	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 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
 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	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 for inside delta circuit at rotary coding switch on switch position.	423 A
for inside-delta circuit at rotary coding switch on switch position 8 for inside delta circuit at rotary coding switch on switch and	447 A
 for inside-delta circuit at rotary coding switch on switch position 9 for inside-delta circuit at rotary coding switch on 	471 A 495 A
for inside-delta circuit at rotary coding switch on switch position 10 for inside-delta circuit at rotary coding switch on	520 A
switch position 11 • for inside-delta circuit at rotary coding switch on	544 A
switch position 12 • for inside-delta circuit at rotary coding switch on	568 A
switch position 13 • for inside-delta circuit at rotary coding switch on	592 A
switch position 14for 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	400.14
• 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 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	7.6 A
inrush current peak at application of control supply voltage	3.3 A
maximum	40.4
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	
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	
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	
type of electrical connection	
for main current circuit	busbar connection
for control circuit	spring-loaded terminals
width of connection bar maximum	45 mm
type of connectable conductor cross-sections	
for DIN cable lug for main contacts 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	2x (0.25 1.5 mm²)
for control circuit finely stranded with core end	2x (0.25 1.5 mm²)
processing	(••)
 at AWG cables for control circuit solid 	2x (24 16)
 at AWG cables for control circuit finely stranded with 	2x (24 16)
core end processing	
wire length	
 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	
 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	
tightening torque [lbf·in]	404 040 11 5
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	
	5 000 m; Derating as of 1000 m, see catalog
installation altitude at height above sea level maximum ambient temperature	5 000 III, Defating as of 1000 III, see catalog
	-25 +60 °C; Please observe derating at temperatures of 40 °C or
during operation	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 operation does to 120 out 21	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
JL/CSA ratings	

of the fuse usable according

— usable for Standard Faults up to 575/600 V according to UL $\,$

— usable for High Faults up to 575/600 V according to UL

— usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL

— usable for High Faults at inside-delta circuit up to 575/600 V according to UL

Type: Class J / L, max. 1200 A; Iq = 18 kA

Type: Class J / L, max. 1200 A; Iq = 100 kA

Type: Class J / L, max. 1200 A; Iq = 18 kA

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
 at 220/230 V at 50 °C rated value

• at 460/480 V at 50 °C rated value

at 575/600 V at 50 °C rated value

 at 200/208 V at inside-delta circuit at 50 °C rated value

• at 220/230 V at inside-delta circuit at 50 °C rated value

 \bullet at 460/480 V at inside-delta circuit at 50 $^{\circ}\text{C}$ rated value

• at 575/600 V at inside-delta circuit at 50 °C rated value

contact rating of auxiliary contacts according to UL

100 hp

125 hp

250 hp

300 hp

200 hp

200 116

200 hp

450 hp

600 hp

R300-B300

Safety related data

protection class IP on the front acc. to IEC 60529

touch protection on the front acc. to IEC 60529

electromagnetic compatibility

IP00; IP20 with cover

finger-safe, for vertical contact from the front with cover

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=3RW5246-2AC05

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5246-2AC05

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5246-2AC05

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

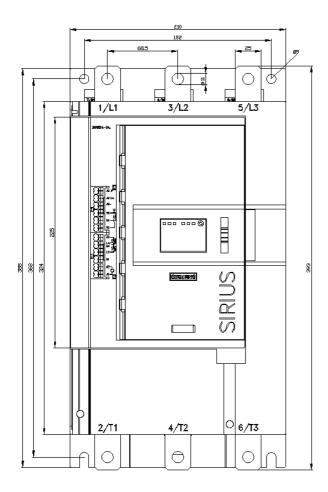
Characteristic: Tripping characteristics, I²t, Let-through current https://support.industry.siemens.com/cs/ww/en/ps/3RW5246-2AC05/char

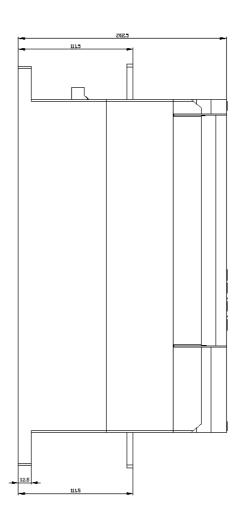
Characteristic: Installation altitude

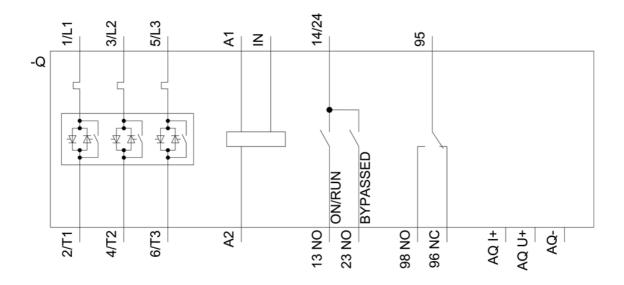
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5246-2AC05&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







last modified: 12/15/2020 🖸