SIEMENS

product brand name

Data sheet 3RW5245-2TC04

SIRIUS



SIRIUS soft starter 200-480 V 315 A, 24 V AC/DC spring-type 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 	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

product feature integrated bypass contact system

Yes

Yes

with a set controlled where	2
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	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
utilization category acc. to IEC 60947-4-2	AC 53a
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
reference code acc. to IEC 81346-2	Q
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
 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 	315 A
 at 50 °C rated value 	279 A
at 60 °C rated value	255 A
operational current at inside-delta circuit	
 at 40 °C rated value 	546 A
 at 50 °C rated value 	483 A
at 60 °C rated value	442 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 inside-delta circuit	-15 %
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	90 kW
• at 230 V at inside-delta circuit at 40 °C rated value	160 kW
• at 400 V at 40 °C rated value	160 kW
• at 400 V at inside-delta circuit 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 	135 A
 at rotary coding switch on switch position 2 	147 A
 at rotary coding switch on switch position 3 	159 A
 at rotary coding switch on switch position 4 	171 A
 at rotary coding switch on switch position 5 	183 A
 at rotary coding switch on switch position 6 	195 A
 at rotary coding switch on switch position 7 	207 A
 at rotary coding switch on switch position 8 	219 A
 at rotary coding switch on switch position 9 	231 A
 at rotary coding switch on switch position 10 	243 A
 at rotary coding switch on switch position 11 	255 A
 at rotary coding switch on switch position 12 	267 A
 at rotary coding switch on switch position 13 	279 A
 at rotary coding switch on switch position 14 	291 A
 at rotary coding switch on switch position 15 	303 A
 at rotary coding switch on switch position 16 	315 A
minimum	135 A
adjustable motor current	
 for inside-delta circuit at rotary coding switch on switch position 1 	234 A
 for inside-delta circuit at rotary coding switch on switch position 2 	255 A
 for inside-delta circuit at rotary coding switch on switch position 3 	275 A
 for inside-delta circuit at rotary coding switch on switch position 4 	296 A
 for inside-delta circuit at rotary coding switch on switch position 5 	317 A
 for inside-delta circuit at rotary coding switch on switch position 6 	338 A
 for inside-delta circuit at rotary coding switch on switch position 7 	359 A
for inside-delta circuit at rotary coding switch on switch position 8	379 A
for inside-delta circuit at rotary coding switch on switch position 9	400 A
for inside-delta circuit at rotary coding switch on switch position 10	421 A
for inside-delta circuit at rotary coding switch on switch position 11	442 A
 for inside-delta circuit at rotary coding switch on switch position 12 	462 A
for inside-delta circuit at rotary coding switch on switch position 13	483 A
for inside-delta circuit at rotary coding switch on switch position 14	504 A
for inside-delta circuit at rotary coding switch on switch position 15	525 A
 for inside-delta circuit at rotary coding switch on switch position 16 	546 A
at inside-delta circuit minimum	234 A

	45.0/ 10.1/ 11.1/ 11.1/
minimum load [%]	15 %; Relative to smallest settable le
power loss [W] for rated value of the current at AC	
• at 40 °C after startup	107 W
• at 50 °C after startup	96 W
at 60 °C after startup	89 W
power loss [W] at AC at current limitation 350 %	
 at 40 °C during startup 	5 350 W
 at 50 °C during startup 	4 471 W
at 60 °C during startup	3 934 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
control supply voltage at AC at 60 Hz rated value	24 V
relative negative tolerance of the control supply	-20 %
voltage at AC at 50 Hz	25 /5
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	
	with vertical mounting surface +/-90° rotatable, with vertical mounting
mounting position	surface +/- 22.5° tiltable to the front and back
fastening method	screw fixing
fastening method height	screw fixing 393 mm
fastening method	screw fixing

• 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
wire length for thermistor connection	
 with conductor cross-section = 0.5 mm² maximum 	50 m
 with conductor cross-section = 1.5 mm² maximum 	150 m
 with conductor cross-section = 2.5 mm² maximum 	250 m
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 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	7 10.3 lbf·in
terminals	7 10.0 INT III
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
ambient temperature 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	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 circuit breaker	

— usable for Standard Faults at 460/480 V according to UL $\,$

— usable for High Faults at 460/480 V according to UI

— usable for Standard Faults at 460/480 V at inside-delta circuit according to UL $\,$

— usable for High Faults at 460/480 V at inside-delta circuit according to UL $\,$

— usable for Standard Faults at 575/600 V according to UL

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

• of the fuse

— 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

Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq = 18 kA

Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq max = 65

Siemens type: 3VA54, max. 600 A; Iq = 18 kA

Siemens type: 3VA54, max. 600 A; Iq max = 65 kA

Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq = 18 kA

Siemens type: 3VA54, max. 600 A; Iq = 18 kA

Type: Class J / L, max. 1000 A; Iq = 18 kA

Type: Class J / L, max. 1000 A; Iq = 100 kA

Type: Class J / L, max. 1000 A; Iq = 18 kA

Type: Class J / L, max. 1000 A; Iq = 100 kA

operating power [hp] for 3-phase motors

 \bullet at 200/208 V at 50 $^{\circ}\text{C}$ rated value

• at 220/230 V at 50 °C rated value

at 460/480 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

75 hp

100 hp

200 hp

150 hp

200 hp

400 hp

contact rating of auxiliary contacts according to UL

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

Miscellaneous



Type Test Certificates/Test Report







Marine / Shipping

other

Confirmation

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=3RW5245-2TC04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5245-2TC04

 ${\bf Service \& Support~(Manuals,~Certificates,~Characteristics,~FAQs,...)}$

https://support.industry.siemens.com/cs/ww/en/ps/3RW5245-2TC04

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...) http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5245-2TC04&lang=en

Characteristic: Tripping characteristics, I2t, Let-through current

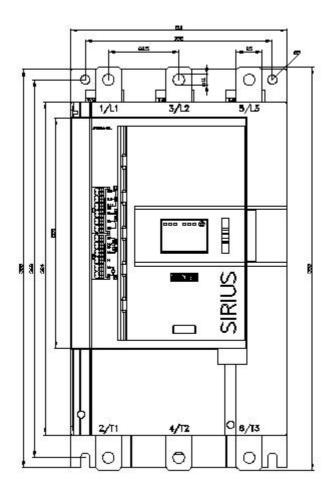
https://support.industry.siemens.com/cs/ww/en/ps/3RW5245-2TC04/char

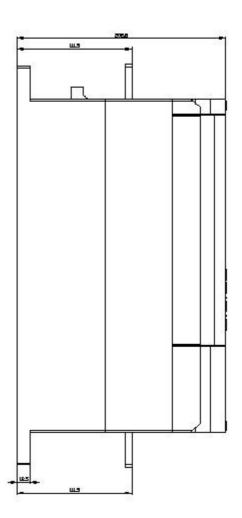
Characteristic: Installation altitude

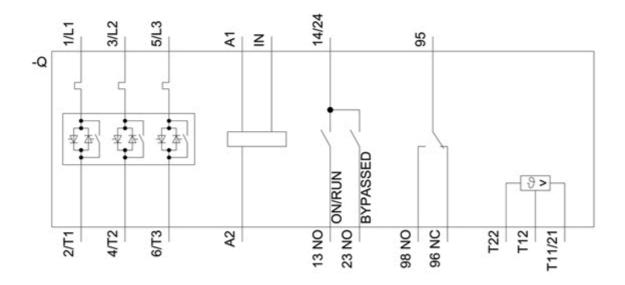
 $\underline{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RW5245-2TC04\&objecttype=14\&gridview=view1}$

Simulation Tool for Soft Starters (STS)

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







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