SIEMENS

product brand name

Data sheet 3RW5244-2AC04

SIRIUS



SIRIUS soft starter 200-480 V 250 A, 24 V AC/DC spring-type terminals Analog output



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	3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
• of circuit breaker usable at 500 V at inside-delta circuit	3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of the gG fuse usable up to 690 V 	2x3NA3354-6; Type of coordination 1, lq = 65 kA
• of the gG fuse usable at inside-delta circuit up to 500 V	2x3NA3354-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1331-0; 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 %; non-adjustable
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	
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	3
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	6 kV
blocking voltage of the thyristor maximum	1 600 V
service factor	1
	6 kV
surge voltage resistance rated value maximum permissible voltage for protective separation	O KV
	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 according to IEC 60947-4-2	Q Q
reference code according to IEC 81346-2	
Substance Prohibitance (Date) SVHC substance name	02/15/2018
SVAC 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 Dibutylbis(pentane-2,4-dionato-O,O')tin - 22673-19-4
Weight	11.57 kg
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	250 A
at 50 °C rated value	220 A
at 60 °C rated value	200 A
operational current at inside-delta circuit	
at 40 °C rated value	433 A
at 50 °C rated value	381 A
at 60 °C rated value	346 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 inside-delta circuit	10 %
operating power for 3-phase motors	

at 220 V at 40 °C rated value	75 144
• at 230 V at 40 °C rated value	75 kW
at 230 V at inside-delta circuit at 40 °C rated value at 400 V at 40 °C rated value.	132 kW
• at 400 V at 40 °C rated value	132 kW
at 400 V at inside-delta circuit 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	100 A
at rotary coding switch on switch position 1	100 A
at rotary coding switch on switch position 2	110 A
at rotary coding switch on switch position 3	120 A
at rotary coding switch on switch position 4	130 A
at rotary coding switch on switch position 5	140 A
at rotary coding switch on switch position 6	150 A
at rotary coding switch on switch position 7	160 A
at rotary coding switch on switch position 8	170 A
at rotary coding switch on switch position 9 at rotary coding switch on switch position 10.	180 A
at rotary coding switch on switch position 10 at rotary coding switch on switch position 11	190 A 200 A
at rotary coding switch on switch position 12 at rotary coding switch on switch position 12	200 A 210 A
at rotary coding switch on switch position 12 at rotary coding switch on switch position 13	210 A 220 A
at rotary coding switch on switch position 13 at rotary coding switch on switch position 14	230 A
 at rotary coding switch on switch position 14 at rotary coding switch on switch position 15 	230 A 240 A
	250 A
 at rotary coding switch on switch position 16 minimum 	250 A 100 A
adjustable motor current	100 A
for inside-delta circuit at rotary coding switch on switch	173 A
position 1	
 for inside-delta circuit at rotary coding switch on switch position 2 	191 A
 for inside-delta circuit at rotary coding switch on switch position 3 	208 A
 for inside-delta circuit at rotary coding switch on switch position 4 	225 A
 for inside-delta circuit at rotary coding switch on switch position 5 	242 A
 for inside-delta circuit at rotary coding switch on switch position 6 	260 A
 for inside-delta circuit at rotary coding switch on switch position 7 	277 A
 for inside-delta circuit at rotary coding switch on switch position 8 	294 A
 for inside-delta circuit at rotary coding switch on switch position 9 	312 A
 for inside-delta circuit at rotary coding switch on switch position 10 	329 A
 for inside-delta circuit at rotary coding switch on switch position 11 	346 A
 for inside-delta circuit at rotary coding switch on switch position 12 	364 A
 for inside-delta circuit at rotary coding switch on switch position 13 	381 A
 for inside-delta circuit at rotary coding switch on switch position 14 	398 A
 for inside-delta circuit at rotary coding switch on switch position 15 	416 A
 for inside-delta circuit at rotary coding switch on switch position 16 	433 A
at inside-delta circuit minimum	173 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 	87 W
at 50 °C after startup	78 W
at 60 °C after startup	72 W
power loss [W] at AC at current limitation 350 %	

• at 40 °C during startup	3 818 W
• at 50 °C during startup	3 188 W
• at 60 °C during startup	2 799 W
Control circuit/ Control	2.000
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
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	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
- Ioi control circuit	opining toution 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 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	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 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 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 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	
Global Warming Potential [CO2 eq] total	786 kg
Global Warming Potential [CO2 eq] during manufacturing	84.2 kg
global warming potential [CO2 eq] during sales	2.81 kg
Global Warming Potential [CO2 eq] during operation	721 kg
Global Warming Potential [CO2 eq] after end of life	-21.8 kg
Siemens Eco Profile (SEP)	Siemens EcoTech
Electromagnetic compatibility	
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	Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq = 18 kA
— 60/480 V according to UL	Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq max = 65 kA
— at 460/480 V at inside-delta circuit according to UL	Siemens type: 3VA54, max. 400 A 01 3VA54, max. 600 A, 1q max – 65 kA Siemens type: 3VA54, max. 600 A; Iq = 18 kA
· · · · · · · · · · · · · · · · · · ·	Siemens type: 3VA54, max. 600 A, Iq = 16 kA Siemens type: 3VA54, max. 600 A; Iq max = 65 kA
— 60/480 V at inside-delta circuit according to UL	
— at 575/600 V according to UL	Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq = 18 kA
— at 575/600 V at inside-delta circuit according to UL	Siemens type: 3VA54, max. 600 A; Iq = 18 kA
• of the fuse	
usable for Standard Faults up to 575/600 V according to UI.	Type: Class J / L, max. 800 A; Iq = 18 kA
usable for Standard Faults up to 575/600 V according to UL usable for High Faults up to 575/600 V according to	Type: Class J / L, max. 800 A; Iq = 18 kA Type: Class J / L, max. 800 A; Iq = 100 kA

UL	
 usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class J / L, max. 800 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. 800 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
• at 200/208 V at 50 °C rated value	60 hp
• at 220/230 V at 50 °C rated value	75 hp
• at 460/480 V at 50 °C rated value	150 hp
• at 200/208 V at inside-delta circuit at 50 °C rated value	125 hp
• at 220/230 V at inside-delta circuit at 50 °C rated value	150 hp
• at 460/480 V at inside-delta circuit at 50 °C rated value	300 hp
contact rating of auxiliary contacts according to UL	R300-B300
Electrical Safety	
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

Approvals Certificates

General Product Approval







Confirmation





EMV Test Certificates Marine / Shipping



<u>KC</u>

Type Test Certificates/Test Report







Marine / Shipping other Environment



Confirmation





Environmental Confirmations

Further information

Information on the packaging

https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RW5244-2AC04

Cax online generator

 $\underline{\text{http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en\&mlfb=3RW5244-2AC04}$

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5244-2AC04

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5244-2AC04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

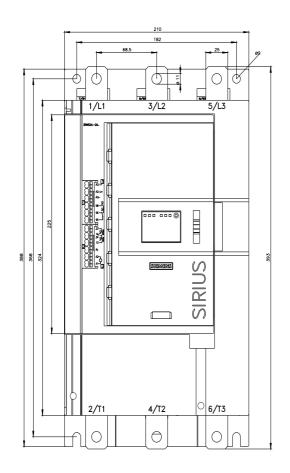
https://support.industry.siemens.com/cs/ww/en/ps/3RW5244-2AC04/char

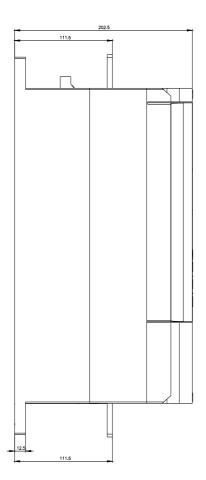
Characteristic: Installation altitude

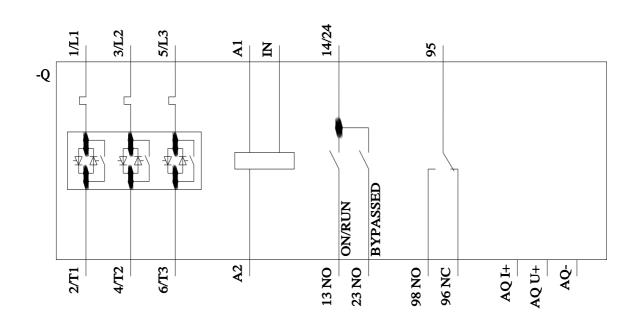
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5244-2AC04&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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