



SIRIUS soft starter 200-600 V 250 A, 24 V AC/DC Screw terminals
Thermistor input

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 • of high feature HMI module usable • of communication module PROFINET standard usable • of communication module PROFIBUS usable • of communication module Modbus TCP usable • of communication module Modbus RTU usable • of communication module Ethernet/IP • of circuit breaker usable at 400 V • of circuit breaker usable at 500 V • of circuit breaker usable at 400 V at inside-delta circuit • of circuit breaker usable at 500 V at inside-delta circuit • of the gG fuse usable up to 690 V • of the gG fuse usable at inside-delta circuit up to 500 V • of full range R fuse link for semiconductor protection usable up to 690 V • of back-up R fuse link for semiconductor protection usable up to 690 V	3RW5980-0HS00 3RW5980-0HF00 3RW5980-0CS00 3RW5980-0CP00 3RW5980-0CT00 3RW5980-0CR00 3RW5980-0CE00 3VA2440-7MN32-0AA0; Type of coordination 1, I _q = 65 kA, CLASS 10 3VA2440-7MN32-0AA0; Type of coordination 1, I _q = 65 kA, CLASS 10 3VA2450-7MN32-0AA0; Type of coordination 1, I _q = 65 kA, CLASS 10 3VA2450-7MN32-0AA0; Type of coordination 1, I _q = 65 kA, CLASS 10 2x3NA3354-6; Type of coordination 1, I _q = 65 kA 2x3NA3354-6; Type of coordination 1, I _q = 65 kA 3NE1331-0; Type of coordination 2, I _q = 65 kA 3NE3336; Type of coordination 2, I _q = 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 • UL approval • CSA approval	Yes Yes Yes
product component is supported	
• HMI-Standard • HMI-High Feature	Yes Yes
product feature integrated bypass contact system	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	
• 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 Klaxon / 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
• PROFenergy	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	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 ... 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 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	75 kW
• at 230 V at inside-delta circuit 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
• at 500 V at 40 °C rated value	160 kW
• at 500 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	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	180 A
• at rotary coding switch on switch position 10	190 A
• at rotary coding switch on switch position 11	200 A
• at rotary coding switch on switch position 12	210 A
• at rotary coding switch on switch position 13	220 A
• at rotary coding switch on switch position 14	230 A
• at rotary coding switch on switch position 15	240 A
• at rotary coding switch on switch position 16	250 A
• minimum	100 A
adjustable motor current	
• for inside-delta circuit at rotary coding switch on switch position 1	173 A
• 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	433 A

switch position 16	
• at inside-delta circuit minimum	173 A
minimum load [%]	15 %; Relative to smallest settable I _e
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	
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 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 (I _{cu} =1 kA), 6 A quick-acting fuse (I _{cu} =1 kA), C1 miniature circuit breaker (I _{cu} = 600 A), C6 miniature circuit breaker (I _{cu} = 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 Klaxon / 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
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	screw-type terminals
width of connection bar maximum	45 mm
wire length for thermistor connection	
• with conductor cross-section = 0.5 mm ² maximum	50 m
• with conductor cross-section = 1.5 mm ² maximum	150 m
• with conductor cross-section = 2.5 mm ² maximum	250 m
type of connectable conductor cross-sections	
• for DIN cable lug for main contacts stranded	2x (50 ... 240 mm ²)
• for DIN cable lug for main contacts finely stranded	2x (70 ... 240 mm ²)
type of connectable conductor cross-sections	
• for control circuit solid	1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²)
• for control circuit finely stranded with core end processing	1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²)
• at AWG cables for control circuit solid	1x (20 ... 12), 2x (20 ... 14)
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
• 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 UL — 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		Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq = 18 kA
• 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 max = 65 kA 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
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 • at 460/480 V at inside-delta circuit at 50 °C rated value • at 575/600 V at inside-delta circuit at 50 °C rated value		Type: Class J / L, max. 800 A; Iq = 18 kA Type: Class J / L, max. 800 A; Iq = 100 kA Type: Class J / L, max. 800 A; Iq = 18 kA Type: Class J / L, max. 800 A; Iq = 100 kA
contact rating of auxiliary contacts according to UL		60 hp 75 hp 150 hp 200 hp 125 hp 150 hp 300 hp 350 hp
Safety related data		R300-B300
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		
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=3RW5244-6TC05>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5244-6TC05>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5244-6TC05>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5244-6TC05&lang=en

Characteristic: Tripping characteristics, I^2t , Let-through current

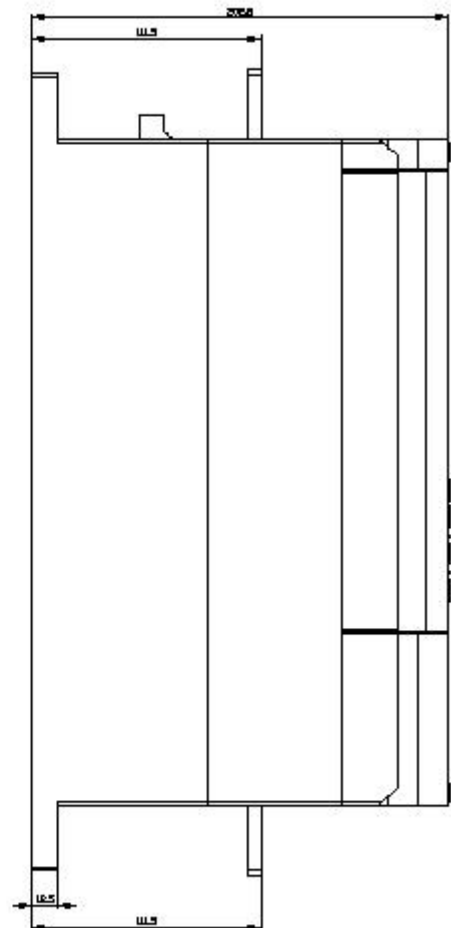
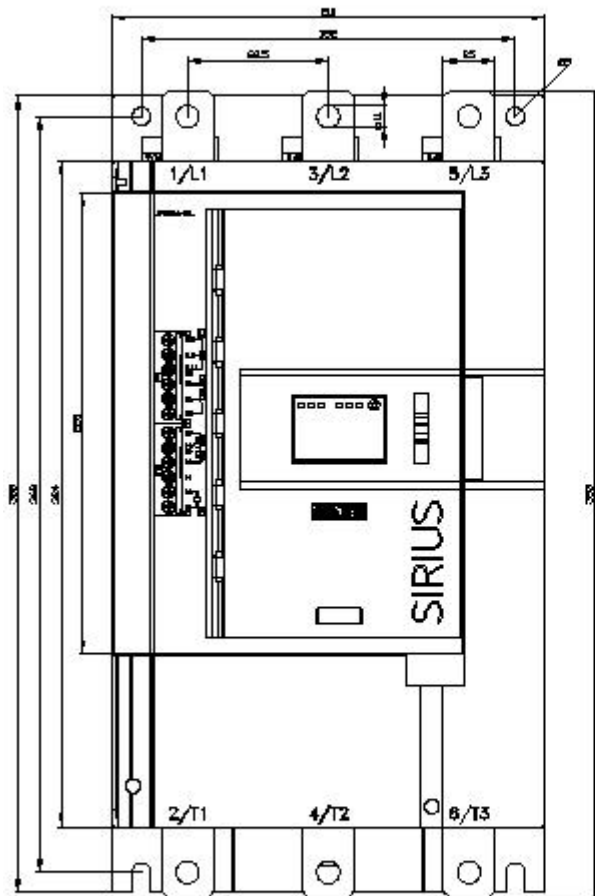
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5244-6TC05/char>

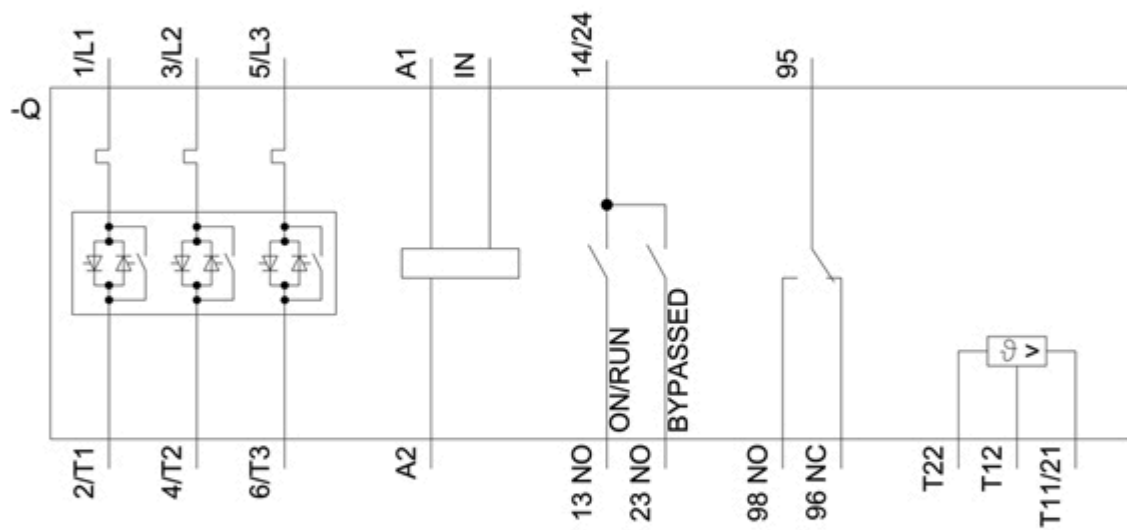
Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5244-6TC05&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





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