SIEMENS

Data sheet 3RW5235-6AC04



SIRIUS soft starter 200-480 V 143 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 	3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of circuit breaker usable at 400 V at inside-delta circuit 	3VA2325-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10
 of the gG fuse usable up to 690 V 	3NA3244-6; Type of coordination 1, Iq = 65 kA
 of the gG fuse usable at inside-delta circuit up to 500 V 	3NA3244-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1227-0; Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NE3334-0B; 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	
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
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	1 400 V	
service factor	1	
surge voltage resistance rated value	6 kV	
maximum permissible voltage for safe isolation	ONV	
between main and auxiliary circuit	600 V	
shock resistance		
vibration resistance	15 g / 11 ms, from 12 g / 11 ms with potential contact lifting 15 mm to 6 Hz; 2g to 500 Hz	
	AC 53a	
utilization category acc. to IEC 60947-4-2 reference code acc. to IEC 81346-2		
	Q 15.02.2018	
Substance Prohibitance (Date)	15.02.2018	
product function	V	
• 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 	143 A	
 at 50 °C rated value 	128 A	
at 60 °C rated value	118 A	
operational current at inside-delta circuit		
• at 40 °C rated value	248 A	
• at 50 °C rated value	222 A	
• at 60 °C rated value	204 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 230 V at 40 °C rated value	37 kW	
at 230 V at 40 C rated value at 230 V at inside-delta circuit at 40 °C rated value	75 kW	
• at 400 V at 40 °C rated value	75 kW	
	1 J KVV	

• at 400 V at inside-delta circuit at 40 °C rated value	132 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 	68 A
 at rotary coding switch on switch position 2 	73 A
 at rotary coding switch on switch position 3 	78 A
 at rotary coding switch on switch position 4 	83 A
 at rotary coding switch on switch position 5 	88 A
 at rotary coding switch on switch position 6 	93 A
 at rotary coding switch on switch position 7 	98 A
 at rotary coding switch on switch position 8 	103 A
 at rotary coding switch on switch position 9 	108 A
 at rotary coding switch on switch position 10 	113 A
 at rotary coding switch on switch position 11 	118 A
 at rotary coding switch on switch position 12 	123 A
 at rotary coding switch on switch position 13 	128 A
 at rotary coding switch on switch position 14 	133 A
 at rotary coding switch on switch position 15 	138 A
 at rotary coding switch on switch position 16 	143 A
minimum	68 A
adjustable motor current	
 for inside-delta circuit at rotary coding switch on switch position 1 	118 A
 for inside-delta circuit at rotary coding switch on switch position 2 	126 A
 for inside-delta circuit at rotary coding switch on switch position 3 	135 A
for inside-delta circuit at rotary coding switch on switch position 4	144 A
for inside-delta circuit at rotary coding switch on switch position 5	152 A
for inside-delta circuit at rotary coding switch on switch position 6	161 A
for inside-delta circuit at rotary coding switch on switch position 7 for inside delta circuit at rotary coding switch on	170 A 178 A
 for inside-delta circuit at rotary coding switch on switch position 8 for inside-delta circuit at rotary coding switch on 	187 A
switch position 9 • for inside-delta circuit at rotary coding switch on	196 A
switch position 10 • for inside-delta circuit at rotary coding switch on	204 A
switch position 11for inside-delta circuit at rotary coding switch on	213 A
switch position 12 for inside-delta circuit at rotary coding switch on switch position 12	222 A
switch position 13 • for inside-delta circuit at rotary coding switch on switch position 14	230 A
for inside-delta circuit at rotary coding switch on switch position 15	239 A
for inside-delta circuit at rotary coding switch on switch position 16	248 A
at inside-delta circuit minimum	118 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	55 W
at 50 °C after startup	50 W
at 60 °C after startup	47 W
power loss [W] at AC at current limitation 350 %	
 at 40 °C during startup 	2 127 W

at 50 °C during startup	1 807 W
• at 60 °C during startup	1 605 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	380 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 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	0.4
 at AC-15 at 250 V rated value at DC-13 at 24 V rated value 	3 A 1 A
Installation/ mounting/ dimensions	10
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	306 mm
width	185 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	6.6 kg
Connections/ Terminals	
type of electrical connection	

for main current circuit	busbar connection
• for control circuit	screw-type terminals
width of connection bar maximum	25 mm
type of connectable conductor cross-sections	
 for DIN cable lug for main contacts stranded 	2x (16 95 mm²)
 for DIN cable lug for main contacts finely stranded 	2x (25 120 mm²)
type of connectable conductor cross-sections	
 for control circuit solid 	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	
 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 	10 14 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	89 124 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 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 	Siemens type: 3VA52, max. 250 A; Iq = 10 kA
 usable for High Faults at 460/480 V according to UL 	Siemens type: 3VA52, max. 250 A; Iq max = 65 kA
 usable for Standard Faults at 460/480 V at inside-delta circuit according to UL 	Siemens type: 3VA52, max. 250 A; Iq = 10 kA
 usable for High Faults at 460/480 V at insidedelta circuit according to UL 	Siemens type: 3VA52, max. 250 A; Iq max = 65 kA
 usable for Standard Faults at 575/600 V according to UL 	Siemens type: 3VA52, max. 250 A; Iq = 10 kA
 usable for Standard Faults at 575/600 V at inside-delta circuit according to UL 	Siemens type: 3VA52, max. 250 A; Iq = 10 kA
• of the fuse	
 usable for Standard Faults up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 350 A; Iq = 10 kA
 usable for High Faults up to 575/600 V according to UL 	Type: Class J / L, max. 350 A; Iq = 100 kA
-	

 usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 350 A; Iq = 10 kA
 usable for High Faults at inside-delta circuit up to 575/600 V according to UL 	Type: Class J / L, max. 350 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
 at 200/208 V at 50 °C rated value 	40 hp
 at 220/230 V at 50 °C rated value 	40 hp
 at 460/480 V at 50 °C rated value 	100 hp
 at 200/208 V at inside-delta circuit at 50 °C rated value 	75 hp
 at 220/230 V at inside-delta circuit at 50 °C rated value 	75 hp
 at 460/480 V at inside-delta circuit at 50 °C rated value 	150 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
0-455-4-1	

Certificates/ approvals

General Product Approval

EMC

Declaration of Conformity













Declaration	of
Conformity	

Test Certificates

Marine / Shipping

UK Declaration of Conformity Type Test Certificates/Test Report









Marine / Shipping

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=3RW5235-6AC04

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5235-6AC04

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5235-6AC04

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

 $\underline{\text{http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5235-6AC04\&lang=en}}$

Characteristic: Tripping characteristics, I²t, Let-through current

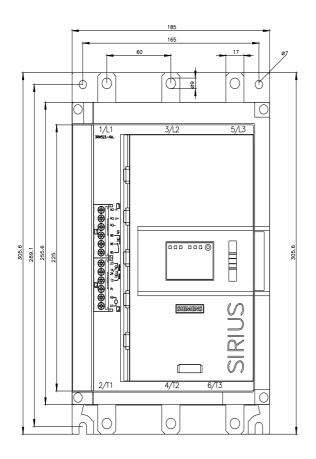
https://support.industry.siemens.com/cs/ww/en/ps/3RW5235-6AC04/char

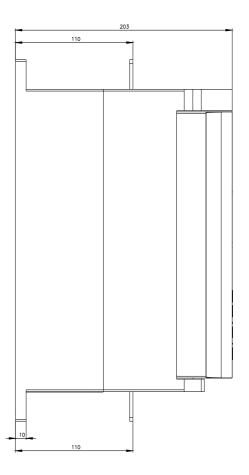
Characteristic: Installation altitude

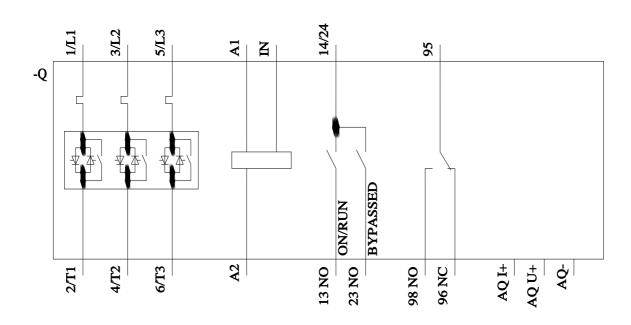
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5235-6AC04&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







last modified: 9/21/2021 🖸