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 	<u>3RW5980-0HS00</u>
 of high feature HMI module usable 	<u>3RW5980-0HF00</u>
 of communication module PROFINET standard usable 	<u>3RW5980-0CS00</u>
 of communication module PROFIBUS usable 	<u>3RW5980-0CP00</u>
 of communication module Modbus TCP usable 	<u>3RW5980-0CT00</u>
 of communication module Modbus RTU usable 	<u>3RW5980-0CR00</u>
 of communication module Ethernet/IP 	<u>3RW5980-0CE00</u>
 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 	<u>3NA3244-6; Type of coordination 1, Iq = 65 kA</u>
 of full range R fuse link for semiconductor protection usable up to 690 V 	<u>3NE1227-0: Type of coordination 2. Iq = 65 kA</u>
 of back-up R fuse link for semiconductor protection usable up to 690 V 	<u>3NE3334-0B; Type of coordination 2, Iq = 65 kA</u>
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	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
insulation voltage rated value	3, acc. to IEC 60947-4-2
degree of pollution 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	
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	143 A
• at 50 °C rated value	128 A
at 60 °C rated value	118 A
operational current at inside-delta circuit	040.4
• at 40 °C rated value	248 A
• at 50 °C rated value	222 A
at 60 °C rated value	204 A
operating voltage	200 480 \/
rated value a st inside data size/it rated value	200 480 V
at inside-delta circuit rated value	200 480 V
relative negative tolerance of the operating voltage	-15 % 10 %
relative positive tolerance of the operating voltage 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	07111/
• at 230 V at 40 °C rated value	37 kW
• at 230 V at inside-delta circuit at 40 °C rated value	75 kW
• at 400 V at 40 °C rated value	75 kW
 at 400 V at inside-delta circuit at 40 °C rated value 	132 kW

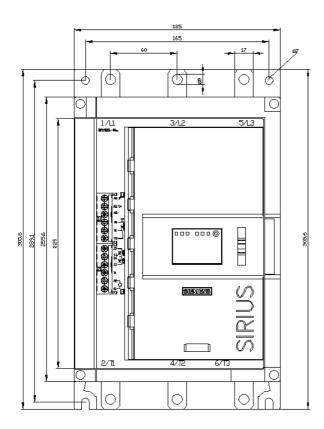
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switch position 10 • for inside-delta circuit at rotary coding switch on switch position 11 • for inside-delta circuit at rotary coding switch on switch position 12 • for inside-delta circuit at rotary coding switch on switch position 13 • for inside-delta circuit at rotary coding switch on switch position 14 • for inside-delta circuit at rotary coding switch on switch position 14 • for inside-delta circuit at rotary coding switch on switch position 14 • for inside-delta circuit at rotary coding switch on switch position 15 • for inside-delta circuit at rotary coding switch on switch position 16 • at inside-delta circuit at rotary coding switch on switch position 16 • at inside-delta circuit at rotary coding switch on switch position 16 • at inside-delta circuit minimum for inside-delta circuit at rotary coding switch on switch position 16 • at sole Cafter startup • at 40 °C after startup • at 60 °C after startup • at 60 °C after startup • at 40 °C during startup	switch position 9	
switch position 11213 A• for inside-delta circuit at rotary coding switch on switch position 12213 A• for inside-delta circuit at rotary coding switch on switch position 13222 A• for inside-delta circuit at rotary coding switch on switch position 14230 A• for inside-delta circuit at rotary coding switch on switch position 14239 A• for inside-delta circuit at rotary coding switch on switch position 15248 A• for inside-delta circuit at rotary coding switch on switch position 16118 A• at inside-delta circuit minimum118 A• at 40 °C after startup • at 60 °C after startup55 W• at 0 °C after startup • at 40 °C during startup20 W• at 0 °C during startup21 27 W	switch position 10	
• for inside-delta circuit at rotary coding switch on switch position 13222 A• for inside-delta circuit at rotary coding switch on switch position 14230 A• for inside-delta circuit at rotary coding switch on switch position 15239 A• for inside-delta circuit at rotary coding switch on switch position 15248 A• for inside-delta circuit at rotary coding switch on switch position 16248 A• for inside-delta circuit minimum118 Aminimum load [%]15 %; Relative to smallest settable lepower loss [W] for rated value of the current at AC • at 40 °C after startup55 W• at 60 °C after startup50 W• at 60 °C after startup2127 W	switch position 11	213 A
• for inside-delta circuit at rotary coding switch on switch position 14230 A• for inside-delta circuit at rotary coding switch on switch position 15239 A• for inside-delta circuit at rotary coding switch on switch position 16248 A• at inside-delta circuit minimum118 Aminimum load [%]15 %; Relative to smallest settable le• at 40 °C after startup55 W• at 40 °C after startup50 W• at 60 °C after startup20 W• at 40 °C after startup2127 W	 for inside-delta circuit at rotary coding switch on 	222 A
• for inside-delta circuit at rotary coding switch on switch position 15239 A• for inside-delta circuit at rotary coding switch on switch position 16248 A• at inside-delta circuit minimum118 Aminimum load [%]15 %; Relative to smallest settable le• at 40 °C after startup55 W• at 60 °C after startup50 W• at 40 °C after startup50 W• at 60 °C after startup2127 W	• for inside-delta circuit at rotary coding switch on	230 A
• for inside-delta circuit at rotary coding switch on switch position 16248 A• at inside-delta circuit minimum118 Aminimum load [%]15 %; Relative to smallest settable lepower loss [W] for rated value of the current at AC-• at 40 °C after startup55 W• at 50 °C after startup50 W• at 60 °C after startup47 Wpower loss [W] at AC at current limitation 350 %-• at 40 °C during startup2 127 W	 for inside-delta circuit at rotary coding switch on 	239 A
• at inside-delta circuit minimum118 Aminimum load [%]15 %; Relative to smallest settable lepower loss [W] for rated value of the current at AC55 W• at 40 °C after startup55 W• at 50 °C after startup50 W• at 60 °C after startup47 Wpower loss [W] at AC at current limitation 350 %2127 W	 for inside-delta circuit at rotary coding switch on 	248 A
minimum load [%]15 %; Relative to smallest settable lepower loss [W] for rated value of the current at AC-• at 40 °C after startup55 W• at 50 °C after startup50 W• at 60 °C after startup47 Wpower loss [W] at AC at current limitation 350 %-• at 40 °C during startup2 127 W		118 A
power loss [W] for rated value of the current at AC• at 40 °C after startup55 W• at 50 °C after startup50 W• at 60 °C after startup47 Wpower loss [W] at AC at current limitation 350 %2 127 W		
• at 40 °C after startup55 W• at 50 °C after startup50 W• at 60 °C after startup47 W• power loss [W] at AC at current limitation 350 %2 127 W		
• at 50 °C after startup 50 W • at 60 °C after startup 47 W • power loss [W] at AC at current limitation 350 % 2 127 W		55 W
• at 60 °C after startup 47 W power loss [W] at AC at current limitation 350 % 2 127 W	•	
power loss [W] at AC at current limitation 350 % • at 40 °C during startup 2 127 W		
• at 40 °C during startup 2 127 W		
		2 127 W
• at 50 °C during startup 1 807 W		1 807 W

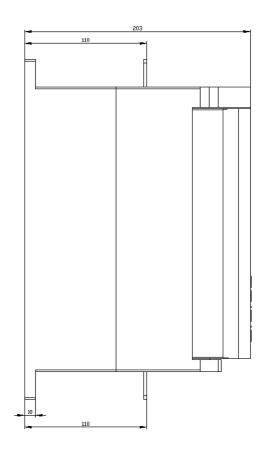
• at 60 °C during startup	1 605 W
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	
• at 50 Hz rated value	24 V
• at 60 Hz rated value	24 V
relative negative tolerance of the control supply voltage at AC at 50 Hz	-20 %
relative positive tolerance 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 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 1 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	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	

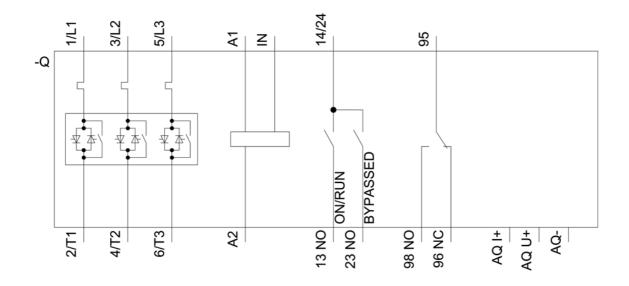
e for main ourrant circuit	bushar connection
for main current circuit	busbar connection
for control circuit	screw-type terminals
width of connection bar maximum type of connectable conductor cross-sections	25 mm
	$2x (16 - 95 \text{ mm}^2)$
 for DIN cable lug for main contacts stranded for DIN cable lug for main contacts finely stranded 	2x (16 95 mm²) 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 	1x (0.5 2.5 mm ²), 2x (0.5 1.5 mm ²)
processing	
 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	5 000 mi Deroting og of 1000 mi ogg antelag
installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see catalog
ambient temperature	25 I 60 °C: Diagon observe dereting at temperatures of 40 °C or
 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
during storage acc. to IEC 60721	mist), 3S2 (sand must not get into the devices), 3M6 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must
e during transport acc. to IEC 60721	not get inside the devices), 1M4 2K2, 2C1, 2S1, 2M2 (max, fall beight 0.3 m)
• during transport acc. to IEC 60721 EMC emitted interference	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m) acc. to IEC 60947-4-2: Class A
Communication/ Protocol	
communication module is supported	
PROFINET standard	Yes
EtherNet/IP	Yes
Modbus RTU	Yes
Modbus KTO 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; lq max = 65 kA
 — usable for Standard Faults at 460/480 V at inside-delta circuit according to UL 	Siemens type: 3VA52, max. 250 A; lq = 10 kA
 — usable for High Faults at 460/480 V at inside- delta circuit according to UL 	Siemens type: 3VA52, max. 250 A; lq max = 65 kA
 — usable for Standard Faults at 575/600 V according to UL 	Siemens type: 3VA52, max. 250 A; lq = 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; lq = 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; lq = 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	
Certificates/ approvals		
	Declaration	£
General Product Approval	EMC Conformity	
Test Certificates Marine / Shipping	RCM EG-Konf.	
Type Test Certific-	(P)	
ates/Test Report	Lloyds Register URS PRS	
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Simulation Tool for Soft Starters (STS) https://support.industry.siemens.com/cs/ww/en/view/101494917







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12/15/2020 🖸