

Data sheet

3RW5235-2AC05



SIRIUS soft starter 200-600 V 143 A, 24 V AC/DC spring-type terminals
Analog output

product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW52
manufacturer's article number	<ul style="list-style-type: none"> • 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 %; 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
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



<ul style="list-style-type: none"> • for control circuit 	100 ms
insulation voltage rated value	600 V
degree of pollution	3, acc. to IEC 6094
impulse voltage rated value	6 kV
blocking voltage of the thyristor maximum	1 800 V
service factor	1
surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation <ul style="list-style-type: none"> • 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 according to IEC 60947-4-2	AC 53a
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	02/15/2018
product function <ul style="list-style-type: none"> • ramp-up (soft starting) • ramp-down (soft stop) • Soft Torque • adjustable current limitation • pump ramp down • intrinsic device protection • motor overload protection • evaluation of thermistor motor protection • inside-delta circuit • auto-RESET • manual RESET • remote reset • communication function • operating measured value display • error logbook • via software parameterizable • via software configurable • PROFInergy • firmware update • removable terminal for control circuit • torque control • analog output 	<ul style="list-style-type: none"> Yes Yes Yes Yes Yes Yes Yes; Electronic motor overload protection No Yes Yes Yes Yes; By turning off the control supply voltage Yes Yes; Only in conjunction with special accessories Yes; Only in conjunction with special accessories No Yes Yes; in connection with the PROFINET Standard communication module Yes Yes No Yes; 4 ... 20 mA (default) / 0 ... 10 V (parameterizable with High Feature HMI)
Power Electronics	
operational current <ul style="list-style-type: none"> • at 40 °C rated value • at 50 °C rated value • at 60 °C rated value 	<ul style="list-style-type: none"> 143 A 128 A 118 A
operational current at inside-delta circuit <ul style="list-style-type: none"> • at 40 °C rated value • at 50 °C rated value • at 60 °C rated value 	<ul style="list-style-type: none"> 248 A 222 A 204 A
operating voltage <ul style="list-style-type: none"> • rated value • at inside-delta circuit rated value 	<ul style="list-style-type: none"> 200 ... 600 V 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 inside-delta circuit	10 %
operating power for 3-phase motors <ul style="list-style-type: none"> • at 230 V at 40 °C rated value • at 230 V at inside-delta circuit at 40 °C rated value • at 400 V at 40 °C rated value 	<ul style="list-style-type: none"> 37 kW 75 kW 75 kW



<ul style="list-style-type: none"> • at 400 V at inside-delta circuit at 40 °C rated value 	132 kW
<ul style="list-style-type: none"> • at 500 V at 40 °C rated value 	90 kW
<ul style="list-style-type: none"> • at 500 V at inside-delta circuit at 40 °C rated value 	160 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	
<ul style="list-style-type: none"> • at rotary coding switch on switch position 1 	68 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 2 	73 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 3 	78 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 4 	83 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 5 	88 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 6 	93 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 7 	98 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 8 	103 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 9 	108 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 10 	113 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 11 	118 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 12 	123 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 13 	128 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 14 	133 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 15 	138 A
<ul style="list-style-type: none"> • at rotary coding switch on switch position 16 	143 A
<ul style="list-style-type: none"> • minimum 	68 A
adjustable motor current	
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 1 	118 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 2 	126 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 3 	135 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 4 	144 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 5 	152 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 6 	161 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 7 	170 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 8 	178 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 9 	187 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 10 	196 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 11 	204 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 12 	213 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 13 	222 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 14 	230 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 15 	239 A
<ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 16 	248 A
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • at 40 °C after startup 	55 W
<ul style="list-style-type: none"> • at 50 °C after startup 	50 W
<ul style="list-style-type: none"> • at 60 °C after startup 	47 W



power loss [W] at AC at current limitation 350 %	
<ul style="list-style-type: none"> • at 40 °C during startup • at 50 °C during startup • at 60 °C during startup 	2 127 W 1 807 W 1 605 W
Control circuit/ Control	
type of voltage of the control supply voltage	AC/DC
control supply voltage at AC	
<ul style="list-style-type: none"> • at 50 Hz rated value • at 60 Hz rated value 	24 V 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	
<ul style="list-style-type: none"> • 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 (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 digital outputs	3
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • at AC-15 at 250 V rated value • at DC-13 at 24 V rated value 	3 A 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	
<ul style="list-style-type: none"> • forwards • backwards • upwards • downwards • at the side 	10 mm 0 mm 100 mm 75 mm 5 mm
weight without packaging	6.6 kg



Connections/ Terminals	
type of electrical connection <ul style="list-style-type: none"> for main current circuit for control circuit 	busbar connection spring-loaded terminals
width of connection bar maximum	25 mm
type of connectable conductor cross-sections <ul style="list-style-type: none"> for DIN cable lug for main contacts stranded for DIN cable lug for main contacts finely stranded 	2x (16 ... 95 mm ²) 2x (25 ... 120 mm ²)
type of connectable conductor cross-sections <ul style="list-style-type: none"> for control circuit solid for control circuit finely stranded with core end processing at AWG cables for control circuit solid at AWG cables for control circuit finely stranded with core end processing 	2x (0.25 ... 1.5 mm ²) 2x (0.25 ... 1.5 mm ²) 2x (24 ... 16) 2x (24 ... 16)
wire length <ul style="list-style-type: none"> between soft starter and motor maximum at the digital inputs at AC maximum at the digital inputs at DC maximum 	800 m 100 m 1 000 m
tightening torque <ul style="list-style-type: none"> for main contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals 	10 ... 14 N·m 0.8 ... 1.2 N·m
tightening torque [lbf·in] <ul style="list-style-type: none"> for main contacts with screw-type terminals for auxiliary and control contacts with screw-type terminals 	89 ... 124 lbf·in 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 <ul style="list-style-type: none"> during operation during storage and transport 	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above -40 ... +80 °C
environmental category <ul style="list-style-type: none"> during operation according to IEC 60721 during storage according to IEC 60721 during transport according to IEC 60721 	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4 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 <ul style="list-style-type: none"> PROFINET standard EtherNet/IP Modbus RTU Modbus TCP PROFIBUS 	Yes Yes Yes Yes Yes
UL/CSA ratings	
manufacturer's article number <ul style="list-style-type: none"> of circuit breaker <ul style="list-style-type: none"> 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 of the fuse 	Siemens type: 3VA52, max. 250 A; Iq = 10 kA Siemens type: 3VA52, max. 250 A; Iq max = 65 kA Siemens type: 3VA52, max. 250 A; Iq = 10 kA Siemens type: 3VA52, max. 250 A; Iq max = 65 kA Siemens type: 3VA52, max. 250 A; Iq = 10 kA Siemens type: 3VA52, max. 250 A; Iq = 10 kA



- 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

Type: Class RK5 / K5, max. 350 A; Iq = 10 kA
 Type: Class J / L, max. 350 A; Iq = 100 kA
 Type: Class RK5 / K5, max. 350 A; Iq = 10 kA
 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 575/600 V at 50 °C rated value 125 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
- at 575/600 V at inside-delta circuit at 50 °C rated value 200 hp

contact rating of auxiliary contacts according to UL R300-B300

Safety related data

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
electromagnetic compatibility in accordance with IEC 60947-4-2

Certificates/ approvals

General Product Approval

EMC



[Confirmation](#)



Declaration of Conformity

Test Certificates

Marine / Shipping



[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=3RW5235-2AC05>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5235-2AC05>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5235-2AC05>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5235-2AC05&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

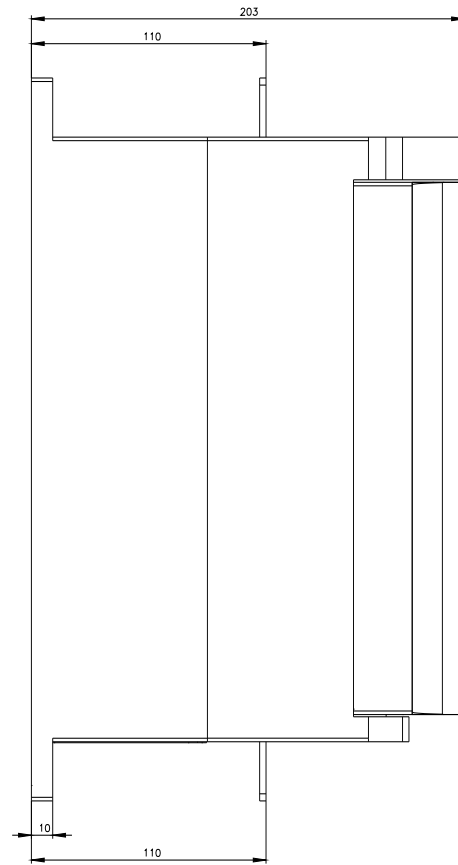
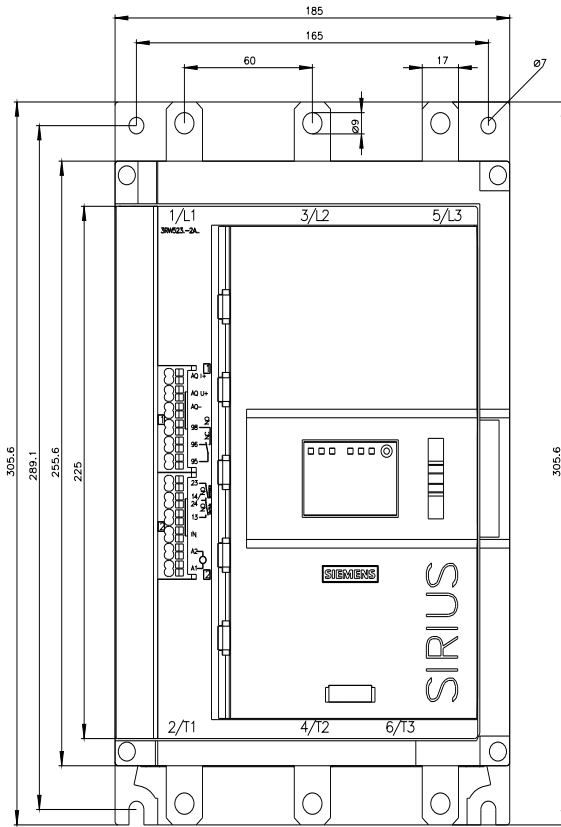
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5235-2AC05/char>

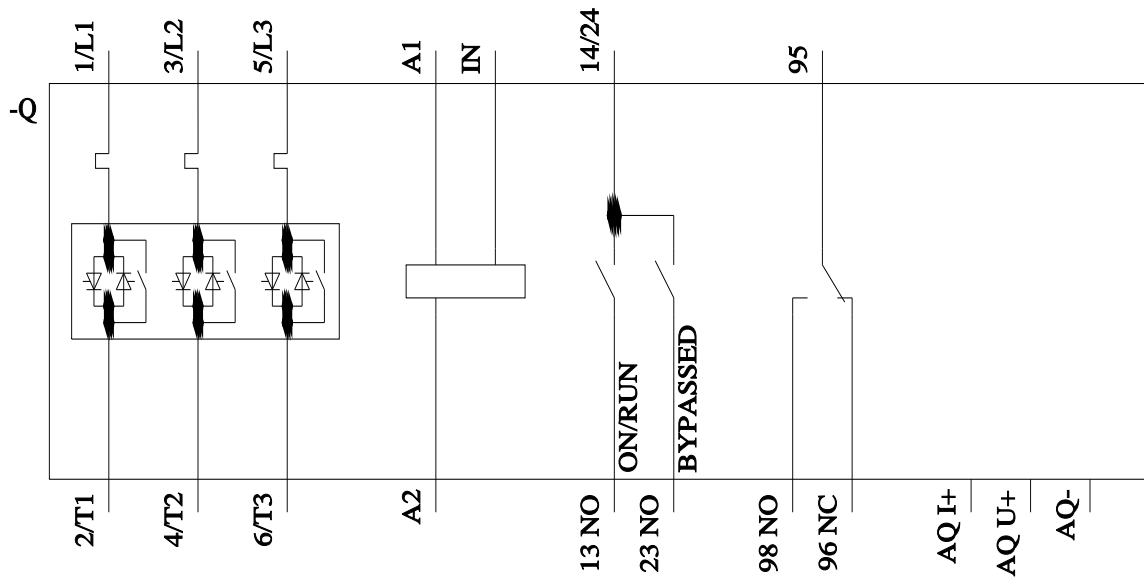
Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mfb=3RW5235-2AC05&objecttype=14&ci=vi=icw>

Simulation Tool for Soft Starters (STS)

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





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