SIEMENS

Data sheet 3RW5056-6AB05

SIRIUS soft starter 200-600 V 171 A, 24 V AC/DC Screw terminals Analog output



Figure similar

product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW50
manufacturer's article number	
 of standard HMI module usable 	3RW5980-0HS01
 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 assignment 1, Iq = 20 kA
 of circuit breaker usable at 500 V 	3VA2220-7MN32-0AA0: Type of assignment 1, Iq = 20 kA
 of the gG fuse usable up to 690 V 	3NA3244-6; Type of coordination 1, Iq = 65 kA
 of full range R fuse link for semiconductor protection usable up to 690 V 	3NE1 230-0: Type of coordination 2, Iq = 65 kA
 of back-up R fuse link for semiconductor protection usable up to 690 V 	3NE3 335; Type of coordination 2, Iq = 65 kA
 of line contactor usable up to 480 V 	<u>3RT1056</u>
 of line contactor usable up to 690 V 	<u>3RT1064</u>
General technical data	
starting voltage [%]	30 100 %
stopping voltage [%]	50 %; non-adjustable
start-up ramp time of soft starter	0 20 s
ramp-down 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	2
trip class	CLASS 10A / 10E (preset) / 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 mg	
• 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 1 800 V	
blocking voltage of the thyristor maximum		
service factor	1	
surge voltage resistance rated value	6 kV	
maximum permissible voltage for protective separation	0001/	
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)	09/23/2019	
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	
• 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	
 voltage ramp 	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 	171 A	
 at 50 °C rated value 	153 A	
at 60 °C rated value	141 A	
operating voltage		
• rated value	200 600 V	
relative negative tolerance of the operating voltage	-15 %	
relative positive tolerance of the operating voltage	10 %	
operating power for 3-phase motors		
• at 230 V at 40 °C rated value	45 kW	
• at 400 V at 40 °C rated value	90 kW	
at 500 V at 40 °C rated value	110 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 	81 A	
 at rotary coding switch on switch position 2 	87 A	
 at rotary coding switch on switch position 3 	93 A	
 at rotary coding switch on switch position 4 	99 A	
 at rotary coding switch on switch position 5 	105 A	
 at rotary coding switch on switch position 6 	111 A	
 at rotary coding switch on switch position 7 	117 A	

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holding current in bypass operation rated value inrush current by closing the bypass contacts maximum inrush current peak at application of control supply voltage maximum duration of inrush current peak at application of control supply voltage design of the overvoltage protection 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 number of digital outputs onto parameterizable digital output version number of analog outputs switching capacity current of the relay outputs other inputs/ Outputs at AC-15 at 250 V rated value at AC-13 at 24 V rated value at AC-13 at 24 V rated value at AC-13 at 24 V rated value at AC-15 at 250 V rated value at AC-15 at 24 V rated value at AC-15 at 250 V rated value at AC-15 at 24 V rated value at AC-15 at 250 V rated value at AC-15 at 24 V rated value at AC-15 at 250 V rated value at AC-15 at 24 V rated value at AC-15 at 24 V rated value		20 %
inrush current by closing the bypass contacts maximum 7.6 A inrush current peak at application of control supply voltage maximum duration of inrush current peak at application of control supply voltage design of the overvoltage protection 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 • not parameterizable 2 digital output version 1 cynomially-open contacts (NO) / 1 changeover contact (CO) number of analog outputs • at AC-15 at 250 V rated value • at DC-13 at 24 V rated value 1 A	control supply current in standby mode rated value	160 mA
inrush current peak at application of control supply voltage maximum duration of inrush current peak at application of control supply voltage design of the overvoltage protection 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 • not parameterizable 2 digital output version 1 unumber of analog outputs 1 switching capacity current of the relay outputs • at AC-15 at 250 V rated value • at DC-13 at 24 V rated value 1 1.3.3 A 3.3 A 3.3 A 3.3 A 12.1 ms 13.3 A 14.3 quick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu=300 A); Is not part of scope of supply Inputs/ Outputs 1 a guick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu=300 A); Is not part of scope of supply Inputs/ Outputs 1 a guick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu=300 A); Is not part of scope of supply 1 a guick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu=300 A); Is not part of scope of supply 1 a guick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu=300 A); Is not part of scope of supply 1 a guick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu=300 A); Is not part of scope of supply 1 a guick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu=300 A); Is not part of scope of supply 1 a guick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu=300 A); Is not part of scope of supply 1 a guick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu=300 A); Is not part of scope of supply 1 a guick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu=300 A); Is not part of scope of supply 1 a guick-acting fuse (I	holding current in bypass operation rated value	360 mA
maximum duration of inrush current peak at application of control supply voltage design of the overvoltage protection 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 • not parameterizable 2 digital output version 2 normally-open contacts (NO) / 1 changeover contact (CO) number of analog outputs • at AC-15 at 250 V rated value • at DC-13 at 24 V rated value 1 a Guranting Supply 12.1 ms 14. A G quick-acting fuse (Icu=1 kA), 6 A quick-	inrush current by closing the bypass contacts maximum	7.6 A
design of the overvoltage protection design of short-circuit protection for control circuit design of short-circuit protection for control circuit linputs/ Outputs number of digital inputs number of digital outputs number of digital outputs number of analog outputs 2 normally-open contacts (NO) / 1 changeover contact (CO) number of analog outputs switching capacity current of the relay outputs at AC-15 at 250 V rated value at DC-13 at 24 V rated value Varistor 4 A gG fuse (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu= 300 A); Is not part of scope of supply 1 1 2 normally-open contacts (NO) / 1 changeover contact (CO) 1 at AC-15 at 250 V rated value 3 A 1 A	1 11 11 11 7	3.3 A
design of the overvoltage protectionVaristordesign of short-circuit protection for control circuit4 A gG fuse (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu= 300 A); Is not part of scope of supplyInputs/ Outputs1number of digital inputs1number of digital outputs3• not parameterizable2digital output version2 normally-open contacts (NO) / 1 changeover contact (CO)number of analog outputs1switching capacity current of the relay outputs3 A• at AC-15 at 250 V rated value3 A• at DC-13 at 24 V rated value1 A		12.1 ms
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 number of digital outputs onto parameterizable digital output version 2 normally-open contacts (NO) / 1 changeover contact (CO) number of analog outputs switching capacity current of the relay outputs o at AC-15 at 250 V rated value at DC-13 at 24 V rated value 1 A		Varistor
Inputs/ Outputs number of digital inputs number of digital outputs onto parameterizable digital output version number of analog outputs switching capacity current of the relay outputs o at AC-15 at 250 V rated value at DC-13 at 24 V rated value 1 1 1 1 1 1 1 1 1 1 1 1 1		breaker (Icu= 600 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of
number of digital inputs number of digital outputs ont parameterizable digital output version number of analog outputs switching capacity current of the relay outputs o at AC-15 at 250 V rated value at DC-13 at 24 V rated value 1 1 1 2 1 3 2 1 3 3 3 4 1 1 3 4 1 1 1 1 1 1 1 1 1 1 1 1		scope of supply
number of digital outputs onot parameterizable digital output version 2 normally-open contacts (NO) / 1 changeover contact (CO) number of analog outputs switching capacity current of the relay outputs o at AC-15 at 250 V rated value at DC-13 at 24 V rated value 1 A		
not parameterizable digital output version 2 normally-open contacts (NO) / 1 changeover contact (CO) number of analog outputs switching capacity current of the relay outputs • at AC-15 at 250 V rated value • at DC-13 at 24 V rated value 1 A	number of digital inputs	
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		
number of analog outputs switching capacity current of the relay outputs • at AC-15 at 250 V rated value • at DC-13 at 24 V rated value 1 A	not parameterizable	
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	digital output version	
 at AC-15 at 250 V rated value at DC-13 at 24 V rated value 1 A 	number of analog outputs	1
at DC-13 at 24 V rated value 1 A	switching capacity current of the relay outputs	
	• at AC-15 at 250 V rated value	3 A
Installation/ mounting/ dimensions	• 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	198 mm	
width	120 mm	
depth	249 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	5.2 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	20 111111	
for main contacts for box terminal using the front	16 120 mm²	
clamping point solid	10 120 Hilli	
 for main contacts for box terminal using the front clamping point finely stranded with core end processing 	16 120 mm²	
 for main contacts for box terminal using the front clamping point finely stranded without core end processing 	10 120 mm²	
 for main contacts for box terminal using the front clamping point stranded 	16 70 mm²	
 for main contacts for box terminal using the back clamping point solid 	16 120 mm ²	
 for AWG cables for main contacts for box terminal using the back clamping point 	6 250 kcmil	
for main contacts for box terminal using both clamping points solid	max. 1x 95 mm², 1x 120 mm²	
for main contacts for box terminal using both clamping points finely stranded with core end processing	max. 1x 95 mm², 1x 120 mm²	
for main contacts for box terminal using both clamping points finely stranded without core end processing for main contacts for box terminal using both clamping.	max. 1x 95 mm², 1x 120 mm² max. 2x 120 mm²	
 for main contacts for box terminal using both clamping points stranded for main contacts for box terminal using the back 	16 120 mm ²	
clamping point finely stranded with core end processing • for main contacts for box terminal using the back	10 120 mm ²	
clamping point finely stranded without core end processing • for main contacts for box terminal using the back	16 120 mm²	
clamping point stranded		
type of connectable conductor cross-sections		
 for AWG cables for main current circuit solid 	4 250 kcmil	
 for DIN cable lug for main contacts stranded 	16 95 mm²	
 for DIN cable lug for main contacts finely stranded 	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)	
 for 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	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		

General Product Approval		For use in hazard- ous locations
IEC 61508 relating to ATEX ertificates/ approvals		
to ATEX T1 value for proof test interval or service life according to	3 a	
to ATEX Safety Integrity Level (SIL) according to IEC 61508 relating	SIL1	
PFHD with high demand rate according to EN 62061 relating	9E-6 1/h	
PFDavg with low demand rate according to IEC 61508 relating to ATEX	0.09	
hardware fault tolerance according to IEC 61508 relating to ATEX	0	
• UKEX	Yes	
• IECEx	Yes	
• ATEX	Yes	
certificate of suitability		
TEX	inger saic, for vertical contact from the front with cover	
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with cover	
protection class IP on the front according to IEC 60529	IP00; IP20 with cover	
afety related data	150 hp	
 at 460/480 V at 50 °C rated value at 575/600 V at 50 °C rated value 	100 hp	
• at 220/230 V at 50 °C rated value	50 hp	
• at 200/208 V at 50 °C rated value	50 hp	
operating power [hp] for 3-phase motors		
 — usable for High Faults up to 575/600 V according to UL 	Type: Class J, max. 350 A; Iq = 100 kA	
— usable for Standard Faults up to 575/600 V according to UL	Type: Class RK5 / K5, max. 400 A; Iq = 10 kA	
of the fuse		
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 according to UL	Siemens type: 3VA5225, max. 250 A; lq = 10 kA	
of circuit breaker		
manufacturer's article number		
L/CSA ratings	103	
PROFIBUS	Yes	
Modbus TCP	Yes	
EtherNet/IP Modbus RTU	Yes Yes	
PROFINET standard February (ID)	Yes	
communication module is supported		
ommunication/ Protocol		
EMC emitted interference	acc. to IEC 60947-4-2: Class A	
during transport according to IEC 60721	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)	
during storage according to IEC 60721	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not ginside the devices), 1M4	
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	
environmental category		
during storage and transport	-40 +80 °C	
ambient temperature • during operation	-25 +60 °C; Please observe derating at temperatures of	of 40 °C or above





Confirmation







For use in hazardous locations Declaration of Conformity Test Certificates Marine / Shipping



Explosion Protection Certificate





Type Test Certificates/Test Report



Marine / Shipping

other





Confirmation

Further information

Siemens has decided to exit the Russian market (see here).

https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

Siemens is working on the renewal of the current EAC certificates.

Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

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=3RW5056-6AB05

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5056-6AB05

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-6AB05

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5056-6AB05&lang=en

Characteristic: Tripping characteristics, I2t, Let-through current

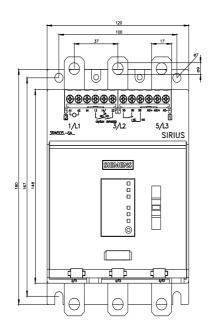
https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-6AB05/char

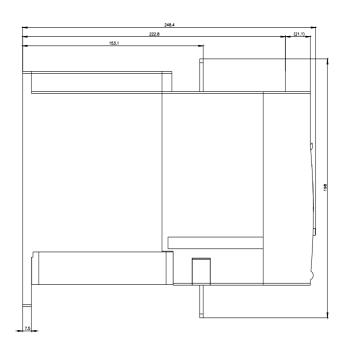
Characteristic: Installation altitude

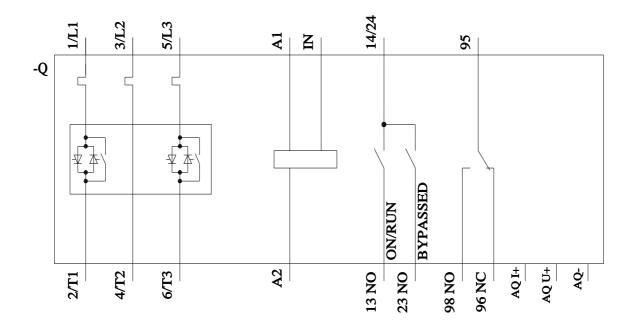
 $\underline{\text{http://www.automation.siemens.com/bilddb/index.aspx?view=Search\&mlfb=3RW5056-6AB05\&objecttype=14\&gridview=view1}$

Simulation Tool for Soft Starters (STS)

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







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