SIEMENS

Data sheet 3RW5056-6TB05

SIRIUS



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

Figure similar

product brand name

product and an annual states	
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 50 %
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 %
accuracy class acc. to IEC 61557-12	5 %
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	2

Avin alana	CLASS 404 / 405 /procety / 205, occ. to JEC 20047 4.2
trip class	CLASS 10A / 10E (preset) / 20E; acc. to IEC 60947-4-2
buffering time in the event of power failure	400
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	1 800 V
service factor	1
surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	000.14
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
reference code acc. to IEC 81346-2	Q
Substance Prohibitance (Date)	23.09.2019 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; Full motor protection (thermistor motor protection and electronic motor overload protection)
 evaluation of thermistor motor protection 	Yes; Type A PTC or Klixon / Thermoclick
• 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	No
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

design of the overvoltage protection design of short-circuit protection for control circuit	Varistor 4 A gG fuse (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature
	Mariakan
supply voltage	
maximum duration of inrush current peak at application of control	12.1 ms
locked-rotor current at close of bypass contact maximum inrush current peak at application of control supply voltage	7.6 A - 3.3 A
holding current in bypass operation rated value	360 mA
control supply current in standby mode rated value	160 mA
relative positive tolerance of the control supply voltage at DC	20 %
relative negative tolerance of the control supply voltage at DC	-20 %
at DC rated value	24 V
voltage frequency control supply voltage	
relative positive tolerance of the control supply	10 %
relative negative tolerance of the control supply	-10 %
control supply voltage frequency	50 60 Hz
relative positive tolerance of the control supply voltage at AC at 60 Hz	20 %
voltage at AC at 50 Hz relative negative tolerance of the control supply voltage at AC at 60 Hz	-20 %
voltage at AC at 50 Hz relative positive tolerance of the control supply	20 %
relative negative tolerance of the control supply	-20 %
at 60 Hz rated value	24 V
at 50 Hz rated value	24 V
control supply voltage at AC	
type of voltage of the control supply voltage	AC/DC
Control circuit/ Control	
type of the motor protection	Electronic, tripping in the event of thermal overload of the motor
at 60 °C during startup	1 308 W
at 50 °C during startup	1 478 W
• at 40 °C during startup	1 751 W
power loss [W] at AC at current limitation 350 %	20.11
at 60 °C after startup at 60 °C after startup	20 W
• at 50 °C after startup	23 W
at 40 °C after startup	29 W
power loss [W] for rated value of the current at AC	10 /u, inclative to sinaliest settable le
• minimum minimum load [%]	81 A 15 %; Relative to smallest settable le
at rotary coding switch on switch position 16 minimum	171 A 81 A
at rotary coding switch on switch position 15 at rotary coding switch on switch position 16	165 A
at rotary coding switch on switch position 14 at rotary coding switch on switch position 15	159 A
at rotary coding switch on switch position 13 at rotary coding switch on switch position 14	153 A
at rotary coding switch on switch position 12 at rotary coding switch on switch position 12	147 A
at rotary coding switch on switch position 11	141 A
at rotary coding switch on switch position 10	135 A
 at rotary coding switch on switch position 9 	129 A
 at rotary coding switch on switch position 8 	123 A
 at rotary coding switch on switch position 7 	117 A
 at rotary coding switch on switch position 6 	111 A
at rotary coding switch on switch position 5	105 A
 at rotary coding switch on switch position 4 	99 A
 at rotary coding switch on switch position 3 	93 A

Inputs/ Outputs	
number of digital inputs	1
number of inputs for thermistor connection	1; Type A PTC or Klixon / 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	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
wire length for thermistor connection	
 with conductor cross-section = 0.5 mm² maximum 	50 m
 with conductor cross-section = 1.5 mm² maximum 	150 m
• with conductor cross-section = 2.5 mm² maximum	250 m
type of connectable conductor cross-sections	
 for main contacts for box terminal using the front clamping point solid 	16 120 mm²
 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
 at AWG cables for main contacts for box terminal using the front clamping point 	6 250 kcmil
 for main contacts for box terminal using the back clamping point solid 	16 120 mm²
 at 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 	max. 1x 95 mm², 1x 120 mm²
 for main contacts for box terminal using both clamping points stranded 	max. 2x 120 mm²
 for main contacts for box terminal using the back clamping point finely stranded with core end 	16 120 mm²

processing	
 for main contacts for box terminal using the back clamping point finely stranded without core end processing 	10 120 mm²
for main contacts for box terminal using the back clamping point stranded	16 120 mm²
type of connectable conductor cross-sections	
at 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)
 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 	1 000 m
tightening torque	
for main contacts with screw-type terminals	10 14 N·m
for auxiliary and control contacts with screw-type	0.8 1.2 N·m
terminals	0.0 1.2 W III
tightening torque [lbf·in]	
for main contacts with screw-type terminals	89 124 lbf·in
 for auxiliary and control contacts with screw-type 	7 10.3 lbf·in
terminals	
Ambient conditions	
installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see manual
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: 3VA5225, 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
of the fuse	
 usable for Standard Faults up to 575/600 V according to UL 	Type: Class RK5 / K5, max. 400 A; Iq = 10 kA
usable for High Faults up to 575/600 V according to UL	Type: Class J, max. 350 A; Iq = 100 kA
operating power [hp] for 3-phase motors	
 at 200/208 V at 50 °C rated value 	50 hp
 at 220/230 V at 50 °C rated value 	50 hp

 at 460/480 V at 50 °C rated value 	100 hp
 at 575/600 V at 50 °C rated value 	150 hp
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
ATEX	
certificate of suitability	
• ATEX	Yes
• IECEx	Yes
hardware fault tolerance acc. to IEC 61508 relating to ATEX	0
PFDavg with low demand rate acc. to IEC 61508 relating to ATEX	0.09
PFHD with high demand rate acc. to EN 62061 relating to ATEX	0.000009 1/h
Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX	SIL1
T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX	3 y
Certificates/ approvals	

General Product Approval

For use in hazardous locations













Declaration of Conformity

Test Certificates

other



Type Test Certificates/Test Report

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=3RW5056-6TB05

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5056-6TB05

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

https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-6TB05

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5056-6TB05&lang=en

Characteristic: Tripping characteristics, I2t, Let-through current

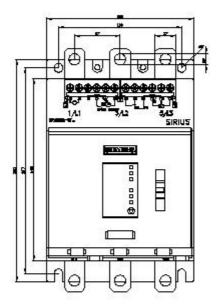
https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-6TB05/char

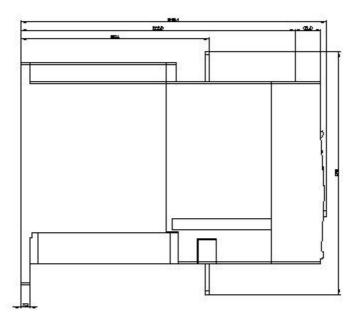
Characteristic: Installation altitude

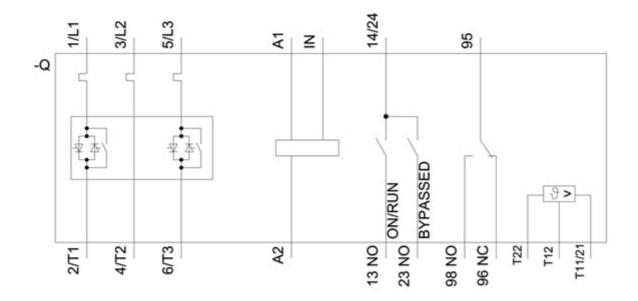
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5056-6TB05&objecttype=14&gridview=view1

Simulation Tool for Soft Starters (STS)

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







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