

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



Figure similar

Product brand name	SIRIUS
Product category	Hybrid switching devices
Product designation	Soft starter
Product type designation	3RW50
Manufacturer's article number	<ul style="list-style-type: none"> • of HMI module usable 3RW5980-0HS01 • of HMI-Modul high-feature 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
- of line contactor usable up to 480 V
- of line contactor usable up to 690 V

[3NE3 335; Type of coordination 2, Iq = 65 kA](#)

3RT1056

3RT1064

General technical data

Starting voltage [%]	30 ... 100 %
Stopping voltage [%]	50 ... 50 %
Start-up ramp time of soft starter	0 ... 20 s
Stopping 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
• 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
Recovery time	300 s
Insulation voltage	
• rated value	600 V
Degree of pollution	3, acc. to IEC 60947-4-2
Impulse voltage rated value	6 V
Blocking voltage of the thyristor maximum	1 800 V
Service factor	1
Protection class IP	IP00; IP20 with additional terminal covers for vertical touching from the front
Reference code acc. to DIN EN 81346-2	Q
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
• PROFINET	Yes; in connection with the PROFINET Standard communication module
• voltage ramp	Yes
• torque control	No
• analog output	No

Power Electronics

Operating 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 three-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 encoding switch on switch position 1	81 A
• at rotary encoding switch on switch position 2	87 A
• at rotary encoding switch on switch position 3	93 A
• at rotary encoding switch on switch position 4	99 A
• at rotary encoding switch on switch position 5	105 A
• at rotary encoding switch on switch position 6	111 A
• at rotary encoding switch on switch position 7	117 A
• at rotary encoding switch on switch position 8	123 A
• at rotary encoding switch on switch position 9	129 A
• at rotary encoding switch on switch position 10	135 A
• at rotary encoding switch on switch position 11	141 A

<ul style="list-style-type: none"> • at rotary encoding switch on switch position 12 • at rotary encoding switch on switch position 13 • at rotary encoding switch on switch position 14 • at rotary encoding switch on switch position 15 • at rotary encoding switch on switch position 16 • minimum 	147 A 153 A 159 A 165 A 171 A 81 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 to power-up • at 50 °C to power-up • at 60 °C to power-up 	29 W 23 W 20 W
Power loss [W] at AC at AC	
<ul style="list-style-type: none"> • at 40 °C during startup • at 50 °C during startup • at 60 °C during startup 	1 751 W 1 478 W 1 308 W
Type of the motor protection	Electronic, tripping in the event of thermal overload of the motor

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 the by-pass mode operating rated value	360 mA

Starting current at close of by-pass contact maximum	7.6 A
Inrush current peak at connect of control supply voltage maximum	3.3 A
Duration of inrush current peak at connect 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 inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
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	0

Installation/ mounting/ dimensions	
Mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
Mounting type	screw fixing
Height	198 mm
Width	120 mm
Depth	249 mm
Required spacing with side-by-side mounting	
<ul style="list-style-type: none"> forwards 	10 mm
<ul style="list-style-type: none"> Backwards 	0 mm
<ul style="list-style-type: none"> upwards 	100 mm
<ul style="list-style-type: none"> downwards 	75 mm
<ul style="list-style-type: none"> at the side 	5 mm
Installation altitude at height above sea level maximum	5 000 m; Derating as of 1000 m, see manual
Weight without packaging	5.2 kg

Connections/ Terminals	
Type of electrical connection	
<ul style="list-style-type: none"> for main current circuit 	busbar connection
<ul style="list-style-type: none"> for control circuit 	spring-loaded terminals
Width of connection bar maximum	25 mm
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> for main contacts for box terminal using the front clamping point solid 	16 ... 120 mm ²
<ul style="list-style-type: none"> for main contacts for box terminal using the front clamping point finely stranded with core end processing 	16 ... 120 mm ²

<ul style="list-style-type: none"> • for main contacts for box terminal using the front clamping point finely stranded without core end processing 	10 ... 120 mm ²
<ul style="list-style-type: none"> • for main contacts for box terminal using the front clamping point stranded 	16 ... 70 mm ²
<ul style="list-style-type: none"> • at AWG conductors for main contacts for box terminal using the front clamping point 	6 ... 250 kcmil
<ul style="list-style-type: none"> • for main contacts for box terminal using the back clamping point solid 	16 ... 120 mm ²
<ul style="list-style-type: none"> • at AWG conductors for main contacts for box terminal using the back clamping point 	6 ... 250 kcmil
<ul style="list-style-type: none"> • for main contacts for box terminal using both clamping points solid 	max. 1x 95 mm ² , 1x 120 mm ²
<ul style="list-style-type: none"> • for main contacts for box terminal using both clamping points finely stranded with core end processing 	max. 1x 95 mm ² , 1x 120 mm ²
<ul style="list-style-type: none"> • for main contacts for box terminal using both clamping points finely stranded without core end processing 	max. 1x 95 mm ² , 1x 120 mm ²
<ul style="list-style-type: none"> • for main contacts for box terminal using both clamping points stranded 	max. 2x 120 mm ²
<ul style="list-style-type: none"> • for main contacts for box terminal using the back clamping point finely stranded with core end processing 	16 ... 120 mm ²
<ul style="list-style-type: none"> • for main contacts for box terminal using the back clamping point finely stranded without core end processing 	10 ... 120 mm ²
<ul style="list-style-type: none"> • for main contacts for box terminal using the back clamping point stranded 	16 ... 120 mm ²
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • at AWG conductors for main current circuit solid 	4 ... 250 kcmil
<ul style="list-style-type: none"> • for DIN cable lug for main contacts stranded 	16 ... 95 mm ²
<ul style="list-style-type: none"> • for DIN cable lug for main contacts finely stranded 	25 ... 120 mm ²
Type of connectable conductor cross-sections	
<ul style="list-style-type: none"> • for control circuit solid 	2x (0.25 ... 1.5 mm ²)
<ul style="list-style-type: none"> • for control circuit finely stranded with core end processing 	2x (0.25 ... 1.5 mm ²)
<ul style="list-style-type: none"> • at AWG conductors for control circuit solid 	2x (24 ... 16)
<ul style="list-style-type: none"> • at AWG conductors for control circuit finely stranded with core end processing 	2x (24 ... 16)
Wire length	
<ul style="list-style-type: none"> • between soft starter and motor maximum 	800 m
<ul style="list-style-type: none"> • at the digital inputs at AC maximum 	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 	<p>10 ... 14 N·m</p> <p>0.8 ... 1.2 N·m</p>
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 	<p>89 ... 124 lbf·in</p> <p>7 ... 10.3 lbf·in</p>

Ambient conditions

Ambient temperature	
<ul style="list-style-type: none"> • during operation • during storage and transport 	<p>-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above</p> <p>-40 ... +80 °C</p>
Environmental category	
<ul style="list-style-type: none"> • during operation acc. to IEC 60721 • during storage acc. to IEC 60721 • during transport acc. to IEC 60721 	<p>3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6</p> <p>1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4</p> <p>2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)</p>
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 	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

UL/CSA ratings

Manufacturer's article number	
<ul style="list-style-type: none"> • of the fuse <ul style="list-style-type: none"> — usable for Standard Faults up to 575/600 V according to UL — usable for High Faults up to 575/600 V according to UL 	<p>Type: Class RK5 / K5, max. 400 A; I_q = 10 kA</p> <p>Type: Class J, max. 350 A; I_q = 100 kA</p>
Operating power [hp] for three-phase motors	
<ul style="list-style-type: none"> • at 200/208 V at 50 °C rated value • at 220/230 V at 50 °C rated value • at 460/480 V at 50 °C rated value • at 575/600 V at 50 °C rated value 	<p>30 hp</p> <p>40 hp</p> <p>75 hp</p> <p>100 hp</p>

ATEX

Certificate of suitability	
<ul style="list-style-type: none"> • 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
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Declaration of Conformity	Test Certificates	other
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[Miscellaneous](#)

[Type Test Certificates/Test Report](#)

[Confirmation](#)

EG-Konf.

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=3RW5056-2TB05>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5056-2TB05>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-2TB05>

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

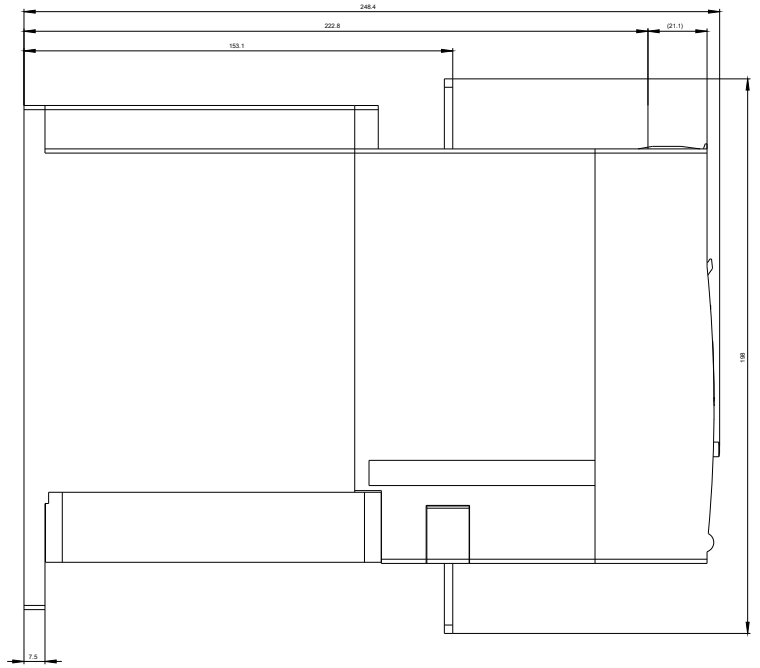
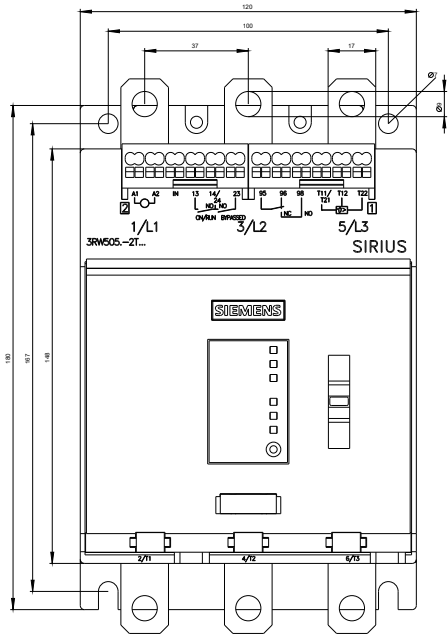
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5056-2TB05&lang=en

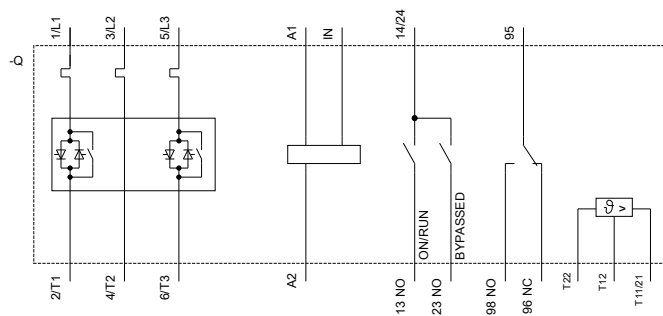
Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-2TB05/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5056-2TB05&objecttype=14&gridview=view1>





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3RW50...T...IEC.DXF

Format / Size: Hybrid quer

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