

SIRIUS soft starter 200-480 V 171 A, 110-250 V AC 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	<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	1 400 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; 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
• PROFINET	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

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 ... 480 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 	<p>147 A</p> <p>153 A</p> <p>159 A</p> <p>165 A</p> <p>171 A</p> <p>81 A</p>
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 	<p>29 W</p> <p>23 W</p> <p>20 W</p>
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 	<p>1 751 W</p> <p>1 478 W</p> <p>1 308 W</p>
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
Control supply voltage at AC	
<ul style="list-style-type: none"> • at 50 Hz • at 60 Hz 	<p>110 ... 250 V</p> <p>110 ... 250 V</p>
Relative negative tolerance of the control supply voltage at AC at 50 Hz	-15 %
Relative positive tolerance of the control supply voltage at AC at 50 Hz	10 %
Relative negative tolerance of the control supply voltage at AC at 60 Hz	-15 %
Relative positive tolerance of the control supply voltage at AC at 60 Hz	10 %
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 current in standby mode rated value	30 mA
Holding current in the by-pass mode operating rated value	80 mA
Starting current at close of by-pass contact maximum	2.5 A
Inrush current peak at connect of control supply voltage maximum	12.2 A
Duration of inrush current peak at connect of control supply voltage	2.2 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
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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

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	
• forwards	10 mm
• Backwards	0 mm
• upwards	100 mm
• downwards	75 mm
• 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	
• 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	
• for main contacts for box terminal using the front clamping point solid	16 ... 120 mm ²
• for main contacts for box terminal using the front clamping point finely stranded with core end processing	16 ... 120 mm ²
• for main contacts for box terminal using the front clamping point finely stranded without core end processing	10 ... 120 mm ²
• 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 • for main contacts for box terminal using the back clamping point solid • at AWG conductors for main contacts for box terminal using the back clamping point • for main contacts for box terminal using both clamping points solid • for main contacts for box terminal using both clamping points finely stranded with core end processing • 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 points stranded • for main contacts for box terminal using the back clamping point finely stranded with core end processing • for main contacts for box terminal using the back clamping point finely stranded without core end processing • for main contacts for box terminal using the back clamping point stranded 	<p>6 ... 250 kcmil</p> <p>16 ... 120 mm²</p> <p>6 ... 250 kcmil</p> <p>max. 1x 95 mm², 1x 120 mm²</p> <p>max. 1x 95 mm², 1x 120 mm²</p> <p>max. 1x 95 mm², 1x 120 mm²</p> <p>max. 2x 120 mm²</p> <p>16 ... 120 mm²</p> <p>10 ... 120 mm²</p> <p>16 ... 120 mm²</p>
<p>Type of connectable conductor cross-sections</p> <ul style="list-style-type: none"> • at AWG conductors for main current circuit solid • for DIN cable lug for main contacts stranded • for DIN cable lug for main contacts finely stranded 	<p>4 ... 250 kcmil</p> <p>16 ... 95 mm²</p> <p>25 ... 120 mm²</p>
<p>Type of connectable conductor cross-sections</p> <ul style="list-style-type: none"> • for control circuit solid • for control circuit finely stranded with core end processing • at AWG conductors for control circuit solid 	<p>1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²)</p> <p>1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)</p> <p>1x (20 ... 12), 2x (20 ... 14)</p>
<p>Wire length</p> <ul style="list-style-type: none"> • between soft starter and motor maximum • at the digital inputs at AC maximum 	<p>800 m</p> <p>1 000 m</p>
<p>Tightening torque</p> <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>
<p>Tightening torque [lbf·in]</p> <ul style="list-style-type: none"> • for main contacts with screw-type terminals 	<p>89 ... 124 lbf·in</p>

- for auxiliary and control contacts with screw-type terminals

7 ... 10.3 lbf·in

Ambient conditions

Ambient temperature

- during operation
- during storage and transport

-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above
-40 ... +80 °C

Environmental category

- during operation acc. to IEC 60721
- during storage acc. to IEC 60721
- during transport acc. 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

- PROFINET standard
- EtherNet/IP
- Modbus RTU
- Modbus TCP
- PROFIBUS

Yes
Yes
Yes
Yes
Yes

UL/CSA ratings

Manufacturer's article number

• of the fuse

- usable for Standard Faults up to 575/600 V according to UL
- usable for High Faults up to 575/600 V according to UL

Type: Class RK5 / K5, max. 400 A; Iq = 10 kA
Type: Class J, max. 350 A; Iq = 100 kA

Operating power [hp] for three-phase motors

- 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

30 hp
40 hp
75 hp
100 hp

ATEX

Certificate of suitability

- ATEX
- IECEx

Yes
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

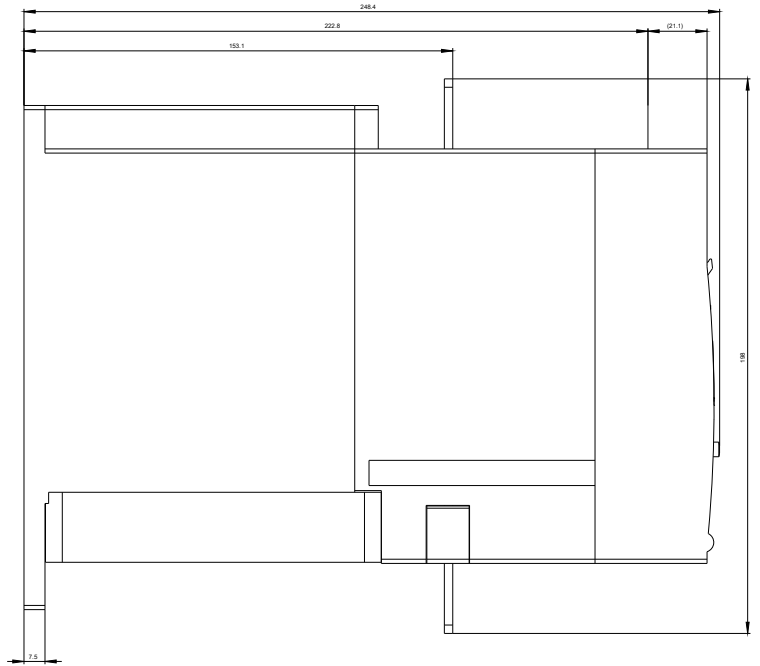
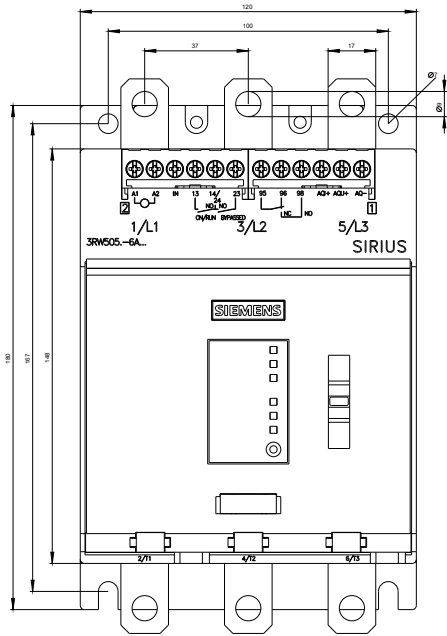
Certificates/ approvals

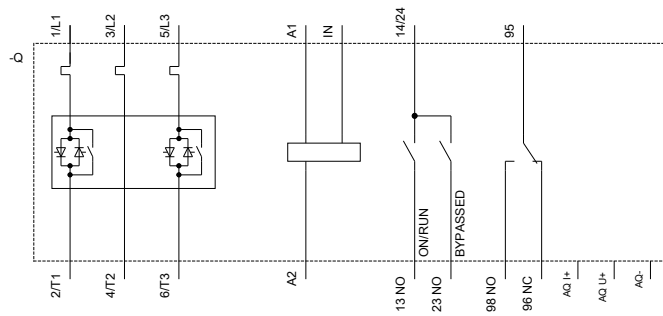
General Product Approval	For use in hazardous locations
 CCC  CSA  UL	 EAC  IECEX  ATEX

Declaration of Conformity	Test Certificates	other
 EG-Konf.	Miscellaneous 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=3RW5056-6AB14>
- Cax online generator**
<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5056-6AB14>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-6AB14>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5056-6AB14&lang=en
- Characteristic: Tripping characteristics, I²t, Let-through current**
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5056-6AB14/char>
- Characteristic: Installation altitude**
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5056-6AB14&objecttype=14&gridview=view1>





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Format / Size: Hybrid quer

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