

SIRIUS soft starter 200-480 V 93 A, 110-250 V AC spring-type terminals Thermistor input



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 HMI module usable 3RW5980-0HS00 • 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 3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 15 kA, CLASS 10 • of circuit breaker usable at 500 V 3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 10 kA, CLASS 10 • of circuit breaker usable at 400 V at inside-delta circuit 3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 15 kA, CLASS 10 • of circuit breaker usable at 500 V at inside-delta circuit 3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 10 kA, CLASS 10

- of the gG fuse usable up to 690 V
- of the gG fuse usable at inside-delta circuit up to 500 V
- of full range R fuse link for semiconductor protection usable up to 690 V
- of back-up R fuse link for semiconductor protection usable up to 690 V

[3NA3136-6; Type of coordination 1, I_q = 65 kA](#)

[3NA3136-6; Type of coordination 1, I_q = 65 kA](#)

[3NE1224-0; Type of coordination 2, I_q = 65 kA](#)

[3NE4124; Type of coordination 2, I_q = 65 kA](#)

General technical data

Starting voltage [%]	30 ... 100 %
Stopping voltage [%]	50 ... 50 %
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	
• 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
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	1 400 V
Service factor	1
Surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
• between main and auxiliary circuit	600 V
Protection class IP	IP00
Usage category acc. to IEC 60947-4-2	AC 53a
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 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
• inside-delta circuit	Yes
• 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
• firmware update	Yes
• removable terminal for control circuit	Yes
• torque control	No
• analog output	No

Power Electronics

Operating current	
• at 40 °C rated value	93 A
• at 50 °C rated value	82.5 A
• at 60 °C rated value	75.5 A
Operating current at inside-delta circuit	
• at 40 °C rated value	161 A
• at 50 °C rated value	143 A
• at 60 °C rated value	131 A
Operating voltage	
• rated value	200 ... 480 V
• at inside-delta circuit rated value	200 ... 480 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 three-phase motors	
• at 230 V at 40 °C rated value	22 kW
• at 230 V at inside-delta circuit at 40 °C rated value	45 kW
• at 400 V at 40 °C rated value	45 kW

<ul style="list-style-type: none"> • at 400 V at inside-delta circuit at 40 °C rated value 	90 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 encoding switch on switch position 1 • at rotary encoding switch on switch position 3 • at rotary encoding switch on switch position 4 • at rotary encoding switch on switch position 5 • at rotary encoding switch on switch position 6 • at rotary encoding switch on switch position 7 • at rotary encoding switch on switch position 8 • at rotary encoding switch on switch position 9 • at rotary encoding switch on switch position 10 • at rotary encoding switch on switch position 11 • 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 • at inside-delta circuit minimum 	40.5 A 47.5 A 51 A 54.5 A 58 A 61.5 A 65 A 68.5 A 72 A 75.5 A 79 A 82.5 A 86 A 89.5 A 93 A 40.5 A 70.1 A
Adjustable motor current for inside-delta circuit	
<ul style="list-style-type: none"> • at rotary encoding switch on switch position 1 • at rotary encoding switch on switch position 2 • at rotary encoding switch on switch position 3 • at rotary encoding switch on switch position 4 • at rotary encoding switch on switch position 5 • at rotary encoding switch on switch position 6 • at rotary encoding switch on switch position 7 • at rotary encoding switch on switch position 8 • at rotary encoding switch on switch position 9 • at rotary encoding switch on switch position 10 • at rotary encoding switch on switch position 11 • 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 	70.1 A 76.2 A 82.3 A 88.3 A 94.4 A 100 A 107 A 113 A 119 A 125 A 131 A 137 A 143 A 149 A 155 A 161 A

Minimum load [%]	15 %; Relative to smallest settable le
Power loss [W] for rated value of the current at AC	
• at 40 °C to power-up	40 W
• at 50 °C to power-up	37 W
• at 60 °C to power-up	35 W
Power loss [W] at AC at AC	
• at 40 °C during startup	1 270 W
• at 50 °C during startup	1 077 W
• at 60 °C during startup	959 W

Control circuit/ Control

Type of voltage of the control supply voltage	AC
Control supply voltage at AC	
• at 50 Hz	110 ... 250 V
• at 60 Hz	110 ... 250 V
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	75 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

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
Mounting type	screw fixing
Height	306 mm
Width	185 mm
Depth	203 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 catalog
Weight without packaging	6.9 kg

Connections/ Terminals

Type of electrical connection	
• for main current circuit	box terminal
• for control circuit	spring-loaded 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	1x (2.5 ... 16 mm ²)
• for main contacts for box terminal using the front clamping point finely stranded with core end processing	1x (2.5 ... 50 mm ²)
• for main contacts for box terminal using the front clamping point stranded	1x (10 ... 70 mm ²)
• at AWG conductors for main contacts for box terminal using the front clamping point	1x (10 ... 2/0)
• for main contacts for box terminal using the back clamping point solid	1x (2.5 ... 16 mm ²)
• at AWG conductors for main contacts for box terminal using the back clamping point	1x (10 ... 2/0)
• for main contacts for box terminal using both clamping points solid	2x (2.5 ... 16 mm ²)

<ul style="list-style-type: none"> • for main contacts for box terminal using both clamping points finely stranded with core end processing 	2x (2.5 ... 35 mm ²)
<ul style="list-style-type: none"> • for main contacts for box terminal using both clamping points stranded 	2x (6 ... 16 mm ²), 2x (10 ... 50 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 	1x (2.5 ... 50 mm ²)
<ul style="list-style-type: none"> • for main contacts for box terminal using the back clamping point stranded 	1x (10 ... 70 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 	100 m
Tightening torque	
<ul style="list-style-type: none"> • for main contacts with screw-type terminals 	4.5 ... 6 N·m
<ul style="list-style-type: none"> • for auxiliary and control contacts with screw-type terminals 	0.8 ... 1.2 N·m
Tightening torque [lbf·in]	
<ul style="list-style-type: none"> • for main contacts with screw-type terminals 	40 ... 53 lbf·in
<ul style="list-style-type: none"> • for auxiliary and control contacts with screw-type terminals 	7 ... 10.3 lbf·in

Ambient conditions	
Ambient temperature	
<ul style="list-style-type: none"> • during operation 	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above
<ul style="list-style-type: none"> • during storage and transport 	-40 ... +80 °C
Environmental category	
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • during storage acc. to IEC 60721 	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • PROFINET standard 	Yes

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

Yes
Yes
Yes
Yes

UL/CSA ratings

Manufacturer's article number

• of circuit breaker

— usable for Standard Faults at 460/480 V according to UL

Siemens type: 3VA51, max. 125 A; I_q = 10 kA

— usable for High Faults at 460/480 V according to UL

Siemens type: 3VA51, max. 125 A; I_q max = 65 kA

— usable for Standard Faults at 460/480 V at inside-delta circuit according to UL

Siemens type: 3VA51, max. 125 A; I_q = 10 kA

— usable for High Faults at 460/480 V at inside-delta circuit according to UL

Siemens type: 3VA51, max. 125 A; I_q max = 65 kA

— usable for Standard Faults at 575/600 V according to UL

Siemens type: 3VA51, max. 125 A; I_q = 10 kA

— usable for Standard Faults at 575/600 V at inside-delta circuit according to UL

Siemens type: 3VA51, max. 125 A; I_q = 10 kA

• of the fuse

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

Type: Class RK5 / K5, max. 300 A; I_q = 10 kA

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

Type: Class J / L, max. 250 A; I_q = 100 kA

— usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL

Type: Class RK5 / K5, max. 300 A; I_q = 10 kA

— usable for High Faults at inside-delta circuit up to 575/600 V according to UL

Type: Class J / L, max. 250 A; I_q = 100 kA

Operating power [hp] for three-phase motors

- at 200/208 V at 50 °C rated value

25 hp

- at 220/230 V at 50 °C rated value

30 hp

- at 460/480 V at 50 °C rated value

60 hp

- at 200/208 V at inside-delta circuit at 50 °C rated value

40 hp

- at 220/230 V at inside-delta circuit at 50 °C rated value

50 hp

- at 460/480 V at inside-delta circuit at 50 °C rated value

100 hp

Contact rating of auxiliary contacts according to UL

R300-B300

Safety related data

Electromagnetic compatibility

in accordance with IEC 60947-4-2

Certificates/ approvals

General Product Approval	EMC	Declaration of Conformity
--------------------------	-----	---------------------------



Declaration of Conformity	Test Certificates	Marine / Shipping
---------------------------	-------------------	-------------------

[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



other

[Confirmation](#)

Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

www.siemens.com/ic10

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5227-3TC14>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5227-3TC14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-3TC14>

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

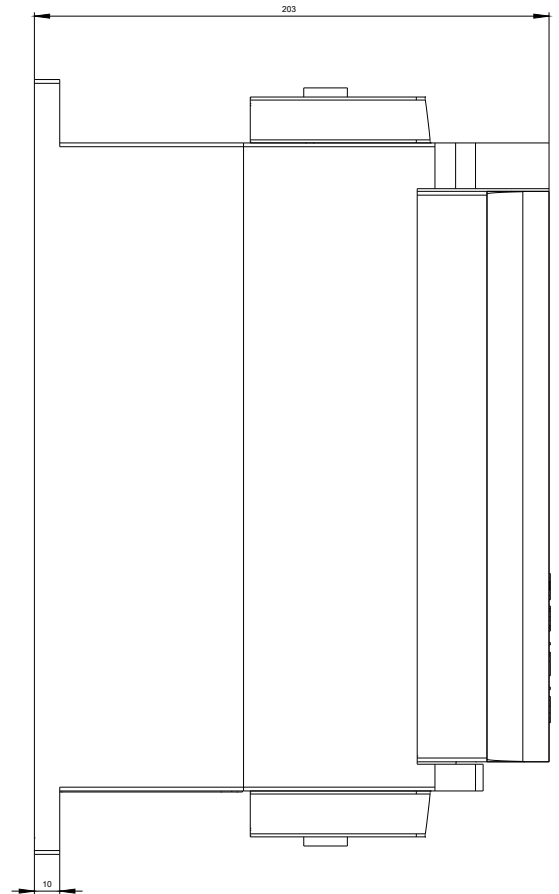
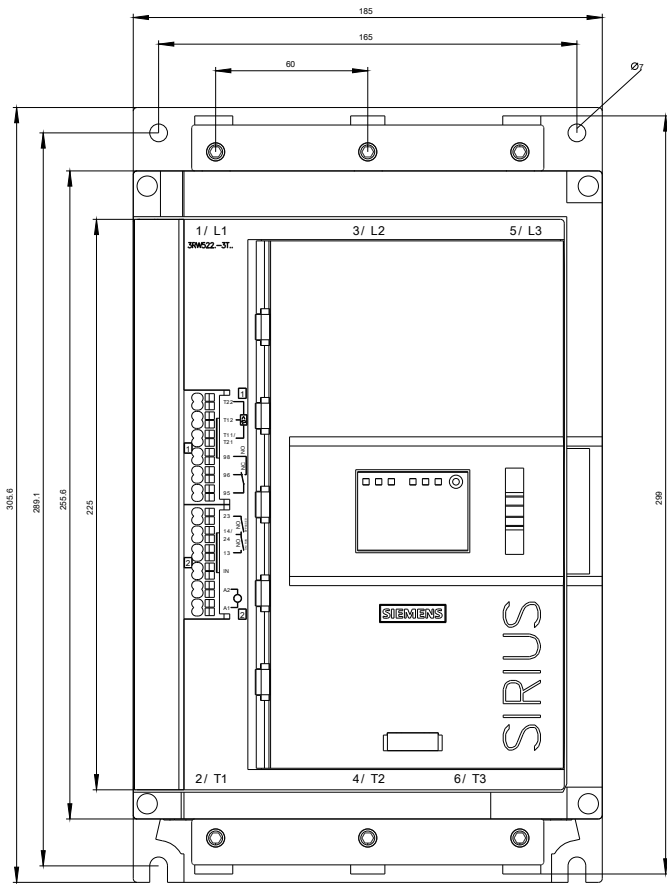
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5227-3TC14&lang=en

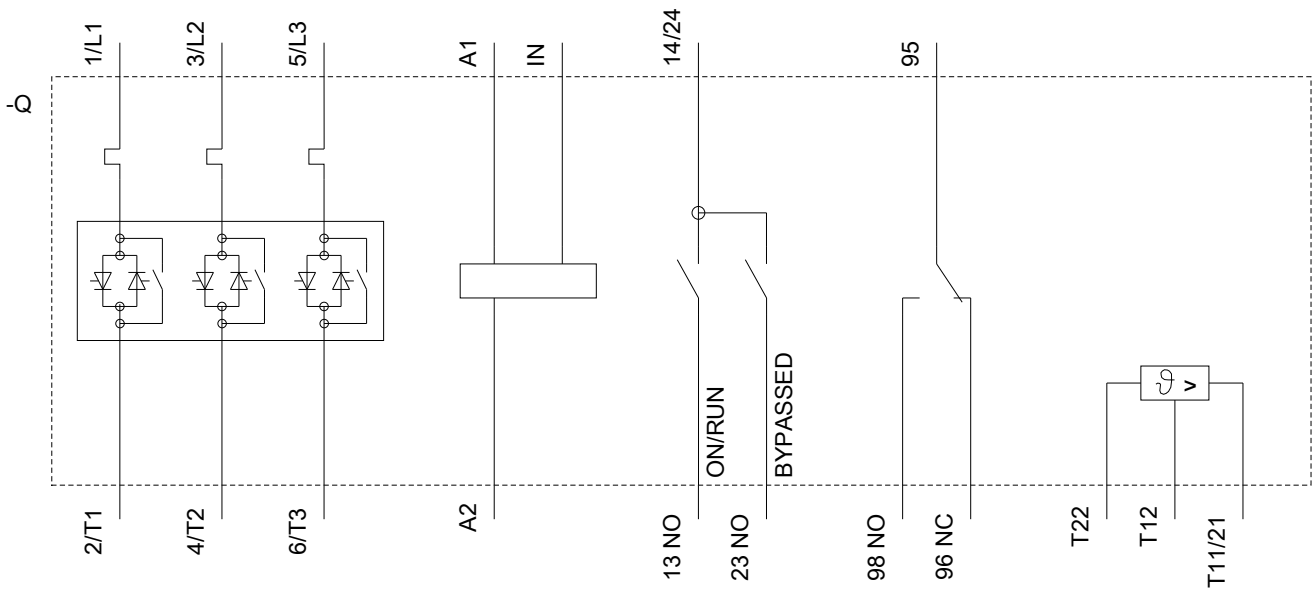
Characteristic: Tripping characteristics, I_t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-3TC14/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5227-3TC14&objecttype=14&gridview=view1>





last modified:

01/23/2020