



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 standard HMI module usable 3RW5980-0HS00 • 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 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 3NA3136-6: Type of coordination 1, Iq = 65 kA • of the gG fuse usable at inside-delta circuit up to 500 V 3NA3136-6: Type of coordination 1, Iq = 65 kA • of full range R fuse link for semiconductor protection usable up to 690 V 3NE1224-0: Type of coordination 2, Iq = 65 kA • of back-up R fuse link for semiconductor protection usable up to 690 V 3NE4124: Type of coordination 2, Iq = 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 | <ul style="list-style-type: none"> • CE marking Yes • UL approval Yes • CSA approval Yes |
| product component is supported | <ul style="list-style-type: none"> • HMI-Standard Yes • 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 |

| | |
|---|---|
| buffering time in the event of power failure | |
| • 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 | 1 400 V |
| service factor | 1 |
| surge voltage resistance rated value | 6 kV |
| maximum permissible voltage for safe isolation | |
| • between main and auxiliary circuit | 600 V |
| 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 acc. to IEC 60947-4-2 | AC 53a |
| reference code acc. to IEC 81346-2 | Q |
| Substance Prohibitance (Date) | 15.02.2018 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 |
| • 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 |
| • PROFInergy | 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 | |
| operational current | |
| • at 40 °C rated value | 93 A |
| • at 50 °C rated value | 83 A |
| • at 60 °C rated value | 76 A |
| operational 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 3-phase motors | |
| • at 230 V at 40 °C rated value | 22 kW |

| | |
|--|--|
| <ul style="list-style-type: none"> • at 230 V at inside-delta circuit at 40 °C rated value | 45 kW |
| <ul style="list-style-type: none"> • 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 coding switch on switch position 1 | 40.5 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 2 | 44 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 3 | 47.5 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 4 | 51 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 5 | 54.5 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 6 | 58 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 7 | 61.5 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 8 | 65 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 9 | 68.5 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 10 | 72 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 11 | 75.5 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 12 | 79 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 13 | 82.5 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 14 | 86 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 15 | 89.5 A |
| <ul style="list-style-type: none"> • at rotary coding switch on switch position 16 | 93 A |
| <ul style="list-style-type: none"> • minimum | 40.5 A |
| adjustable motor current | |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 1 | 70.1 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 2 | 76.2 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 3 | 82.3 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 4 | 88.3 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 5 | 94.4 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 6 | 100 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 7 | 107 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 8 | 113 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 9 | 119 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 10 | 125 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 11 | 131 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 12 | 137 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 13 | 143 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 14 | 149 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 15 | 155 A |
| <ul style="list-style-type: none"> • for inside-delta circuit at rotary coding switch on switch position 16 | 161 A |
| <ul style="list-style-type: none"> • at inside-delta circuit minimum | 70.1 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 after startup | 40 W |
| <ul style="list-style-type: none"> • at 50 °C after startup | 37 W |
| <ul style="list-style-type: none"> • at 60 °C after startup | 35 W |

| | |
|---|--|
| power loss [W] at AC at current limitation 350 % | |
| <ul style="list-style-type: none"> • at 40 °C during startup • at 50 °C during startup • at 60 °C during startup | 1 270 W 1 077 W 959 W |
| 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 | 110 ... 250 V 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 bypass operation rated value | 75 mA |
| locked-rotor current at close of bypass contact maximum | 2.5 A |
| inrush current peak at application of control supply voltage maximum | 12.2 A |
| duration of inrush current peak at application 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 |
| <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 |
| switching capacity current of the relay outputs | |
| <ul style="list-style-type: none"> • at AC-15 at 250 V rated value • at DC-13 at 24 V rated value | 3 A 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 | 306 mm |
| width | 185 mm |
| depth | 203 mm |
| required spacing with side-by-side mounting | |
| <ul style="list-style-type: none"> • forwards • backwards • upwards • downwards • at the side | 10 mm 0 mm 100 mm 75 mm 5 mm |
| weight without packaging | 6.9 kg |
| Connections/ Terminals | |
| type of electrical connection | |
| <ul style="list-style-type: none"> • for main current circuit • for control circuit | box terminal spring-loaded terminals |

| | |
|---|---|
| width of connection bar maximum | 25 mm |
| wire length for thermistor connection | |
| <ul style="list-style-type: none"> with conductor cross-section = 0.5 mm² maximum with conductor cross-section = 1.5 mm² maximum with conductor cross-section = 2.5 mm² maximum | 50 m 150 m 250 m |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> for main contacts for box terminal using the front clamping point solid | 1x (2.5 ... 16 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 | 1x (2.5 ... 50 mm ²) |
| <ul style="list-style-type: none"> for main contacts for box terminal using the front clamping point stranded | 1x (10 ... 70 mm ²) |
| <ul style="list-style-type: none"> at AWG cables for main contacts for box terminal using the front clamping point | 1x (10 ... 2/0) |
| <ul style="list-style-type: none"> for main contacts for box terminal using the back clamping point solid | 1x (2.5 ... 16 mm ²) |
| <ul style="list-style-type: none"> at AWG cables for main contacts for box terminal using the back clamping point | 1x (10 ... 2/0) |
| <ul style="list-style-type: none"> 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 cables for control circuit solid | 2x (24 ... 16) |
| <ul style="list-style-type: none"> at AWG cables 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 at the digital inputs at AC maximum | 800 m 100 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 | 4.5 ... 6 N·m 0.8 ... 1.2 N·m |
| 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 | 40 ... 53 lbf·in 7 ... 10.3 lbf·in |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 5 000 m; Derating as of 1000 m, see catalog |
| ambient temperature | |
| <ul style="list-style-type: none"> during operation during storage and transport | -25 ... +60 °C; Please observe derating at temperatures of 40 °C or above -40 ... +80 °C |
| 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 | 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 | |
| <ul style="list-style-type: none"> PROFINET standard | Yes |

| | |
|---------------|-----|
| • EtherNet/IP | Yes |
| • Modbus RTU | Yes |
| • Modbus TCP | Yes |
| • PROFIBUS | Yes |

UL/CSA ratings

| | |
|---|---|
| manufacturer's article number | |
| <ul style="list-style-type: none"> of circuit breaker <ul style="list-style-type: none"> — usable for Standard Faults at 460/480 V according to UL — usable for High Faults at 460/480 V according to UL — usable for Standard Faults at 460/480 V at inside-delta circuit according to UL — usable for High Faults at 460/480 V at inside-delta circuit according to UL — usable for Standard Faults at 575/600 V according to UL — usable for Standard Faults at 575/600 V at inside-delta circuit according to UL 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 — usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL — usable for High Faults at inside-delta circuit up to 575/600 V according to UL | <p>Siemens type: 3VA51, max. 125 A; Iq = 10 kA</p> <p>Siemens type: 3VA51, max. 125 A; Iq max = 65 kA</p> <p>Siemens type: 3VA51, max. 125 A; Iq = 10 kA</p> <p>Siemens type: 3VA51, max. 125 A; Iq max = 65 kA</p> <p>Siemens type: 3VA51, max. 125 A; Iq = 10 kA</p> <p>Siemens type: 3VA51, max. 125 A; Iq = 10 kA</p> <p>Type: Class RK5 / K5, max. 300 A; Iq = 10 kA</p> <p>Type: Class J / L, max. 250 A; Iq = 100 kA</p> <p>Type: Class RK5 / K5, max. 300 A; Iq = 10 kA</p> <p>Type: Class J / L, max. 250 A; Iq = 100 kA</p> |
| operating power [hp] for 3-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 200/208 V at inside-delta circuit at 50 °C rated value • at 220/230 V at inside-delta circuit at 50 °C rated value • at 460/480 V at inside-delta circuit at 50 °C rated value | <p>25 hp</p> <p>30 hp</p> <p>60 hp</p> <p>40 hp</p> <p>50 hp</p> <p>100 hp</p> |
| contact rating of auxiliary contacts according to UL | R300-B300 |

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 |
| electromagnetic compatibility | in accordance with IEC 60947-4-2 |

Certificates/ approvals

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



Test Certificates Marine / Shipping

[Type Test Certificates/Test Report](#)



other

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=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, I²t, Let-through current

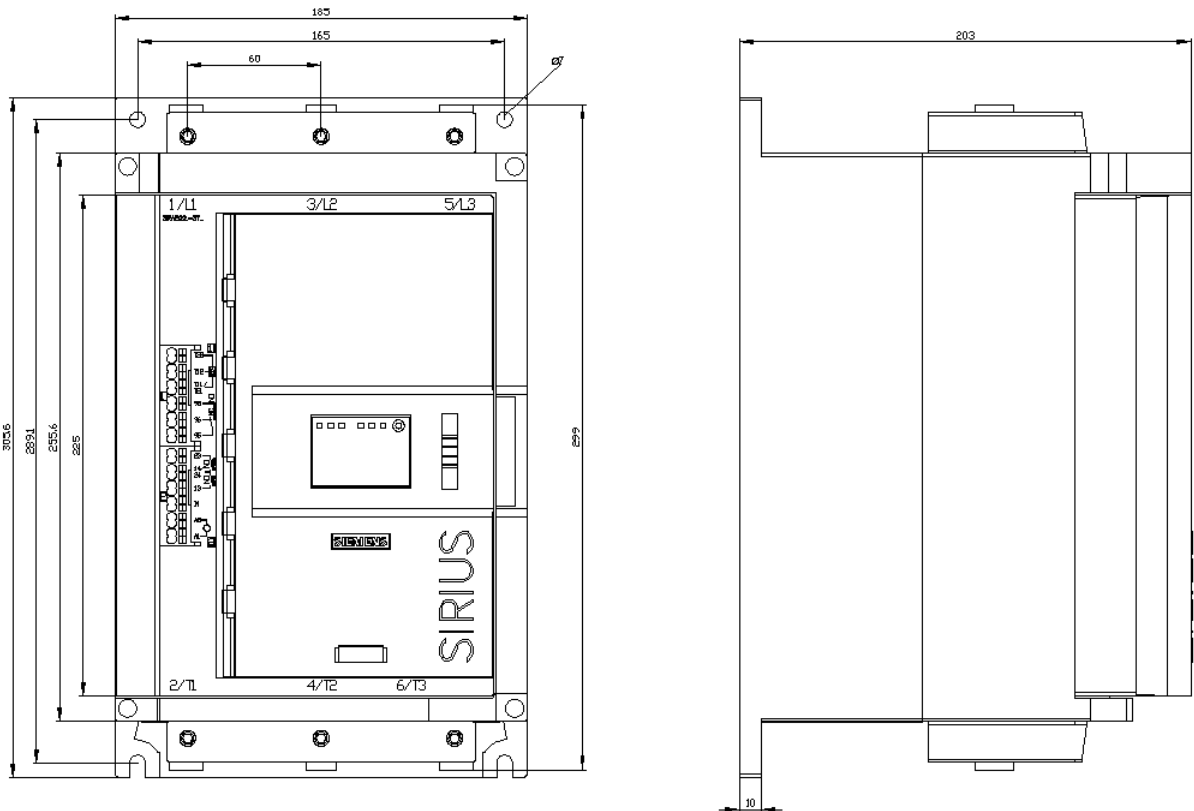
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5227-3TC14/char>

Characteristic: Installation altitude

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

Simulation Tool for Soft Starters (STS)

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





last modified:

8/10/2021 

