

Siemens
EcoTech



SIRIUS soft starter 200-480 V 470 A, 24 V AC/DC Screw terminals Analog output



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| 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 3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 of circuit breaker usable at 500 V 3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 of circuit breaker usable at 400 V at inside-delta circuit 3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 of circuit breaker usable at 500 V at inside-delta circuit 3VA2510-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10 of the gG fuse usable up to 690 V 2x3NA3365-6; Type of coordination 1, Iq = 65 kA of the gG fuse usable at inside-delta circuit up to 500 V 2x3NA3365-6; Type of coordination 1, Iq = 65 kA of full range R fuse link for semiconductor protection usable up to 690 V 3NE1436-2; Type of coordination 2, Iq = 65 kA of back-up R fuse link for semiconductor protection usable up to 690 V 3NE3340-8; Type of coordination 2, Iq = 65 kA |
| General technical data | |
| starting voltage [%] | 30 ... 100 % |
| stopping voltage [%] | 50 %; non-adjustable |
| 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 | <ul style="list-style-type: none"> HMI-High Feature No is supported HMI-Standard Yes is supported HMI-High Feature Yes |
| product feature integrated bypass contact system | Yes |
| number of controlled phases | 3 |
| buffering time in the event of power failure | |

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| <ul style="list-style-type: none"> • for main current circuit • for control circuit | 100 ms |
| | 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 | 1 600 V |
| service factor | 1 |
| surge voltage resistance rated value | 6 kV |
| maximum permissible voltage for protective separation <ul style="list-style-type: none"> • between main and auxiliary circuit | 600 V |
| shock resistance | 15 g / 11 ms, from 12 g / 11 ms with potential contact lifting |
| utilization category according to IEC 60947-4-2 | AC 53a |
| reference code according to IEC 81346-2 | Q |
| Substance Prohibitance (Date) | 02/15/2018 |
| SVHC substance name | Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one - 71868-10-5 Dibutylbis(pentane-2,4-dionato-O,O')tin - 22673-19-4 |
| product function <ul style="list-style-type: none"> • ramp-up (soft starting) • ramp-down (soft stop) • Soft Torque • adjustable current limitation • pump ramp down • intrinsic device protection • motor overload protection • evaluation of thermistor motor protection • inside-delta circuit • auto-RESET • manual RESET • remote reset • communication function • operating measured value display • error logbook • via software parameterizable • via software configurable • PROFInergy • firmware update • removable terminal for control circuit • torque control • analog output | Yes Yes Yes Yes Yes Yes Yes; Electronic motor overload protection No Yes Yes Yes Yes; By turning off the control supply voltage Yes Yes; Only in conjunction with special accessories Yes; Only in conjunction with special accessories No Yes Yes; in connection with the PROFINET Standard communication module Yes Yes No Yes; 4 ... 20 mA (default) / 0 ... 10 V (parameterizable with High Feature HMI) |
| Power Electronics | |
| operational current <ul style="list-style-type: none"> • at 40 °C rated value • at 50 °C rated value • at 60 °C rated value | 470 A 416 A 380 A |
| operational current at inside-delta circuit <ul style="list-style-type: none"> • at 40 °C rated value • at 50 °C rated value • at 60 °C rated value | 814 A 721 A 658 A |
| operating voltage <ul style="list-style-type: none"> • rated value • at inside-delta circuit rated value | 200 ... 480 V 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 <ul style="list-style-type: none"> • at 230 V at 40 °C rated value • at 230 V at inside-delta circuit at 40 °C rated value | 132 kW 250 kW |

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| • at 400 V at 40 °C rated value | 250 kW |
| • at 400 V at inside-delta circuit at 40 °C rated value | 400 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 | 200 A |
| • at rotary coding switch on switch position 2 | 218 A |
| • at rotary coding switch on switch position 3 | 236 A |
| • at rotary coding switch on switch position 4 | 254 A |
| • at rotary coding switch on switch position 5 | 272 A |
| • at rotary coding switch on switch position 6 | 290 A |
| • at rotary coding switch on switch position 7 | 308 A |
| • at rotary coding switch on switch position 8 | 326 A |
| • at rotary coding switch on switch position 9 | 344 A |
| • at rotary coding switch on switch position 10 | 362 A |
| • at rotary coding switch on switch position 11 | 380 A |
| • at rotary coding switch on switch position 12 | 398 A |
| • at rotary coding switch on switch position 13 | 416 A |
| • at rotary coding switch on switch position 14 | 434 A |
| • at rotary coding switch on switch position 15 | 452 A |
| • at rotary coding switch on switch position 16 | 470 A |
| • minimum | 200 A |
| adjustable motor current | |
| • for inside-delta circuit at rotary coding switch on switch position 1 | 346 A |
| • for inside-delta circuit at rotary coding switch on switch position 2 | 378 A |
| • for inside-delta circuit at rotary coding switch on switch position 3 | 409 A |
| • for inside-delta circuit at rotary coding switch on switch position 4 | 440 A |
| • for inside-delta circuit at rotary coding switch on switch position 5 | 471 A |
| • for inside-delta circuit at rotary coding switch on switch position 6 | 502 A |
| • for inside-delta circuit at rotary coding switch on switch position 7 | 533 A |
| • for inside-delta circuit at rotary coding switch on switch position 8 | 565 A |
| • for inside-delta circuit at rotary coding switch on switch position 9 | 596 A |
| • for inside-delta circuit at rotary coding switch on switch position 10 | 627 A |
| • for inside-delta circuit at rotary coding switch on switch position 11 | 658 A |
| • for inside-delta circuit at rotary coding switch on switch position 12 | 689 A |
| • for inside-delta circuit at rotary coding switch on switch position 13 | 721 A |
| • for inside-delta circuit at rotary coding switch on switch position 14 | 752 A |
| • for inside-delta circuit at rotary coding switch on switch position 15 | 783 A |
| • for inside-delta circuit at rotary coding switch on switch position 16 | 814 A |
| • at inside-delta circuit minimum | 346 A |
| minimum load [%] | 15 %; Relative to smallest settable I _e |
| power loss [W] for rated value of the current at AC | |
| • at 40 °C after startup | 153 W |
| • at 50 °C after startup | 137 W |
| • at 60 °C after startup | 126 W |
| power loss [W] at AC at current limitation 350 % | |
| • at 40 °C during startup | 7 903 W |
| • at 50 °C during startup | 6 604 W |

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| • at 60 °C during startup | 5 794 W |
| Control circuit/ Control | |
| type of voltage of the control supply voltage | AC/DC |
| control supply voltage at AC | |
| • at 50 Hz rated value | 24 V |
| • at 60 Hz rated value | 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 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 bypass operation rated value | 470 mA |
| inrush current by closing the bypass contacts maximum | 7.6 A |
| inrush current peak at application of control supply voltage maximum | 3.3 A |
| duration of inrush current peak at application 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 (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu= 600 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of scope of supply |
| Inputs/ Outputs | |
| number of digital inputs | 1 |
| 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 |
| 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 | 393 mm |
| width | 210 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 |
| weight without packaging | 9.9 kg |
| Connections/ Terminals | |
| type of electrical connection | |
| • for main current circuit | busbar connection |
| • for control circuit | screw-type terminals |
| width of connection bar maximum | 45 mm |

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| type of connectable conductor cross-sections | |
| • for DIN cable lug for main contacts stranded | 2x (50 ... 240 mm²) |
| • for DIN cable lug for main contacts finely stranded | 2x (70 ... 240 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) |
| • for 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 | 100 m |
| • at the digital inputs at DC maximum | 1 000 m |
| tightening torque | |
| • for main contacts with screw-type terminals | 14 ... 24 N·m |
| • for auxiliary and control contacts with screw-type terminals | 0.8 ... 1.2 N·m |
| tightening torque [lbf·in] | |
| • for main contacts with screw-type terminals | 124 ... 210 lbf·in |
| • for auxiliary and control contacts with screw-type terminals | 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 | |
| • 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 according 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 according to IEC 60721 | 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4 |
| • during transport according to IEC 60721 | 2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m) |
| Environmental footprint | |
| Siemens Eco Profile (SEP) | Siemens EcoTech |
| 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 the fuse | |
| — usable for Standard Faults up to 575/600 V according to UL | Type: Class J / L, max. 1600 A; Iq = 30 kA |
| — usable for High Faults up to 575/600 V according to UL | Type: Class J / L, max. 1200 A; Iq = 100 kA |
| — usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL | Type: Class J / L, max. 1600 A; Iq = 30 kA |
| — usable for High Faults at inside-delta circuit up to 575/600 V according to UL | Type: Class J / L, max. 1200 A; Iq = 100 kA |
| operating power [hp] for 3-phase motors | |
| • at 200/208 V at 50 °C rated value | 150 hp |
| • at 220/230 V at 50 °C rated value | 150 hp |
| • at 460/480 V at 50 °C rated value | 350 hp |
| • at 200/208 V at inside-delta circuit at 50 °C rated value | 250 hp |
| • at 220/230 V at inside-delta circuit at 50 °C rated value | 250 hp |
| • at 460/480 V at inside-delta circuit at 50 °C rated value | 600 hp |
| contact rating of auxiliary contacts according to UL | R300-B300 |
| Electrical Safety | |
| protection class IP on the front according to IEC 60529 | IP00; IP20 with cover |
| touch protection on the front according to IEC 60529 | finger-safe, for vertical contact from the front with cover |
| Approvals Certificates | |

General Product Approval

[Confirmation](#)



EMV

Test Certificates

Marine / Shipping



[KC](#)

[Type Test Certificates/Test Report](#)



Marine / Shipping

other

Environment



[Confirmation](#)

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[Environmental Confirmations](#)

Further information

Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

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=3RW5247-6AC04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5247-6AC04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5247-6AC04>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5247-6AC04&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5247-6AC04/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5247-6AC04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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



