



SIRIUS soft starter 200-480 V 210 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 | 3RW50 |
| manufacturer's article number | <ul style="list-style-type: none"> • of standard HMI module usable 3RW5980-0HS01 • 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 3VA2440-7MN32-0AA0: Type of assignment 1, Iq = 65 kA • of circuit breaker usable at 500 V 3VA2440-7MN32-0AA0: Type of assignment 1, Iq = 65 kA • of the gG fuse usable up to 690 V 2x3NA3354-6; Type of coordination 1, Iq = 65 kA • of full range R fuse link for semiconductor protection usable up to 690 V 3NE1 230-2: Type of coordination 2, Iq = 65 kA • of back-up R fuse link for semiconductor protection usable up to 690 V 3NE3 333: Type of coordination 2, Iq = 65 kA • of line contactor usable up to 480 V 3RT1064 • of line contactor usable up to 690 V 3RT1064 |
| General technical data | |
| starting voltage [%] | 30 ... 100 % |
| stopping voltage [%] | 50 %; non-adjustable |
| start-up ramp time of soft starter | 0 ... 20 s |
| ramp-down 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 | |
| • 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 | 2 |

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| 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 | 1 600 V |
| service factor | 1 |
| surge voltage resistance rated value | 6 kV |
| maximum permissible voltage for protective separation | |
| • 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; 2 g to 500 Hz |
| utilization category according to IEC 60947-4-2 | AC-53a |
| reference code according to IEC 81346-2 | Q |
| Substance Prohibitance (day/month/year) | 09/23/2019 |
| SVHC substance name | Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol CAS-No. 79-94-7 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1 |
| Net Weight | 8.038 kg |
| product function | |
| • ramp-up (soft starting) | Yes |
| • soft stopping | Yes |
| • Soft Torque | Yes |
| • adjustable current limitation | Yes |
| • pump stop | 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 |
| • PROFInergy | 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 | |
| operational current | |
| • at 40 °C rated value | 210 A |
| • at 50 °C rated value | 186 A |
| • at 60 °C rated value | 170 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 3-phase motors | |
| • at 230 V at 40 °C rated value | 55 kW |
| • at 400 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 % |

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| adjustable motor current | |
| • at rotary coding switch on switch position 1 | 90 A |
| • at rotary coding switch on switch position 2 | 98 A |
| • at rotary coding switch on switch position 3 | 106 A |
| • at rotary coding switch on switch position 4 | 114 A |
| • at rotary coding switch on switch position 5 | 122 A |
| • at rotary coding switch on switch position 6 | 130 A |
| • at rotary coding switch on switch position 7 | 138 A |
| • at rotary coding switch on switch position 8 | 146 A |
| • at rotary coding switch on switch position 9 | 154 A |
| • at rotary coding switch on switch position 10 | 162 A |
| • at rotary coding switch on switch position 11 | 170 A |
| • at rotary coding switch on switch position 12 | 178 A |
| • at rotary coding switch on switch position 13 | 186 A |
| • at rotary coding switch on switch position 14 | 194 A |
| • at rotary coding switch on switch position 15 | 202 A |
| • at rotary coding switch on switch position 16 | 210 A |
| • minimum | 90 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 | 16 W |
| • at 50 °C after startup | 13 W |
| • at 60 °C after startup | 11 W |
| power loss [W] at AC at current limitation 350 % | |
| • at 40 °C during startup | 2 237 W |
| • at 50 °C during startup | 1 867 W |
| • at 60 °C during startup | 1 637 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 | |
| • 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 | 490 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 (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 | |
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| number of digital inputs | 1 |
| 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 | 1 |
| switching capacity current of the relay outputs | |
| <ul style="list-style-type: none"> at AC-15 at 250 V rated value | 3 A |
| <ul style="list-style-type: none"> 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 | 230 mm |
| width | 160 mm |
| depth | 282 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 |
| weight without packaging | 7.3 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 | screw-type terminals |
| width of connection bar maximum | 35 mm; with connection cover 3RT1966-4EA1 maximum length 45 mm |
| type of connectable conductor cross-sections for main contacts for box terminal | |
| <ul style="list-style-type: none"> using the front clamping point solid | 95 ... 300 mm ² |
| <ul style="list-style-type: none"> using the front clamping point finely stranded with core end processing | 70 ... 240 mm ² |
| <ul style="list-style-type: none"> using the front clamping point finely stranded without core end processing | 70 ... 240 mm ² |
| <ul style="list-style-type: none"> using the front clamping point stranded | 95 ... 300 mm ² |
| <ul style="list-style-type: none"> using the back clamping point solid | 120 ... 240 mm ² |
| <ul style="list-style-type: none"> r box terminal using the back clamping point | 250 ... 500 kcmil |
| <ul style="list-style-type: none"> using both clamping points solid | min. 2x 70 mm ² , max. 2x 240 mm ² |
| <ul style="list-style-type: none"> using both clamping points finely stranded with core end processing | min. 2x 50 mm ² , max. 2x 185 mm ² |
| <ul style="list-style-type: none"> using both clamping points finely stranded without core end processing | min. 2x 50 mm ² , max. 2x 185 mm ² |
| <ul style="list-style-type: none"> using both clamping points stranded | min. 2x 70 mm ² , max. 2x 240 mm ² |
| <ul style="list-style-type: none"> using the back clamping point finely stranded with core end processing | 120 ... 185 mm ² |
| <ul style="list-style-type: none"> using the back clamping point finely stranded without core end processing | 120 ... 185 mm ² |
| <ul style="list-style-type: none"> using the back clamping point stranded | 120 ... 240 mm ² |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> for AWG cables for main current circuit solid | 2/0 ... 500 kcmil |
| <ul style="list-style-type: none"> for DIN cable lug for main contacts stranded | 50 ... 240 mm ² |
| <ul style="list-style-type: none"> for DIN cable lug for main contacts finely stranded | 70 ... 240 mm ² |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> for control circuit solid | 1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²) |
| <ul style="list-style-type: none"> for control circuit finely stranded with core end processing | 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²) |
| <ul style="list-style-type: none"> for AWG cables for control circuit solid | 1x (20 ... 12), 2x (20 ... 14) |
| 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 | |

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| <ul style="list-style-type: none"> • for main contacts with screw-type terminals • for auxiliary and control contacts with screw-type terminals | <p>14 ... 24 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>124 ... 210 lbf·in</p> <p>7 ... 10.3 lbf·in</p> |
| Ambient conditions | |
| installation altitude at height above sea level maximum | 5 000 m |
| 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 according to IEC 60721 • during storage according to IEC 60721 • during transport according 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> |
| Electromagnetic compatibility | |
| 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 circuit breaker <ul style="list-style-type: none"> — usable for High Faults at 460/480 V 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 | <p>Siemens type: 3VA54, max. 600 A; Iq max = 65 kA</p> <p>Type: Class L, max. 700 A; Iq = 10 kA</p> <p>Type: Class L, max. 700 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 | <p>60 hp</p> <p>60 hp</p> <p>150 hp</p> |
| 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 |
| ATEX | |
| Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX | SIL 1 |
| PFHD with high demand rate according to IEC 61508 relating to ATEX | 9E-6 1/h |
| PFDavg with low demand rate according to IEC 61508 relating to ATEX | 0.09 |
| hardware fault tolerance according to IEC 61508 relating to ATEX | 0 |
| T1 value for proof test interval or service life according to IEC 61508 relating to ATEX | 3 a |
| certificate of suitability <ul style="list-style-type: none"> • ATEX • IECEx • UKEX | <p>Yes</p> <p>Yes</p> <p>Yes</p> |
| Approvals Certificates | |
| Environmental Product Declaration | |
| <ul style="list-style-type: none"> • global warming potential [CO2 eq] / during manufacturing • global warming potential [CO2 eq] / during sales | <p>87.4 kg</p> <p>2.05 kg</p> |

- global warming potential [CO2 eq] / during operation 407 kg
- global warming potential [CO2 eq] / after end of life -32.4 kg
- global warming potential [CO2 eq] / total 464 kg

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| Environment | General Product Approval |
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[Environmental Confirmations](#)



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| General Product Approval | EMV | For use in hazardous locations |
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| Test Certificates | Maritime application | other |
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[Type Test Certificates/Test Report](#)



[Confirmation](#)

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| other |
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[Confirmation](#)



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| Further information |
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- Information on the packaging
<https://support.industry.siemens.com/cs/ww/en/view/109813875>
- Information for data generation and storage
<https://support.industry.siemens.com/cs/ww/en/view/109995012>
- 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=3RW5072-6AB04>
- Service&Support (Manuals, Certificates, Characteristics, FAQs,...)
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5072-6AB04>
- Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)
https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5072-6AB04&lang=en
- Cax online generator
<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5072-6AB04>
- Characteristic curves
[https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP="HAUPT"></mmp_prod_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)
- Characteristic: Tripping characteristics, I²t, Let-through current
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5072-6AB04/char>
- Characteristic: Installation altitude
https://www.automation.siemens.com/bilddb/index.aspx?gridview=view2&objkey=G_NSB0_XX_01704&showdetail=true&view=Search
- Simulation Tool for Soft Starters (STS)
<https://support.industry.siemens.com/cs/ww/en/view/101494917>



