

Siemens
EcoTech



SIRIUS soft starter 200-480 V 47 A, 110-250 V AC Screw terminals Analog output



| | |
|--|---|
| 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 3RV2032-4JA10: Type of coordination 1, Iq = 65 kA, CLASS 10 of circuit breaker usable at 500 V 3RV2032-4JA10: Type of coordination 1, Iq = 10 kA, CLASS 10 of circuit breaker usable at 400 V at inside-delta circuit 3RV2032-4RA10: Type of coordination 1, Iq = 65 kA, CLASS 10 of circuit breaker usable at 500 V at inside-delta circuit 3RV2032-4RA10: Type of coordination 1, Iq = 10 kA, CLASS 10 of the gG fuse usable up to 690 V 3NA3824-6: Type of coordination 1, Iq = 65 kA of the gG fuse usable at inside-delta circuit up to 500 V 3NA3824-6: Type of coordination 1, Iq = 65 kA of full range R fuse link for semiconductor protection usable up to 690 V 3NE1021-2: Type of coordination 2, Iq = 65 kA of back-up R fuse link for semiconductor protection usable up to 690 V 3NE8024-1: 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 | |

| | |
|---|---|
| <ul style="list-style-type: none"> • for main current circuit | 100 ms |
| <ul style="list-style-type: none"> • 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 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) | Yes |
| <ul style="list-style-type: none"> • ramp-down (soft stop) | Yes |
| <ul style="list-style-type: none"> • Soft Torque | Yes |
| <ul style="list-style-type: none"> • adjustable current limitation | Yes |
| <ul style="list-style-type: none"> • pump ramp down | Yes |
| <ul style="list-style-type: none"> • intrinsic device protection | Yes |
| <ul style="list-style-type: none"> • motor overload protection | Yes; Electronic motor overload protection |
| <ul style="list-style-type: none"> • evaluation of thermistor motor protection | No |
| <ul style="list-style-type: none"> • inside-delta circuit | Yes |
| <ul style="list-style-type: none"> • auto-RESET | Yes |
| <ul style="list-style-type: none"> • manual RESET | Yes |
| <ul style="list-style-type: none"> • remote reset | Yes; By turning off the control supply voltage |
| <ul style="list-style-type: none"> • communication function | Yes |
| <ul style="list-style-type: none"> • operating measured value display | Yes; Only in conjunction with special accessories |
| <ul style="list-style-type: none"> • error logbook | Yes; Only in conjunction with special accessories |
| <ul style="list-style-type: none"> • via software parameterizable | No |
| <ul style="list-style-type: none"> • via software configurable | Yes |
| <ul style="list-style-type: none"> • PROFInergy | Yes; in connection with the PROFINET Standard communication module |
| <ul style="list-style-type: none"> • firmware update | Yes |
| <ul style="list-style-type: none"> • removable terminal for control circuit | Yes |
| <ul style="list-style-type: none"> • torque control | No |
| <ul style="list-style-type: none"> • analog output | 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 | 47 A |
| <ul style="list-style-type: none"> • at 50 °C rated value | 41.6 A |
| <ul style="list-style-type: none"> • at 60 °C rated value | 36.2 A |
| operational current at inside-delta circuit | |
| <ul style="list-style-type: none"> • at 40 °C rated value | 81.4 A |
| <ul style="list-style-type: none"> • at 50 °C rated value | 72 A |
| <ul style="list-style-type: none"> • at 60 °C rated value | 62.7 A |
| operating voltage | |
| <ul style="list-style-type: none"> • rated value | 200 ... 480 V |
| <ul style="list-style-type: none"> • 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 | |
| <ul style="list-style-type: none"> • at 230 V at 40 °C rated value | 11 kW |
| <ul style="list-style-type: none"> • at 230 V at inside-delta circuit at 40 °C rated value | 22 kW |

| | |
|--|--|
| • at 400 V at 40 °C rated value | 22 kW |
| • at 400 V at inside-delta circuit at 40 °C rated value | 45 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 | 20 A |
| • at rotary coding switch on switch position 2 | 21.8 A |
| • at rotary coding switch on switch position 3 | 23.6 A |
| • at rotary coding switch on switch position 4 | 25.4 A |
| • at rotary coding switch on switch position 5 | 27.2 A |
| • at rotary coding switch on switch position 6 | 29 A |
| • at rotary coding switch on switch position 7 | 30.8 A |
| • at rotary coding switch on switch position 8 | 32.6 A |
| • at rotary coding switch on switch position 9 | 34.4 A |
| • at rotary coding switch on switch position 10 | 36.2 A |
| • at rotary coding switch on switch position 11 | 38 A |
| • at rotary coding switch on switch position 12 | 39.8 A |
| • at rotary coding switch on switch position 13 | 41.6 A |
| • at rotary coding switch on switch position 14 | 43.4 A |
| • at rotary coding switch on switch position 15 | 45.2 A |
| • at rotary coding switch on switch position 16 | 47 A |
| • minimum | 20 A |
| adjustable motor current | |
| • for inside-delta circuit at rotary coding switch on switch position 1 | 34.6 A |
| • for inside-delta circuit at rotary coding switch on switch position 2 | 37.8 A |
| • for inside-delta circuit at rotary coding switch on switch position 3 | 40.9 A |
| • for inside-delta circuit at rotary coding switch on switch position 4 | 44 A |
| • for inside-delta circuit at rotary coding switch on switch position 5 | 47.1 A |
| • for inside-delta circuit at rotary coding switch on switch position 6 | 50.2 A |
| • for inside-delta circuit at rotary coding switch on switch position 7 | 53.3 A |
| • for inside-delta circuit at rotary coding switch on switch position 8 | 56.5 A |
| • for inside-delta circuit at rotary coding switch on switch position 9 | 59.6 A |
| • for inside-delta circuit at rotary coding switch on switch position 10 | 62.7 A |
| • for inside-delta circuit at rotary coding switch on switch position 11 | 65.8 A |
| • for inside-delta circuit at rotary coding switch on switch position 12 | 68.9 A |
| • for inside-delta circuit at rotary coding switch on switch position 13 | 72.1 A |
| • for inside-delta circuit at rotary coding switch on switch position 14 | 75.2 A |
| • for inside-delta circuit at rotary coding switch on switch position 15 | 78.3 A |
| • for inside-delta circuit at rotary coding switch on switch position 16 | 81.4 A |
| • at inside-delta circuit minimum | 34.6 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 | 26 W |
| • at 50 °C after startup | 24 W |
| • at 60 °C after startup | 23 W |
| power loss [W] at AC at current limitation 350 % | |
| • at 40 °C during startup | 606 W |
| • at 50 °C during startup | 522 W |

| | |
|--|--|
| • at 60 °C during startup | 438 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 bypass operation rated value | 75 mA |
| inrush current by closing the bypass contacts 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 (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 | +/- 10° rotation possible and can be tilted forward or backward on vertical mounting surface |
| fastening method | 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 |
| weight without packaging | 5.2 kg |
| Connections/ Terminals | |
| type of electrical connection | |
| • for main current circuit | box terminal |
| • 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 | 1x (2.5 ... 16 mm²) |
| • using the front clamping point finely stranded with core end processing | 1x (2.5 ... 50 mm²) |
| • using the front clamping point stranded | 1x (10 ... 70 mm²) |

| | |
|--|--|
| <ul style="list-style-type: none"> • using the back clamping point solid • r box terminal using the back clamping point • using both clamping points solid • using both clamping points finely stranded with core end processing • using both clamping points stranded • using the back clamping point finely stranded with core end processing • using the back clamping point stranded | 1x (2.5 ... 16 mm ²) 1x (10 ... 2/0) 2x (2.5 ... 16 mm ²) 2x (2.5 ... 35 mm ²) 2x (6 ... 16 mm ²), 2x (10 ... 50 mm ²) 1x (2.5 ... 50 mm ²) 1x (10 ... 70 mm ²) |
| type of connectable conductor cross-sections | |
| <ul style="list-style-type: none"> • for control circuit solid • for control circuit finely stranded with core end processing • for AWG cables for control circuit solid | 1x (0.5 ... 4.0 mm ²), 2x (0.5 ... 2.5 mm ²) 1x (0.5 ... 2.5 mm ²), 2x (0.5 ... 1.5 mm ²) 1x (20 ... 12), 2x (20 ... 14) |
| 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 according to IEC 60721 • during storage according to IEC 60721 • during transport according 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) |
| 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 | |
| <ul style="list-style-type: none"> • PROFINET standard • EtherNet/IP • Modbus RTU • Modbus TCP • PROFIBUS | Yes Yes Yes Yes Yes |
| UL/CSA ratings | |
| manufacturer's article number | |
| <ul style="list-style-type: none"> • of circuit breaker usable for Standard Faults <ul style="list-style-type: none"> — at 460/480 V according to UL — 60/480 V according to UL — at 460/480 V at inside-delta circuit according to UL — 60/480 V at inside-delta circuit according to UL — at 575/600 V according to UL — 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 | Siemens type: 3RV2742, max. 70 A or 3VA51, max. 90 A; I _q = 5 kA Siemens type: 3VA51, max. 60 A; I _q max = 65 kA Siemens type: 3VA51, max. 90 A; I _q = 5 kA Siemens type: 3VA51, max. 60 A; I _q max = 65 kA Siemens type: 3RV2742, max. 70 A or 3VA51, max. 90 A; I _q = 5 kA Siemens type: 3VA51, max. 90 A; I _q = 5 kA Type: Class RK5 / K5, max. 175 A; I _q = 5 kA Type: Class J / L, max. 175 A; I _q = 100 kA Type: Class RK5 / K5, max. 175 A; I _q = 5 kA Type: Class J / L, max. 175 A; I _q = 100 kA |

| | |
|--|---|
| operating power [hp] for 3-phase motors | |
| • at 200/208 V at 50 °C rated value | 10 hp |
| • at 220/230 V at 50 °C rated value | 10 hp |
| • at 460/480 V at 50 °C rated value | 30 hp |
| • at 200/208 V at inside-delta circuit at 50 °C rated value | 20 hp |
| • at 220/230 V at inside-delta circuit at 50 °C rated value | 25 hp |
| • at 460/480 V at inside-delta circuit at 50 °C rated value | 50 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](#)



[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=3RW5224-1AC14>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5224-1AC14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-1AC14>

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5224-1AC14&lang=en

Characteristic: Tripping characteristics, I²t, Let-through current

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-1AC14/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5224-1AC14&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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



