SIEMENS

## Data sheet 3RW5514-3HA04

SIRIUS soft starter 200-480 V 18 A, 24 V AC/DC spring-type terminals

| | |
|---|---|
| **Product brand name** | SIRIUS |
| **Product category** | Hybrid switching devices |
| **Product designation** | Soft starter |
| **Product type designation** | 3RW55 |
| **Manufacturer's article number** | |
| • of HMI-Modul high-feature usable | 3RW5980-0HF00 |
| • of communication module PROFINET standard usable | 3RW5980-0CS00 |
| • of communication module PROFINET high-feature usable | 3RW5950-0CH00 |
| • 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 | 3RV2032-4DA10; Type of coordination 1, Iq = 65 kA, CLASS 10 |
| • of circuit breaker usable at 500 V | 3RV2032-4DA10; Type of coordination 1, Iq = 15 kA, CLASS 10 |
| • of circuit breaker usable at 400 V at inside-delta circuit | 3RV2032-4EA10; Type of coordination 1, Iq = 65 kA, CLASS 10 |

| | |
|---|---|
| • of circuit breaker usable at 500 V at inside-delta circuit | 3RV2032-4EA10; Type of coordination 1, Iq = 15 kA, CLASS 10 |
| • of the gG fuse usable up to 690 V | 3NA3820-6; Type of coordination 1, Iq = 65 kA |
| • of the gG fuse usable at inside-delta circuit up to 500 V | 3NA3820-6; Type of coordination 1, Iq = 65 kA |
| • of full range R fuse link for semiconductor protection usable up to 690 V | 3NE1802-0; Type of coordination 2, Iq = 65 kA |
| • of back-up R fuse link for semiconductor protection usable up to 690 V | 3NE8020-1; Type of coordination 2, Iq = 65 kA |

| General technical data | |
|---|---|
| **Starting voltage [%]** | 20 ... 100 % |
| **Stopping voltage [%]** | 50 ... 50 % |
| **Start-up ramp time of soft starter** | 0 ... 360 s |
| **Stopping time of soft starter** | 0 ... 360 s |
| **Start torque [%]** | 10 ... 100 % |
| **Stopping torque [%]** | 10 ... 100 % |
| **Torque limit [%]** | 20 ... 200 % |
| **Current limiting value [%] adjustable** | 125 ... 800 % |
| **Breakaway voltage [%] adjustable** | 40 ... 100 % |
| **Breakaway time adjustable** | 0 ... 2 s |
| **Number of parameter sets** | 3 |
| **Accuracy class acc. to IEC 61557-12** | 5 % |
| **Certificate of suitability** | |
| • CE marking | Yes |
| • UL approval | Yes |
| • CSA-approval | Yes |
| **Product component** | |
| • HMI-High Feature | Yes |
| • is supported HMI-High Feature | Yes |
| **Product feature integrated bypass contact system** | Yes |
| **Number of controlled phases** | 3 |
| **Trip class** | CLASS 10A / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2 |
| **Current unbalance limiting value [%]** | 10 ... 60 % |
| **Ground-fault monitoring limiting value [%]** | 10 ... 95 % |
| **Recovery time after overload trip adjustable** | 60 ... 1 800 s |
| **Insulation voltage** | |
| • rated value | 480 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** | 1.15 |
| **Surge voltage resistance rated value** | 6 kV |
| **maximum permissible voltage for safe isolation** | |

| | |
|---|---|
| • between main and auxiliary circuit | 480 V; does not apply for thermistor connection |
| **Protection class IP** | IP00 |
| **Usage category acc. to IEC 60947-4-2** | AC 53a |
| **Shock resistance** | 15 g / 11 ms, from 6 g / 11 ms with potential contact lifting |
| **Vibration resistance** | 15 mm up to 6 Hz; 2 g up to 500 Hz |
| **Reference code acc. to DIN EN 81346-2** | Q |
| **Product function** | |
| • ramp-up (soft starting) | Yes |
| • ramp-down (soft stop) | Yes |
| • breakaway pulse | Yes |
| • Adjustable current limitation | Yes |
| • creep speed in both directions of rotation | Yes |
| • pump ramp down | Yes |
| • DC braking | Yes |
| • motor heating | Yes |
| • slave pointer function | Yes |
| • trace function | Yes |
| • Intrinsic device protection | Yes |
| • motor overload protection | Yes; Full motor protection (thermistor motor protection and electronic motor overload protection) / When using the motor overload protection according to ATEX, an upstream contactor is required in inside-delta circuit. |
| • 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 |
| • communication function | Yes |
| • operating measured value display | Yes |
| • event list | Yes |
| • error logbook | Yes |
| • via software parameterizable | Yes |
| • via software configurable | Yes |
| • screw terminal | No |
| • spring-type terminal | Yes |
| • PROFIenergy | Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules |
| • firmware update | Yes |
| • removable terminal for control circuit | Yes |
| • voltage ramp | Yes |
| • torque control | Yes |
| • combined braking | Yes |

| | |
|---|---|
| • analog output | Yes; 4 ... 20 mA (default) / 0 ... 10 V |
| • programmable control inputs/outputs | Yes |
| • condition monitoring | Yes |
| • automatic parameterisation | Yes |
| • application wizards | Yes |
| • alternative run-down | Yes |
| • emergency operation mode | Yes |
| • reversing operation | Yes |
| • soft starting at heavy starting conditions | Yes |

## Power Electronics

| | |
|---|---|
| **Operating current** | |
| • at 40 °C rated value | 18 A |
| • at 40 °C rated value minimum | 3.5 A |
| • at 50 °C rated value | 15.9 A |
| • at 60 °C rated value | 13.8 A |
| **Operating current at inside-delta circuit** | |
| • at 40 °C rated value | 31.5 A |
| • at 50 °C rated value | 28 A |
| • at 60 °C rated value | 23.9 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 | 4 kW |
| • at 230 V at inside-delta circuit at 40 °C rated value | 7.5 kW |
| • at 400 V at 40 °C rated value | 7.5 kW |
| • at 400 V at inside-delta circuit at 40 °C rated value | 15 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 % |
| **Minimum load [%]** | 10 %; Relative to set Ie |
| **Power loss [W] for rated value of the current at AC** | |

| | |
|---|---|
| • at 40 °C to power-up | 5 W |
| • at 50 °C to power-up | 5 W |
| • at 60 °C to power-up | 4 W |
| **Power loss [W] at AC at AC** | |
| • at 40 °C during startup | 266 W |
| • at 50 °C during startup | 229 W |
| • at 60 °C during startup | 188 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** | 420 mA |
| **Holding current in the by-pass mode operating rated value** | 820 mA |
| **Starting current at close of by-pass contact maximum** | 0.91 A |
| **Inrush current peak at connect of control supply voltage maximum** | 7.5 A |
| **Duration of inrush current peak at connect of control supply voltage** | 20 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** | 4 |
| • parameterizable | 4 |
| **Number of inputs for thermistor connection** | 1; Type A PTC or Klixon / Thermoclick |
| **Number of digital outputs** | 4 |
| • parameterizable | 3 |
| • not parameterizable | 1 |
| **Digital output version** | 3 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** | Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°) |
| **Mounting type** | screw fixing |
| **Height** | 275 mm |
| **Width** | 170 mm |
| **Depth** | 152 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** | 2.3 kg |

| Connections/ Terminals | |
|---|---|
| **Type of electrical connection** | |
| • for main current circuit | screw-type terminals |
| • for control circuit | spring-loaded terminals |
| **Type of connectable conductor cross-sections** | |
| • for main contacts | |
| — solid | 2x (1.0 ... 2.5 mm²), 2x (2.5 ... 10 mm²) |
| — finely stranded with core end processing | 2x (1.0 ... 2.5 mm²), 2x (2.5 ... 6.0 mm²) |
| • at AWG conductors for main current circuit solid | 2x (16 ... 12), 2x (14 ... 8) |
| **Type of connectable conductor cross-sections** | |
| • for control circuit solid | 2x (0.25 ... 1.5 mm²) |
| • for control circuit finely stranded with core end processing | 2x (0.25 ... 1.5 mm²) |

| | |
|---|---|
| • at AWG conductors for control circuit solid | 2x (24 ... 16) |
| • at AWG conductors for control circuit finely stranded with core end processing | 2x (24 ... 16) |
| **Wire length** | |
| • between soft starter and motor maximum | 800 m |
| • at the digital inputs at DC maximum | 1 000 m |
| **Tightening torque** | |
| • for main contacts with screw-type terminals | 2 ... 2.5 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 | 18 ... 22 lbf·in |
| • for auxiliary and control contacts with screw-type terminals | 7 ... 10.3 lbf·in |

## Ambient conditions

| | |
|---|---|
| **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 acc. 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 acc. to IEC 60721 | 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4 |
| • 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** | |
| • PROFINET standard | Yes |
| • PROFINET high-feature | Yes |
| • EtherNet/IP | Yes |
| • Modbus RTU | Yes |
| • Modbus TCP | Yes |
| • PROFIBUS | Yes |

## UL/CSA ratings

| | |
|---|---|
| **Manufacturer's article number** | |
| • **of circuit breaker** | |
| — usable for Standard Faults at 460/480 V according to UL | Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA |
| — usable for High Faults at 460/480 V according to UL | Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; Iq max = 65 kA |

| | |
|---|---|
| — usable for Standard Faults at 460/480 V at inside-delta circuit according to UL | Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA |
| — usable for High Faults at 460/480 V at inside-delta circuit according to UL | Siemens type: 3VA51, max. 35 A; Iq max = 65 kA |
| — usable for Standard Faults at 575/600 V according to UL | Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA |
| — usable for High Faults at 575/600 V at inside-delta circuit according to UL | Siemens type: 3VA51, max. 35 A; Iq max = 65 kA |
| — usable for Standard Faults at 575/600 V at inside-delta circuit according to UL | Siemens type: 3RV2742, max. 60 A or 3VA51, max. 60 A; Iq = 5 kA |
| • **of the fuse** | |
| — usable for Standard Faults up to 575/600 V according to UL | Type: Class RK5 / K5, max. 70 A; Iq = 5 kA |
| — usable for High Faults up to 575/600 V according to UL | Type: Class J / L, max. 70 A; Iq = 100 kA |
| — usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL | Type: Class RK5 / K5, max. 70 A; Iq = 5 kA |
| — usable for High Faults at inside-delta circuit up to 575/600 V according to UL | Type: Class J / L, max. 70 A; Iq = 100 kA |
| **Operating power [hp] for three-phase motors** | |
| • at 200/208 V at 50 °C rated value | 3 hp |
| • at 220/230 V at 50 °C rated value | 5 hp |
| • at 460/480 V at 50 °C rated value | 10 hp |
| • at 200/208 V at inside-delta circuit at 50 °C rated value | 7.5 hp |
| • at 220/230 V at inside-delta circuit at 50 °C rated value | 7.5 hp |
| • at 460/480 V at inside-delta circuit at 50 °C rated value | 20 hp |
| **Contact rating of auxiliary contacts according to UL** | R300-B300 |

## Safety related data

| | |
|---|---|
| **Electromagnetic compatibility** | acc. to IEC 60947-4-2 |

## ATEX

| | |
|---|---|
| **Certificate of suitability** | |
| • ATEX | Yes |
| • IECEx | Yes |
| • according to ATEX directive 2014/34/EU | BVS 18 ATEX F 003 X |
| **Type of protection according to ATEX directive 2014/34/EU** | II (2)G [Ex eb Gb] [Ex db Gb] [Ex pxb Gb],<br>II (2)D [Ex tb Db] [Ex pxb Db],<br>I (M2) [Ex db Mb] |
| **Hardware fault tolerance acc. to IEC 61508 relating to ATEX** | 0 |
| **PFDavg with low demand rate acc. to IEC 61508 relating to ATEX** | 0.008 |

| | |
|---|---|
| PFHD with high demand rate acc. to EN 62061 relating to ATEX | 0.0000005 1/h |
| Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX | SIL1 |
| T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX | 3 y |

## Certificates/ approvals

| General Product Approval | | | | EMC | For use in hazardous locations |
|---|---|---|---|---|---|
| CCC | CSA | UL | EAC | RCM | ATEX |

| Declaration of Conformity | | Test Certificates | Marine / Shipping | | |
|---|---|---|---|---|---|
| EG-Konf. | Miscellaneous | Type Test Certificates/Test Report | ABS | LRS | PRS |

| Marine / Shipping | other |
|---|---|
| | Confirmation |

## 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=3RW5514-3HA04

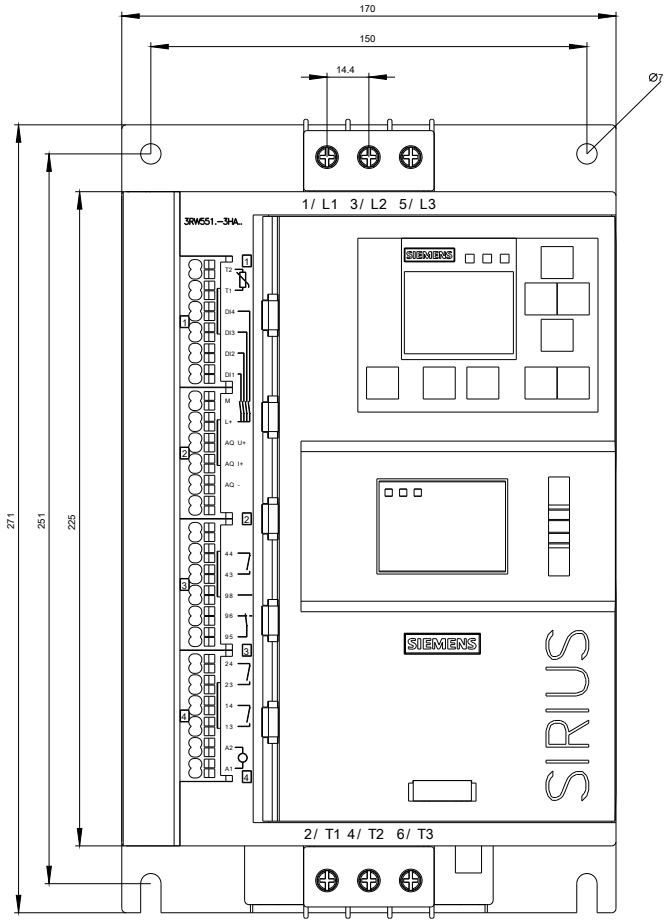
**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5514-3HA04

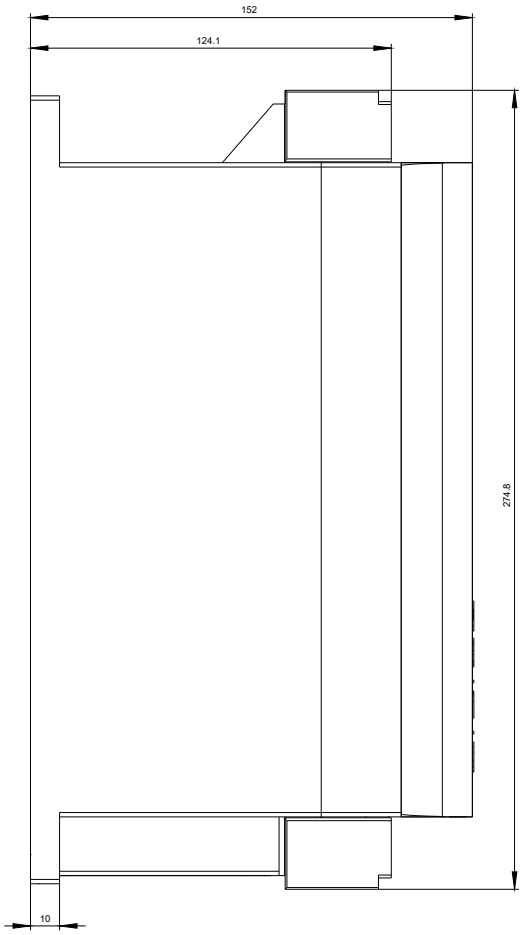
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3RW5514-3HA04

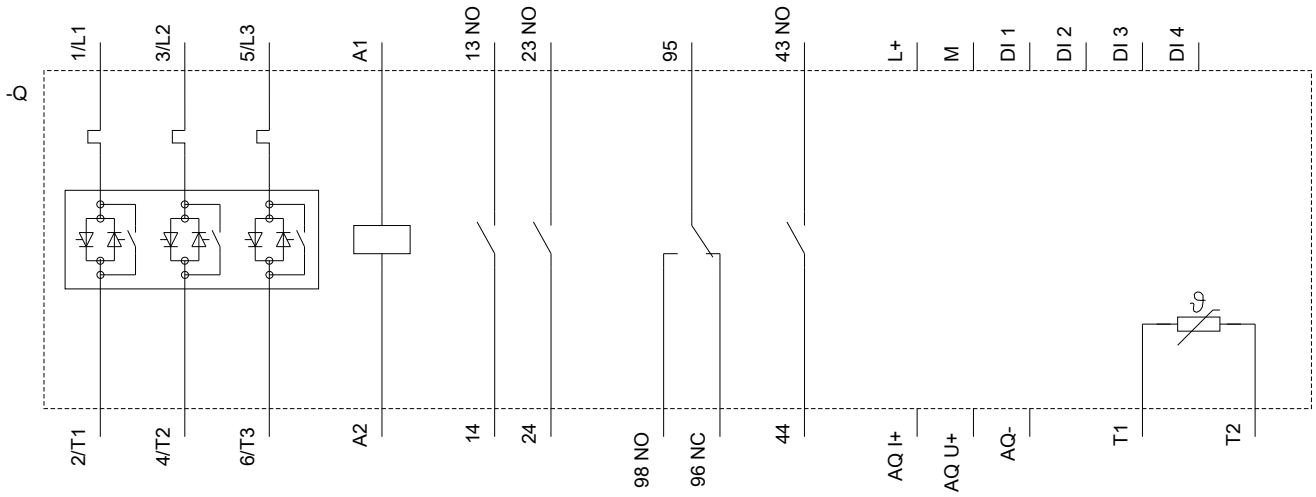
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5514-3HA04&lang=en

**Characteristic: Tripping characteristics, I²t, Let-through current**
https://support.industry.siemens.com/cs/ww/en/ps/3RW5514-3HA04/char

**Characteristic: Installation altitude**
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5514-3HA04&objecttype=14&gridview=view1





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