SIEMENS

## Data sheet 3RW5076-6TB14

Figure similar

SIRIUS soft starter 200-480 V 470 A, 110-250 V AC Screw terminals Thermistor input

| | |
|---|---|
| **product brand name** | SIRIUS |
| **product category** | Hybrid switching devices |
| **product designation** | Soft starter |
| **product type designation** | 3RW50 |
| **manufacturer's article number** | |
| ● 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 | 3VA2580-6HN32-0AA0: Type of assignment 1, Iq = 65 kA |
| ● of circuit breaker usable at 500 V | 3VA2580-6HN32-0AA0: Type of assignment 1, Iq = 65 kA |
| ● of the gG fuse usable up to 690 V | 2x3NA3365-6; Type of coordination 1, Iq = 65 kA |
| ● of full range R fuse link for semiconductor protection usable up to 690 V | 3NE1 436-2: Type of coordination 2, Iq = 65 kA |
| ● of back-up R fuse link for semiconductor protection usable up to 690 V | 3NE3 340-8: Type of coordination 2, Iq = 65 kA |
| ● of line contactor usable up to 480 V | 3RT1076 |
| ● of line contactor usable up to 690 V | 3RT1076 |
| **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 |
| **trip class** | CLASS 10A / 10E (preset) / 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** | 1 600 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; 2g to 500 Hz |
| utilization category according to IEC 60947-4-2 | AC-53a |
| **reference code according to IEC 81346-2** | Q |
| **Substance Prohibitance (Date)** | 09/23/2019 |
| **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 |
| ● 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 |
| ● **PROFIenergy** | Yes; in connection with the PROFINET Standard communication module |
| ● voltage ramp | Yes |
| ● torque control | No |
| ● analog output | No |
| **Power Electronics** | |
| **operational current** | |
| ● at 40 °C rated value | 470 A |
| ● at 50 °C rated value | 416 A |
| ● at 60 °C rated value | 380 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 | 132 kW |
| ● at 400 V at 40 °C rated value | 250 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 |
| **minimum load [%]** | 15 %; Relative to smallest settable Ie |
| **power loss [W] for rated value of the current at AC** | |
| ● at 40 °C after startup | 56 W |
| ● at 50 °C after startup | 44 W |
| ● at 60 °C after startup | 37 W |
| **power loss [W] at AC at current limitation 350 %** | |
| ● at 40 °C during startup | 5 344 W |
| ● at 50 °C during startup | 4 438 W |
| ● at 60 °C during startup | 3 876 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 |
| **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** | 105 mA |
| **inrush current by closing the bypass contacts maximum** | 2.2 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** | 0 |
| **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** | 230 mm |
| **width** | 160 mm |
| **depth** | 282 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** | 7.3 kg |
| **Connections/ Terminals** | |
| **type of electrical connection** | |
| ● for main current circuit | busbar connection |
| ● for control circuit | screw-type terminals |
| **width of connection bar maximum** | 35 mm; with connection cover 3RT1966-4EA1 maximum length 45 mm |
| **wire length for thermistor connection** | |
| ● with conductor cross-section = 0.5 mm² maximum | 50 m |
| ● with conductor cross-section = 1.5 mm² maximum | 150 m |
| ● with conductor cross-section = 2.5 mm² maximum | 250 m |
| **type of connectable conductor cross-sections** | |
| ● for main contacts for box terminal using the front clamping point solid | 95 ... 300 mm² |
| ● for main contacts for box terminal using the front clamping point finely stranded with core end processing | 70 ... 240 mm² |
| ● for main contacts for box terminal using the front clamping point finely stranded without core end processing | 70 ... 240 mm² |
| ● for main contacts for box terminal using the front clamping point stranded | 95 ... 300 mm² |
| ● for main contacts for box terminal using the back clamping point solid | 120 ... 240 mm² |
| ● for AWG cables for main contacts for box terminal using the back clamping point | 250 ... 500 kcmil |
| ● for main contacts for box terminal using both clamping points solid | min. 2x 70 mm², max. 2x 240 mm² |
| ● for main contacts for box terminal using both clamping points finely stranded with core end processing | min. 2x 50 mm², max. 2x 185 mm² |
| ● for main contacts for box terminal using both clamping points finely stranded without core end processing | min. 2x 50 mm², max. 2x 185 mm² |
| ● for main contacts for box terminal using both clamping points stranded | min. 2x 70 mm², max. 2x 240 mm² |
| ● for main contacts for box terminal using the back clamping point finely stranded with core end processing | 120 ... 185 mm² |
| ● for main contacts for box terminal using the back clamping point finely stranded without core end processing | 120 ... 185 mm² |
| ● for main contacts for box terminal using the back clamping point stranded | 120 ... 240 mm² |
| **type of connectable conductor cross-sections** | |
| ● for AWG cables for main current circuit solid | 2/0 ... 500 kcmil |
| ● for DIN cable lug for main contacts stranded | 50 ... 240 mm² |
| ● for DIN cable lug for main contacts finely stranded | 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 | 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 Manual |
| **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) |
| **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 L, max. 1600 A; Iq = 30 kA |
| — usable for High Faults up to 575/600 V according to UL | Type: Class 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 |
| **Safety related data** | |
| **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** | |
| **certificate of suitability** | |
| ● ATEX | Yes |
| ● IECEx | Yes |
| ● UKEX | Yes |
| **hardware fault tolerance according to IEC 61508 relating to ATEX** | 0 |
| **PFDavg with low demand rate according to IEC 61508 relating to ATEX** | 0.09 |
| **PFHD with high demand rate according to EN 62061 relating to ATEX** | 9E-6 1/h |
| **Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX** | SIL1 |
| **T1 value for proof test interval or service life according to IEC 61508 relating to ATEX** | 3 a |

**Certificates/ approvals**

| General Product Approval | | | | | For use in hazardous locations |
|---|---|---|---|---|---|
| CSA | CCC | Confirmation | UL | EAC | IECEx |

| For use in hazardous locations | | Declaration of Conformity | | Test Certificates | Marine / Shipping |
|---|---|---|---|---|---|
| ATEX | Explosion Protection Certificate | UKCA | CE EG-Konf. | Type Test Certificates/Test Report | ABS |

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

Confirmation

## Further information

**Siemens has decided to exit the Russian market (see here).**
https://press.siemens.com/global/en/pressrelease/siemens-wind-down-russian-business

**Siemens is working on the renewal of the current EAC certificates.**
Please contact your local Siemens office on the status of validity of the EAC certification if you intend to import or offer to supply these products to an EAC relevant market (other than the sanctioned EAEU member states Russia or Belarus).

**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=3RW5076-6TB14

**Cax online generator**
http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5076-6TB14

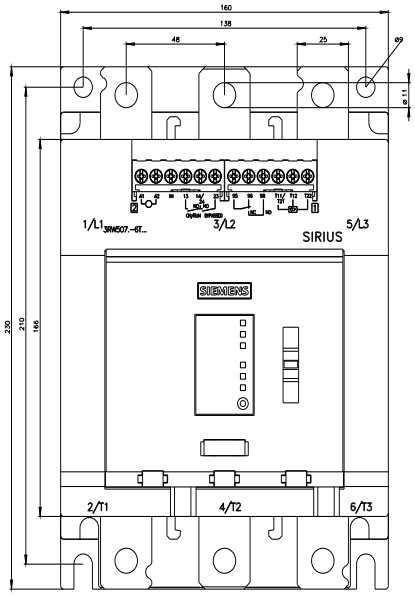
**Service&Support (Manuals, Certificates, Characteristics, FAQs,...)**
https://support.industry.siemens.com/cs/ww/en/ps/3RW5076-6TB14

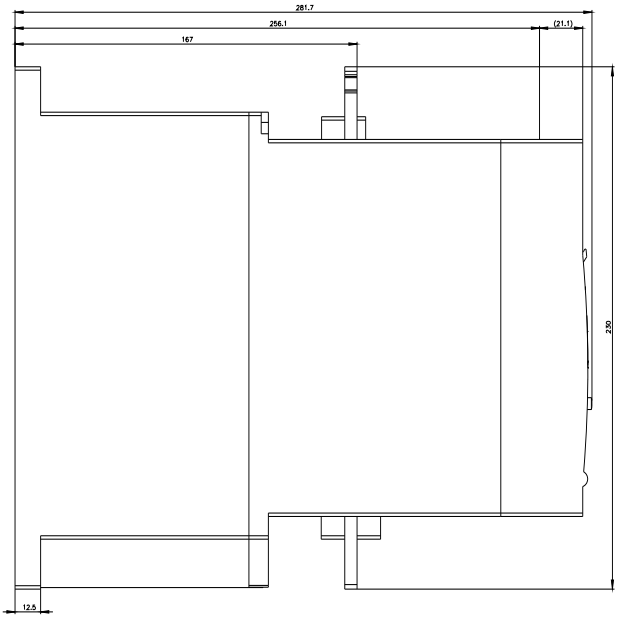
**Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)**
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5076-6TB14&lang=en

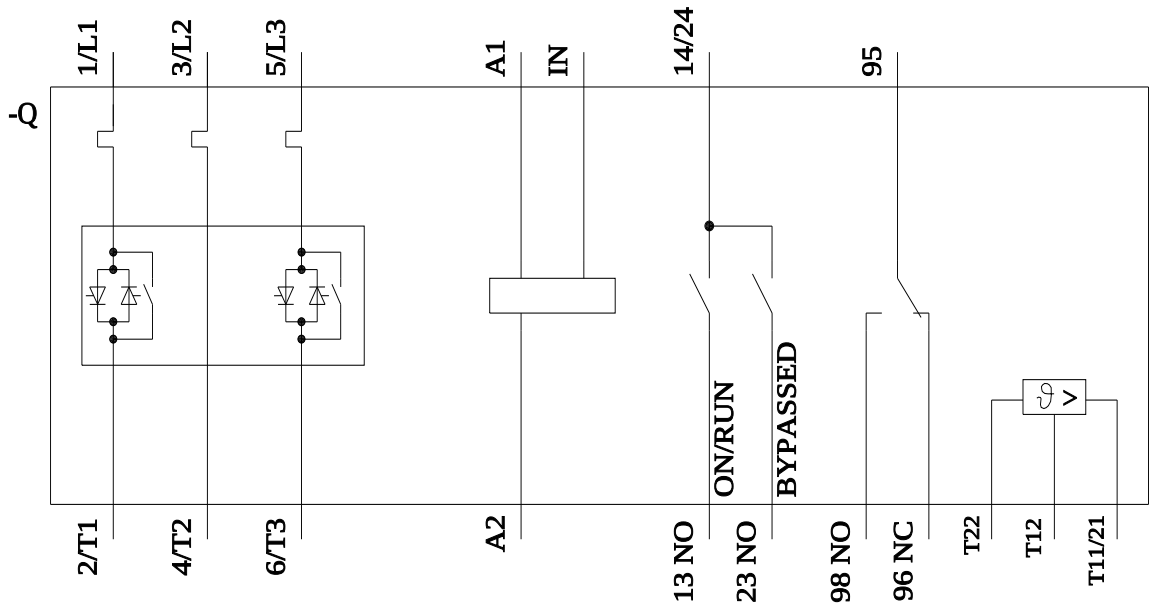
**Characteristic: Tripping characteristics, I²t, Let-through current**
https://support.industry.siemens.com/cs/ww/en/ps/3RW5076-6TB14/char

**Characteristic: Installation altitude**
http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5076-6TB14&objecttype=14&gridview=view1

**Simulation Tool for Soft Starters (STS)**
https://support.industry.siemens.com/cs/ww/en/view/101494917






**last modified:** 1/14/2023

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Siemens:

3RW50766TB14