



Figure similar

SIRIUS soft starter 200-480 V 570 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**

3RW50

**manufacturer's article number**

[3RW5980-0HS01](#)

- of standard HMI module usable
- of high feature HMI module usable
- of communication module PROFINET standard usable
- of communication module PROFIBUS usable
- of communication module Modbus TCP usable
- of communication module Modbus RTU usable
- of communication module Ethernet/IP
- of circuit breaker usable at 400 V
- of circuit breaker usable at 500 V
- of the gG fuse usable up to 690 V
- of full range R fuse link for semiconductor protection usable up to 690 V
- of back-up R fuse link for semiconductor protection usable up to 690 V
- of line contactor usable up to 480 V
- of line contactor usable up to 690 V

[3RW5980-0HF00](#)

[3RW5980-0CS00](#)

[3RW5980-0CP00](#)

[3RW5980-0CT00](#)

[3RW5980-0CR00](#)

[3RW5980-0CE00](#)

[3VA2580-6HN32-0AA0](#); Type of assignment 1,  $I_q = 65 \text{ kA}$

[3VA2580-6HN32-0AA0](#); Type of assignment 1,  $I_q = 65 \text{ kA}$

2x3NA3365-6; Type of coordination 1,  $I_q = 65 \text{ kA}$

[3NE1 437-2](#); Type of coordination 2,  $I_q = 65 \text{ kA}$

[3NE3 340-8](#); Type of coordination 2,  $I_q = 65 \text{ kA}$

3TF68

3TF68

**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 %

**accuracy class according to IEC 61557-12**

5 %

**certificate of suitability**

Yes

- CE marking
- UL approval
- CSA approval

Yes

Yes

**product component**

No

- HMI-High Feature
- is supported HMI-Standard
- is supported HMI-High Feature

Yes

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  |
| <b>insulation voltage rated value</b>                 | 600 V   |
| <b>degree of pollution</b>                            | 3, acc. to IEC 60947-4-2  |
| <b>impulse voltage rated value</b>                    | 6 kV  |
| <b>blocking voltage of the thyristor maximum</b>      | 1 600 V   |
| <b>service factor</b>                                 | 1   |
| <b>surge voltage resistance rated value</b>           | 6 kV  |
| <b>maximum permissible voltage for safe isolation</b> | 600 V   |
| • between main and auxiliary circuit                  | 15 g / 11 ms, from 12 g / 11 ms with potential contact lifting                  |
| <b>shock resistance</b>                               | 15 mm to 6 Hz; 2g to 500 Hz   |
| <b>vibration resistance</b>                           | AC-53a  |
| utilization category according to IEC 60947-4-2       | Q   |
| <b>reference code according to IEC 81346-2</b>        | 09/23/2019  |
| <b>Substance Prohibition (Date)</b>                   |   |
| <b>product function</b>                               |   |
| • 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; 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   |
| • <b>PROFlenergy</b>                                  | 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

|   |               |
|---|---------------|
| <b>operational current</b>                                    | 570 A         |
| • at 40 °C rated value  | 504 A         |
| • at 50 °C rated value  | 460 A         |
| • at 60 °C rated value  |               |
| <b>operating voltage</b>                                      | 200 ... 480 V |
| • rated value   |               |
| <b>relative negative tolerance of the operating voltage</b>   | -15 %         |
| <b>relative positive tolerance of the operating voltage</b>   | 10 %          |
| <b>operating power for 3-phase motors</b>                     |               |
| • at 230 V at 40 °C rated value                               | 160 kW        |
| • at 400 V at 40 °C rated value                               | 315 kW        |
| <b>Operating frequency 1 rated value</b>                      | 50 Hz         |
| <b>Operating frequency 2 rated value</b>                      | 60 Hz         |
| <b>relative negative tolerance of the operating frequency</b> | -10 %         |
| <b>relative positive tolerance of the operating frequency</b> | 10 %          |
| <b>adjustable motor current</b>                               |               |
| • at rotary coding switch on switch position 1                | 240 A         |
| • at rotary coding switch on switch position 2                | 262 A         |
| • at rotary coding switch on switch position 3                | 284 A         |
| • at rotary coding switch on switch position 4                | 306 A         |
| • at rotary coding switch on switch position 5                | 328 A         |
| • at rotary coding switch on switch position 6                | 350 A         |
| • at rotary coding switch on switch position 7                | 372 A         |
| • at rotary coding switch on switch position 8                | 394 A         |
| • at rotary coding switch on switch position 9                | 416 A         |

|   |  |
|---|--|
| • at rotary coding switch on switch position 10                                 | 438 A  |
| • at rotary coding switch on switch position 11                                 | 460 A  |
| • at rotary coding switch on switch position 12                                 | 482 A  |
| • at rotary coding switch on switch position 13                                 | 504 A  |
| • at rotary coding switch on switch position 14                                 | 526 A  |
| • at rotary coding switch on switch position 15                                 | 548 A  |
| • at rotary coding switch on switch position 16                                 | 570 A  |
| • minimum   | 240 A  |
| <b>minimum load [%]</b>   | 15 %; Relative to smallest settable $I_e$  |
| <b>power loss [W] for rated value of the current at AC</b>                      |  |
| • at 40 °C after startup  | 73 W   |
| • at 50 °C after startup  | 57 W   |
| • at 60 °C after startup  | 47 W   |
| <b>power loss [W] at AC at current limitation 350 %</b>                         |  |
| • at 40 °C during startup   | 7 019 W  |
| • at 50 °C during startup   | 5 801 W  |
| • at 60 °C during startup   | 5 048 W  |
| <b>type of the motor protection</b>   | Electronic, tripping in the event of thermal overload of the motor   |
| <b>Control circuit/ Control</b>   |  |
| <b>type of voltage of the control supply voltage</b>                            | AC   |
| <b>control supply voltage at AC</b>   |  |
| • at 50 Hz  | 110 ... 250 V  |
| • at 60 Hz  | 110 ... 250 V  |
| <b>relative negative tolerance of the control supply voltage at AC at 50 Hz</b> | -15 %  |
| <b>relative positive tolerance of the control supply voltage at AC at 50 Hz</b> | 10 %   |
| <b>relative negative tolerance of the control supply voltage at AC at 60 Hz</b> | -15 %  |
| <b>relative positive tolerance of the control supply voltage at AC at 60 Hz</b> | 10 %   |
| <b>control supply voltage frequency</b>   | 50 ... 60 Hz   |
| <b>relative negative tolerance of the control supply voltage frequency</b>      | -10 %  |
| <b>relative positive tolerance of the control supply voltage frequency</b>      | 10 %   |
| <b>control supply current in standby mode rated value</b>                       | 30 mA  |
| <b>holding current in bypass operation rated value</b>                          | 105 mA   |
| <b>inrush current by closing the bypass contacts maximum</b>                    | 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   |
| <b>design of the overvoltage protection</b>                                     | Varistor   |
| <b>design of short-circuit protection for control circuit</b>                   | 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 |
| <b>Inputs/ Outputs</b>  |  |
| <b>number of digital inputs</b>   | 1  |
| <b>number of digital outputs</b>  | 3  |
| • not parameterizable   | 2  |
| <b>digital output version</b>   | 2 normally-open contacts (NO) / 1 changeover contact (CO)  |
| <b>number of analog outputs</b>   | 1  |
| <b>switching capacity current of the relay outputs</b>                          |  |
| • at AC-15 at 250 V rated value   | 3 A  |
| • at DC-13 at 24 V rated value  | 1 A  |
| <b>Installation/ mounting/ dimensions</b>                                       |  |
| <b>mounting position</b>  | with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back   |
| <b>fastening method</b>   | screw fixing   |
| <b>height</b>   | 230 mm   |
| <b>width</b>  | 160 mm   |
| <b>depth</b>  | 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   |
| <b>weight without packaging</b> | 7.3 kg |

## Connections/ Terminals

|   |  |
|---|--|
| <b>type of electrical connection</b>  | busbar connection<br>screw-type terminals<br>35 mm; with connection cover 3RT1966-4EA1 maximum length 45 mm                                  |
| <b>width of connection bar maximum</b>  | 95 ... 300 mm <sup>2</sup>   |
| <b>type of connectable conductor cross-sections</b>   | 70 ... 240 mm <sup>2</sup>   |
| • for main contacts for box terminal using the front clamping point solid                                       | 70 ... 240 mm <sup>2</sup>   |
| • for main contacts for box terminal using the front clamping point finely stranded with core end processing    | 95 ... 300 mm <sup>2</sup>   |
| • for main contacts for box terminal using the front clamping point finely stranded without core end processing | 3/0 ... 600 kcmil  |
| • for main contacts for box terminal using the front clamping point stranded                                    | 120 ... 240 mm <sup>2</sup>  |
| • at AWG cables for main contacts for box terminal using the front clamping point                               | 250 ... 500 kcmil  |
| • for main contacts for box terminal using the back clamping point solid  | min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>   |
| • at AWG cables for main contacts for box terminal using the back clamping point                                | min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>   |
| • for main contacts for box terminal using both clamping points solid   | min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>   |
| • for main contacts for box terminal using both clamping points finely stranded with core end processing        | min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>   |
| • for main contacts for box terminal using both clamping points finely stranded without core end processing     | 120 ... 185 mm <sup>2</sup>  |
| • for main contacts for box terminal using both clamping points stranded  | 120 ... 185 mm <sup>2</sup>  |
| • for main contacts for box terminal using the back clamping point finely stranded with core end processing     | 120 ... 240 mm <sup>2</sup>  |
| • for main contacts for box terminal using the back clamping point finely stranded without core end processing  | 2/0 ... 500 kcmil  |
| • for main contacts for box terminal using the back clamping point stranded                                     | 50 ... 240 mm <sup>2</sup>   |
| • for main contacts for box terminal using the back clamping point solid  | 70 ... 240 mm <sup>2</sup>   |
| <b>type of connectable conductor cross-sections</b>   | 1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )<br>1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> ) |
| <b>type of connectable conductor cross-sections</b>   | 1x (20 ... 12), 2x (20 ... 14)   |
| <b>wire length</b>  | 800 m<br>1 000 m   |
| <b>tightening torque</b>  | 14 ... 24 N·m<br>0.8 ... 1.2 N·m   |
| <b>tightening torque [lbf·in]</b>   | 124 ... 210 lbf·in<br>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 |
|---|--|

|   |   |
|---|---|
| <b>ambient temperature</b>                | -25 ... +60 °C; Please observe derating at temperatures of 40 °C or above<br>-40 ... +80 °C   |
| • during operation                        |   |
| • during storage and transport            |   |
| <b>environmental category</b>             | 3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6<br>1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4<br>2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)<br>acc. to IEC 60947-4-2: Class A |
| • during operation according to IEC 60721 |   |
| • during storage according to IEC 60721   |   |
| • during transport according to IEC 60721 |   |

|  |     |
|--|-----|
| <b>EMC emitted interference</b>          |     |
| <b>Communication/ Protocol</b>           |     |
| <b>communication module is supported</b> |     |
| • PROFINET standard                      | Yes |
| • EtherNet/IP                            | Yes |
| • Modbus RTU                             | Yes |
| • Modbus TCP                             | Yes |
| • PROFIBUS                               | Yes |

|  |   |
|--|---|
| <b>UL/CSA ratings</b>  |   |
| <b>manufacturer's article number</b>                         |   |
| • <b>of the fuse</b>   |   |
| — 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 |
| <b>operating power [hp] for 3-phase motors</b>               |   |
| • at 200/208 V at 50 °C rated value                          | 150 hp                                  |
| • at 220/230 V at 50 °C rated value                          | 200 hp                                  |
| • at 460/480 V at 50 °C rated value                          | 400 hp                                  |

|  |   |
|--|---|
| <b>Safety related data</b>                                     |   |
| <b>protection class IP on the front according to IEC 60529</b> | IP00; IP20 with cover                                       |
| <b>touch protection on the front according to IEC 60529</b>    | finger-safe, for vertical contact from the front with cover |

|   |          |
|---|----------|
| <b>ATEX</b>   |          |
| <b>certificate of suitability</b>   |          |
| • ATEX  | Yes      |
| • IECEx   | Yes      |
| • UKEX  | Yes      |
| <b>hardware fault tolerance according to IEC 61508 relating to ATEX</b>                         | 0        |
| <b>PFDavg with low demand rate according to IEC 61508 relating to ATEX</b>                      | 0.09     |
| <b>PFHD with high demand rate according to EN 62061 relating to ATEX</b>                        | 9E-6 1/h |
| <b>Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX</b>                     | SIL1     |
| <b>T1 value for proof test interval or service life according to IEC 61508 relating to ATEX</b> | 3 a      |

|                                 |                                       |
|---------------------------------|---------------------------------------|
| <b>Certificates/ approvals</b>  |                                       |
| <b>General Product Approval</b> | <b>For use in hazardous locations</b> |



[Confirmation](#)



|                                       |                                  |                          |                          |
|---------------------------------------|----------------------------------|--------------------------|--------------------------|
| <b>For use in hazardous locations</b> | <b>Declaration of Conformity</b> | <b>Test Certificates</b> | <b>Marine / Shipping</b> |
|---------------------------------------|----------------------------------|--------------------------|--------------------------|



[Explosion Protection Certificate](#)



[Type Test Certificates/Test Report](#)



**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=3RW5077-6AB14>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5077-6AB14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5077-6AB14>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5077-6AB14&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5077-6AB14&lang=en)

**Characteristic: Tripping characteristics,  $I^2t$ , Let-through current**

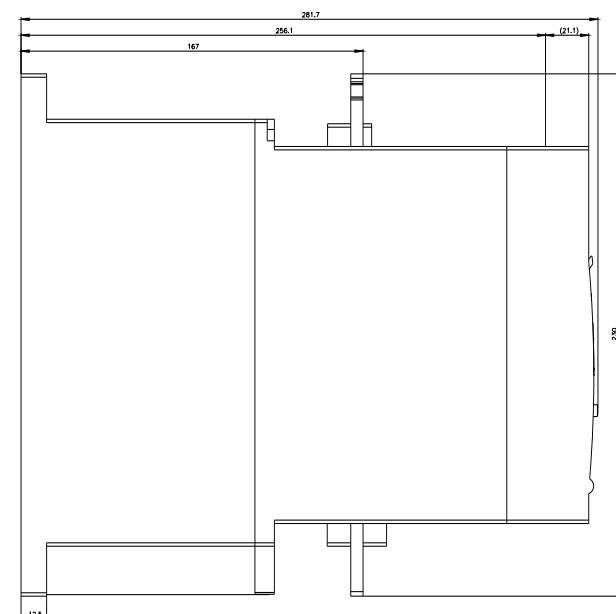
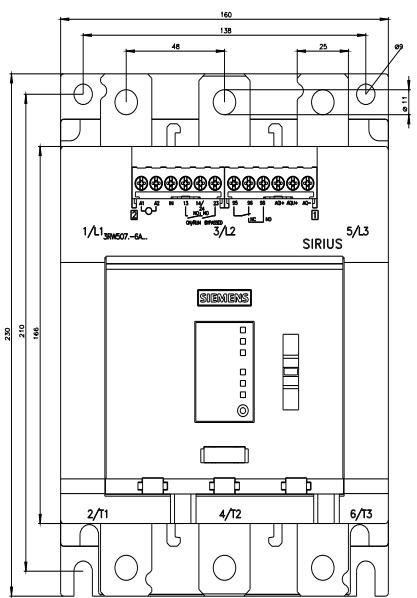
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5077-6AB14/char>

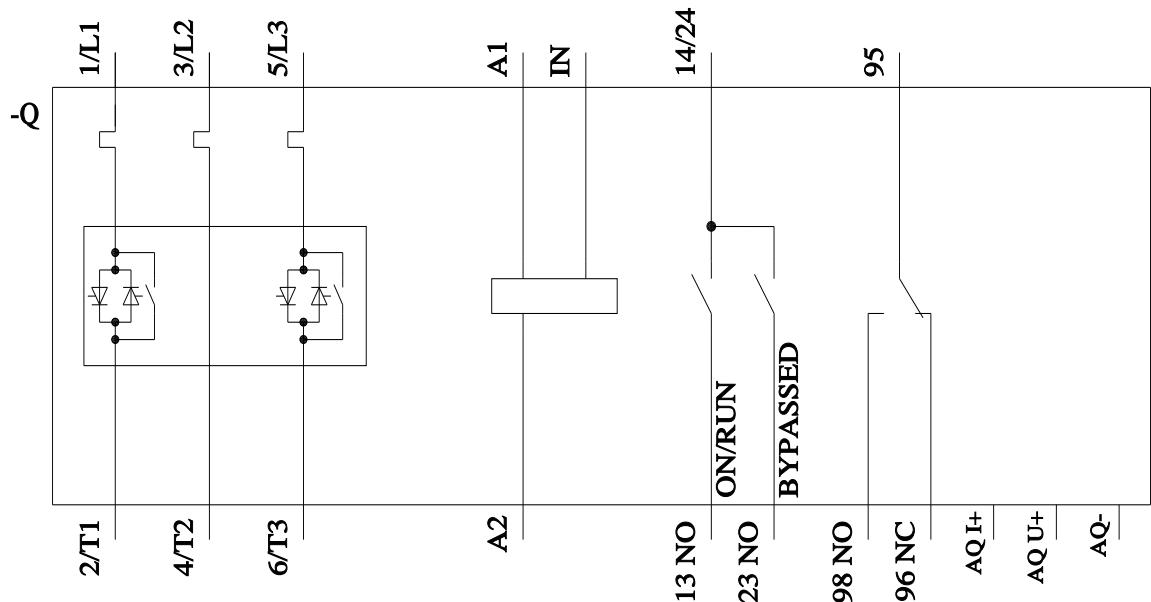
**Characteristic: Installation altitude**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5077-6AB14&objecttype=14&gridview=view1>

**Simulation Tool for Soft Starters (STS)**

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





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