



SIRIUS soft starter 200-480 V 370 A, 110-250 V AC Screw terminals

**product brand name**  
**product category**  
**product designation**  
**product type designation**  
**manufacturer's article number**

- of high feature HMI module usable
- of communication module PROFINET standard usable
- of communication module PROFINET high-feature 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 circuit breaker usable at 400 V at inside-delta circuit
- of circuit breaker usable at 500 V at inside-delta circuit
- of the gG fuse usable up to 690 V
- of the gG fuse usable at inside-delta circuit up to 500 V
- of full range R fuse link for semiconductor protection usable up to 690 V

SIRIUS  
 Hybrid switching devices  
 Soft starter  
 3RW55

[3RW5980-0HF00](#)

[3RW5980-0CS00](#)

[3RW5950-0CH00](#)

[3RW5980-0CP00](#)

[3RW5980-0CT00](#)

[3RW5980-0CR00](#)

[3RW5980-0CE00](#)

[3VA2440-7MN32-0AA0](#); Type of coordination 1, Iq = 65 kA, CLASS 10

[3VA2440-7MN32-0AA0](#); Type of coordination 1, Iq = 65 kA, CLASS 10

[3VA2580-6HN32-0AA0](#); Type of coordination 1, Iq = 65 kA, CLASS 10

[3VA2580-6HN32-0AA0](#); Type of coordination 1, Iq = 65 kA, CLASS 10

2x3NA3365-6; Type of coordination 1, Iq = 65 kA

2x3NA3365-6; Type of coordination 1, Iq = 65 kA

[3NE1334-2](#); Type of coordination 2, Iq = 65 kA

### General technical data

|   |                      |
|---|----------------------|
| <b>starting voltage [%]</b>                     | 20 ... 100 %         |
| <b>stopping voltage [%]</b>                     | 50 %; non-adjustable |
| <b>start-up ramp time of soft starter</b>       | 0 ... 360 s          |
| <b>ramp-down time of soft starter</b>           | 0 ... 360 s          |
| <b>start torque [%]</b>                         | 10 ... 100 %         |
| <b>stopping torque [%]</b>                      | 10 ... 100 %         |
| <b>torque limitation [%]</b>                    | 20 ... 200 %         |
| <b>current limiting value [%] adjustable</b>    | 125 ... 800 %        |
| <b>breakaway voltage [%] adjustable</b>         | 40 ... 100 %         |
| <b>breakaway time adjustable</b>                | 0 ... 2 s            |
| <b>number of parameter sets</b>                 | 3                    |
| <b>accuracy class according to IEC 61557-12</b> | 5 %                  |
| <b>certificate of suitability</b>               |                      |
| • CE marking                                    | Yes                  |
| • UL approval                                   | Yes                  |
| • CSA approval                                  | Yes                  |
| <b>product component</b>                        |                      |



|  |     |
|--|-----|
| • application wizards                        | Yes |
| • alternative run-down                       | Yes |
| • emergency operation mode                   | Yes |
| • reversing operation                        | Yes |
| • soft starting at heavy starting conditions | Yes |

### Power Electronics

|   |  |
|---|--|
| <b>operational current</b>  |  |
| • at 40 °C rated value  | 370 A  |
| • at 40 °C rated value minimum  | 74 A   |
| • at 50 °C rated value  | 328 A  |
| • at 60 °C rated value  | 300 A  |
| <b>operational current at inside-delta circuit</b>                                  |  |
| • at 40 °C rated value  | 641 A  |
| • at 50 °C rated value  | 568 A  |
| • at 60 °C rated value  | 519 A  |
| <b>operating voltage</b>  |  |
| • rated value   | 200 ... 480 V  |
| • at inside-delta circuit rated value   | 200 ... 480 V  |
| <b>relative negative tolerance of the operating voltage</b>                         | -15 %  |
| <b>relative positive tolerance of the operating voltage</b>                         | 10 %   |
| <b>relative negative tolerance of the operating voltage at inside-delta circuit</b> | -15 %  |
| <b>relative positive tolerance of the operating voltage at inside-delta circuit</b> | 10 %   |
| <b>operating power for 3-phase motors</b>   |  |
| • at 230 V at 40 °C rated value   | 110 kW   |
| • at 230 V at inside-delta circuit at 40 °C rated value                             | 200 kW   |
| • at 400 V at 40 °C rated value   | 200 kW   |
| • at 400 V at inside-delta circuit at 40 °C rated value                             | 355 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>minimum load [%]</b>   | 10 %; Relative to set le   |
| <b>power loss [W] for rated value of the current at AC</b>                          |  |
| • at 40 °C after startup  | 111 W  |
| • at 50 °C after startup  | 98 W   |
| • at 60 °C after startup  | 90 W   |
| <b>power loss [W] at AC at current limitation 350 %</b>                             |  |
| • at 40 °C during startup   | 5 563 W  |
| • at 50 °C during startup   | 4 694 W  |
| • at 60 °C during startup   | 4 145 W  |
| <b>type of the motor protection</b>   | Electronic, tripping in the event of thermal overload of the motor |

### Control circuit/ Control

|   |               |
|---|---------------|
| <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>                       | 100 mA        |
| <b>holding current in bypass operation rated value</b>                          | 150 mA        |
| <b>locked-rotor current at close of bypass contact maximum</b>                  | 0.87 A        |

|  |  |
|--|--|
| inrush current peak at application of control supply voltage maximum     | 43 A   |
| duration of inrush current peak at application of control supply voltage | 1.6 ms   |
| <b>design of the overvoltage protection</b>                              | Varistor   |
| <b>design of short-circuit protection for control circuit</b>            | 4 A gG fuse (I <sub>cu</sub> =1 kA), 6 A quick-acting fuse (I <sub>cu</sub> =1 kA), C1 miniature circuit breaker (I <sub>cu</sub> = 600 A), C6 miniature circuit breaker (I <sub>cu</sub> = 300 A); Is not part of scope of supply |

### Inputs/ Outputs

|   |   |
|---|---|
| <b>number of digital inputs</b>   | 4   |
| <ul style="list-style-type: none"> <li>parameterizable</li> </ul>                               | 4   |
| <ul style="list-style-type: none"> <li><b>number of digital outputs</b></li> </ul>              | 4   |
| <ul style="list-style-type: none"> <li>number of digital outputs parameterizable</li> </ul>     | 3   |
| <ul style="list-style-type: none"> <li>number of digital outputs not parameterizable</li> </ul> | 1   |
| <b>digital output version</b>   | 3 normally-open contacts (NO) / 1 changeover contact (CO) |
| <b>number of analog outputs</b>   | 1   |
| <b>switching capacity current of the relay outputs</b>  |   |
| <ul style="list-style-type: none"> <li>at AC-15 at 250 V rated value</li> </ul>                 | 3 A   |
| <ul style="list-style-type: none"> <li>at DC-13 at 24 V rated value</li> </ul>                  | 1 A   |

### Installation/ mounting/ dimensions

|   |  |
|---|--|
| <b>mounting position</b>                                      | Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°) |
| <b>fastening method</b>                                       | screw fixing   |
| <b>height</b>   | 393 mm   |
| <b>width</b>  | 210 mm   |
| <b>depth</b>  | 203 mm   |
| required spacing with side-by-side mounting                   |  |
| <ul style="list-style-type: none"> <li>forwards</li> </ul>    | 10 mm  |
| <ul style="list-style-type: none"> <li>backwards</li> </ul>   | 0 mm   |
| <ul style="list-style-type: none"> <li>upwards</li> </ul>     | 100 mm   |
| <ul style="list-style-type: none"> <li>downwards</li> </ul>   | 75 mm  |
| <ul style="list-style-type: none"> <li>at the side</li> </ul> | 5 mm   |
| <b>weight without packaging</b>                               | 10.9 kg  |

### Connections/ Terminals

|  |  |
|--|--|
| <b>type of electrical connection</b>   | busbar connection  |
| <ul style="list-style-type: none"> <li>for main current circuit</li> </ul>                                     | screw-type terminals   |
| <ul style="list-style-type: none"> <li>for control circuit</li> </ul>  |  |
| <b>width of connection bar maximum</b>   | 45 mm  |
| <b>wire length for thermistor connection</b>   |  |
| <ul style="list-style-type: none"> <li>with conductor cross-section = 0.5 mm<sup>2</sup> maximum</li> </ul>    | 50 m   |
| <ul style="list-style-type: none"> <li>with conductor cross-section = 1.5 mm<sup>2</sup> maximum</li> </ul>    | 150 m  |
| <ul style="list-style-type: none"> <li>with conductor cross-section = 2.5 mm<sup>2</sup> maximum</li> </ul>    | 250 m  |
| <b>type of connectable conductor cross-sections</b>  |  |
| <ul style="list-style-type: none"> <li>for DIN cable lug for main contacts stranded</li> </ul>                 | 2x (50 ... 240 mm <sup>2</sup> )                                     |
| <ul style="list-style-type: none"> <li>for DIN cable lug for main contacts finely stranded</li> </ul>          | 2x (70 ... 240 mm <sup>2</sup> )                                     |
| <b>type of connectable conductor cross-sections</b>  |  |
| <ul style="list-style-type: none"> <li>for control circuit solid</li> </ul>                                    | 1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> ) |
| <ul style="list-style-type: none"> <li>for control circuit finely stranded with core end processing</li> </ul> | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> ) |
| <ul style="list-style-type: none"> <li>at AWG cables for control circuit solid</li> </ul>                      | 1x (20 ... 12), 2x (20 ... 14)                                       |
| <b>wire length</b>   |  |
| <ul style="list-style-type: none"> <li>between soft starter and motor maximum</li> </ul>                       | 800 m  |
| <ul style="list-style-type: none"> <li>at the digital inputs at DC maximum</li> </ul>                          | 1 000 m  |
| <b>tightening torque</b>   |  |
| <ul style="list-style-type: none"> <li>for main contacts with screw-type terminals</li> </ul>                  | 14 ... 24 N·m  |
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts with screw-type terminals</li> </ul> | 0.8 ... 1.2 N·m  |
| <b>tightening torque [lbf·in]</b>  |  |
| <ul style="list-style-type: none"> <li>for main contacts with screw-type terminals</li> </ul>                  | 124 ... 210 lbf·in   |
| <ul style="list-style-type: none"> <li>for auxiliary and control contacts with screw-type terminals</li> </ul> | 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                         |
| <b>ambient temperature</b>   |   |
| <ul style="list-style-type: none"> <li>during operation</li> </ul> | -25 ... +60 °C; Please observe derating at temperatures of 40 °C or |

|  |   |
|--|---|
| <ul style="list-style-type: none"> <li>during storage and transport</li> </ul> <b>environmental category</b> <ul style="list-style-type: none"> <li>during operation according to IEC 60721</li> <li>during storage according to IEC 60721</li> <li>during transport according to IEC 60721</li> </ul> <b>EMC emitted interference</b>   | <p>above<br/>-40 ... +80 °C</p> <p>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</p> |
| <b>Communication/ Protocol</b>   |   |
| <b>communication module is supported</b>   |   |
| <ul style="list-style-type: none"> <li>PROFINET standard</li> <li>PROFINET high-feature</li> <li>EtherNet/IP</li> <li>Modbus RTU</li> <li>Modbus TCP</li> <li>PROFIBUS</li> </ul>  | <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>   |
| <b>UL/CSA ratings</b>  |   |
| <b>manufacturer's article number</b>   |   |
| <ul style="list-style-type: none"> <li><b>of the fuse</b> <ul style="list-style-type: none"> <li>— usable for Standard Faults up to 575/600 V according to UL</li> <li>— usable for High Faults up to 575/600 V according to UL</li> <li>— usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL</li> <li>— usable for High Faults at inside-delta circuit up to 575/600 V according to UL</li> </ul> </li> </ul> | <p>Type: Class J / L, max. 1200 A; Iq = 18 kA</p> <p>Type: Class J / L, max. 1200 A; Iq = 100 kA</p> <p>Type: Class J / L, max. 1200 A; Iq = 18 kA</p> <p>Type: Class J / L, max. 1200 A; Iq = 100 kA</p>   |
| <b>operating power [hp] for 3-phase motors</b>   |   |
| <ul style="list-style-type: none"> <li>at 200/208 V at 50 °C rated value</li> <li>at 220/230 V at 50 °C rated value</li> <li>at 460/480 V at 50 °C rated value</li> <li>at 200/208 V at inside-delta circuit at 50 °C rated value</li> <li>at 220/230 V at inside-delta circuit at 50 °C rated value</li> <li>at 460/480 V at inside-delta circuit at 50 °C rated value</li> </ul>   | <p>100 hp</p> <p>125 hp</p> <p>250 hp</p> <p>200 hp</p> <p>200 hp</p> <p>450 hp</p>   |
| <b>contact rating of auxiliary contacts according to UL</b>  | R300-B300   |
| <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>electromagnetic compatibility</b>   | acc. to IEC 60947-4-2   |
| <b>ATEX</b>  |   |
| <b>certificate of suitability</b>  |   |
| <ul style="list-style-type: none"> <li>ATEX</li> <li>IECEX</li> <li>according to ATEX directive 2014/34/EU</li> </ul>  | <p>Yes</p> <p>Yes</p> <p>BVS 18 ATEX F 003 X</p>  |
| <b>type of protection according to ATEX directive 2014/34/EU</b>   | II (2)G [Ex eb Gb] [Ex db Gb] [Ex pxb Gb], II (2)D [Ex tb Db] [Ex pxb Db], I (M2) [Ex db Mb]  |
| <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>   | 0.008   |
| <b>PFHD with high demand rate according to EN 62061 relating to ATEX</b>   | 5E-7 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>EMC</b>  |



[Confirmation](#)



For use in hazardous locations

Declaration of Conformity

Test Certificates

Marine / Shipping



IECEX



ATEX



EG-Konf.

[Type Test Certificates/Test Report](#)



ABS



BUREAU VERITAS

Marine / Shipping

other



LRS



PRS

[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=3RW5546-6HA14>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5546-6HA14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5546-6HA14>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5546-6HA14&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5546-6HA14&lang=en)

Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current

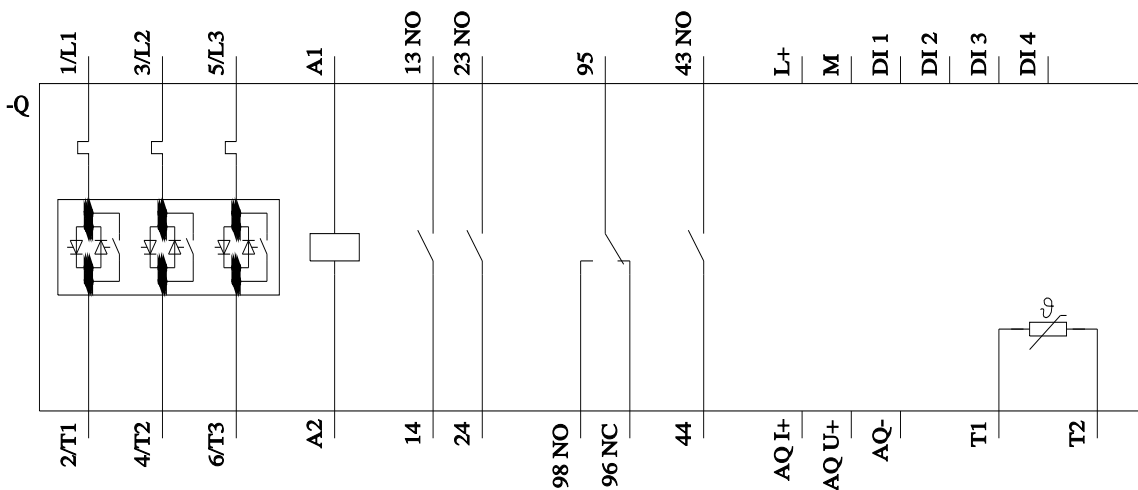
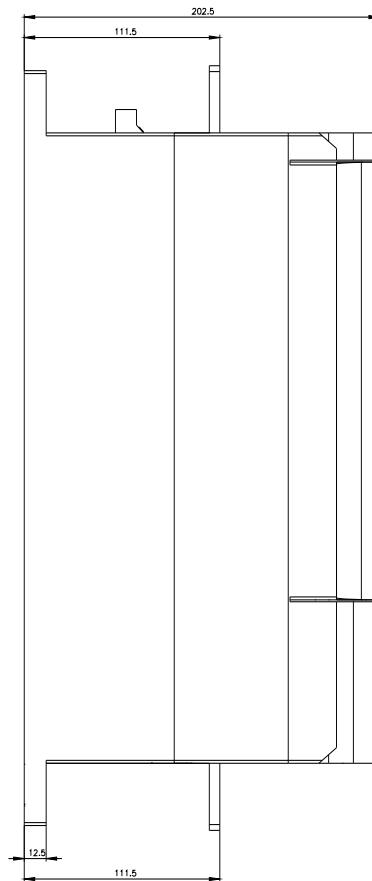
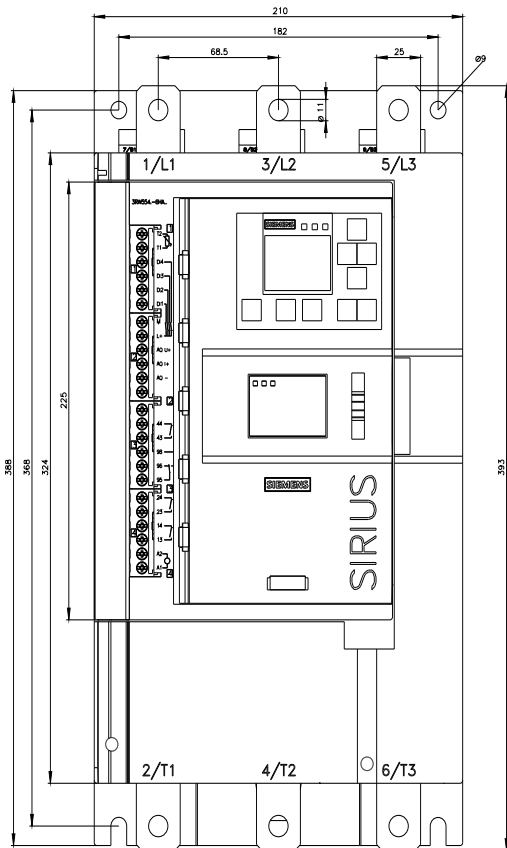
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5546-6HA14/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5546-6HA14&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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







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