



SIRIUS soft starter 200-690 V 250 A, 110-250 V AC Screw terminals

|   |  |
|---|--|
| <b>product brand name</b>                       | SIRIUS   |
| <b>product category</b>                         | Hybrid switching devices   |
| <b>product designation</b>                      | Soft starter   |
| <b>product type designation</b>                 | 3RW55  |
| <b>manufacturer's article number</b>            | <ul style="list-style-type: none"> <li>• of high feature HMI module usable <a href="#">3RW5980-0HF00</a></li> <li>• of communication module PROFINET standard usable <a href="#">3RW5980-0CS00</a></li> <li>• of communication module PROFINET high-feature usable <a href="#">3RW5950-0CH00</a></li> <li>• of communication module PROFIBUS usable <a href="#">3RW5980-0CP00</a></li> <li>• of communication module Modbus TCP usable <a href="#">3RW5980-0CT00</a></li> <li>• of communication module Modbus RTU usable <a href="#">3RW5980-0CR00</a></li> <li>• of communication module Ethernet/IP <a href="#">3RW5980-0CE00</a></li> <li>• of circuit breaker usable at 400 V <a href="#">3VA2440-7MN32-0AA0: Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 500 V <a href="#">3VA2440-7MN32-0AA0: Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 400 V at inside-delta circuit <a href="#">3VA2450-7MN32-0AA0: Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 500 V at inside-delta circuit <a href="#">3VA2450-7MN32-0AA0: Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of the gG fuse usable up to 690 V 2x3NA3354-6; Type of coordination 1, Iq = 65 kA</li> <li>• of the gG fuse usable at inside-delta circuit up to 500 V 2x3NA3354-6; Type of coordination 1, Iq = 65 kA</li> <li>• of full range R fuse link for semiconductor protection usable up to 690 V <a href="#">3NE1331-0: Type of coordination 2, Iq = 65 kA</a></li> <li>• of back-up R fuse link for semiconductor protection usable up to 690 V <a href="#">3NE3335: Type of coordination 2, Iq = 65 kA</a></li> </ul> |
| <b>General technical data</b>                   |  |
| <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>               |  |





- torque control
- combined braking
- analog output
- programmable control inputs/outputs
- condition monitoring
- automatic parameterisation
- application wizards
- alternative run-down
- emergency operation mode
- reversing operation
- soft starting at heavy starting conditions

Yes  
 Yes  
 Yes; 4 ... 20 mA (dc) ... 10 V  
 Yes  
 Yes  
 Yes  
 Yes  
 Yes  
 Yes  
 Yes  
 Yes  
 Yes  
 Yes

### Power Electronics

|   |  |
|---|--|
| <b>operational current</b>  |  |
| • at 40 °C rated value  | 250 A  |
| • at 40 °C rated value minimum  | 50 A   |
| • at 50 °C rated value  | 220 A  |
| • at 60 °C rated value  | 200 A  |
| <b>operational current at inside-delta circuit</b>                                  |  |
| • at 40 °C rated value  | 433 A  |
| • at 50 °C rated value  | 381 A  |
| • at 60 °C rated value  | 346 A  |
| <b>operating voltage</b>  |  |
| • rated value   | 200 ... 690 V  |
| • at inside-delta circuit rated value   | 200 ... 600 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   | 75 kW  |
| • at 230 V at inside-delta circuit at 40 °C rated value                             | 132 kW   |
| • at 400 V at 40 °C rated value   | 132 kW   |
| • at 400 V at inside-delta circuit at 40 °C rated value                             | 250 kW   |
| • at 500 V at 40 °C rated value   | 160 kW   |
| • at 500 V at inside-delta circuit at 40 °C rated value                             | 315 kW   |
| • at 690 V at 40 °C rated value   | 250 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 I <sub>e</sub>                               |
| <b>power loss [W] for rated value of the current at AC</b>                          |  |
| • at 40 °C after startup  | 75 W   |
| • at 50 °C after startup  | 66 W   |
| • at 60 °C after startup  | 60 W   |
| <b>power loss [W] at AC at current limitation 350 %</b>                             |  |
| • at 40 °C during startup   | 3 806 W  |
| • at 50 °C during startup   | 3 176 W  |
| • at 60 °C during startup   | 2 787 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 %   |



|  |  |
|--|--|
| 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                       | 100 mA   |
| holding current in bypass operation rated value                          | 150 mA   |
| locked-rotor current at close of bypass contact maximum                  | 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   |
| design of the overvoltage protection                                     | Varistor   |
| design of short-circuit protection for control circuit                   | 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 |
| <b>Inputs/ Outputs</b>   |  |
| number of digital inputs   | 4  |
| • parameterizable  | 4  |
| • number of digital outputs  | 4  |
| • number of digital outputs parameterizable                              | 3  |
| • number of digital outputs 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  |
| <b>Installation/ mounting/ dimensions</b>                                |  |
| mounting position  | Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°)   |
| fastening method   | screw fixing   |
| height   | 393 mm   |
| width  | 210 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   | 10.2 kg  |
| <b>Connections/ Terminals</b>  |  |
| type of electrical connection  |  |
| • for main current circuit   | busbar connection  |
| • for control circuit  | screw-type terminals   |
| width of connection bar maximum  | 45 mm  |
| wire length for thermistor connection                                    |  |
| • with conductor cross-section = 0.5 mm <sup>2</sup> maximum             | 50 m   |
| • with conductor cross-section = 1.5 mm <sup>2</sup> maximum             | 150 m  |
| • with conductor cross-section = 2.5 mm <sup>2</sup> maximum             | 250 m  |
| type of connectable conductor cross-sections                             |  |
| • for DIN cable lug for main contacts stranded                           | 2x (50 ... 240 mm <sup>2</sup> )   |
| • for DIN cable lug for main contacts finely stranded                    | 2x (70 ... 240 mm <sup>2</sup> )   |
| type of connectable conductor cross-sections                             |  |
| • for control circuit solid  | 1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )   |
| • for control circuit finely stranded with core end processing           | 1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )   |
| • at AWG cables for control circuit solid                                | 1x (20 ... 12), 2x (20 ... 14)   |



|  |  |
|--|--|
| <b>wire length</b>   |  |
| <ul style="list-style-type: none"> <li>• between soft starter and motor maximum</li> <li>• at the digital inputs at DC maximum</li> </ul>  | 800 m<br>1 000 m   |
| <b>tightening torque</b>   |  |
| <ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>  | 14 ... 24 N·m<br>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> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>  | 124 ... 210 lbf·in<br>7 ... 10.3 lbf·in  |
| <b>Ambient conditions</b>  |  |
| installation altitude at height above sea level maximum  | 2 000 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 above  |
| <ul style="list-style-type: none"> <li>• during storage and transport</li> </ul>   | -40 ... +80 °C   |
| <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>  | 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)  |
| <b>EMC emitted interference</b>  | acc. to IEC 60947-4-2: Class A   |
| <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>  | Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes   |
| <b>UL/CSA ratings</b>  |  |
| <b>manufacturer's article number</b>   |  |
| <ul style="list-style-type: none"> <li>• of circuit breaker               <ul style="list-style-type: none"> <li>— usable for Standard Faults at 460/480 V according to UL</li> <li>— usable for High Faults at 460/480 V according to UL</li> <li>— usable for Standard Faults at 460/480 V at inside-delta circuit according to UL</li> <li>— usable for High Faults at 460/480 V at inside-delta circuit according to UL</li> <li>— usable for Standard Faults at 575/600 V according to UL</li> <li>— usable for High Faults at 575/600 V at inside-delta circuit according to UL</li> <li>— usable for Standard Faults at 575/600 V at inside-delta circuit according to UL</li> </ul> </li> <li>• of the fuse               <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> | Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq = 18 kA<br>Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq max = 65 kA<br>Siemens type: 3VA54, max. 600 A; Iq = 18 kA<br>Siemens type: 3VA54, max. 600 A; Iq max = 65 kA<br>Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq = 18 kA<br>Siemens type: 3VA54, max. 600 A; Iq max = 65 kA<br>Siemens type: 3VA54, max. 600 A; Iq = 18 kA<br>Type: Class J / L, max. 800 A; Iq = 18 kA<br>Type: Class J / L, max. 800 A; Iq = 100 kA<br>Type: Class J / L, max. 800 A; Iq = 18 kA<br>Type: Class J / L, max. 800 A; Iq = 100 kA |
| <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 575/600 V at 50 °C rated value</li> </ul>   | 60 hp<br>75 hp<br>150 hp<br>200 hp   |



|  |           |
|--|-----------|
| <ul style="list-style-type: none"> <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> <li>at 575/600 V at inside-delta circuit at 50 °C rated value</li> </ul> | 125 hp    |
|  | 150 hp    |
|  | 300 hp    |
|  | 350 hp    |
| <b>contact rating of auxiliary contacts according to UL</b>  | R300-B300 |

| Safety related data  |   |
|--|---|
| <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                                       |

| ATEX  |  |
|---|--|
| <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> | Yes<br>Yes<br>BVS 18 ATEX F 003 X  |
| <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 s  |

| Certificates/ approvals  |     |
|--------------------------|-----|
| General Product Approval | EMC |



[Confirmation](#)



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



[Type Test Certificates/Test Report](#)



| 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=3RW5544-6HA16>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5544-6HA16>



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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5544-6HA16>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5544-6HA16&](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5544-6HA16&)

Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

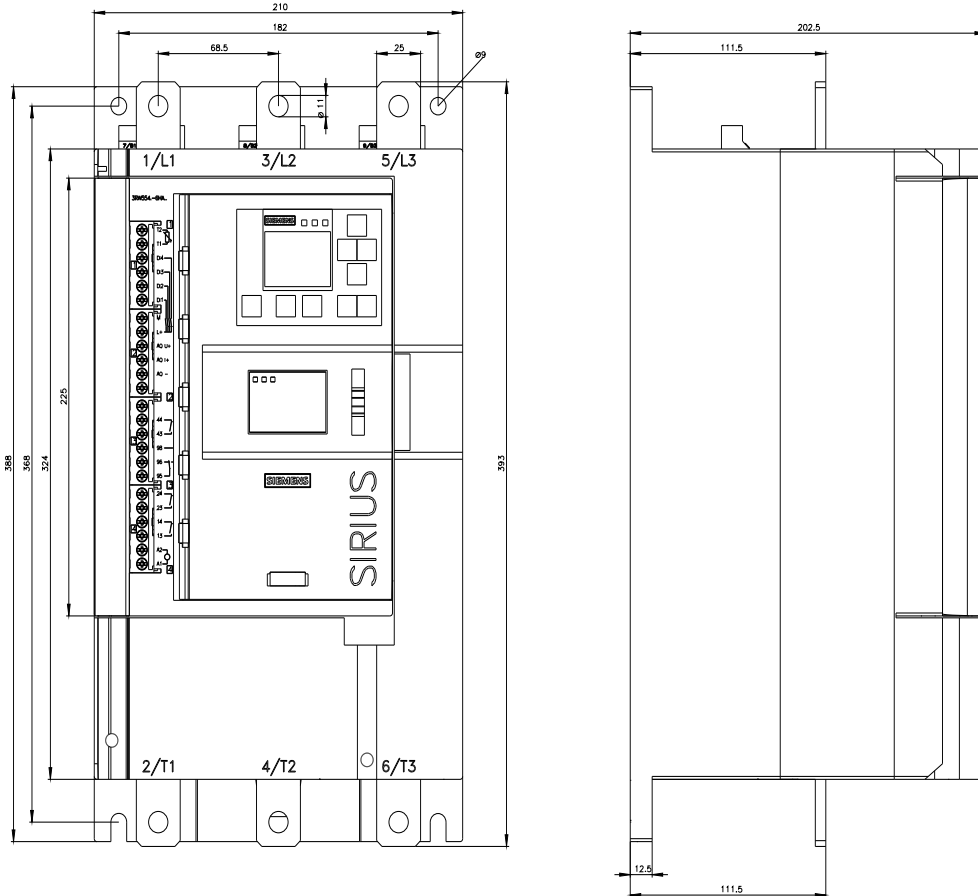
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5544-6HA16/char>

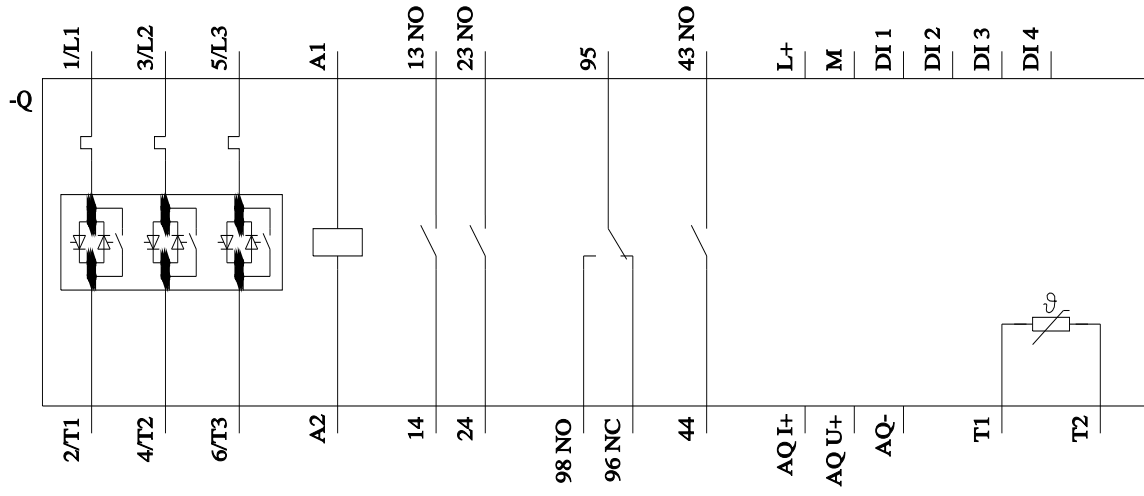
Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5544-6HA16&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





last modified:

5/13/2022



