



SIRIUS soft starter 200-600 V 143 A, 24 V AC/DC Screw terminals  
Thermistor input

|   |  |
|---|--|
| <b>product brand name</b>   | SIRIUS   |
| <b>product category</b>   | Hybrid switching devices   |
| <b>product designation</b>  | Soft starter   |
| <b>product type designation</b>   | 3RW52  |
| <b>manufacturer's article number</b>  |  |
| <ul style="list-style-type: none"> <li>• of standard HMI module usable</li> <li>• of high feature HMI module usable</li> <li>• of communication module PROFINET standard usable</li> <li>• of communication module PROFIBUS usable</li> <li>• of communication module Modbus TCP usable</li> <li>• of communication module Modbus RTU usable</li> <li>• of communication module Ethernet/IP</li> <li>• of circuit breaker usable at 400 V</li> <li>• of circuit breaker usable at 400 V at inside-delta circuit</li> <li>• of the gG fuse usable up to 690 V</li> <li>• of the gG fuse usable at inside-delta circuit up to 500 V</li> <li>• of full range R fuse link for semiconductor protection usable up to 690 V</li> <li>• of back-up R fuse link for semiconductor protection usable up to 690 V</li> </ul> | <ul style="list-style-type: none"> <li><a href="#">3RW5980-0HS00</a></li> <li><a href="#">3RW5980-0HF00</a></li> <li><a href="#">3RW5980-0CS00</a></li> <li><a href="#">3RW5980-0CP00</a></li> <li><a href="#">3RW5980-0CT00</a></li> <li><a href="#">3RW5980-0CR00</a></li> <li><a href="#">3RW5980-0CE00</a></li> <li><a href="#">3VA2220-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li><a href="#">3VA2325-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li><a href="#">3NA3244-6; Type of coordination 1, Iq = 65 kA</a></li> <li><a href="#">3NA3244-6; Type of coordination 1, Iq = 65 kA</a></li> <li><a href="#">3NE1227-0; Type of coordination 2, Iq = 65 kA</a></li> <li><a href="#">3NE3334-0B; Type of coordination 2, Iq = 65 kA</a></li> </ul> |
| <b>General technical data</b>   |  |
| <b>starting voltage [%]</b>   | 30 ... 100 %   |
| <b>stopping voltage [%]</b>   | 50 %; non-adjustable   |
| <b>start-up ramp time of soft starter</b>   | 0 ... 20 s   |
| <b>current limiting value [%] adjustable</b>  | 130 ... 700 %  |
| <b>certificate of suitability</b>   |  |
| <ul style="list-style-type: none"> <li>• CE marking</li> <li>• UL approval</li> <li>• CSA approval</li> </ul>   | <ul style="list-style-type: none"> <li>Yes</li> <li>Yes</li> <li>Yes</li> </ul>  |
| <b>product component</b>  |  |
| <ul style="list-style-type: none"> <li>• HMI-High Feature</li> <li>• is supported HMI-Standard</li> <li>• is supported HMI-High Feature</li> </ul>  | <ul style="list-style-type: none"> <li>No</li> <li>Yes</li> <li>Yes</li> </ul>   |
| <b>product feature integrated bypass contact system</b>   | Yes  |
| <b>number of controlled phases</b>  | 3  |
| <b>trip class</b>   | CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2   |
| <b>buffering time in the event of power failure</b>   |  |
| <ul style="list-style-type: none"> <li>• for main current circuit</li> </ul>  | 100 ms   |

|  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• for control circuit</li> </ul>  | 100 ms  |
| insulation voltage rated value   | 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>   | 1 800 V   |
| <b>service factor</b>  | 1   |
| <b>surge voltage resistance rated value</b>  | 6 kV  |
| <b>maximum permissible voltage for safe isolation</b> <ul style="list-style-type: none"> <li>• between main and auxiliary circuit</li> </ul>   | 600 V   |
| <b>shock resistance</b>  | 15 g / 11 ms, from 12 g / 11 ms with potential contact lifting  |
| <b>vibration resistance</b>  | 15 mm to 6 Hz; 2g to 500 Hz   |
| utilization category according to IEC 60947-4-2  | AC 53a  |
| <b>reference code according to IEC 81346-2</b>   | Q   |
| <b>Substance Prohibitance (Date)</b>   | 02/15/2018  |
| <b>product function</b> <ul style="list-style-type: none"> <li>• ramp-up (soft starting)</li> <li>• ramp-down (soft stop)</li> <li>• Soft Torque</li> <li>• adjustable current limitation</li> <li>• pump ramp down</li> <li>• intrinsic device protection</li> <li>• motor overload protection</li> <br/> <li>• evaluation of thermistor motor protection</li> <li>• inside-delta circuit</li> <li>• auto-RESET</li> <li>• manual RESET</li> <li>• remote reset</li> <li>• communication function</li> <li>• operating measured value display</li> <li>• error logbook</li> <li>• via software parameterizable</li> <li>• via software configurable</li> <li>• <b>PROFInergy</b></li> <br/> <li>• <b>firmware update</b></li> <li>• <b>removable terminal for control circuit</b></li> <li>• torque control</li> <li>• analog output</li> </ul> | Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes<br>Yes; Full motor protection (thermistor motor protection and electronic motor overload protection)<br>Yes; Type A PTC or Klixon / Thermoclick<br>Yes<br>Yes<br>Yes<br>Yes; By turning off the control supply voltage<br>Yes<br>Yes; Only in conjunction with special accessories<br>Yes; Only in conjunction with special accessories<br>No<br>Yes<br>Yes; in connection with the PROFINET Standard communication module<br>Yes<br>Yes<br>No<br>No |
| <b>Power Electronics</b>   |   |
| <b>operational current</b> <ul style="list-style-type: none"> <li>• at 40 °C rated value</li> <li>• at 50 °C rated value</li> <li>• at 60 °C rated value</li> </ul>  | 143 A<br>128 A<br>118 A   |
| <b>operational current at inside-delta circuit</b> <ul style="list-style-type: none"> <li>• at 40 °C rated value</li> <li>• at 50 °C rated value</li> <li>• at 60 °C rated value</li> </ul>  | 248 A<br>222 A<br>204 A   |
| <b>operating voltage</b> <ul style="list-style-type: none"> <li>• rated value</li> <li>• at inside-delta circuit rated value</li> </ul>  | 200 ... 600 V<br>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> <ul style="list-style-type: none"> <li>• at 230 V at 40 °C rated value</li> <li>• at 230 V at inside-delta circuit at 40 °C rated value</li> <li>• at 400 V at 40 °C rated value</li> </ul>  | 37 kW<br>75 kW<br>75 kW   |

|  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• at 400 V at inside-delta circuit at 40 °C rated value</li> <li>• at 500 V at 40 °C rated value</li> <li>• at 500 V at inside-delta circuit at 40 °C rated value</li> </ul>  | 132 kW<br>90 kW<br>160 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>  |   |
| <ul style="list-style-type: none"> <li>• at rotary coding switch on switch position 1</li> <li>• at rotary coding switch on switch position 2</li> <li>• at rotary coding switch on switch position 3</li> <li>• at rotary coding switch on switch position 4</li> <li>• at rotary coding switch on switch position 5</li> <li>• at rotary coding switch on switch position 6</li> <li>• at rotary coding switch on switch position 7</li> <li>• at rotary coding switch on switch position 8</li> <li>• at rotary coding switch on switch position 9</li> <li>• at rotary coding switch on switch position 10</li> <li>• at rotary coding switch on switch position 11</li> <li>• at rotary coding switch on switch position 12</li> <li>• at rotary coding switch on switch position 13</li> <li>• at rotary coding switch on switch position 14</li> <li>• at rotary coding switch on switch position 15</li> <li>• at rotary coding switch on switch position 16</li> <li>• minimum</li> </ul>   | 68 A<br>73 A<br>78 A<br>83 A<br>88 A<br>93 A<br>98 A<br>103 A<br>108 A<br>113 A<br>118 A<br>123 A<br>128 A<br>133 A<br>138 A<br>143 A<br>68 A         |
| <b>adjustable motor current</b>  |   |
| <ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary coding switch on switch position 1</li> <li>• for inside-delta circuit at rotary coding switch on switch position 2</li> <li>• for inside-delta circuit at rotary coding switch on switch position 3</li> <li>• for inside-delta circuit at rotary coding switch on switch position 4</li> <li>• for inside-delta circuit at rotary coding switch on switch position 5</li> <li>• for inside-delta circuit at rotary coding switch on switch position 6</li> <li>• for inside-delta circuit at rotary coding switch on switch position 7</li> <li>• for inside-delta circuit at rotary coding switch on switch position 8</li> <li>• for inside-delta circuit at rotary coding switch on switch position 9</li> <li>• for inside-delta circuit at rotary coding switch on switch position 10</li> <li>• for inside-delta circuit at rotary coding switch on switch position 11</li> <li>• for inside-delta circuit at rotary coding switch on switch position 12</li> <li>• for inside-delta circuit at rotary coding switch on switch position 13</li> <li>• for inside-delta circuit at rotary coding switch on switch position 14</li> <li>• for inside-delta circuit at rotary coding switch on switch position 15</li> <li>• at inside-delta circuit minimum</li> </ul> | 118 A<br>126 A<br>135 A<br>144 A<br>152 A<br>161 A<br>170 A<br>178 A<br>187 A<br>196 A<br>204 A<br>213 A<br>222 A<br>230 A<br>239 A<br>248 A<br>118 A |
| <b>minimum load [%]</b>  | 15 %; Relative to smallest settable le  |
| <b>power loss [W] for rated value of the current at AC</b>   |   |
| <ul style="list-style-type: none"> <li>• at 40 °C after startup</li> <li>• at 50 °C after startup</li> <li>• at 60 °C after startup</li> </ul>   | 55 W<br>50 W<br>47 W  |

|   |  |
|---|--|
| <b>power loss [W] at AC at current limitation 350 %</b>   |  |
| <ul style="list-style-type: none"> <li>• at 40 °C during startup</li> <li>• at 50 °C during startup</li> <li>• at 60 °C during startup</li> </ul> | 2 127 W<br>1 807 W<br>1 605 W  |
| <b>Control circuit/ Control</b>   |  |
| <b>type of voltage of the control supply voltage</b>  | AC/DC  |
| <b>control supply voltage at AC</b>   |  |
| <ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul>  | 24 V<br>24 V   |
| <b>relative negative tolerance of the control supply voltage at AC at 50 Hz</b>   | -20 %  |
| <b>relative positive tolerance of the control supply voltage at AC at 50 Hz</b>   | 20 %   |
| <b>relative negative tolerance of the control supply voltage at AC at 60 Hz</b>   | -20 %  |
| <b>relative positive tolerance of the control supply voltage at AC at 60 Hz</b>   | 20 %   |
| <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 voltage</b>   |  |
| <ul style="list-style-type: none"> <li>• at DC rated value</li> </ul>   | 24 V   |
| <b>relative negative tolerance of the control supply voltage at DC</b>  | -20 %  |
| <b>relative positive tolerance of the control supply voltage at DC</b>  | 20 %   |
| <b>control supply current in standby mode rated value</b>   | 160 mA   |
| <b>holding current in bypass operation rated value</b>  | 380 mA   |
| <b>locked-rotor current at close of bypass contact maximum</b>  | 7.6 A  |
| <b>inrush current peak at application of control supply voltage maximum</b>   | 3.3 A  |
| <b>duration of inrush current peak at application of control supply voltage</b>   | 12.1 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 |
| <b>Inputs/ Outputs</b>  |  |
| <b>number of digital inputs</b>   | 1  |
| <b>number of digital outputs</b>  | 3  |
| <ul style="list-style-type: none"> <li>• not parameterizable</li> </ul>   | 2  |
| <b>digital output version</b>   | 2 normally-open contacts (NO) / 1 changeover contact (CO)  |
| <b>number of analog outputs</b>   | 0  |
| <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> <li>• at DC-13 at 24 V rated value</li> </ul>                         | 3 A<br>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>   | 306 mm   |
| <b>width</b>  | 185 mm   |
| <b>depth</b>  | 203 mm   |
| <b>required spacing with side-by-side mounting</b>  |  |
| <ul style="list-style-type: none"> <li>• forwards</li> <li>• backwards</li> <li>• upwards</li> <li>• downwards</li> <li>• at the side</li> </ul>  | 10 mm<br>0 mm<br>100 mm<br>75 mm<br>5 mm   |
| <b>weight without packaging</b>   | 6.6 kg   |

| Connections/ Terminals  |   |
|---|---|
| <b>type of electrical connection</b> <ul style="list-style-type: none"> <li>for main current circuit</li> <li>for control circuit</li> </ul>  | busbar connection<br>screw-type terminals   |
| <b>width of connection bar maximum</b>  | 25 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> <li>with conductor cross-section = 1.5 mm<sup>2</sup> maximum</li> <li>with conductor cross-section = 2.5 mm<sup>2</sup> maximum</li> </ul>  | 50 m<br>150 m<br>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> <li>for DIN cable lug for main contacts finely stranded</li> </ul>   | 2x (16 ... 95 mm <sup>2</sup> )<br>2x (25 ... 120 mm <sup>2</sup> )   |
| <b>type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>for control circuit solid</li> <li>for control circuit finely stranded with core end processing</li> <li>at AWG cables for control circuit solid</li> </ul>  | 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> )<br>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 AC maximum</li> <li>at the digital inputs at DC maximum</li> </ul>   | 800 m<br>100 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>  | 10 ... 14 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>   | 89 ... 124 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 catalog   |
| <b>ambient temperature</b> <ul style="list-style-type: none"> <li>during operation</li> <li>during storage and transport</li> </ul>   | -25 ... +60 °C; Please observe derating at temperatures of 40 °C or above<br>-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  |
| Communication/ Protocol   |   |
| <b>communication module is supported</b> <ul style="list-style-type: none"> <li>PROFINET standard</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   |
| UL/CSA ratings  |   |
| <b>manufacturer's article number</b> <ul style="list-style-type: none"> <li><b>of circuit breaker</b> <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> </ul> </li> </ul> | Siemens type: 3VA52, max. 250 A; I <sub>q</sub> = 10 kA<br>Siemens type: 3VA52, max. 250 A; I <sub>q</sub> max = 65 kA<br>Siemens type: 3VA52, max. 250 A; I <sub>q</sub> = 10 kA<br>Siemens type: 3VA52, max. 250 A; I <sub>q</sub> max = 65 kA<br>Siemens type: 3VA52, max. 250 A; I <sub>q</sub> = 10 kA |

— usable for Standard Faults at 575/600 V at inside-delta circuit according to UL

• of the fuse

— usable for Standard Faults up to 575/600 V according to UL

— usable for High Faults up to 575/600 V according to UL

— usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL

— usable for High Faults at inside-delta circuit up to 575/600 V according to UL

Siemens type: 3VA52, max. 250 A; Iq = 10 kA

Type: Class RK5 / K5, max. 350 A; Iq = 10 kA

Type: Class J / L, max. 350 A; Iq = 100 kA

Type: Class RK5 / K5, max. 350 A; Iq = 10 kA

Type: Class J / L, max. 350 A; Iq = 100 kA

**operating power [hp] for 3-phase motors**

- at 200/208 V at 50 °C rated value
- at 220/230 V at 50 °C rated value
- at 460/480 V at 50 °C rated value
- at 575/600 V at 50 °C rated value
- at 200/208 V at inside-delta circuit at 50 °C rated value
- at 220/230 V at inside-delta circuit at 50 °C rated value
- at 460/480 V at inside-delta circuit at 50 °C rated value
- at 575/600 V at inside-delta circuit at 50 °C rated value

- 40 hp
- 40 hp
- 100 hp
- 125 hp
- 75 hp
- 75 hp
- 150 hp
- 200 hp

**contact rating of auxiliary contacts according to UL**

R300-B300

**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

**electromagnetic compatibility**

in accordance with IEC 60947-4-2

**Certificates/ approvals**

**General Product Approval**

EMC



[Confirmation](#)



**Declaration of Conformity**

**Test Certificates**

**Marine / Shipping**



EG-Konf.

[Type Test Certificates/Test Report](#)



ABS



BUREAU VERITAS



LRS

**Marine / Shipping**

**other**



PRS



DNV-GL

[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?mfb=3RW5235-6TC05>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mfb=3RW5235-6TC05>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5235-6TC05>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5235-6TC05&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5235-6TC05&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5235-6TC05/char>

**Characteristic: Installation altitude**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5235-6TC05&objecttype=14&gridview=view1>

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

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

last modified:

4/10/2022 

