



SIRIUS soft starter 200-600 V 210 A, 110-250 V AC Spring-loaded 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>                         | 3RW50  |
| <b>manufacturer's article number</b>                    | <ul style="list-style-type: none"> <li>• of standard HMI module usable <a href="#">3RW5980-0HS01</a></li> <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 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 assignment 1, Iq = 65 kA</a></li> <li>• of circuit breaker usable at 500 V <a href="#">3VA2440-7MN32-0AA0: Type of assignment 1, Iq = 65 kA</a></li> <li>• of the gG fuse usable up to 690 V <a href="#">2x3NA3354-6; Type of coordination 1, Iq = 65 kA</a></li> <li>• of full range R fuse link for semiconductor protection usable up to 690 V <a href="#">3NE1 230-2: 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="#">3NE3 333: Type of coordination 2, Iq = 65 kA</a></li> <li>• of line contactor usable up to 480 V <a href="#">3RT1064</a></li> <li>• of line contactor usable up to 690 V <a href="#">3RT1064</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>ramp-down time of soft starter</b>                   | 0 ... 20 s   |
| <b>current limiting value [%] adjustable</b>            | 130 ... 700 %  |
| <b>certificate of suitability</b>                       |  |
| • CE marking  | Yes  |
| • UL approval   | Yes  |
| • CSA approval  | Yes  |
| <b>product component</b>                                |  |
| • HMI-High Feature                                      | No   |
| • is supported HMI-Standard                             | Yes  |
| • is supported HMI-High Feature                         | Yes  |
| <b>product feature integrated bypass contact system</b> | Yes  |
| <b>number of controlled phases</b>                      | 2  |

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| <b>buffering time in the event of power failure</b>          |   |
| • 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 protective separation</b> |   |
| • between main and auxiliary circuit                         | 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; 2 g 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 (day/month/year)</b>               | 09/23/2019  |
| <b>SVHC substance name</b>                                   | Lead CAS-No. 7439-92-1<br>Lead monoxide (lead oxide) CAS-No. 1317-36-8<br>2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol CAS-No. 79-94-7<br>2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5<br>Melamine CAS-No. 108-78-1<br>6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1 |
| <b>Net Weight</b>  | 8 kg  |
| <b>product function</b>                                      |   |
| • ramp-up (soft starting)                                    | Yes   |
| • soft stopping  | Yes   |
| • Soft Torque  | Yes   |
| • adjustable current limitation                              | Yes   |
| • pump stop  | 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   |
| • <b>PROFenergy</b>  | Yes; in connection with the PROFINET Standard communication module  |
| • voltage ramp   | Yes   |
| • torque control   | No  |
| • analog output  | No  |
| <b>Power Electronics</b>                                     |   |
| <b>operational current</b>                                   |   |
| • at 40 °C rated value                                       | 210 A   |
| • at 50 °C rated value                                       | 186 A   |
| • at 60 °C rated value                                       | 170 A   |
| <b>operating voltage</b>                                     |   |
| • 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>operating power for 3-phase motors</b>                    |   |
| • at 230 V at 40 °C rated value                              | 55 kW   |
| • at 400 V at 40 °C rated value                              | 110 kW  |
| • at 500 V at 40 °C rated value                              | 132 kW  |
| <b>Operating frequency 1 rated value</b>                     | 50 Hz   |
| <b>Operating frequency 2 rated value</b>                     | 60 Hz   |

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| <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                                  | 90 A   |
| • at rotary coding switch on switch position 2                                  | 98 A   |
| • at rotary coding switch on switch position 3                                  | 106 A  |
| • at rotary coding switch on switch position 4                                  | 114 A  |
| • at rotary coding switch on switch position 5                                  | 122 A  |
| • at rotary coding switch on switch position 6                                  | 130 A  |
| • at rotary coding switch on switch position 7                                  | 138 A  |
| • at rotary coding switch on switch position 8                                  | 146 A  |
| • at rotary coding switch on switch position 9                                  | 154 A  |
| • at rotary coding switch on switch position 10                                 | 162 A  |
| • at rotary coding switch on switch position 11                                 | 170 A  |
| • at rotary coding switch on switch position 12                                 | 178 A  |
| • at rotary coding switch on switch position 13                                 | 186 A  |
| • at rotary coding switch on switch position 14                                 | 194 A  |
| • at rotary coding switch on switch position 15                                 | 202 A  |
| • at rotary coding switch on switch position 16                                 | 210 A  |
| • minimum   | 90 A   |
| <b>minimum load [%]</b>   | 15 %; Relative to smallest settable I <sub>e</sub>   |
| <b>power loss [W] for rated value of the current at AC</b>                      |  |
| • at 40 °C after startup  | 16 W   |
| • at 50 °C after startup  | 13 W   |
| • at 60 °C after startup  | 11 W   |
| <b>power loss [W] at AC at current limitation 350 %</b>                         |  |
| • at 40 °C during startup   | 2 237 W  |
| • at 50 °C during startup   | 1 867 W  |
| • at 60 °C during startup   | 1 637 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 <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  |

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| <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> </ul>   | 3 A  |
| <ul style="list-style-type: none"> <li>at DC-13 at 24 V rated value</li> </ul>  | 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   |  |
| <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>   | 7.3 kg   |
| <b>Connections/ Terminals</b>   |  |
| <b>type of electrical connection</b>  |  |
| <ul style="list-style-type: none"> <li>for main current circuit</li> </ul>  | busbar connection  |
| <ul style="list-style-type: none"> <li>for control circuit</li> </ul>   | spring-loaded terminals  |
| <b>width of connection bar maximum</b>  | 35 mm; with connection cover 3RT1966-4EA1 maximum length 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 for main contacts for box terminal</b>  |  |
| <ul style="list-style-type: none"> <li>using the front clamping point solid</li> </ul>  | 95 ... 300 mm <sup>2</sup>   |
| <ul style="list-style-type: none"> <li>using the front clamping point finely stranded with core end processing</li> </ul>     | 70 ... 240 mm <sup>2</sup>   |
| <ul style="list-style-type: none"> <li>using the front clamping point finely stranded without core end processing</li> </ul>  | 70 ... 240 mm <sup>2</sup>   |
| <ul style="list-style-type: none"> <li>using the front clamping point stranded</li> </ul>                                     | 95 ... 300 mm <sup>2</sup>   |
| <ul style="list-style-type: none"> <li>using the back clamping point solid</li> </ul>   | 120 ... 240 mm <sup>2</sup>  |
| <ul style="list-style-type: none"> <li>r box terminal using the back clamping point</li> </ul>                                | 250 ... 500 kcmil  |
| <ul style="list-style-type: none"> <li>using both clamping points solid</li> </ul>  | min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>   |
| <ul style="list-style-type: none"> <li>using both clamping points finely stranded with core end processing</li> </ul>         | min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>   |
| <ul style="list-style-type: none"> <li>using both clamping points finely stranded without core end processing</li> </ul>      | min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>   |
| <ul style="list-style-type: none"> <li>using both clamping points stranded</li> </ul>   | min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>   |
| <ul style="list-style-type: none"> <li>using the back clamping point finely stranded with core end processing</li> </ul>      | 120 ... 185 mm <sup>2</sup>  |
| <ul style="list-style-type: none"> <li>using the back clamping point finely stranded without core end processing</li> </ul>   | 120 ... 185 mm <sup>2</sup>  |
| <ul style="list-style-type: none"> <li>using the back clamping point stranded</li> </ul>                                      | 120 ... 240 mm <sup>2</sup>  |
| <b>type of connectable conductor cross-sections</b>   |  |
| <ul style="list-style-type: none"> <li>for AWG cables for main current circuit solid</li> </ul>                               | 2/0 ... 500 kcmil  |
| <ul style="list-style-type: none"> <li>for DIN cable lug for main contacts stranded</li> </ul>                                | 50 ... 240 mm <sup>2</sup>   |
| <ul style="list-style-type: none"> <li>for DIN cable lug for main contacts finely stranded</li> </ul>                         | 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>   | 2x (0.25 ... 1.5 mm <sup>2</sup> )   |
| <ul style="list-style-type: none"> <li>for control circuit finely stranded with core end processing</li> </ul>                | 2x (0.25 ... 1.5 mm <sup>2</sup> )   |
| <ul style="list-style-type: none"> <li>for AWG cables for control circuit solid</li> </ul>                                    | 2x (24 ... 16)   |
| <ul style="list-style-type: none"> <li>for AWG cables for control circuit finely stranded with core end processing</li> </ul> | 2x (24 ... 16)   |
| <b>wire length</b>  |  |

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| <ul style="list-style-type: none"> <li>• between soft starter and motor maximum</li> <li>• at the digital inputs at AC maximum</li> </ul>   | <p>800 m</p> <p>1 000 m</p>  |
| <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>  | <p>14 ... 24 N·m</p> <p>0.8 ... 1.2 N·m</p>  |
| <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>   | <p>124 ... 210 lbf·in</p> <p>7 ... 10.3 lbf·in</p>   |
| <b>Ambient conditions</b>   |  |
| installation altitude at height above sea level maximum   | 5 000 m  |
| <b>ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage and transport</li> </ul>   | <p>-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above</p> <p>-40 ... +80 °C</p>   |
| <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>   | <p>3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6</p> <p>1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4</p> <p>2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)</p> |
| <b>Electromagnetic compatibility</b>  |  |
| <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>• 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>   |
| <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 High Faults at 460/480 V 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> </ul> </li> </ul> | <p>Siemens type: 3VA54, max. 600 A; I<sub>q</sub> max = 65 kA</p> <p>Type: Class L, max. 700 A; I<sub>q</sub> = 10 kA</p> <p>Type: Class L, max. 700 A; I<sub>q</sub> = 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 575/600 V at 50 °C rated value</li> </ul>   | <p>60 hp</p> <p>60 hp</p> <p>150 hp</p> <p>150 hp</p>  |
| <b>Electrical Safety</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>Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX</b>   | SIL 1  |
| <b>PFHD with high demand rate according to IEC 61508 relating to ATEX</b>   | 9E-6 1/h   |
| <b>PFDAvg with low demand rate according to IEC 61508 relating to ATEX</b>  | 0.09   |
| <b>hardware fault tolerance according to IEC 61508 relating to ATEX</b>   | 0  |
| <b>T1 value for proof test interval or service life according to IEC 61508 relating to ATEX</b>   | 3 a  |
| <b>certificate of suitability</b> <ul style="list-style-type: none"> <li>• ATEX</li> <li>• IECEx</li> <li>• UKEX</li> </ul>   | <p>Yes</p> <p>Yes</p> <p>Yes</p>   |

## Approvals Certificates

### Environmental Product Declaration

|  |          |
|--|----------|
| • global warming potential [CO2 eq] / during manufacturing | 87.4 kg  |
| • global warming potential [CO2 eq] / during sales         | 2.05 kg  |
| • global warming potential [CO2 eq] / during operation     | 407 kg   |
| • global warming potential [CO2 eq] / after end of life    | -32.4 kg |
| • global warming potential [CO2 eq] / total                | 464 kg   |

### Environment

### General Product Approval

[Environmental Confirmations](#)



### General Product Approval

### EMV

### For use in hazardous locations



[Miscellaneous](#)

### Test Certificates

### Maritime application

### other

[Type Test Certificates/Test Report](#)



[Confirmation](#)

### other

[Confirmation](#)



## Further information

### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

### Information for data generation and storage

<https://support.industry.siemens.com/cs/ww/en/view/109995012>

### 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=3RW5072-2TB15>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5072-2TB15>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5072-2TB15&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5072-2TB15&lang=en)

### Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5072-2TB15>

### Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5072-2TB15/char>

### Characteristic: Installation altitude

[https://www.automation.siemens.com/bilddb/index.aspx?gridview=view2&objkey=G\\_NSB0\\_XX\\_01704&showdetail=true&view=Search](https://www.automation.siemens.com/bilddb/index.aspx?gridview=view2&objkey=G_NSB0_XX_01704&showdetail=true&view=Search)

### Simulation Tool for Soft Starters (STS)

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

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4/4/2026