



SIRIUS soft starter 200-480 V 47 A, 24 V AC/DC spring-type 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 <a href="#">3RW5980-0HS00</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="#">3RV2032-4JA10: Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 500 V <a href="#">3RV2032-4JA10: Type of coordination 1, Iq = 10 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 400 V at inside-delta circuit <a href="#">3RV2032-4RA10: 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="#">3RV2032-4RA10: Type of coordination 1, Iq = 10 kA, CLASS 10</a></li> <li>• of the gG fuse usable up to 690 V <a href="#">3NA3824-6: Type of coordination 1, Iq = 65 kA</a></li> <li>• of the gG fuse usable at inside-delta circuit up to 500 V <a href="#">3NA3824-6: 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="#">3NE1021-2: 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="#">3NE8024-1: 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 ... 50 %   |
| <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 Yes</li> <li>• UL approval Yes</li> <li>• CSA approval Yes</li> </ul>   |
| <b>product component is supported</b>                   | <ul style="list-style-type: none"> <li>• HMI-Standard Yes</li> <li>• HMI-High Feature Yes</li> </ul>  |
| <b>product feature integrated bypass contact system</b> | Yes   |

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| <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>                                 |   |
| • for main current circuit  | 100 ms  |
| • for control circuit   | 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>                                    | 1 400 V   |
| <b>service factor</b>   | 1   |
| <b>surge voltage resistance rated value</b>   | 6 kV  |
| <b>maximum permissible voltage for safe isolation</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; 2g to 500 Hz   |
| utilization category acc. to IEC 60947-4-2  | AC 53a  |
| <b>reference code acc. to IEC 81346-2</b>   | Q   |
| <b>Substance Prohibitance (Date)</b>  | 15.02.2018 00:00:00   |
| <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; Full motor protection (thermistor motor protection and electronic motor overload protection) |
| • evaluation of thermistor motor protection   | Yes; Type A PTC or Klixon / Thermoclick   |
| • inside-delta circuit  | Yes   |
| • 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                                |
| • <b>firmware update</b>  | Yes   |
| • <b>removable terminal for control circuit</b>                                     | Yes   |
| • torque control  | No  |
| • analog output   | No  |
| <b>Power Electronics</b>  |   |
| <b>operational current</b>  |   |
| • at 40 °C rated value  | 47 A  |
| • at 50 °C rated value  | 42 A  |
| • at 60 °C rated value  | 36 A  |
| <b>operational current at inside-delta circuit</b>                                  |   |
| • at 40 °C rated value  | 81.4 A  |
| • at 50 °C rated value  | 72 A  |
| • at 60 °C rated value  | 62.7 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 %   |

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| <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   | 11 kW  |
| • at 230 V at inside-delta circuit at 40 °C rated value                             | 22 kW  |
| • at 400 V at 40 °C rated value   | 22 kW  |
| • at 400 V at inside-delta circuit at 40 °C rated value                             | 45 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                                      | 20 A   |
| • at rotary coding switch on switch position 2                                      | 21.8 A |
| • at rotary coding switch on switch position 3                                      | 23.6 A |
| • at rotary coding switch on switch position 4                                      | 25.4 A |
| • at rotary coding switch on switch position 5                                      | 27.2 A |
| • at rotary coding switch on switch position 6                                      | 29 A   |
| • at rotary coding switch on switch position 7                                      | 30.8 A |
| • at rotary coding switch on switch position 8                                      | 32.6 A |
| • at rotary coding switch on switch position 9                                      | 34.4 A |
| • at rotary coding switch on switch position 10                                     | 36.2 A |
| • at rotary coding switch on switch position 11                                     | 38 A   |
| • at rotary coding switch on switch position 12                                     | 39.8 A |
| • at rotary coding switch on switch position 13                                     | 41.6 A |
| • at rotary coding switch on switch position 14                                     | 43.4 A |
| • at rotary coding switch on switch position 15                                     | 45.2 A |
| • at rotary coding switch on switch position 16                                     | 47 A   |
| • minimum   | 20 A   |
| <b>adjustable motor current</b>   |        |
| • for inside-delta circuit at rotary coding switch on switch position 1             | 34.6 A |
| • for inside-delta circuit at rotary coding switch on switch position 2             | 37.8 A |
| • for inside-delta circuit at rotary coding switch on switch position 3             | 40.9 A |
| • for inside-delta circuit at rotary coding switch on switch position 4             | 44 A   |
| • for inside-delta circuit at rotary coding switch on switch position 5             | 47.1 A |
| • for inside-delta circuit at rotary coding switch on switch position 6             | 50.2 A |
| • for inside-delta circuit at rotary coding switch on switch position 7             | 53.3 A |
| • for inside-delta circuit at rotary coding switch on switch position 8             | 56.5 A |
| • for inside-delta circuit at rotary coding switch on switch position 9             | 59.6 A |
| • for inside-delta circuit at rotary coding switch on switch position 10            | 62.7 A |
| • for inside-delta circuit at rotary coding switch on switch position 11            | 65.8 A |
| • for inside-delta circuit at rotary coding switch on switch position 12            | 68.9 A |
| • for inside-delta circuit at rotary coding switch on switch position 13            | 72.1 A |
| • for inside-delta circuit at rotary coding switch on switch position 14            | 75.2 A |
| • for inside-delta circuit at rotary coding switch on switch position 15            | 78.3 A |
| • for inside-delta circuit at rotary coding switch on switch position 16            | 81.4 A |

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| <ul style="list-style-type: none"> <li>at inside-delta circuit minimum</li> </ul> | 34.6 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>                        |  |
| <ul style="list-style-type: none"> <li>at 40 °C after startup</li> </ul>          | 26 W   |
| <ul style="list-style-type: none"> <li>at 50 °C after startup</li> </ul>          | 24 W   |
| <ul style="list-style-type: none"> <li>at 60 °C after startup</li> </ul>          | 23 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> </ul>         | 606 W  |
| <ul style="list-style-type: none"> <li>at 50 °C during startup</li> </ul>         | 522 W  |
| <ul style="list-style-type: none"> <li>at 60 °C during startup</li> </ul>         | 438 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> </ul>            | 24 V   |
| <ul style="list-style-type: none"> <li>at 60 Hz rated value</li> </ul>            | 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 inputs for thermistor connection</b>                                 | 1; Type A PTC or Klixon / Thermoclick  |
| <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> </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>  | +/- 10° rotation possible and can be tilted forward or backward on vertical mounting surface   |
| <b>fastening method</b>   | screw fixing   |
| <b>height</b>   | 306 mm   |

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| <b>width</b>  | 185 mm  |
| <b>depth</b>  | 203 mm  |
| required spacing with side-by-side mounting   |   |
| <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>   | 5.2 kg  |
| <b>Connections/ Terminals</b>   |   |
| <b>type of electrical connection</b>  |   |
| <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for control circuit</li> </ul>   | box terminal<br>spring-loaded 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 main contacts for box terminal using the front clamping point solid</li> </ul>   | 1x (2.5 ... 16 mm <sup>2</sup> )                                |
| <ul style="list-style-type: none"> <li>• for main contacts for box terminal using the front clamping point finely stranded with core end processing</li> </ul>  | 1x (2.5 ... 50 mm <sup>2</sup> )                                |
| <ul style="list-style-type: none"> <li>• for main contacts for box terminal using the front clamping point stranded</li> </ul>  | 1x (10 ... 70 mm <sup>2</sup> )                                 |
| <ul style="list-style-type: none"> <li>• at AWG cables for main contacts for box terminal using the front clamping point</li> </ul>   | 1x (10 ... 2/0)   |
| <ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point solid</li> </ul>  | 1x (2.5 ... 16 mm <sup>2</sup> )                                |
| <ul style="list-style-type: none"> <li>• at AWG cables for main contacts for box terminal using the back clamping point</li> </ul>  | 1x (10 ... 2/0)   |
| <ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points solid</li> </ul>   | 2x (2.5 ... 16 mm <sup>2</sup> )                                |
| <ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points finely stranded with core end processing</li> </ul>  | 2x (2.5 ... 35 mm <sup>2</sup> )                                |
| <ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points stranded</li> </ul>  | 2x (6 ... 16 mm <sup>2</sup> ), 2x (10 ... 50 mm <sup>2</sup> ) |
| <ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point finely stranded with core end processing</li> </ul>   | 1x (2.5 ... 50 mm <sup>2</sup> )                                |
| <ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point stranded</li> </ul>   | 1x (10 ... 70 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>• at AWG cables for control circuit solid</li> </ul>   | 2x (24 ... 16)  |
| <ul style="list-style-type: none"> <li>• at AWG cables for control circuit finely stranded with core end processing</li> </ul>  | 2x (24 ... 16)  |
| <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>   | 4.5 ... 6 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</li> </ul>   | 40 ... 53 lbf·in<br>7 ... 10.3 lbf·in                           |

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| terminals  |   |
| <b>Ambient conditions</b>  |   |
| installation altitude at height above sea level maximum                              | 5 000 m; Derating as of 1000 m, see catalog   |
| <b>ambient temperature</b>   |   |
| • during operation   | -25 ... +60 °C; Please observe derating at temperatures of 40 °C or above   |
| • during storage and transport   | -40 ... +80 °C  |
| <b>environmental category</b>  |   |
| • during operation acc. to IEC 60721   | 3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6 |
| • during storage acc. to IEC 60721   | 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4                 |
| • during transport acc. to IEC 60721   | 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>   |   |
| • 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 circuit breaker</b>  |   |
| — usable for Standard Faults at 460/480 V according to UL                            | Siemens type: 3RV2742, max. 70 A or 3VA51, max. 90 A; Iq = 5 kA   |
| — usable for High Faults at 460/480 V according to UL                                | Siemens type: 3VA51, max. 60 A; Iq max = 65 kA  |
| — usable for Standard Faults at 460/480 V at inside-delta circuit according to UL    | Siemens type: 3VA51, max. 90 A; Iq = 5 kA   |
| — usable for High Faults at 460/480 V at inside-delta circuit according to UL        | Siemens type: 3VA51, max. 60 A; Iq max = 65 kA  |
| — usable for Standard Faults at 575/600 V according to UL                            | Siemens type: 3RV2742, max. 70 A or 3VA51, max. 90 A; Iq = 5 kA   |
| — usable for Standard Faults at 575/600 V at inside-delta circuit according to UL    | Siemens type: 3VA51, max. 90 A; Iq = 5 kA   |
| • <b>of the fuse</b>   |   |
| — usable for Standard Faults up to 575/600 V according to UL                         | Type: Class RK5 / K5, max. 175 A; Iq = 5 kA   |
| — usable for High Faults up to 575/600 V according to UL                             | Type: Class J / L, max. 175 A; Iq = 100 kA  |
| — usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL | Type: Class RK5 / K5, max. 175 A; Iq = 5 kA   |
| — usable for High Faults at inside-delta circuit up to 575/600 V according to UL     | Type: Class J / L, max. 175 A; Iq = 100 kA  |
| <b>operating power [hp] for 3-phase motors</b>                                       |   |
| • at 200/208 V at 50 °C rated value  | 10 hp   |
| • at 220/230 V at 50 °C rated value  | 10 hp   |
| • at 460/480 V at 50 °C rated value  | 30 hp   |
| • at 200/208 V at inside-delta circuit at 50 °C rated value                          | 20 hp   |
| • at 220/230 V at inside-delta circuit at 50 °C rated value                          | 25 hp   |
| • at 460/480 V at inside-delta circuit at 50 °C rated value                          | 50 hp   |
| <b>contact rating of auxiliary contacts according to UL</b>                          | R300-B300   |
| <b>Safety related data</b>   |   |
| <b>protection class IP on the front acc. to IEC 60529</b>                            | IP00; IP20 with cover   |
| <b>touch protection on the front acc. to IEC 60529</b>                               | finger-safe, for vertical contact from the front with cover   |
| <b>electromagnetic compatibility</b>   | in accordance with IEC 60947-4-2  |
| <b>Certificates/ approvals</b>   |   |



## Test Certificates

## Marine / Shipping

[Type Test Certificates/Test Report](#)

## 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=3RW5224-3TC04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5224-3TC04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-3TC04>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5224-3TC04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5224-3TC04&lang=en)

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

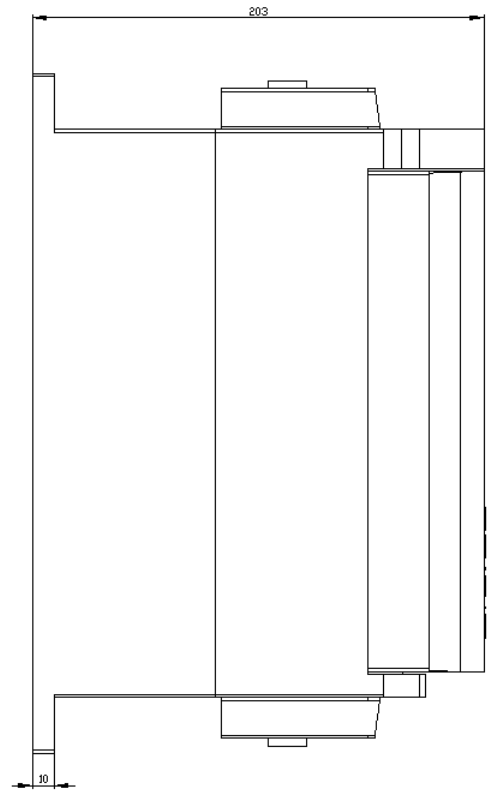
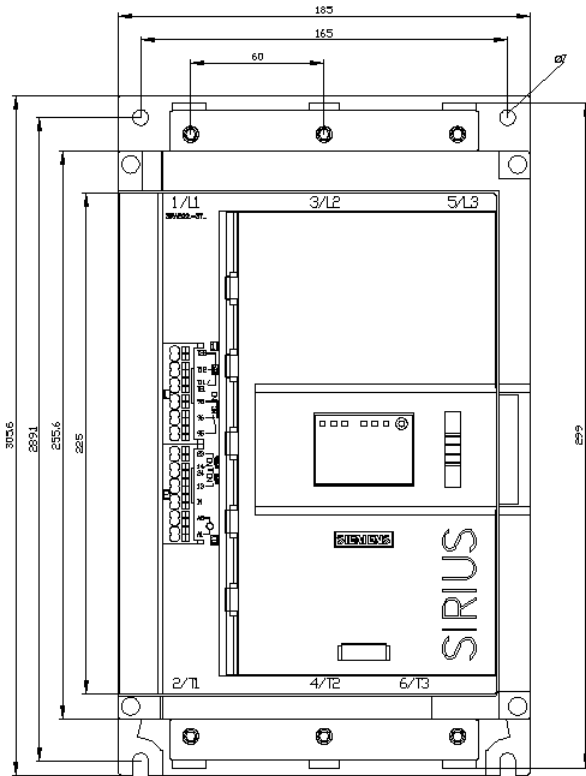
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-3TC04/char>

Characteristic: Installation altitude

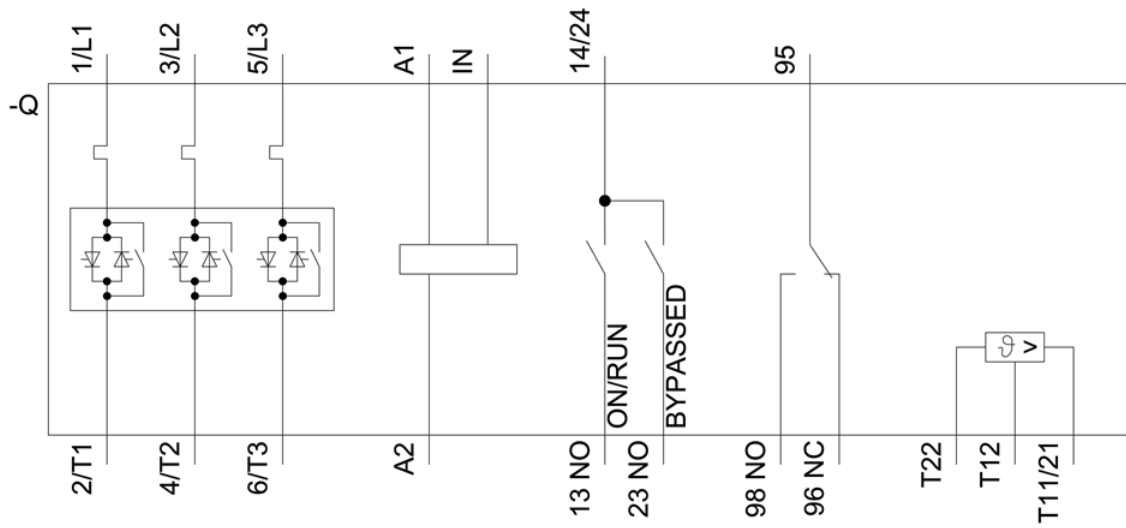
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5224-3TC04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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







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