



SIRIUS soft starter 200-480 V 370 A, 24 V AC/DC Spring-loaded terminals Thermistor input

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| <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>                                      |  |
| of standard HMI module usable   | <a href="#">3RW5980-OHS01</a>  |
| of high feature HMI module usable   | <a href="#">3RW5980-OHF00</a>  |
| of communication module PROFINET standard usable                          | <a href="#">3RW5980-OCS00</a>  |
| of communication module PROFIBUS usable                                   | <a href="#">3RW5980-OCP00</a>  |
| of communication module Modbus TCP usable                                 | <a href="#">3RW5980-OCT00</a>  |
| of communication module Modbus RTU usable                                 | <a href="#">3RW5980-OCR00</a>  |
| of communication module Ethernet/IP                                       | <a href="#">3RW5980-OCE00</a>  |
| of circuit breaker usable at 400 V  | <a href="#">3VA2580-6HN32-0AA0: Type of assignment 1, Iq = 65 kA</a> |
| of circuit breaker usable at 500 V  | <a href="#">3VA2580-6HN32-0AA0: Type of assignment 1, Iq = 65 kA</a> |
| of the gG fuse usable up to 690 V   | 2x3NA3365-6; Type of coordination 1, Iq = 65 kA                      |
| of full range R fuse link for semiconductor protection usable up to 690 V | <a href="#">3NE1 334-2: Type of coordination 2, Iq = 65 kA</a>       |
| of back-up R fuse link for semiconductor protection usable up to 690 V    | <a href="#">3NE3 336: Type of coordination 2, Iq = 65 kA</a>         |
| of line contactor usable up to 480 V                                      | <a href="#">3RT1075</a>  |
| of line contactor usable up to 690 V                                      | <a href="#">3RT1075</a>  |
| <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>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>  |  |
| 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  |
| <b>trip class</b>   | CLASS 10A / 10E (preset) / 20E; acc. to IEC 60947-4-2                |

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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  |
| 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>              | 1 600 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 according to IEC 60947-4-2               | AC-53a  |
| <b>reference code according to IEC 81346-2</b>                | Q   |
| <b>Substance Prohibitance (Date)</b>                          | 09/23/2019  |
| <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   |
| 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  | 370 A   |
| at 50 °C rated value  | 328 A   |
| at 60 °C rated value  | 300 A   |
| <b>operating voltage</b>                                      |   |
| 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>operating power for 3-phase motors</b>                     |   |
| at 230 V at 40 °C rated value                                 | 110 kW  |
| at 400 V at 40 °C rated value                                 | 200 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                  | 160 A   |
| at rotary coding switch on switch position 2                  | 174 A   |
| at rotary coding switch on switch position 3                  | 188 A   |
| at rotary coding switch on switch position 4                  | 202 A   |

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| at rotary coding switch on switch position 5                                    | 216 A  |
| at rotary coding switch on switch position 6                                    | 230 A  |
| at rotary coding switch on switch position 7                                    | 244 A  |
| at rotary coding switch on switch position 8                                    | 258 A  |
| at rotary coding switch on switch position 9                                    | 272 A  |
| at rotary coding switch on switch position 10                                   | 286 A  |
| at rotary coding switch on switch position 11                                   | 300 A  |
| at rotary coding switch on switch position 12                                   | 314 A  |
| at rotary coding switch on switch position 13                                   | 328 A  |
| at rotary coding switch on switch position 14                                   | 342 A  |
| at rotary coding switch on switch position 15                                   | 356 A  |
| at rotary coding switch on switch position 16                                   | 370 A  |
| minimum   | 160 A  |
| <b>minimum load [%]</b>   | 15 %; Relative to smallest settable le   |
| <b>power loss [W] for rated value of the current at AC</b>                      |  |
| at 40 °C after startup  | 36 W   |
| at 50 °C after startup  | 29 W   |
| at 60 °C after startup  | 24 W   |
| <b>power loss [W] at AC at current limitation 350 %</b>                         |  |
| at 40 °C during startup   | 3 726 W  |
| at 50 °C during startup   | 3 124 W  |
| at 60 °C during startup   | 2 748 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/DC  |
| <b>control supply voltage at AC</b>   |  |
| at 50 Hz rated value  | 24 V   |
| at 60 Hz rated value  | 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>   |  |
| at DC rated value   | 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>                          | 490 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  |
| not parameterizable   | 2  |

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| <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>  |  |
| 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>   |  |
| <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   |  |
| forwards  | 10 mm  |
| backwards   | 0 mm   |
| upwards   | 100 mm   |
| downwards   | 75 mm  |
| at the side   | 5 mm   |
| <b>weight without packaging</b>   | 7.3 kg   |
| <b>Connections/ Terminals</b>   |  |
| <b>type of electrical connection</b>  |  |
| for main current circuit  | busbar connection  |
| for control circuit   | 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>  |  |
| 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  |
| <b>type of connectable conductor cross-sections</b>   |  |
| for main contacts for box terminal using the front clamping point solid                                       | 95 ... 300 mm <sup>2</sup>   |
| for main contacts for box terminal using the front clamping point finely stranded with core end processing    | 70 ... 240 mm <sup>2</sup>   |
| for main contacts for box terminal using the front clamping point finely stranded without core end processing | 70 ... 240 mm <sup>2</sup>   |
| for main contacts for box terminal using the front clamping point stranded                                    | 95 ... 300 mm <sup>2</sup>   |
| at AWG cables for main contacts for box terminal using the front clamping point                               | 3/0 ... 600 kcmil  |
| for main contacts for box terminal using the back clamping point solid  | 120 ... 240 mm <sup>2</sup>  |
| at AWG cables for main contacts for box terminal using the back clamping point                                | 250 ... 500 kcmil  |
| for main contacts for box terminal using both clamping points solid   | min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>   |
| for main contacts for box terminal using both clamping points finely stranded with core end processing        | min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>   |
| for main contacts for box terminal using both clamping points finely stranded without core end processing     | min. 2x 50 mm <sup>2</sup> , max. 2x 185 mm <sup>2</sup>   |
| for main contacts for box terminal using both clamping points stranded  | min. 2x 70 mm <sup>2</sup> , max. 2x 240 mm <sup>2</sup>   |
| for main contacts for box terminal using the back clamping point finely stranded with core end processing     | 120 ... 185 mm <sup>2</sup>  |
| for main contacts for box terminal using the back clamping point finely stranded without core end processing  | 120 ... 185 mm <sup>2</sup>  |
| for main contacts for box terminal using the back clamping point stranded                                     | 120 ... 240 mm <sup>2</sup>  |
| <b>type of connectable conductor cross-sections</b>   |  |
| at AWG cables for main current circuit solid  | 2/0 ... 500 kcmil  |

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| for DIN cable lug for main contacts stranded                               | 50 ... 240 mm <sup>2</sup>  |
| for DIN cable lug for main contacts finely stranded                        | 70 ... 240 mm <sup>2</sup>  |
| <b>type of connectable conductor cross-sections</b>                        |   |
| for control circuit solid  | 2x (0.25 ... 1.5 mm <sup>2</sup> )  |
| for control circuit finely stranded with core end processing               | 2x (0.25 ... 1.5 mm <sup>2</sup> )  |
| at AWG cables for control circuit solid                                    | 2x (24 ... 16)  |
| at AWG cables for control circuit finely stranded with core end processing | 2x (24 ... 16)  |
| <b>wire length</b>   |   |
| between soft starter and motor maximum                                     | 800 m   |
| at the digital inputs at AC maximum  | 1 000 m   |
| <b>tightening torque</b>   |   |
| for main contacts with screw-type terminals                                | 14 ... 24 N·m   |
| for auxiliary and control contacts with screw-type terminals               | 0.8 ... 1.2 N·m   |
| <b>tightening torque [lbf·in]</b>  |   |
| for main contacts with screw-type terminals                                | 124 ... 210 lbf·in  |
| for auxiliary and control contacts with screw-type terminals               | 7 ... 10.3 lbf·in   |
| <b>Ambient conditions</b>  |   |
| installation altitude at height above sea level maximum                    | 5 000 m; derating as of 1000 m, see Manual  |
| <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 according 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 according to IEC 60721                                      | 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4                 |
| during transport according 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>                                       |   |
| ● of the fuse  |   |
| — usable for Standard Faults up to 575/600 V according to UL               | Type: Class L, max. 1200 A; Iq = 18 kA  |
| — usable for High Faults up to 575/600 V according to UL                   | Type: Class L, max. 1200 A; Iq = 100 kA   |
| <b>operating power [hp] for 3-phase motors</b>                             |   |
| at 200/208 V at 50 °C rated value  | 100 hp  |
| at 220/230 V at 50 °C rated value  | 125 hp  |
| at 460/480 V at 50 °C rated value  | 250 hp  |
| <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>ATEX</b>  |   |
| <b>certificate of suitability</b>  |   |
| ATEX   | Yes   |
| IECEX  | Yes   |
| <b>hardware fault tolerance according to IEC 61508 relating to ATEX</b>    | 0   |
| <b>PFDavg with low demand rate according to IEC 61508</b>                  | 0.09  |

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| relating to ATEX   |          |
| PFHD with high demand rate according to EN 62061 relating to ATEX                        | 9E-6 1/h |
| Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX                     | SIL1     |
| T1 value for proof test interval or service life according to IEC 61508 relating to ATEX | 3 y      |

#### Certificates/ approvals

|                          |                                |
|--------------------------|--------------------------------|
| General Product Approval | For use in hazardous locations |
|--------------------------|--------------------------------|



[Confirmation](#)



|                                |                           |                   |                   |
|--------------------------------|---------------------------|-------------------|-------------------|
| For use in hazardous locations | Declaration of Conformity | 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=3RW5075-2TB04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5075-2TB04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5075-2TB04>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5075-2TB04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5075-2TB04&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5075-2TB04/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5075-2TB04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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

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