



SIRIUS soft starter 200-480 V 13 A, 24 V AC/DC Screw terminals Fail-safe

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| product brand name                 | SIRIUS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| product category                   | Hybrid switching devices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| product designation                | Failsafe soft starters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| product type designation           | 3RW55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| manufacturer's article number      | <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="#">3RV2032-4TA10; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li><li>• of circuit breaker usable at 500 V <a href="#">3RV2032-4TA10; Type of coordination 1, Iq = 18 kA, CLASS 10</a></li><li>• of circuit breaker usable at 400 V at inside-delta circuit <a href="#">3RV2032-4DA10; 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="#">3RV2032-4DA10; Type of coordination 1, Iq = 18 kA, CLASS 10</a></li><li>• of the gG fuse usable up to 690 V <a href="#">3NA3820-6; 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="#">3NA3820-6; 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="#">3NE1815-0; 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="#">3NE8017-1; Type of coordination 2, Iq = 65 kA</a></li><li>• of the redundant contactor for applications &gt; SIL 1 according to EN 62061 <a href="#">3RT2027</a></li><li>• of the redundant contactor for applications &gt; SIL 1 at inside-delta circuit according to EN 62061 <a href="#">3RT2027</a></li><li>• of the redundant contactor for applications &gt; SIL 1 according to EN ISO 13849-1 <a href="#">3RT2027</a></li><li>• of the redundant contactor for applications &gt; SIL 1 at inside-delta circuit according to EN ISO 13849-1 <a href="#">3RT2027</a></li></ul> |
| General technical data             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| starting voltage [%]               | 20 ... 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| stopping voltage [%]               | 50 %; non-adjustable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| start-up ramp time of soft starter | 0 ... 360 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| ramp-down time of soft starter     | 0 ... 360 s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| start torque [%]                   | 10 ... 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| stopping torque [%]                | 10 ... 100 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| torque limitation [%]              | 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</b>                                        | 5 (based on IEC 61557-12)                                                                                                                                                                                                                                                                                                                               |
| <b>certificate of suitability</b>                            |                                                                                                                                                                                                                                                                                                                                                         |
| • CE marking                                                 | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • UL approval                                                | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • CSA approval                                               | Yes                                                                                                                                                                                                                                                                                                                                                     |
| <b>product component</b>                                     |                                                                                                                                                                                                                                                                                                                                                         |
| • HMI-High Feature                                           | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • is supported HMI-High Feature                              | Yes                                                                                                                                                                                                                                                                                                                                                     |
| <b>product feature integrated bypass contact system</b>      | Yes                                                                                                                                                                                                                                                                                                                                                     |
| <b>number of controlled phases</b>                           | 3                                                                                                                                                                                                                                                                                                                                                       |
| <b>current unbalance limiting value [%]</b>                  | 10 ... 60 %                                                                                                                                                                                                                                                                                                                                             |
| <b>ground-fault monitoring limiting value [%]</b>            | 10 ... 95 %                                                                                                                                                                                                                                                                                                                                             |
| <b>buffering time in the event of power failure</b>          |                                                                                                                                                                                                                                                                                                                                                         |
| • for main current circuit                                   | 100 ms                                                                                                                                                                                                                                                                                                                                                  |
| • for control circuit                                        | 100 ms                                                                                                                                                                                                                                                                                                                                                  |
| <b>idle time adjustable</b>                                  | 0 ... 255 s                                                                                                                                                                                                                                                                                                                                             |
| <b>insulation voltage rated value</b>                        | 480 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>                                        | 1.15                                                                                                                                                                                                                                                                                                                                                    |
| <b>surge voltage resistance rated value</b>                  | 6 kV                                                                                                                                                                                                                                                                                                                                                    |
| <b>maximum permissible voltage for protective separation</b> |                                                                                                                                                                                                                                                                                                                                                         |
| • between main and auxiliary circuit                         | 480 V; does not apply for thermistor connection                                                                                                                                                                                                                                                                                                         |
| <b>shock resistance</b>                                      | 15 g / 11 ms, from 6 g / 11 ms with potential contact lifting                                                                                                                                                                                                                                                                                           |
| <b>vibration resistance</b>                                  | 15 mm up to 6 Hz; 2 g up to 500 Hz                                                                                                                                                                                                                                                                                                                      |
| <b>recovery time after overload trip adjustable</b>          | 60 ... 1 800 s                                                                                                                                                                                                                                                                                                                                          |
| 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>               | 11/22/2019                                                                                                                                                                                                                                                                                                                                              |
| <b>SVHC substance name</b>                                   | Lead CAS-No. 7439-92-1<br>Lead monoxide (lead oxide) CAS-No. 1317-36-8<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<br>Dibutylbis(pentane-2,4-dionato-O,O')tin CAS-No. 22673-19-4<br>Diboron trioxide CAS-No. 1303-86-2 |
| <b>Net Weight</b>                                            | 2.192 kg                                                                                                                                                                                                                                                                                                                                                |
| <b>product function</b>                                      |                                                                                                                                                                                                                                                                                                                                                         |
| • ramp-up (soft starting)                                    | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • soft stopping                                              | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • breakaway pulse                                            | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • adjustable current limitation                              | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • creep speed in both directions of rotation                 | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • pump stop                                                  | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • DC braking                                                 | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • motor heating                                              | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • min/max pointer                                            | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • trace function                                             | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • intrinsic device protection                                | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • motor overload protection                                  | Yes; Full motor protection (thermistor motor protection and electronic motor overload protection) / When using the motor overload protection according to ATEX, an upstream contactor is required in inside-delta circuit.                                                                                                                              |
| • evaluation of thermistor motor protection                  | Yes; Type A PTC or Klaxon / Thermoclick                                                                                                                                                                                                                                                                                                                 |
| • inside-delta circuit                                       | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • auto-RESET                                                 | Yes                                                                                                                                                                                                                                                                                                                                                     |
| • manual RESET                                               | Yes                                                                                                                                                                                                                                                                                                                                                     |

- remote reset
- communication function
- operating measured value display
- event list
- error logbook
- via software parameterizable
- via software configurable
- screw terminal
- spring-loaded terminal
- **PROFInergy**
- **firmware update**
- **removable terminal for control circuit**
- voltage ramp
- torque control
- combined braking
- analog output
- programmable control inputs/outputs
- condition monitoring
- automatic parameterisation
- application wizards
- alternative stopping mode
- emergency operation mode
- reversing operation
- soft starting at heavy starting conditions

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

No

Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules

Yes

Yes

Yes

Yes

Yes

Yes; 4 ... 20 mA (default) / 0 ... 10 V

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

#### Power Electronics

|                                                                                     |                                      |
|-------------------------------------------------------------------------------------|--------------------------------------|
| <b>operational current</b>                                                          |                                      |
| • at 40 °C rated value                                                              | 13 A                                 |
| • at 40 °C rated value minimum                                                      | 2.5 A                                |
| • at 50 °C rated value                                                              | 11.5 A                               |
| • at 60 °C rated value                                                              | 10.5 A                               |
| <b>operational current at inside-delta circuit</b>                                  |                                      |
| • at 40 °C rated value                                                              | 22.5 A                               |
| • at 50 °C rated value                                                              | 19.9 A                               |
| • at 60 °C rated value                                                              | 18.2 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 %                                |
| <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                                                     | 3 kW                                 |
| • at 230 V at inside-delta circuit at 40 °C rated value                             | 5.5 kW                               |
| • at 400 V at 40 °C rated value                                                     | 5.5 kW                               |
| • at 400 V at inside-delta circuit at 40 °C rated value                             | 11 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                                                            | 4 W                                  |
| • at 50 °C after startup                                                            | 3 W                                  |
| • at 60 °C after startup                                                            | 3 W                                  |
| <b>power loss [W] at AC at current limitation 350%</b>                              |                                      |
| • at 40 °C during startup                                                           | 198 W                                |

|                                                                                                   |                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• at 50 °C during startup</li> </ul>                       | 166 W                                                                                                                                                                          |
| <ul style="list-style-type: none"> <li>• at 60 °C during startup</li> </ul>                       | 148 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>                                                               |                                                                                                                                                                                |
| <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 at DC rated value</b>                                                   | 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>                                         | 420 mA                                                                                                                                                                         |
| <b>holding current in bypass operation rated value</b>                                            | 820 mA                                                                                                                                                                         |
| <b>inrush current by closing the bypass contacts maximum</b>                                      | 0.91 A                                                                                                                                                                         |
| inrush current peak at application of control supply voltage maximum                              | 7.5 A                                                                                                                                                                          |
| duration of inrush current peak at application of control supply voltage                          | 20 ms                                                                                                                                                                          |
| <b>design of the overvoltage protection</b>                                                       | Varistor                                                                                                                                                                       |
| <b>design of short-circuit protection for control circuit</b>                                     | 4 A gG fuse (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu= 600 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of scope of supply |
| <b>Inputs/ Outputs</b>                                                                            |                                                                                                                                                                                |
| <b>number of digital inputs</b>                                                                   | 4                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• with fail-safe</li> </ul>                                | 1                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• parameterizable</li> </ul>                               | 4                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• <b>number of digital outputs</b></li> </ul>              | 3                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• Number of digital outputs with fail-safe</li> </ul>      | 1                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• number of digital outputs parameterizable</li> </ul>     | 2                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>• number of digital outputs not parameterizable</li> </ul> | 1                                                                                                                                                                              |
| <b>digital output version</b>                                                                     | 2 normally-open contacts (NO) / 1 normally-closed contact (NC) / 1 changeover contact (CO)                                                                                     |
| <b>number of analog outputs</b>                                                                   | 1                                                                                                                                                                              |
| <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>Response times</b>                                                                             |                                                                                                                                                                                |
| OFF-delay time with safety-related request when switched off via control inputs maximum           | 100 ms                                                                                                                                                                         |
| <b>Installation/ mounting/ dimensions</b>                                                         |                                                                                                                                                                                |
| <b>mounting position</b>                                                                          | Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°)                                                                                                     |
| <b>fastening method</b>                                                                           | screw fixing                                                                                                                                                                   |
| <b>height</b>                                                                                     | 275 mm                                                                                                                                                                         |
| <b>width</b>                                                                                      | 170 mm                                                                                                                                                                         |
| <b>depth</b>                                                                                      | 152 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> <li>• upwards</li> <li>• downwards</li> <li>• at the side</li> </ul>                                                                                                                                                            | 0 mm<br>100 mm<br>75 mm<br>5 mm                                                                                                                                                                                                                                                   |
| <b>weight without packaging</b>                                                                                                                                                                                                                                                         | 2.3 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>                                                                                                                                                                             | screw-type terminals<br>screw-type terminals                                                                                                                                                                                                                                      |
| <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 <ul style="list-style-type: none"> <li>— solid</li> <li>— finely stranded with core end processing</li> </ul> </li> <li>• for AWG cables for main current circuit solid</li> </ul>                                           | 2x (1.0 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 10 mm <sup>2</sup> )<br>2x (1.0 ... 2.5 mm <sup>2</sup> ), 2x (2.5 ... 6.0 mm <sup>2</sup> )<br>2x (16 ... 12), 2x (14 ... 8)                                                                                                      |
| <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>• for 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 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>                                                                                                                 | 2 ... 2.5 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>                                                                                                                 | 18 ... 22 lbf·in<br>7 ... 10.3 lbf·in                                                                                                                                                                                                                                             |
| <b>Ambient conditions</b>                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                   |
| installation altitude at height above sea level maximum                                                                                                                                                                                                                                 | 2 000 m                                                                                                                                                                                                                                                                           |
| <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>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>• 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 usable for Standard Faults <ul style="list-style-type: none"> <li>— at 460/480 V according to UL</li> <li>— 60/480 V according to UL</li> <li>— at 460/480 V at inside-delta circuit according to UL</li> </ul> </li> </ul> | Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; I <sub>q</sub> = 5 kA<br>Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; I <sub>q</sub> max = 65 kA<br>Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; I <sub>q</sub> = 5 kA                                    |

|                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>— 60/480 V at inside-delta circuit according to UL</li> <li>— at 575/600 V according to UL</li> <li>— 75/600 V at inside-delta circuit according to UL</li> <li>— at 575/600 V at inside-delta circuit according to UL</li> </ul>                                                                                                                                                                      | Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; Iq max = 65 kA<br>Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; Iq = 5 kA<br>Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; Iq max = 65 kA<br>Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; Iq = 5 kA |
| <b>• of the fuse</b> <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>                                                 | Type: Class RK5 / K5, max. 50 A; Iq = 5 kA<br><br>Type: Class J / L, max. 50 A; Iq = 100 kA<br><br>Type: Class RK5 / K5, max. 50 A; Iq = 5 kA<br><br>Type: Class J / L, max. 50 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 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> </ul> | 2 hp<br>3 hp<br>7.5 hp<br>5 hp<br>5 hp<br>10 hp                                                                                                                                                                                                                                    |
| <b>contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                                                                                                                   | R300-B300                                                                                                                                                                                                                                                                          |
| <b>Safety related data</b>                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                    |
| product function suitable for safety function                                                                                                                                                                                                                                                                                                                                                                                                 | Yes                                                                                                                                                                                                                                                                                |
| <b>suitability for use</b>                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>• safety-related switching on</li> <li>• safety-related switching OFF</li> </ul>                                                                                                                                                                                                                                                                                                                       | No<br>Yes                                                                                                                                                                                                                                                                          |
| <b>safe state</b>                                                                                                                                                                                                                                                                                                                                                                                                                             | Open load circuit                                                                                                                                                                                                                                                                  |
| <b>function test interval maximum</b>                                                                                                                                                                                                                                                                                                                                                                                                         | 1 a                                                                                                                                                                                                                                                                                |
| <b>diagnostics test interval by internal test function maximum</b>                                                                                                                                                                                                                                                                                                                                                                            | 1 000 s                                                                                                                                                                                                                                                                            |
| <b>stop category according to IEC 60204-1</b>                                                                                                                                                                                                                                                                                                                                                                                                 | 0                                                                                                                                                                                                                                                                                  |
| <b>B10d value</b>                                                                                                                                                                                                                                                                                                                                                                                                                             | 1 588 000                                                                                                                                                                                                                                                                          |
| <b>average diagnostic coverage level (DCavg)</b>                                                                                                                                                                                                                                                                                                                                                                                              | 90 %                                                                                                                                                                                                                                                                               |
| <b>MTTFd</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  | 39 a                                                                                                                                                                                                                                                                               |
| <b>IEC 62061</b>                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                    |
| <b>Safety Integrity Level (SIL) according to IEC 62061</b>                                                                                                                                                                                                                                                                                                                                                                                    | SIL 1                                                                                                                                                                                                                                                                              |
| PFHD with high demand rate according to IEC 62061                                                                                                                                                                                                                                                                                                                                                                                             | 1E-6 1/h                                                                                                                                                                                                                                                                           |
| <b>ISO 13849</b>                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                    |
| <b>performance level (PL) according to ISO 13849-1</b>                                                                                                                                                                                                                                                                                                                                                                                        | PL c                                                                                                                                                                                                                                                                               |
| <b>category according to ISO 13849-1</b>                                                                                                                                                                                                                                                                                                                                                                                                      | 2                                                                                                                                                                                                                                                                                  |
| <b>IEC 61508</b>                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                    |
| <b>Safety Integrity Level (SIL)</b>                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>• according to IEC 61508</li> </ul>                                                                                                                                                                                                                                                                                                                                                                    | SIL 1                                                                                                                                                                                                                                                                              |
| <b>safety device type according to IEC 61508-2</b>                                                                                                                                                                                                                                                                                                                                                                                            | Type B                                                                                                                                                                                                                                                                             |
| <b>PFHD with high demand rate according to IEC 61508</b>                                                                                                                                                                                                                                                                                                                                                                                      | 1E-6 1/h                                                                                                                                                                                                                                                                           |
| PFDAvg with low demand rate according to IEC 61508                                                                                                                                                                                                                                                                                                                                                                                            | 0.09                                                                                                                                                                                                                                                                               |
| <b>Safe failure fraction (SFF)</b>                                                                                                                                                                                                                                                                                                                                                                                                            | 60 %                                                                                                                                                                                                                                                                               |
| hardware fault tolerance according to IEC 61508                                                                                                                                                                                                                                                                                                                                                                                               | 0                                                                                                                                                                                                                                                                                  |
| T1 value of service life according to IEC 61508                                                                                                                                                                                                                                                                                                                                                                                               | 20 a                                                                                                                                                                                                                                                                               |
| <b>Electrical Safety</b>                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                    |
| <b>protection class IP on the front according to IEC 60529</b>                                                                                                                                                                                                                                                                                                                                                                                | IP20                                                                                                                                                                                                                                                                               |
| <b>touch protection on the front according to IEC 60529</b>                                                                                                                                                                                                                                                                                                                                                                                   | finger-safe, for vertical contact from the front                                                                                                                                                                                                                                   |
| <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>                                                                                                                                                                                                                                                                                                                                                                     | 5E-7 1/h                                                                                                                                                                                                                                                                           |
| <b>PFDAvg with low demand rate according to IEC 61508 relating to ATEX</b>                                                                                                                                                                                                                                                                                                                                                                    | 0.008                                                                                                                                                                                                                                                                              |
| <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</b>                                                                                                                                                                                                                                                                                                                                                                          | 3 a                                                                                                                                                                                                                                                                                |

|                                                                  |                                                                                              |
|------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>IEC 61508 relating to ATEX</b>                                |                                                                                              |
| <b>certificate of suitability</b>                                |                                                                                              |
| • ATEX                                                           | Yes                                                                                          |
| • IECEx                                                          | Yes                                                                                          |
| • according to ATEX directive 2014/34/EU                         | 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] |

#### Approvals Certificates

|                                                            |          |
|------------------------------------------------------------|----------|
| <b>Environmental Product Declaration</b>                   |          |
| • global warming potential [CO2 eq] / during manufacturing | 50.8 kg  |
| • global warming potential [CO2 eq] / during sales         | 0.827 kg |
| • global warming potential [CO2 eq] / during operation     | 240 kg   |
| • global warming potential [CO2 eq] / after end of life    | -7.11 kg |
| • global warming potential [CO2 eq] / total                | 285 kg   |

|                    |                                 |
|--------------------|---------------------------------|
| <b>Environment</b> | <b>General Product Approval</b> |
|--------------------|---------------------------------|

[Environmental Confirmations](#)

Siemens  
EcoTech



|                                 |            |                                       |
|---------------------------------|------------|---------------------------------------|
| <b>General Product Approval</b> | <b>EMV</b> | <b>For use in hazardous locations</b> |
|---------------------------------|------------|---------------------------------------|



|                          |                          |                             |
|--------------------------|--------------------------|-----------------------------|
| <b>Functional Safety</b> | <b>Test Certificates</b> | <b>Maritime application</b> |
|--------------------------|--------------------------|-----------------------------|

[Type Examination Certificate](#)

[Type Test Certificates/Test Report](#)



|                             |              |
|-----------------------------|--------------|
| <b>Maritime application</b> | <b>other</b> |
|-----------------------------|--------------|



[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=3RW5513-1HF04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5513-1HF04>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5513-1HF04&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5513-1HF04&lang=en)

**Cax online generator**

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5513-1HF04>

**Kennlinien**

<https://curves.simaris.siemens.com/curves/3RW5513-1HF04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5513-1HF04/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>





