

SIRIUS soft starter 200-690 V 171 A, 110-250 V AC spring-type terminals



|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product brand name            | SIRIUS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Product category              | Hybrid switching devices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product designation           | Soft starter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Manufacturer's article number | <div><ul style="list-style-type: none"><li>• of HMI-Modul high-feature usable</li><li>• of communication module PROFINET standard usable</li><li>• of communication module PROFIBUS usable</li><li>• of communication module Modbus TCP usable</li><li>• of circuit breaker usable at 400 V</li><li>• of circuit breaker usable at 500 V</li><li>• of circuit breaker usable at 400 V at inside-delta circuit</li><li>• of circuit breaker usable at 500 V at inside-delta circuit</li><li>• of the gG fuse usable up to 690 V</li><li>• of the gG fuse usable at inside-delta circuit up to 500 V</li><li>• of full range R fuse link for semiconductor protection usable up to 690 V</li></ul></div> |

- of back-up R fuse link for semiconductor protection usable up to 690 V

[3NE3334-0B; Type of coordination 2, I<sub>q</sub> = 65 kA](#)

#### General technical data

|                                                  |                                                              |
|--------------------------------------------------|--------------------------------------------------------------|
| Starting voltage [%]                             | 20 ... 100 %                                                 |
| Start-up ramp time of soft starter               | 0 ... 360 s                                                  |
| Stopping time of soft starter                    | 0 ... 360 s                                                  |
| Start torque [%]                                 | 10 ... 100 %                                                 |
| Stopping torque [%]                              | 10 ... 100 %                                                 |
| Torque limit [%]                                 | 20 ... 200 %                                                 |
| Current limiting value [%] adjustable            | 125 ... 1 000 %                                              |
| Breakaway voltage [%] adjustable                 | 40 ... 100 %                                                 |
| Breakaway time adjustable                        | 0 ... 2 s                                                    |
| Number of parameter sets                         | 3                                                            |
| Accuracy class acc. to IEC 61557-12              | 5 %                                                          |
| Product component                                |                                                              |
| • HMI-High Feature                               | Yes                                                          |
| • is supported HMI-High Feature                  | Yes                                                          |
| Product feature integrated bypass contact system | Yes                                                          |
| Number of controlled phases                      | 3                                                            |
| Trip class                                       | CLASS 10A / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2 |
| Current unbalance limiting value [%]             | 10 ... 60 %                                                  |
| • Recovery time after overload trip adjustable   | 60 ... 1 800 s                                               |
| Idle time adjustable                             | 0 ... 255 s                                                  |
| Insulation voltage                               |                                                              |
| • rated value                                    | 690 V                                                        |
| Degree of pollution                              | 3                                                            |
| Impulse voltage rated value                      | 8 kV                                                         |
| Blocking voltage of the thyristor maximum        | 1 800 V                                                      |
| Service factor                                   | 1.15                                                         |
| Protection class IP                              | IP00                                                         |
| Reference code acc. to DIN EN 81346-2            | Q                                                            |
| Product function                                 |                                                              |
| • ramp-up (soft starting)                        | Yes                                                          |
| • ramp-down (soft stop)                          | Yes                                                          |
| • breakaway pulse                                | Yes                                                          |
| • torque control                                 | Yes                                                          |
| • Adjustable current limitation                  | Yes                                                          |
| • creep speed in both directions of rotation     | Yes                                                          |
| • pump ramp down                                 | Yes                                                          |
| • DC braking                                     | Yes                                                          |
| • motor heating                                  | Yes                                                          |
| • slave pointer function                         | Yes                                                          |

|                                              |                                                                                                   |
|----------------------------------------------|---------------------------------------------------------------------------------------------------|
| • trace function                             | Yes                                                                                               |
| • voltage ramp                               | Yes                                                                                               |
| • Intrinsic device protection                | Yes                                                                                               |
| • motor overload protection                  | Yes; Full motor protection (thermistor motor protection and electronic motor overload protection) |
| • Evaluation of thermistor motor protection  | Yes; Type A PTC or Klaxon / Thermoclick                                                           |
| • inside-delta circuit                       | No                                                                                                |
| • Auto-reset                                 | Yes                                                                                               |
| • Manual RESET                               | Yes                                                                                               |
| • remote reset                               | Yes                                                                                               |
| • communication function                     | Yes                                                                                               |
| • operating measured value display           | Yes                                                                                               |
| • event list                                 | Yes                                                                                               |
| • error logbook                              | Yes                                                                                               |
| • via software parameterizable               | Yes                                                                                               |
| • via software configurable                  | Yes                                                                                               |
| • PROFINET                                   | Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules     |
| • firmware update                            | Yes                                                                                               |
| • removable terminal for control circuit     | Yes                                                                                               |
| • combined braking                           | Yes                                                                                               |
| • analog output                              | Yes; 4 ... 20 mA (default) / 0 ... 10 V                                                           |
| • programmable control input-/outputs        | Yes                                                                                               |
| • condition monitoring                       | Yes                                                                                               |
| • automatic parameterisation                 | Yes                                                                                               |
| • application wizards                        | Yes                                                                                               |
| • alternative run-down                       | Yes                                                                                               |
| • emergency operation mode                   | Yes                                                                                               |
| • reversing operation                        | Yes                                                                                               |
| • soft starting at heavy starting conditions | Yes                                                                                               |

## Power Electronics

|                                                  |               |
|--------------------------------------------------|---------------|
| <b>Operating current</b>                         |               |
| • at 40 °C rated value                           | 171 A         |
| • at 50 °C rated value                           | 153 A         |
| • at 60 °C rated value                           | 141 A         |
| <b>Operating current at inside-delta circuit</b> |               |
| • at 40 °C rated value                           | 296 A         |
| • at 50 °C rated value                           | 265 A         |
| • at 60 °C rated value                           | 244 A         |
| <b>Operating voltage</b>                         |               |
| • rated value                                    | 200 ... 690 V |

|                                                                                     |                                      |
|-------------------------------------------------------------------------------------|--------------------------------------|
| • at inside-delta circuit rated value                                               | 200 ... 600 V                        |
| <b>Relative negative tolerance of the operating voltage</b>                         | -15 %                                |
| <b>Relative positive tolerance of the operating voltage</b>                         | 10 %                                 |
| <b>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 three-phase motors</b>                                       |                                      |
| • at 230 V at 40 °C rated value                                                     | 45 kW                                |
| • at 230 V at inside-delta circuit at 40 °C rated value                             | 90 kW                                |
| • at 400 V at 40 °C rated value                                                     | 90 kW                                |
| • at 400 V at inside-delta circuit at 40 °C rated value                             | 160 kW                               |
| • at 500 V at 40 °C rated value                                                     | 110 kW                               |
| • at 500 V at inside-delta circuit at 40 °C rated value                             | 200 kW                               |
| <b>Operating frequency 1 rated value</b>                                            | 50 Hz                                |
| <b>Operating frequency 2 rated value</b>                                            | 60 Hz                                |
| <b>Relative negative tolerance of the operating frequency</b>                       | -10 %                                |
| <b>Relative positive tolerance of the operating frequency</b>                       | 10 %                                 |
| <b>Adjustable motor current</b>                                                     |                                      |
| • minimum                                                                           | 34 A                                 |
| • at inside-delta circuit minimum                                                   | 58.9 A                               |
| <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 to power-up                                                              | 51 W                                 |
| • at 50 °C to power-up                                                              | 46 W                                 |
| • at 60 °C to power-up                                                              | 42 W                                 |

#### Control circuit/ Control

|                                                                                 |               |
|---------------------------------------------------------------------------------|---------------|
| <b>Type of voltage of the control supply voltage</b>                            | AC            |
| <b>Control supply voltage at AC</b>                                             |               |
| • at 50 Hz                                                                      | 110 ... 250 V |
| • at 60 Hz                                                                      | 110 ... 250 V |
| <b>Relative negative tolerance of the control supply voltage at AC at 50 Hz</b> | -15 %         |
| <b>Relative positive tolerance of the control supply voltage at AC at 50 Hz</b> | 10 %          |
| <b>Relative negative tolerance of the control supply voltage at AC at 60 Hz</b> | -15 %         |
| <b>Relative positive tolerance of the control supply voltage at AC at 60 Hz</b> | 10 %          |
| <b>Control supply voltage frequency</b>                                         | 50 ... 60 Hz  |

|                                                                     |                                                                                                                                                                                |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Relative negative tolerance of the control supply voltage frequency | -10 %                                                                                                                                                                          |
| Relative positive tolerance of the control supply voltage frequency | 10 %                                                                                                                                                                           |
| Design of the overvoltage protection                                | Varistor                                                                                                                                                                       |
| Design of short-circuit protection for control circuit              | 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 |

#### Inputs/ Outputs

|                                                 |                                                           |
|-------------------------------------------------|-----------------------------------------------------------|
| Number of digital inputs                        | 4                                                         |
| • with fail-safe                                | 0                                                         |
| • parameterizable                               | 4                                                         |
| Number of digital outputs                       | 4                                                         |
| • with fail-safe                                | 0                                                         |
| • parameterizable                               | 3                                                         |
| • not parameterizable                           | 1                                                         |
| Digital output version                          | 3 normally-open contacts (NO) / 1 changeover contact (CO) |
| Number of inputs for thermistor connection      | 1; Type A PTC or Klaxon / Thermoclick                     |
| Number of analog outputs                        | 1                                                         |
| Switching capacity current of the relay outputs |                                                           |
| • at AC-15 at 250 V rated value                 | 3 A                                                       |
| • at DC-13 at 24 V rated value                  | 1 A                                                       |

#### Installation/ mounting/ dimensions

|                                                         |                                                                            |
|---------------------------------------------------------|----------------------------------------------------------------------------|
| Mounting position                                       | Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°) |
| Mounting type                                           | screw fixing                                                               |
| Height                                                  | 306 mm                                                                     |
| Width                                                   | 185 mm                                                                     |
| Depth                                                   | 203 mm                                                                     |
| Required spacing with side-by-side mounting             |                                                                            |
| • forwards                                              | 10 mm                                                                      |
| • Backwards                                             | 0 mm                                                                       |
| • upwards                                               | 100 mm                                                                     |
| • downwards                                             | 75 mm                                                                      |
| • at the side                                           | 5 mm                                                                       |
| Installation altitude at height above sea level maximum | 2 000 m; Derating as of 1000 m, see catalog                                |
| Weight without packaging                                | 9.1 kg                                                                     |

#### Connections/Terminals

|                               |                         |
|-------------------------------|-------------------------|
| Type of electrical connection |                         |
| • for main current circuit    | busbar connection       |
| • for control circuit         | spring-loaded terminals |

|                                                                                                                                                                                                                     |                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>Type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for DIN cable lug for main contacts stranded</li> <li>• for DIN cable lug for main contacts finely stranded</li> </ul> | 2x (16 ... 95 mm <sup>2</sup> )<br>2x (25 ... 120 mm <sup>2</sup> ) |
| <b>Type of connectable conductor cross-sections at AWG conductors for control circuit</b> <ul style="list-style-type: none"> <li>• solid</li> <li>• finely stranded with core end processing</li> </ul>             | 2x (24 ... 16)<br>2x (24 ... 16)                                    |
| <b>Wire length</b> <ul style="list-style-type: none"> <li>• between soft starter and motor maximum</li> <li>• at the digital inputs at DC maximum</li> </ul>                                                        | 800 m<br>1 000 m                                                    |

#### Ambient conditions

|                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage and transport</li> </ul>                                                                        | -25 ... +60 °C<br>-25 ... +80 °C                                                                                                                                                                                                                                                  |
| <b>Environmental category</b> <ul style="list-style-type: none"> <li>• during operation acc. to IEC 60721</li> <li>• during storage acc. to IEC 60721</li> <li>• during transport acc. 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) |

#### Communication/ Protocol

|                                                                                                                                                          |                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| <b>Communication module is supported</b> <ul style="list-style-type: none"> <li>• PROFINET standard</li> <li>• Modbus TCP</li> <li>• PROFIBUS</li> </ul> | Yes<br>Yes<br>Yes |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|

#### UL/CSA ratings

|                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Manufacturer's article number</b> <ul style="list-style-type: none"> <li>• of the fuse usable up to 575/600 V according to UL</li> <li>• of the fuse usable at inside-delta circuit up to 575/600 V according to UL</li> </ul>                                                                                                                                                                                         | Type: Class RK5 / K5, max. 400 A; Standard fault, I <sub>q</sub> = 10 kA<br>Type: Class RK5 / K5, max. 400 A |
| <b>Operating power [hp] for three-phase motors</b> <ul style="list-style-type: none"> <li>• at 200/208 V at 50 °C rated value</li> <li>• at 220/230 V at 50 °C rated value</li> <li>• at 460/480 V at 50 °C rated value</li> <li>• at 575/600 V at 50 °C rated value</li> <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> </ul> | 50 hp<br>50 hp<br>100 hp<br>150 hp<br>75 hp<br>100 hp                                                        |

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

200 hp

250 hp

Contact rating of auxiliary contacts according to UL

R300-B300

#### Further information

**Information- and Downloadcenter (Catalogs, Brochures,...)**

<http://www.siemens.com/industrial-controls/catalogs>

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5536-2HA16>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5536-2HA16>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5536-2HA16>

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

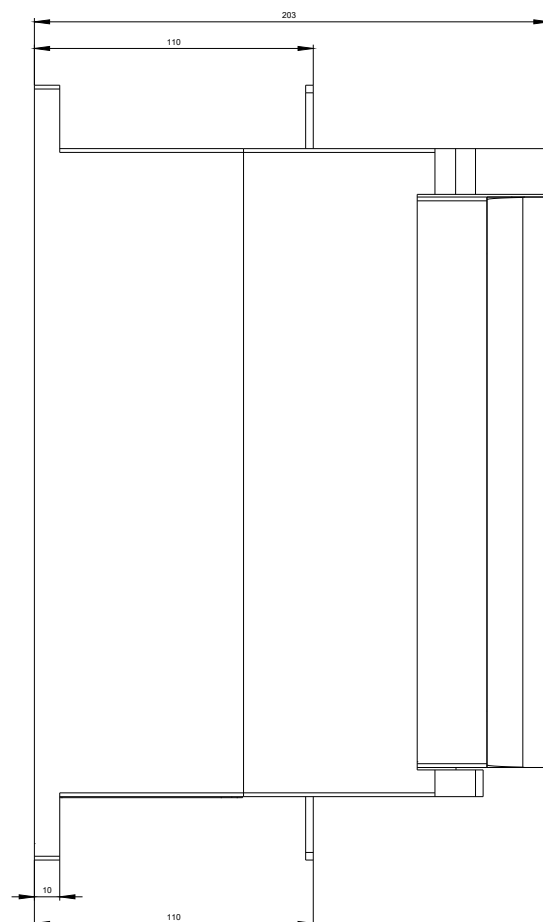
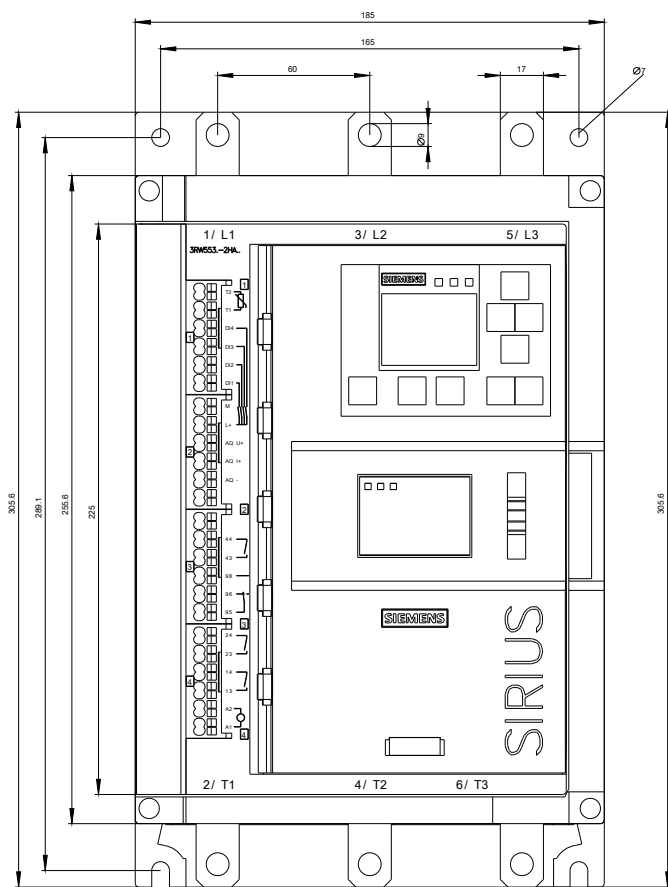
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5536-2HA16&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5536-2HA16&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5536-2HA16/char>

**Characteristic: Installation altitude**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5536-2HA16&objecttype=14&gridview=view1>



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