

SIRIUS soft starter 200-600 V 32 A, 24 V AC/DC 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

[3NE8022-1; 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                                    | 600 V                                                        |
| Degree of pollution                              | 3                                                            |
| Impulse voltage rated value                      | 6 kV                                                         |
| Blocking voltage of the thyristor maximum        | 1 600 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) / 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 Klixon / Thermoclick                                                                                                                                                                                    |
| • inside-delta circuit                       | Yes                                                                                                                                                                                                                        |
| • 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                                                                                                                                                                                                                        |
| • PROFINergy                                 | 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                           | 32 A   |
| • at 50 °C rated value                           | 28.4 A |
| • at 60 °C rated value                           | 26 A   |
| <b>Operating current at inside-delta circuit</b> |        |
| • at 40 °C rated value                           | 55.4 A |
| • at 50 °C rated value                           | 49 A   |
| • at 60 °C rated value                           | 45 A   |
| <b>Operating voltage</b>                         |        |

|                                                                                     |                                      |
|-------------------------------------------------------------------------------------|--------------------------------------|
| • rated value                                                                       | 200 ... 600 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                                                     | 7.5 kW                               |
| • at 230 V at inside-delta circuit at 40 °C rated value                             | 15 kW                                |
| • at 400 V at 40 °C rated value                                                     | 15 kW                                |
| • at 400 V at inside-delta circuit at 40 °C rated value                             | 22 kW                                |
| • at 500 V at 40 °C rated value                                                     | 18.5 kW                              |
| • at 500 V at inside-delta circuit at 40 °C rated value                             | 30 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                                                                           | 6.5 A                                |
| • at inside-delta circuit minimum                                                   | 11.3 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                                                              | 10 W                                 |
| • at 50 °C to power-up                                                              | 9 W                                  |
| • at 60 °C to power-up                                                              | 8 W                                  |

#### Control circuit/ Control

|                                                                                 |       |
|---------------------------------------------------------------------------------|-------|
| <b>Type of voltage of the control supply voltage</b>                            | AC/DC |
| <b>Control supply voltage at AC</b>                                             |       |
| • at 50 Hz rated value                                                          | 24 V  |
| • at 60 Hz rated value                                                          | 24 V  |
| <b>Relative negative tolerance of the control supply voltage at AC at 50 Hz</b> | -20 % |
| <b>Relative positive tolerance of the control supply voltage at AC at 50 Hz</b> | 20 %  |
| <b>Relative negative tolerance of the control supply voltage at AC at 60 Hz</b> | -20 % |
| <b>Relative positive tolerance of the control supply voltage at AC at 60 Hz</b> | 20 %  |

|                                                                                              |                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control supply voltage frequency                                                             | 50 ... 60 Hz                                                                                                                                                                   |
| Relative negative tolerance of the control supply voltage frequency                          | -10 %                                                                                                                                                                          |
| Relative positive tolerance of the control supply voltage frequency                          | 10 %                                                                                                                                                                           |
| Control supply voltage <ul style="list-style-type: none"> <li>• at DC rated value</li> </ul> | 24 V                                                                                                                                                                           |
| Relative negative tolerance of the control supply voltage at DC                              | -20 %                                                                                                                                                                          |
| Relative positive tolerance of the control supply voltage at DC                              | 20 %                                                                                                                                                                           |
| Inrush current peak at connect of control supply voltage maximum                             | 7.5 A                                                                                                                                                                          |
| Duration of inrush current peak at connect of control supply voltage                         | 20 ms                                                                                                                                                                          |
| 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 <ul style="list-style-type: none"> <li>• with fail-safe</li> <li>• parameterizable</li> </ul>                                                    | 4<br>0<br>4                                               |
| Number of digital outputs <ul style="list-style-type: none"> <li>• with fail-safe</li> <li>• parameterizable</li> <li>• not parameterizable</li> </ul>                    | 4<br>0<br>3<br>1                                          |
| Digital output version                                                                                                                                                    | 3 normally-open contacts (NO) / 1 changeover contact (CO) |
| Number of inputs for thermistor connection                                                                                                                                | 1; Type A PTC or Klixon / Thermoclick                     |
| Number of analog outputs                                                                                                                                                  | 1                                                         |
| Switching capacity current of the relay outputs <ul style="list-style-type: none"> <li>• at AC-15 at 250 V rated value</li> <li>• at DC-13 at 24 V rated value</li> </ul> | 3 A<br>1 A                                                |

#### Installation/ mounting/ dimensions

|                                                                                                                               |                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Mounting position                                                                                                             | Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°) |
| Mounting type                                                                                                                 | screw fixing                                                               |
| Height                                                                                                                        | 275 mm                                                                     |
| Width                                                                                                                         | 170 mm                                                                     |
| Depth                                                                                                                         | 152 mm                                                                     |
| Required spacing with side-by-side mounting <ul style="list-style-type: none"> <li>• forwards</li> <li>• Backwards</li> </ul> | 10 mm<br>0 mm                                                              |

|                                                                                                         |                                             |
|---------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <ul style="list-style-type: none"> <li>• upwards</li> <li>• downwards</li> <li>• at the side</li> </ul> | 100 mm<br>75 mm<br>5 mm                     |
| <b>Installation altitude at height above sea level maximum</b>                                          | 5 000 m; Derating as of 1000 m, see catalog |
| <b>Weight without packaging</b>                                                                         | 2.6 kg                                      |

#### Connections/Terminals

|                                                                                                                                                                                                                                          |                                                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <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>spring-loaded terminals                                                                                             |
| <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> </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> ) |
| <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> </ul> | Type: Class RK5 / K5, max. 125 A; Standard fault, I <sub>q</sub> = 5 kA |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• of the fuse usable at inside-delta circuit up to 575/600 V according to UL</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                      | Type: Class RK5 / K5, max. 125 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> <li>• at 460/480 V at inside-delta circuit at 50 °C rated value</li> <li>• at 575/600 V at inside-delta circuit at 50 °C rated value</li> </ul> | 7.5 hp<br>10 hp<br>20 hp<br>25 hp<br>15 hp<br>15 hp<br>30 hp<br>40 hp |
| <b>Contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 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=3RW5516-3HA05>

##### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5516-3HA05>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5516-3HA05>

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

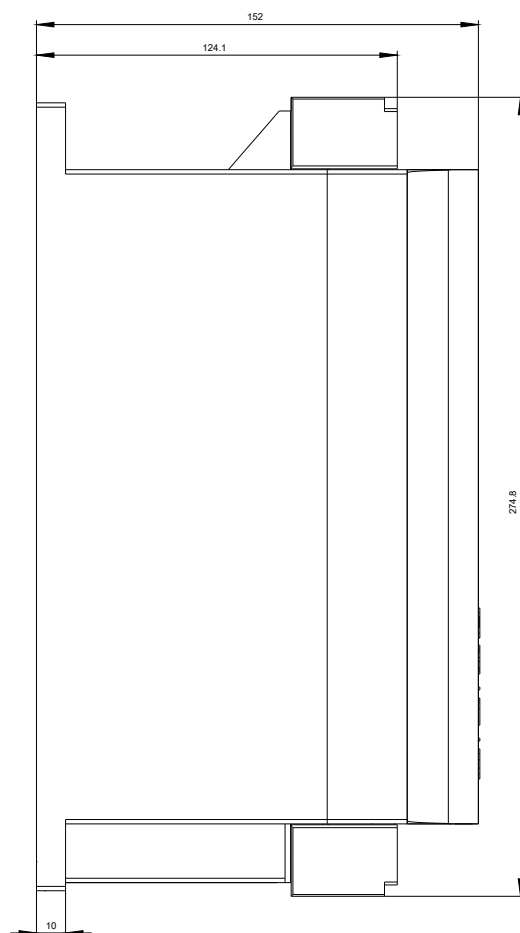
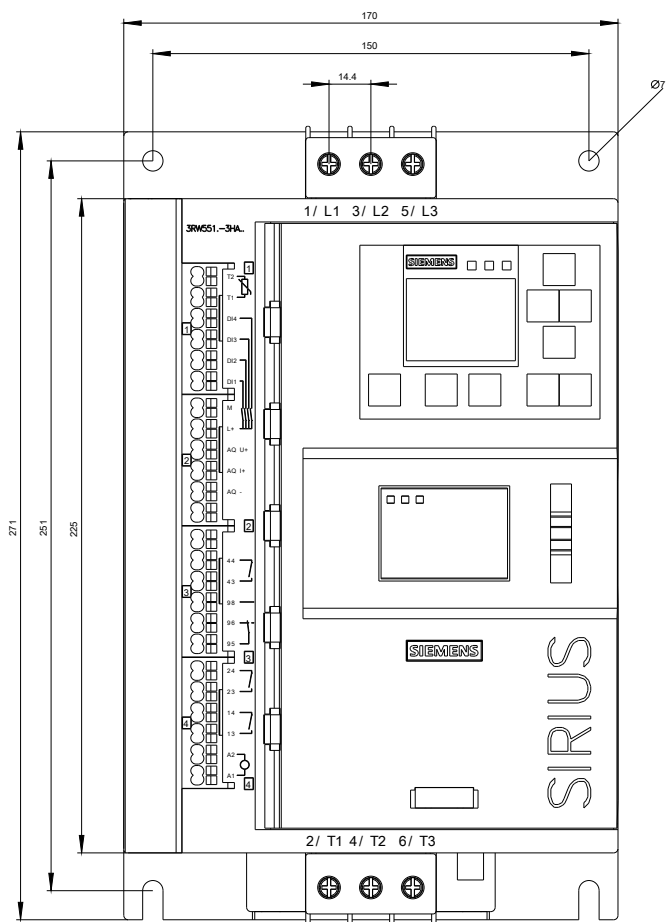
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5516-3HA05&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5516-3HA05&lang=en)

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5516-3HA05/char>

##### Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5516-3HA05&objecttype=14&gridview=view1>



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