



SIRIUS soft starter 200-480 V 370 A, 110-250 V AC Screw terminals

**product brand name**

**product category**

**product designation**

**product type designation**

**manufacturer's article number**

- of high feature HMI module usable
- of communication module PROFINET standard usable
- of communication module PROFINET high-feature usable
- of communication module PROFIBUS usable
- of communication module Modbus TCP usable
- of communication module Modbus RTU usable
- of communication module Ethernet/IP
- of circuit breaker usable at 400 V
- of circuit breaker usable at 500 V
- of circuit breaker usable at 400 V at inside-delta circuit
- of circuit breaker usable at 500 V at inside-delta circuit
- of the gG fuse usable up to 690 V
- of the gG fuse usable at inside-delta circuit up to 500 V
- of full range R fuse link for semiconductor protection usable up to 690 V

SIRIUS

Hybrid switching devices

Soft starter

3RW55

[3RW5980-0HF00](#)

[3RW5980-0CS00](#)

[3RW5950-0CH00](#)

[3RW5980-0CP00](#)

[3RW5980-0CT00](#)

[3RW5980-0CR00](#)

[3RW5980-0CE00](#)

[3VA2440-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10](#)

[3VA2440-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10](#)

[3VA2580-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10](#)

[3VA2580-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10](#)

2x3NA3365-6; Type of coordination 1, Iq = 65 kA

2x3NA3365-6; Type of coordination 1, Iq = 65 kA

[3NE1334-2; Type of coordination 2, Iq = 65 kA](#)

**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 %

**current limiting value [%] adjustable**

125 ... 800 %

**breakaway voltage [%] adjustable**

40 ... 100 %

**breakaway time adjustable**

0 ... 2 s

**number of parameter sets**

3

**accuracy class according to IEC 61557-12**

5 %

**certificate of suitability**

- CE marking
- UL approval
- CSA approval

Yes

Yes

Yes

**product component**

- HMI-High Feature
- is supported HMI-High Feature

**product feature integrated bypass contact system**

**number of controlled phases**

**trip class**

**current unbalance limiting value [%]**

**ground-fault monitoring limiting value [%]**

**buffering time in the event of power failure**

- for main current circuit
- for control circuit

**idle time adjustable**

insulation voltage rated value

**degree of pollution**

**impulse voltage rated value**

**blocking voltage of the thyristor maximum**

**service factor**

**surge voltage resistance rated value**

**maximum permissible voltage for safe isolation**

- between main and auxiliary circuit

**shock resistance**

**vibration resistance**

**recovery time after overload trip adjustable**

utilization category according to IEC 60947-4-2

**reference code according to IEC 81346-2**

**Substance Prohibitance (Date)**

**product function**

- ramp-up (soft starting)
- ramp-down (soft stop)
- breakaway pulse
- adjustable current limitation
- creep speed in both directions of rotation
- pump ramp down
- DC braking
- motor heating
- slave pointer function
- trace function
- intrinsic device protection
- motor overload protection

- evaluation of thermistor motor protection
- inside-delta circuit
- auto-RESET
- manual RESET
- 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

Yes

Yes

Yes

3

CLASS 10A / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2

10 ... 60 %

10 ... 95 %

100 ms

100 ms

0 ... 255 s

480 V

3, acc. to IEC 60947-4-2

6 kV

1 400 V

1.15

6 kV

480 V; does not apply for thermistor connection

15 g / 11 ms, from 6 g / 11 ms with potential contact lifting

15 mm up to 6 Hz; 2 g up to 500 Hz

60 ... 1 800 s

AC 53a

Q

02/15/2018

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

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.

Yes; Type A PTC or Klaxon / Thermoclick

Yes

Yes

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

|                                              |     |
|----------------------------------------------|-----|
| • application wizards                        | Yes |
| • alternative run-down                       | Yes |
| • emergency operation mode                   | Yes |
| • reversing operation                        | Yes |
| • soft starting at heavy starting conditions | Yes |

## Power Electronics

### operational current

|                                |       |
|--------------------------------|-------|
| • at 40 °C rated value         | 370 A |
| • at 40 °C rated value minimum | 74 A  |
| • at 50 °C rated value         | 328 A |
| • at 60 °C rated value         | 300 A |

### operational current at inside-delta circuit

|                        |       |
|------------------------|-------|
| • at 40 °C rated value | 641 A |
| • at 50 °C rated value | 568 A |
| • at 60 °C rated value | 519 A |

### operating voltage

|                                       |               |
|---------------------------------------|---------------|
| • rated value                         | 200 ... 480 V |
| • at inside-delta circuit rated value | 200 ... 480 V |

### relative negative tolerance of the operating voltage

-15 %

### relative positive tolerance of the operating voltage

10 %

### relative negative tolerance of the operating voltage at inside-delta circuit

-15 %

### relative positive tolerance of the operating voltage at inside-delta circuit

10 %

### operating power for 3-phase motors

|                                                         |        |
|---------------------------------------------------------|--------|
| • at 230 V at 40 °C rated value                         | 110 kW |
| • at 230 V at inside-delta circuit at 40 °C rated value | 200 kW |
| • at 400 V at 40 °C rated value                         | 200 kW |
| • at 400 V at inside-delta circuit at 40 °C rated value | 355 kW |

### Operating frequency 1 rated value

50 Hz

### Operating frequency 2 rated value

60 Hz

### relative negative tolerance of the operating frequency

-10 %

### relative positive tolerance of the operating frequency

10 %

### minimum load [%]

10 %; Relative to set I<sub>e</sub>

### power loss [W] for rated value of the current at AC

|                          |       |
|--------------------------|-------|
| • at 40 °C after startup | 111 W |
| • at 50 °C after startup | 98 W  |
| • at 60 °C after startup | 90 W  |

### power loss [W] at AC at current limitation 350 %

|                           |         |
|---------------------------|---------|
| • at 40 °C during startup | 5 563 W |
| • at 50 °C during startup | 4 694 W |
| • at 60 °C during startup | 4 145 W |

### type of the motor protection

Electronic, tripping in the event of thermal overload of the motor

## Control circuit/ Control

### type of voltage of the control supply voltage

AC

### control supply voltage at AC

|            |               |
|------------|---------------|
| • at 50 Hz | 110 ... 250 V |
| • at 60 Hz | 110 ... 250 V |

### relative negative tolerance of the control supply voltage at AC at 50 Hz

-15 %

### relative positive tolerance of the control supply voltage at AC at 50 Hz

10 %

### relative negative tolerance of the control supply voltage at AC at 60 Hz

-15 %

### relative positive tolerance of the control supply voltage at AC at 60 Hz

10 %

### 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 current in standby mode rated value

100 mA

### holding current in bypass operation rated value

150 mA

### locked-rotor current at close of bypass contact maximum

0.87 A

|                                                                          |                                                                                                                                                                                |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| inrush current peak at application of control supply voltage maximum     | 43 A                                                                                                                                                                           |
| duration of inrush current peak at application of control supply voltage | 1.6 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 |

#### Inputs/ Outputs

|                                                        |                                                           |
|--------------------------------------------------------|-----------------------------------------------------------|
| <b>number of digital inputs</b>                        | 4                                                         |
| • parameterizable                                      | 4                                                         |
| • <b>number of digital outputs</b>                     | 4                                                         |
| • number of digital outputs parameterizable            | 3                                                         |
| • number of digital outputs not parameterizable        | 1                                                         |
| <b>digital output version</b>                          | 3 normally-open contacts (NO) / 1 changeover contact (CO) |
| <b>number of analog outputs</b>                        | 1                                                         |
| <b>switching capacity current of the relay outputs</b> |                                                           |
| • at AC-15 at 250 V rated value                        | 3 A                                                       |
| • at DC-13 at 24 V rated value                         | 1 A                                                       |

#### Installation/ mounting/ dimensions

|                                             |                                                                            |
|---------------------------------------------|----------------------------------------------------------------------------|
| <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>                               | 393 mm                                                                     |
| <b>width</b>                                | 210 mm                                                                     |
| <b>depth</b>                                | 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                                                                       |
| <b>weight without packaging</b>             | 10.9 kg                                                                    |

#### Connections/ Terminals

|                                                                |                                            |
|----------------------------------------------------------------|--------------------------------------------|
| <b>type of electrical connection</b>                           | busbar connection                          |
| • for main current circuit                                     | screw-type terminals                       |
| • for control circuit                                          |                                            |
| <b>width of connection bar maximum</b>                         | 45 mm                                      |
| <b>wire length for thermistor connection</b>                   |                                            |
| • with conductor cross-section = 0.5 mm² maximum               | 50 m                                       |
| • with conductor cross-section = 1.5 mm² maximum               | 150 m                                      |
| • with conductor cross-section = 2.5 mm² maximum               | 250 m                                      |
| <b>type of connectable conductor cross-sections</b>            |                                            |
| • for DIN cable lug for main contacts stranded                 | 2x (50 ... 240 mm²)                        |
| • for DIN cable lug for main contacts finely stranded          | 2x (70 ... 240 mm²)                        |
| <b>type of connectable conductor cross-sections</b>            |                                            |
| • for control circuit solid                                    | 1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²) |
| • for control circuit finely stranded with core end processing | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²) |
| • at AWG cables for control circuit solid                      | 1x (20 ... 12), 2x (20 ... 14)             |
| <b>wire length</b>                                             |                                            |
| • between soft starter and motor maximum                       | 800 m                                      |
| • at the digital inputs at DC maximum                          | 1 000 m                                    |
| <b>tightening torque</b>                                       |                                            |
| • for main contacts with screw-type terminals                  | 14 ... 24 N·m                              |
| • for auxiliary and control contacts with screw-type terminals | 0.8 ... 1.2 N·m                            |
| <b>tightening torque [lbf·in]</b>                              |                                            |
| • for main contacts with screw-type terminals                  | 124 ... 210 lbf·in                         |
| • for auxiliary and control contacts with screw-type terminals | 7 ... 10.3 lbf·in                          |

#### Ambient conditions

|                                                         |                                                                     |
|---------------------------------------------------------|---------------------------------------------------------------------|
| installation altitude at height above sea level maximum | 5 000 m; Derating as of 1000 m, see catalog                         |
| <b>ambient temperature</b>                              |                                                                     |
| • during operation                                      | -25 ... +60 °C; Please observe derating at temperatures of 40 °C or |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>during storage and transport</li> </ul> <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> <b>EMC emitted interference</b>                                                                                                         | above<br>-40 ... +80 °C<br><br>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)<br>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><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> </li> </ul> | Type: Class J / L, max. 1200 A; Iq = 18 kA<br><br>Type: Class J / L, max. 1200 A; Iq = 100 kA<br><br>Type: Class J / L, max. 1200 A; Iq = 18 kA<br><br>Type: Class J / L, max. 1200 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>                                                             | 100 hp<br>125 hp<br>250 hp<br>200 hp<br>200 hp<br>450 hp                                                                                                                                                                                                                                                                                           |
| <b>contact rating of auxiliary contacts according to UL</b>                                                                                                                                                                                                                                                                                                                                                                                    | R300-B300                                                                                                                                                                                                                                                                                                                                          |
| <b>Safety related data</b>                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                    |
| <b>protection class IP on the front according to IEC 60529</b>                                                                                                                                                                                                                                                                                                                                                                                 | IP00; IP20 with cover                                                                                                                                                                                                                                                                                                                              |
| <b>touch protection on the front according to IEC 60529</b>                                                                                                                                                                                                                                                                                                                                                                                    | finger-safe, for vertical contact from the front with cover                                                                                                                                                                                                                                                                                        |
| <b>electromagnetic compatibility</b>                                                                                                                                                                                                                                                                                                                                                                                                           | acc. to IEC 60947-4-2                                                                                                                                                                                                                                                                                                                              |
| <b>ATEX</b>                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                    |
| <b>certificate of suitability</b>                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                    |
| <ul style="list-style-type: none"> <li>ATEX</li> <li>IECEx</li> <li>according to ATEX directive 2014/34/EU</li> </ul>                                                                                                                                                                                                                                                                                                                          | Yes<br>Yes<br>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]                                                                                                                                                                                                                                                       |
| <b>hardware fault tolerance according to IEC 61508 relating to ATEX</b>                                                                                                                                                                                                                                                                                                                                                                        | 0                                                                                                                                                                                                                                                                                                                                                  |
| <b>PFDAvg with low demand rate according to IEC 61508 relating to ATEX</b>                                                                                                                                                                                                                                                                                                                                                                     | 0.008                                                                                                                                                                                                                                                                                                                                              |
| <b>PFHD with high demand rate according to EN 62061 relating to ATEX</b>                                                                                                                                                                                                                                                                                                                                                                       | 5E-7 1/h                                                                                                                                                                                                                                                                                                                                           |
| <b>Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX</b>                                                                                                                                                                                                                                                                                                                                                                    | SIL1                                                                                                                                                                                                                                                                                                                                               |
| <b>T1 value for proof test interval or service life according to IEC 61508 relating to ATEX</b>                                                                                                                                                                                                                                                                                                                                                | 3 y                                                                                                                                                                                                                                                                                                                                                |
| <b>Certificates/ approvals</b>                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                    |
| <b>General Product Approval</b>                                                                                                                                                                                                                                                                                                                                                                                                                | <b>EMC</b>                                                                                                                                                                                                                                                                                                                                         |



[Confirmation](#)



For use in hazardous locations

Declaration of  
Conformity

Test Certificates

Marine / Shipping



IECEX



ATEX



EG-Konf.

[Type Test Certificates/Test Report](#)



ABS



BUREAU  
VERITAS

Marine / Shipping

other



LRS



PRS



DNV GL

[Confirmation](#)

#### Further information

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

<https://www.siemens.com/ic10>

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5546-6HA14>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5546-6HA14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5546-6HA14>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5546-6HA14&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5546-6HA14&lang=en)

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

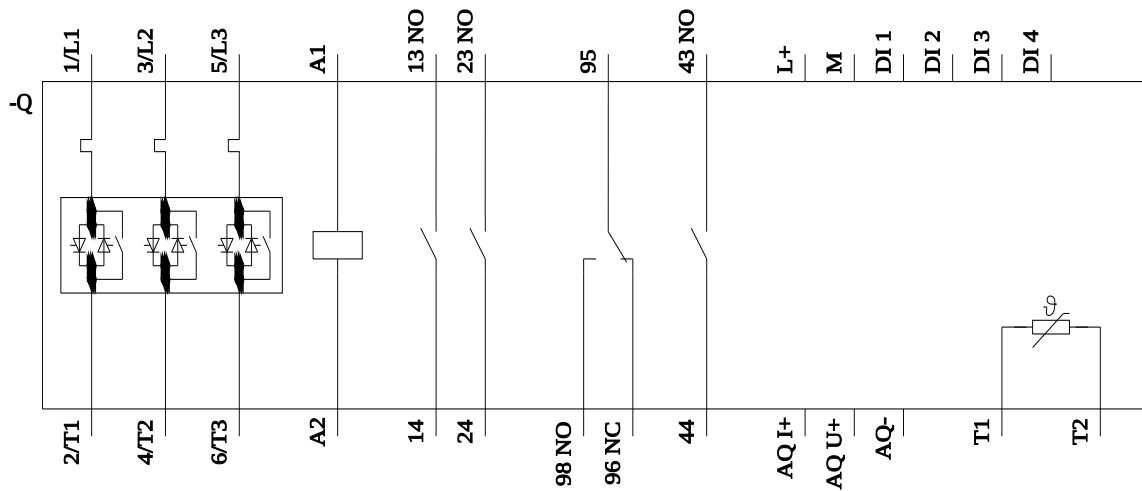
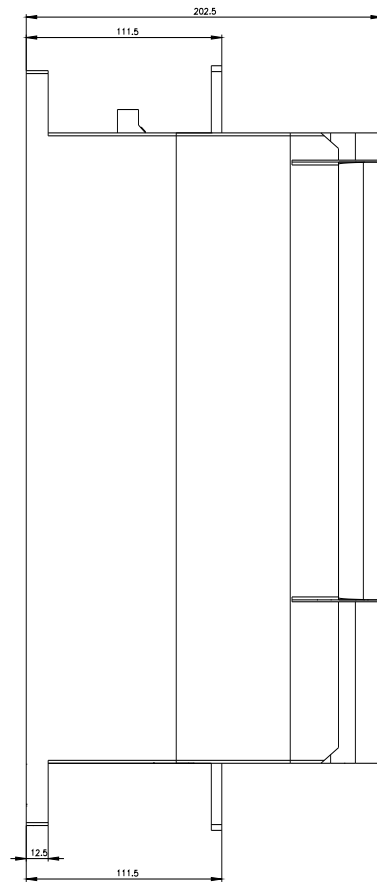
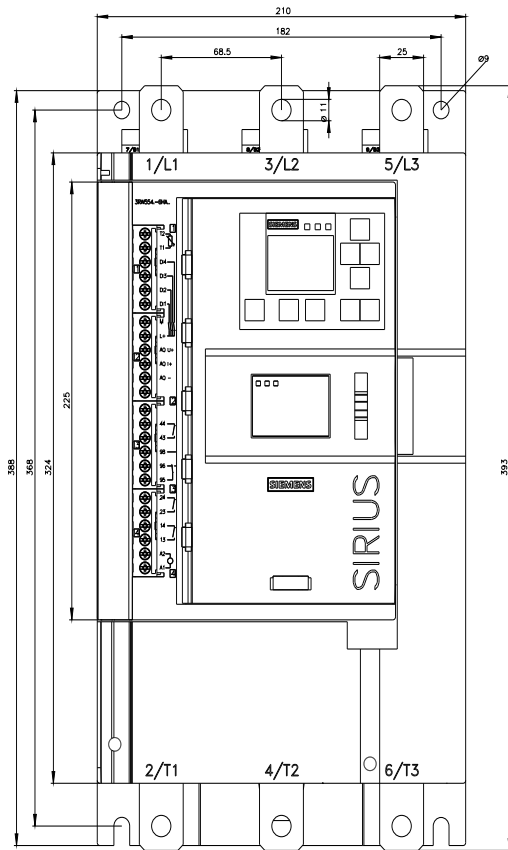
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5546-6HA14/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5546-6HA14&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





last modified:

10/11/2022 