

SIRIUS soft starter 200-480 V 47 A, 24 V AC/DC spring-type terminals Thermistor input



Figure similar

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 module usable</li><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></ul></div> |

- [3RW5980-0HS00](#)
- [3RW5980-0HF00](#)
- [3RW5980-0CS00](#)
- [3RW5980-0CP00](#)
- [3RW5980-0CT00](#)
- [3RV2032-4JA10; Type of coordination 1, Iq = 65 kA, CLASS 10](#)
- [3RV2032-4JA10; Type of coordination 1, Iq = 10 kA, CLASS 10](#)
- [3RV2032-4RA10; Type of coordination 1, Iq = 65 kA, CLASS 10](#)
- [3RV2032-4RA10; Type of coordination 1, Iq = 10 kA, CLASS 10](#)
- [3NA3824-6; Type of coordination 1, Iq = 65 kA](#)

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

[3NA3824-6; Type of coordination 1, I<sub>q</sub> = 65 kA](#)

[3NE1021-2; Type of coordination 2, I<sub>q</sub> = 65 kA](#)

[3NE8024-1; Type of coordination 2, I<sub>q</sub> = 65 kA](#)

#### General technical data

|                                                         |                                                                                                   |
|---------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Starting voltage [%]</b>                             | 30 ... 100 %                                                                                      |
| <b>Start-up ramp time of soft starter</b>               | 0 ... 20 s                                                                                        |
| <b>Product component</b>                                |                                                                                                   |
| • is supported HMI-Standard                             | Yes                                                                                               |
| • is supported HMI-High Feature                         | Yes                                                                                               |
| <b>Product feature integrated bypass contact system</b> | Yes                                                                                               |
| <b>Number of controlled phases</b>                      | 3                                                                                                 |
| <b>Trip class</b>                                       | CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2                                            |
| <b>Insulation voltage</b>                               |                                                                                                   |
| • rated value                                           | 600 V                                                                                             |
| <b>Degree of pollution</b>                              | 3                                                                                                 |
| <b>Impulse voltage rated value</b>                      | 6 kV                                                                                              |
| <b>Blocking voltage of the thyristor maximum</b>        | 1 400 V                                                                                           |
| <b>Service factor</b>                                   | 1                                                                                                 |
| <b>Surge voltage resistance rated value</b>             | 6 kV                                                                                              |
| <b>maximum permissible voltage for safe isolation</b>   |                                                                                                   |
| • between main and auxiliary circuit                    | 600 V                                                                                             |
| <b>Protection class IP</b>                              | IP00; IP20 with additional terminal covers for vertical touching from the front                   |
| <b>Usage category acc. to IEC 60947-4-2</b>             | AC 53a                                                                                            |
| <b>Shock resistance</b>                                 | 15 g / 11 ms, from 12 g / 11 ms with potential contact lifting                                    |
| <b>Vibration resistance</b>                             | 15 mm to 6 Hz; 2g to 500 Hz                                                                       |
| <b>Reference code acc. to DIN EN 81346-2</b>            | Q                                                                                                 |
| <b>Product function</b>                                 |                                                                                                   |
| • ramp-up (soft starting)                               | Yes                                                                                               |
| • ramp-down (soft stop)                                 | Yes                                                                                               |
| • Soft Torque                                           | Yes                                                                                               |
| • Adjustable current limitation                         | Yes                                                                                               |
| • pump ramp down                                        | Yes                                                                                               |
| • Intrinsic device protection                           | Yes                                                                                               |
| • motor overload protection                             | Yes; Full motor protection (thermistor motor protection and electronic motor overload protection) |
| • Evaluation of thermistor motor protection             | Yes; Type A PTC or Klixon / Thermoclick                                                           |
| • inside-delta circuit                                  | Yes                                                                                               |
| • Auto-reset                                            | Yes                                                                                               |
| • Manual RESET                                          | Yes                                                                                               |

|                                          |                                                |
|------------------------------------------|------------------------------------------------|
| • remote reset                           | Yes; By turning off the control supply voltage |
| • communication function                 | Yes                                            |
| • via software configurable              | Yes                                            |
| • firmware update                        | Yes                                            |
| • removable terminal for control circuit | Yes                                            |
| • analog output                          | No                                             |

## Power Electronics

|                                                                                     |                                                    |
|-------------------------------------------------------------------------------------|----------------------------------------------------|
| <b>Operating current</b>                                                            |                                                    |
| • at 40 °C rated value                                                              | 47 A                                               |
| • at 50 °C rated value                                                              | 41.6 A                                             |
| • at 60 °C rated value                                                              | 36.2 A                                             |
| <b>Operating current at inside-delta circuit</b>                                    |                                                    |
| • at 40 °C rated value                                                              | 81.4 A                                             |
| • at 50 °C rated value                                                              | 72 A                                               |
| • at 60 °C rated value                                                              | 62.7 A                                             |
| <b>Operating voltage</b>                                                            |                                                    |
| • rated value                                                                       | 200 ... 480 V                                      |
| • at inside-delta circuit rated value                                               | 200 ... 480 V                                      |
| <b>Relative negative tolerance of the operating voltage</b>                         | -15 %                                              |
| <b>Relative positive tolerance of the operating voltage</b>                         | 10 %                                               |
| <b>Relative negative tolerance of the operating voltage at inside-delta circuit</b> | -15 %                                              |
| <b>Relative positive tolerance of the operating voltage at inside-delta circuit</b> | 10 %                                               |
| <b>Operating power for three-phase motors</b>                                       |                                                    |
| • at 230 V at 40 °C rated value                                                     | 11 kW                                              |
| • at 230 V at inside-delta circuit at 40 °C rated value                             | 22 kW                                              |
| • at 400 V at 40 °C rated value                                                     | 22 kW                                              |
| • at 400 V at inside-delta circuit at 40 °C rated value                             | 45 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                                                                           | 20 A                                               |
| • at inside-delta circuit minimum                                                   | 34.6 A                                             |
| <b>Minimum load [%]</b>                                                             | 15 %; Relative to smallest settable I <sub>e</sub> |
| <b>Power loss [W] for rated value of the current at AC</b>                          |                                                    |
| • at 40 °C to power-up                                                              | 26 W                                               |

- at 50 °C to power-up
- at 60 °C to power-up

24 W

23 W

#### Control circuit/ Control

|                                                                          |                                                                                                                                                                                |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type of voltage of the control supply voltage                            | AC/DC                                                                                                                                                                          |
| Control supply voltage at AC                                             |                                                                                                                                                                                |
| • at 50 Hz rated value                                                   | 24 V                                                                                                                                                                           |
| • at 60 Hz rated value                                                   | 24 V                                                                                                                                                                           |
| Relative negative tolerance of the control supply voltage at AC at 50 Hz | -20 %                                                                                                                                                                          |
| Relative positive tolerance of the control supply voltage at AC at 50 Hz | 20 %                                                                                                                                                                           |
| Relative negative tolerance of the control supply voltage at AC at 60 Hz | -20 %                                                                                                                                                                          |
| Relative positive tolerance of the control supply voltage at AC at 60 Hz | 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                                                   |                                                                                                                                                                                |
| • at DC rated value                                                      | 24 V                                                                                                                                                                           |
| Relative negative tolerance of the control supply voltage at DC          | -20 %                                                                                                                                                                          |
| Relative positive tolerance of the control supply voltage at DC          | 20 %                                                                                                                                                                           |
| Control supply current in standby mode rated value                       | 160 mA                                                                                                                                                                         |
| Holding current in the by-pass mode operating rated value                | 380 mA                                                                                                                                                                         |
| Starting current at close of by-pass contact maximum                     | 7.6 A                                                                                                                                                                          |
| Inrush current peak at connect of control supply voltage maximum         | 3.3 A                                                                                                                                                                          |
| Duration of inrush current peak at connect of control supply voltage     | 12.1 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                   | 1                                                         |
| Number of digital outputs                  | 3                                                         |
| • not parameterizable                      | 2                                                         |
| Digital output version                     | 2 normally-open contacts (NO) / 1 changeover contact (CO) |
| Number of inputs for thermistor connection | 1; Type A PTC or Klaxon / Thermoclick                     |

|                                                        |     |
|--------------------------------------------------------|-----|
| <b>Number of analog outputs</b>                        | 0   |
| <b>Switching capacity current of the relay outputs</b> |     |
| • at AC-15 at 250 V rated value                        | 3 A |
| • at DC-13 at 24 V rated value                         | 1 A |

#### Installation/ mounting/ dimensions

|                                                                |                                                                                              |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>Mounting position</b>                                       | +/- 10° rotation possible and can be tilted forward or backward on vertical mounting surface |
| <b>Mounting type</b>                                           | screw fixing                                                                                 |
| <b>Height</b>                                                  | 306 mm                                                                                       |
| <b>Width</b>                                                   | 185 mm                                                                                       |
| <b>Depth</b>                                                   | 203 mm                                                                                       |
| <b>Required spacing with side-by-side mounting</b>             |                                                                                              |
| • forwards                                                     | 10 mm                                                                                        |
| • Backwards                                                    | 0 mm                                                                                         |
| • upwards                                                      | 100 mm                                                                                       |
| • downwards                                                    | 75 mm                                                                                        |
| • at the side                                                  | 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>                                | 5.2 kg                                                                                       |

#### Connections/Terminals

|                                                                                                              |                                  |
|--------------------------------------------------------------------------------------------------------------|----------------------------------|
| <b>Type of electrical connection</b>                                                                         |                                  |
| • for main current circuit                                                                                   | screw-type terminals             |
| • for control circuit                                                                                        | spring-loaded terminals          |
| <b>Type of connectable conductor cross-sections</b>                                                          |                                  |
| • for main contacts for box terminal using the front clamping point solid                                    | 1x (2.5 ... 16 mm <sup>2</sup> ) |
| • for main contacts for box terminal using the front clamping point finely stranded with core end processing | 1x (2.5 ... 50 mm <sup>2</sup> ) |
| • for main contacts for box terminal using the front clamping point stranded                                 | 1x (10 ... 70 mm <sup>2</sup> )  |
| • at AWG conductors for main contacts for box terminal using the front clamping point                        | 1x (10 ... 2/0)                  |
| • for main contacts for box terminal using the back clamping point solid                                     | 1x (2.5 ... 16 mm <sup>2</sup> ) |
| • at AWG conductors for main contacts for box terminal using the back clamping point                         | 1x (10 ... 2/0)                  |
| • for main contacts for box terminal using both clamping points solid                                        | 2x (2.5 ... 16 mm <sup>2</sup> ) |
| • for main contacts for box terminal using both clamping points finely stranded with core end processing     | 2x (2.5 ... 35 mm <sup>2</sup> ) |

|                                                                                                                                                               |                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points stranded</li> </ul>                                    | 2x (6 ... 16 mm <sup>2</sup> ), 2x (10 ... 50 mm <sup>2</sup> )                                                         |
| <ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point finely stranded with core end processing</li> </ul> | 1x (2.5 ... 50 mm <sup>2</sup> )                                                                                        |
| <ul style="list-style-type: none"> <li>• for main contacts for box terminal using the back clamping point stranded</li> </ul>                                 | 1x (10 ... 70 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> </ul>                                                                                                     | 2x (24 ... 16)                                                                                                          |
| <ul style="list-style-type: none"> <li>• finely stranded with core end processing</li> </ul>                                                                  | 2x (24 ... 16)                                                                                                          |
| <b>Wire length</b>                                                                                                                                            |                                                                                                                         |
| <ul style="list-style-type: none"> <li>• between soft starter and motor maximum</li> </ul>                                                                    | 800 m                                                                                                                   |
| <ul style="list-style-type: none"> <li>• at the digital inputs at AC maximum</li> </ul>                                                                       | 100 m                                                                                                                   |
| <ul style="list-style-type: none"> <li>• at the digital inputs at DC maximum</li> </ul>                                                                       | 1 000 m                                                                                                                 |
| <b>Ambient conditions</b>                                                                                                                                     |                                                                                                                         |
| <b>Ambient temperature</b>                                                                                                                                    |                                                                                                                         |
| <ul style="list-style-type: none"> <li>• during operation</li> </ul>                                                                                          | -25 ... +60 °C                                                                                                          |
| <ul style="list-style-type: none"> <li>• during storage and transport</li> </ul>                                                                              | -40 ... +80 °C                                                                                                          |
| <b>Environmental category</b>                                                                                                                                 |                                                                                                                         |
| <ul style="list-style-type: none"> <li>• during operation 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 |
| <ul style="list-style-type: none"> <li>• during storage acc. to IEC 60721</li> </ul>                                                                          | 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4                 |
| <ul style="list-style-type: none"> <li>• during transport acc. to IEC 60721</li> </ul>                                                                        | 2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)                                                                             |
| EMC emitted interference acc. to IEC 60947-1                                                                                                                  | CISPR11, ambience A (industrial sector)                                                                                 |
| <b>Communication/ Protocol</b>                                                                                                                                |                                                                                                                         |
| <b>Communication module is supported</b>                                                                                                                      |                                                                                                                         |
| <ul style="list-style-type: none"> <li>• PROFINET standard</li> </ul>                                                                                         | Yes                                                                                                                     |
| <ul style="list-style-type: none"> <li>• Modbus TCP</li> </ul>                                                                                                | Yes                                                                                                                     |
| <ul style="list-style-type: none"> <li>• PROFIBUS</li> </ul>                                                                                                  | Yes                                                                                                                     |
| <b>UL/CSA ratings</b>                                                                                                                                         |                                                                                                                         |
| <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. 175 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. 175 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> </ul>                                                                         | 10 hp                                                                                                                   |
| <ul style="list-style-type: none"> <li>• at 220/230 V at 50 °C rated value</li> </ul>                                                                         | 10 hp                                                                                                                   |
| <ul style="list-style-type: none"> <li>• at 460/480 V at 50 °C rated value</li> </ul>                                                                         | 30 hp                                                                                                                   |

- at 200/208 V at inside-delta circuit at 50 °C rated value
- at 220/230 V at inside-delta circuit at 50 °C rated value
- at 460/480 V at inside-delta circuit at 50 °C rated value

20 hp

25 hp

50 hp

Contact rating of auxiliary contacts according to UL

R300-B300

General Product Approval

Declaration of  
Conformity

other



CSA



UL



EG-Konf.

[Confirmation](#)

#### 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=3RW5224-3TC04>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5224-3TC04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-3TC04>

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

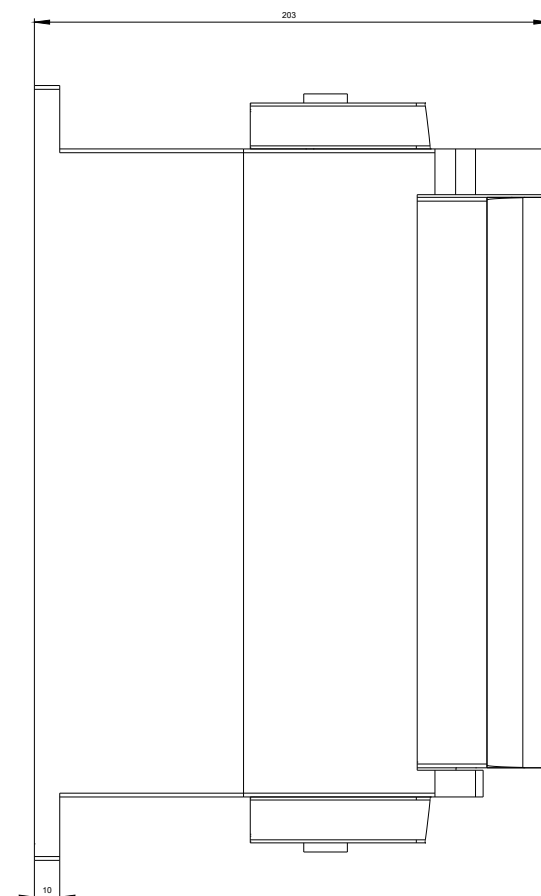
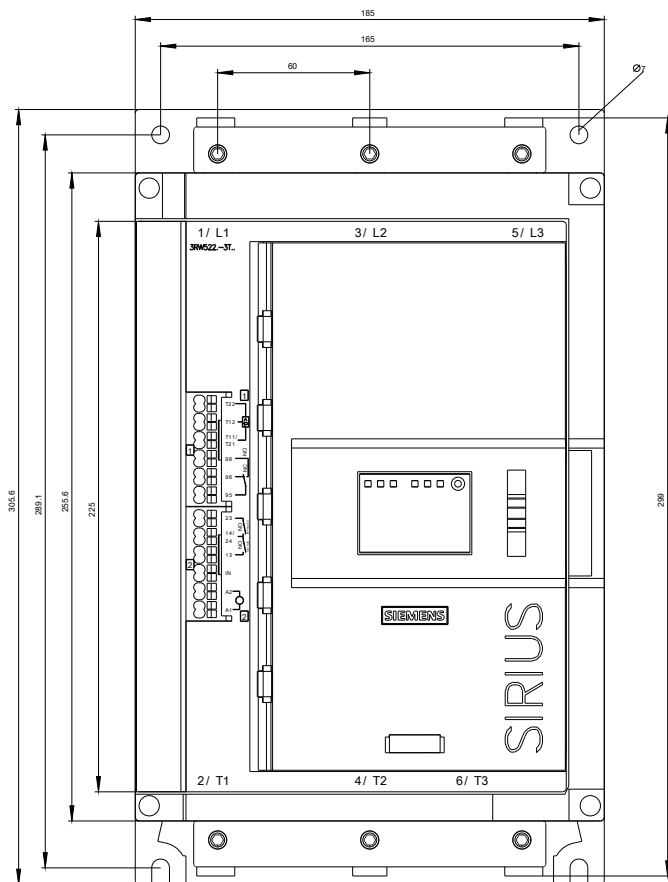
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5224-3TC04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5224-3TC04&lang=en)

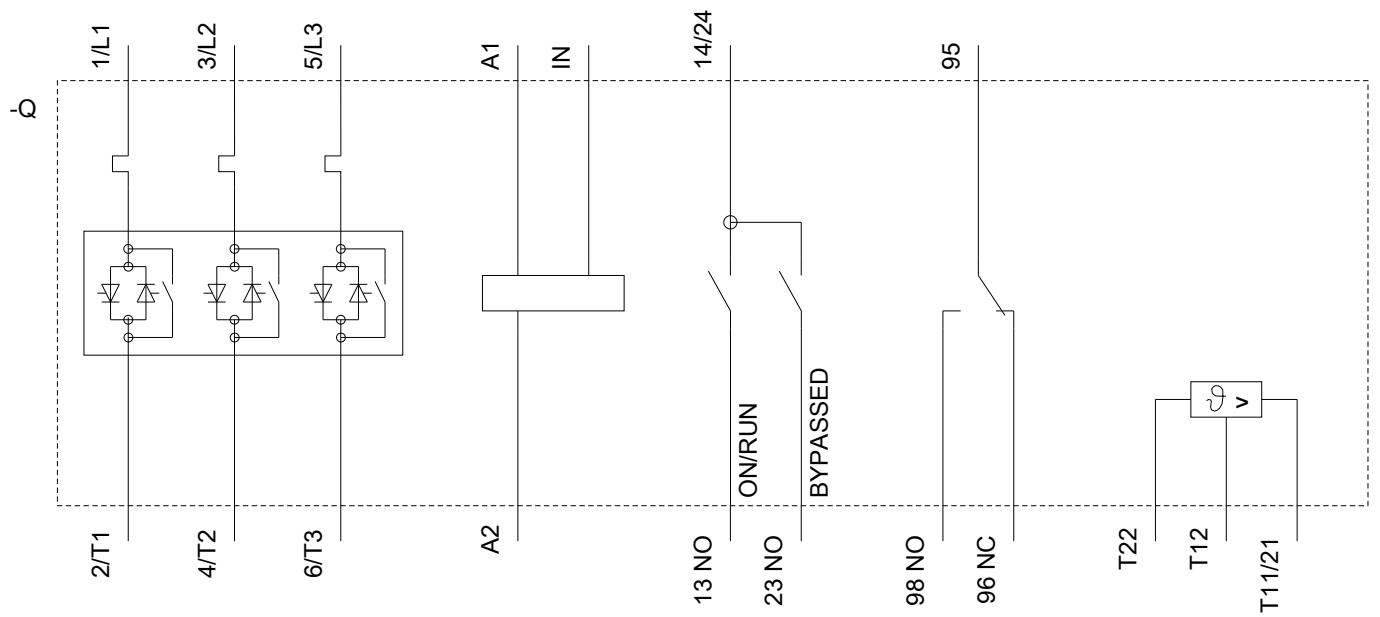
**Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5224-3TC04/char>

**Characteristic: Installation altitude**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5224-3TC04&objecttype=14&gridview=view1>





last modified:

07/04/2018