

SIRIUS soft starter 200-600 V 370 A, 24 V AC/DC spring-type terminals Thermistor input



<b>product brand name</b>	SIRIUS
<b>product category</b>	Hybrid switching devices
<b>product designation</b>	Soft starter
<b>product type designation</b>	3RW52
<b>manufacturer's article number</b>	
<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 communication module Modbus RTU usable</li> <li>• of communication module Ethernet/IP</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> </ul>	<ul style="list-style-type: none"> <li><a href="#">3RW5980-0HS00</a></li> <li><a href="#">3RW5980-0HF00</a></li> <li><a href="#">3RW5980-0CS00</a></li> <li><a href="#">3RW5980-0CP00</a></li> <li><a href="#">3RW5980-0CT00</a></li> <li><a href="#">3RW5980-0CR00</a></li> <li><a href="#">3RW5980-0CE00</a></li> <li><a href="#">3VA2440-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li><a href="#">3VA2440-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li><a href="#">3VA2580-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li><a href="#">3VA2580-6HN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> </ul>

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

2x3NA3365-6; Type of coordination 1, I<sub>q</sub> = 65 kA

2x3NA3365-6; Type of coordination 1, I<sub>q</sub> = 65 kA

[3NE1334-2; Type of coordination 2, I<sub>q</sub> = 65 kA](#)

[3NE3336; Type of coordination 2, I<sub>q</sub> = 65 kA](#)

### General technical data

<b>starting voltage [%]</b>	30 ... 100 %
<b>stopping voltage [%]</b>	50 ... 50 %
<b>start-up ramp time of soft starter</b>	0 ... 20 s
<b>current limiting value [%] adjustable</b>	130 ... 700 %
<b>certificate of suitability</b>	
• CE marking	Yes
• UL approval	Yes
• CSA-approval	Yes
<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>buffering time in the event of power failure</b>	
• for main current circuit	100 ms
• for control circuit	100 ms
<b>insulation voltage</b>	
• rated value	600 V
<b>degree of pollution</b>	3, acc. to IEC 60947-4-2
<b>impulse voltage rated value</b>	6 kV
<b>blocking voltage of the thyristor maximum</b>	1 600 V
<b>service factor</b>	1
<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
<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
• operating measured value display	Yes; Only in conjunction with special accessories
• error logbook	Yes; Only in conjunction with special accessories
• via software parameterizable	No
• via software configurable	Yes
• PROFINergy	Yes; in connection with the PROFINET Standard communication module
• firmware update	Yes
• removable terminal for control circuit	Yes
• torque control	No
• analog output	No

## Power Electronics

<b>operating current</b>	
• at 40 °C rated value	370 A
• at 50 °C rated value	328 A
• at 60 °C rated value	300 A
<b>operating current at inside-delta circuit</b>	
• at 40 °C rated value	641 A
• at 50 °C rated value	568 A
• at 60 °C rated value	519 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	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
• at 500 V at 40 °C rated value	250 kW
• at 500 V at inside-delta circuit at 40 °C rated value	450 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>	
• at rotary encoding switch on switch position 1	160 A
• at rotary encoding switch on switch position 2	174 A
• at rotary encoding switch on switch position 3	188 A
• at rotary encoding switch on switch position 4	202 A
• at rotary encoding switch on switch position 5	216 A
• at rotary encoding switch on switch position 6	230 A
• at rotary encoding switch on switch position 7	244 A
• at rotary encoding switch on switch position 8	258 A
• at rotary encoding switch on switch position 9	272 A
• at rotary encoding switch on switch position 10	286 A
• at rotary encoding switch on switch position 11	300 A
• at rotary encoding switch on switch position 12	314 A
• at rotary encoding switch on switch position 13	328 A
• at rotary encoding switch on switch position 14	342 A
• at rotary encoding switch on switch position 15	356 A
• at rotary encoding switch on switch position 16	370 A
• minimum	160 A
<b>adjustable motor current</b>	
• for inside-delta circuit at rotary encoding switch on switch position 1	277 A
• for inside-delta circuit at rotary encoding switch on switch position 2	301 A
• for inside-delta circuit at rotary encoding switch on switch position 3	326 A
• for inside-delta circuit at rotary encoding switch on switch position 4	350 A
• for inside-delta circuit at rotary encoding switch on switch position 5	374 A
• for inside-delta circuit at rotary encoding switch on switch position 6	398 A

<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 7</li> </ul>	423 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 8</li> </ul>	447 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 9</li> </ul>	471 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 10</li> </ul>	495 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 11</li> </ul>	520 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 12</li> </ul>	544 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 13</li> </ul>	568 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 14</li> </ul>	592 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 15</li> </ul>	617 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 16</li> </ul>	641 A
<ul style="list-style-type: none"> <li>• at inside-delta circuit minimum</li> </ul>	277 A
<b>minimum load [%]</b>	15 %; Relative to smallest settable le
<b>power loss [W] for rated value of the current at AC</b>	
<ul style="list-style-type: none"> <li>• at 40 °C after startup</li> </ul>	123 W
<ul style="list-style-type: none"> <li>• at 50 °C after startup</li> </ul>	110 W
<ul style="list-style-type: none"> <li>• at 60 °C after startup</li> </ul>	102 W
<b>power loss [W] at AC at AC</b>	
<ul style="list-style-type: none"> <li>• at 40 °C during startup</li> </ul>	5 575 W
<ul style="list-style-type: none"> <li>• at 50 °C during startup</li> </ul>	4 706 W
<ul style="list-style-type: none"> <li>• at 60 °C during startup</li> </ul>	4 157 W

Control circuit/ Control	
<b>type of voltage of the control supply voltage</b>	AC/DC
<b>control supply voltage at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> </ul>	24 V
<ul style="list-style-type: none"> <li>• at 60 Hz rated value</li> </ul>	24 V
<b>relative negative tolerance of the control supply voltage at AC at 50 Hz</b>	-20 %
<b>relative positive tolerance of the control supply voltage at AC at 50 Hz</b>	20 %
<b>relative negative tolerance of the control supply voltage at AC at 60 Hz</b>	-20 %
<b>relative positive tolerance of the control supply voltage at AC at 60 Hz</b>	20 %
<b>control supply voltage frequency</b>	50 ... 60 Hz

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	470 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 (I <sub>cu</sub> =1 kA), 6 A quick-acting fuse (I <sub>cu</sub> =1 kA), C1 miniature circuit breaker (I <sub>cu</sub> = 600 A), C6 miniature circuit breaker (I <sub>cu</sub> = 300 A); Is not part of scope of supply

#### Inputs/ Outputs

number of digital inputs	1
number of inputs for thermistor connection	1; Type A PTC or Klixon / Thermoclick
• number of digital outputs	3
• number of digital outputs not parameterizable	2
digital output version	2 normally-open contacts (NO) / 1 changeover contact (CO)
number of analog outputs	0
switching capacity current of the relay outputs	
• at AC-15 at 250 V rated value	3 A
• at DC-13 at 24 V rated value	1 A

#### Installation/ mounting/ dimensions

mounting position	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
mounting type	screw fixing
height	393 mm
width	210 mm
depth	203 mm
required spacing with side-by-side mounting	
• forwards	10 mm
• backwards	0 mm
• upwards	100 mm
• downwards	75 mm

<ul style="list-style-type: none"> <li>• at the side</li> </ul>	5 mm
<b>weight without packaging</b>	9.9 kg
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b> <ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for control circuit</li> </ul>	busbar connection spring-loaded terminals
<b>width of connection bar maximum</b>	45 mm
<b>wire length for thermistor connection</b> <ul style="list-style-type: none"> <li>• with conductor cross-section = 0.5 mm<sup>2</sup> maximum</li> <li>• with conductor cross-section = 1.5 mm<sup>2</sup> maximum</li> <li>• with conductor cross-section = 2.5 mm<sup>2</sup> maximum</li> </ul>	50 m 150 m 250 m
<b>type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for DIN cable lug for main contacts stranded</li> <li>• for DIN cable lug for main contacts finely stranded</li> </ul>	2x (50 ... 240 mm <sup>2</sup> ) 2x (70 ... 240 mm <sup>2</sup> )
<b>type of connectable conductor cross-sections</b> <ul style="list-style-type: none"> <li>• for control circuit solid</li> <li>• for control circuit finely stranded with core end processing</li> <li>• at AWG conductors for control circuit solid</li> <li>• at AWG conductors for control circuit finely stranded with core end processing</li> </ul>	2x (0.25 ... 1.5 mm <sup>2</sup> ) 2x (0.25 ... 1.5 mm <sup>2</sup> ) 2x (24 ... 16) 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 AC maximum</li> <li>• at the digital inputs at DC maximum</li> </ul>	800 m 100 m 1 000 m
<b>tightening torque</b> <ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>	14 ... 24 N·m 0.8 ... 1.2 N·m
<b>tightening torque [lbf-in]</b> <ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>	124 ... 210 lbf-in 7 ... 10.3 lbf-in
<b>Ambient conditions</b>	
<b>installation altitude at height above sea level</b> <ul style="list-style-type: none"> <li>• maximum</li> </ul>	5 000 m; Derating as of 1000 m, see catalog
<b>ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> </ul>	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above

<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> <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 1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4 2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
EMC emitted interference	acc. to IEC 60947-4-2: Class A

### Communication/ Protocol

<b>communication module is supported</b> <ul style="list-style-type: none"> <li>PROFINET standard</li> <li>EtherNet/IP</li> <li>Modbus RTU</li> <li>Modbus TCP</li> <li>PROFIBUS</li> </ul>	Yes Yes Yes Yes Yes
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### UL/CSA ratings

<b>manufacturer's article number</b> <ul style="list-style-type: none"> <li>of the fuse               <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; I <sub>q</sub> = 18 kA  Type: Class J / L, max. 1200 A; I <sub>q</sub> = 100 kA  Type: Class J / L, max. 1200 A; I <sub>q</sub> = 18 kA  Type: Class J / L, max. 1200 A; I <sub>q</sub> = 100 kA
<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>	100 hp 125 hp 250 hp 300 hp 200 hp 200 hp 450 hp 600 hp
<b>contact rating of auxiliary contacts according to UL</b>	R300-B300

### Safety related data

<b>electromagnetic compatibility</b>	in accordance with IEC 60947-4-2
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## Certificates/ approvals

General Product Approval	EMC	Declaration of Conformity
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CCC

CSA

UL

RCM

EG-Konf.

Declaration of Conformity	Test Certificates	Marine / Shipping
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[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



ABS



LRS



PRS



DNVGL.COM/AF

## other

[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=3RW5246-2TC05>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5246-2TC05>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5246-2TC05>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5246-2TC05&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5246-2TC05&lang=en)

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

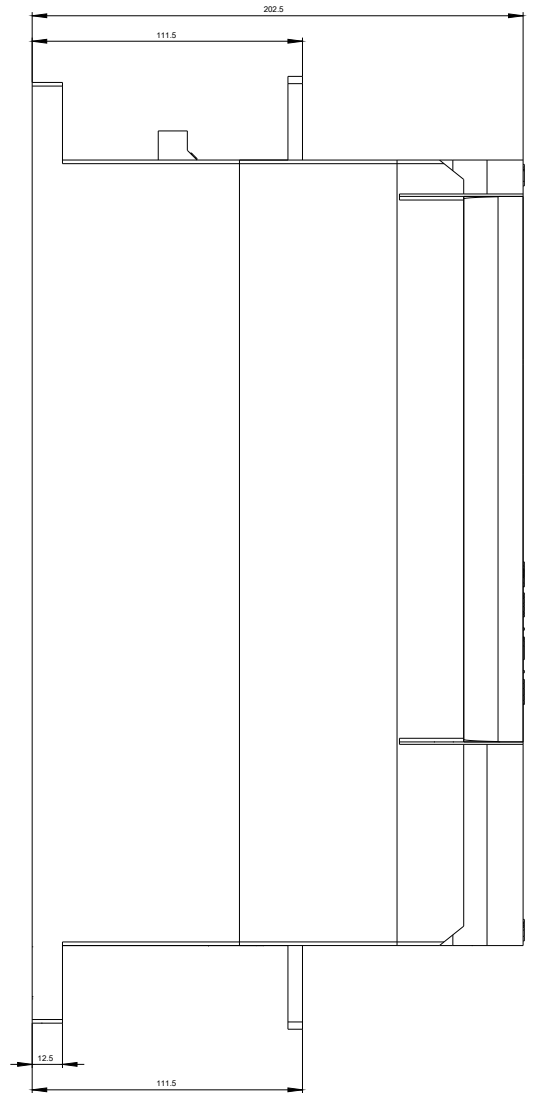
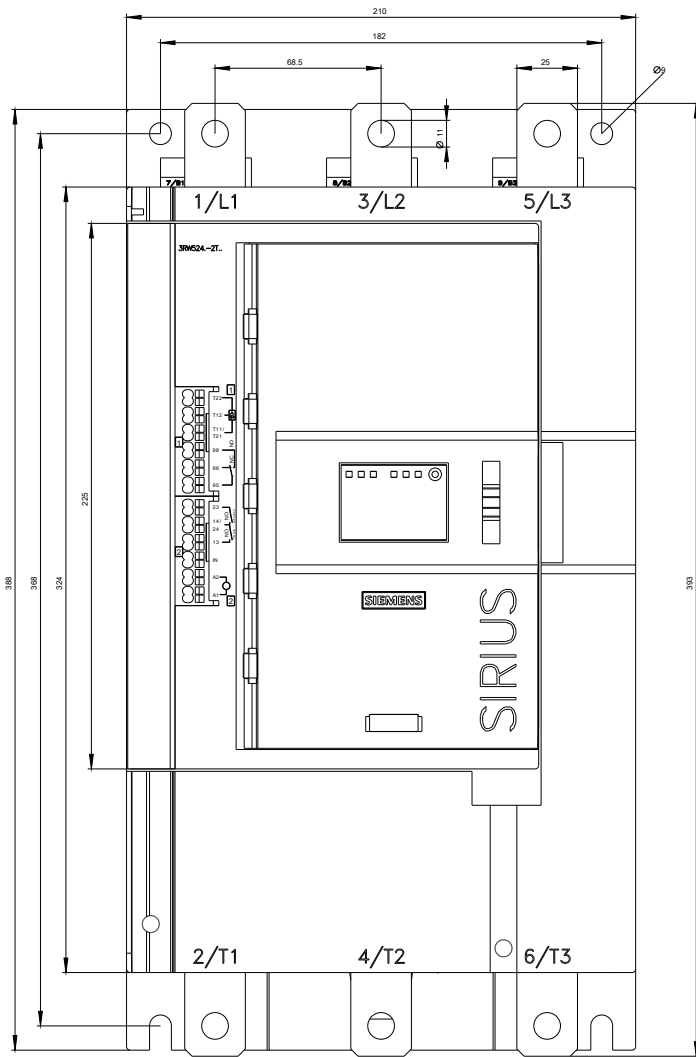
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5246-2TC05/char>

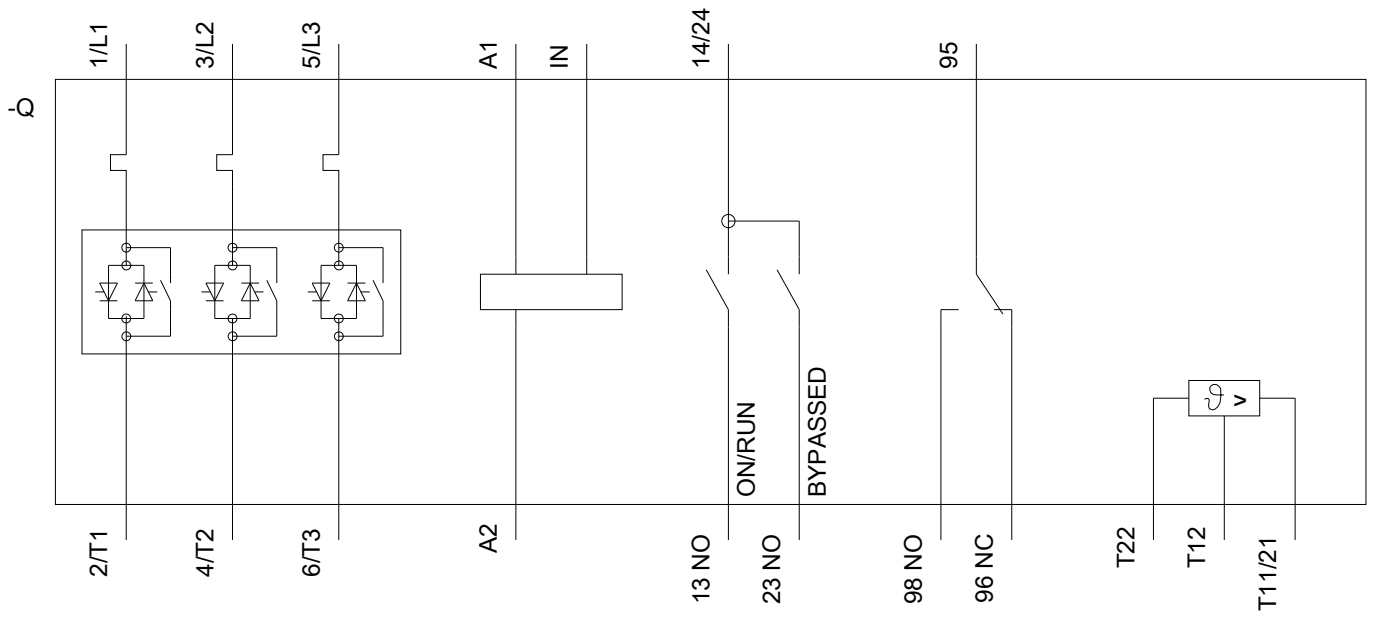
**Characteristic: Installation altitude**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5246-2TC05&objecttype=14&gridview=view1>

**Simulation Tool for Soft Starters (STS)**

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





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