

SIRIUS soft starter 200-480 V 250 A, 24 V AC/DC Screw 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="#">3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li><a href="#">3VA2450-7MN32-0AA0; 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

2x3NA3354-6; Type of coordination 1, I<sub>q</sub> = 65 kA

2x3NA3354-6; Type of coordination 1, I<sub>q</sub> = 65 kA

[3NE1331-0; 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>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
• PROFINET	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	250 A
• at 50 °C rated value	220 A
• at 60 °C rated value	200 A
<b>Operating current at inside-delta circuit</b>	
• at 40 °C rated value	433 A
• at 50 °C rated value	381 A
• at 60 °C rated value	346 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	75 kW
• at 230 V at inside-delta circuit at 40 °C rated value	132 kW
• at 400 V at 40 °C rated value	132 kW

<ul style="list-style-type: none"> <li>• at 400 V at inside-delta circuit at 40 °C rated value</li> </ul>	250 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>	
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 1</li> <li>• at rotary encoding switch on switch position 3</li> <li>• at rotary encoding switch on switch position 4</li> <li>• at rotary encoding switch on switch position 5</li> <li>• at rotary encoding switch on switch position 6</li> <li>• at rotary encoding switch on switch position 7</li> <li>• at rotary encoding switch on switch position 8</li> <li>• at rotary encoding switch on switch position 9</li> <li>• at rotary encoding switch on switch position 10</li> <li>• at rotary encoding switch on switch position 11</li> <li>• at rotary encoding switch on switch position 12</li> <li>• at rotary encoding switch on switch position 13</li> <li>• at rotary encoding switch on switch position 14</li> <li>• at rotary encoding switch on switch position 15</li> <li>• at rotary encoding switch on switch position 16</li> <li>• minimum</li> <li>• at inside-delta circuit minimum</li> </ul>	100 A 120 A 130 A 140 A 150 A 160 A 170 A 180 A 190 A 200 A 210 A 220 A 230 A 240 A 250 A 100 A 173 A
<b>Adjustable motor current for inside-delta circuit</b>	
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 1</li> <li>• at rotary encoding switch on switch position 2</li> <li>• at rotary encoding switch on switch position 3</li> <li>• at rotary encoding switch on switch position 4</li> <li>• at rotary encoding switch on switch position 5</li> <li>• at rotary encoding switch on switch position 6</li> <li>• at rotary encoding switch on switch position 7</li> <li>• at rotary encoding switch on switch position 8</li> <li>• at rotary encoding switch on switch position 9</li> <li>• at rotary encoding switch on switch position 10</li> <li>• at rotary encoding switch on switch position 11</li> <li>• at rotary encoding switch on switch position 12</li> <li>• at rotary encoding switch on switch position 13</li> <li>• at rotary encoding switch on switch position 14</li> <li>• at rotary encoding switch on switch position 15</li> <li>• at rotary encoding switch on switch position 16</li> </ul>	173 A 191 A 208 A 225 A 242 A 260 A 277 A 294 A 312 A 329 A 346 A 364 A 381 A 398 A 416 A 433 A

<b>Minimum load [%]</b>	15 %; Relative to smallest settable le
<b>Power loss [W] for rated value of the current at AC</b>	
• at 40 °C to power-up	87 W
• at 50 °C to power-up	78 W
• at 60 °C to power-up	72 W
<b>Power loss [W] at AC at AC</b>	
• at 40 °C during startup	3 818 W
• at 50 °C during startup	3 188 W
• at 60 °C during startup	2 799 W

Control circuit/ Control	
<b>Type of voltage of the control supply voltage</b>	AC/DC
<b>Control supply voltage at AC</b>	
• at 50 Hz rated value	24 V
• at 60 Hz rated value	24 V
<b>Relative negative tolerance of the control supply voltage at AC at 50 Hz</b>	-20 %
<b>Relative positive tolerance of the control supply voltage at AC at 50 Hz</b>	20 %
<b>Relative negative tolerance of the control supply voltage at AC at 60 Hz</b>	-20 %
<b>Relative positive tolerance of the control supply voltage at AC at 60 Hz</b>	20 %
<b>Control supply voltage frequency</b>	50 ... 60 Hz
<b>Relative negative tolerance of the control supply voltage frequency</b>	-10 %
<b>Relative positive tolerance of the control supply voltage frequency</b>	10 %
<b>Control supply voltage</b>	
• at DC rated value	24 V
<b>Relative negative tolerance of the control supply voltage at DC</b>	-20 %
<b>Relative positive tolerance of the control supply voltage at DC</b>	20 %
<b>Control supply current in standby mode rated value</b>	160 mA
<b>Holding current in the by-pass mode operating rated value</b>	470 mA
<b>Starting current at close of by-pass contact maximum</b>	7.6 A
<b>Inrush current peak at connect of control supply voltage maximum</b>	3.3 A
<b>Duration of inrush current peak at connect of control supply voltage</b>	12.1 ms
<b>Design of the overvoltage protection</b>	Varistor

<b>Design of short-circuit protection for control circuit</b>	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
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### Inputs/ Outputs

<b>Number of digital inputs</b>	1
<b>Number of inputs for thermistor connection</b>	1; Type A PTC or Klixon / Thermoclick
<b>Number of digital outputs</b>	3
• not parameterizable	2
<b>Digital output version</b>	2 normally-open contacts (NO) / 1 changeover contact (CO)
<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>	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
<b>Mounting type</b>	screw fixing
<b>Height</b>	393 mm
<b>Width</b>	210 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>	9.9 kg

### Connections/ Terminals

<b>Type of electrical connection</b>	
• for main current circuit	busbar connection
• for control circuit	screw-type terminals
<b>Width of connection bar maximum</b>	45 mm
<b>Type of connectable conductor cross-sections</b>	
• for DIN cable lug for main contacts stranded	2x (50 ... 240 mm <sup>2</sup> )
• for DIN cable lug for main contacts finely stranded	2x (70 ... 240 mm <sup>2</sup> )
<b>Type of connectable conductor cross-sections</b>	
• for control circuit solid	1x (0.5 ... 4.0 mm <sup>2</sup> ), 2x (0.5 ... 2.5 mm <sup>2</sup> )
• for control circuit finely stranded with core end processing	1x (0.5 ... 2.5 mm <sup>2</sup> ), 2x (0.5 ... 1.5 mm <sup>2</sup> )

<ul style="list-style-type: none"> <li>• at AWG conductors for control circuit solid</li> </ul>	1x (20 ... 12), 2x (20 ... 14)
<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

### Ambient conditions

<b>Ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage and transport</li> </ul>	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above -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 circuit breaker               <ul style="list-style-type: none"> <li>— usable for Standard Faults at 460/480 V according to UL</li> <li>— usable for High Faults at 460/480 V according to UL</li> <li>— usable for Standard Faults at 460/480 V at inside-delta circuit according to UL</li> </ul> </li> </ul>	Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; I <sub>q</sub> = 18 kA Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; I <sub>q</sub> max = 65 kA Siemens type: 3VA54, max. 600 A; I <sub>q</sub> = 18 kA
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- usable for High Faults at 460/480 V at inside-delta circuit according to UL
- usable for Standard Faults at 575/600 V according to UL
- usable for Standard Faults at 575/600 V at inside-delta circuit according to UL

• **of the fuse**

- usable for Standard Faults up to 575/600 V according to UL
- usable for High Faults up to 575/600 V according to UL
- usable for Standard Faults at inside-delta circuit up to 575/600 V according to UL
- usable for High Faults at inside-delta circuit up to 575/600 V according to UL

Siemens type: 3VA54, max. 600 A; I<sub>q</sub> max = 65 kA

Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; I<sub>q</sub> = 18 kA

Siemens type: 3VA54, max. 600 A; I<sub>q</sub> = 18 kA

Type: Class J / L, max. 800 A; I<sub>q</sub> = 18 kA

Type: Class J / L, max. 800 A; I<sub>q</sub> = 100 kA

Type: Class J / L, max. 800 A; I<sub>q</sub> = 18 kA

Type: Class J / L, max. 800 A; I<sub>q</sub> = 100 kA

**Operating power [hp] for three-phase motors**

- at 200/208 V at 50 °C rated value 60 hp
- at 220/230 V at 50 °C rated value 75 hp
- at 460/480 V at 50 °C rated value 150 hp
- at 200/208 V at inside-delta circuit at 50 °C rated value 125 hp
- at 220/230 V at inside-delta circuit at 50 °C rated value 150 hp
- at 460/480 V at inside-delta circuit at 50 °C rated value 300 hp

**Contact rating of auxiliary contacts according to UL**

R300-B300

**Safety related data**

**Electromagnetic compatibility**

in accordance with IEC 60947-4-2

**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
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[Confirmation](#)

## Further information

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

[www.siemens.com/ic10](http://www.siemens.com/ic10)

**Industry Mall (Online ordering system)**

<https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RW5244-6TC04>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5244-6TC04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5244-6TC04>

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

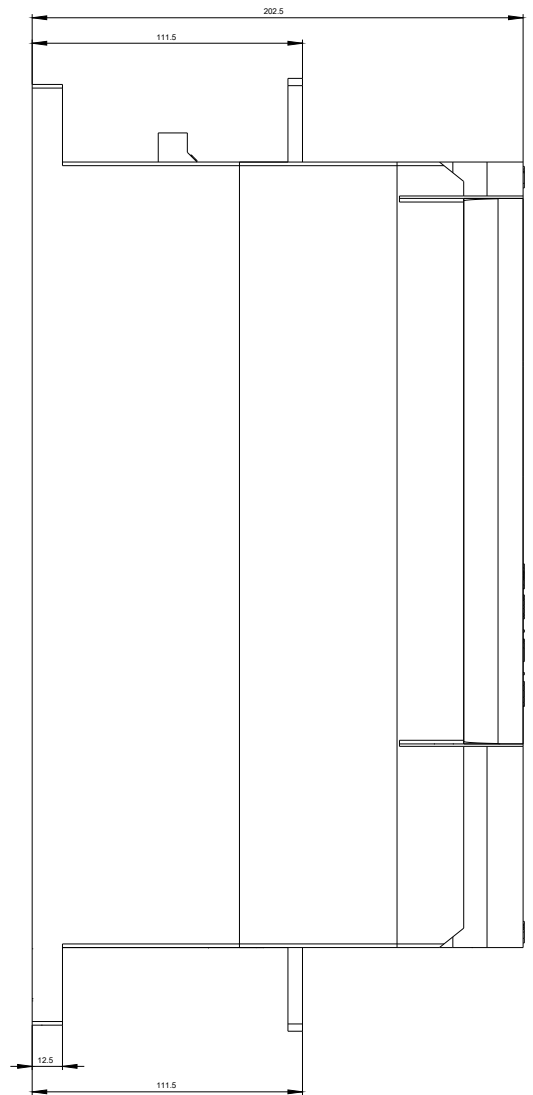
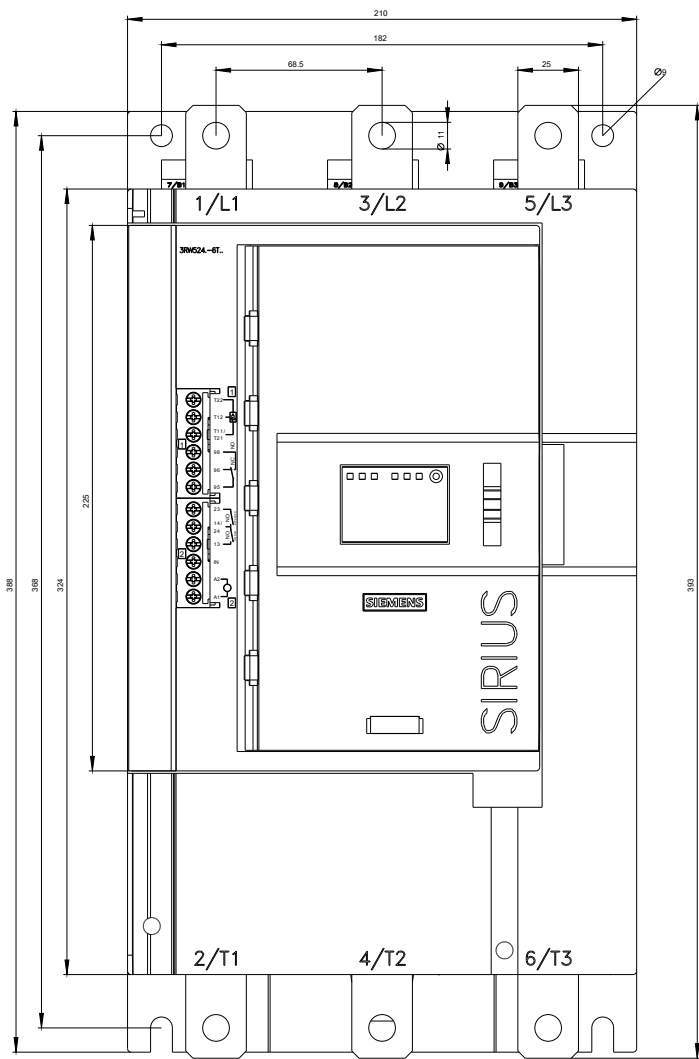
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5244-6TC04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5244-6TC04&lang=en)

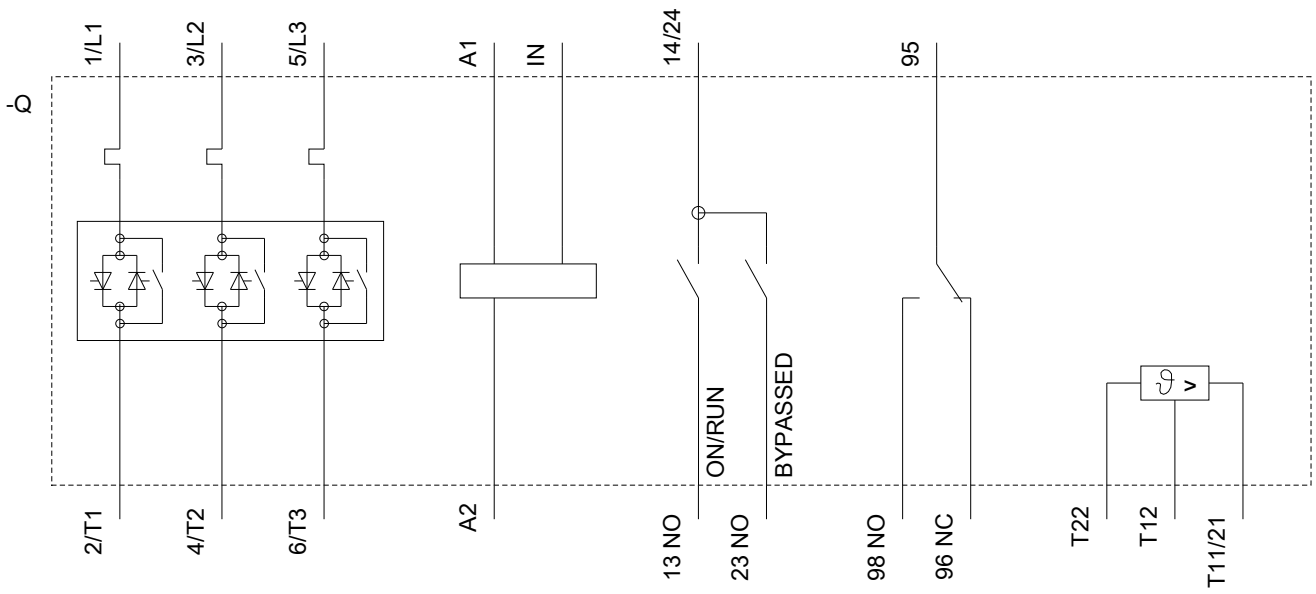
**Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5244-6TC04/char>

**Characteristic: Installation altitude**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5244-6TC04&objecttype=14&gridview=view1>





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