

SIRIUS soft starter 200-600 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 <a href="#">3RW5980-0HS00</a></li> <li>• of HMI-Modul high-feature usable <a href="#">3RW5980-0HF00</a></li> <li>• of communication module PROFINET standard usable <a href="#">3RW5980-0CS00</a></li> <li>• of communication module PROFIBUS usable <a href="#">3RW5980-0CP00</a></li> <li>• of communication module Modbus TCP usable <a href="#">3RW5980-0CT00</a></li> <li>• of communication module Modbus RTU usable <a href="#">3RW5980-0CR00</a></li> <li>• of communication module Ethernet/IP <a href="#">3RW5980-0CE00</a></li> <li>• of circuit breaker usable at 400 V <a href="#">3VA2440-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 500 V <a href="#">3VA2440-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 400 V at inside-delta circuit <a href="#">3VA2450-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of circuit breaker usable at 500 V at inside-delta circuit <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 ... 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	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
<ul style="list-style-type: none"> <li>• at 500 V at 40 °C rated value</li> </ul>	160 kW
<ul style="list-style-type: none"> <li>• at 500 V at inside-delta circuit at 40 °C rated value</li> </ul>	315 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> </ul>	100 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 3</li> </ul>	120 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 4</li> </ul>	130 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 5</li> </ul>	140 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 6</li> </ul>	150 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 7</li> </ul>	160 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 8</li> </ul>	170 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 9</li> </ul>	180 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 10</li> </ul>	190 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 11</li> </ul>	200 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 12</li> </ul>	210 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 13</li> </ul>	220 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 14</li> </ul>	230 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 15</li> </ul>	240 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 16</li> </ul>	250 A
<ul style="list-style-type: none"> <li>• minimum</li> </ul>	100 A
<ul style="list-style-type: none"> <li>• at inside-delta circuit minimum</li> </ul>	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> </ul>	173 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 2</li> </ul>	191 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 3</li> </ul>	208 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 4</li> </ul>	225 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 5</li> </ul>	242 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 6</li> </ul>	260 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 7</li> </ul>	277 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 8</li> </ul>	294 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 9</li> </ul>	312 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 10</li> </ul>	329 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 11</li> </ul>	346 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 12</li> </ul>	364 A
<ul style="list-style-type: none"> <li>• at rotary encoding switch on switch position 13</li> </ul>	381 A

<ul style="list-style-type: none"> <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>	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>	
<ul style="list-style-type: none"> <li>• at 40 °C to power-up</li> <li>• at 50 °C to power-up</li> <li>• at 60 °C to power-up</li> </ul>	87 W 78 W 72 W
<b>Power loss [W] at AC at AC</b>	
<ul style="list-style-type: none"> <li>• at 40 °C during startup</li> <li>• at 50 °C during startup</li> <li>• at 60 °C during startup</li> </ul>	3 818 W 3 188 W 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>	
<ul style="list-style-type: none"> <li>• at 50 Hz rated value</li> <li>• at 60 Hz rated value</li> </ul>	24 V 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>	
<ul style="list-style-type: none"> <li>• at DC rated value</li> </ul>	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

### 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> )

<ul style="list-style-type: none"> <li>• for control circuit finely stranded with core end processing</li> <li>• at AWG conductors for control circuit solid</li> </ul>	<p>1x (0.5 ... 2.5 mm<sup>2</sup>), 2x (0.5 ... 1.5 mm<sup>2</sup>)</p> <p>1x (20 ... 12), 2x (20 ... 14)</p>
<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>	<p>800 m</p> <p>100 m</p> <p>1 000 m</p>
<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>	<p>14 ... 24 N·m</p> <p>0.8 ... 1.2 N·m</p>
<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>	<p>124 ... 210 lbf·in</p> <p>7 ... 10.3 lbf·in</p>

### Ambient conditions

<b>Ambient temperature</b> <ul style="list-style-type: none"> <li>• during operation</li> <li>• during storage and transport</li> </ul>	<p>-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above</p> <p>-40 ... +80 °C</p>
<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>	<p>3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6</p> <p>1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4</p> <p>2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)</p>
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>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
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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> </ul> </li> </ul>	<p>Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq = 18 kA</p> <p>Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; Iq max = 65 kA</p>
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- usable for Standard Faults at 460/480 V at inside-delta circuit according to UL
- 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> = 18 kA

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
- at 220/230 V at 50 °C rated value
- at 460/480 V at 50 °C rated value
- at 575/600 V at 50 °C rated value
- 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
- at 575/600 V at inside-delta circuit at 50 °C rated value

60 hp  
75 hp  
150 hp  
200 hp  
125 hp  
150 hp  
300 hp  
350 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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Declaration of Conformity	Test Certificates	Marine / Shipping
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[Miscellaneous](#)

[Type Test Certificates/Test Report](#)



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=3RW5244-6TC05>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5244-6TC05>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5244-6TC05>

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

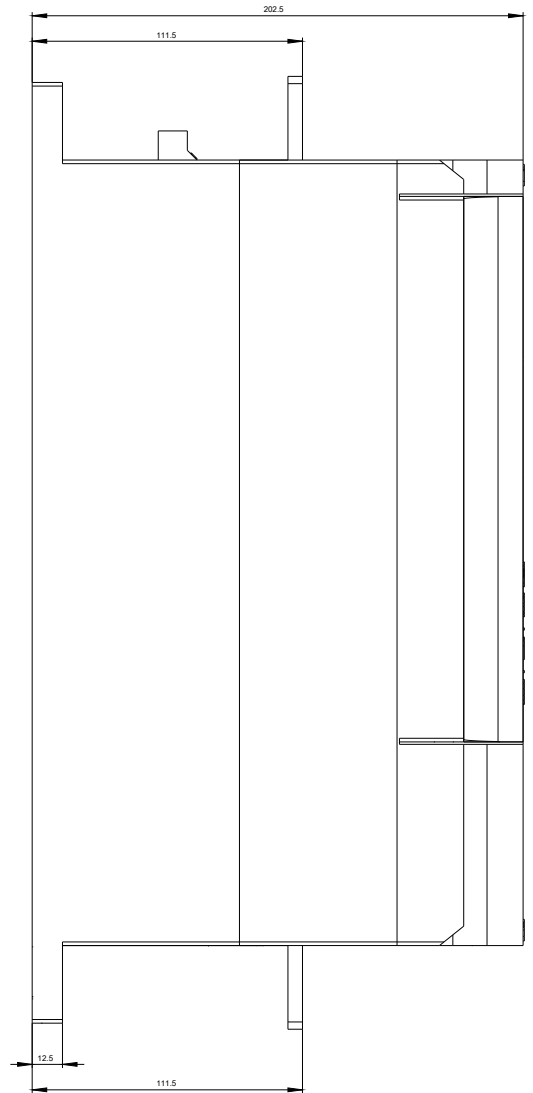
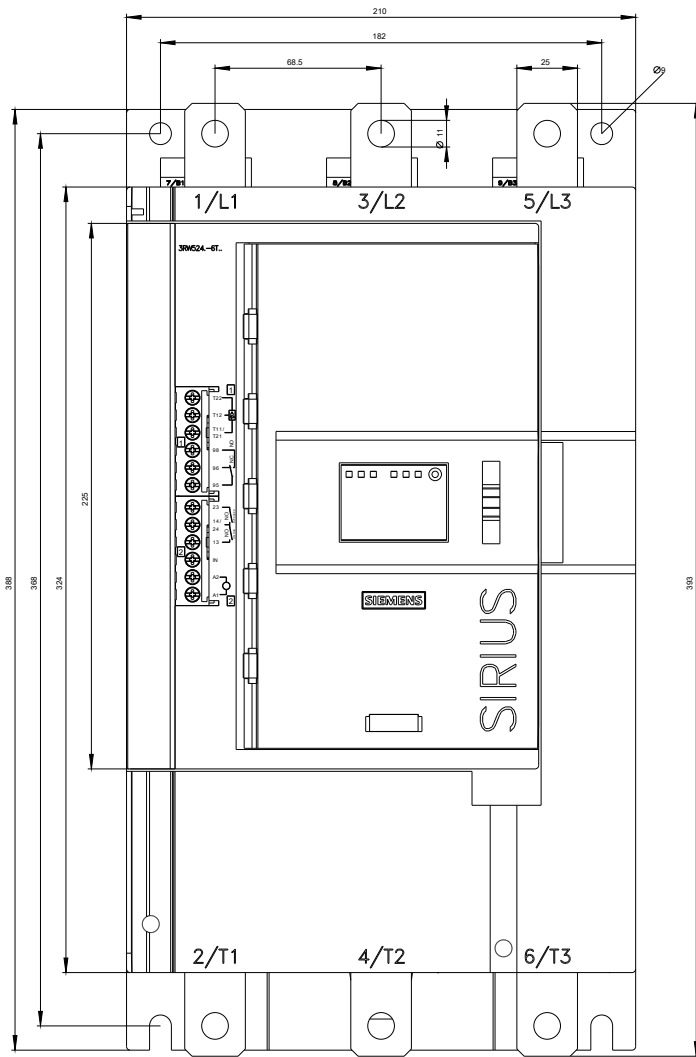
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5244-6TC05&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5244-6TC05&lang=en)

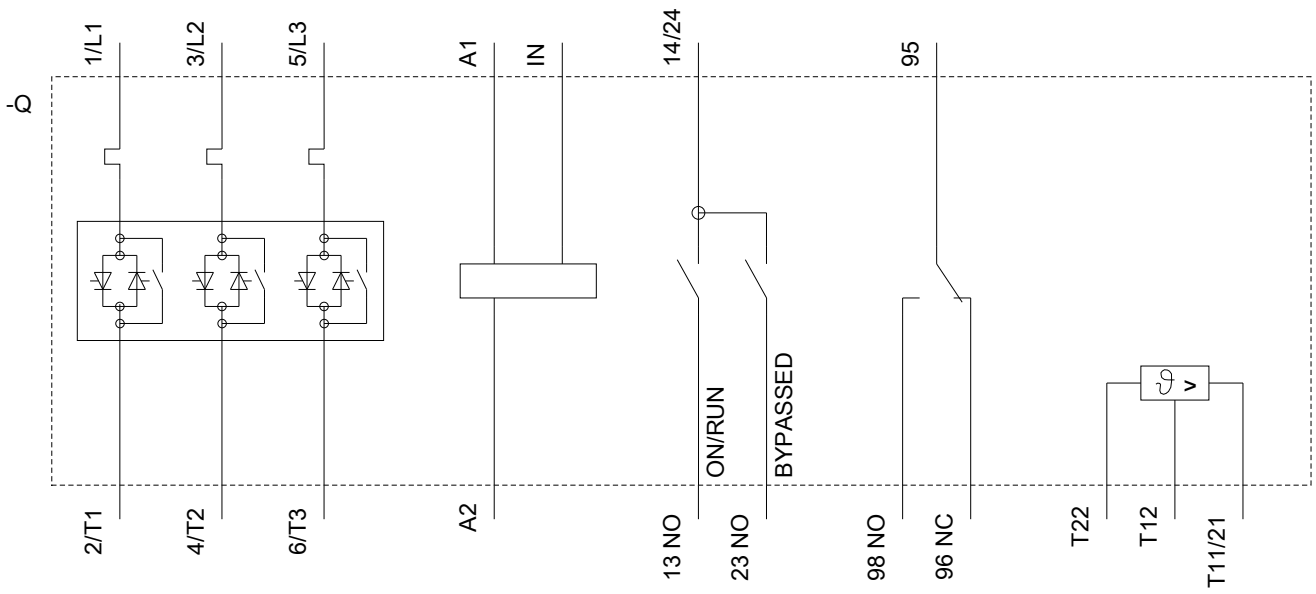
**Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5244-6TC05/char>

**Characteristic: Installation altitude**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5244-6TC05&objecttype=14&gridview=view1>





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