

SIRIUS soft starter 200-480 V 77 A, 110-250 V AC 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="#">3VA2110-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li><a href="#">3VA2110-7MN32-0AA0; Type of coordination 1, Iq = 20 kA, CLASS 10</a></li> <li><a href="#">3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li><a href="#">3VA2216-7MN32-0AA0; Type of coordination 1, Iq = 20 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

[3NA3132-6; Type of coordination 1, Iq = 65 kA](#)

[3NA3132-6; Type of coordination 1, Iq = 65 kA](#)

[3NE1224-0; Type of coordination 2, Iq = 65 kA](#)

[3NE8024-1; Type of coordination 2, Iq = 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>	1 400 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
<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	77 A
• at 50 °C rated value	68 A
• at 60 °C rated value	62 A
<b>Operating current at inside-delta circuit</b>	
• at 40 °C rated value	133 A
• at 50 °C rated value	118 A
• at 60 °C rated value	107 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	22 kW
• at 230 V at inside-delta circuit at 40 °C rated value	37 kW
• at 400 V at 40 °C rated value	37 kW

<ul style="list-style-type: none"> <li>• at 400 V at inside-delta circuit at 40 °C rated value</li> </ul>	75 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>	32 A 38 A 41 A 44 A 47 A 50 A 53 A 56 A 59 A 62 A 65 A 68 A 71 A 74 A 77 A 32 A 55.4 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>	55.4 A 60.6 A 65.8 A 71 A 76.2 A 81.4 A 86.6 A 91.8 A 97 A 102 A 107 A 113 A 118 A 123 A 128 A 133 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	35 W
• at 50 °C to power-up	32 W
• at 60 °C to power-up	31 W
<b>Power loss [W] at AC at AC</b>	
• at 40 °C during startup	1 107 W
• at 50 °C during startup	933 W
• at 60 °C during startup	826 W

#### Control circuit/ Control

<b>Type of voltage of the control supply voltage</b>	AC
<b>Control supply voltage at AC</b>	
• at 50 Hz	110 ... 250 V
• at 60 Hz	110 ... 250 V
<b>Relative negative tolerance of the control supply voltage at AC at 50 Hz</b>	-15 %
<b>Relative positive tolerance of the control supply voltage at AC at 50 Hz</b>	10 %
<b>Relative negative tolerance of the control supply voltage at AC at 60 Hz</b>	-15 %
<b>Relative positive tolerance of the control supply voltage at AC at 60 Hz</b>	10 %
<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 current in standby mode rated value</b>	30 mA
<b>Holding current in the by-pass mode operating rated value</b>	75 mA
<b>Starting current at close of by-pass contact maximum</b>	2.5 A
<b>Inrush current peak at connect of control supply voltage maximum</b>	12.2 A
<b>Duration of inrush current peak at connect of control supply voltage</b>	2.2 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>	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>	5.6 kg

### Connections/ Terminals

<b>Type of electrical connection</b>	
• for main current circuit	box terminal
• for control circuit	spring-loaded terminals
<b>Width of connection bar maximum</b>	25 mm
<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> )

<ul style="list-style-type: none"> <li>• for main contacts for box terminal using both clamping points finely stranded with core end processing</li> </ul>	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</b>	
<ul style="list-style-type: none"> <li>• for control circuit solid</li> </ul>	2x (0.25 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• for control circuit finely stranded with core end processing</li> </ul>	2x (0.25 ... 1.5 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• at AWG conductors for control circuit solid</li> </ul>	2x (24 ... 16)
<ul style="list-style-type: none"> <li>• at AWG conductors for control circuit 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
<b>Tightening torque</b>	
<ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> </ul>	4.5 ... 6 N·m
<ul style="list-style-type: none"> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>	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> </ul>	40 ... 53 lbf·in
<ul style="list-style-type: none"> <li>• for auxiliary and control contacts with screw-type terminals</li> </ul>	7 ... 10.3 lbf·in

<b>Ambient conditions</b>	
<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> </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 60947-4-2: Class A

<b>Communication/ Protocol</b>	
<b>Communication module is supported</b>	
<ul style="list-style-type: none"> <li>• PROFINET standard</li> </ul>	Yes

- EtherNet/IP
- Modbus RTU
- Modbus TCP
- PROFIBUS

Yes  
Yes  
Yes  
Yes

## UL/CSA ratings

### Manufacturer's article number

#### • of circuit breaker

— usable for Standard Faults at 460/480 V according to UL

Siemens type: 3VA51, max. 125 A; I<sub>q</sub> = 10 kA

— usable for High Faults at 460/480 V according to UL

Siemens type: 3VA51, max. 125 A; I<sub>q</sub> max = 65 kA

— usable for Standard Faults at 460/480 V at inside-delta circuit according to UL

Siemens type: 3VA51, max. 125 A; I<sub>q</sub> = 10 kA

— usable for High Faults at 460/480 V at inside-delta circuit according to UL

Siemens type: 3VA51, max. 125 A; I<sub>q</sub> max = 65 kA

— usable for Standard Faults at 575/600 V according to UL

Siemens type: 3VA51, max. 125 A; I<sub>q</sub> = 10 kA

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

Siemens type: 3VA51, max. 125 A; I<sub>q</sub> = 10 kA

#### • of the fuse

— usable for Standard Faults up to 575/600 V according to UL

Type: Class RK5 / K5, max. 250 A; I<sub>q</sub> = 10 kA

— usable for High Faults up to 575/600 V according to UL

Type: Class J / L, max. 250 A; I<sub>q</sub> = 100 kA

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

Type: Class RK5 / K5, max. 250 A; I<sub>q</sub> = 10 kA

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

Type: Class J / L, max. 250 A; I<sub>q</sub> = 100 kA

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

- at 200/208 V at 50 °C rated value

20 hp

- at 220/230 V at 50 °C rated value

25 hp

- at 460/480 V at 50 °C rated value

50 hp

- at 200/208 V at inside-delta circuit at 50 °C rated value

30 hp

- at 220/230 V at inside-delta circuit at 50 °C rated value

40 hp

- at 460/480 V at inside-delta circuit at 50 °C rated value

75 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=3RW5226-3TC14>

**Cax online generator**

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5226-3TC14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5226-3TC14>

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

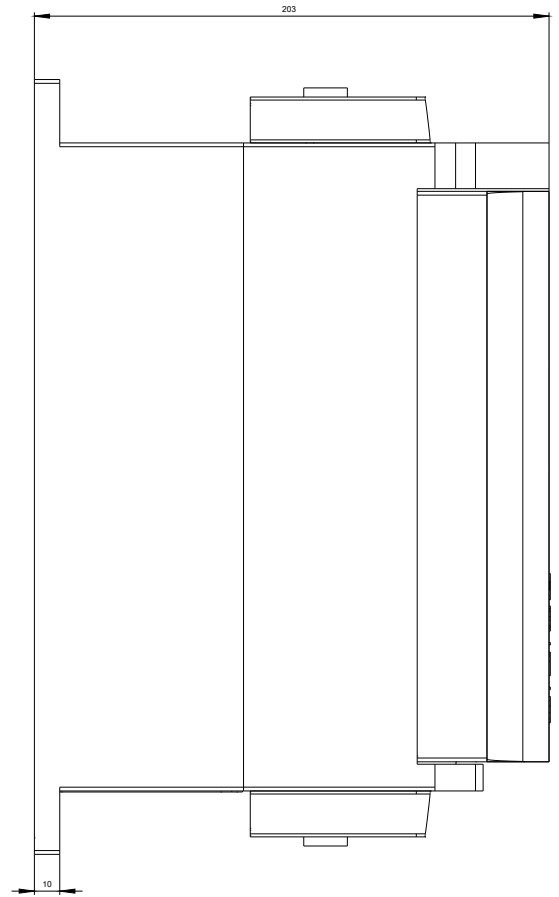
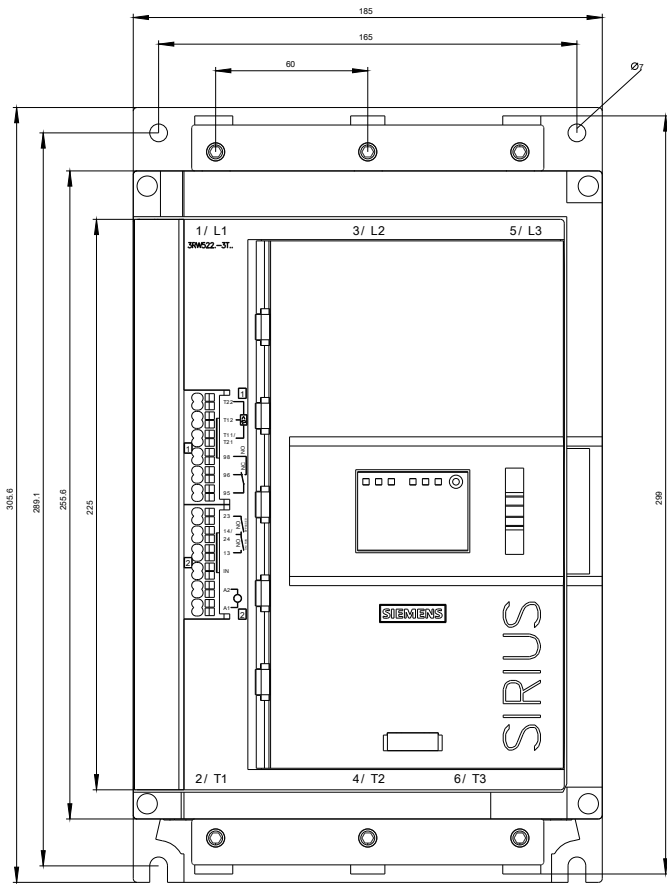
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5226-3TC14&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5226-3TC14&lang=en)

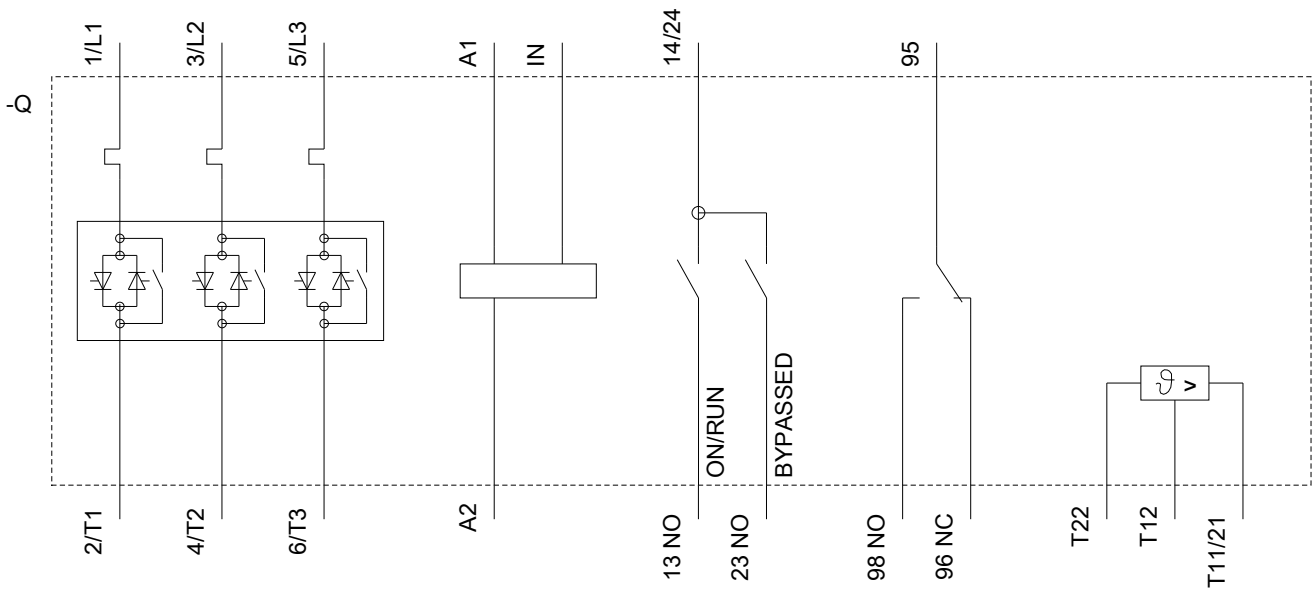
**Characteristic: Tripping characteristics, I<sub>t</sub>, Let-through current**

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5226-3TC14/char>

**Characteristic: Installation altitude**

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5226-3TC14&objecttype=14&gridview=view1>





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