

SIRIUS soft starter 200-600 V 315 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 <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="#">3VA2580-6HN32-0AA0; 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="#">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	315 A
• at 50 °C rated value	279 A
• at 60 °C rated value	255 A
<b>operating current at inside-delta circuit</b>	
• at 40 °C rated value	546 A
• at 50 °C rated value	483 A
• at 60 °C rated value	442 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	90 kW

• at 230 V at inside-delta circuit at 40 °C rated value	160 kW
• at 400 V at 40 °C rated value	160 kW
• at 400 V at inside-delta circuit at 40 °C rated value	315 kW
• at 500 V at 40 °C rated value	200 kW
• at 500 V at inside-delta circuit at 40 °C rated value	355 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	135 A
• at rotary encoding switch on switch position 2	147 A
• at rotary encoding switch on switch position 3	159 A
• at rotary encoding switch on switch position 4	171 A
• at rotary encoding switch on switch position 5	183 A
• at rotary encoding switch on switch position 6	195 A
• at rotary encoding switch on switch position 7	207 A
• at rotary encoding switch on switch position 8	219 A
• at rotary encoding switch on switch position 9	231 A
• at rotary encoding switch on switch position 10	243 A
• at rotary encoding switch on switch position 11	255 A
• at rotary encoding switch on switch position 12	267 A
• at rotary encoding switch on switch position 13	279 A
• at rotary encoding switch on switch position 14	291 A
• at rotary encoding switch on switch position 15	303 A
• at rotary encoding switch on switch position 16	315 A
• minimum	135 A
<b>adjustable motor current</b>	
• for inside-delta circuit at rotary encoding switch on switch position 1	234 A
• for inside-delta circuit at rotary encoding switch on switch position 2	255 A
• for inside-delta circuit at rotary encoding switch on switch position 3	275 A
• for inside-delta circuit at rotary encoding switch on switch position 4	296 A
• for inside-delta circuit at rotary encoding switch on switch position 5	317 A
• for inside-delta circuit at rotary encoding switch on switch position 6	338 A

<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 7</li> </ul>	359 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 8</li> </ul>	379 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 9</li> </ul>	400 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 10</li> </ul>	421 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 11</li> </ul>	442 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 12</li> </ul>	462 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 13</li> </ul>	483 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 14</li> </ul>	504 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 15</li> </ul>	525 A
<ul style="list-style-type: none"> <li>• for inside-delta circuit at rotary encoding switch on switch position 16</li> </ul>	546 A
<ul style="list-style-type: none"> <li>• at inside-delta circuit minimum</li> </ul>	234 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>	107 W
<ul style="list-style-type: none"> <li>• at 50 °C after startup</li> </ul>	96 W
<ul style="list-style-type: none"> <li>• at 60 °C after startup</li> </ul>	89 W
<b>power loss [W] at AC at AC</b>	
<ul style="list-style-type: none"> <li>• at 40 °C during startup</li> </ul>	5 350 W
<ul style="list-style-type: none"> <li>• at 50 °C during startup</li> </ul>	4 471 W
<ul style="list-style-type: none"> <li>• at 60 °C during startup</li> </ul>	3 934 W

Control circuit/ Control	
<b>type of voltage of the control supply voltage</b>	AC
<b>control supply voltage at AC</b>	
<ul style="list-style-type: none"> <li>• at 50 Hz</li> </ul>	110 ... 250 V
<ul style="list-style-type: none"> <li>• at 60 Hz</li> </ul>	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

relative negative tolerance of the control supply voltage frequency	-10 %
relative positive tolerance of the control supply voltage frequency	10 %
control supply current in standby mode rated value	30 mA
holding current in the by-pass mode operating rated value	100 mA
starting current at close of by-pass contact maximum	2.2 A
inrush current peak at connect of control supply voltage maximum	12.2 A
duration of inrush current peak at connect of control supply voltage	2.2 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 Klaxon / Thermoclick
<ul style="list-style-type: none"> <li>number of digital outputs</li> <li>number of digital outputs not parameterizable</li> </ul>	3 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	
<ul style="list-style-type: none"> <li>at AC-15 at 250 V rated value</li> <li>at DC-13 at 24 V rated value</li> </ul>	3 A 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	
<ul style="list-style-type: none"> <li>forwards</li> <li>backwards</li> <li>upwards</li> <li>downwards</li> <li>at the side</li> </ul>	10 mm 0 mm 100 mm 75 mm 5 mm
weight without packaging	9.9 kg

Connections/ Terminals	
type of electrical connection	
<ul style="list-style-type: none"> <li>for main current circuit</li> </ul>	busbar connection

<ul style="list-style-type: none"> <li>• for control circuit</li> </ul>	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> </ul>	50 m
<ul style="list-style-type: none"> <li>• with conductor cross-section = 1.5 mm<sup>2</sup> maximum</li> </ul>	150 m
<ul style="list-style-type: none"> <li>• with conductor cross-section = 2.5 mm<sup>2</sup> maximum</li> </ul>	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> </ul>	2x (50 ... 240 mm <sup>2</sup> )
<ul style="list-style-type: none"> <li>• for DIN cable lug for main contacts finely stranded</li> </ul>	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> </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>	14 ... 24 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>	124 ... 210 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

Ambient conditions	
<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> </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> <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>
<b>UL/CSA ratings</b>	
<b>manufacturer's article number</b>	
<ul style="list-style-type: none"> <li><b>of circuit breaker</b> <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> <li>— usable for High Faults at 460/480 V at inside-delta circuit according to UL</li> <li>— usable for Standard Faults at 575/600 V according to UL</li> <li>— usable for Standard Faults at 575/600 V at inside-delta circuit according to UL</li> </ul> </li> <li><b>of the fuse</b> <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>	<p>Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; I<sub>q</sub> = 18 kA</p> <p>Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; I<sub>q</sub> max = 65 kA</p> <p>Siemens type: 3VA54, max. 600 A; I<sub>q</sub> = 18 kA</p> <p>Siemens type: 3VA54, max. 600 A; I<sub>q</sub> max = 65 kA</p> <p>Siemens type: 3VA53, max. 400 A or 3VA54, max. 600 A; I<sub>q</sub> = 18 kA</p> <p>Siemens type: 3VA54, max. 600 A; I<sub>q</sub> = 18 kA</p> <p>Type: Class J / L, max. 1000 A; I<sub>q</sub> = 18 kA</p> <p>Type: Class J / L, max. 1000 A; I<sub>q</sub> = 100 kA</p> <p>Type: Class J / L, max. 1000 A; I<sub>q</sub> = 18 kA</p> <p>Type: Class J / L, max. 1000 A; I<sub>q</sub> = 100 kA</p>
<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> </ul>	<p>75 hp</p> <p>100 hp</p> <p>200 hp</p> <p>250 hp</p> <p>150 hp</p> <p>200 hp</p>



- 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

400 hp

500 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
 CCC	 EAC	 EG-Konf.
 CSA	 RCM	
 UL		

Declaration of Conformity	Test Certificates	Marine / Shipping
<a href="#">Miscellaneous</a>	<a href="#">Type Test Certificates/Test Report</a>	 ABS
		 LRS
		 PRS
		 DNV-GL 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=3RW5245-2TC15>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5245-2TC15>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5245-2TC15>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5245-2TC15&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5245-2TC15&lang=en)

Characteristic: Tripping characteristics, I<sup>Δt</sup>, Let-through current

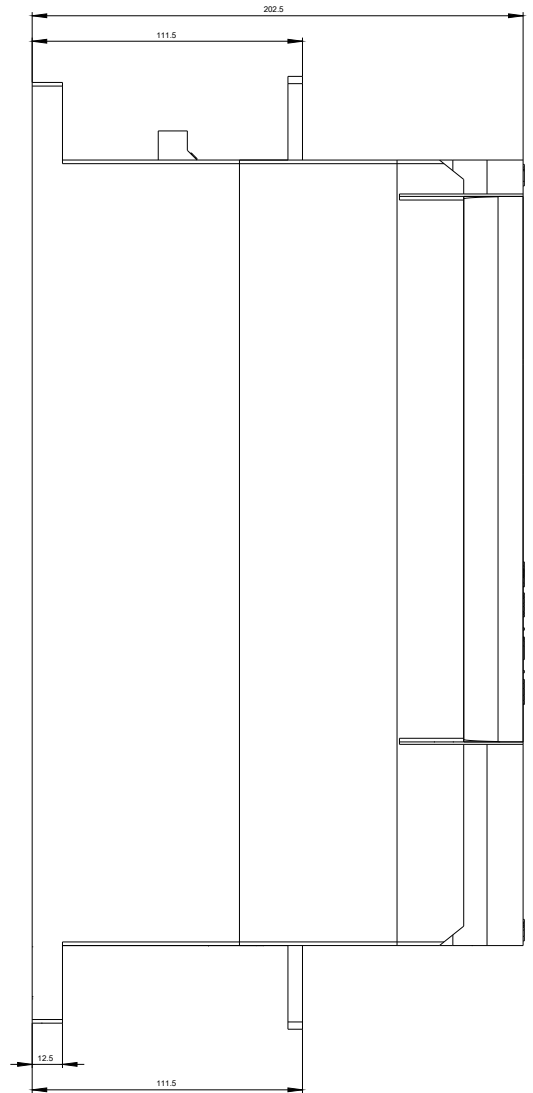
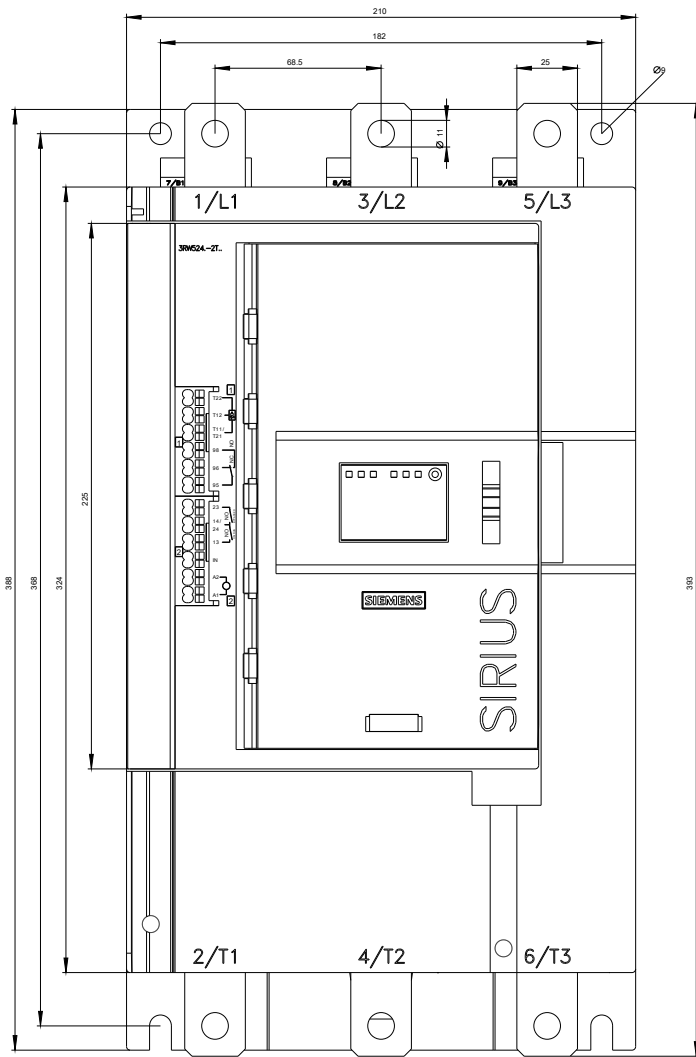
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5245-2TC15/char>

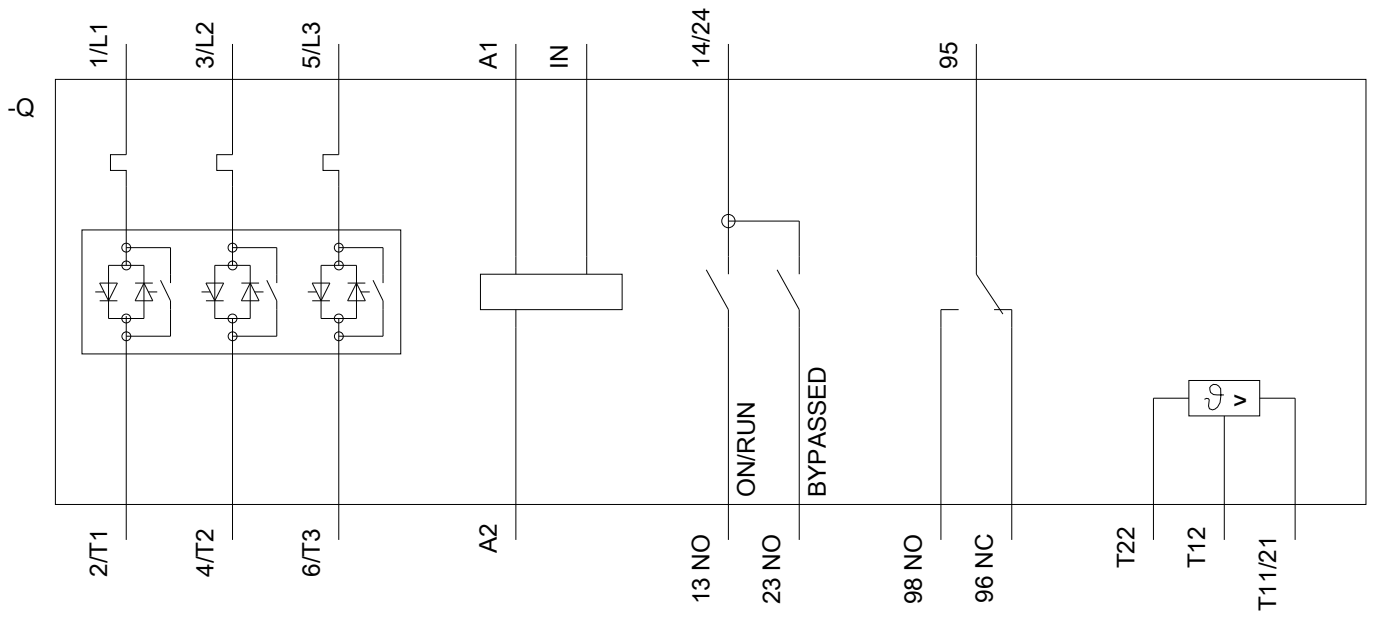
Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5245-2TC15&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





last modified:

09/23/2020