



SIRIUS soft starter 200-690 V 47 A, 24 V AC/DC Screw terminals

product brand name	SIRIUS
product category	Hybrid switching devices
product designation	Soft starter
product type designation	3RW55
manufacturer's article number	<div><ul style="list-style-type: none"><li>• of high feature HMI module usable</li><li>• of communication module PROFINET standard usable</li><li>• of communication module PROFINET high-feature 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><li>• of the gG fuse usable up to 690 V</li><li>• of the gG fuse usable at inside-delta circuit up to 500 V</li><li>• of full range R fuse link for semiconductor protection usable up to 690 V</li><li>• of back-up R fuse link for semiconductor protection usable up to 690 V</li></ul></div>
General technical data	
starting voltage [%]	20 ... 100 %
stopping voltage [%]	50 ... 50 %
start-up ramp time of soft starter	0 ... 360 s
ramp-down time of soft starter	0 ... 360 s
start torque [%]	10 ... 100 %
stopping torque [%]	10 ... 100 %
torque limitation [%]	20 ... 200 %
current limiting value [%] adjustable	125 ... 800 %
breakaway voltage [%] adjustable	40 ... 100 %
breakaway time adjustable	0 ... 2 s
number of parameter sets	3

- [3RW5980-0HF00](#)  
[3RW5980-0CS00](#)  
[3RW5950-0CH00](#)  
[3RW5980-0CP00](#)  
[3RW5980-0CT00](#)  
[3RW5980-0CR00](#)  
[3RW5980-0CE00](#)  
[3RV2032-4JA10; Type of coordination 1, Iq = 65 kA, CLASS 10](#)  
[3RV2032-4JA10; Type of coordination 1, Iq = 10 kA, CLASS 10](#)  
[3RV2032-4RA10; Type of coordination 1, Iq = 65 kA, CLASS 10](#)  
[3RV2032-4RA10; Type of coordination 1, Iq = 10 kA, CLASS 10](#)  
[3NA3824-6; Type of coordination 1, Iq = 65 kA](#)  
[3NA3824-6; Type of coordination 1, Iq = 65 kA](#)  
[3NE1021-2; Type of coordination 2, Iq = 65 kA](#)  
[3NE8024-1; Type of coordination 2, Iq = 65 kA](#)

<b>accuracy class acc. to IEC 61557-12</b>	5 %
<b>certificate of suitability</b>	
• CE marking	Yes
• UL approval	Yes
• CSA approval	Yes
<b>product component</b>	
• HMI-High Feature	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 / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2
<b>current unbalance limiting value [%]</b>	10 ... 60 %
<b>ground-fault monitoring limiting value [%]</b>	10 ... 95 %
<b>recovery time after overload trip adjustable</b>	60 ... 1 800 s
<b>buffering time in the event of power failure</b>	
• for main current circuit	100 ms
• for control circuit	100 ms
<b>idle time adjustable</b>	0 ... 255 s
<b>insulation voltage rated value</b>	690 V
<b>degree of pollution</b>	3, acc. to IEC 60947-4-2
<b>impulse voltage rated value</b>	8 kV
<b>blocking voltage of the thyristor maximum</b>	1 800 V
<b>service factor</b>	1.15
<b>surge voltage resistance rated value</b>	8 kV
<b>maximum permissible voltage for safe isolation</b>	
• between main and auxiliary circuit	690 V; does not apply for thermistor connection
<b>utilization category acc. to IEC 60947-4-2</b>	AC 53a
<b>shock resistance</b>	15 g / 11 ms, from 6 g / 11 ms with potential contact lifting
<b>vibration resistance</b>	15 mm up to 6 Hz; 2 g up to 500 Hz
<b>reference code acc. to IEC 81346-2</b>	Q
Substance Prohibitance (Date)	15.02.2018 00:00:00
<b>product function</b>	
• ramp-up (soft starting)	Yes
• ramp-down (soft stop)	Yes
• breakaway pulse	Yes
• adjustable current limitation	Yes
• creep speed in both directions of rotation	Yes
• pump ramp down	Yes
• DC braking	Yes
• motor heating	Yes
• slave pointer function	Yes
• trace function	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 Klaxon / Thermoclick
• inside-delta circuit	Yes; Only up to 600 V operating voltage
• auto-RESET	Yes
• manual RESET	Yes
• remote reset	Yes
• communication function	Yes
• operating measured value display	Yes
• event list	Yes
• error logbook	Yes
• via software parameterizable	Yes
• via software configurable	Yes
• screw terminal	Yes
• spring-type terminal	No
• <b>PROFInergy</b>	Yes; in connection with the PROFINET Standard and PROFINET High-

<ul style="list-style-type: none"> <li>• <b>firmware update</b></li> <li>• <b>removable terminal for control circuit</b></li> <li>• voltage ramp</li> <li>• torque control</li> <li>• combined braking</li> <li>• analog output</li> <li>• programmable control inputs/outputs</li> <li>• condition monitoring</li> <li>• automatic parameterisation</li> <li>• application wizards</li> <li>• alternative run-down</li> <li>• emergency operation mode</li> <li>• reversing operation</li> <li>• soft starting at heavy starting conditions</li> </ul>	Feature communication modules Yes Yes Yes Yes Yes Yes; 4 ... 20 mA (default) / 0 ... 10 V Yes Yes Yes Yes Yes Yes Yes Yes
<b>Power Electronics</b>	
<b>operational current</b>	
<ul style="list-style-type: none"> <li>• at 40 °C rated value</li> <li>• at 40 °C rated value minimum</li> <li>• at 50 °C rated value</li> <li>• at 60 °C rated value</li> </ul>	47 A 10 A 41.6 A 36.2 A
<b>operational current at inside-delta circuit</b>	
<ul style="list-style-type: none"> <li>• at 40 °C rated value</li> <li>• at 50 °C rated value</li> <li>• at 60 °C rated value</li> </ul>	81.4 A 72 A 62.7 A
<b>operating voltage</b>	
<ul style="list-style-type: none"> <li>• rated value</li> <li>• at inside-delta circuit rated value</li> </ul>	200 ... 690 V 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 3-phase motors</b>	
<ul style="list-style-type: none"> <li>• at 230 V at 40 °C rated value</li> <li>• at 230 V at inside-delta circuit at 40 °C rated value</li> <li>• at 400 V at 40 °C rated value</li> <li>• at 400 V at inside-delta circuit at 40 °C rated value</li> <li>• at 500 V at 40 °C rated value</li> <li>• at 500 V at inside-delta circuit at 40 °C rated value</li> <li>• at 690 V at 40 °C rated value</li> </ul>	11 kW 22 kW 22 kW 45 kW 30 kW 45 kW 45 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>minimum load [%]</b>	10 %; Relative to set I <sub>e</sub>
<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> <li>• at 50 °C after startup</li> <li>• at 60 °C after startup</li> </ul>	14 W 12 W 11 W
<b>power loss [W] at AC at current limitation 350 %</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>	588 W 504 W 420 W
<b>type of the motor protection</b>	Electronic, tripping in the event of thermal overload of the motor
<b>Control circuit/ Control</b>	
<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
<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>	440 mA
<b>holding current in bypass operation rated value</b>	870 mA
<b>locked-rotor current at close of bypass contact maximum</b>	6.3 A
<b>inrush current peak at application of control supply voltage maximum</b>	7.5 A
<b>duration of inrush current peak at application of control supply voltage</b>	20 ms
<b>design of the overvoltage protection</b>	Varistor
<b>design of short-circuit protection for control circuit</b>	4 A gG fuse (Icu=1 kA), 6 A quick-acting fuse (Icu=1 kA), C1 miniature circuit breaker (Icu= 600 A), C6 miniature circuit breaker (Icu= 300 A); Is not part of scope of supply
<b>Inputs/ Outputs</b>	
<b>number of digital inputs</b> <ul style="list-style-type: none"> <li>• parameterizable</li> </ul>	4
<b>number of inputs for thermistor connection</b>	1; Type A PTC or Klixon / Thermoclick
<ul style="list-style-type: none"> <li>• <b>number of digital outputs</b></li> <li>• number of digital outputs parameterizable</li> <li>• number of digital outputs not parameterizable</li> </ul>	4
<b>digital output version</b>	3 normally-open contacts (NO) / 1 changeover contact (CO)
<b>number of analog outputs</b>	1
<b>switching capacity current of the relay outputs</b> <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
<b>Installation/ mounting/ dimensions</b>	
<b>mounting position</b>	Vertical (can be rotated +/- 90° and tilted forward or backward +/- 22.5°)
<b>fastening method</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> <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
<b>weight without packaging</b>	5.5 kg
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b> <ul style="list-style-type: none"> <li>• for main current circuit</li> </ul>	box terminal

• for control circuit	screw-type terminals
<b>width of connection bar maximum</b>	25 mm
<b>wire length for thermistor connection</b>	
• with conductor cross-section = 0.5 mm <sup>2</sup> maximum	50 m
• with conductor cross-section = 1.5 mm <sup>2</sup> maximum	150 m
• with conductor cross-section = 2.5 mm <sup>2</sup> maximum	250 m
<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 cables 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 cables 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> )
• for main contacts for box terminal using both clamping points finely stranded with core end processing	2x (2.5 ... 35 mm <sup>2</sup> )
• for main contacts for box terminal using both clamping points stranded	2x (6 ... 16 mm <sup>2</sup> ), 2x (10 ... 50 mm <sup>2</sup> )
• for main contacts for box terminal using the back clamping point finely stranded with core end processing	1x (2.5 ... 50 mm <sup>2</sup> )
• for main contacts for box terminal using the back clamping point stranded	1x (10 ... 70 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> )
• at AWG cables for control circuit solid	1x (20 ... 12), 2x (20 ... 14)
<b>wire length</b>	
• between soft starter and motor maximum	800 m
• at the digital inputs at DC maximum	1 000 m
<b>tightening torque</b>	
• for main contacts with screw-type terminals	4.5 ... 6 N·m
• for auxiliary and control contacts with screw-type terminals	0.8 ... 1.2 N·m
<b>tightening torque [lbf·in]</b>	
• for main contacts with screw-type terminals	40 ... 53 lbf·in
• for auxiliary and control contacts with screw-type terminals	7 ... 10.3 lbf·in
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	2 000 m; Derating as of 1000 m, see catalog
<b>ambient temperature</b>	
• during operation	-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above
• during storage and transport	-40 ... +80 °C
<b>environmental category</b>	
• during operation acc. to IEC 60721	3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6
• during storage acc. to IEC 60721	1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4
• during transport acc. to IEC 60721	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
<b>EMC emitted interference</b>	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>• PROFINET high-feature</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> <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 High Faults at 575/600 V at inside-delta circuit 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: 3RV2742, max. 70 A or 3VA51, max. 90 A; I<sub>q</sub> = 5 kA</p> <p>Siemens type: 3VA51, max. 60 A; I<sub>q</sub> max = 65 kA</p> <p>Siemens type: 3VA51, max. 90 A; I<sub>q</sub> = 5 kA</p> <p>Siemens type: 3VA51, max. 60 A; I<sub>q</sub> max = 65 kA</p> <p>Siemens type: 3RV2742, max. 70 A or 3VA51, max. 90 A; I<sub>q</sub> = 5 kA</p> <p>Siemens type: 3VA51, max. 60 A; I<sub>q</sub> max = 65 kA</p> <p>Siemens type: 3VA51, max. 90 A; I<sub>q</sub> = 5 kA</p> <p>Type: Class RK5 / K5, max. 175 A; I<sub>q</sub> = 5 kA</p> <p>Type: Class J / L, max. 175 A; I<sub>q</sub> = 100 kA</p> <p>Type: Class RK5 / K5, max. 175 A; I<sub>q</sub> = 5 kA</p> <p>Type: Class J / L, max. 175 A; I<sub>q</sub> = 100 kA</p>
<b>operating power [hp] for 3-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>	<p>10 hp</p> <p>10 hp</p> <p>30 hp</p> <p>40 hp</p> <p>20 hp</p> <p>25 hp</p> <p>50 hp</p> <p>60 hp</p>
<b>contact rating of auxiliary contacts according to UL</b>	R300-B300
<b>Safety related data</b>	
<b>protection class IP on the front acc. to IEC 60529</b>	IP00; IP20 with cover
<b>touch protection on the front acc. to IEC 60529</b>	finger-safe, for vertical contact from the front with cover
<b>electromagnetic compatibility</b>	acc. to IEC 60947-4-2
<b>ATEX</b>	
<b>certificate of suitability</b>	
<ul style="list-style-type: none"> <li>• ATEX</li> <li>• IECEx</li> <li>• according to ATEX directive 2014/34/EU</li> </ul>	<p>Yes</p> <p>Yes</p> <p>BVS 18 ATEX F 003 X</p>
<b>type of protection according to ATEX directive 2014/34/EU</b>	II (2)G [Ex eb Gb] [Ex db Gb] [Ex pxb Gb], II (2)D [Ex tb Db] [Ex pxb Db], I (M2) [Ex db Mb]
<b>hardware fault tolerance acc. to IEC 61508 relating to ATEX</b>	0
<b>PFDavg with low demand rate acc. to IEC 61508 relating to ATEX</b>	0.008
<b>PFHD with high demand rate acc. to EN 62061 relating</b>	0.0000005 1/h

to ATEX	
Safety Integrity Level (SIL) acc. to IEC 61508 relating to ATEX	SIL1
T1 value for proof test interval or service life acc. to IEC 61508 relating to ATEX	3 y

#### Certificates/ approvals

General Product Approval	EMC	For use in hazardous locations
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For use in hazardous locations	Declaration of Conformity	Test Certificates	Marine / Shipping
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[Type Test Certificates/Test Report](#)



#### 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=3RW5524-1HA06>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5524-1HA06>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5524-1HA06>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5524-1HA06&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5524-1HA06&lang=en)

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

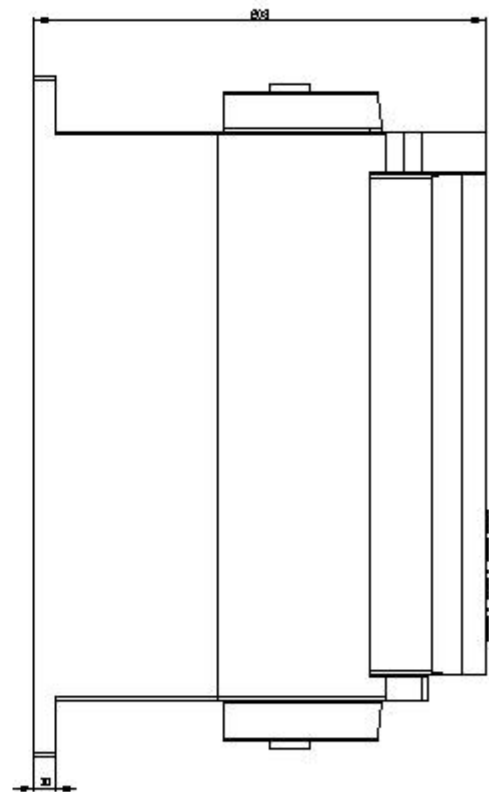
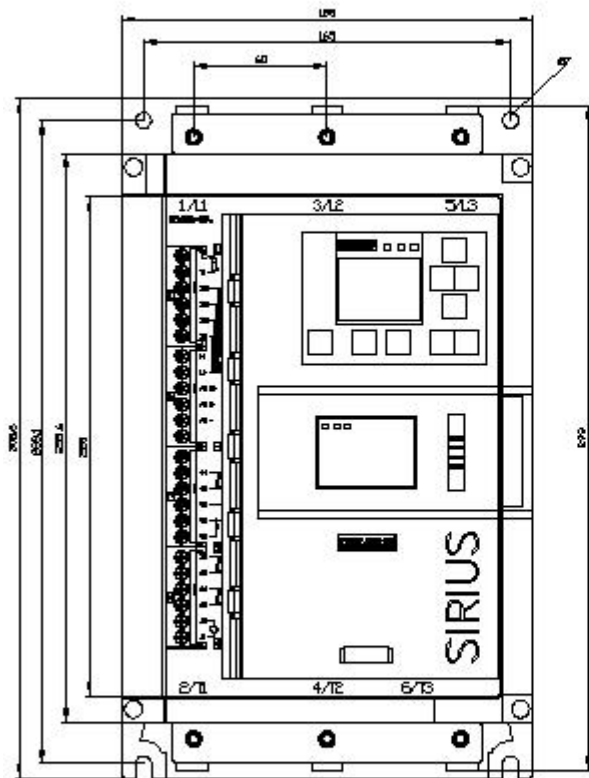
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5524-1HA06/char>

Characteristic: Installation altitude

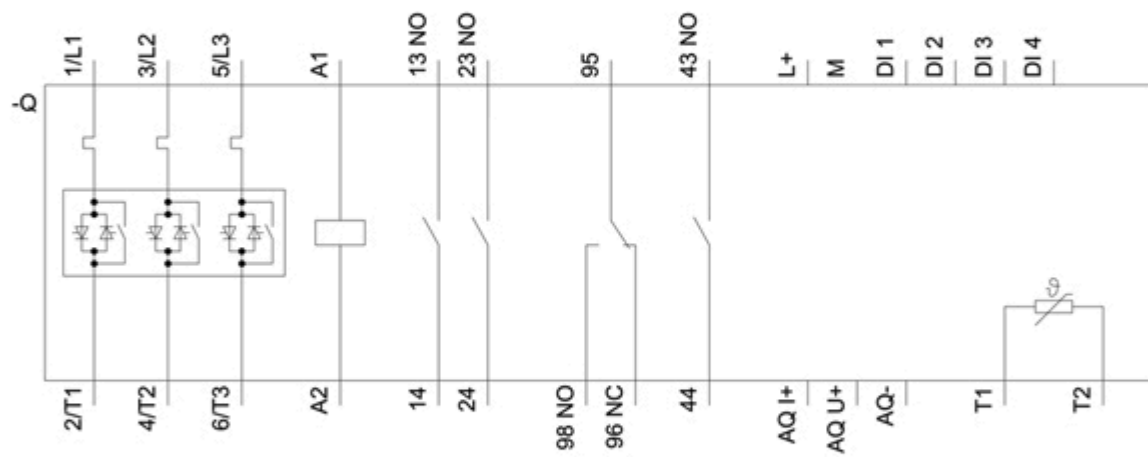
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5524-1HA06&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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







last modified:

3/9/2021