



SIRIUS soft starter 200-480 V 143 A, 110-250 V AC Screw terminals

<b>product brand name</b>	SIRIUS
<b>product category</b>	Hybrid switching devices
<b>product designation</b>	Soft starter
<b>product type designation</b>	3RW55
<b>manufacturer's article number</b>	<ul style="list-style-type: none"> <li>• of high feature HMI module usable <a href="#">3RW5980-0HF00</a></li> <li>• of communication module PROFINET standard usable <a href="#">3RW5980-0CS00</a></li> <li>• of communication module PROFINET high-feature usable <a href="#">3RW5950-0CH00</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="#">3VA2220-7MN32-0AA0; 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="#">3VA2325-7MN32-0AA0; Type of coordination 1, Iq = 65 kA, CLASS 10</a></li> <li>• of the gG fuse usable up to 690 V <a href="#">3NA3244-6; Type of coordination 1, Iq = 65 kA</a></li> <li>• of the gG fuse usable at inside-delta circuit up to 500 V <a href="#">3NA3244-6; Type of coordination 1, Iq = 65 kA</a></li> <li>• of full range R fuse link for semiconductor protection usable up to 690 V <a href="#">3NE1227-0; Type of coordination 2, Iq = 65 kA</a></li> <li>• of back-up R fuse link for semiconductor protection usable up to 690 V <a href="#">3NE3233; Type of coordination 2, Iq = 65 kA</a></li> </ul>
<b>General technical data</b>	
<b>starting voltage [%]</b>	20 ... 100 %
<b>stopping voltage [%]</b>	50 %; non-adjustable
<b>start-up ramp time of soft starter</b>	0 ... 360 s
<b>ramp-down time of soft starter</b>	0 ... 360 s
<b>start torque [%]</b>	10 ... 100 %
<b>stopping torque [%]</b>	10 ... 100 %
<b>torque limitation [%]</b>	20 ... 200 %
<b>current limiting value [%] adjustable</b>	125 ... 800 %
<b>breakaway voltage [%] adjustable</b>	40 ... 100 %
<b>breakaway time adjustable</b>	0 ... 2 s
<b>number of parameter sets</b>	3
<b>accuracy class</b>	5 (based on IEC 61557-12)
<b>certificate of suitability</b>	<ul style="list-style-type: none"> <li>• CE marking Yes</li> <li>• UL approval Yes</li> <li>• CSA approval Yes</li> </ul>

<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>current unbalance limiting value [%]</b>	10 ... 60 %
<b>ground-fault monitoring limiting value [%]</b>	10 ... 95 %
<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>	480 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>	1.15
<b>surge voltage resistance rated value</b>	6 kV
<b>maximum permissible voltage for protective separation</b>	
• between main and auxiliary circuit	480 V; does not apply for thermistor connection
<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>recovery time after overload trip adjustable</b>	60 ... 1 800 s
utilization category according to IEC 60947-4-2	AC 53a
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (day/month/year)</b>	02/15/2018
<b>SVHC substance name</b>	Lead CAS-No. 7439-92-1 Lead monoxide (lead oxide) CAS-No. 1317-36-8 2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one CAS-No. 71868-10-5 Melamine CAS-No. 108-78-1 6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol CAS-No. 119-47-1 Dibutylbis(pentane-2,4-dionato-O,O')tin CAS-No. 22673-19-4 Lead titanium trioxide CAS-No. 12060-00-3
<b>Net Weight</b>	9.675 kg
<b>product function</b>	
• ramp-up (soft starting)	Yes
• soft stopping	Yes
• breakaway pulse	Yes
• adjustable current limitation	Yes
• creep speed in both directions of rotation	Yes
• pump stop	Yes
• DC braking	Yes
• motor heating	Yes
• min/max pointer	Yes
• trace function	Yes
• intrinsic device protection	Yes
• motor overload protection	Yes; Full motor protection (thermistor motor protection and electronic motor overload protection) / When using the motor overload protection according to ATEX, an upstream contactor is required in inside-delta circuit.
• 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
• 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-loaded terminal	No

<ul style="list-style-type: none"> <li>● <b>PROFenergy</b></li> </ul>	Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules
<ul style="list-style-type: none"> <li>● <b>firmware update</b></li> </ul>	Yes
<ul style="list-style-type: none"> <li>● <b>removable terminal for control circuit</b></li> </ul>	Yes
<ul style="list-style-type: none"> <li>● voltage ramp</li> </ul>	Yes
<ul style="list-style-type: none"> <li>● torque control</li> </ul>	Yes
<ul style="list-style-type: none"> <li>● combined braking</li> </ul>	Yes
<ul style="list-style-type: none"> <li>● analog output</li> </ul>	Yes; 4 ... 20 mA (default) / 0 ... 10 V
<ul style="list-style-type: none"> <li>● programmable control inputs/outputs</li> </ul>	Yes
<ul style="list-style-type: none"> <li>● condition monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>● automatic parameterisation</li> </ul>	Yes
<ul style="list-style-type: none"> <li>● application wizards</li> </ul>	Yes
<ul style="list-style-type: none"> <li>● alternative stopping mode</li> </ul>	Yes
<ul style="list-style-type: none"> <li>● emergency operation mode</li> </ul>	Yes
<ul style="list-style-type: none"> <li>● reversing operation</li> </ul>	Yes
<ul style="list-style-type: none"> <li>● soft starting at heavy starting conditions</li> </ul>	Yes
<b>Power Electronics</b>	
<b>operational current</b>	
<ul style="list-style-type: none"> <li>● at 40 °C rated value</li> </ul>	143 A
<ul style="list-style-type: none"> <li>● at 40 °C rated value minimum</li> </ul>	29 A
<ul style="list-style-type: none"> <li>● at 50 °C rated value</li> </ul>	128 A
<ul style="list-style-type: none"> <li>● at 60 °C rated value</li> </ul>	118 A
<b>operational current at inside-delta circuit</b>	
<ul style="list-style-type: none"> <li>● at 40 °C rated value</li> </ul>	248 A
<ul style="list-style-type: none"> <li>● at 50 °C rated value</li> </ul>	222 A
<ul style="list-style-type: none"> <li>● at 60 °C rated value</li> </ul>	204 A
<b>operating voltage</b>	
<ul style="list-style-type: none"> <li>● rated value</li> </ul>	200 ... 480 V
<ul style="list-style-type: none"> <li>● at inside-delta circuit rated value</li> </ul>	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 3-phase motors</b>	
<ul style="list-style-type: none"> <li>● at 230 V at 40 °C rated value</li> </ul>	37 kW
<ul style="list-style-type: none"> <li>● at 230 V at inside-delta circuit at 40 °C rated value</li> </ul>	75 kW
<ul style="list-style-type: none"> <li>● at 400 V at 40 °C rated value</li> </ul>	75 kW
<ul style="list-style-type: none"> <li>● at 400 V at inside-delta circuit at 40 °C rated value</li> </ul>	132 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 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>	43 W
<ul style="list-style-type: none"> <li>● at 50 °C after startup</li> </ul>	38 W
<ul style="list-style-type: none"> <li>● at 60 °C after startup</li> </ul>	35 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> </ul>	2 115 W
<ul style="list-style-type: none"> <li>● at 50 °C during startup</li> </ul>	1 795 W
<ul style="list-style-type: none"> <li>● at 60 °C during startup</li> </ul>	1 593 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
<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</b>	-15 %

<b>AC at 50 Hz</b>	
<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>	100 mA
<b>holding current in bypass operation rated value</b>	180 mA
<b>inrush current by closing the bypass contacts maximum</b>	0.8 A
inrush current peak at application of control supply voltage maximum	43 A
duration of inrush current peak at application of control supply voltage	1.6 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
<b>Inputs/ Outputs</b>	
<b>number of digital inputs</b>	4
• parameterizable	4
• <b>number of digital outputs</b>	4
• number of digital outputs parameterizable	3
• number of digital outputs not parameterizable	1
<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>	
• at AC-15 at 250 V rated value	3 A
• at DC-13 at 24 V rated value	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
required spacing with side-by-side mounting	
• forwards	10 mm
• backwards	0 mm
• upwards	100 mm
• downwards	75 mm
• at the side	5 mm
<b>weight without packaging</b>	8.5 kg
<b>Connections/ Terminals</b>	
<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>	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 DIN cable lug for main contacts stranded	2x (16 ... 95 mm <sup>2</sup> )
• for DIN cable lug for main contacts finely stranded	2x (25 ... 120 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>	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> </ul>	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>• for AWG cables 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> </ul>	800 m
<ul style="list-style-type: none"> <li>• at the digital inputs at DC maximum</li> </ul>	1 000 m
<b>tightening torque</b>	
<ul style="list-style-type: none"> <li>• for main contacts with screw-type terminals</li> </ul>	10 ... 14 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>	89 ... 124 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>	
installation altitude at height above sea level maximum	5 000 m
<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 according 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 according 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 according to IEC 60721</li> </ul>	2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)
<b>Electromagnetic compatibility</b>	
<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> </ul>	Yes
<ul style="list-style-type: none"> <li>• PROFINET high-feature</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• EtherNet/IP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Modbus RTU</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Modbus TCP</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• PROFIBUS</li> </ul>	Yes
<b>UL/CSA ratings</b>	
<b>manufacturer's article number</b>	
<ul style="list-style-type: none"> <li>• of circuit breaker usable for Standard Faults <ul style="list-style-type: none"> <li>— at 460/480 V according to UL</li> <li>— 60/480 V according to UL</li> <li>— at 460/480 V at inside-delta circuit according to UL</li> <li>— 60/480 V at inside-delta circuit according to UL</li> <li>— at 575/600 V according to UL</li> <li>— 75/600 V at inside-delta circuit according to UL</li> <li>— at 575/600 V at inside-delta circuit according to UL</li> </ul> </li> <li>• of the fuse <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>	Siemens type: 3VA52, max. 250 A; I <sub>q</sub> = 10 kA Siemens type: 3VA52, max. 250 A; I <sub>q</sub> max = 65 kA Siemens type: 3VA52, max. 250 A; I <sub>q</sub> = 10 kA Siemens type: 3VA52, max. 250 A; I <sub>q</sub> max = 65 kA Siemens type: 3VA52, max. 250 A; I <sub>q</sub> = 10 kA Siemens type: 3VA52, max. 250 A; I <sub>q</sub> max = 65 kA Siemens type: 3VA52, max. 250 A; I <sub>q</sub> = 10 kA Type: Class RK5 / K5, max. 350 A; I <sub>q</sub> = 10 kA Type: Class J / L, max. 350 A; I <sub>q</sub> = 100 kA Type: Class RK5 / K5, max. 350 A; I <sub>q</sub> = 10 kA Type: Class J / L, max. 350 A; I <sub>q</sub> = 100 kA
<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 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> </ul>	40 hp 40 hp 100 hp 75 hp 75 hp 150 hp

contact rating of auxiliary contacts according to UL	R300-B300
Electrical Safety	
protection class IP on the front according to IEC 60529	IP00; IP20 with cover
touch protection on the front according to IEC 60529	finger-safe, for vertical contact from the front with cover

### ATEX

Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL 1
PFHD with high demand rate according to IEC 61508 relating to ATEX	5E-7 1/h
PFDAvg with low demand rate according to IEC 61508 relating to ATEX	0.008
hardware fault tolerance according to IEC 61508 relating to ATEX	0
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 a
certificate of suitability	
• ATEX	Yes
• IECEx	Yes
• according to ATEX directive 2014/34/EU	BVS 18 ATEX F 003 X
type of protection according to ATEX directive 2014/34/EU	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]

### Approvals Certificates

Environmental Product Declaration	
• global warming potential [CO2 eq] / during manufacturing	92.599 kg
• global warming potential [CO2 eq] / during sales	2.37 kg
• global warming potential [CO2 eq] / during operation	324 kg
• global warming potential [CO2 eq] / after end of life	-19.4 kg
• global warming potential [CO2 eq] / total	399 kg

Environment	General Product Approval
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[Environmental Confirmations](#)



General Product Approval	EMV	For use in hazardous locations
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Test Certificates	Maritime application
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[Type Test Certificates/Test Report](#)



### other

[Confirmation](#)

[Confirmation](#)



### Further information

Information on the packaging  
<https://support.industry.siemens.com/cs/ww/en/view/109813875>

Information for data generation and storage  
<https://support.industry.siemens.com/cs/ww/en/view/109995012>

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=3RW5535-6HA14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5535-6HA14>

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

[https://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5535-6HA14&lang=en](https://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5535-6HA14&lang=en)

Cax online generator

<https://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5535-6HA14>

Characteristic curves

[https://curves.simaris.siemens.com/curves/<mmp\\_prod\\_noCOMP="HAUPT"></mmp\\_prod\\_no>](https://curves.simaris.siemens.com/curves/<mmp_prod_noCOMP=)

Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current

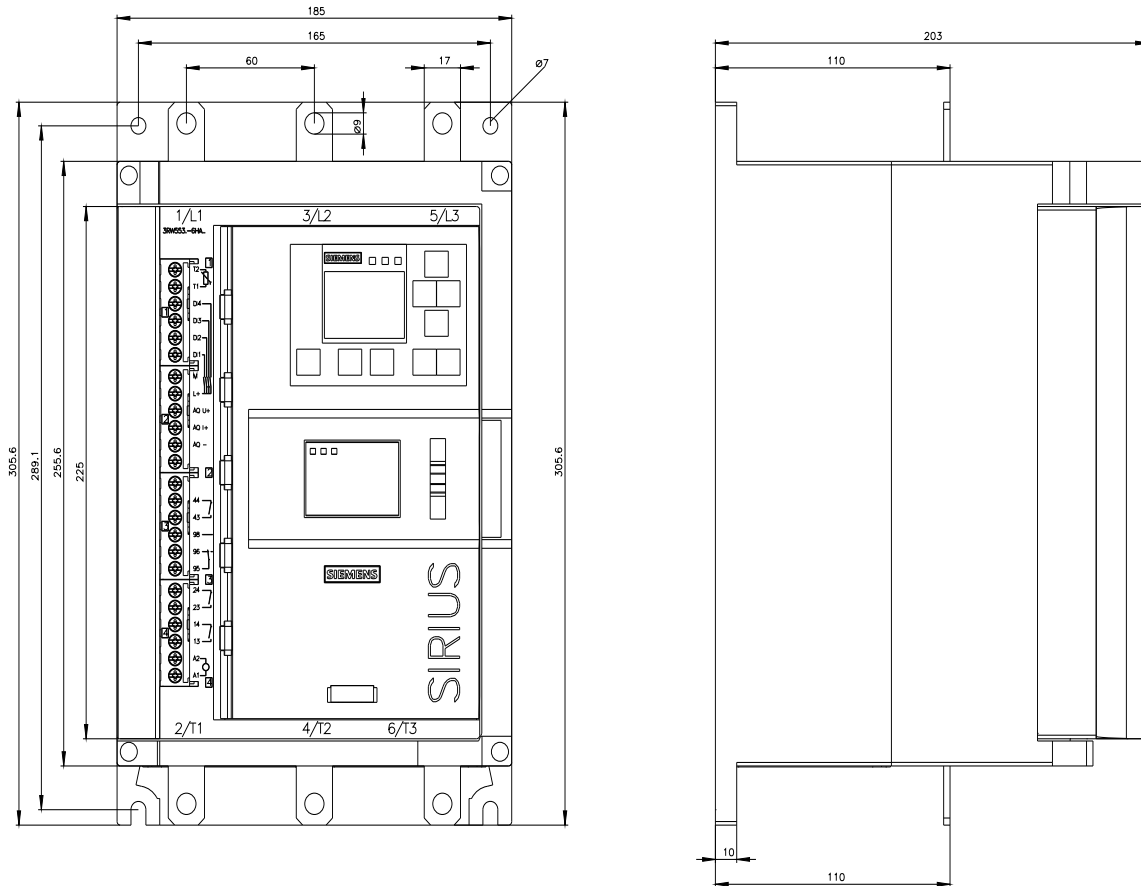
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5535-6HA14/char>

Characteristic: Installation altitude

[https://www.automation.siemens.com/bilddb/index.aspx?gridview=view2&objkey=G\\_NSB0\\_XX\\_01704&showdetail=true&view=Search](https://www.automation.siemens.com/bilddb/index.aspx?gridview=view2&objkey=G_NSB0_XX_01704&showdetail=true&view=Search)

Simulation Tool for Soft Starters (STS)

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





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