



SIRIUS soft starter 200-480 V 77 A, 24 V AC/DC Screw terminals Analog output

**product brand name**

**product category**

**product designation**

**product type designation**

**manufacturer's article number**

- of standard HMI module usable
- of high feature HMI module usable
- of communication module PROFINET standard usable
- of communication module PROFIBUS usable
- of communication module Modbus TCP usable
- of communication module Modbus RTU usable
- of communication module Ethernet/IP
- of circuit breaker usable at 400 V
- of circuit breaker usable at 500 V
- of circuit breaker usable at 400 V at inside-delta circuit
- of circuit breaker usable at 500 V at inside-delta circuit
- 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

SIRIUS

Hybrid switching devices

Soft starter

3RW52

[3RW5980-0HS00](#)

[3RW5980-0HF00](#)

[3RW5980-0CS00](#)

[3RW5980-0CP00](#)

[3RW5980-0CT00](#)

[3RW5980-0CR00](#)

[3RW5980-0CE00](#)

[3VA2110-7MN32-0AA0](#); Type of coordination 1, I<sub>q</sub> = 65 kA, CLASS 10

[3VA2110-7MN32-0AA0](#); Type of coordination 1, I<sub>q</sub> = 20 kA, CLASS 10

[3VA2216-7MN32-0AA0](#); Type of coordination 1, I<sub>q</sub> = 65 kA, CLASS 10

[3VA2216-7MN32-0AA0](#); Type of coordination 1, I<sub>q</sub> = 20 kA, CLASS 10

[3NA3132-6](#); Type of coordination 1, I<sub>q</sub> = 65 kA

[3NA3132-6](#); Type of coordination 1, I<sub>q</sub> = 65 kA

[3NE1224-0](#); Type of coordination 2, I<sub>q</sub> = 65 kA

[3NE8024-1](#); Type of coordination 2, I<sub>q</sub> = 65 kA

## General technical data

**starting voltage [%]**

30 ... 100 %

**stopping voltage [%]**

50 %; non-adjustable

**start-up ramp time of soft starter**

0 ... 20 s

**current limiting value [%] adjustable**

130 ... 700 %

**certificate of suitability**

- CE marking
- UL approval
- CSA approval

Yes

Yes

Yes

**product component**

- HMI-High Feature
- is supported HMI-Standard
- is supported HMI-High Feature

No

Yes

Yes

**product feature integrated bypass contact system**

Yes

**number of controlled phases**

3

**trip class**

CLASS 10A (default) / 10E / 20E; acc. to IEC 60947-4-2

**buffering time in the event of power failure**

<ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for control circuit</li> </ul>	100 ms
<b>insulation voltage rated value</b>	100 ms
<b>degree of pollution</b>	600 V
<b>impulse voltage rated value</b>	3, acc. to IEC 60947-4-2
<b>blocking voltage of the thyristor maximum</b>	6 kV
<b>service factor</b>	1 400 V
<b>surge voltage resistance rated value</b>	1
<b>maximum permissible voltage for safe isolation</b>	6 kV
<ul style="list-style-type: none"> <li>• between main and auxiliary circuit</li> </ul>	600 V
<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
utilization category according to IEC 60947-4-2	AC 53a
<b>reference code according to IEC 81346-2</b>	Q
<b>Substance Prohibitance (Date)</b>	02/15/2018
<b>product function</b>	
<ul style="list-style-type: none"> <li>• ramp-up (soft starting)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• ramp-down (soft stop)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Soft Torque</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• adjustable current limitation</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• pump ramp down</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• intrinsic device protection</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• motor overload protection</li> </ul>	Yes; Electronic motor overload protection
<ul style="list-style-type: none"> <li>• evaluation of thermistor motor protection</li> </ul>	No
<ul style="list-style-type: none"> <li>• inside-delta circuit</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• auto-RESET</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• manual RESET</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• remote reset</li> </ul>	Yes; By turning off the control supply voltage
<ul style="list-style-type: none"> <li>• communication function</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• operating measured value display</li> </ul>	Yes; Only in conjunction with special accessories
<ul style="list-style-type: none"> <li>• error logbook</li> </ul>	Yes; Only in conjunction with special accessories
<ul style="list-style-type: none"> <li>• via software parameterizable</li> </ul>	No
<ul style="list-style-type: none"> <li>• via software configurable</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• <b>PROFenergy</b></li> </ul>	Yes; in connection with the PROFINET Standard communication module
<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>• torque control</li> </ul>	No
<ul style="list-style-type: none"> <li>• analog output</li> </ul>	Yes; 4 ... 20 mA (default) / 0 ... 10 V (parameterizable with High Feature HMI)

## Power Electronics

<b>operational current</b>	
<ul style="list-style-type: none"> <li>• at 40 °C rated value</li> </ul>	77 A
<ul style="list-style-type: none"> <li>• at 50 °C rated value</li> </ul>	68 A
<ul style="list-style-type: none"> <li>• at 60 °C rated value</li> </ul>	62 A
<b>operational current at inside-delta circuit</b>	
<ul style="list-style-type: none"> <li>• at 40 °C rated value</li> </ul>	133 A
<ul style="list-style-type: none"> <li>• at 50 °C rated value</li> </ul>	118 A
<ul style="list-style-type: none"> <li>• at 60 °C rated value</li> </ul>	107 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>	22 kW
<ul style="list-style-type: none"> <li>• at 230 V at inside-delta circuit at 40 °C rated value</li> </ul>	37 kW
<ul style="list-style-type: none"> <li>• at 400 V at 40 °C rated value</li> </ul>	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

**Operating frequency 2 rated value****relative negative tolerance of the operating frequency****relative positive tolerance of the operating frequency****adjustable motor current**

- at rotary coding switch on switch position 1
- at rotary coding switch on switch position 2
- at rotary coding switch on switch position 3
- at rotary coding switch on switch position 4
- at rotary coding switch on switch position 5
- at rotary coding switch on switch position 6
- at rotary coding switch on switch position 7
- at rotary coding switch on switch position 8
- at rotary coding switch on switch position 9
- at rotary coding switch on switch position 10
- at rotary coding switch on switch position 11
- at rotary coding switch on switch position 12
- at rotary coding switch on switch position 13
- at rotary coding switch on switch position 14
- at rotary coding switch on switch position 15
- at rotary coding switch on switch position 16
- minimum

**adjustable motor current**

- for inside-delta circuit at rotary coding switch on switch position 1
- for inside-delta circuit at rotary coding switch on switch position 2
- for inside-delta circuit at rotary coding switch on switch position 3
- for inside-delta circuit at rotary coding switch on switch position 4
- for inside-delta circuit at rotary coding switch on switch position 5
- for inside-delta circuit at rotary coding switch on switch position 6
- for inside-delta circuit at rotary coding switch on switch position 7
- for inside-delta circuit at rotary coding switch on switch position 8
- for inside-delta circuit at rotary coding switch on switch position 9
- for inside-delta circuit at rotary coding switch on switch position 10
- for inside-delta circuit at rotary coding switch on switch position 11
- for inside-delta circuit at rotary coding switch on switch position 12
- for inside-delta circuit at rotary coding switch on switch position 13
- for inside-delta circuit at rotary coding switch on switch position 14
- for inside-delta circuit at rotary coding switch on switch position 15
- for inside-delta circuit at rotary coding switch on switch position 16
- at inside-delta circuit minimum

**minimum load [%]****power loss [W] for rated value of the current at AC**

- at 40 °C after startup
- at 50 °C after startup
- at 60 °C after startup

**power loss [W] at AC at current limitation 350 %**

- at 40 °C during startup
- at 50 °C during startup
- at 60 °C during startup

60 Hz

-10 %

10 %

32 A

35 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

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

55.4 A

15 %; Relative to smallest settable I<sub>e</sub>

35 W

32 W

31 W

1 107 W

933 W

826 W

**Control circuit/ Control****type of voltage of the control supply voltage****control supply voltage at AC**

AC/DC

<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>	24 V
<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>	20 %
<b>relative negative tolerance of the control supply voltage frequency</b>	50 ... 60 Hz
<b>relative positive tolerance of the control supply voltage frequency</b>	-10 %
<b>control supply voltage</b>	10 %
<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 bypass operation rated value</b>	380 mA
<b>inrush current peak at application of control supply voltage maximum</b>	3.3 A
<b>duration of inrush current peak at application 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 (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>	1
<b>number of digital outputs</b>	3
<ul style="list-style-type: none"> <li>• not parameterizable</li> </ul>	2
<b>digital output version</b>	2 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>	with vertical mounting surface +/-90° rotatable, with vertical mounting surface +/- 22.5° tiltable to the front and back
<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>	5.6 kg
<b>Connections/ Terminals</b>	
<b>type of electrical connection</b>	
<ul style="list-style-type: none"> <li>• for main current circuit</li> <li>• for control circuit</li> </ul>	box terminal
<b>width of connection bar maximum</b>	screw-type terminals
<b>type of connectable conductor cross-sections</b>	25 mm
<ul style="list-style-type: none"> <li>• for main contacts for box terminal using the front clamping point solid</li> <li>• for main contacts for box terminal using the front clamping point finely stranded with core end processing</li> <li>• for main contacts for box terminal using the front</li> </ul>	1x (2.5 ... 16 mm²)
	1x (2.5 ... 50 mm²)
	1x (10 ... 70 mm²)

<p>clamping point stranded</p> <ul style="list-style-type: none"> <li>• at AWG cables for main contacts for box terminal using the front clamping point</li> <li>• for main contacts for box terminal using the back clamping point solid</li> <li>• at AWG cables for main contacts for box terminal using the back clamping point</li> <li>• for main contacts for box terminal using both clamping points solid</li> <li>• for main contacts for box terminal using both clamping points finely stranded with core end processing</li> <li>• for main contacts for box terminal using both clamping points stranded</li> <li>• for main contacts for box terminal using the back clamping point finely stranded with core end processing</li> <li>• for main contacts for box terminal using the back clamping point stranded</li> </ul> <p><b>type of connectable conductor cross-sections</b></p> <ul style="list-style-type: none"> <li>• for control circuit solid</li> <li>• for control circuit finely stranded with core end processing</li> <li>• at AWG cables for control circuit solid</li> </ul> <p><b>wire length</b></p> <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><b>tightening torque</b></p> <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><b>tightening torque [lbf·in]</b></p> <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>1x (10 ... 2/0)</p> <p>1x (2.5 ... 16 mm<sup>2</sup>)</p> <p>1x (10 ... 2/0)</p> <p>2x (2.5 ... 16 mm<sup>2</sup>)</p> <p>2x (2.5 ... 35 mm<sup>2</sup>)</p> <p>2x (6 ... 16 mm<sup>2</sup>), 2x (10 ... 50 mm<sup>2</sup>)</p> <p>1x (2.5 ... 50 mm<sup>2</sup>)</p> <p>1x (10 ... 70 mm<sup>2</sup>)</p> <p>1x (0.5 ... 4.0 mm<sup>2</sup>), 2x (0.5 ... 2.5 mm<sup>2</sup>)</p> <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> <p>800 m</p> <p>100 m</p> <p>1 000 m</p> <p>4.5 ... 6 N·m</p> <p>0.8 ... 1.2 N·m</p> <p>40 ... 53 lbf·in</p> <p>7 ... 10.3 lbf·in</p>
<b>Ambient conditions</b>	
installation altitude at height above sea level maximum	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 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>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>• 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</li> </ul>	
<ul style="list-style-type: none"> <li>— usable for Standard Faults at 460/480 V according to UL</li> </ul>	Siemens type: 3VA51, max. 125 A; I <sub>q</sub> = 10 kA
<ul style="list-style-type: none"> <li>— usable for High Faults at 460/480 V according to UL</li> </ul>	Siemens type: 3VA51, max. 125 A; I <sub>q</sub> max = 65 kA
<ul style="list-style-type: none"> <li>— usable for Standard Faults at 460/480 V at inside-delta circuit according to UL</li> </ul>	Siemens type: 3VA51, max. 125 A; I <sub>q</sub> = 10 kA
<ul style="list-style-type: none"> <li>— usable for High Faults at 460/480 V at inside-delta circuit according to UL</li> </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
- 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

operating power [hp] for 3-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 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

contact rating of auxiliary contacts according to UL

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

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

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

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

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

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

20 hp

25 hp

50 hp

30 hp

40 hp

75 hp

R300-B300

Safety related data

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

electromagnetic compatibility

in accordance with IEC 60947-4-2

Certificates/ approvals

General Product Approval

EMC



[Confirmation](#)



Declaration of Conformity

Test Certificates

Marine / Shipping



[Type Test Certificates/Test Report](#)



Marine / Shipping

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=3RW5226-1AC04>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5226-1AC04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5226-1AC04>

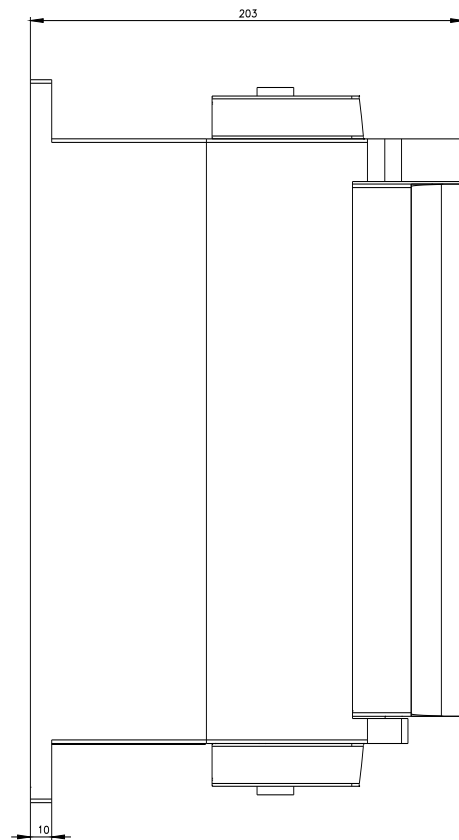
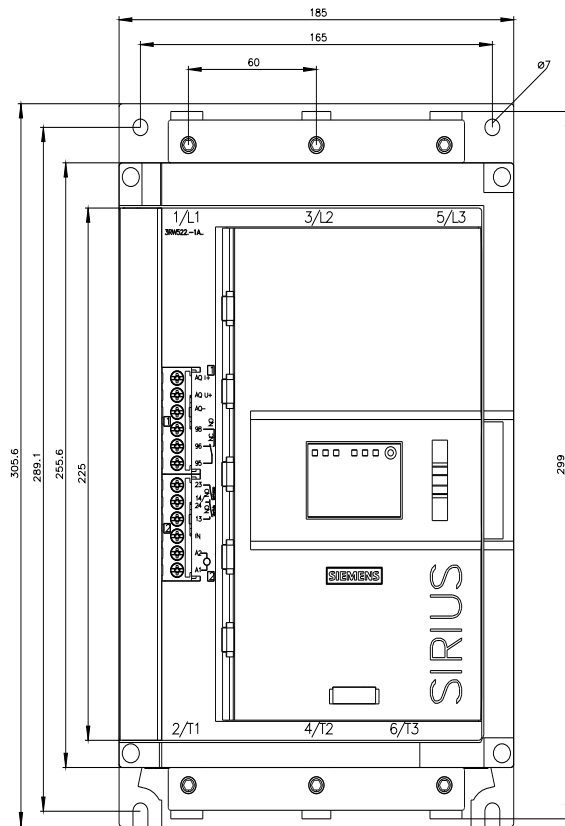
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

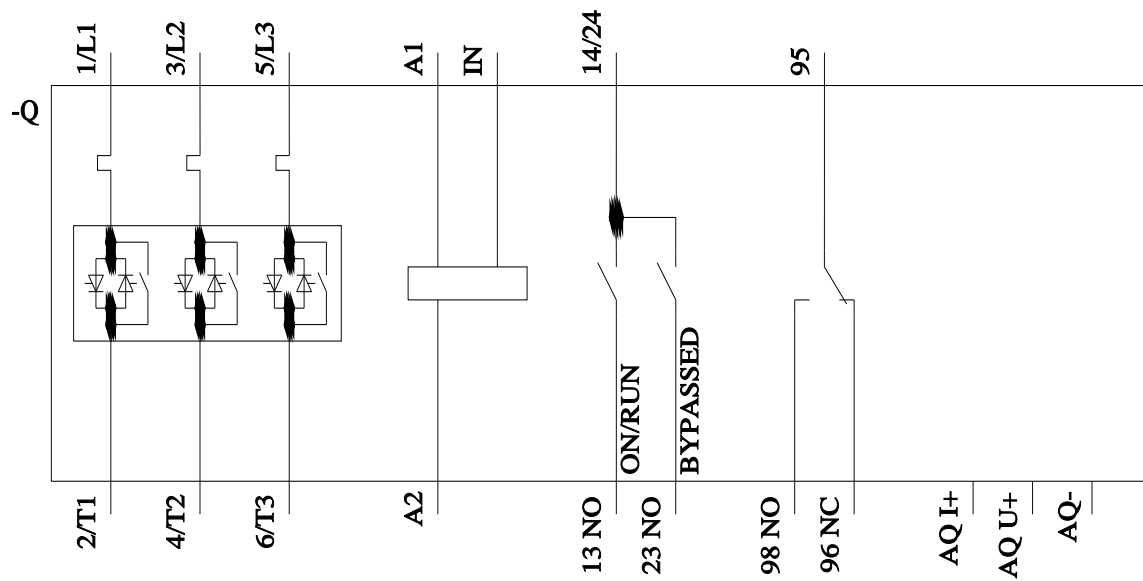
[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5226-1AC04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5226-1AC04&lang=en)

Characteristic: Tripping characteristics, I<sup>2</sup>t, Let-through current  
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5226-1AC04/char>

Characteristic: Installation altitude  
<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5226-1AC04&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)  
<https://support.industry.siemens.com/cs/ww/en/view/101494917>





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