



Figure similar

SIRIUS soft starter 200-480 V 93 A, 24 V AC/DC spring-type terminals Fail-safe

**product brand name**

SIRIUS

**product category**

Hybrid switching devices

**product designation**

Failsafe soft starters

**product type designation**

3RW55

**manufacturer's article number**

- of high feature HMI module usable
- of communication module PROFINET standard usable
- of communication module PROFINET high-feature 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
- of the redundant contactor for applications > SIL 1 according to EN 62061
- of the redundant contactor for applications > SIL 1 at inside-delta circuit according to EN 62061
- of the redundant contactor for applications > SIL 1 according to EN ISO 13849-1
- of the redundant contactor for applications > SIL 1 at inside-delta circuit according to EN ISO 13849-1

[3RW5980-0HF00](#)

[3RW5980-0CS00](#)

[3RW5950-0CH00](#)

[3RW5980-0CP00](#)

[3RW5980-0CT00](#)

[3RW5980-0CR00](#)

[3RW5980-0CE00](#)

[3VA2216-7MN32-0AA0](#); Type of coordination 1,  $I_q = 15$  kA, CLASS 10

[3VA2216-7MN32-0AA0](#); Type of coordination 1,  $I_q = 10$  kA, CLASS 10

[3VA2220-7MN32-0AA0](#); Type of coordination 1,  $I_q = 15$  kA, CLASS 10

[3VA2220-7MN32-0AA0](#); Type of coordination 1,  $I_q = 10$  kA, CLASS 10

[3NA3136-6](#); Type of coordination 1,  $I_q = 65$  kA

[3NA3136-6](#); Type of coordination 1,  $I_q = 65$  kA

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

[3NE3227](#); Type of coordination 2,  $I_q = 65$  kA

[3RT1055](#)

[3RT1055](#)

[3RT1064](#)

[3RT1064](#)

**General technical data**

**starting voltage [%]**

20 ... 100 %

**stopping voltage [%]**

50 %; non-adjustable

**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
accuracy class according to IEC 61557-12	5 %
certificate of suitability	
• CE marking	Yes
• UL approval	Yes
• CSA approval	Yes
product component	
• HMI-High Feature	Yes
• is supported HMI-High Feature	Yes
product feature integrated bypass contact system	Yes
number of controlled phases	3
trip class	CLASS 10A / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2
current unbalance limiting value [%]	10 ... 60 %
ground-fault monitoring limiting value [%]	10 ... 95 %
buffering time in the event of power failure	
• for main current circuit	100 ms
• for control circuit	100 ms
idle time adjustable	0 ... 255 s
insulation voltage rated value	480 V
degree of pollution	3, acc. to IEC 60947-4-2
impulse voltage rated value	6 kV
blocking voltage of the thyristor maximum	1 400 V
service factor	1.15
surge voltage resistance rated value	6 kV
maximum permissible voltage for safe isolation	
• between main and auxiliary circuit	480 V; does not apply for thermistor connection
shock resistance	15 g / 11 ms, from 6 g / 11 ms with potential contact lifting
vibration resistance	15 mm up to 6 Hz; 2 g up to 500 Hz
recovery time after overload trip adjustable	60 ... 1 800 s
utilization category according to IEC 60947-4-2	AC 53a
reference code according to IEC 81346-2	Q
Substance Prohibitance (Date)	11/22/2019
product function	
• 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
• evaluation of thermistor motor 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.
• inside-delta circuit	Yes; Type A PTC or Klixon / Thermoclick
• 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	No
• spring-loaded terminal	Yes
• PROFlenergy	Yes; in connection with the PROFINET Standard and PROFINET High-

● firmware update	Yes
● removable terminal for control circuit	Yes
● voltage ramp	Yes
● torque control	Yes
● combined braking	Yes
● analog output	Yes; 4 ... 20 mA (default) / 0 ... 10 V
● programmable control inputs/outputs	Yes
● condition monitoring	Yes
● automatic parameterisation	Yes
● application wizards	Yes
● alternative run-down	Yes
● emergency operation mode	Yes
● reversing operation	Yes
● soft starting at heavy starting conditions	Yes
<b>Power Electronics</b>	
<b>operational current</b>	
● at 40 °C rated value	93 A
● at 40 °C rated value minimum	19 A
● at 50 °C rated value	82.5 A
● at 60 °C rated value	75.5 A
<b>operational current at inside-delta circuit</b>	
● at 40 °C rated value	161 A
● at 50 °C rated value	143 A
● at 60 °C rated value	131 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 3-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	45 kW
● at 400 V at 40 °C rated value	45 kW
● at 400 V at inside-delta circuit at 40 °C rated value	90 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 $I_e$
<b>power loss [W] for rated value of the current at AC</b>	
● at 40 °C after startup	28 W
● at 50 °C after startup	25 W
● at 60 °C after startup	23 W
<b>power loss [W] at AC at current limitation 350 %</b>	
● at 40 °C during startup	1 258 W
● at 50 °C during startup	1 065 W
● at 60 °C during startup	948 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>	
● at 50 Hz rated value	24 V
● at 60 Hz rated value	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>	
• at DC rated value	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>inrush current by closing the bypass contacts maximum</b>	6.3 A
inrush current peak at application of control supply voltage maximum	7.5 A
duration of inrush current peak at application of control supply voltage	20 ms
<b>design of the overvoltage protection</b>	Varistor
<b>design of short-circuit protection for control circuit</b>	4 A gG fuse ( $I_{cu}=1$ kA), 6 A quick-acting fuse ( $I_{cu}=1$ kA), C1 miniature circuit breaker ( $I_{cu}= 600$ A), C6 miniature circuit breaker ( $I_{cu}= 300$ A); Is not part of scope of supply

#### Inputs/ Outputs

<b>number of digital inputs</b>	4
• with fail-safe	1
• parameterizable	4
<b>number of digital outputs</b>	3
• Number of digital outputs with fail-safe	1
• number of digital outputs parameterizable	2
• number of digital outputs not parameterizable	1
<b>digital output version</b>	2 normally-open contacts (NO) / 1 normally-closed contact (NC) / 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

#### Response times

OFF-delay time with safety-related request when switched off via control inputs maximum	100 ms
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#### Installation/ mounting/ dimensions

<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>	7.15 kg

#### Connections/ Terminals

<b>type of electrical connection</b>	box terminal spring-loaded terminals
• for main current circuit	
• for control circuit	
<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
- for main contacts for box terminal using the front clamping point finely stranded with core end processing
- for main contacts for box terminal using the front clamping point stranded
- at AWG cables for main contacts for box terminal using the front clamping point
- for main contacts for box terminal using the back clamping point solid
- at AWG cables for main contacts for box terminal using the back clamping point
- for main contacts for box terminal using both clamping points solid
- for main contacts for box terminal using both clamping points finely stranded with core end processing
- for main contacts for box terminal using both clamping points stranded
- for main contacts for box terminal using the back clamping point finely stranded with core end processing
- for main contacts for box terminal using the back clamping point stranded

1x (2.5 ... 16 mm <sup>2</sup> )
1x (2.5 ... 50 mm <sup>2</sup> )
1x (10 ... 70 mm <sup>2</sup> )
1x (10 ... 2/0)
1x (2.5 ... 16 mm <sup>2</sup> )
1x (10 ... 2/0)
2x (2.5 ... 16 mm <sup>2</sup> )
2x (2.5 ... 35 mm <sup>2</sup> )
2x (6 ... 16 mm <sup>2</sup> ), 2x (10 ... 50 mm <sup>2</sup> )
1x (2.5 ... 50 mm <sup>2</sup> )
1x (10 ... 70 mm <sup>2</sup> )
2x (0.25 ... 1.5 mm <sup>2</sup> )
2x (0.25 ... 1.5 mm <sup>2</sup> )
2x (24 ... 16)
2x (24 ... 16)
800 m
1 000 m
4.5 ... 6 N·m
0.8 ... 1.2 N·m
40 ... 53 lbf·in
7 ... 10.3 lbf·in

#### type of connectable conductor cross-sections

- for control circuit solid
- for control circuit finely stranded with core end processing
- at AWG cables for control circuit solid
- at AWG cables for control circuit finely stranded with core end processing

#### wire length

- between soft starter and motor maximum
- at the digital inputs at DC maximum

#### tightening torque

- for main contacts with screw-type terminals
- for auxiliary and control contacts with screw-type terminals

#### tightening torque [lbf·in]

- for main contacts with screw-type terminals
- for auxiliary and control contacts with screw-type terminals

#### Ambient conditions

installation altitude at height above sea level maximum

2 000 m; Derating as of 1000 m, see catalog

#### ambient temperature

-25 ... +60 °C; Please observe derating at temperatures of 40 °C or above  
-40 ... +80 °C

#### environmental category

3K6 (no ice formation, only occasional condensation), 3C3 (no salt mist), 3S2 (sand must not get into the devices), 3M6  
1K6 (only occasional condensation), 1C2 (no salt mist), 1S2 (sand must not get inside the devices), 1M4  
2K2, 2C1, 2S1, 2M2 (max. fall height 0.3 m)  
acc. to IEC 60947-4-2: Class A

#### EMC emitted interference

#### Communication/ Protocol

##### communication module is supported

- PROFINET standard
- PROFINET high-feature
- EtherNet/IP
- Modbus RTU
- Modbus TCP
- PROFIBUS

Yes  
Yes  
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
- usable for High Faults at 460/480 V according to UL
- usable for Standard Faults at 460/480 V at inside-delta circuit according to UL
- usable for High Faults at 460/480 V at inside-delta circuit according to UL
- usable for Standard Faults at 575/600 V according to UL
- usable for High Faults at 575/600 V at inside-delta circuit 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

Siemens type: 3VA51, max. 125 A;  $I_q = 10 \text{ kA}$

Siemens type: 3VA51, max. 125 A;  $I_q \text{ max} = 65 \text{ kA}$

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Siemens type: 3VA51, max. 125 A;  $I_q \text{ max} = 65 \text{ kA}$

Siemens type: 3VA51, max. 125 A;  $I_q = 10 \text{ kA}$

Type: Class RK5 / K5, max. 300 A;  $I_q = 10 \text{ kA}$

Type: Class J / L, max. 250 A;  $I_q = 100 \text{ kA}$

Type: Class RK5 / K5, max. 300 A;  $I_q = 10 \text{ kA}$

Type: Class J / L, max. 250 A;  $I_q = 100 \text{ kA}$

25 hp

30 hp

60 hp

40 hp

50 hp

100 hp

R300-B300

**contact rating of auxiliary contacts according to UL**

**Safety related data**

**safety device type according to IEC 61508-2**

**B10d value**

**Safety Integrity Level (SIL)**

- according to IEC 61508

**SIL Claim Limit (subsystem) according to EN 62061**

performance level (PL) according to EN ISO 13849-1

category according to EN ISO 13849-1

**stop category according to EN 60204-1**

**Safe failure fraction (SFF)**

**average diagnostic coverage level (DCavg)**

**diagnostics test interval by internal test function maximum**

PFHD with high demand rate according to EN 62061

**PFDavg with low demand rate according to IEC 61508**

**hardware fault tolerance according to IEC 61508**

T1 value for proof test interval or service life according to IEC 61508

**safe state**

**protection class IP on the front according to IEC 60529**

**touch protection on the front according to IEC 60529**

**electromagnetic compatibility**

Type B

1 000 000

SIL1

SIL 1

c

2

0

60 %

90 %

1 000 s

1E-6 1/h

0.09

0

20 a

Open load circuit

IP00; IP20 with cover

finger-safe, for vertical contact from the front with cover acc. to IEC 60947-4-2

**ATEX**

**certificate of suitability**

- ATEX
- IECEx
- according to ATEX directive 2014/34/EU

Yes

Yes

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]

0

**hardware fault tolerance according to IEC 61508 relating to ATEX**

0.008

relating to ATEX	5E-7 1/h
PFHD with high demand rate according to EN 62061 relating to ATEX	
Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX	SIL1
T1 value for proof test interval or service life according to IEC 61508 relating to ATEX	3 a

## Certificates/ approvals

### General Product Approval



[Confirmation](#)



CCC



TUV



UL



EMC	For use in hazardous locations	Declaration of Conformity	Test Certificates	Marine / Shipping
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IECEx



ATEX



EG-Konf.

[Type Test Certificates/Test Report](#)



Marine / Shipping	other
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LRS



[Confirmation](#)

## Further information

### Information on the packaging

<https://support.industry.siemens.com/cs/ww/en/view/109813875>

### 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=3RW5527-3HF04>

### Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5527-3HF04>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5527-3HF04>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5527-3HF04&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5527-3HF04&lang=en)

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

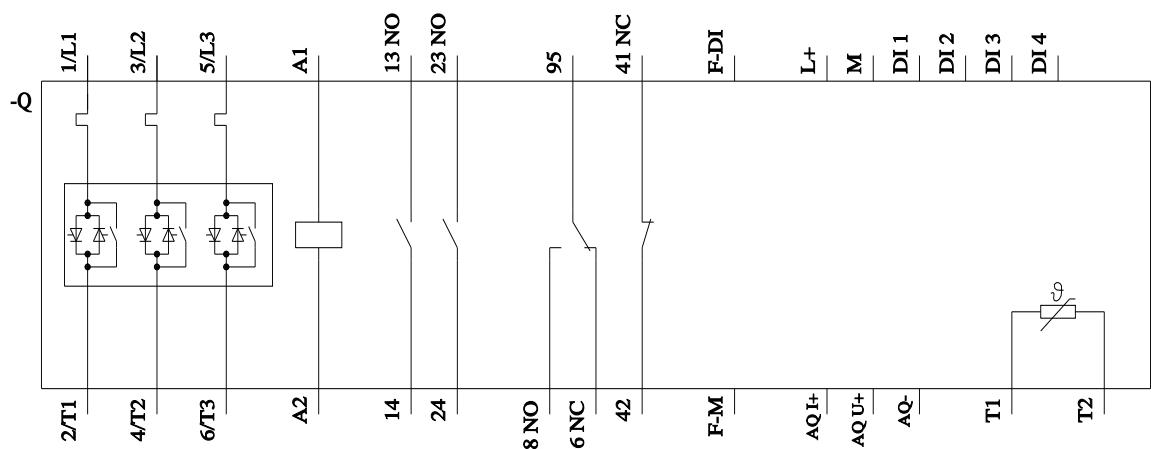
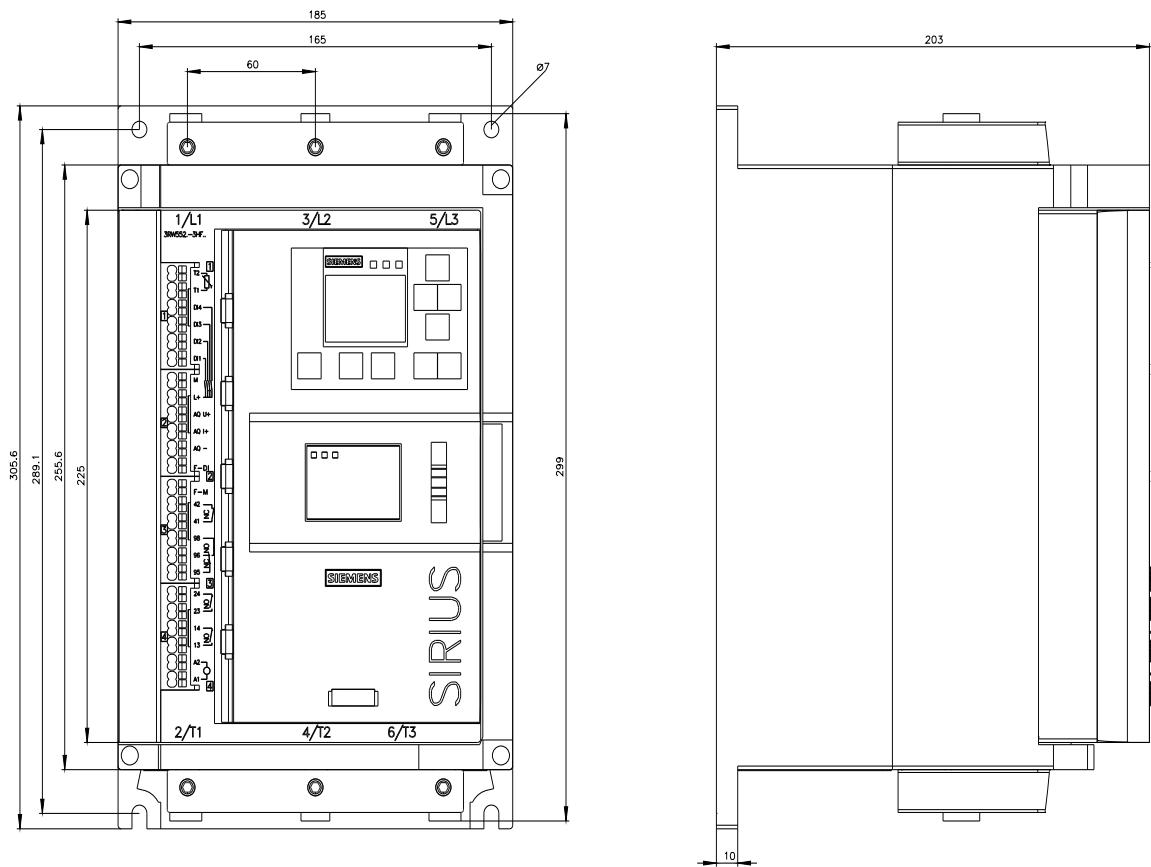
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5527-3HF04/char>

### Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5527-3HF04&objecttype=14&gridview=view1>

### Simulation Tool for Soft Starters (STS)

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





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