



SIRIUS soft starter 200-480 V 13 A, 110-250 V AC Screw terminals

**product brand name**

**product category**

**product designation**

**product type designation**

**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

**SIRIUS**

**Hybrid switching devices**

**Soft starter**

**3RW55**

[3RW5980-0HF00](#)

[3RW5980-0CS00](#)

[3RW5950-0CH00](#)

[3RW5980-0CP00](#)

[3RW5980-0CT00](#)

[3RW5980-0CR00](#)

[3RW5980-0CE00](#)

[3RV2032-4TA10: Type of coordination 1, Iq = 65 kA, CLASS 10](#)

[3RV2032-4TA10: Type of coordination 1, Iq = 18 kA, CLASS 10](#)

[3RV2032-4DA10: Type of coordination 1, Iq = 65 kA, CLASS 10](#)

[3RV2032-4DA10: Type of coordination 1, Iq = 18 kA, CLASS 10](#)

[3NA3820-6: Type of coordination 1, Iq = 65 kA](#)

[3NA3820-6: Type of coordination 1, Iq = 65 kA](#)

[3NE1815-0: Type of coordination 2, Iq = 65 kA](#)

[3NE8017-1: Type of coordination 2, Iq = 65 kA](#)

**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
- UL approval

Yes

Yes

- CSA approval

**product component**

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

**product feature integrated bypass contact system**

**number of controlled phases**

**trip class**

**current unbalance limiting value [%]**

**ground-fault monitoring limiting value [%]**

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

- for main current circuit
- for control circuit

**idle time adjustable**

insulation voltage rated value

**degree of pollution**

**impulse voltage rated value**

**blocking voltage of the thyristor maximum**

**service factor**

**surge voltage resistance rated value**

**maximum permissible voltage for safe isolation**

- between main and auxiliary circuit

**shock resistance**

**vibration resistance**

**recovery time after overload trip adjustable**

utilization category according to IEC 60947-4-2

**reference code according to IEC 81346-2**

**Substance Prohibitance (Date)**

**product function**

- ramp-up (soft starting)
- ramp-down (soft stop)
- breakaway pulse
- adjustable current limitation
- creep speed in both directions of rotation
- pump ramp down
- DC braking
- motor heating
- slave pointer function
- trace function
- intrinsic device protection
- motor overload protection

- evaluation of thermistor motor protection
- inside-delta circuit
- auto-RESET
- manual RESET
- remote reset
- communication function
- operating measured value display
- event list
- error logbook
- via software parameterizable
- via software configurable
- screw terminal
- spring-loaded terminal
- **PROFInergy**

- **firmware update**
- **removable terminal for control circuit**
- voltage ramp
- torque control
- combined braking
- analog output
- programmable control inputs/outputs

Yes

Yes

Yes

Yes

3

CLASS 10A / 10E (default) / 20E / 30E; acc. to IEC 60947-4-2

10 ... 60 %

10 ... 95 %

100 ms

100 ms

0 ... 255 s

480 V

3, acc. to IEC 60947-4-2

6 kV

1 600 V

1.15

6 kV

480 V; does not apply for thermistor connection

15 g / 11 ms, from 6 g / 11 ms with potential contact lifting

15 mm up to 6 Hz; 2 g up to 500 Hz

60 ... 1 800 s

AC 53a

Q

02/15/2018

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

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.

Yes; Type A PTC or Klaxon / Thermoclick

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

No

Yes; in connection with the PROFINET Standard and PROFINET High-Feature communication modules

Yes

Yes

Yes

Yes

Yes

Yes; 4 ... 20 mA (default) / 0 ... 10 V

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 |

## Power Electronics

### operational current

|                                |        |
|--------------------------------|--------|
| • at 40 °C rated value         | 13 A   |
| • at 40 °C rated value minimum | 2.5 A  |
| • at 50 °C rated value         | 11.5 A |
| • at 60 °C rated value         | 10.5 A |

### operational current at inside-delta circuit

|                        |        |
|------------------------|--------|
| • at 40 °C rated value | 22.5 A |
| • at 50 °C rated value | 19.9 A |
| • at 60 °C rated value | 18.2 A |

### operating voltage

|                                       |               |
|---------------------------------------|---------------|
| • rated value                         | 200 ... 480 V |
| • at inside-delta circuit rated value | 200 ... 480 V |

### relative negative tolerance of the operating voltage

-15 %

### relative positive tolerance of the operating voltage

10 %

### relative negative tolerance of the operating voltage at inside-delta circuit

-15 %

### relative positive tolerance of the operating voltage at inside-delta circuit

10 %

### operating power for 3-phase motors

|                                                         |        |
|---------------------------------------------------------|--------|
| • at 230 V at 40 °C rated value                         | 3 kW   |
| • at 230 V at inside-delta circuit at 40 °C rated value | 5.5 kW |
| • at 400 V at 40 °C rated value                         | 5.5 kW |
| • at 400 V at inside-delta circuit at 40 °C rated value | 11 kW  |

### Operating frequency 1 rated value

50 Hz

### Operating frequency 2 rated value

60 Hz

### relative negative tolerance of the operating frequency

-10 %

### relative positive tolerance of the operating frequency

10 %

### minimum load [%]

10 %; Relative to set le

### power loss [W] for rated value of the current at AC

|                          |     |
|--------------------------|-----|
| • at 40 °C after startup | 4 W |
| • at 50 °C after startup | 3 W |
| • at 60 °C after startup | 3 W |

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

|                           |       |
|---------------------------|-------|
| • at 40 °C during startup | 198 W |
| • at 50 °C during startup | 166 W |
| • at 60 °C during startup | 148 W |

### type of the motor protection

Electronic, tripping in the event of thermal overload of the motor

## Control circuit/ Control

### type of voltage of the control supply voltage

AC

### control supply voltage at AC

|            |               |
|------------|---------------|
| • at 50 Hz | 110 ... 250 V |
| • at 60 Hz | 110 ... 250 V |

### relative negative tolerance of the control supply voltage at AC at 50 Hz

-15 %

### relative positive tolerance of the control supply voltage at AC at 50 Hz

10 %

### relative negative tolerance of the control supply voltage at AC at 60 Hz

-15 %

### relative positive tolerance of the control supply voltage at AC at 60 Hz

10 %

### control supply voltage frequency

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

100 mA

### holding current in bypass operation rated value

165 mA

|                                                                                 |                                                                                                                                                                                |
|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>locked-rotor current at close of bypass contact maximum</b>                  | 0.2 A                                                                                                                                                                          |
| <b>inrush current peak at application of control supply voltage maximum</b>     | 43 A                                                                                                                                                                           |
| <b>duration of inrush current peak at application of control supply voltage</b> | 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 (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>                                                 | 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>                                                                   | 275 mm                                                                                                                                                                         |
| <b>width</b>                                                                    | 170 mm                                                                                                                                                                         |
| <b>depth</b>                                                                    | 152 mm                                                                                                                                                                         |
| <b>required spacing with side-by-side mounting</b>                              |                                                                                                                                                                                |
| • forwards                                                                      | 10 mm                                                                                                                                                                          |
| • backwards                                                                     | 0 mm                                                                                                                                                                           |
| • upwards                                                                       | 100 mm                                                                                                                                                                         |
| • downwards                                                                     | 75 mm                                                                                                                                                                          |
| • at the side                                                                   | 5 mm                                                                                                                                                                           |
| <b>weight without packaging</b>                                                 | 2.3 kg                                                                                                                                                                         |
| <b>Connections/ Terminals</b>                                                   |                                                                                                                                                                                |
| <b>type of electrical connection</b>                                            |                                                                                                                                                                                |
| • for main current circuit                                                      | screw-type terminals                                                                                                                                                           |
| • for control circuit                                                           | screw-type terminals                                                                                                                                                           |
| <b>wire length for thermistor connection</b>                                    |                                                                                                                                                                                |
| • with conductor cross-section = 0.5 mm² maximum                                | 50 m                                                                                                                                                                           |
| • with conductor cross-section = 1.5 mm² maximum                                | 150 m                                                                                                                                                                          |
| • with conductor cross-section = 2.5 mm² maximum                                | 250 m                                                                                                                                                                          |
| <b>type of connectable conductor cross-sections</b>                             |                                                                                                                                                                                |
| • for main contacts                                                             |                                                                                                                                                                                |
| — solid                                                                         | 2x (1.0 ... 2.5 mm²), 2x (2.5 ... 10 mm²)                                                                                                                                      |
| — finely stranded with core end processing                                      | 2x (1.0 ... 2.5 mm²), 2x (2.5 ... 6.0 mm²)                                                                                                                                     |
| • at AWG cables for main current circuit solid                                  | 2x (16 ... 12), 2x (14 ... 8)                                                                                                                                                  |
| <b>type of connectable conductor cross-sections</b>                             |                                                                                                                                                                                |
| • for control circuit solid                                                     | 1x (0.5 ... 4.0 mm²), 2x (0.5 ... 2.5 mm²)                                                                                                                                     |
| • for control circuit finely stranded with core end processing                  | 1x (0.5 ... 2.5 mm²), 2x (0.5 ... 1.5 mm²)                                                                                                                                     |
| • 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                                   | 2 ... 2.5 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                                   | 18 ... 22 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

**ambient temperature**

- during operation
- during storage and transport

**environmental category**

- during operation according to IEC 60721
- during storage according to IEC 60721
- during transport according to IEC 60721

**EMC emitted interference**

5 000 m; Derating as of 1000 m, see catalog

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

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, Class B on request

**Communication/ Protocol**

**communication module is supported**

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

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

Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; Iq = 5 kA

Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; Iq max = 65 kA

Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; Iq = 5 kA

Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; Iq max = 65 kA

Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; Iq = 5 kA

Siemens type: 3RV2742, max. 30 A or 3VA51, max. 35 A; Iq max = 65 kA

Siemens type: 3RV2742, max. 40 A or 3VA51, max. 40 A; Iq = 5 kA

Type: Class RK5 / K5, max. 50 A; Iq = 5 kA

Type: Class J / L, max. 50 A; Iq = 100 kA

Type: Class RK5 / K5, max. 50 A; Iq = 5 kA

Type: Class J / L, max. 50 A; Iq = 100 kA

2 hp

3 hp

7.5 hp

5 hp

5 hp

10 hp

R300-B300

**Safety related data**

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

IP20

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

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

**ATEX**

**certificate of suitability**

- ATEX Yes
- IECEx Yes

- according to ATEX directive 2014/34/EU

type of protection according to ATEX directive 2014/34/EU

hardware fault tolerance according to IEC 61508 relating to ATEX

PFDavg with low demand rate according to IEC 61508 relating to ATEX

PFHD with high demand rate according to EN 62061 relating to ATEX

Safety Integrity Level (SIL) according to IEC 61508 relating to ATEX

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

BVS 18 ATEX F 003 X

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

0.008

5E-7 1/h

SIL1

3 y

#### Certificates/ approvals

General Product Approval

EMC



[Confirmation](#)



For use in hazardous locations

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=3RW5513-1HA14>

Cax online generator

<http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RW5513-1HA14>

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

<https://support.industry.siemens.com/cs/ww/en/ps/3RW5513-1HA14>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=3RW5513-1HA14&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RW5513-1HA14&lang=en)

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

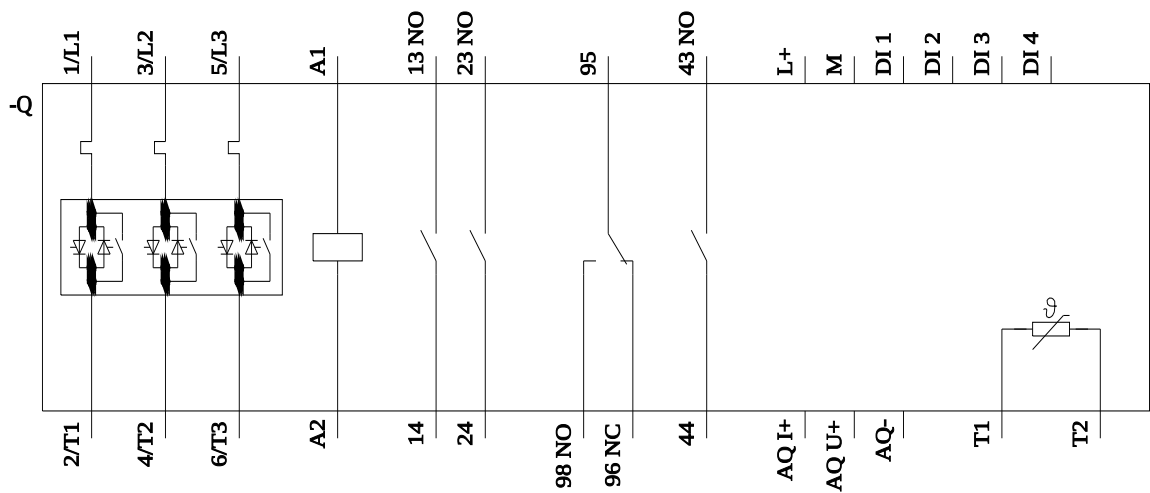
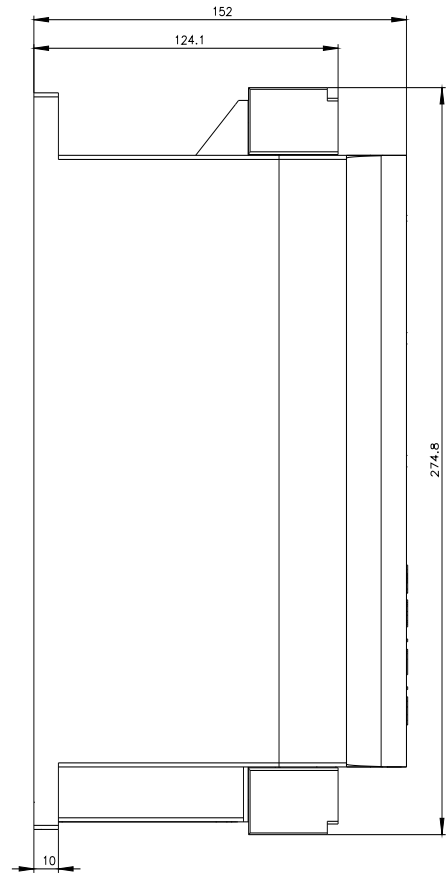
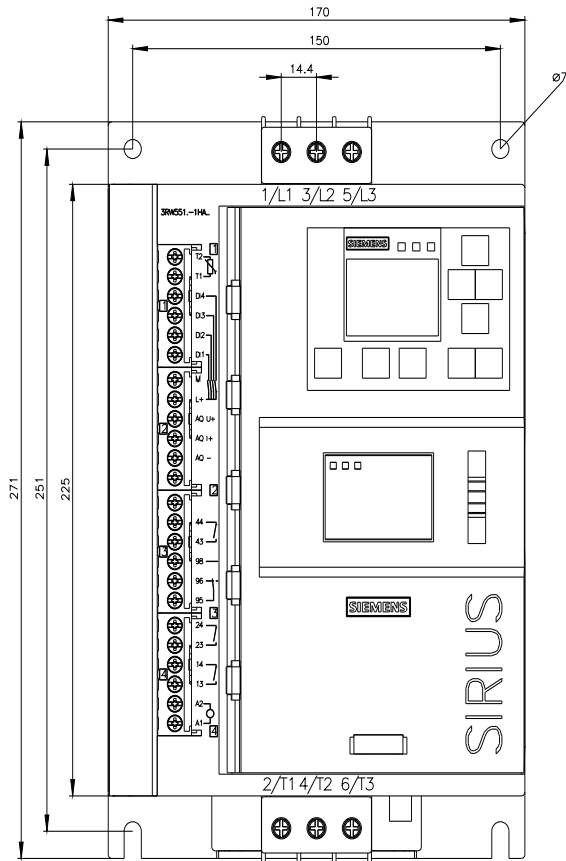
<https://support.industry.siemens.com/cs/ww/en/ps/3RW5513-1HA14/char>

Characteristic: Installation altitude

<http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RW5513-1HA14&objecttype=14&gridview=view1>

Simulation Tool for Soft Starters (STS)

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





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