

# Accessories for Central inverter TRANSFORMER COMPACT STATION 500SC/630SC/800SC/1000SC/1250SC/1600SC

Installation Manual



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# 1 Information on this Manual

#### Validity

This manual covers the following devices:

- Transformer Compact Station 500SC-IT
- Transformer Compact Station 630SC-IT
- Transformer Compact Station 800SC-IT
- Transformer Compact Station 1000SC-IT
- Transformer Compact Station 1250SC-IT
- Transformer Compact Station 1600SC-IT

#### **Target Group**

This manual is intended for skilled workers. Only qualified personnel are allowed to perform the tasks set forth in this manual (see section 2.2 "Target Group Qualification", page 7).

#### **Additional Information**

Additional information is available at www.SMA.de/en:

Title	Document Type
Installation requirements for the Italian station concept	Technical information
Transformer Compact Stations 500SC/630SC/800SC/1000SC/ 1250SC/1600SC	

## Symbols

Symbol	Explanation
	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a situation that can result in property damage if not avoided.
i	Indicates information that is important for a specific topic or objective, but is not safety-relevant.
	Indicates a requirement for meeting a specific goal.
<b>I</b>	Desired result.
×	Undesired result. The undesired event is followed by a solution on how to achieve the desired result.

#### Nomenclature

In this manual, Transformer Compact Stations 500SC-IT/630SC-IT/800SC-IT/1000SC-IT/ 1250SC-IT/1600SC-IT are collectively referred to as the Transformer Compact Station.

In this manual, Sunny Central CP inverters are referred to as Sunny Central or inverters.

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# 2 Security

## 2.1 Intended Use

The Transformer Compact Station is a transformer unit that steps up low voltage to medium voltage. The Transformer Compact Station contains low-voltage switchgear and, depending on the options ordered, may also contain medium-voltage switchgear.

The Transformer Compact Station may be connected to CP inverters in the same power class only.



Figure 1: Principle of a grid-tied PV plant with a Transformer Compact Station

Position	Description
А	PV modules
В	Sunny String-Monitor
С	Sunny Central
D	Transformer Compact Station
E	Power distribution grid

Any use not described as intended use or any unauthorized addition or conversion may pose an operational hazard and will void the warranty and operating license.

## 2.2 Target Group Qualification

Only properly qualified technical personnel may work on the equipment. "Properly qualified" means the personnel have undergone relevant vocational training and are familiar with the contents of this manual.

## 2.3 Safety Instructions

#### **Electric Shock**

High voltages are present in the Transformer Compact Station. The Transformer Compact Station must be de-energized before any work is performed on it. All work must comply with the applicable guidelines for the installation site.

- Disconnecting the device:
  - Low-voltage switchgear
  - Medium-voltage switchgear
  - External voltage supply
- Ensure that the device cannot be reconnected.
- Ensure that no voltage is present in the system.
- Ground and short-circuit.
- Cover or safeguard any adjacent live components.

Operating a damaged Transformer Compact Station may cause serious injury from electric shock.

- Operate the Transformer Compact Station only if it is in safe and good working order.
- Operate the Transformer Compact Station only if there is no visible damage, and regularly inspect it for visible damage. Ensure that all external safety equipment is freely accessible at all times and is regularly checked for proper functioning.

Tampering with the device may cause potentially fatal injuries or property damage due to electric shock.

- Do not operate the Transformer Compact Station while the door is open.
- Always lock the Transformer Compact Station.
- Remove the keys from the door locks.
- Keep the keys in a safe place.

Failure to follow this manual and the operating or safety instructions it contains may lead to severe injury from electric shock.

- Only perform work as described in this manual. Observe all safety instructions.
- Establish all electrical connections according to the circuit diagram.
- Keep the documentation for the Transformer Compact Station and for the installed components with the system documentation. They must be accessible at all times.

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#### Burn Hazard

Some components, such as fuses, can become hot during operation.

• Wear safety gloves while working on the device.

# 3 Product Description

## 3.1 Transformer Compact Station

The Transformer Compact Station is a transformer unit that steps up low voltage to medium voltage. The Transformer Compact Station contains low-voltage switchgear and, depending on the options ordered, may also contain medium-voltage switchgear.

The Transformer Compact Station is connected to CP inverters in the same power class. Inverters convert direct current to alternating current. The alternating current is then supplied to the transformer. The alternating current is transmitted from the transformer to the switchgear and fed into the power distribution grid.



Figure 2: Assembly

Position	Description
А	Communit communication distribution box <sup>*</sup>
В	GSE meter*
С	Low-voltage switchgear
D	Station sub-distribution
E	Disconnector for internal power supply transformer*
F	Internal power supply transformer*
G	Medium-voltage Transformers
Н	Medium-voltage switchgear <sup>*</sup>

\* Optional

## 3.1.1 Low-Voltage Switchgear

The low-voltage switchgear connects the Transformer Compact Station to the inverters. The low-voltage switchgear can be used to disconnect the Transformer Compact Station from the inverters.

## 3.1.2 Internal Power Supply Transformer

The internal power supply transformer supplies power to the Transformer Compact Station and the inverter. Supply voltage is 230 V/400 V (3/N/PE)

## 3.1.3 Medium-voltage switchgear

The medium-voltage switchgear is used to disconnect the Transformer Compact Station from the medium-voltage power grid.

## 3.1.4 Medium-voltage Transformers

The medium-voltage transformer steps up low voltages to medium voltages.

## 3.1.5 Communit

The Communit communication distribution box is used to hold and cable all the communication components used in large PV plants with Sunny Central, Sunny Mini Central, or Sunny Tripower.

## 3.1.6 GSE Meter

This Gestore dei Servizi Elettrici meter is used to meter energy consumption on the low-voltage side of the transformer and to receive Conto Energia feed-in tariffs.

## 3.1.7 Type Label

The type label is used to identify the Transformer Compact Station. The type label is located inside to the right on the low-voltage side. The information listed on the type label includes the following:

- Type designation
- Serial number
- Date of manufacture

# 4 Scope of Delivery

Check the delivery for completeness and any visible external damage. If the shipment is incomplete or damaged, contact SMA Solar Technology AG.



Figure 3: Scope of Delivery

Position	Quantity	Description
А	1	Transformer Compact Station
В	1	Gloves
С	1	Fire extinguisher
D	1	Installation manual, circuit diagram, documentation
E	6	Cable entries
F	1	Operating lever**
G	9/18*	ÖLFLEX® TRAFO cables <sup>**</sup>

\* 9 cables per inverter

\*\* Optional

# 5 Installation Site

## 5.1 Choosing an Installation Site

#### **Ambient conditions**

- The installation site must be accessible at all times.
- The installation site must not be higher than 1 000 m above MSL.
- All minimum clearances must be maintained.
- A safety clearance of 5 000 mm must be maintained from flammable objects.
- All ambient conditions must be met (see section 9 "Technical Data", page 30).

#### **Minimum clearances**

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#### Cable fire hazard.

Differing cable lengths lead to greater warming of the cables.

• All line conductors from the inverter to the Transformer Compact Station must be the same length. However, the cables may not be longer than 15 m between termination points.



Figure 4: Minimum clearances for the Transformer Compact Station

Position	Description
A	Inverter
В	Cabling between the inverter and the Transformer Compact Station
С	Transformer Compact Station

# 6 Transport and Installation

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# Crush hazard: The Transformer Compact Station may tip over if not transported properly.

The Transformer Compact Station's center of gravity is not in the middle of the device.

- The means of transportation must be designed for a 17 t load.
- Do not tip the Transformer Compact Station during transportation.
- Transport the Transformer Compact Station as low to the ground as possible.
- Always use all lifting holes when transporting the device.
- Avoid sudden, jerky movements during transportation.

#### NOTICE

Transporting the device without transport locks on the medium-voltage transformer may damage the medium-voltage transformer.

• Do not remove the transport locks on the medium-voltage transformer.

#### NOTICE

#### Moisture penetration may damage the Transformer Compact Station.

• Transport and store the Transformer Compact Station with its doors closed only.





Figure 5: Lifting holes for lifting spreader on the front and back

Position	Description
А	Lifting holes for spreader

1. Attach the spreader chains to the lifting holes.



- 2. Slowly raise the spreader until the spreader chains are taut.
- 3. Slowly lift the Transformer Compact Station.
- 4. Transport the Transformer Compact Station.
- 5. Set down the Transformer Compact Station in the center of the foundation. Observe the foundation boundaries.



6. Remove the spreader chains from the lifting holes.

# 7 Electrical Connection

## 7.1 Set up Electrical Connection

Proce	dure	See
1	Run the cable from the low-voltage switchgear to the inverter.	Section 7.2.1
2	Run the cable for the inverter power supply and for the connection to the transformer protection unit.	
3	Insert the cable.	Section 7.2.2
4	Connect the cable for the internal power supply to the inverter.	Section 7.3.2
5	Connect the protective conductor.	Section 7.3.3
6	Connect the inverter to the output terminal of the transformer protection unit in the station sub- distribution board.	Section 7.3.4
7	Connect the internal power supply cable to the Transformer Compact Station.	Section 7.3.5
8	Connect the cable for the low-voltage switchgear.	Documentation for the low-voltage switchgear.
9	Connect the cable for the medium-voltage switchgear.	Documentation for the medium- voltage switchgear.
10	Close cable entries.	Documentation for the cable entries.

## 7.2 Laying cables

# 7.2.1 Running Cables between the Low-Voltage Switchgear and the Inverter

- □ The AC cables are 3-phase cables.
- □ Between the low-voltage switchgear and the inverter there are three separate cable runs for the AC cables, e. g. cable channels.
- □ The spacing between the cable runs must be at least twice the diameter of an AC cable.



Figure 6: Arrangement of AC cables with three cables per line conductor (example).

#### **İ** Maintain cable clearances

Run an L1, L2 and L3 line conductor in each cable run. The spacing between the cable pairs must be at least twice the diameter of a cable. This prevents current imbalances.

• Run the cables as described.

## 7.2.2 Inserting the Cables



Figure 7: Position of cable entries

Position	Description
А	Cable entries for cables for the following devices or components:
	Low-voltage switchgear
	Internal power supply for the inverter
	Protective conductor
	Transformer protection
	• If internal power is supplied by an external source: internal power supply for the Transformer Compact Station
В	Cable entries for the medium-voltage switchgear

- Insert the cables into the Transformer Compact Station (see the cable entry manufacturer's documentation on inserting the cables):
  - The cables that connect the medium-voltage switchgear to the point of common connection
  - The cables that connect the low-voltage switchgear to the inverters
  - The cables for the inverters' internal power supply
  - The cables for the transformer protection unit
  - If internal power is supplied by an external source: the cable for the internal power supply of the Transformer Compact Station



## 7.3 Connecting Cables

## 7.3.1 Connection Area of the Station Sub-Distribution Board



Figure 8: Connection area for the station sub-distribution board

Position	Description
А	Connection terminal clamps for internal power supply
В	Connection terminals for the first Sunny Central
С	Connection terminals for the second Sunny Central <sup>*</sup>
D	Connecting bar for the protective conductor
E	Connection terminals for the transformer protection unit for the first Sunny Central

Position	Description
F	Connection terminals for the transformer protection unit for the second Sunny Central <sup>*</sup>

\* Only for Transformer Compact Station 1000SC/1250SC/1600SC

## 7.3.2 Connecting Cables for Inverter's Internal Power Supply

- 1. Connect the inverter's internal power supply.
  - Strip cable jacket.
  - Strip insulation off the wires.
  - Connect the wires.



- 2. If you have two inverters: connect the internal power supply for the second inverter.
  - Strip cable jacket.
  - Strip insulation off the wires.
  - Connect the wires.



## 7.3.3 Connecting Protective Conductors

- 1. Strip the cable insulation.
- 2. Connect the cable.



## 7.3.4 Connecting Inverter to Output Terminal of Transformer Protection Unit in Station Sub-Distribution Board

1. Connect the transformer protection unit of the inverter.

#### **i** Select the correct terminal.

Before connecting the wires, make sure you have selected the correct terminal.

- Strip cable jacket.
- Strip insulation off the wires.
- Connect the wires.



- 2. If you have two inverters: connect the transformer protection unit for the second inverter.
  - Strip cable jacket.
  - Strip insulation off the wires.
  - Connect the wires.



## 7.3.5 Connecting Cables for the Internal Power Supply of the Transformer Compact Station

Depending on the options ordered, the Transformer Compact Station may contain an internal power supply transformer. If it does not contain an internal power supply transformer, the internal power will have to be supplied by an external source.

- 1. Strip cable jacket.
- 2. Strip insulation off the wires.
- 3. Connect the wires.



## 7.4 Set Voltage on Internal Power Supply Transformer

The output voltage of the internal power supply transformer must match the input voltage of the inverter's internal power supply. To do this, adapt the primary and secondary sides of the internal power supply transformer to the inverter.



Figure 9: Position of connecting terminal plates

Position	Description
А	Connecting terminal plate on the secondary side
В	Connecting terminal plate on the primary side

- 1. Set the input voltage on the primary side. This adjusts the output voltage to the inverter's input voltage (see circuit diagram for the Transformer Compact Station).
- 2. Set the output voltage on the secondary side. This adjusts the output voltage to the inverter's input voltage (see circuit diagram for the Transformer Compact Station).

## 8 Commissioning

## 8.1 Commissioning the Transformer Compact Station

#### **WARNING**

#### Danger of fire if the connection is faulty.

- Switch off all switch elements:
  - Switch off the low-voltage switchgear (see the documentation for the low-voltage switchgear).
  - Switch off the medium-voltage switchgear (see the documentation for the medium-voltage switchgear).
  - Remove fuses.
  - Open the miniature circuit-breaker.
  - Open the residual current device.

#### i Warranty and Guarantee Claims

Warranty or guarantee claims can only be made valid if the initial start-up was carried out by SMA Solar Technology AG or if the fully completed and signed "Initial Commissioning Report for Sunny Central Systems" is completed and available at SMA Solar Technology AG. The commissioning report is included with Sunny Central.



Figure 10: Overview of station sub-distribution board:

Position	Description	Explanation
А	Discharger	Overvoltage Protection
В	Main Circuit Breaker	Miniature circuit-breaker for the entire Transformer Compact Station
С	Voltage supply SC1	Miniature circuit-breaker for the first inverter
D	Voltage supply fan motor	Miniature circuit-breaker for the fan
E	Hermetical full protection & stop	Miniature circuit-breaker for the transformer protection unit
F	Communit voltage supply	Miniature circuit-breaker for the Communit communication distribution box
G	Reserve	Reserve miniature circuit-breaker
Н	Voltage supply feed in meter	Miniature circuit-breaker for the GSE meter
I	Voltage supply power outlet	Miniature circuit-breaker with integrated RCD for outlet with earth contact
К	Voltage supply lighting	Miniature circuit-breaker for station lighting
L	Voltage supply SC2	Miniature circuit-breaker for the second inverter

#### Requirements

- □ The medium-voltage switchgear is switched off.
- □ The low-voltage switchgear is switched off.
- □ All terminals have been connected as per the instructions and the circuit diagram (see section 7 "Electrical Connection", page 17).
- 1. Inspect the cabling to the Transformer Compact Station (see section 8.2).
- 2. Make sure the temperature settings on the Hermetic transformer protection unit are correct:
  - Warning temperature: 90°C
  - Actuation temperature: 100°C
- <sup>3.</sup> **i** Only a duly authorized person trained in electrical safety can connect the AC voltage of the medium-voltage transformer.

Have the AC voltage of the medium-voltage transformer connected externally.

 I Only a duly authorized person trained in electrical safety can switch on the medium-voltage switchgear.

Have the medium-voltage switchgear switched on (see the documentation for the medium-voltage switchgear).

- 5. Check the low AC voltage in the low-voltage switchgear (see section 8.3).
- 6. If you have an internal power supply transformer: Connect the internal power supply for the Transformer Compact Station (see section 8.4).
- 7. Turn on the power supply to the Transformer Compact Station with the "main circuit breaker".
- 8. Turn on the station lighting with the "voltage supply lighting" miniature circuit-breaker.
- 9. Energize the earthed outlet with the "voltage supply power outlet" miniature circuit-breaker with the integrated residual current device.
- 10. Turn on the fan with the "voltage supply fan motor" miniature circuit-breaker.
- 11. Turn on the GSE meter with the "voltage supply feed-in meter" miniature circuit-breaker.
- 12. Turn on Communit with the "voltage supply Communit" miniature circuit-breaker.
- 13. Turn on low-voltage switchgear (see the documentation for the low-voltage switchgear).
- 14. Connect the internal power supply for the inverter (see section 8.5).
- 15. Commission the inverter (see the inverter documentation).

## 8.2 Inspecting Cabling to the Transformer Compact Station

- 1. Verify that all connections are connected as described in the circuit diagram.
- 2. Verify that all terminals are firmly in place.
- 3. Check the Transformer Compact Station's equipotential bonding to the installation site. Bond them together if needed.

## 8.3 Examining Low AC Voltage in Low-Voltage Switchgear

- 1. Check the phase sequence of the low voltage. Correct if necessary.
- 2. Measure the low voltage difference between the line conductors and log it in the commissioning report.
  - L<sub>1</sub>-L<sub>2</sub>
  - L<sub>1</sub> L<sub>3</sub>
  - L<sub>2</sub> L<sub>3</sub>
- $\blacksquare$  The low voltage is within ± 5 V of the nominal voltage of the inverter.
- X Does the low voltage vary from the nominal voltage of the inverter by more than  $\pm$  5 V?
  - De-energize the medium-voltage transformer.
  - Have a duly authorized person change the turns ratio of the medium-voltage transformer by adjusting the on-load tap-changer.
  - ☑ The on-load tap-changer will audibly click into place.
  - Proceed to step 2.

## 8.4 Connecting the Internal Power Supply for the Transformer Compact Station

- 1. Insert the fuses in the fuse-switch-disconnector.
- 2. Close the fuse-switch-disconnector.



## 8.5 Connecting the Internal Power Supply for the Inverter

1. Close the "Voltage supply SC 1" miniature circuitbreaker for the first inverter.



2. If two inverters are used, in addition switch on "Voltage supply SC 2".

# 9 Technical Data

## 9.1 Transformer Compact Station 500SC

## Medium-voltage side

Rated power (@ 25°C)	P <sub>ACnom</sub>	550 kVA
AC nominal power (@ 45°C)	P <sub>AC</sub>	500 kVA
AC nominal voltage	V <sub>ACnom</sub>	15 kV / 20 kV
AC voltage range	V <sub>AC</sub>	13.5 kV 16.5 kV / 18 kV 22 kV
Rated grid voltage	V <sub>AC</sub>	20 kV
Rated grid frequency	f <sub>AC</sub>	50 Hz
Nominal current	I <sub>nom</sub>	14.5 A

## Low-Voltage Side

Nominal input voltage	V <sub>AC</sub>	270 V
Nominal input current	I <sub>nom</sub>	1 070 A

## **Dimensions and Weight**

Width x height x depth with medium-voltage switchgear	3 280 mm x 2 550 mm x 2 500 mm
Width x height x depth without medium-voltage switchgear	2 380 mm x 2 550 mm x 2 500 mm
Weight with medium-voltage switchgear	14.2 t
Weight without medium-voltage switchgear	9.8 t
Degree of protection <sup>*</sup>	IP23

\* As per EN 60529

#### **Climatic Conditions**

Operation temperature range	– 20°C +45°C
Relative humidity, non-condensing	15% 95%
Maximum operating altitude above sea level	1 000 m
(MSL)	

## Options

Internal power supply transformer*	6 kVA
Medium-voltage switchgear	None / RE-T / C-C-T
Low-voltage switchgear	1 x LV/HRC switch-disconnector / 1 x circuit breaker
Pre-assembled cable set	5 m / 7.5 m / 10 m / 15 m
Communication distribution box	Communit
Low-voltage meter	GSE meter

\* Additional power classes available on request.

## 9.2 Transformer Compact Station 630SC

## Medium-voltage side

Rated power (@ 25°C)	P <sub>ACnom</sub>	700 kVA
AC nominal power (@ 45°C)	P <sub>AC</sub>	630 kVA
AC nominal voltage	V <sub>ACnom</sub>	15 kV / 20 kV
AC voltage range	V <sub>AC</sub>	13.5 kV 16.5 kV / 18 kV 22 kV
Rated grid voltage	V <sub>AC</sub>	20 kV
Rated grid frequency	f <sub>AC</sub>	50 Hz
Nominal current	I <sub>nom</sub>	18.2 A

## Low-Voltage Side

Nominal input voltage	V <sub>AC</sub>	315 V
Nominal input current	I <sub>nom</sub>	1 155 A

#### **Dimensions and Weight**

Width x height x depth	3 280 mm x 2 550 mm x 2 500 mm
with medium-voltage switchgear	
Width x height x depth	2 380 mm x 2 550 mm x 2 500 mm
without medium-voltage switchgear	
Weight with medium-voltage switchgear	14.5 t
Weight without medium-voltage switchgear	10.1 t
Degree of protection <sup>*</sup>	IP23

\* As per EN 60529

## **Climatic Conditions**

Operation temperature range	– 20°C +45°C
Relative humidity, non-condensing	15% 95%
Maximum operating altitude above sea level	1 000 m
(MSL)	

## Options

Internal power supply transformer*	6 kVA
Medium-voltage switchgear	None / RE-T / C-C-T
Low-voltage switchgear	1 x LV/HRC switch-disconnector /
	1 x circuit breaker
Pre-assembled cable set	5 m / 7.5 m / 10 m / 15 m
Communication distribution box	Communit
Low-voltage meter	GSE meter

\* Additional power classes available on request.

## 9.3 Transformer Compact Station 800SC

## Medium-voltage side

Rated power (@ 25°C)	P <sub>ACnom</sub>	880 kVA
AC nominal power (@ 45°C)	P <sub>AC</sub>	800 kVA
AC nominal voltage	V <sub>ACnom</sub>	15 kV / 20 kV
AC voltage range	V <sub>AC</sub>	13.5 kV 16.5 kV / 18 kV 22 kV
Rated grid voltage	V <sub>AC</sub>	20 kV
Rated grid frequency	f <sub>AC</sub>	50 Hz
Nominal current	I <sub>Nominal</sub>	23.1 A

## Low-Voltage Side

Nominal Voltage	V <sub>AC</sub>	360 V
Nominal voltage reduced by 2.5% <sup>*</sup>	V <sub>AC</sub>	351 V
Nominal voltage reduced by 5.0% <sup>*</sup>	V <sub>AC</sub>	342 V
Nominal voltage reduced by 7.5% <sup>*</sup>	V <sub>AC</sub>	333 V
Nominal voltage reduced by 10.0% <sup>*</sup>	V <sub>AC</sub>	324 V
Nominal voltage reduced by 12.5%*	V <sub>AC</sub>	315 V
Nominal current	I <sub>nom</sub>	1 283 A

\* Can be set with on-load tap-changer in transformer

## **Dimensions and Weight**

Width x height x depth	3 280 mm x 2 550 mm x 2 500 mm
with medium-voltage switchgear	
Width x height x depth	2 380 mm x 2 550 mm x 2 500 mm
without medium-voltage switchgear	
Weight with medium-voltage switchgear	15.0 t
Weight without medium-voltage switchgear	10.6 t
Degree of protection <sup>*</sup>	IP23

\* As per EN 60529

#### **Climatic Conditions**

Operation temperature range	– 20°C +45°C
Relative humidity, non-condensing	15% 95%
Maximum operating altitude above sea level	1 000 m
(MSL)	

## Options

Internal power supply transformer*	6 kVA
Medium-voltage switchgear	None / RE-T / C-C-T
Low-voltage switchgear	1 x LV/HRC switch-disconnector / 1 x circuit breaker
Pre-assembled cable set	5 m / 7.5 m / 10 m / 15 m
Communication distribution box	Communit
Low-voltage meter	GSE meter

\* Additional power classes available on request.

## 9.4 Transformer Compact Station 1000SC

## Medium-voltage side

Rated power (@ 25°C)	P <sub>ACnom</sub>	1 100 kVA
AC nominal power (@ 45°C)	P <sub>AC</sub>	1 000 kVA
AC nominal voltage	V <sub>ACnom</sub>	15 kV / 20 kV
AC voltage range	V <sub>AC</sub>	13.5 kV 16.5 kV / 18 kV 22 kV
Rated grid voltage	V <sub>AC</sub>	20 kV
Rated grid frequency	f <sub>AC</sub>	50 Hz
Nominal current	I <sub>nom</sub>	28.9 A

#### Low-Voltage Side

Nominal input voltage	V <sub>AC</sub>	270 V
Nominal input current	I <sub>nom</sub>	2 x 1 070 A

## **Dimensions and Weight**

Width x height x depth	3 280 mm x 2 550 mm x 2 500 mm
with medium-voltage switchgear	
Width x height x depth	2 380 mm x 2 550 mm x 2 500 mm
without medium-voltage switchgear	
Weight with medium-voltage switchgear	16.3 t
Weight without medium-voltage switchgear	11.9 t
Degree of protection <sup>*</sup>	IP23

\* As per EN 60529

## **Climatic Conditions**

Operation temperature range	– 20°C +45°C
Relative humidity, non-condensing	15% 95%
Maximum operating altitude above sea level (MSL)	1 000 m

## Options

Internal power supply transformer*	6 kVA
Medium-voltage switchgear	None / RE-T / C-C-T
Low-voltage switchgear	2 x LV/HRC switch-disconnectors / 2 x circuit breakers
Pre-assembled cable set	5 m / 7.5 m / 10 m / 15 m
Communication distribution box	Communit
Low-voltage meter	GSE meter

\* Additional power classes available on request.

## 9.5 Transformer Compact Station 1250SC

## Medium-voltage side

Rated power (@ 25°C)	P <sub>ACnom</sub>	1 375 kVA
AC nominal power (@ 45°C)	P <sub>AC</sub>	1 250 kVA
AC nominal voltage	V <sub>ACnom</sub>	15 kV / 20 kV
AC voltage range	V <sub>AC</sub>	13.5 kV 16.5 kV / 18 kV 22 kV
Rated grid voltage	V <sub>AC</sub>	20 kV
Rated grid frequency	f <sub>AC</sub>	50 Hz
Nominal current	I <sub>nom</sub>	36.4 A

## Low-Voltage Side

Nominal input voltage	V <sub>AC</sub>	315 V
Nominal input current	I <sub>nom</sub>	2 x 1 155 A

## **Dimensions and Weight**

Width x height x depth	3 280 mm x 2 550 mm x 2 500 mm
with medium-voltage switchgear	
Width x height x depth	2 380 mm x 2 550 mm x 2 500 mm
without medium-voltage switchgear	
Weight with medium-voltage switchgear	16.8 t
Weight without medium-voltage switchgear	12.4 t
Degree of protection <sup>*</sup>	IP23

\* As per EN 60529

## **Climatic Conditions**

Operation temperature range	– 20°C +45°C
Relative humidity, non-condensing	15% 95%
Maximum operating altitude above sea level	1 000 m
(MSL)	

## Options

Internal power supply transformer*	6 kVA
Medium-voltage switchgear	None / RE-T / C-C-T
Low-voltage switchgear	2 x LV/HRC switch-disconnectors / 2 x circuit breakers
Pre-assembled cable set	5 m / 7.5 m / 10 m / 15 m
Communication distribution box	Communit
Low-voltage meter	GSE meter

\* Additional power classes available on request.

## 9.6 Transformer Compact Station 1600SC

## Medium-voltage side

Rated power (@ 25°C)	P <sub>ACnom</sub>	1 760 kVA
AC nominal power (@ 45°C)	P <sub>AC</sub>	1 600 kVA
AC nominal voltage	V <sub>ACnom</sub>	15 kV / 20 kV
AC voltage range	V <sub>AC</sub>	13.5 kV 16.5 kV / 18 kV 22 kV
Rated grid voltage	V <sub>AC</sub>	20 kV
Rated grid frequency	f <sub>AC</sub>	50 Hz
Nominal current	I <sub>nom</sub>	46.2 A

## Low-Voltage Side

Nominal input voltage	V <sub>AC</sub>	360 V
Nominal voltage reduced by $2.5\%^{*}$	V <sub>AC</sub>	351 V
Nominal voltage reduced by 5.0% <sup>*</sup>	V <sub>AC</sub>	342 V
Nominal voltage reduced by 7.5% <sup>*</sup>	V <sub>AC</sub>	333 V
Nominal voltage reduced by 10.0% <sup>*</sup>	V <sub>AC</sub>	324 V
Nominal voltage reduced by 12.5% <sup>*</sup>	V <sub>AC</sub>	315 V
Nominal input current	I <sub>nom</sub>	2 x 1 283 A

\* Can be set with an on-load tap-changer in the transformer

## **Dimensions and Weight**

Width x height x depth	3 280 mm x 2 550 mm x 2 500 mm
with medium-voltage switchgear	
Width x height x depth	2 380 mm x 2 550 mm x 2 500 mm
without medium-voltage switchgear	
Weight with medium-voltage switchgear	17.4 t
Weight without medium-voltage switchgear	13.0 t
Degree of protection <sup>*</sup>	IP23

\* As per EN 60529

## **Climatic Conditions**

Operation temperature range	– 20°C +45°C
Relative humidity, non-condensing	15% 95%
Maximum operating altitude above sea level	1 000 m
(MSL)	

## Options

Internal power supply transformer*	6 kVA
Medium-voltage switchgear	None / RE-T / C-C-T
Low-voltage switchgear	2 x LV/HRC switch-disconnectors / 2 x circuit breakers
Pre-assembled cable set	5 m / 7.5 m / 10 m / 15 m
Communication distribution box	Communit
Low-voltage meter	GSE meter

\* Additional power classes available on request.

# 10 Contact

If you have technical problems concerning our products, contact the SMA Serviceline. We need the following information in order to provide you with the necessary assistance:

- Serial number of the Transformer Compact Station
- Type designation of the Transformer Compact Station
- Installation site address

#### SMA Solar Technology AG

Sonnenallee 1 34266 Niestetal, Germany www.SMA.de

#### **SMA Serviceline**

 Tel.
 +49 561 9522 299

 Fax
 +49 561 9522 3299

 E-Mail:
 SunnyCentral.Service@SMA.de

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