Communit

Communication Distributor for Large-Scale PV Plants

for **SUNNY CENTRAL, SUNNY MINI CENTRAL** or **SUNNY TRIPOWER**

Contents

The communication distributor Communit from SMA Solar Technology AG contains all the communication components of a large-scale PV plant. The Communit is used in large-scale PV plants with Sunny Central, Sunny Mini Central or Sunny Tripower.

This document comprises the technical data of the Communit that is important for project planning for a PV plant with inverters from SMA Solar Technology AG and the Communit.

1 Product Details

1.1 Using and Mounting the Communit

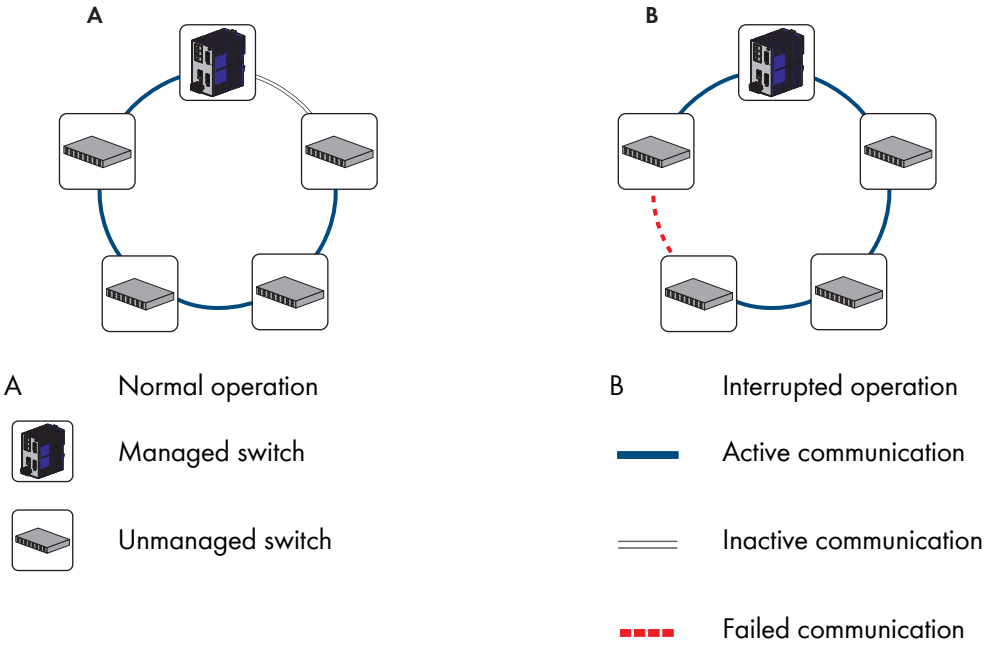
- The Communit is a central communication distributor of a large-scale PV plant that integrates all the communication components. The communication components can be arranged in various ways. As a result, you can adapt the communication distributor to the individual requirements of your large-scale PV plant.
- The Communit uses a double-bit switch cabinet key. For optimal security, you can insert a half-profile cylinder into the Communit.
- You can order the Communit with a free space for fitting your own device. For this purpose, the device must meet the following requirements:
  - There is a currently valid CE Declaration of Conformity for the device.
  - The device has suitable dimensions for the available space (width x height x depth: 273 mm x 120 mm x 60 mm).
  - The device can be mounted on a top-hat rail.
  - The device can be connected to the power supply intended for the customer installation location (AC grid voltage, maximum power consumption 50 W).
  - The device is suitable for the installation location of the Communit. For this purpose, observe the installation height above sea level and the overvoltage category.
- The Communit is suitable for indoor and outdoor use. The Communit is available for base, wall, and mast mounting. Note that grid voltage is required to supply the Communit.

1.2 Secure Power Supply

- Fault-free operation of all communication devices in the Communit is of the greatest importance for the monitoring of large-scale PV plants. The option "Power supply redundant" provides a secure power supply. For this option, a second power supply and a redundancy module are used. Both power supplies can bridge a voltage drop of 150 ms at 230 V due to the storage capacity. This adheres to the requirements of the medium voltage directive. If there is a failure of a power supply, the second power supply automatically supplies the total power to the Communit without interruption.
- Maximum security for unstable grids can be achieved using the option "Power supply redundant, buffered". For this option, two power supplies, a redundancy module, and a buffer module are available for increasing the bridging time. The bridging duration for the option "Power supply redundant, buffered" is a minimum of six seconds.

1.3 Network Components

- For the complex data communication in large-scale PV plants, it is important that data transmission can continue in the event of a network failure. By installing intelligent, managed switches in the Communit, it is possible to use a redundant ring topology. In this way, there is also no risk of a loss of connection or data in the event of a failure.

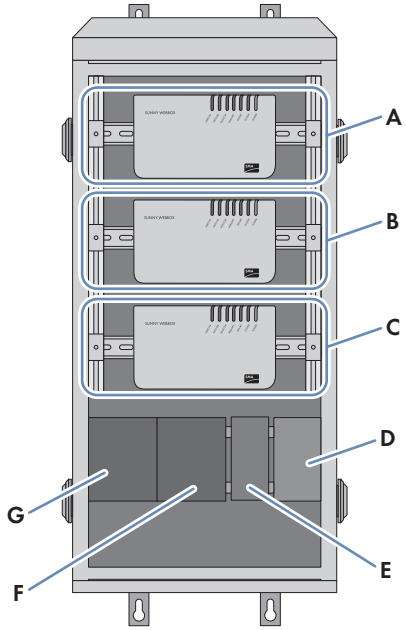


- With the optionally available Sunny WebBox, up to 50 nodes can be detected. Up to three Sunny WebBoxes can be selected. The Sunny Central can be connected to the Sunny WebBox via Ethernet and to the Sunny Mini Central and Sunny Tripower via RS485. You must use at least one SF/UTP cable of the category 5/5e as a network cable.
- If there are large distances between the nodes of the network, you can use optical fibres. For this purpose, you can order switches with optical fiber ports and a splice box as an option. The splice box is equipped with four SC/SC duplex couplings. Ensure that the splice box corresponds to the switches of the selected optical fiber type.
- Using the optional GSM/GPRS/EDGE/UMTS router, you can transfer measurement data to the Sunny Portal even from remote locations where there is no DSL. The required external antenna is contained in the scope of delivery.
- All routers used by SMA Solar Technology AG allow you to set up virtual private networks (VPN). This enables you to dial into the plant remotely in order to carry out remote diagnoses.

2 Option Code

In the option code, you can select the communication components, the enclosure variant, and the type of voltage supply that correspond to the requirements of your PV plant.

The option code contains ten characters describing the order variants of the Communit. You can find the position of the installation locations and the possible variants in the diagram and the table.



Position	Description
A	Installation location 1
B	Installation location 2
C	Installation location 3
G	Network installation location 4
F	Network installation location 5
E	Router
D	Patch panel

Communit	X	X	X	X	X	X	X	X	X	xx	
1 Enclosure	0										Wall mounting
	1										Base mounting
	2										Mast mounting
	3										Mounting in station
2 Installation location 1		0									None
		1									WebBox Ethernet
		2									WebBox RS485
		4									Power Reducer Box
3 Installation location 2			0								None
			1								WebBox Ethernet
			2								WebBox RS485
			3								WebBox + SensorBox*
			4								Power Reducer Box
4 Installation location 3				0							None
				1							WebBox Ethernet
				2							WebBox RS485
				3							WebBox + SensorBox*
				7							Customer installation location
5 Network installation location 4**					0						None
					1						Switch 8 TX
					2						Switch 2 FX-M (SC) 8 TX
					3						Switch 2 FX-S (SC) 8 TX
					B						Switch 2 FX-M (SC) 6 TX MNG
					C						Switch 2 FX-S (SC) 6 TX MNG
					D						Switch 2 FX-M (SC) 14 TX MNG
					F						Switch 2 FX-S (SC) 14 TX MNG
6 Network installation location 5**						0					None
						1					Switch 8 TX
						2					Switch 2 FX-M (SC) 8 TX
						3					Switch 2 FX-S (SC) 8 TX
						B					Switch 2 FX-M (SC) 6 TX MNG
						C					Switch 2 FX-S (SC) 6 TX MNG
						D					Switch 2 FX-M (SC) 14 TX MNG
						F					Switch 2 FX-S (SC) 14 TX MNG
7 Router							0				None
							1				Ethernet
							2				GSM / GPRS/ EDGE / UMTS
8 Power supply								0			Power supply, redundant
								1			Power supply, basic
								2			Power supply, redundant buffered
9 Patch panel									0		No
									4		Optical fibre splice box SC

Communit	X	X	X	X	X	X	X	X	X	xx	
10 Language										**DE**	German
										EN	English
										ES	Spanish
										KR	Korean
										IT	Italian
										FR	French
										CN	Chinese
										PL	Polish
										CZ	Czech
										GR	Greek
										PT	Portuguese
										NL	Dutch
										JP	Japanese

* Options cannot be combined. The Sunny WebBox with the Sunny SensorBox is available in either installation location 2 or installation location 3.

** TX – copper port RJ45
FX-M – multi-mode optical fiber port
FX-S – single-mode optical fiber port
MNG – managed switch

3 Technical Data

General Data on the Enclosure

Wall mounting	Yes*
Base mounting	Yes*
Mast mounting	Yes, for round and square masts*
Material	Glass fiber reinforced polyester
Colour	RAL 7035
Lock cylinder	Double-bit switch cabinet key**

* Optional
** Prepared for customer mounting of a half-profile cylinder

Mast Dimensions for Mast Mounting

Round mast, diameter	75 mm ... 180 mm
Square mast	60 mm ... 180 mm

Mechanical Sizes, Enclosure without Base

Width x height x depth	427 mm x 868 mm x 345 mm
Weight, maximum*	45 kg

* Depending on the order

Mechanical Sizes, Enclosure with Base

Width x height x depth	427 mm x 2,302 mm x 340 mm
Depth	660 mm
Weight, maximum*	45 kg

* Depending on the order

Variant-Dependent Equipment

GSM/GPRS/EDGE/UMTS router*	max. 1
Ethernet router	max. 1
Sunny WebBox	max. 3
Power Reducer Box	max. 2
Sunny SensorBox	max. 1
Ethernet switch	max. 2
Splice box	max. 1

* Including external antenna

Variant-Dependent Interfaces

Communication	GSM / GPRS / EDGE / UMTS / Ethernet / RS485 communication

Grid Connection

Nominal voltage	100 V ... 240 V
Supply voltage	24 V
Frequency	50 Hz / 60 Hz
Nominal current	1.6 A
Maximum net protection pre-fuse	16.0 A
Type of connection*	3-pole X-COM® plug
Number of insulated conductors and cable cross-section	3 x 1.5 mm^2 ... 3 x 4 mm^2

* L, N, and PE connection

Grid Connection of the Optional Customer Devices

Maximum power consumption	50 W
Type of connection	3-pole X-COM® plug
Number of insulated conductors and cable cross-section	3 x 1.5 mm^2

Connection of the Communication Components

Type of connection	Spring terminals
Number of insulated conductors and cable cross-section	2 x 2 x 0.34 mm^2 ... 2 x 2 x 1.5 mm^2

Degree of Protection and Ambient Conditions

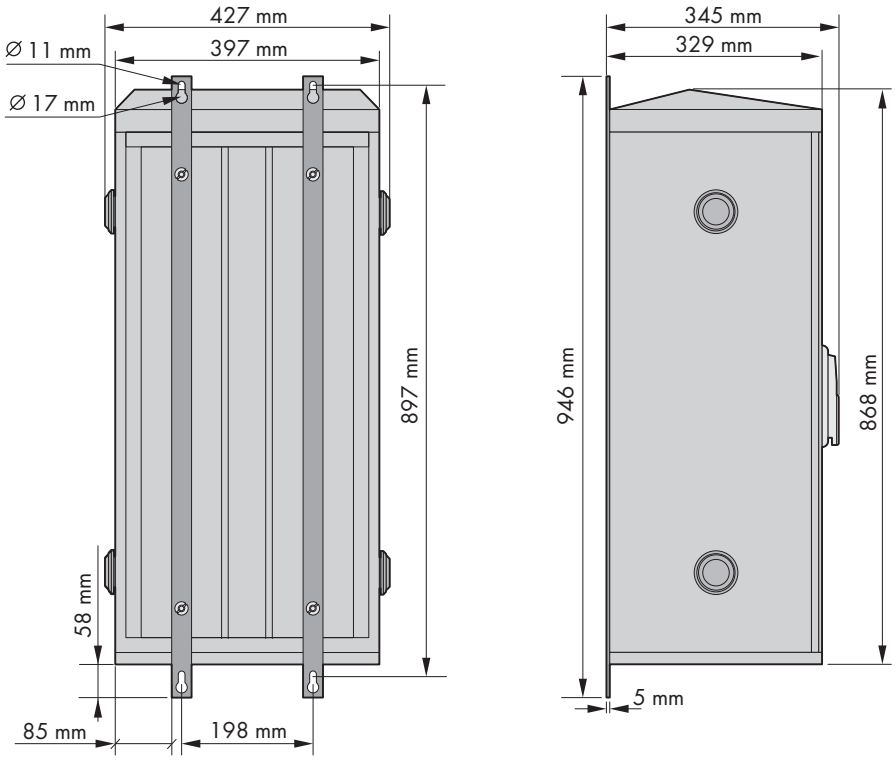
Degree of protection*		IP 54
Permissible ambient temperatures		– 20 °C ... +50 °C

Relative humidity**	U_{air}	5 % ... 95 %
Pollution degree***		2
Maximum altitude above sea level, MSL****		4,000 m

* As per EN 60529
** non-condensing
*** As per DIN EN 50178:1197
**** For installation heights above 2,000 m, the overvoltage category is reduced to class II.

4 Dimensions

4.1 Dimensions of the Communit



4.2 Dimensions of the Communit for Base Mounting