



System Monitoring
SUNNY WEBBOX with *Bluetooth*[®] Wireless Technology
User Manual

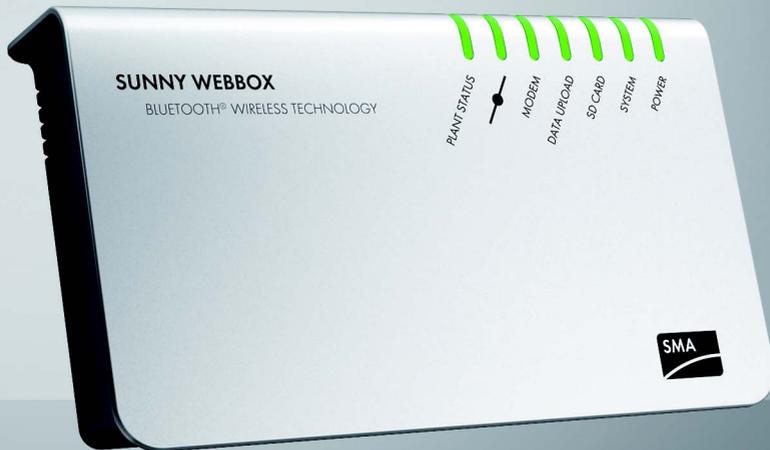


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1 Notes on this Manual

This manual contains instructions for operating the Sunny WebBox. Store this manual where it will be accessible at all times. This manual does not contain any detailed information about the connected devices. Detailed information about the devices connected is provided in the manuals for the devices.

1.1 Validity

This user manual is valid for Sunny WebBox with *Bluetooth* from hardware version A1 and from firmware version 1.1.

1.2 Additional Information

Further information about SMA *Bluetooth* Wireless technology can be found in the download section at www.SMA.de/en.

1.3 Symbols Used

The following types of safety instructions and general information appear in this document as described below:

	DANGER
<p>"DANGER" indicates a hazardous situation which, if not avoided, will result in death or serious injury.</p>	
	WARNING
<p>"WARNING" indicates a hazardous situation which, if not avoided, could result in death or serious injury.</p>	
	CAUTION
<p>"CAUTION" indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.</p>	
	NOTICE
<p>"NOTICE" indicates a situation that can result in property damage if not avoided.</p>	
	Information
<p>Information provides tips that are valuable for the optimum operation of the product.</p>	

1.4 Terminology

In this manual the term photovoltaic plant is shortened to PV plant. Additionally the product name "Sunny WebBox with *Bluetooth*" is shortened to "Sunny WebBox" in the running text.

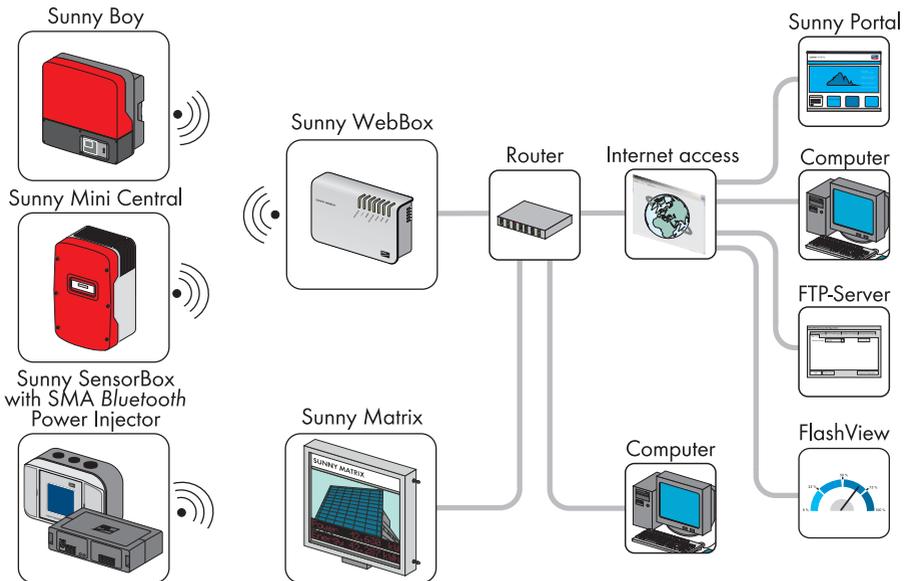
Formatting	Meaning
[Save]	Buttons are displayed in square brackets [].
"Menu1"	Menu items are displayed in quotation marks.
"Menu1 > Menu2"	Menu paths are given in quotation marks. The angle bracket > separates individual menus.
<i>Example:</i>	Examples are represented in italics.

2 The Sunny WebBox with Bluetooth

As the central communication interface, the Sunny WebBox with *Bluetooth* creates the connection between the devices of the the PV plant and its operator. Additionally The Sunny WebBox with *Bluetooth* collects and documents all data from the connected SMA *Bluetooth* devices, thus permitting interruption-free monitoring.

Via the comprehensive functions of the Sunny WebBox with *Bluetooth* you can amongst other things automatically send the collected data of the PV plant to the Sunny Portal internet portal for example or to a freely selectable FTP server for subsequent processing or present your data via the Sunny Matrix large-format display or the Flashview computer software.

For installers the Sunny WebBox with *Bluetooth* is a powerful tool for configuring individual devices or entire device classes of the PV plant and carrying out remote diagnostics. The Sunny WebBox with *Bluetooth* enables early recognition of operational faults and thus helps to optimize the yield of the PV plant.



2.1 Function Overview

The most important functions of the Sunny WebBox with *Bluetooth* Wireless Technology at a glance:

Plant communication

- Wireless control of the PV plant with *Bluetooth* Wireless Technology

External system communication

- Ethernet-Network 10/100 MBit

Integrated web server

- Quick overview of the current status of the PV plant.
- Graphic display of the most important plant data.
- Setting of individual devices or an entire device class
- Setting of SMA Grid Guard parameters
- Simple diagnostics thanks to the display of device events
- Secure data transfer thanks to a new password concept

PV plant data management

- Display plant data from the PV plant via the user interface
- Save plant data from the PV plant on an internal memory
- Save plant data from the PV plant to an optional SD card
- Automatically send system plant from the PV plant to the Sunny Portal
- Call up plant data via the internal FTP server
- Load plant data from the PV plant to an external FTP server via the FTP Push function
- Plant data in CSV or XML format

Service Functions

- Firmware update via the internet
- Time synchronization via the internet
- Restoration of the factory settings

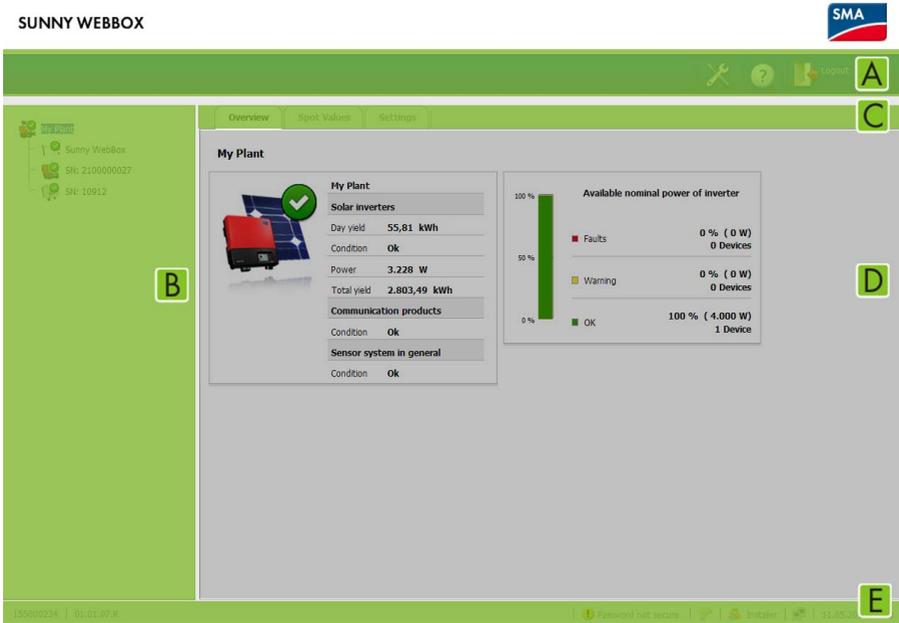
2.2 Information on the operation of the Sunny WebBox

- The Sunny WebBox user interface needs JavaScript in order to be able to correctly perform and display the functions and content of the Sunny WebBox. Activate JavaScript in the Web browser. If necessary, read the help section in your web browser.
- The save procedure for parameters can take up to 30 seconds. Do not separate the Sunny WebBox with *Bluetooth* from the electricity supply during the save procedure. Otherwise data can be lost.

3 Sunny WebBox with *Bluetooth* Basics

3.1 User interface

The user interface permits quick access to all important information about the PV plant and its devices.



Position	Description	Meaning
A	Icon Bar	The icon bar gives you quick access to the main functions of the Sunny WebBox.
B	Plant tree	In the plant tree, all devices in a PV system are represented in a tree structure.
C	Device menu	The device menu enables you to retrieve information and undertake the configuration of devices selected in the plant tree.
D	Contents section	The contents section shows the actual contents. The contents are determined by the device menu.

Position	Description	Meaning
E	Status bar	<p>The status bar displays the current status of the Sunny WebBox and includes the following contents:</p> <ul style="list-style-type: none"> • serial number • software version <p>upon logging on to the Sunny WebBox additionally:</p> <ul style="list-style-type: none"> • information on the password status • SMA Grid Guard (only installers) • current user group • connection status to the PV plant • current date and time

3.1.1 Icon Bar

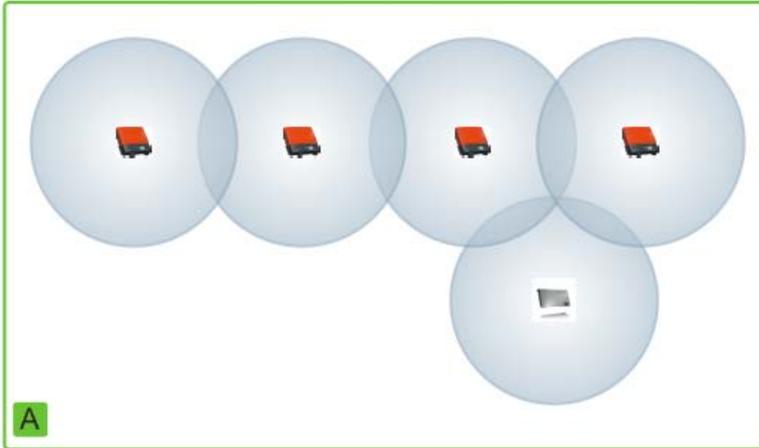
The icon bar gives you quick access to the main functions of the Sunny WebBox.

Symbol	Meaning
	The "Settings" button opens the Sunny WebBox settings. The Sunny WebBox settings can also be adjusted via the plant tree "Sunny WebBox" / "Settings".
	The "Help" button opens the Sunny WebBox help section.
	The user can log out of the Sunny WebBox user interface via the "Logout" button.

3.1.2 Plant tree

From the plant communication perspective, a PV plant is made up of several devices which are connected to each other via the same communication type (e.g. SMA Bluetooth).

View of a Bluetooth system

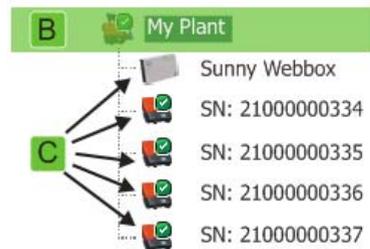


The physical structure of the plant (A) is represented by means of the plant tree in the Sunny WebBox. In addition, all devices in a plant (including the Sunny WebBox) are displayed underneath the plant (B). From the plant communication perspective, the plant is generated by the Sunny WebBox.

The plant tree in the Sunny WebBox

In general, a distinction is made between the Plant View (B) and the Device View (C).

- See Section .5.1 "Plant View" (page 27)
- See Section .5.2 "Device View" (page 29)



3.1.3 Device menu

The device menu shows the settings options and spot values of a given device. The device must first be selected in the plant tree. The menu items change according to the device selected.



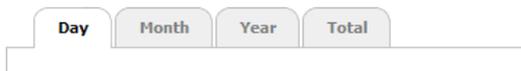
Tabs	Meaning
Overview	The overview page provides information about the devices or systems selected in the plant tree. Here you will find a short overview of the most important device data as well as the actual status display.
Spot Values	The spot values provide current data on the selected device depending on the particular user group.
Settings	Depending on your user group, you can use the settings option to look at and adjust various parameters.
Events	The "Events" page displays the events that have occurred in a device. The events displayed depend on your user group.

3.1.4 Overview

The "Overview" page displays the key data of the entire PV plant or of a particular device.

Device View

When a device is selected in the plant tree, the yield and output values of that device are also displayed in diagrams on the overview page. There are 4 diagrams that can be accessed via the following tabs:



Tabs	Meaning
Day	Displays the device output during the course of a day.
Month	Displays the daily yield of the device over one month.
Year	Displays the monthly yield of the device over one year.
Total	Displays the annual yield of the device over the last 10 years.

Click the mouse on a point of the graph to call up a display. The display shows the precise value at that particular point as well as the time and date.

Scroll down to the next time period using the arrows. Use the calendar symbol to directly select a time period.

Plant View

If a plant is selected in the plant tree, the overview page displays the following data for the entire PV plant:

- Data of all inverters in the PV plant:
 - Day yield: yield achieved so far that day
 - Condition: current operative condition of the plant (OK, fault, warning)
 - Power: output achieved so far that day
 - Total yield: total yield achieved so far
- Data on the communication products in the PV plant:
 - Condition: current operative condition of the communication products (OK, fault, warning)
- Available nominal power of the inverters

3.1.5 Spot Values

The "Spot Values" page displays all values of the device or plant selected in the plant tree. The specific user group determines which values are displayed. All values are collected into groups (parameter groups) and subgroups.

Device View

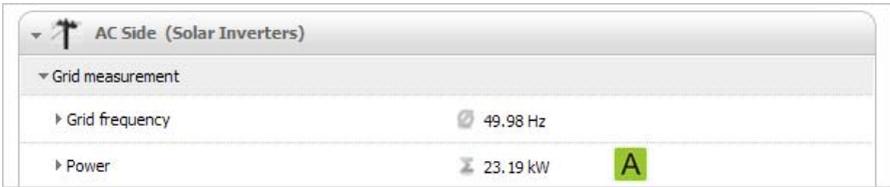
If you have selected a device in the plant tree, the "Spot Values" page displays the values for that particular device.

Plant View

If you have selected the plant in the plant tree, the "Spot Values" page displays the values for complete device classes. When you click on the parameter group, the device classes are displayed separately (e.g., solar inverters and communication products).

Overview	Spot values	Settings						
My Plant » Sunny WebBox								
<div style="border: 1px solid #ccc; padding: 5px;"> <p>▼ Status (Solar Inverters)</p> <p>▼ Operation</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Derating</td> <td>No Derating</td> </tr> <tr> <td>Grid relay</td> <td>Closed</td> </tr> <tr> <td>Condition</td> <td>OK</td> </tr> </table> <p>▶ Event</p> <p>▶ Device status</p> </div>			Derating	No Derating	Grid relay	Closed	Condition	OK
Derating	No Derating							
Grid relay	Closed							
Condition	OK							
<div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p>▼ Status (Communication Products)</p> <p>▼ Operation</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Condition</td> <td>OK</td> </tr> </table> </div>			Condition	OK				
Condition	OK							

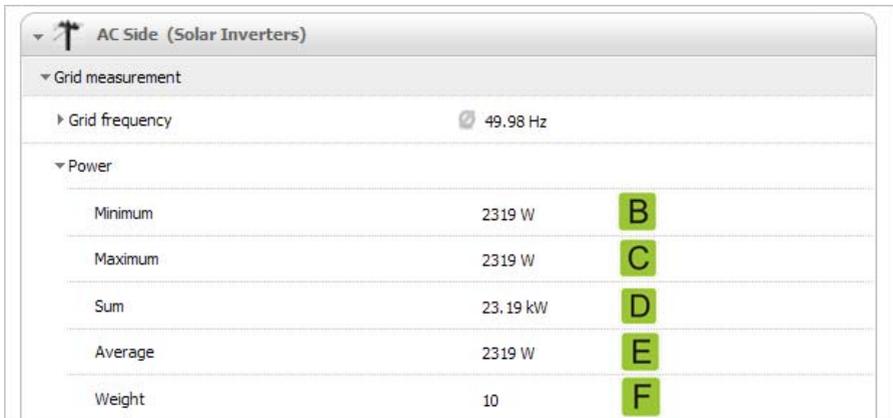
Certain values from the individual devices in a device class are combined (e.g., total power (A)).



Depending on the type of value, a meaningful aggregate for the device class is displayed:

Symbol	Meaning
Σ	Total
⊘	Average value
e.g., 20 ... 50°C	Smallest and greatest value

The aggregate value can be opened to reveal additional information.



Position	Meaning
B	Lowest power value of the 10 devices
C	Greatest power value of the 10 devices
D	Sum of power values of the 10 devices
E	Mean power for the 10 devices.
F	Number of devices in the device class.

3.1.6 Settings

All parameters of the device or plant selected in the plant tree are displayed in the device menu "Settings". For numerical values the permissible parameter limits are displayed in brackets after the value. The display of specific parameters depends on the particular user group. All parameters are summarized in groups (parameter groups) and subgroups.

Device View

When a device is selected in the plant tree, you can modify the parameters of that device on the "Settings" page.

Plant View

If you have selected the plant in the plant tree, you can modify the parameters for the entire device class on the "Settings" page. All devices in the device class are then set to the new parameter value. When you click on the parameter group, the device classes are displayed separately (e.g., solar inverters and communication products).

Overview
Spot Values
Settings

My Plant

▼ Type label (Solar inverters)

▼ Type label

Communication version	1.1.11.9
Device name	SN: 2100000027
Device class	Solar inverters
Device type	SB 4000TL-20
Software package	01.01.00.R

[Edit](#)

▼ Type label (Communication products)

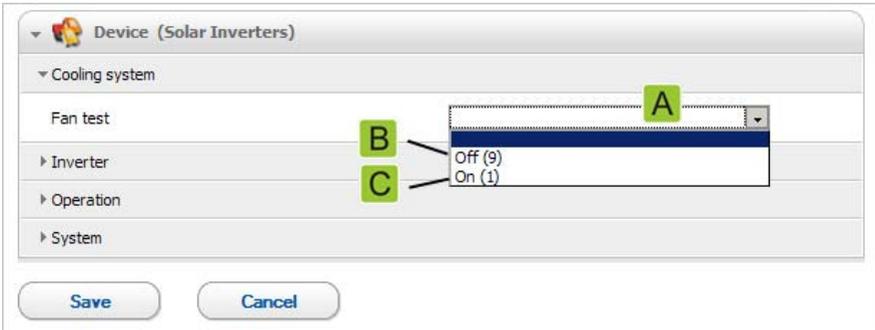
▼ Type label

Communication version	1.0.0.0
Device name	Sunny WebBox
Device class	Communication products
Device type	WebBox-20
Software package	01.01.07.R

[Edit](#)

If different values are set for devices in the same device class, this is indicated in editing mode by an empty field (A).

The different options are shown in selection menus. The number of devices set to each option is shown in brackets. See (B) and (C). By choosing an option and then saving, all devices in this device class are set to this value. If a "*" is displayed, this parameter is not available for all devices.



In text fields the mutual leading characters are displayed. Different characters are supplemented with "...".

3.1.7 Events

The Sunny WebBox can display its own events and the events of individual devices. The Sunny WebBox retrieves the event list directly from the devices.



Position	Meaning
A	Filter for event categories
B	Filter for the time period of the events displayed
C	Priority of event
D	Type of event
E	Event in clear text and event number in brackets
F	Group of parameters involved (parameter group)
G	Date on which the event occurred
H	Time at which the event occurred

Priority of events

The event priorities are as follows:

Symbol	Meaning
	This type of event can only be remedied through intervention by the installer at the device. Please contact your installer with the device serial number and the event number.
	Please contact your installer with the device serial number and the event number.

Types of event

There are 3 different types of event which the Sunny WebBox displays by symbols:

- Information
- Warning
- Failure

Symbols and meaning of event types

Events can have 3 different statuses:

- Incoming: the event is occurring
- In progress: the event has existed for some time and could not yet be automatically remedied.
- Outgoing: the event has come to an end.

Symbol	Meaning
	Failure
	Error incoming
	Error outgoing
	Warning
	Warning in progress
	Warning outgoing
	Information
	Information incoming
	Information outgoing

3.2 Security- and password concept

3.2.1 User groups

As a rule, SMA Solar Technology AG distinguishes between two user groups: **users** and **installers**. Installers can also undertake additional settings on devices after entering the SMA Grid Guard code. The user groups have the following rights:

User group	Right
User	This user group allows the user to read all display-relevant information, such as spot values and parameter settings. Function-sensitive settings can not be modified. The user can freely select the plant password for the "User" user group.
Installer	In addition to the rights available to users, this user group may also set or change plant parameters that affect functionality. In addition, this user group may reset the user's plant password, and may undertake additional settings to devices after entering the SMA Grid Guard code.
Installer with SMA Grid Guard rights	The installer can change SMA Grid Guard parameters for devices.

3.2.2 Plant password

The plant password for the respective user group is the same for all devices in a plant. After logging in with the plant password (**user/installer**), you can simultaneously configure more than one device in your plant. If the device password is not the same as the plant password, for example in the case of a new device in an existing plant, the device is depicted with a lock () in the plant tree.



Unauthorized access to your PV plant

The plant password protects your plant from unauthorized access to the plant devices.

- After initial login to a new plant, the standard password for both user groups (**User/Installer**) should be changed. After changing the password a restart of the Sunny WebBox is necessary.



Plant password at delivery

All devices are delivered with the user password: 0000 and the installer password: 1111.

3.2.3 Access security of the Sunny WebBox with *Bluetooth*

Each user group is protected by a freely selectable password. Passwords are transmitted in encrypted form. After 4 incorrect password entries access to the Sunny WebBox is blocked for 15 minutes. After this time you can log in again.

Protect your PV plant from unauthorized access. Take suitable protective measures - amongst others:

- Set up safe passwords (see section 3.2.4 "Password Quality" (page 21)).
- Change your passwords at regular intervals.
- Use different passwords for different user groups.
- Never leave slips of paper with passwords lying around.
- Install a firewall in Ethernet networks.
- Close unnecessary ports in Ethernet networks.

3.2.4 Password Quality

In order to increase the security of your password, please note the following properties when selecting a password:

- Use passwords with a minimum length of 8 characters. The longer the password, the more secure it is.
- Do not use names or terms from dictionaries (for example: "Dog", "Cat", "Mouse", ...).
- Do not use data related to your person as passwords (for example names of persons or pets, personal- or identification numbers, car license plates, ...).
- Do not repeat names or terms (for example "househouse", "carcar", ...)
- Use a combination of upper and lower case letters, special characters and numbers.
- Do not use number and letter combinations which are consecutive on a keyboard (for example "12345", "qwerty", ...).

3.2.5 SMA Grid Guard

SMA Grid Guard is a security concept for country-specific settings in the inverter, which determine the network behavior within a grid system. These settings (Grid Guard parameters) are pre-installed in the devices and can only be changed with the SMA Grid Guard password. In order to change SMA Grid Guard parameters, you will need to be logged in as an installer and you will need your personal SMA Grid Guard password, which you can obtain from SMA Solar Technology. The application form for the personal access code is located in the download area at www.SMA.de/en, in the "Data sheet" category for each inverter.

3.2.6 Forgotten Password

If you have forgotten your plant password, you can unlock the devices of your PV plant with a Personal Unlocking Key (PUK). For every inverter and every Sunny WebBox there is one PUK for each of the two user groups ("user" and "installer").

Procedure:

1. Request PUKs for inverters and Sunny WebBox.
2. Unlock the inverters with the PUKs via the Sunny Explorer.
3. Unlock the Sunny WebBox with the PUK.

Requesting PUKs for inverters and Sunny WebBox

1. Download the PUK application form from the download area at www.SMA.de/en.
2. Complete the application form and sign it.
3. Send the application form to the SMA Service Line:
 - Send the application form by e-mail (see section 11 "Contact" (page 72)).

or

 - Send the application form by fax (see section 11 "Contact" (page 72)).

or

 - Send the application form by mail (see section 11 "Contact" (page 72)).

- The SMA Service Line will confirm your application and then send you the requested PUKs.

Unlocking an inverter with a PUK



Unlocking multiple inverters with PUKs

Each PUK can only be used for one inverter and one user group.

- If you requested PUKs for multiple inverters, then you have to unlock each inverter using its individually assigned PUK.

1. Log onto the inverter with the PUK using Sunny Explorer (see Sunny Explorer user manual).
1. Choose a new plant password (see Sunny Explorer user manual).

Unlocking a Sunny WebBox with a PUK

1. Start your web browser (e.g., Internet Explorer).
2. Enter the IP address of the Sunny WebBox into the address bar and press Enter.
3. In the "User" field, select the user group that the PUK was assigned to by the SMA Service Line.
4. Enter the PUK in the "Password" field.
5. Change the password of the Sunny WebBox (see section 6.1 "Changing the Sunny WebBox password" (page 33)). Enter the plant password that you chose via the Sunny Explorer.

- The Sunny WebBox will now display the inverters in the plant tree without the padlock icon. You have access rights for all the inverters in the corresponding user group.

3.3 Symbols

Symbols for access rights

The individual devices are depicted with a symbol for the access right in the plant tree. If no symbol is displayed after a device, you have access rights to the device that correspond to the user group which is logged in.



Updating time in the plant tree

In the plant tree, updating the symbol for access rights (SMA Grid Guard symbol and lock symbol) can take up to 2 minutes.

Symbol	Meaning
	You do not have access to the device. The device password differs from the current plant password.
	You have access to parameters which are protected by the SMA Grid Guard password. Parameters which are protected by SMA Grid Guard are also indicated by this symbol.

Device symbols

Device symbols are displayed in the plant tree and on the device's overview page. Devices will have a specific status, which is displayed by a symbol.

Symbol	Meaning
	Plant
	Sunny WebBox
	Inverter
	Unknown inverter
	Unknown device
	Sunny SensorBox with SMA Power Injector with <i>Bluetooth</i>
	SMA <i>Bluetooth</i> Repeater

Group symbols for spot values and settings

Group symbols are used for specific parameter groups.

Symbol	Meaning
	Status General values that describe the status of the device. The status of other components in the device (e.g., modems) are not listed here.
	Type Plate All values that describe the device / the plant.
	Device Values which apply to the device directly and which do not fall into any of the special categories (e.g., DC side, AC side, plant communication, etc.).
	User Rights All values that affect the access protection for the device.
	DC Side Values affecting the DC side of the device (e.g. PV modules).
	AC Side Values affecting the grid side of the device.
	Grid Monitoring Includes parameters that affect the grid and which in part are protected by the personal SMA Grid Guard password.
	Plant and Device Control Includes parameters for devices that must fulfill special requirements for feeding into the medium voltage level. The parameters are protected by the personal SMA Grid Guard password.
	Plant communication All values which define communication between communication devices and the plant.
	Data Recording All values that affect data recording for the device (storage location, storage intervals, storage format).
	Device Components Includes parameters and measured values relating to the components of a device. This group is a kind of "expanded type label". For example, it files the version numbers of the system components.
	Meteorology Includes all measured values of the connected sensors e.g. temperature, irradiation and wind speed.

Other symbols

Symbol	Meaning
	<p>Hour glass</p> <p>The hour glass is displayed when values are being saved in a device.</p>
	<p>Average value</p> <p>The average number refers to an average value.</p>
	<p>Total</p> <p>The total number displays the summed values.</p>
	<p>Maximum</p> <p>Displays the maximum of a value.</p>
	<p>Minimum</p> <p>Displays the minimum of a value.</p>
	<p>Updating</p> <p>This symbol indicates that data is being uploaded from the device.</p>
	<p>Alarm</p> <p>The alarm symbol indicates that values are more than 10 minutes old.</p>
	<p>Calendar function</p> <p>Opens a calendar for selecting a date, a start date, or an end date.</p>

4 Logging into and out of the Sunny WebBox

4.1 Logging into the Sunny WebBox



Unauthorized access to your PV plant

The plant password protects your plant from unauthorized access to the plant devices.

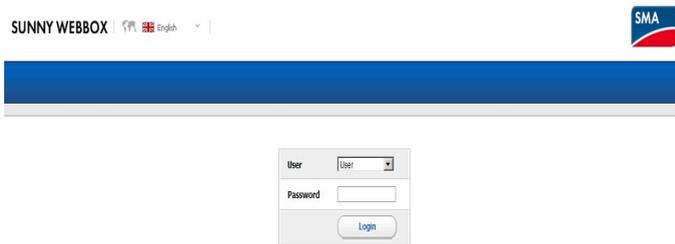
- After initial login to a new plant, the standard password for both user groups (**User/Installer**) should be changed.



Plant password at delivery

All devices are delivered with the user password: 0000 and the installer password: 1111.

1. Start web browser (e.g. Internet Explorer).
2. Enter the IP address of the Sunny WebBox into the address bar and press enter.
 - The Sunny WebBox login page opens.
 - If the page does not open, please read section 9.1 "General troubleshooting for the Sunny WebBox" (page 63).



3. Select a language.
4. In the "User" field select the user group under which you wish to log in.
5. In the "Password" field enter the password belonging to the selected user group.
6. Select [Login].
 - The Sunny WebBox start page appears.

4.2 Logging out of the Sunny WebBox

1. Select "Logout" in the icon bar.



- The Sunny WebBox login page opens. You have successfully logged out.

5 Operation

5.1 Plant View

5.1.1 Plant Status

Symbol	Status	Meaning
	Neutral	The status of the plant is unknown and is currently being updated.
	OK	All plant devices are working as prescribed.
	Warning	At least one device in the plant is displaying the "Warning" status. No device is displaying the "Error" status.
	Failure	At least one device in the plant is displaying the "Error" status.

5.1.2 Setting Parameters for a Device Class

A device class refers to devices of the same type. You can configure all the devices in a device class simultaneously. It is not possible to configure different device classes at the same time. Save the changes made to one device class before processing another device class.

To configure all the devices in a device class, proceed as follows:

1. Select the plant in the plant tree.
2. Select "Settings" in the device menu.
 - The parameter groups for the entire plant are displayed.
3. Select the parameter group that contains the parameter which is to be configured.
 - The individual device classes are listed. It may take a moment for all the data to be read from the devices.
4. Select [Edit] below the relevant device class.
5. Change the desired parameter for the entire device class.
6. Select [Save].
 - The settings will be applied to all devices in the device class.



Saving of data when parameters are adjusted

An hour glass displays the saving process. After the changes have been saved in the Sunny WebBox, the data is transmitted to the device. The setting process can sometimes take several hours if the device (e.g. an inverter) is in night mode. When the device is started, the data is transmitted to the main memory, and the hour glass is no longer displayed.

- The parameters for a device class have been set.

5.1.3 Change Plant Name

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

or

Click on the "Settings" button in the icon bar.

2. Select the "Type label > Type label" parameter group.
3. Select [Edit].
4. Enter the desired plant name in the "Plant name" field.
5. Select [Save].
 - The plant name has been set.

5.2 Device View

5.2.1 Device Status

The device is in a specific status. The status is displayed via the symbols in the plant tree and on the overview page of the device.

Symbol	Status	Meaning
	Neutral	The status of the device is currently being updated.
	OK	The device is operational and is working as prescribed.
	Warning	The device is not operating properly. It may be possible to automatically remedy the error.
	Failure	The device is in error condition. There is a problem with the device. Check the device.
	Communication error	The device can not communicate at present. This may happen at night, for example, when the inverter is not operating.

5.2.2 Set Device Parameters

You can configure a device via its parameters. Setting parameters for a device is dependent on the user group.

To change device parameters, proceed as follows:

1. Select the corresponding device in the plant tree.
2. Select "Settings" in the device menu.
 - The available parameter groups for the device are displayed.
3. Select the parameter group that contains the desired parameter.
 - Reading the values may take a moment because the values are queried directly from the device.
4. Select [Edit].
5. Change desired parameter.
6. Select [Save].



Saving of data when parameters are adjusted

An hour glass displays the saving process. After the changes have been saved in the Sunny WebBox, the data is transmitted to the device. The setting process can sometimes take several hours if the device, e.g. an inverter, happens to be in night mode. When the device is started, the data is transmitted to the main memory, and the hour glass disappears.

- The device parameter is set.

5.3 Setting the Device Password to the Plant Password

If the password of a device is different from the plant password, the device will be displayed with a lock in the plant tree. This may occur, for example, when a new device is added to an existing plant. To set the new device to the plant password, proceed as follows:

1. Log into the Sunny WebBox as "Installer".
 - The new device is displayed with a lock in the plant tree.
2. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

or

Click on the "Settings" button in the icon bar.
3. Select the "User Rights > Access Control" parameter group.
4. Select [Edit].
5. Enter the password of the new device in the "Set installer password" field.
6. Confirm the password in the "Confirm the password" field.
7. Enter the password of the new device in the appropriate user group field .
8. Confirm the password in the "Confirm the password" field.
9. Select [Save].
 - The Sunny WebBox saves the password of the new device into all approved devices. All devices now have the same plant password.
10. Restart the Sunny WebBox via the user interface (see page 60).
11. Repeat the password setting process in order to transfer your previous plant password to all devices.
12. Select [Save].
13. Restart the Sunny WebBox via the user interface (see page 60).
 - The device is displayed without a lock in the plant tree. The password of the new device is matched to the plant password.

5.4 Determining the Sunny WebBox serial number

You can read off the serial number from the status bar of the user interface or alternatively via the parameter groups or the SD Card (see section 8.5 "Determining current settings of the Sunny WebBox via SD card" (page 62)).

Determining the Sunny WebBox serial number via the parameter group

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

or

Click on the "Settings" button in the icon bar.
2. Select the "Type label > Type label" parameter group.
 - Read off the Sunny WebBox serial number from the "Serial Number" field.

5.5 Determining the WAN IP address

You can determine the WAN (wide area network) IP address via the parameter group or the SD card (see section 8.5 "Determining current settings of the Sunny WebBox via SD card" (page 62)). The WAN IP address is the IP address via which the Sunny WebBox is to be reached via the internet.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

or

Click on the "Settings" button in the icon bar.

2. Select the "External Communication > Nat" parameter group.
- In the "WAN IP" field read off the WAN IP address.

5.6 Activating / Deactivating SMA Grid Guard mode



Country-specific Settings in the inverter

SMA Grid Guard parameters may only be changed with the express authorization of the grid operator. Unauthorized changes to the SMA Grid Guard parameters void operating license of the respective device.



Updating time in the plant tree

In the plant tree, updating the symbol for access rights (SMA Grid Guard symbol and lock symbol) can take up to 2 minutes.

Activating SMA Grid Guard mode

In order to change SMA Grid Guard parameters in devices you must enter your SMA Grid Guard password.

1. Log in as "Installer".
 2. Select the SMA Grid Guard symbol  in the status bar of the Sunny WebBox user interface.
- This opens the SMA Grid Guard dialog.

SMA Grid Guard

You can only change the SMA Grid Guard parameters with your personal access code. Every change to SMA Grid Guard parameters has to be approved by the responsible grid operator.

Individual access code

OK

Cancel

3. Enter your password in the "Individual access code" field. You can obtain the password from SMA Solar Technology AG (see page 21).
 4. Select [OK].
- The SMA Grid Guard code is set. You can now process all devices which are indicated with the SMA Grid Guard symbol.

Deactivating SMA Grid Guard mode

To end the SMA Grid Guard mode proceed as follows:

1. Select the SMA Grid Guard symbol  in the status bar of the Sunny WebBox user interface.
 - This opens the SMA Grid Guard dialog.
2. Enter the blocking code "54321" in the "Individual access code" field.
3. Select [OK].
 - The SMA Grid Guard code is deactivated. Check whether the SMA Grid Guard mode has been deactivated for all inverters. The blocking code is not supported by inverters with SMA *Bluetooth Piggy-Back*.
 - If the SMA Grid Guard mode remains active, log out of the Sunny WebBox user interface and log back in again after 2 minutes (see section 4 "Logging into and out of the Sunny WebBox" (page 26)). The SMA Grid Guard code is then deactivated.

6 Configuring the Sunny WebBox

6.1 Changing the Sunny WebBox password



Additional rights for the installer

If you are logged in as installer, you can set or change function-sensitive plant parameters in addition to the rights of the user. In addition, the "Installer" user group has the option of resetting the user's plant password and can change SMA Grid Guard parameters.



Password for the internal FTP server

The password set here is also valid for access to the internal FTP server.

By setting the Sunny WebBox password, all devices which are displayed without a lock in the plant tree will be set with the Sunny WebBox password. In order to successfully transfer the password a restart of the Sunny WebBox is necessary (see page 60).

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "User Rights > Access Control" parameter group.
 3. Select [Edit].
 4. Enter a secure password in the appropriate user group field. The password can be a maximum of 12 characters. The following special characters are permitted: ?_!-. Take note of the quality of your password (see section 3.2.4 "Password Quality" (page 21)).
 5. Confirm the password in each case in the "Confirm Password" field.
 6. Select [Save].
- All devices will be set with the Sunny WebBox password.

6.2 Plant time

6.2.1 Information on the Plant time

The date and time of a PV plant is indicated as plant time.

During operation of your *Bluetooth* PV plant with the Sunny WebBox all connected *Bluetooth* devices assume the plant time of the Sunny WebBox.

If further communications products (e.g. Sunny Beam with *Bluetooth* or Sunny Explorer) are added to the PV plant, the communications products added automatically assume the current plant time of the PV plant.

If you change the plant time, all inverters immediately assume the new plant time. Additional communication products in the plant apply the plant time only after some time (7 hours max. later).

The plant time can be adjusted manually in the Sunny WebBox or synchronized via the internet. With "Automatic Time Synchronization" the Sunny WebBox aligns the date and time with Sunny Portal 1x per day. Registration in Sunny Portal is not necessary.



NOTICE

Possible loss of data through changing the plant time.

Take note that a time adjustment can have possible effects on the data already recorded. If for example the time or the date is put back, the recorded data could be overwritten. Only change the plant time when it is necessary.

6.2.2 Setting Date and Time



Automatic time synchronization

You can also synchronize the plant time automatically via the internet (see section 6.2.4 "Activating / Deactivating automatic time synchronization" (page 35)).

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
2. Select the "Device > Time settings" parameter group.
3. Select [Edit].
4. In the "Summer / Winter Time Adjustment" field select "Yes" in order to activate the automatic adjustment between Summer and Winter Time. (Status upon delivery)
or
In the "Standard/Daylight Saving Time conversion on" field select "No" in order to deactivate the automatic adjustment between Summer and Winter Time. The date and time are to be set manually in the event of a change.
5. In the "Set plant time" field, set the current date and time of the PV plant.

6. Select the time zone in which the system is located in the "Time zone" field. (Delivery status: "(UTC+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna")
7. Select [Save].
- Data and time are set.

6.2.3 Manually synchronizing the date and time with Sunny Portal

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
2. Select the "Device > Time settings" parameter group.
3. Select [Edit].
4. In the "Synchronize time with portal" field select "Execute" in order to synchronize the date and time with Sunny Portal.
- The date time will be synchronized with Sunny Portal. The synchronization was successful if the time is displayed in the "Plant Time" field and "—" is again displayed in the "Synchronize Time with Portal" field.

6.2.4 Activating / Deactivating automatic time synchronization

Activating automatic time synchronization

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
2. Select the "Device > Time settings" parameter group.
3. Select [Edit].
4. In the "Automatic Time Synchronization" field select "Yes" in order to synchronize the date and time with Sunny Portal.
- The automatic time synchronization is activated.

Deactivating automatic time synchronization

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
2. Select the "Device > Time settings" parameter group.
3. Select [Edit].
4. In the "Time Synchronization Active" field select "No" in order to manually set the date and time (see section 6.2.2 "Setting Date and Time" (page 34)) (status on delivery).
- The automatic time synchronization is deactivated.

6.3 Country configuration

6.3.1 Setting the date format



Effect on existing data from the PV plant.

Changes to the format have an effect on all future data exports, e.g. data on the SD card or data on the internal FTP server.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
2. Select the "Device > Country settings" parameter group.
3. Select [Edit].
4. In the "Date format" field select the desired data format ("DD" = day, "MM" = month, "YYYY" = year) (Status on delivery "DD.MM.YYYY").
5. Select [Save].
- The date format is set.

6.3.2 Setting the Language

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
2. Select the "Device > Country settings" parameter group.
3. Select [Edit].
4. Select the desired language in the "Language" field.
5. Select [Save].
- The language is set.

6.3.3 Setting the number format

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
2. Select the "Device > Country settings" parameter group.
3. Select [Edit].
4. In the "Number format" field, select the desired number format. (Status upon delivery: "123.456,0")
5. Select [Save].
- The number format is set.

6.3.4 Setting the Time format



Effect on existing data from the PV plant.

Changes to the format have an effect on all future data exports, e.g. data on the SD card or data on the internal FTP server.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Device > Country settings" parameter group.
 3. Select [Edit].
 4. In the "Time format" field select the desired time format ("hh" = 12 hour format, "HH" = 24 hour format, "mm" = minutes, "ss" = seconds) (Status on delivery: "HH:mm").
 5. Select [Save].
- The time format is set.

6.3.5 Setting the Unit of temperature

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Device > Country settings" parameter group.
 3. Select [Edit].
 4. Select the desired unit of temperature in the "Unit of temperature" field. (Status upon delivery: "Celsius")
 5. Select [Save].
- The unit of temperature has been set.

6.4 Changing the Sunny WebBox device name

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Type Label > Type Label" parameter group.
 3. Select [Edit].
 4. Enter the desired device name in the "Device name" field.
 5. Select [Save].
- The Sunny WebBox device name is changed.

6.5 Ethernet network

6.5.1 Information on network settings



Changing extended network settings

Do not change any device network settings if you are not clear on the effects of the change. Changes to values could lead to the existing network not functioning or only partially functioning. If you have any questions please contact your network administrator.



Sunny WebBox Assistant

It is recommended to use the Sunny WebBox Assistant for the commissioning of the Sunny WebBox and for the integration into a network. You can download the Sunny WebBox Assistant on the internet from www.SMA.de/en.

You can assign static network settings to the Sunny WebBox or obtain these dynamically via a DHCP server. Additionally it is possible to use a Proxy server for the internet connection.

If you would like to make the Sunny WebBox available in the internet, in order that you can for example have direct access to the Sunny WebBox via the Sunny Portal, you must perform a Port rerouting in your router. Here it may be necessary to align the HTTP port and the NAT port.

6.5.2 Applying static network settings to the Sunny WebBox

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
2. Select the "External Communication > Ethernet" parameter group.
3. Select [Edit].
4. In the "DNS server IP" field enter the IP address of the DNS server (Domain Name System Server). Usually, this is the IP address of the router.
5. Enter the Gateway IP address into the "Gateway IP" field. Usually, this is the IP address of the router.
6. In the "IP Address" field enter the static IP address, under which the Sunny WebBox is to be reachable in the local network (see section 10.7 "Allocating IP addresses in a local network" (page 71)).
7. In the "Subnet mask" field, enter the subnet mask of your network. Normally you can find this information in the router manual.
8. Select [Save].
- The local network settings are applied to the Sunny WebBox.

6.5.3 Activating / Deactivating DHCP

The Sunny WebBox can obtain its network settings via a DHCP server (Dynamic Host Configuration Protocol server). With this during the start of the Sunny WebBox the IP address, subnet mask, gateway and DNS server are automatically obtained from the DHCP server. In order to establish the Sunny WebBox in your network, use the Sunny WebBox Assistant.

Activating DHCP

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "External Communication > Ethernet" parameter group.
 3. Select [Edit].
 4. Under "DHCP" select "Yes" in the "Activated" field in order to receive the network settings dynamically assigned.
 5. Select [Save].
- The Sunny WebBox obtains the network settings automatically via the DHCP server.

Deactivating DHCP

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
2. Select the "External Communication > Ethernet" parameter group.
3. Select [Edit].
4. Under "DHCP" select "No" in the "Activated" field in order to assign the network settings statically (see section 6.5.2 "Applying static network settings to the Sunny WebBox" (page 38)) (Status on delivery).
5. Select [Save].
6. Assigning the network settings takes place manually.

6.5.4 Proxy Server

If there is a Proxy server in your network, enter the Proxy settings here. The Proxy settings of the Sunny WebBox are used for connection to the Sunny Portal and for firmware updates.

Using the Proxy server

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. In the "Activated" field select "Yes" in order to use the Proxy server.
 3. In the "Login" field enter the login name for the Proxy Server.
 4. In the "Port" field enter the network port under which the Proxy server is available.
 5. In the "Password" field enter the password for the Proxy Server.
 6. Confirm the password entered in the "Confirm the password" field.
 7. In the "Server" field enter the Proxy Server IP address.
 8. Select [Save].
- The Proxy server will be used.

Not using the Proxy server

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. In the "Activated" field select "No" in order not to use the Proxy server.
 3. Select [Save].
- The Proxy server will not be used.

6.5.5 Setting the HTTP Port



Adjusting of the network ports

Changing the ports is only necessary in rare cases. Before adjusting the ports, contact your network administrator.

The HTTP port is the network port under which the Sunny WebBox user interface is available. Port 80 is set by default here. Should another port be entered, this is to be explicitly specified during call up of the user interface.

Example: The Sunny WebBox IP address is 192.168.0.168 and the HTTP port was changed to 8080; thus "http://192.168.0.168:8080" must then be entered in the address bar of the web browser.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

or

Click on the "Settings" button in the icon bar.

2. Select the "External Communication > HTTP" parameter group.
 3. Select [Edit].
 4. In the "Port" field enter the desired Port. (Status upon delivery: Port 80)
 5. Select [Save].
- The HTTP port is saved.

6.5.6 Setting the NAT Port



Adjusting of the network ports

Changing the ports is only necessary in rare cases. Before adjusting the ports, contact your network administrator.

During a data transfer the Sunny WebBox communicates to the Sunny Portal under which IP address and which port the Sunny WebBox is available on the internet. For this the respective port must be freed by the router. If the NAT (Network Address Translation) in the router is changed, you must specify the network port that has been set in the router. NAT Port is set to 80 is set by default.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.

or

Click on the "Settings" button in the icon bar.

2. Select the "External Communication > Ethernet > NAT" parameter group.
 3. Select [Edit].
 4. In the "Port" field enter the desired Port.
 5. Select [Save].
- The NAT port is saved.

6.6 Data Recording

6.6.1 Information on Data Recording

The Sunny WebBox can export the collected data from the PV plant in various data formats and make these available via the integrated FTP server or SD card.

The following data formats are possible:

- Comma Separated Value (CSV) (see section 6.6.2 "CSV Files" (page 43))
- Extensible Markup Language (XML) (see section 6.6.3 "XML files" (page 44))

All data is exported at selected recording intervals in the respective directory of the data format. Additionally you can set the description of the measured values (see section 6.6.4 "Setting measured value descriptions in local language" (page 45)).



Effect on existing data from the PV plant.

Changes to the format have an effect on all future data exports, e.g. data on the SD card or data on the internal FTP server.

6.6.2 CSV Files

Information on CSV Files

The Sunny WebBox saves the collected data of the PV plant into the relevant Day-CSV-file every 5 minutes. The content of the existing data is added to this. Individual data is always separated by a semicolon in the file. The decimal separator and the timestamp format in the files are determined by the country settings of the Sunny WebBox (see section 6.3 "Country configuration" (page 36)).

Directory path and structure of the filename

Directory Path
.../CSV/[YYYY]/[MM]/

Structure of the filename
[YYYY]-[MM]-[DD].csv CSV File

Example: Daily report file from 1.3.2010: .../CSV/2010/03/2010-03-01.csv

Activating export of the data in CSV format

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Data Recording > Export" parameter group.
 3. Select [Edit].
 4. In the "Data export in CSV format" field select "Yes".
 5. Select [Save].
- Data will be exported in CSV format.

Deactivating export of the data in CSV format

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Data Recording > Export" parameter group.
 3. Select [Edit].
 4. In the "Data export in CSV format" field select "No".
 5. Select [Save].
- Data will not be exported in CSV format.

6.6.3 XML files

Information on XML Files

The Sunny WebBox saves the collected data of the PV plant into a XML file every 5 minutes. In order to reduce the quantity and amount of data, every 15 minutes the XML files to be added are automatically packed in a ZIP file and saved onto the integrated FTP server or the SD card. As a rule there are 3 XML files in a zip file. The decimal separator and the timestamp format in the files are determined by the country settings of the Sunny WebBox (see section 6.3 "Country configuration" (page 36)). You will find how an XML file is structured in section 10.3 "Structure of an XML data file" (page 69).

Directory path and structure of the filename

Directory Path
.../XML/[YYYY]/[MM]/[YYYY]-[MM]-[DD]/

Structure of the filename	
[YYYY]-[MM]-[DD]_[HHMMSS].zip	Packed file in ZIP format
[YYYY]-[MM]-[DD]_[HHMMSS].xml	XML file

Example: daily report file from 1.3.2010, 12:42:08 Hrs: .../XML/2010/03/2010-03-01/2010-03-01_124503.zip

The ZIP file contains the following 3 XML files: 2010-03-01_123159.xml, 2010-03-01_123703.xml, 2010-03-01_124208.xml.

Activating export of the data in XML format

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
 or
 Click on the "Settings" button in the icon bar.
2. Select the "Data Recording > Export" parameter group.
3. Select [Edit].
4. In the "Data export in XML format" field select "Yes".
5. Select [Save].
- Data will be exported in XML format.

Deactivating export of the data in XML format

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Data Recording > Export" parameter group.
 3. Select [Edit].
 4. In the "Data export in XML format" field select "No".
 5. Select [Save].
- Data will not be exported in XML format.

6.6.4 Setting measured value descriptions in local language

You can set the description of the measured values as follows:

- Technical description of the measured value *Example: Metering.TotWhOut*
- Description of the measured value as a term. *Example: Total yield*

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Data Recording > Export" parameter group.
 3. Select [Edit].
 4. In the "Measurement name in local language" field select "Yes" in order to display the descriptions as terms.
or
In the "Measurement name in local language" field select "No" in order to display the technical descriptions.
 5. Select [Save].
- The measured value description is set.

7 Managing Plant Data

7.1 Information on the plant data

The Sunny WebBox can display spot values and parameters of the registered devices and can relay this for subsequent processing (e.g. via Sunny Portal, FTP Push, internal FTP server, SD card).

SMA devices provide various spot values and parameters depending on the device type, which can be displayed and processed via the Sunny WebBox depending on user group. Spot values and measured values or calculated values of the device such as for example: temperature or output.

Parameters are used in the configuration of the device and can, depending on access rights, be edited.

You will find which spot values and parameters are available in a device in the manual of the respective device.

The Sunny WebBox saves all continually recorded values of the connected devices on the 1 GB internal hard drive. If the capacity of the internal drive is reached, then all values older than 12 months will be overwritten. Save the plant data at regular intervals using the functions provided in the Sunny WebBox to an external hard drive.

7.2 Sunny Portal

7.2.1 Information on the Sunny Portal

The Sunny WebBox offers you the possibility of sending all of your PV plant's relevant plant data automatically to the Sunny Portal internet portal. Sunny Portal is suitable for the individual presentation of plant data of every power class and offers comprehensive evaluation and notification functions. You will find further information on the Sunny Portal at www.SunnyPortal.com.

Before you can use Sunny Portal, you must register via the Sunny WebBox (see page 47).

If you are already registered in Sunny Portal with the PV plant, you must align the plant identifier (see page 50). This can be the case for example during a replacement of the Sunny WebBox.



Possible Delays in Visualization and Notifications

Please note that there can be delays before the Sunny Portal displays the transmitted data of your PV plant and when requested also to notifications to be sent to you.



SMS notification to a mobile telephone

Via Sunny Portal you can generate Report E-Mails, which can be sent automatically to your mobile telephone via a third party.

7.2.2 Registering Sunny WebBox in the Sunny Portal

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
2. Select "Sunny Portal > User settings" parameter group.
3. Select [Edit].

The screenshot shows a web interface for configuring a Sunny Portal. The window title is "Sunny Portal (Communication products)". It is divided into several sections:

- Basic settings:**
 - Use Sunny Portal: No (1)
 - Upload frequency: Every 15 minutes (1)
- Status and actions:**
 - Result of the last upload: -----
 - Portal connection test: [Dropdown menu]
 - Result of the last portal connection test: -----
 - Register: [Dropdown menu]
 - Result of the last registration: -----
- User settings:**
 - Email: [Text input field]
 - Plant ID: 48d91602-5a11-44ee-a581-07
 - Plant name: [Text input field]

At the bottom of the window, there are two buttons: "Save" and "Cancel".

4. In the "E-Mail" field enter the E-Mail address to which Sunny Portal should send the access data.
 5. The plant identifier is automatically entered in the "Plant ID" field. The number is, with the E-Mail address and the plant name, a clear identifier of the PV plant.
 6. In the "Plant name" field enter the name of your PV plant. The plant will be displayed under this name as Sunny Portal.
 7. In the "Status and Actions" subgroup enter "Execute" in the "Register" field.
 8. Select [Save].
- The Sunny WebBox performs the registration onto Sunny Portal. The registration was successful, when "OK" is displayed in the "Result of the last registration" field. Sunny Portal then sends your access data to the E-Mail address entered.
- If the registration is unsuccessful, refer to section 9.1 "General troubleshooting for the Sunny WebBox" (page 63).

7.2.3 Activating / Deactivating Sunny Portal

Activating data transmission to the Sunny Portal

The transmission of data only takes place if you are logged out of the Sunny WebBox user interface. Logging in to the user interface of the Sunny WebBox is possible at all times.

Requirement:

You must be registered in Sunny Portal (see section 7.2.2 "Registering Sunny WebBox in the Sunny Portal" (page 47)):

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select "Sunny Portal > Basic settings" parameter group.
 3. Select [Edit].
 4. In the "Use Sunny Portal" field select "Yes" in order to use Sunny Portal. The Sunny WebBox sends the PV plant data automatically to the Sunny Portal depending on the defined upload frequency.
 5. Select [Save].
- The Sunny WebBox will send data to the Sunny Portal.

Deactivating data transmission to the Sunny Portal

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select "Sunny Portal > Basic settings" parameter group.
 3. Select [Edit].
 4. In the "Use Sunny Portal" field select "No" in order not to use Sunny Portal. (Status upon delivery)
 5. Select [Save].
- The Sunny WebBox will not send data to the Sunny Portal.

7.2.4 Testing the connection to Sunny Portal

You can test the connection to Sunny Portal. Registration in Sunny Portal is not necessary.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Sunny Portal > Status and Actions" parameter group.
 3. Select [Edit].
 4. In the "Portal connection test" field select "Execute".
 5. Select [Save].
- The Sunny WebBox performs a connection test. The connection test was successful, if "Ok" is displayed in the "Result of the last portal connection test" field, and "—" is again displayed in the "Portal connection test" field.
- If the connection test is unsuccessful, refer to section 9.1 "General troubleshooting for the Sunny WebBox" (page 63).

7.2.5 Setting the Upload frequency

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
2. Select the "Sunny Portal > Basic settings" parameter group.
3. Select [Edit].
4. In the "Upload frequency" field select the desired value. See Table:

Selection	Meaning
"Every 15 minutes"	Data transmission within the next full 15 minutes.
"Daily"	Data transmission within the next full 24 hours.
"Hourly"	Data transmission within the next full hour.



Possible delays of the data uploads

The uploading of data can be delayed by up to 2.5 minutes, in order to avoid too great a data transmission load for the Sunny Portal at certain times.

If an upload is still being performed and a new upload should be started (possibly at 15 minute intervals), then the new upload is not performed. The data will be transmitted at the next upload.

5. Select [Save].
- The Sunny WebBox will send the data to the Sunny Portal in the prescribed intervals.

7.2.6 Accessing the Sunny WebBox via Sunny Portal

During every data transmission of the Sunny WebBox to the Sunny Portal, Sunny Portal saves the current IP address of the Sunny WebBox or the current IP address of your router, with which the internet connection is established.

Using Sunny Portal, you can directly access your Sunny WebBox via the Internet. Please note that you must set up a port rerouting in your router. Here it may be necessary to align the HTTP port and the NAT port of the Sunny WebBox (see section 6.5 "Ethernet network" (page 38)).

7.2.7 Adjusting the Plant ID for Sunny Portal

In the following cases, you must adjust the plant ID in the Sunny WebBox:

- Plant data of the PV plant concerned has already been sent to Sunny Portal via another communication device.
- The plant ID set for the Sunny WebBox was reset using the Reset button.
- The Sunny WebBox was replaced with another Sunny WebBox.

Perform the following steps to adjust the plant ID of the Sunny WebBox for Sunny Portal:

1. Register in Sunny Portal (www.SunnyPortal.com) with the access data available.
 2. Go to "Configuration > Plant properties" on the Sunny Portal page.
 3. Copy the plant ID to the clipboard.
 4. Log into the Sunny WebBox as user or installer.
 5. In the Sunny WebBox user interface select the Sunny WebBox in the plant tree.
 6. Select "Settings" in the device menu.
 7. Select the "Sunny Portal > User settings" parameter group.
 8. Select [Edit].
 9. In the "Plant ID" field delete the current content and paste in the content of the clipboard.
 10. Select [Save].
- The plant ID for Sunny Portal is adjusted.

7.3 SD Card

7.3.1 Information on saving plant data on an SD card

You can save plant data onto an SD card. Once the SD card has been inserted into the SD card slot the Sunny WebBox copies all plant data which is on the internal drive of the Sunny WebBox onto the SD card. The Sunny WebBox saves new plant data to the SD card as long as the SD card remains inserted and enough memory is available. In order to select a data format in which the data should be made available please refer to section 6.6 "Data Recording" (page 42):

7.3.2 Saving plant data on an SD card



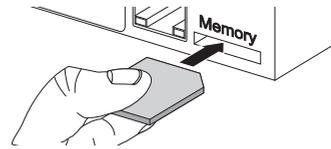
NOTICE

Loss of data on the SD card

Do not remove the SD card whilst the "SD CARD" LED is flashing green or orange. This can damage the file system of the SD card and lead to data loss. Depending on the amount of data, the saving process can take some time.

Please take note of information on the SD card (see section 10.1 "Information on the SD card" (page 68)).

1. Insert the SD card into the Sunny WebBox SD card slot.
- The Sunny WebBox saves the plant data onto the SD card.



7.4 Integrated FTP server

7.4.1 Information on the integrated FTP server

The Sunny WebBox is equipped with an integrated FTP server. You can directly access the saved plant data via the FTP server. The FTP server is activated as standard. You can call up the data with any FTP program or with Internet Explorer. The FTP server is protected via the passwords of the respective user group.

Please note that for logging into the integrated FTP server, the English description (User ID) for the respective user group and the related password must be entered:

User ID	User group
"Installer"	For the "Installer" user group
"User"	For the "User" user group

In order to select a data format in which the data should be made available please refer to section 6.6 "Data Recording" (page 42):

7.4.2 Activating / Deactivating the integrated FTP server

Activating the integrated FTP server

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Device > FTP server" parameter group.
 3. Select [Edit].
 4. In the "Activated" field select "Yes" in order to activate the integrated FTP server.
 5. Select [Save].
- The integrated FTP server is activated.

Deactivating the integrated FTP server

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Device > FTP server" parameter group.
 3. Select [Edit].
 4. In the "Activated" field select "No" in order to deactivate the integrated FTP server.
 5. Select [Save].
- The integrated FTP server is deactivated.

7.4.3 Accessing the FTP server via Internet Explorer

1. Start Internet Explorer.
2. Enter the IP address of the Sunny WebBox with details of the User ID and the password in the address bar of the web browser in accordance with the following template:

`ftp://[UserID]:[Password]@[IP-address]`

Use the following User ID:

User ID	User group
"Installer"	For the "Installer" user group
"User"	For the "User" user group

Example: if you want to log onto the Sunny WebBox having the IP address 192.168.0.168 as installer with the password "1111" then enter: `ftp://Installer:1111@192.168.0.168`

3. Press enter on the keyboard.
- The browser displays the directory structure of the integrated FTP server. You can now download and display the data.



User name and password remain saved in the web browser cache

Once you have accessed the integrated FTP server via a web browser, the user name and password remain saved in the web browser cache. Delete the web browser cache in order to avoid unauthorized access to the integrated FTP server.

7.5 FTP Push

7.5.1 Information on FTP Push

The Sunny WebBox is equipped with an FTP Push function. With this function the Sunny WebBox can load the collected data of your PV plant to a freely selectable FTP server. FTP Push always transmits via the network port 21. The FTP Push function is deactivated as standard. The collected data is uploaded to the directory given and in the desired data format every 15 minutes.

7.5.2 Activating / Deactivating FTP Push

Activating FTP Push

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Further Applications > FTP Push" parameter group.
 3. Select [Edit].
 4. In the "Activated" field select "Yes" in order to activate the FTP Push function.
 5. In the "Login" field enter the login name of the external FTP server.
 6. In the "Port" field enter the network port under which the FTP server is available.
 7. In the "Password" field enter the password of the FTP server.
 8. In the "Server path" field enter the sub directory into which the data should be saved on the FTP server.
 9. In the "Server" field enter the address of the server.
 10. In the "Data export in CSV format" field select "Yes" in order to receive the data in CSV format.
or
In the "Data export in CSV format" field select "No" in order not to receive the data in CSV format.
 11. In the "Data export in XML format" field select "Yes" in order to receive the data in XML format.
or
In the "Data export in XML format" field select "No" in order not to receive the data in XML format.
 12. Select [Save].
- The FTP push function is activated.

Deactivating FTP Push

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Further Applications > FTP Push" parameter group.
 3. Select [Edit].
 4. In the "Activated" field select "No" in order to deactivate the FTP Push function.
 5. Select [Save].
- The FTP Push function is deactivated.

7.5.3 Testing FTP Push

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Further Applications > FTP Push" parameter group.
 3. Select [Edit].
 4. In the "Connection test" field select "Execute".
 5. Select [Save].
- The Sunny WebBox performs a connection test. The connection test was successful, if "Ok" is displayed in the "Result of the last connection test" field, and "—" is again displayed in the "Connection test" field.
- If the connection test is unsuccessful, refer to section 9.1 "General troubleshooting for the Sunny WebBox" (page 63).

8 Service Functions

8.1 Updating the Firmware

8.1.1 Information on Firmware Update

You have the option of updating the Sunny WebBox firmware. The firmware update can be performed online via the internet or locally via the SD card. Existing settings of the Sunny WebBox and data from the PV plant remain available after the update procedure. In order to always keep the Sunny WebBox at the latest level, automatic firmware updates via the internet is recommended.

The update procedure is displayed via the flashing orange "SYSTEM" LED and occasionally via a red running light across all LEDs. The firmware update is complete when the "SYSTEM" LED is green. The Sunny WebBox is again available via the user interface after the update procedure. An update procedure can take up to a maximum of 20 minutes.



Effect on the function during the update procedure

The Sunny WebBox restarts during the update process. Restarting affects the function of the Sunny WebBox. For a short time you can not access the user interface.



Never remove the power supply plug during the update procedure.

8.1.2 Firmware update via the internet

If the Sunny WebBox has internet access, you can update the Sunny WebBox via the internet automatically or manually.

Activating / Deactivating automatic firmware update

When the automatic firmware update is activated, the Sunny WebBox check 1x daily whether a new firmware update is available. If a new firmware update is available, the Sunny WebBox downloads this from the internet and starts the update procedure. The update procedure starts automatically the following night (23:00 Hrs) when the PV plant is not in operation.



Unexpected interruption of an automatically started update procedure

If an automatically started update procedure of the Sunny WebBox is interrupted e.g. as a result of a power failure, the Sunny WebBox restarts the update procedure in the next defined time period.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Device > Update" parameter group.
 3. Select [Edit].
 4. In the "Automatic update" field select "Yes" in order to activate the automatic firmware update. (Status upon delivery)
or
In the "Automatic update" field select "No" in order to deactivate the automatic firmware update.
 5. Select [Save].
- The automatic firmware update is set.

Updating the Firmware Manually



NOTICE

Loss of plant data

Only perform a manual firmware update when the PV plant is not in operation (e.g. during the night). Otherwise losses during the recording of the plant data may occur.



You can also carry out manual updates when the automatic firmware update is activated.

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Device > Update" parameter group.
 3. Select [Edit].
 4. In the "Check for update and install it" field select "Execute".
 5. Select [Save].
- The Sunny WebBox checks whether a new firmware update is available. If a new firmware update is available, the Sunny WebBox downloads this from the internet and starts the update procedure.

8.1.3 Firmware Update via the SD Card



NOTICE

Loss of plant data

Only perform a manual firmware update when the PV plant is not in operation (e.g. during the night). Otherwise losses during the recording of the plant data may occur.



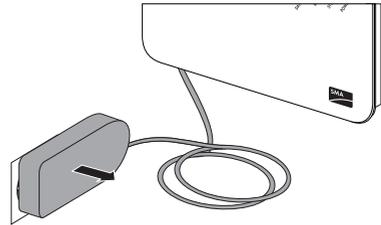
NOTICE

Loss of data on the SD card

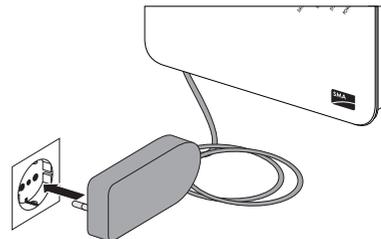
Do not remove the SD card whilst the "SD CARD" LED is flashing green or orange. This can damage the file system of the SD card and lead to data loss. Depending on the amount of data, the saving process can take some time.

Please take note of information on the SD card (see section 10.1 "Information on the SD card" (page 68)).

1. With the help of the computer create a folder on the SD card with the name "UPDATE".
2. Copy the update file (*.up2) in the folder created on the SD card.
3. Remove the plug-in power supply unit from the plug socket.



4. Insert the prepared SD card into the Sunny WebBox SD card slot.
 5. Insert the plug-in power supply unit of the Sunny WebBox into the socket.
- The update procedure starts.



8.2 Stopping the Sunny WebBox



NOTICE

Loss of plant data

Only remove the power supply unit when the PV plant is not in operation (e.g. during the night). Otherwise losses during the recording of the plant data may occur.

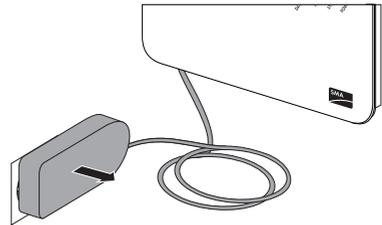


NOTICE

Loss of data on the SD card

Do not remove the Sunny WebBox from the electricity grid whilst the „SD CARD“ LED is flashing green or orange. This can damage the file system of the SD card and lead to data loss. Depending on the amount of data, the saving process can take some time.

1. Remove the power supply unit of the Sunny WebBox from the plug socket.
- The Sunny WebBox has been stopped



8.3 Restarting the Sunny WebBox via the user interface

1. Select the Sunny WebBox in the plant tree and select "Settings" in the device menu.
or
Click on the "Settings" button in the icon bar.
 2. Select the "Device > Update" parameter group.
 3. Select [Edit].
 4. In the "Initiate device restart" field select "Execute".
 5. Select [Save].
- The Sunny WebBox is restarted. The restart was successful if the "SYSTEM" and "POWER" LEDs light up again. The start-up procedure can take up to 90 seconds
- If the "SYSTEM" or "POWER" LEDs are not green, please refer to section 9.1 "General troubleshooting for the Sunny WebBox" (page 63).

8.4 Resetting the Sunny WebBox Using the Reset Button

You can reset the Sunny WebBox via a small hole in the rear side of the Sunny WebBox with the reset button hidden behind this. For this the Sunny WebBox must be supplied with electricity.



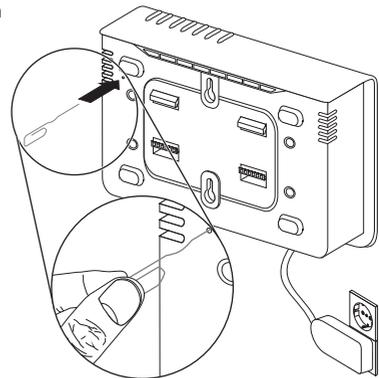
Data back-up

Before you reset the Sunny WebBox, take note when necessary of all settings such as network or portal settings. In addition secure the PV plant data in order to avoid data losses.

Depending on how long you press the Reset button, the Sunny WebBox performs the actions listed in the following table.

Duration	Action
1 - 5 seconds	Reset the passwords to the factory setting. All other settings and PV plant data remains.
5 - 15 seconds	Reset the network settings to the factory setting. All other settings and PV plant data remains.
15 - 30 seconds	Resets all settings (event memory, network settings, modem settings, portal settings and passwords) of the Sunny WebBox back to the default values. PV plant data will be fully deleted.

- Use a sharp object to activate the hidden reset button through the hole.
- The Sunny WebBox is reset.

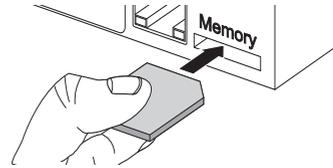


8.5 Determining current settings of the Sunny WebBox via SD card

With the following steps you can determine the current settings and the current firmware of the Sunny WebBox when you do not have access to the user interface.

Please take note of information on the SD card (see section 10.1 "Information on the SD card" (page 68)).

1. Insert the SD card into the Sunny WebBox SD card slot.
 - The Sunny WebBox creates a folder with the name "WEBBOX_[Serial number]" on the SD card and saves the "config.xml" file there. The writing process is complete when the "SD CARD" LED is permanently lit. *Example WEBBOX_0155000123\config.xml*
2. When the "SD CARD" LED is permanently lit, remove the SD card from the Sunny WebBox SD card slot.
3. Read off the SD card using a computer with an SD card reader.
4. Open the "config.xml" file in the WebBox_[Serial number] folder with a text editor or a web browser.
- Extract the network settings of the Sunny WebBox (see section 10.2 "Structure of the Config.xml File" (page 68)).



9 Troubleshooting

9.1 General troubleshooting for the Sunny WebBox

No.	Problem	Cause	Rectification
1	<p>The Sunny WebBox is not available via the user interface.</p> <p>or</p> <p>The Sunny WebBox can not be found via the Sunny WebBox Assistant.</p>	<p>The Sunny WebBox is not connected to the network or to the power supply.</p> <hr/> <p>Incorrect network settings of the network components.</p> <hr/> <p>A Firewall is blocking the connection.</p> <hr/> <p>Defective or damaged network components, network cable or plug connections.</p>	<ul style="list-style-type: none"> • Connect the Sunny WebBox with the network cable directly to the computer or the local network and supply the Sunny WebBox with power (see installation manual of the Sunny WebBox with <i>Bluetooth</i>). • Use the Sunny WebBox Assistant for commissioning. • Check the network settings of the computer with which you wish to access the Sunny WebBox. Align the network settings when necessary. • Carry out a reset of the Sunny WebBox (see page 61) and repeat the commissioning. • Check the network settings for the individual network components (e.g., router, Proxy server, etc.). Align the network settings when necessary. • Please contact your network administrator. • Deactivate the computer firewall or enable the necessary connection. • Replace the defective or damaged parts in the network. • Please contact your network administrator.

No.	Problem	Cause	Rectification
1	The Sunny WebBox is not available via the user interface. or The Sunny WebBox can not be found via the Sunny WebBox Assistant.	The web browser is incorrectly configured.	<ul style="list-style-type: none"> If there is a Proxy server in your network, you must enter an exception for the Proxy server in your web browser (see section 10.4 "Information on your web browser" (page 70)).
		There is no internet connection.	<ul style="list-style-type: none"> Reinstall the internet access. If necessary, please contact your internet service provider.
		The Sunny WebBox has not correctly started.	<ul style="list-style-type: none"> Remove the Sunny WebBox power supply unit from the plug socket and plug it back in after a short time in order to restart the Sunny WebBox. Note that this can lead to loss of collected plant data.
		IPv6 is not supported by the Proxy server.	<ul style="list-style-type: none"> Use a Proxy server that supports IPv6.
2	The "SYSTEM" LED is flashing red	A system error has occurred.	<ul style="list-style-type: none"> Remove the Sunny WebBox power supply unit from the plug socket and plug it back in after a short time in order to restart the Sunny WebBox. Contact the SMA Serviceline.
3	The "POWER" LED is off.	The Sunny WebBox is not supplied with electricity.	<ul style="list-style-type: none"> Check the power supply of the plug socket and rectify any faults.
4	Sunny WebBox does not send any data to the Sunny Portal or the external FTP server (the "DATA UPLOAD" LED is red) or The connection test to Sunny Portal or to the external FTP server was not successful.	The data transfer is incorrectly configured.	<ul style="list-style-type: none"> Check the settings of Sunny Portal or FTP Push (see page 46). Perform a connection test. You must be registered for data transfer to Sunny Portal Register your Sunny WebBox in the Sunny Portal(see page 47).
		There is a fault in the network.	<ul style="list-style-type: none"> Check the network settings of the individual network components (e.g., router, Sunny WebBox, Computer) and adjust if necessary. Check the network components for defects or damage. Replace defective or damaged parts in the network. Perform a connection test.

No.	Problem	Cause	Rectification
5	Sunny Portal registration was not successful.	Invalid data	<ul style="list-style-type: none"> Perform a connection test (see page 49).
6	After an FTP download, the Internet Explorer shows old Sunny WebBox data.	The cache properties of Internet Explorer shows old data.	<ul style="list-style-type: none"> Use an FTP client in order to load the plant data from the internal FTP server of the Sunny WebBox.
7	The "SD CARD" LED glows red.	The SD card is full.	<ul style="list-style-type: none"> Replace the SD card or format the SD card in FAT 32 format.
		The SD card is write-protected.	<ul style="list-style-type: none"> remove the write protection of the SD card.
8	After a Sunny WebBox is replaced, two plants appear in the Sunny Portal with the same name.	Double Sunny Portal registration	<p>The Sunny WebBox supplied as a replacement device logs into the Sunny Portal with a new plant ID. Sunny Portal creates a new plant for this plant ID, even if you gave the plant the same name.</p> <ul style="list-style-type: none"> Assign the plant ID of the old plant to the replacement device (see page 50). In the replacement device enter the e-mail address of a user who has administrator rights in Sunny Portal for the plant. In Sunny Portal, delete the new plant the replacement device created.
9	Parameters can not be processed	You do not possess the necessary rights for the parameters.	<ul style="list-style-type: none"> Change the user group.
		You have an inverter with upgraded SMA <i>Bluetooth</i> Piggy-Back with a software version lower than 02.00.00.R.	<p>The configuration of parameters and the graphical presentation of monthly and annual energy values are not supported.</p> <ul style="list-style-type: none"> Perform an update of the <i>Bluetooth</i> Piggy-Back with the help of Sunny Explorer.
10	LAN connection can not be displayed in Windows.	The network card driver (Ethernet card) is not installed or the network card is defective.	<ul style="list-style-type: none"> Check the installation of the network adaptor in the device manager and re-install the driver when necessary or replace the faulty network card with a new one.

No.	Problem	Cause	Rectification
11	Fault in the user interface display	JavaScript is not activated.	<ul style="list-style-type: none"> • Activate JavaScript in the Web browser

9.2 Bluetooth Connection

No.	Problem	Cause	Rectification
1	No <i>Bluetooth</i> devices are displayed in the Sunny WebBox.	An incorrect NetID is set.	<ul style="list-style-type: none"> • Set the NetID of the PV plant (see installation manual of the Sunny WebBox with <i>Bluetooth</i>) and repeat the commissioning. • Consult your installer.
		The connection quality to the <i>Bluetooth</i> plant is too weak.	<ul style="list-style-type: none"> • Shorten the distance to the devices or use an SMA <i>Bluetooth</i> Repeater in order to extend the radio range. Repeat the commissioning (see installation manual of the Sunny WebBox with <i>Bluetooth</i>).
		There are already 4 masters connected to the <i>Bluetooth</i> plant.	<ul style="list-style-type: none"> • Remove a Master and repeat the commissioning (see installation manual of the Sunny WebBox with <i>Bluetooth</i>).
		There are already 2 participators connected to the device through which you want to connect to the <i>Bluetooth</i> plant.	<ul style="list-style-type: none"> • Change the position of the Sunny WebBox in order to create a connection via another device in the plant or remove a Master from the plant. Further information on SMA <i>Bluetooth</i> can be found in the download section at www.SMA.de/en.
2	Inverter is not accessible.	The <i>Bluetooth</i> connection was interrupted.	<ul style="list-style-type: none"> • Wait until the Sunny WebBox has automatically recreated the connection.

No.	Problem	Cause	Rectification
2	Inverter is not accessible.	Parameters for the <i>Bluetooth</i> communication were changed.	<p>When setting parameters that regulate the <i>Bluetooth</i> connection (e.g. parameters for the transmitting power and country parameters), the communication via <i>Bluetooth</i> is interrupted for some time because the inverters are carrying out a reboot of the communication interface. This does not affect inverters with upgraded SMA <i>Bluetooth</i> Piggy-Back.</p> <ul style="list-style-type: none"> • Wait until the inverter has completed a restart. The inverter is then accessible again.
		Inverter with upgraded SMA <i>Bluetooth</i> Piggy-Back is in night mode.	<ul style="list-style-type: none"> • Wait until the inverter is again working in normal operation. The inverter is then accessible again.
		The inverter has not been set to the same NetID and commissioned.	<ul style="list-style-type: none"> • The inverter must be set to the NetID of your PV plant and commissioned. Consult your installer.
3	An unknown inverter is displayed.	The set NetID is already assigned via an unknown <i>Bluetooth</i> PV plant.	<ul style="list-style-type: none"> • You must assign the PV plant with a free NetID. Consult your installer.
4	An inverter is displayed as unknown device in the plant tree.	The inverter with integrated <i>Bluetooth</i> has an old software packet (only for inverters SB 3000TL-20, SB 4000TL-20, SB 5000TL-20).	<ul style="list-style-type: none"> • Update the software packet version of your inverter to a version higher than 2.0. • Consult your installer.

10 Appendix

10.1 Information on the SD card

To ensure that the SD card is functioning properly, use SD cards available from SMA. Compatibility with all SD cards available on the market cannot be guaranteed. The Sunny WebBox does not support SD cards with storage capacities of over 2 GB or SDHC cards.

Only use SD cards which have been formatted with the FAT32 file system. If necessary reformat the SD card using the computer.

The Sunny WebBox converts the SD card's file system to TFAT in order to increase data security. If you wish to delete the SD card, you must format the SD card on the computer with the FAT32 file system.

10.2 Structure of the Config.xml File

The "config.xml" configuration file contains information on the Sunny WebBox network settings, the firmware version and further settings.

Example:

```
<?xml version="1.0" encoding="utf-8"?>
<WebBox>
  <Settings>
    <add key="Version" value="1.5" />
    <add key="Plant-ID" value=" " />
    <add key="User-ID" value="Max.Mustermann@sma.de" />
  <add key="DHCP" value="false" />
    <add key="IP-Address" value="192.168.0.168" />
    <add key="SubNetMask" value="255.255.255.0" />
    <add key="Gateway" value="192.168.0.100" />
    <add key="DNS-Server" value="192.168.0.100" />
      <add key="NAT-Port" value="80" />
    <add key="Webserver-Port" value="80" />
    <add key="Webservice-Port" value="80" />
  </Settings>
  <Export>
    (...)
  </Export>
</WebBox>
```

Setting	Meaning
Version	The current firmware version of the Sunny WebBox
Plant ID	Plant ID for Sunny Portal
User ID	User ID for Sunny Portal
DHCP	Displays whether the network settings are acquired via DHCP.
IP address	The current IP address of the Sunny WebBox
SubNetMask	The current Subnet mask of the Sunny WebBox
Gateway	The currently set Gateway IP address
DNS Server	The currently set DNS server IP address
NAT Port	The currently set NAT port
Web server port	The currently set port of the web server
Webservice port	The set port of the web service

10.3 Structure of an XML data file

Example:

```
<?xml version="1.0" encoding="utf-8"?>
<WebBox>
  <Info>
    <Created>2010-02-10T01:37:04</Created>
    <Culture>de</Culture>
  </Info>
  <MeanPublic>
    <Key>Meine Sunny WebBox:155000234:Metering.TotWhOut</Key>
    <Mean>761.858</Mean>
    <Base>1</Base>
    <Period>300</Period>
    <Timestamp>2010-02-09T10:55:52</Timestamp>
  </MeanPublic>
  <MeanPublic>
    (...)
  </MeanPublic>
</WebBox>
```

Setting	Meaning
Info	Information
Create	Date of generation

Setting	Meaning
Culture	Language
UtcOffset	Offset in minutes to UTC
MeanPublic	Data of the mean values
CurrentPublic	Data of the spot values
Key	Name of the element made up of device name, serial number of the device and the parameter name Individual values are separated by a colon. <i>Example: D <Key>SENS0700:5141:TmpMdul C</Key></i>
Min	Smallest value in measurement interval / merging
Max	Largest value in measurement interval / merging
Mean	Average value in measurement interval / merging
Base	Quantity of the spot values in interval / quantity of the merged values
Period	Length of the measurement interval in seconds
TimeStamp	Time stamp, at which the average was calculated

10.4 Information on your web browser

In order to be able to call up the Sunny WebBox user interface, you need a current web browser. You can use the standard settings of your web browsers.

Ensure that

- JavaScript is activated.
- If a Proxy server is active in your network, you must set up a Proxy exception rule in your browser (see page 10.5 "Setting up a Proxy exception rule in Internet Explorer" (page 70)).

10.5 Setting up a Proxy exception rule in Internet Explorer

1. Start Internet Explorer.
 2. In Internet Explorer, select "Tools > Internet Options".
 3. The "Internet Options" window opens.
 4. Select the "Connections" tab, then click [Settings].
 5. Select "Advanced".
 6. In the "For addresses that start as follows, do not use a Proxy server:" field, enter the address 192.168.*.
 7. Confirm entry with [OK] and close all further windows by selecting [OK] in each.
- The Proxy exception rule is set up.

10.6 Activating IPv6 in Windows XP SP2

In order to be able to locate the Sunny WebBox with the Sunny WebBox Assistant IPv6 is required.

IPv6 stands for Internet Protocol Version 6 and specifies the procedures that are necessary for data transfer via a packet-switching data network.

IPv6 is the successor to IPv4, which is still predominantly found in use in the internet. IPv6 is already activated in Windows Vista, Windows 7, MacOS and Linux. IPv6 has to be activated in Windows XP SP2.

In order to activate IPv6 manually, proceed as follows:

8. In Windows select "Start > Run"
9. In the "Open" field enter "ncpa.cpl" and select [OK]
 - The "Network connections" window opens.
10. Double click on the LAN connection via which the Sunny WebBox is connected.
 - If Windows displays several LAN connections, there are probably several network connections installed in the computer. Ensure that you select the correct network connection, with which the computer is connected to the Sunny WebBox. If necessary, read the manual for your computer.
 - In the event that no LAN connection is displayed, please refer to section 9.1 "General troubleshooting for the Sunny WebBox" (page 63).
11. Select [Properties].
 - The "LAN connection properties" window opens.
 - 1. Activate "Microsoft TCP/IP Version 6"
 - 2. Select [OK].
 - IPv6 is activated.

10.7 Allocating IP addresses in a local network

You select a static IP address (Internet Protocol). Use the address range which is available to your router. In most cases the address range of the router lies between 192.168.0.1. and 192.168.255.254. If necessary refer to the manual of your router.

Please note during the allocation of the IP address that the first three address parts of the IP address must be identical for all participants of the same network. Additionally you may not allocate the same IP address twice.

Example:

Router:	192.168.0.1
Computer 1	192.168.0.2
Computer 2	192.168.0.3
Sunny WebBox	192.168.0.168

11 Contact

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

- The current firmware version of the Sunny WebBox
- Serial number and hardware version of the Sunny WebBox.
- Type of communication interface between Sunny WebBox and the inverters.
- Type and serial numbers of the inverters connected to the plant.

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