![SMA logo]

System Monitoring
SUNNY PORTAL
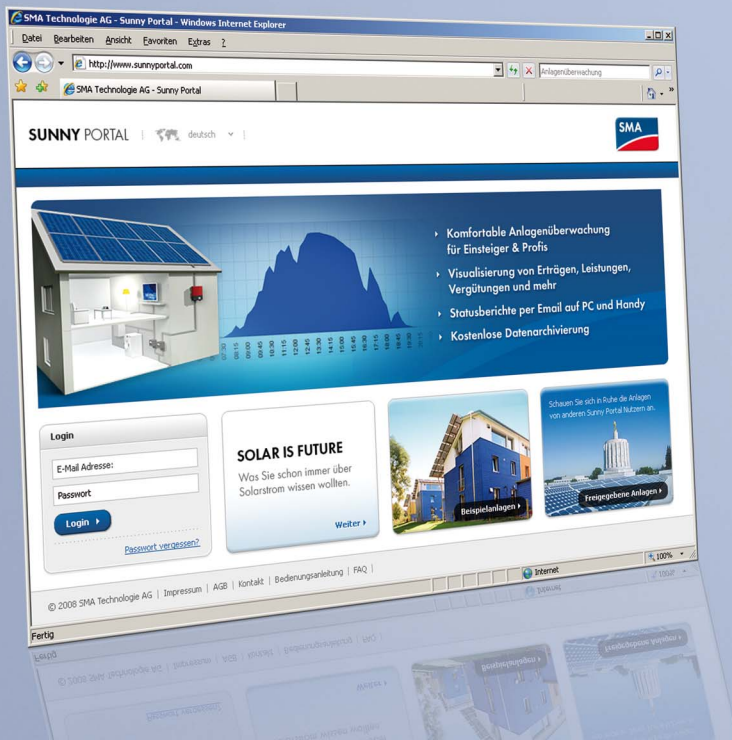**User Manual**

Table of Contents

1 Notes on this Manual

1.1 Target Group

1.2 Symbols Used

The following general information appears in this document as described below:

i Information

Informations provide valuable advice for the optimal installation and operation of your program.

1.3 Syntax

Type	Example of typographic convention
Menu, individual menu item	Select "File".
Several menu items	Select "File > Tools".
Button	Select [Save].

2 Sunny Portal

2.1 Applications

Sunny Portal is a web service from SMA Technology AG, which enables you to set up personal Sunny Portal web pages on which you can visualize the data pertaining to your photovoltaic system. Sunny Portal also archives this data. This means that you can access your plant data via the Internet from any location worldwide.

Sunny Portal offers you a wide range of functions for monitoring and visualizing your photovoltaic system, such as:

- System information via email

  (e.g. yield, max. output, CO_2 reduction, system messages)
- Presentation of system data in diagrams and tables
- Publishing of individual Sunny Portal web pages
- Individual page design by means of HTML
- Display of CO_2 reduction and revenue
- Creation of several web pages with visualizations of system data
- Insertion of personal plant images.
- Managing several plants with a single account

You can record the data from your inverters by means of a data logger (communications device) and forward it to Sunny Portal. The data is sent to Sunny Portal via web service (Sunny WebBox) or via e-mail using Sunny Data Control or Sunny Boy Control.

3 Registering at Sunny Portal

The registration at Sunny Portal depends on the communications device.

3.1 Register Using Sunny WebBox

Use the Sunny WebBox user interface to register at Sunny Portal with the Sunny WebBox.

1. Enter the settings for Sunny Portal in the Sunny WebBox interface as described in the Sunny WebBox user manual.

2. Your access data for Sunny Portal is sent to your email address (operator email).

3. Call up your personal Sunny Portal page as described in section 4 „Logging in at Sunny Portal" (9).

3.2 Register Using Sunny Boy Control / Plus

Using the Sunny Boy Control Control / Plus, you can register via SMA's Sunny Data Control software. The registration at Sunny Portal via Sunny Data Control is described in section 3.3 „Registering Using Sunny Data Control" (7).

Sunny Boy Control / Plus with NET Piggy-Back

If your Sunny Boy Control / Plus is equipped with the optional NET Piggy-Back, you can forward the plant data to Sunny Portal directly via Ethernet, or one of the possible modems. The registration at Sunny Portal occurs via the Sunny Boy Control / Plus menu and is described in the NET Piggy-Back's user manual.

3.3 Registering Using Sunny Data Control

The Sunny Data Control software from SMA is needed when forwarding data from the communications device to Sunny Portal (not necessary for the Sunny WebBox and Sunny Boy Control/Plus with NET Piggy-Back).

1. In Sunny Data Control, set up Sunny Portal email as described in the Sunny Data Control help. You will receive an email from Sunny Portal containing your access password.
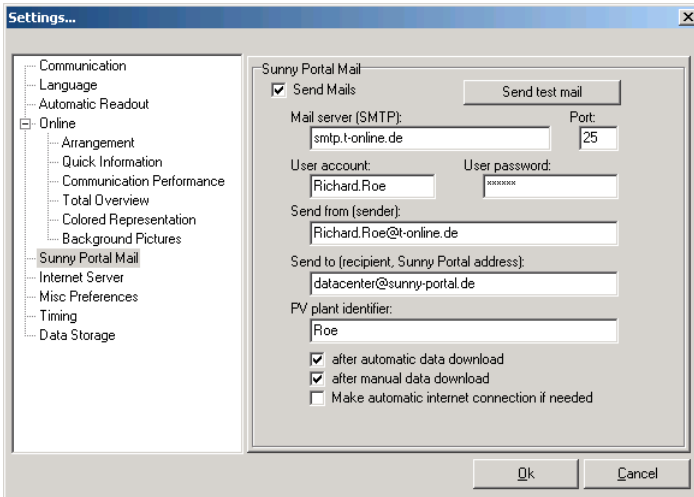
First-time Registration for New Customers

Enter any name for your system as "PV Plant Identifier" (e.g. SampleSystem). You cannot change the PV plant identifier once you have successfully registered!

If the PV plant identifier you choose is already used in Sunny Portal, you will receive an error message by email. You will then need to use a different name as your PV plant identifier.

After successful registration you can log in at Sunny Portal and call up your personal Sunny Portal page as described in section 4 „Logging in at Sunny Portal" (9).

Adding a Plant to an Existing Plant

If you have registered on Sunny Portal using your email address and want to add a plant to your existing plant, use the same email address but a different PV plant identifier than the one you assigned to your existing plant.

If you use a name as your PV plant identifier that another Sunny Portal customer already uses, you will receive an error message by email from Sunny Portal. You will then need to use a different name as your PV plant identifier.

After successful registration you can log in at Sunny Portal and call up your personal Sunny Portal page as described in section 4 „Logging in at Sunny Portal" (9).

Sending Data to External Plants (Authorized Users)

Before you can send your data to an external plant using your own email address, the plant owner must enter you as an authorized user for his plant. See section 10.3 „User Management" (54).

4 Logging in at Sunny Portal

i **Requirements**

You have registered at Sunny Portal as described in section 3 „Registering at Sunny Portal" (7).

1. Call up www.SunnyPortal.com.
2. To safely transfer the login data, activate "SSL".
3. Type the email address you specified during registration into the "Email:" field.
4. Enter the password that was emailed to you in the "Password:" field.
5. Select [Login].

    ☑ When logging into Sunny Portal for the first time, the "User information" **page opens.**
6. Type in the address data.
7. Select [Save].

    ☑ Your Sunny Portal page is displayed.

    ☑ Once your plant data has been forwarded, Sunny Portal automatically sets up various standard pages in the "Visualization" menu. (6.3 „Standard Pages" (25)).

i **Delays in the Visualization**

Under certain circumstances, it can take up to three hours until your plant data is displayed on Sunny Portal.

i **Display According to Plant Data Transferred**

The display of the available data on the page shown will vary according to the amount of plant data transferred.

4.1 Creating an Auto-login Shortcut

An auto-login shortcut allows you to call up your personal Sunny Portal page with one mouse click. This saves you having to log in at Sunny Portal with your access data (typing in your email address and password).

> **i** **Security Risk**
>
> An auto-login shortcut does present a security risk.
>
> Within the shortcut, your personal access data (email address, password) is saved in a readable format on your PC. Anyone with access to your PC can read this data and use it.

1. Right-click on the desktop.

   ☑ The Desktop menu opens.

2. Select "New > Shortcut".

   ☑ The "Create Shortcut" window opens.

3. Type the following link into the field and replace the text in bold with your login data with which you log in at Sunny Portal (email address, password):

   http://www.sunnyportal.com/Templates/
   Autologin.aspx?user=**Youremailaddress**&pass=**Yourpassword**

4. Select [Continue].

5. In this field, type a name for the shortcut, for example: "Sunny Portal".

6. Select [Finish].

☑ The shortcut is now on your desktop. The auto-login shortcut has been created.

5 Description of the Interface

Your Sunny Portal web interface is divided into two areas.
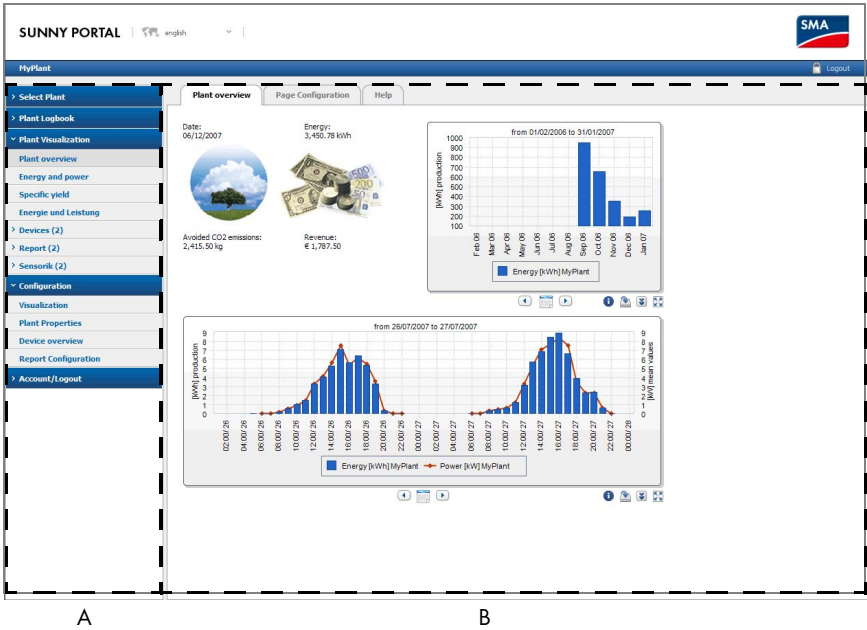
A   Navigation area

You can call up the individual pages via the navigation area.

B   Display area with tabs

The pages that you select in the navigation area open here as tabs.

5.1 Navigation Area

The navigation area is subdivided into the following main menus.

Select Plant (only if several plants are available)	In this menu, all plants assigned to your email address are listed. The name of the currently selected plant is displayed in the blue bar on the upper left.

System log	In this menu, you receive messages concerning Sunny Portal and your plant.

Visualization	This menu contains pages with visualizations of your plant data automatically created by Sunny Portal or by you.

Configuration	This menu contains pages with which you can carry out various configurations and create new pages, for example.

Account / Logout	In this menu, you can change your account and end your Sunny Portal page session.

> **i** **Additional Menu Options in Advanced Mode**
>
> For explanations of the additional menu options in advanced mode, see section 10 „Additional Functions in Advanced Mode" (45).

5.2 Display Area with Tabs

The page that you select in the navigation area is shown as a tab in the display area.

Page configuration

If you select a page in the "Visualization" menu, the "Page Configuration" tab is also displayed. You can edit the displayed page via the page configuration.

5.3 Logout

You can end your visit to your Sunny Portal page by selecting "Account / Logout > Logout" or clicking the lock icon on the upper right of the Sunny Portal page.

6 Page Design

6.1 Creating a New Page

1. Select "Configuration > Visualization".

    ☑ The "Page Configuration (groups)" page opens.

2. Select [New Page].

    ☑ The page with the page templates opens.

3. Enter a page name.

4. Select a page template.

    ☑ The "Page Configuration" page opens. The new page is created.

5. Select a module type in the "Module Type" field in one area of the page.

6. Select [Create].

7. Set the desired module type as described in section 6.2

6.2 Module Type

In Sunny Portal, you design pages with module types. The following module types area available.

Table

	E-Total production [kWh] 23/11/2008	E-Total production [kWh] November 2008	E-Total production [kWh] 2008
WR850 neu	0.40	14.36	789.78
WR2500neu	0.54	39.37	0.00
	0.94 [sum]	53.72 [sum]	789.78 [sum]

< year < month < day   day > month > year >

Diagram

Using the "Diagram" module type, you can display values over a period of time. The X axis is the time axis.
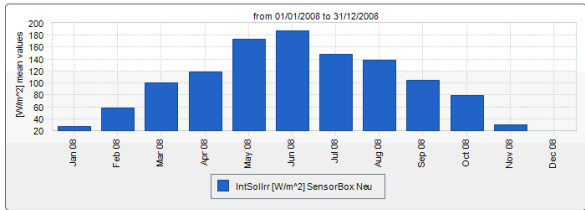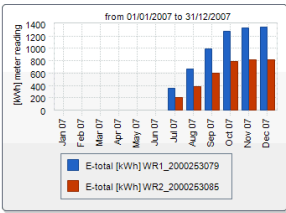
Image

Using the "Image" module type, you can display any image on the page.

> **i**
>
> **Image Size and Format**
>
> The image cannot be any larger than 150 kB. The image will be proportionally adjusted in height and width, according to the size of the page layout.
>
> The following image file formats are supported: JPG, PNG, GIF.

XY Diagram

Using the "XY diagram", you can display pairs of values in a diagram. The time axis is not shown. Examples include:

- Plant power with irradiation (only for plants with Sunny SensorBox)
- Performance ratio with irradiation
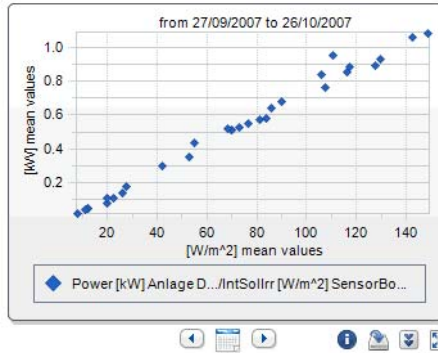
Overview

Using the "Overview" module type, you can display the following:

- Current date
- Energy of the plant
- CO_2 reduction of the plant
- Revenue of the plant
- Standard image or user-defined image
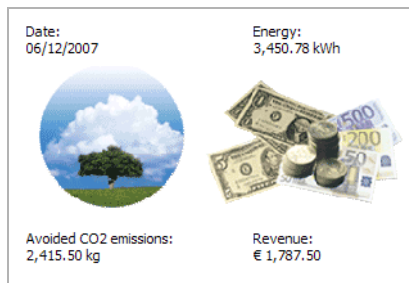
Text

Using the "Text" module type, you can display any text on the page.

6.2.1 Creating Tables

1. Select the desired table configuration.

    The following settings are possible.

Standard configuration for the display of plant energy / inverter energy.
The following channels are automatically created:
• Energy meter reading of the current date
• Energy production of the current month
• Yield production of the current year
User-defined
All settings can be selected freely.

2. Select [Continue].
•   Standard configuration:
☑   If you have selected a standard configuration, the "Standard Configuration" page opens. The table is now set.
•   User-defined
    ☑ The "Page Configuration" page opens.
3. Select "Add Device / Plant".
4. Select a plant or a device in the "Plant / Devices" field.
5. Select [Apply].
    ☑ The selected device or the plant is added to the table.
6. To add further plants or devices, select "Add Device / Plant".
7. To configure the channel, select the hand icon or [- - - -].
    ☑ The "Channel Configuration" page opens.
8. In the "Name:" field, enter a heading for the column (or row, depending on the alignment of the table), if desired.
9. In the "Time Unit" field, select the period whose value is to be displayed.
10. Activate the desired end time in the "End time:" field.

    The following settings are possible.

current	The values from the current date (e.g. current day, current month) will always be displayed.
defined	You can select the date whose value is to be displayed (e.g. a specific day, a specific month).

11. In the "Channel" area, select the desired channel for the respective devices or the plant.

i **Selectable Channels**

For devices, all channels transferred to Sunny Portal are available. For a plant, the calculated channels are available (CO_2 reduction, energy, power, revenue, performance ratio, specific plant performance).

The unit of the first channel selected determines the additional channels available for selection.

12. In the "Result:" field, select how the result is to be calculated.

This only makes sense for more than one device, or more than one plant.

The following settings are possible.

Sum	SSum of the channel values
Min	Lowest channel value
Mean values	Average channel value
Max	Highest channel value

13. Select [Apply].

☑ The page configuration opens.

Alignment

14. Activate the desired alignment of the table.

Download / Export Settings

The table data can be saved in the set format in the page view via "Download".

15. Select the storage format in the "Download file type" field.

The following settings are possible.

CSV (Character Separated Values)	The text format CSV is used to save or exchange data which has a simple structure. The data in a CSV file is separated by a character. Sunny Portal uses the semicolon as the separator.
ODS (Open Document Format)	The ODS file format is an open document format for Office program files (as per international standard ISO / IEC 26300).
XLSX	This new Excel file format can be opened using Microsoft Excel 2007. Older Excel versions require the installation of a corresponding format converter from Microsoft.

16. Select [Save].

☑ The page for editing the page layout opens. The table module type is set.

To view the page, select the page's tab.

6.2.2 Creating Charts

A diagram consists of at least an X axis (configuration of time) and a Y1 axis. The Y2 axis is optional. Use the Y2 axis if you wish to display values with a different unit.
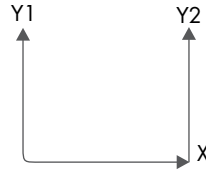
Y1 Axis, Y2 Axis

1. Select a plant or a device in the "Plant / Devices" field.

i	**Selectable Devices**
	Only the devices of the current plant can be selected.

2. Select a channel in the "Channel:" field.

i	**Selectable Channels**
	For devices, all channels transferred to Sunny Portal are available. For a plant, the calculated channels are available (CO_2 reduction, energy, power, revenue, performance ratio, specific plant performance).
	The unit of the first channel selected determines the additional channels available for selection.

3. Select [+].

   ☑ The selected device or the plant is shown in the table.

4. You can add additional devices or plants with the desired channels in the same manner if you wish.

i	The unit of the first channel determines the additional channels available for selection. If the base unit of the first selected channel is "Watt", the only channels subsequently selectable are those compatible with "Watt". The selection options are automatically restricted by Sunny Portal accordingly.

5. Select the unit in the "Unit:" field.

6. Select the channel type of the value in the "Value:" field.

   The following channel types are available, depending on the channel.

Analog values	
Mean values	The average channel value during the set period.
Maximum values	The highest channel value during the set period.
Minimum values	The lowest channel value during the set period.

Meter channels	
Production	The increase within the period to be selected.
(Meter reading	The current total meter reading of the value.
accum. production	The total increase within the period to be selected.

7. Select the display style in the "Graph type" field.

   The following display styles are possible.

A

D

B

E

C

F
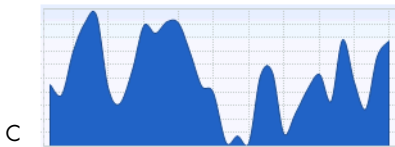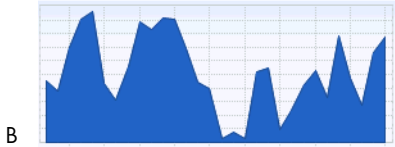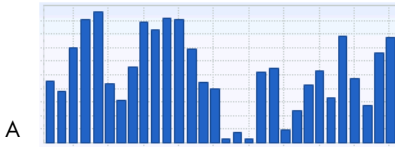
A	Bar	D	Line with points
B	Area	E	Line
C	Curve area	F	Points without line

8. Set the scaling.

   – Automatic scaling: To automatically scale the axis, activate "Automatic scaling min:" and "Automatic scaling max:".

   – -or-

   – Set your own scale values: enter scale values in the "Min:" and "Max:" fields.

Configuration of Time

9. In the "Display period:" field, select the period to be displayed.

10. In the "Number of periods:" field, select how many display periods are to be displayed.

11. In the "Time unit:" field, select the time units in which the periods are to be subdivided.

12. Activate the desired end time in the "End time:" field.

    The following settings are possible.

current	The values of the current date are always displayed (e.g. current day, current month).
defined	You can select the date whose value is to be displayed (e.g. a specific day, a specific month).

Extended Configuration

13. Enter a heading for the diagram in the "Diagram name" field.

14. Select the download format in the "Download file type" field.

15. If the legend for this diagram is to be shown by default, activate "Show legend".

16. Select [Save].

☑ The page for editing the page layout opens. The diagram module type is now set.

To view the page, select the page's tab.

6.2.3 Creating Images

ℹ **Image Size and Format**

The image cannot be any larger than 150 kB. The image will be proportionally scaled in height and width, according to the size of the page layout.

The following image file formats are supported: JPG, PNG, GIF.

1. Select [Browse].

   ☑ The "Select file" window opens.

2. Open the desired image.

   ☑ The path of the image is shown in the corresponding line.

3. Select a caption in the "Title:" field if desired.

4. Select [Save].

☑ The page for editing the page layout opens. The image module type is set.

To view the page, select the page's tab.

6.2.4 Creating XY Diagrams

You can display pairs of values in a diagram using the XY Diagram. The time axis is not shown.

Examples include:

- Plant power with solar radiation (only for plants with Sunny SensorBox).
- Performance ratio with solar radiation.

Y axis, X axis

1. Select a plant or a device in the "Plant / Devices" field.

i **Selectable Devices**

Only the devices of the current plant can be selected.

2. Select a channel in the "Channel:" field.

i **Selectable Channels**

For devices, all channels transferred to Sunny Portal are available. For a plant, the calculated channels are available (CO_2 reduction, energy, power, revenue, performance ratio, specific plant performance).

The unit of the first channel selected determines the additional channels available for selection.

3. Select [+].

☑ The selected device or the plant is shown in the table.

4. You can add additional devices or plants with the desired channels in the same manner if you wish.

5. You can set additional values for the Y1 axis in the same manner if desired.

i The unit of the first channel determines the additional channels available for selection. If the base unit of the first selected channel is "Watt", the only channels subsequently selectable are those compatible with "Watt". The selection options are automatically restricted by Sunny Portal accordingly.

6. Select the unit in the "Unit:" field.

7. Select the channel type of the value in the "Value:" field.

The following channel types are available, depending on the channel.

Analog values	
Mean values	The average channel value during the set period.
Maximum values	The highest channel value during the set period.
Minimum values	The lowest channel value during the set period.

Meter channels	
Production)	The increase within the period to be selected.
Meter reading)	The current total meter reading of the value.
(accum. production)	The total increase within the period to be selected.

8. Set the scaling.

   – Automatic scaling: To automatically scale the axis, activate "Automatic scaling min:" and "Automatic scaling max:".

   -or-

   – Set your own scale values: enter scale values in the "Min:" and "Max:" fields.

Configuration of Time

9. In the "Display period:" field, select the period to be displayed.

10. In the "Number of periods:" field, select how many display periods are to be displayed.

11. In the "Time unit:" field, select the time units in which the periods are to be subdivided.

12. Activate the desired end time in the "End time:" field.

    The following settings are possible.

current	The values from the current date (e.g. current day, current month) will always be displayed.
defined	You can select the date whose value is to be displayed (e.g. a specific day, a specific month).

Extended Configuration

13. Enter a heading for the diagram in the "Diagram name" field if desired.

14. In the "Download file type" field, select the storage format of the diagram.

    The following settings are possible.

CSV (Character Separated Values)	The text format CSV is used to save or exchange data which has a simple structure. The data in a CSV file is separated by a character. Sunny Portal uses the semicolon as the separator.
ODS (Open Document Format)	The ODS file format is an open document format for Office program files (as per international standard ISO / IEC 26300).
XLSX	This new Excel file format can be opened using Microsoft Excel 2007. Older Excel versions require the installation of a corresponding format converter from Microsoft.

15. If the legend for this diagram is to be shown by default, activate "Show legend".

16. Select [Save].

☑ The page for editing the page layout opens. The XY diagram module type is set.

To view the page, select the page's tab.

6.2.5 Creating Overviews

You can select the following values for display on the
overview page:

- Energy of the plant
- CO_2 reduction of the plant
- Revenue

1. Activate the field of the desired value.
2. Set the unit size.
3. Set the image.
   - To use the displayed image, activate "automatic".
   - To use your own image, activate "user-defined" and select [Browse...].
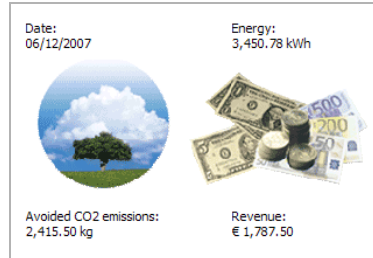
> **i**   **Image Size and Format**
>
> The image cannot be any larger than 150 kB. The image will be proportionally scaled in
> height and width, according to the size of the page layout.
>
> The following image file formats are supported: JPG, PNG, GIF.

4. Select [Save].

☑ The page for editing the page layout opens. The overview module type is set.

To view the page, select the page's tab.

6.2.6 Creating Text

Using the text module type, you can display any text, for example, information on the location and the size of the plant.

You can format the text using HTML if you are familiar with this language.

1. Enter a title for the text in the "Title" field if desired.

2. Enter the desired text in the field below.

3. Activate "HTML Format" to use HTML.

4. Select [Save].

☑ The page for editing the page layout opens. The text module type is set.

To view the page, select the page's tab.

Prohibited HTML Tags

SCRIPT (and thus, Javascript)

META

APPLET

FORM

HTML

HEAD

FRAME & IFRAME

6.3 Standard Pages

6.3.1 Overview of Standard Pages

Standard pages are pages containing the most important data that Sunny Portal creates automatically the first time your plant data is sent. The standard pages are saved in the "Visualization" menu. Pages with the most important data can then be accessed quickly and easily. You can also modify standard pages.

The following standard pages are available:

Plant overview	
Energy and power	
Specific plant performance	
Performance Ratio	Is automatically created and set if a Sunny SensorBox is added to your Sunny Portal plant. -or- Is automatically created when the communications device sends irradiation and temperature sensor data to Sunny Portal. In this case, the irradiation channel must be assigned manually, see section 10.1.7 „Setting the Performance Ratio" (51).
Overview	One overview page per inverter.
Daily report	
Monthly report	
Sensor	Is automatically created when a Sunny SensorBox is added to your Sunny Portal plant or the communications device sends irradiation and temperature sensor data to Sunny Portal.

i   **"Sensors" page only for the first Sunny SensorBox**

When the first Sunny SensorBox for a plant is added to the portal, Sunny Portal automatically creates the "Sensors" group with a separate page for each connected sensor.

i   **Updating the "Performance Ratio" Page**

When you add additional Sunny SensorBox devices for a plant to Sunny Portal, the channel list changes, or you replace a Sunny SensorBox, the "Performance Ratio" page is not automatically updated. You must update the calculated "Performance Ratio" channel manually as described in section 10.1.7 „Setting the Performance Ratio" (51).

6.3.2 Creating Standard Pages

Sunny Portal automatically creates the standard pages. If you have accidentally deleted or changed a standard page, you can create standard pages as described below.

1. Select "Configuration > Visualization".

    ☑ The Page Configuration (groups) page opens.

2. In the "Create standard pages" field, select the icon in the row of the desired page.

Create standard page		
Page name	**Plant / device class**	
Plant overview	Photovoltaic plant with Sunny WebBox	
Energy and power	Photovoltaic plant with Sunny WebBox	
Specific yield	Photovoltaic plant with Sunny WebBox	
Performance Ratio	Photovoltaic plant with Sunny WebBox	
Overview	Photovoltaic Inverter	
Daily report	Photovoltaic plant with Sunny WebBox	
Monthly report	Photovoltaic plant with Sunny WebBox	
Sensor	Sensor	

☑   The selected standard page is created in the visualization menu.

The following standard pages are created in a group: overview in the "Devices" group, daily and monthly plant report in the "Report" group, and sensor in the "Sensors" group.

6.4 Publishing Pages on Sunny Portal

You can share individual pages of your Sunny Portal page so that the pages can be viewed by other Internet users.

Once you have shared a page, your plant will also automatically be listed on the Sunny Portal homepage under the menu item "Publicly available plants".

If you click on your plant in the list, a new window opens in which all your shared pages can be seen.

1. In the "Visualization" menu, click on the page name.

    ☑ The selected page opens.

2. Select the "Page configuration" tab.

    ☑ The page configuration opens.

3. Activate "Also share page on www.sunnyportal.com".

4. Select [Save].

☑   The page is set to public access at www.SUNNYPORTAL.com.

If you would like to see a preview of the page, select "Open page in new window".

6.5 Publishing Pages on the Internet

You can share individual pages of your Sunny Portal on the Internet so that these pages can be viewed by other Internet users. Each of your individual Sunny Portal pages has a separate URL. You can use this URL to insert a link to your page on another website.

You can call up the page's URL as described below.

1. In the "Visualization" menu, click on the page name.
   - ☑ The selected page opens.
2. Select the "Page configuration" tab.
   - ☑ The page configuration opens.
3. Copy the URL from the "Page URL" field and insert it as a link in web editor (e.g. Microsoft Office Frontpage).
☑ The page is now published on the Internet.

6.6 Editing Pages

6.6.1 Changing Module Types

1. In the "Visualization" menu, click on the page name.
   - ☑ The selected page opens.
2. Select the "Page configuration" tab.
   - ☑ The page configuration opens.
3. Select [Edit] in the field of the module type to be edited.
   - ☑ The page for editing the set module type opens.
4. Edit the module type as described in the respective section of the module type (see beginning with section 6.2 „Module Type" (14)).

6.6.2 Deleting Module Types

1. In the "Visualization" menu, click on the page name.
   - ☑ The selected page opens.
2. Select the "Page configuration" tab.
   - ☑ The page configuration opens.
3. To immediately delete the module type, select [Delete].
☑ The module type is immediately deleted.

You can set a new module type as described in section6.2 „Module Type" (14). If you don not set a module type, the area remains blank.

6.6.3 Deleting Pages

1. In the "Visualization" menu, click on the page name.

   ☑ The selected page opens.

2. Select the "Page configuration" tab.

   ☑ The page configuration opens.

3. To delete the entire page, click on [Delete Page].

4. Click on [Yes] to accept the settings.

☑ The "Page Configuration (groups)" page opens.

   The page is deleted.

6.6.4 Changing Page Names

1. In the "Visualization" menu, click on the page name.

   ☑ The selected page opens.

2. Select the "Page configuration" tab.

   ☑ The page configuration opens.

3. Change the page name in the "Name of this page" field.

4. Select [Save].

☑ The page name is now changed.

6.7 Arranging Pages in the Visualization Menu

This section explains how to create or delete new groups, assign pages to a group, and change the positions of pages and groups.

In the "Visualization" menu, you can change the positions of pages and groups, and arrange the pages in groups in order to make it easier to acquire an overview of the navigation. Sunny Portal automatically creates the "Devices" group, which contains the overview pages of your inverters.

The number in brackets alongside the group name indicates how many pages are assigned to the group.

6.7.1 Creating New Groups

To create a new group, you must first assign a group name and then assign pages to the group. The pages are assigned to the groups by changing the page position as described in section 6.7.3 „Changing the Positions of Pages and Groups" (29).

1. Select "Configuration > Visualization".

   ☑ The page configuration opens.

2. Select [New group].

   ☑ The "Configure group" page opens.

3. Enter a name for the group in the "Group name" field.

4. Select [Save].

☑ The page configuration opens. The new group has been created. The new group can now be seen in the directory tree and in the visualization menu.

Now you can assign the desired pages to this group by changing the page positions as described in section 6.7.3 „Changing the Positions of Pages and Groups" (29).

6.7.2 Deleting Groups

i **The Group and all subpages are irrevocably deleted!**

If you delete a group, all the subpages assigned to the group will also be irrevocably deleted!

1. Select "Configuration > Visualization".

☑ The page configuration opens.

2. Select the name of the group.

3. Select [New group].

☑ The "Configure group" page opens.

4. To irrevocably delete the group, select [Delete].

6.7.3 Changing the Positions of Pages and Groups

You can change the order of pages and groups as they appear in the "Visualization" menu. This means you can create your own structure for the visualization menu, and arrange your pages.

Groups are moved as groups, i.e. together with the subpages assigned to them. The position of the "(without group)" group cannot be changed; it always remains in first place.

1. Select "Configuration > Visualization".

☑ The page configuration opens.

2. Select "Modify position".

3. Select the name of the group or the page.

☑ The arrow buttons are now enabled. The name of the page or group is shown in gray.

4. To move the group or page, select the arrow pointing up or down.

☑ The page or group moves by one position.

5. Select the corresponding arrow until the desired position is reached.

6. Select [Save].

☑ The page or group has now been moved.

7 Plant Settings

7.1 Selecting Plants

If more than one plant is assigned to your account at Sunny Portal, you can select the desired plant in the "Select Plant" menu. The name of the currently selected plant is displayed in the blue bar on the upper left.

7.2 Opening Plant Properties

7.2.1 Changing Plant and Carrier Data

1. In case of several plants, first select the plant in the "Select Plant" menu.
2. Select "Configuration > Plant Properties".
   ☑ The plant properties page opens.
3. Select [Edit].
4. Change the plant and carrier data. See the following table for explanations.
5. Select [Save].
☑ The plant and carrier data have been changed.

Explanations of the Plant Properties

Plant data	
Name	The name of the current plant. The plant identifier is used as the default plant name. You can change the plant name (see section 7.3 „Changing Plant Names" (31).
Plant identifier	The plant identifier of the plant currently selected. The plant identifier is defined when you register the plant.
Location	Enter any information on the plant's location properties.
Commissioning	The date on which the plant was created in Sunny Portal.
Street / No.	The street address where the plant is located.
Zip / City	The zip code and city where the plant is located.
Country	The country where the plant is located.
State / Province	The federal state / province where the plant is located.
Time zone	Here you can select the time zone.
Description	Enter any comments on the plant.
Longitude	The longitude and latitude of the plant's location. To automatically enter the geo data for the location from the database, select "Find geo data".
Latitude	
Altitude	The altitude of the plant's location.

Plant power	The plant's total output (kWp = kilowatt peak).
	If the "Calculate plant power from string output" field is activated, the plant's output is calculated from the string output.
	Requirement: The supply phase and the string connection must be set. See sections 8.6 „Setting Supply Phases" (39) and 8.7 „Setting String Connections" (39).
Module type	Enter information on the type of module.
Manufacturer	Enter information on the module manufacturer.
Carrier data	
Information on the plant operator.	

7.3 Changing Plant Names

The plant identifier is used as the default plant name. You can change the plant name and name your plant. If you have several plants registered on Sunny Portal, you can better distinguish the plants by using meaningful names.

1. In case of several plants, first select the plant in the "Select Plant" menu.
2. Select "Configuration > Plant Properties".
   ☑ The "Plant Properties" page opens.
3. Select [Edit].
4. In the "Name:" field, enter the desired name for the plant (e.g. Smith House or WebBox Plant South).
5. Select [Save].
☑ The name of the plant has now been changed.

7.4 Deleting Plants

i **You cannot undo the delete process!**

If you delete a plant, all devices and data related to this plant are irrevocably deleted!

1. In case of several plants, first select the plant in the "Select Plant" menu.
2. Select "Configuration > Plant Properties".
   ☑ The "Plant Properties" page opens.
3. Select [Delete].
   ☑ A confirmation prompt opens.
4. To irrevocably delete the entire plant with all the data on Sunny Portal, select [Yes].
☑ The plant has now been deleted.

7.5 Peak Power from String Data

You can either enter the total output (kWp = kilowatt peak) of your plant in the plant properties or have it calculated from the string output.

To allow the plant power to be calculated from the string output, the supply phase and the string connection must be set.

1. Set up the supply phase as described in section 8.6 „Setting Supply Phases" (39).
2. Set up the string connection as described in section 8.7 „Setting String Connections" (39).
3. In case of several plants, first select the plant in the "Select Plant" menu.
4. Select "Configuration > Plant Properties".
   ☑ The "Plant Properties" page opens.
5. Select [Edit].
6. Activate "Calculate peak power from string output".
7. Select [Save].
☑ The plant power is calculated from the string output.

7.6 Accessing the System Log

The system log contains messages from Sunny Portal and from your plant. These messages help you, for example, to identify failures which occur in your plant. The number after the colon indicates the number of unread messages.

Portal	Messages from the Sunny Data Control software and from the Sunny WebBox are shown here. The messages include, for example, information regarding the transfer of your plant data to Sunny Portal.
Plant	Messages from the devices are displayed here.

1. Select "System log".
2. Select "Portal" or "Plant".
☑ The system log opens.

7.6.1 Filtering Messages

You can filter the messages in the system log so that only specific messages are displayed.

The following settings are possible.

Go to	Here, you can select the date whose messages are to be displayed.
Status	• not approved All messages which have not been approved are displayed (standard setting). • approved All approved messages are displayed. • all All approved and unapproved messages are displayed.
Plant / Devices	• all Messages from Sunny Portal, the plant, service, and the devices are displayed. • Portal Messages from Sunny Portal are displayed. • Plant Messages from the currently selected plant are displayed. • Devices (e.g. SB4200TL) Messages regarding the selected device are displayed.
Count per page	This allows you to select how many messages are to be displayed per page.
Type	This allows you to select which messages are to be displayed. • Info / Warning / Failure / Error

7.6.2 Approving Messages

You can approve messages in order to mark them as read. This allows you to differentiate between read messages and new messages.

1. Activate the fields at the beginning of the messages that are to be approved.

    -or-

    To select all displayed messages, activate "mark all".

    -or-

    To immediately approve a message, select the red checkmark.

2. Select [Submit].

☑ The marked messages have now been approved.

8 Device Settings

8.1 Accessing and Filtering Device Overviews

1. **Select** "Configuration > Device Overview".

☑ The device overview of all devices from the current plant opens.

Filtering Device Overviews

1. To filter the device overview, set the filter.

   The following settings are possible:

Device	Enter the complete name of a device or parts of a device name.
Serial number	Enter the complete serial number of the device or parts of the serial number.
Device class	Select the device class that you are searching for.
Active device	Select the status of the devices that you are searching for. • all: all activated and deactivated devices are displayed. • active: only activated devices are displayed. • deactivated: only deactivated devices are displayed.
Count per page	Select how many devices are to be displayed per page.

2. **Select** [Refresh].

☑ The device overview is now filtered.

To delete the filter settings, select [Reset].

Explanation of Device Overview
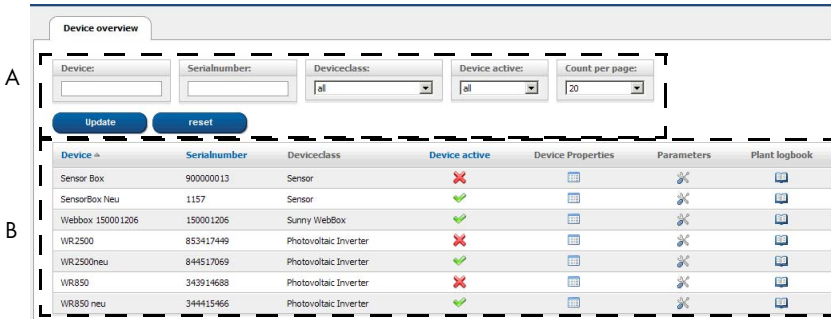
A   Settings for filtering the device overview

B   Device overview

The device overview is structured as follows:

Device	The device name. The device's serial number is displayed as the default name. To change the name, see section 8.3 „Changing Device Names" (37).
Serial number	The serial number of device
Device class	The device class of the device. • Photovoltaic inverter • Sunny WebBox • Sensor
Active device	Indicates whether the device is activated in Sunny Portal, see section 8.4 „Deactivating / Activating Devices" (38). A green arrow means that the device is activated in Sunny Portal, i.e. is being used in Sunny Portal. A red cross means that the device is deactivated in Sunny Portal, i.e. is not being used in Sunny Portal.
Device properties	Opens the "Device Properties" tab, see section 8.2 „Accessing and Changing Device Properties" (36).
Parameters	Opens the "Parameter" tab.
System log	Opens the system log and displays the entries for the selected device. System log, see section 7.6 „Accessing the System Log" (32).

8.2 Accessing and Changing Device Properties

1. **Select** "Configuration > Device Overview".

2. **In the device row, select the** "Device Properties" **icon.**

☑ The tab of the selected device with the device properties opens.
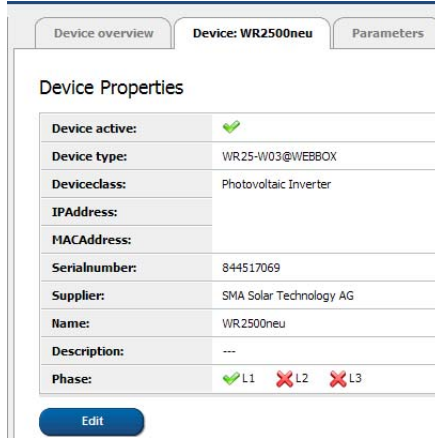
Explanation of Device Properties

Active device	Indicates whether the device is activated in Sunny Portal, see section 8.4 „Deactivating / Activating Devices" (38). Activated devices are used in Sunny Portal; deactivated devices are not used. A green arrow means that the device is activated in Sunny Portal. A red cross means that the device is deactivated in Sunny Portal.
Device type	The device type of the device (e.g. WR42MS04@WEBBOX) DeviceType@CommunicationsDevice.
Device class	The device class of the device. • Photovoltaic inverter • Sunny WebBox • Sensor
IP address (only Sunny WebBox)	If you select the IP address, you can directly access your Sunny WebBox user interface. In order to do this, you must first activate the Sunny WebBox IP address at your router. Refer to your router's user manual for instructions on how this is to be achieved.
MAC address (only Sunny WebBox)	The Sunny WebBox MAC address.
Serial number	The serial number of the device.

Manufacturer	The device manufacturer.
Name	The device name. The device's serial number is displayed as the default name. To change the name, see section 8.3 „Changing Device Names" (37).
Description	Enter comments for the device.
Phase (L1, L2, L3)	The phases to which the device is connected. A green arrow means that the device is connected to this phase. A red cross means that the device is not connected to the phase, or that the phase has not yet been configured.

Changing Device Properties

1. To change the device properties, select [Edit].
2. Make the changes to the device properties.

   The following settings are possible:

Active device	To deactivate the device, deactivate the "active" field.
	To activate the device, activate the "active" field.
Name	The device name. To change the name, enter a new name in the "Name:" field.
Description	Enter comments about the device.
Phase (L1, L2, L3)	Activate the phases to which the device is connected.
String	Set up the string connection as described in section 8.7 „Setting String Connections" (39).

8.3 Changing Device Names

The device's serial number is displayed as the default name.

1. Select "Configuration > Device Overview".

   ☑ The "Device Properties" page opens.

2. In the device row, select the [Device Properties] icon.

   ☑ The device's properties are displayed.

3. Select [Edit].
4. Enter the new name in the "Name:" field.
5. Select [Save].

☑ The device name has now been changed.

8.4 Deactivating / Activating Devices

You can deactivate devices (e.g. inverters, communications devices) on Sunny Portal. The device and its data are then no longer displayed or processed on Sunny Portal, and the device data is no longer available for channel calculations or display.

1. Select "Configuration > Device Overview".

    ☑ The "Device Properties" **page opens.**

2. In the device row, select the [Device Properties] icon.

    ☑ The device's properties are displayed.

3. Select [Edit].

4. Activate the device by activating the "active" field.

    Deactivate the device by deactivating the "active" field.

5. Select [Save].

☑ Depending on the setting, the device is either deactivated or activated.

8.5 Deleting Devices

ℹ️ If you delete a device, all device data is irrevocably deleted! First check whether it is sufficient to simply deactivate the device.

1. Select "Configuration > Device Overview".

    ☑ The device Properties page opens.

2. In the device row, select the [Device Properties] icon.

    ☑ The device's properties are displayed.

3. Select [Edit].

4. Select [Delete].

    ☑ A confirmation prompt is displayed.

5. To irrevocably delete the device, select [Yes].

☑ The device has now been deleted.

8.6 Setting Supply Phases

You can select the inverter supply phase.

1. Select "Configuration > Device Overview".

    ☑ The „Device Properties" page opens.

2. In the device row, select the [Device Properties] icon.

    ☑ The device's properties are displayed.

3. Select [Edit].

4. In the "Phase:" field, activate the corresponding L1, L2 or L3 fields.

5. Select [Save].

☑ The phase is now set.

8.7 Setting String Connections

You can set the individual strings of a string inverter.

1. Select "Configuration > Device Overview".

    ☑ The "Device Properties" page opens.

2. In the device row, select the [Device Properties] icon.

    ☑ The device's properties are displayed.

3. Select [Edit].

4. Select [Add string].

    ☑ The menu for setting a new string opens.

5. Set string.

    The following settings are possible:

Designation	Enter a name for the string.
Manufacturer	Select or enter the module manufacturer.
Module type	Select the module type. You must set the manufacturer first. The menu contents vary depending on the manufacturer you select.
Module power	This data is entered automatically when you select the module type. You can enter changes in the fields using the arrows or the keyboard arrows.
Module surface	
Efficiency	
Number of modules	Enter the number of modules on the string.
Azimuth angle	Enter the azimuth angle of the string module surfaces. The azimuth angle indicates by how many degrees the module surfaces deviate from an exact southern orientation. • Tracking If your module surfaces track the sun automatically, activate this field.

Tilt angle	Set the tilt angle of the string module surfaces. The tilt angle indicates how many degrees the module surfaces deviate from the horizontal.
	• Optimized
	If your plant is optimized based on the latitude, activate this field. The optimum orientation is 30° from the horizontal in Germany.
Description	Enter comments.

6. Select [Apply].

   ☑ The "Device Properties" page opens. The set string has now been added.

7. If you wish to add an additional string, select [Add string].

   -or-

   To create a string with almost the same data, it makes sense to copy the string you just created by selecting the copy icon and then edit the copy of the string.

8. Select [Save].

☑ The string connection is now set.

9 Service Settings

9.1 User Information

The user information page lets you change your address data, the user mode, and your password.

9.1.1 Changing Address Data

1. Select "Account / Logout > User Information".
2. Select [Edit].
3. Change address data.
4. Select [Save].
☑ The address data is now changed.

9.1.2 Selecting Standard or Advanced Mode

Standard mode and advanced mode are described in section 10 „Additional Functions in Advanced Mode" (45). You can select standard or advanced mode at your Sunny Portal page as follows.

1. Select "Account / Logout > User Information".
2. Select [Edit].
3. In the "User mode:" field, activate "Standard" or "Advanced".
4. Select [Save].
☑ The user mode is now set.

9.1.3 Changing Passwords

You can change the password that was sent to you by Sunny Portal via email during registration as follows.

1. Select "Account / Logout > User Information".
2. Select [Edit].
3. Select "If you would like to change your password, please click here:".
   ☑ The "Change password" page opens.
4. Enter the previous password in the "Old password:" field.
5. Enter the new password in the "New password:" field.
6. Enter the new password again in the "New password (repeat):" field. Repeating the new password allows the program to determine whether both passwords are identical or whether you typed in the wrong password.
7. Select [Save].
☑ The new password is now set.

9.2 Report Configuration

You can have reports containing information about your plant data sent to you from your Sunny Portal page. The reports are sent to you via email.

The following three reports are available. You can set three of each.

Report	You can select the following channels.
Daily info reports 1 to 3	• Daily production (kWh) • Daily revenue • Daily max. power (kW) • Daily CO_2 reduction
Monthly info reports 1 to 3	• Monthly production (kWh) • Monthly revenue • Monthly max. power (kW) • Monthly CO_2 reduction (kg)
Message reports 1 to 3	In each of the three message reports, you can select four message types from Sunny Portal, the system, and the service: • Information • Warnings • Faults • Errors

9.2.1 Setting Daily / Monthly Info Reports

For the daily info report, the channels' data from the respective day is sent; for the monthly info report, the channels' data from the respective month. You can set up three info reports and three daily info reports that contain different data. Each info daily report can be sent at a set time; the monthly info reports are sent at the end of the month.

1. Select "Configuration > Report Configuration".

2. Select a daily info report or a monthly info report in the "Report" field.

   ☑ The report page opens.

3. Select [Edit].

   ☑ The page for setting up reports opens.

4. Set up the report.

   The following settings are possible.

Activate report	If the report is activated, it is sent to the set email address at the set interval. You can also save the report settings, and activate the report later.
Recipient	In the "Email address(es):" field, type in the email address(es) to which the email should be sent.

Interval	In the "Send Report from:" field, select the time you would like to receive the email.
Contents	
Channel selection	Activate the channel fields that are to be displayed in the report.
Send report as	Text: you receive the email with the data in text format.
	In the "Send Data in:" field, activate the fields where the email data should be sent.
	– Email's subject heading: the data is displayed in the email's subject heading.
	– Mail contents: the data is shown in the email.
	HTML: you receive the email with the data in HTML format.
	PDF: you receive the email in text format, with the data in PDF format as an attachment.
	In the "Portal page to send:" field, select which Sunny Portal page should be sent with the email. If you would like to generate a standard report page, save your report settings and create a subsequent report manually.

Manual creation of subsequent reports	
Report date	In the "Report date:" field, select the date on which the report is to be subsequently generated. Select [Generate].

5. To send a test report to the set email addresses, select [Send test report].

6. Select [Save].

☑ The report is now set up.

9.2.2 Setting up Message Reports

You can set up three message reports that contain different events and are sent at different times. You can select four events from Sunny Portal and from the plant: information, warnings, faults, errors.

1. Select "Configuration > Report Configuration".
2. Select a message report in the "Report" field.
3. Select [Edit].

   ☑ The page for setting up reports opens.
4. Set up the report.

   The following settings are possible.

Activate report	If the report is activated, it is sent to the set recipient at the set interval. You can also save the report settings, and activate the report later.
Recipient	In the "Email address(es):" field, type in the email address(es) to which the email should be sent.
Interval	To receive an hourly report, activate the "hourly" field. To receive an daily report, activate the "daily" field and select the time.
Contents	
	In the "Portal" and "Plant" rows, activate the respective event fields that the report should contain.
Report versenden als (Send report as)	Text: you receive the email with the data in text format.
	HTML: you receive the email with the data in HTML format.
	PDF: you receive the email in text format, with the data in PDF format as an attachment.
Max. number of messages in a report	Select the maximum number of messages a report may have.
	If empty reports are also to be sent, activate "Send empty reports if no new events are available".

Manual creation of subsequent reports	
Report date	In the "Report date:" field, select the date on which the report is to be subsequently generated. Select [Generate].

5. To send a test report to the set email addresses, select [Send test report].
6. Select [Save].

   ☑ The report is now set up.

10 Additional Functions in Advanced Mode

Sunny Portal has a standard mode, and an advanced mode. The advanced mode includes additional functions in the "Configuration" menu, which are specifically intended for plant operators who have expert knowledge. In advanced mode, for example, you can change the channel settings.

To learn how to change modes, see section 9.1.2 „Selecting Standard or Advanced Mode" (41).

i	**Effects of Incorrect Settings in Advanced Mode** Incorrect settings in the additional menus in advanced mode cause channels to be calculated incorrectly, and incorrect plant data to be displayed.

In advanced mode, the following additional functions are available in the "Configuration" menu.

- Calculated Channels
- Channel Configuration
- User management

10.1 Calculated Channels

i	**Only Make Changes if Very Familiar with the Calculated Channels** The calculated channels are automatically set on Sunny Portal when you register your solar power system. Only change the calculated channel settings if you are very familiar with calculated channels and want to carry out special calculations.

In the "Configuration > Calculated Channels" menu, you can set up to six virtual channels, which are calculated from the data of other channels.

- Energy
- Revenue
- CO_2 reduction
- Power
- Specific plant performance
- Performance Ratio

For the revenue and CO_2 reduction channels, you can also change the value's calculation factor.

The channels are labeled "virtual", because they are calculated from the data of other channels. The data can be calculated from device channels (e.g. E-Total) or calculated channels (e.g. Energy).

Example

For example, the "Energy" channel is derived from the data of all the E-Total channels of the system's inverters. The CO_2 reduction can be calculated using the data from the "Energy" channel. This is done by simply multiplying the channel value by a configurable factor to produce the CO_2 reduction value.

> Example:
>
> E-Total from device 1 + E-Total from device 2 = energy
>
> Energy x factor = CO_2 reduction

> **i** **Recommendation for Configuration of Virtual Channels**
>
> Configure the virtual channels based on the energy.

10.1.1 Overview of the Calculated Channels

The following virtual channels are available.

Energy	The calculated "Energy" channel is the sum of the "E-Total" channels from several inverters. The unit of the energy channel is always kWh, and cannot be changed.
Revenue	The "Revenue" channel is the calculated "Energy" channel multiplied by the amount paid per kWh of solar power.
CO_2 reduction	The calculated CO_2 reduction channel is the calculated Energy channel multiplied by the value typical of your power-generating country. This value varies from region to region. You can specify the factor for the calculation of CO_2 reduction yourself.

> **i** **To be Observed if Using the Energy, Revenue or CO_2 Reduction Channels**
>
> If using the calculated Energy channel to calculate either of the calculated CO_2 or Revenue channel, you may not add any device channels for CO_2 reduction or revenue that already deliver data to the calculated Energy channel.

Power	The calculated Power channel is the sum of the Pac channels from several inverters. The unit of the Power channel is always kW, and cannot be changed.
Specific plant performance (kWh / kWp)	The standardized plant performance equals the absolute yield (kWh) divided by the peak plant yield (kWp). The standardized plant performance lets you compare different sized PV plants.

Performance Ratio	The performance ratio refers to the ratio of actual energy yield to the potential energy yield in percent. The calculated Performance Ratio channel lets you use the irradiation sensor and temperature sensor channels to calculate your plant's performance ratio. You can also set a correction factor if you want to use sensor data that affects another orientation or tilt. **Manual Adjustment** The Performance Ratio channel is automatically set when the first Sunny SensorBox is added to your Sunny Portal plant. You must only set the channel manually if you add another Sunny SensorBox to your plant, if a communications device sends irradiation and temperature sensor data to Sunny Portal, if the channel list has changed, or if you replace a Sunny SensorBox.

10.1.2 Setting the Energy Channel

Further information on the channel can be found in section 10.1.1 „Overview of the Calculated Channels" (46).

1. Select "Configuration > Calculated Channels".

    ☑ The "Calculated channels" page opens.

2. In the "Channel selection:" field, select the "Energy" channel.

3. Select [Edit].

    ☑ The page for setting up the channel opens.

4. In the "Assign device" field, select the "Select" icon in the row of the desired device.

    ☑ The selected device is displayed in bold. The "Assign channel" area is displayed.

i **Assigning Channels**

If the "Assign device" area is not displayed for a device, it has either already been assigned to the calculated channel, or does not have a suitable channel for providing data.

5. In the "Assign channel" area, select the "Add" icon in the row of the desired channel.

    ☑ The device listed in the "Assigned devices / channels" field is added.

6. Follow the same steps to assign additional channels, if desired.

7. Select [Save].

☑ The channel is now set up.

10.1.3 Setting the Revenue Channel

Further information on the channel can be found in section 10.1.1 „Overview of the Calculated Channels" (46).

1. Select "Configuration > Calculated Channels".

   ☑ The "Calculated channels" **page opens.**

2. In the "Channel selection:" **field, select the** "Revenue" **channel.**

3. Select [Edit].

   ☑ The page for setting up the channel opens.

4. If required, change the currency unit and factor for calculating revenue in the "Unit of channel" and "Factor" **fields.**

5. In the "Assign device" **field, select the** "Select" icon in the row of the desired device.

   ☑ The selected device is displayed in bold. The "Assign channel" **area is displayed.**

> **ℹ** **Assigning Channels**
>
> If the "Assign device" area is not displayed for a device, it has either already been assigned to the calculated channel, or does not have a suitable channel for providing data.

6. In the "Assign channel" **area, select the** "Add" icon in the row of the desired channel.

   ☑ The device listed in the "Assigned devices / channels" **field is added.**

7. Follow the same steps to assign additional channels, if desired.

8. Select [Save].

☑ The channel is now set up.

10.1.4 Setting the CO_2 Reduction Channel

Further information on the channel can be found in section 10.1.1 „Overview of the Calculated Channels" (46).

1. Select "Configuration > Calculated Channels".

   ☑ The "Calculated channels" **page opens.**

2. In the "Channel selection:" **field, select the** "CO_2 Reduction" **channel.**

3. Select [Edit].

   ☑ The page for setting up the channel opens.

4. If required, change the factor for calculating the CO_2 reduction in the "Factor" field.

5. In the "Assign device" **field, select the** "Select" icon in the row of the desired device.

   ☑ The selected device is displayed in bold. The "Assign channel" **area is displayed.**

> **ℹ** **Assigning Channels**
>
> If the "Assign device" area is not displayed for a device, it has either already been assigned to the calculated channel, or does not have a suitable channel for providing data.

6. In the "Assign channel" area, select the "Add" icon in the row of the desired channel.

   ☑ The device listed in the "Assigned devices / channels" field is added.

7. Follow the same steps to assign additional channels, if desired.

8. Select [Save].

☑ The channel is now set up.

10.1.5 Setting the Power Channel

Further information on the channel can be found in section 10.1.1 „Overview of the Calculated Channels" (46).

1. Select "Configuration > Calculated Channels".

   ☑ The "Calculated channels" page opens.

2. In the "Channel selection:" field, select the "Power" channel.

3. Select [Edit].

   ☑ The page for setting up the channel opens.

4. In the "Assign device" field, select the "Select" icon in the row of the desired device.

   ☑ The selected device is displayed in bold. The "Assign channel" area is displayed.

> **ℹ Assigning Channels**
>
> If the "Assign device" field is not displayed for a device, it has either already been assigned to the calculated channel, or does not have a suitable channel for providing data.

5. In the "Assign channel" area, select the "Add" icon in the row of the desired channel.

   ☑ The device listed in the "Assigned devices / channels" field is added.

6. Follow the same steps to assign additional channels, if desired.

7. Select [Save].

☑ The channel is now set up.

10.1.6 Setting the Specific Plant Performance

Sunny Portal automatically sets the specific plant performance. Normally, no changes are required. Further information on the channel can be found in section 10.1.1 „Overview of the Calculated Channels" (46).

1. Select "Configuration > Calculated Channels".

   ☑ The "Calculated channels" **page opens.**

2. In the "Channel selection:" **field, select the** "Specific plant performance" **channel.**

3. Select [Edit].

   ☑ The page for setting up the channel opens.

4. In the "Assign device" **field, select the** "Select" icon in the row of the desired device.

   ☑ The selected device is displayed in bold. The "Assign channel" **area** is displayed.

ⓘ | **Assigning Channels**
If the "Assign device" **area** is not displayed for a device, it has either already been assigned to the calculated channel, or does not have a suitable channel for providing data.

---

5. In the "Assign channel" **area, select the** "Add" icon in the row of the desired channel.

   ☑ The device listed in the "Assigned devices / channels" **field is added**.

6. Follow the same steps to assign additional channels, if desired.

7. Select [Save].

☑ The channel is now set up.

10.1.7 Setting the Performance Ratio

The Performance Ratio channel is automatically set when the first Sunny SensorBox is added to your Sunny Portal plant. Normally, no changes are required. Further information on the channel can be found in section 10.1.1 „Overview of the Calculated Channels" (46).

1. Select "Configuration > Calculated Channels".

   ☑ The "Calculated channels" page opens.

2. In the "Channel selection" field, select the "Performance Ratio" channel.

3. Select [Edit].

   ☑ The page for setting up the channel opens.

4. In the "Assign device" field, select the "Select" icon in the row of the desired device.

   ☑ The selected device is displayed in bold. The "Assign channel" area is displayed.

> **i** **Assigning Channels**
>
> If the "Assign device" area is not displayed for a device, it has either already been assigned to the calculated channel, or does not have a suitable channel for providing data.

5. In the "Assign channel" area, select the "Add" icon in the row of the desired channel.

   ☑ The device listed in the "Assigned devices / channels" field is added.

6. Follow the same steps to assign additional channels, if desired.

Selecting the Irradiation Sensor / Temperature Sensor

7. Select the sensor in the respective "Device" field.

8. Select the channel in the respective "Channel" field.

Correction Factor

9. If required, enter the correction factor in the "Correction factor" field.

10. Select [Save].

☑ The channel is now set up.

10.2 Channel Configuration

Sunny Portal automatically defines all required settings for the channel configuration as soon as you create a diagram or table.

In the "Configuration > Channel Configuration" menu, you can also set channels' processing intervals yourself. All required data is automatically processed by Sunny Portal. Sunny Portal calculates the channels according to the processing intervals, and stores the data for use in diagrams and tables, for example.

i	**Do not Remove any Channel Processing Intervals which are in Use**
	Do not remove any established channel processing intervals unless you are certain that the respective channel interval is not being used, for example, for an existing diagram or table on your page.

You can set the processing intervals for all channels individually or for a group of channels. You can also apply these settings to all devices of the same type.

For plants, the following virtual channels are available.

* CO_2 reduction
*   Energy
*   Performance Ratio
*   Power
*   Revenue
*   Specific plant performance

Devices have additional channels that depend on the device type.

i	**Recommendation: Select Intervals no Shorter than "Hour"**
	The more values are saved at Sunny Portal, the longer the calculation of the curves takes when visualizing the plant. We therefore recommend selecting intervals no shorter than "Hour".

10.2.1 Changing Channel Configurations

1. Select "Configuration > Channel Configuration".

2. Select a plant or a device in the "Plant / Device" field.

3. Select [Edit].

   ☑ The page for changing the channel configuration opens.

4. In the "Channel processing interval" area, activate the channels to be changed using the "Mark." column.

5. Activate the fields in the "Set Interval" row wherever intervals are to be set.

   Activate the "save for all devices of this device type" field. Sunny Portal automatically applies the selected settings to the other devices in the current plant which are of the same type.

6. Select [Set Interval] to apply the new intervals to all selected channels. The "Channel processing interval" list is updated.

7. Select [Save].

   ☑ The channel is now set up.

The drop-down list beneath the "Channel processing interval" table is intended to save you the work of inserting check marks in the "Mark." column.

- mark all: activates all fields.
- mark none: all fields are deactivated.
- invert mark: activated fields are deactivated and deactivated fields are activated.

10.3 User Management

You can create additional users on your Sunny Portal page so they can access your page. The "Configuration > User Management" menu lets you create, edit, and delete new users.

When you create a new user, the user receives an email indicating that he or she now has access to your Sunny Portal page under this email address. If the new user is not registered on Sunny Portal, an automatically generated password will also be included in the email.

You can assign roles to users on your Sunny Portal page. Roles differ in the rights the user has to your page, for example, whether the user is authorized to create a new page.

The following roles are possible.

- Guest
- User (Standard)
- Installer
- Plant Administrator

10.3.1 Overview of Roles and Rights

Rights	Role			
	Guest	**Standard**	**Installer**	**Administrator**
Login	✔	✔	✔	✔
View pages	✔	✔	✔	✔
View and change user information	✔	✔	✔	✔
Change passwords	-	✔	✔	✔
View plant properties	-	✔	✔	✔
View device properties	-	✔	✔	✔
View report configuration	-	✔	✔	✔
View, change, and delete pages	-	-	✔	✔
View and change plant properties	-	-	✔	✔
View and change device properties	-	-	✔	✔
View and change report configuration	-	-	✔	✔
View and change calculated channels	-	-	✔	✔
View system log and approve entries	-	-	✔	✔
Import data	-	-	✔	✔
View user management	-	-	-	✔
Create and delete users and assign roles	-	-	-	✔

10.3.2 Creating New Users

1. Select "Configuration > User Management".
   ☑ The user management page opens.
2. Select [New User].
3. In the "Email address:" field, enter the email address of the new user.
4. In the "Roles" area, activate the desired roles. The "User (Standard)" role is selected by default.
5. Select [Save].
☑ The new user is created and receives an email with the access information.

10.3.3 Changing User Rights

You can assign roles to your Sunny Portal users. Roles differ in the rights the users on your page have (see section 10.3.1 „Overview of Roles and Rights" (55)).

1. Select "Configuration > User Management".
   ☑ The user management page opens.
2. In the user row, select the hand icon.
3. In the "Roles" area, activate the desired roles.
4. Select [Save].
☑ The rights are now changed.

10.3.4 Deleting Users

1. Select "Configuration > User Management".
   ☑ The user management page opens.
2. In the user row, select the recycle bin icon.
   ☑ A confirmation prompt opens.
3. To delete the user, confirm the prompt with [Yes].
☑ The user is now deleted.

11 Contact

If you have technical problems concerning our products, contact our Service Line.

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