

Contents

1	General information	5
2	Operation using the web browser in your own network	6
2.1	Requirements	6
2.2	Overview	7
2.2.1	Navigation overview	7
2.2.2	Homepage	8
2.3	Calling up yield data	9
2.3.1	How to navigate within the overviews	9
2.3.2	What the values in the overviews mean	10
2.3.3	Day overview	11
2.3.4	Month overview	13
2.3.5	Year overview	14
2.3.6	Total overview	15
2.4	Calling up yield data on a mobile computer	17
2.4.1	Day	18
2.4.2	Month	18
2.4.3	Year	19
2.5	Calling up the diagnosis function	20
2.5.1	Calling up and filtering the event log	21
2.5.2	Displaying the decrease in output for your plant	23
2.6	Changing settings in the configuration menu	25
3	Operation using the touchscreen	26
3.1	Overview	27
3.1.1	Navigation overview	27
3.1.2	How to navigate the touchscreen	28
3.2	Calling up yield data	29
3.2.1	How to navigate within the overviews	29
3.2.2	What the values in the overviews mean	29
3.2.3	Daily chart	31
3.2.4	Month chart	33
3.2.5	Year chart	34
3.2.6	Total chart	36
3.2.7	Large display	37

3.2.8	Power balance	38
3.3	Calling up the analysis function	39
3.3.1	Calling up messages	39
3.3.2	Showing inverter events	40
3.3.3	Processing the alarm messages	41
3.3.4	Optimising your own power consumption	42
3.4	Using data transfer via USB	45
3.4.1	Saving current data on the USB stick (copying data)	45
3.4.2	Performing data back-up	46
3.4.3	Updating the firmware	50
3.5	Changing settings in the configuration menu	51
4	Using Solar-Log WEB	52
4.1	Register with Solar-Log™ WEB "Classic 2nd Edition"	52
4.2	Calling up plant data	55
4.3	Calling up yield data	59
4.3.1	How to navigate within the overviews	59
4.3.2	What the values in the overviews mean	59
4.3.3	Day overview	59
4.3.4	Month overview	61
4.3.5	Year overview	62
4.3.6	Overview of all years	64
4.3.7	Calling up and filtering the event log	65
5	Using the Solar-Log™ APP for iPhone	67
5.1	Installing the app	67
5.2	Adding plants	68
5.3	Calling up yield data	71
5.3.1	How to navigate within the overviews	72
5.3.2	What the values in the overviews mean	72
5.3.3	Day overview	72
5.3.4	Month overview	74
5.3.5	Year overview	74
5.3.6	Total overview	75
5.4	Calling up data	76
5.5	Calling up CO ₂ savings	77

5.6	The yield data as a slide show	78
6	Cleaning and care	80
6.1	Cleaning tips	80
6.2	Care tips	80
7	Malfunctions	81
7.1	Status display for the LEDs	81
7.2	Remedying faults yourself	82
7.2.1	Obtaining information from the internet	84
7.2.2	Informing a specialist technician	84
8	Disposal	85
9	Technical data	86
	Glossary	87

1 General information

This user manual is intended to assist you in the operation of the Solar-Log¹⁰⁰⁰. The yield data for the Solar-Log¹⁰⁰⁰ can be displayed in several ways:

- via a web browser in a local network ([↗page 6](#)) or
- via the touchscreen directly on the device ([↗page 9](#)) or
- via the internet ([↗page 52](#)) or
- via the Solar-Log™ APP for iPhone ([↗page 67](#)).

2 Operation using the web browser in your own network

2.1 Requirements



Information

For faster access, enter "solar-log" in the address line of the browser and create a bookmark.

In the local network

To operate the Solar-Log¹⁰⁰⁰ using a web browser you will need to be on a computer that is connected to the same local network as the Solar-Log¹⁰⁰⁰. This computer will also need to have a modern web browser installed on it.

You are also able to operate the Solar-Log¹⁰⁰⁰ on a mobile device such as a tablet, smartphone. This device must also be connected to the same local network as the Solar-Log¹⁰⁰⁰. It must also have a modern web browser installed on it.

Via the internet

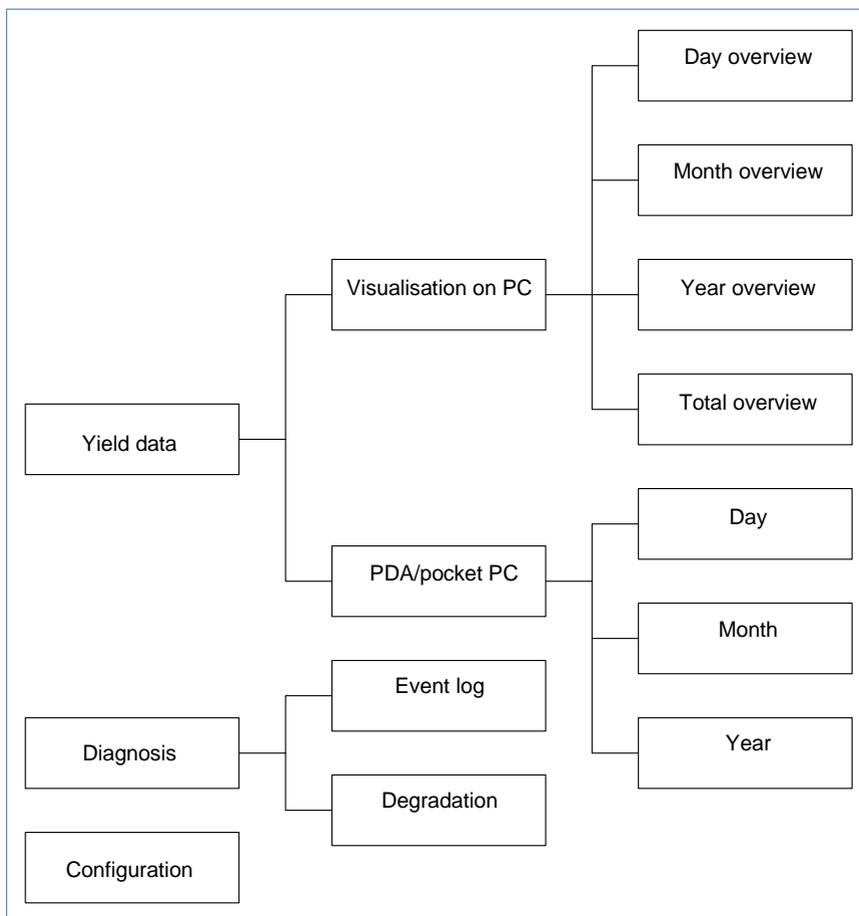
In addition to the computer or mobile computer with a web browser you need an active internet connection as well as a user account on a server.

- ▶ To set up a user account please contact your solar technician or find out more on our homepage under

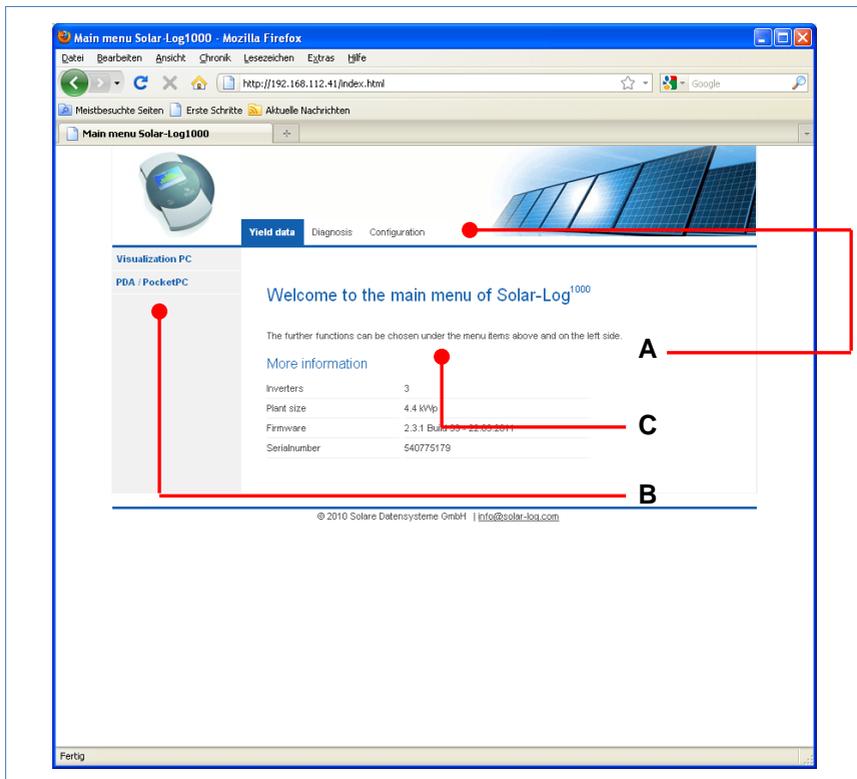
<http://www.solar-log.com/en/products-solutions/solar-log-web.html>

2.2 Overview

2.2.1 Navigation overview



2.2.2 Homepage



The homepage contains the following areas:

- Main navigation menu (A)
- Navigation bar (B)
- Information field (C)

Main navigation menu

The main navigation menu contains three main operating groups:

- **Yield data:** Here you will find the yield information within certain periods of time such as day, month, year and the total yield to date of your plant.

- **Diagnosis:** Here you can call up the fault and process reports as well as filter according to desired criteria.
- **Configuration:** Here you can change the settings of your device as required.

Left navigation bar

Depending on the selected field in the main navigation menu you can access additional functions in the left navigation bar.

Information field

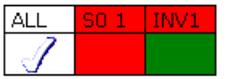
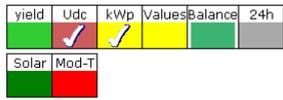
Device configuration will take place in this area. When viewing yield information an additional window will pop up and yield information can be found there.

2.3 Calling up yield data

- 1 Start the web browser and enter "solar-log" in the address line of the browser or select the bookmark in the browser's navigation bar.
→ The homepage is displayed.
- 2 Select **Visualization PC** in the left navigation bar.
→ The output details for the current day are displayed in a new window.

2.3.1 How to navigate within the overviews

Symbol	Meaning
	<p>Arrow keys: used to navigate to the previous or next period of time shown. Magnifying glass symbol: used to update the modified parameters.</p>

Symbol	Meaning
	Information on the inverter that is connected. Hold the cursor over a field to display the specific values.
	Display of additional information on the plant (page 10).

- 1 Click inside the colored area of the connected inverter or the desired yield values.
- 2 Click on the magnifying glass symbol.
 - The overview is updated and the yield information for the inverter or the yield values is shown in the selected overview, as a line.
- 3 Move to the next overview by clicking on the information under the heading.
- 4 Close the yield data window.
 - This allows you to return to the main menu.

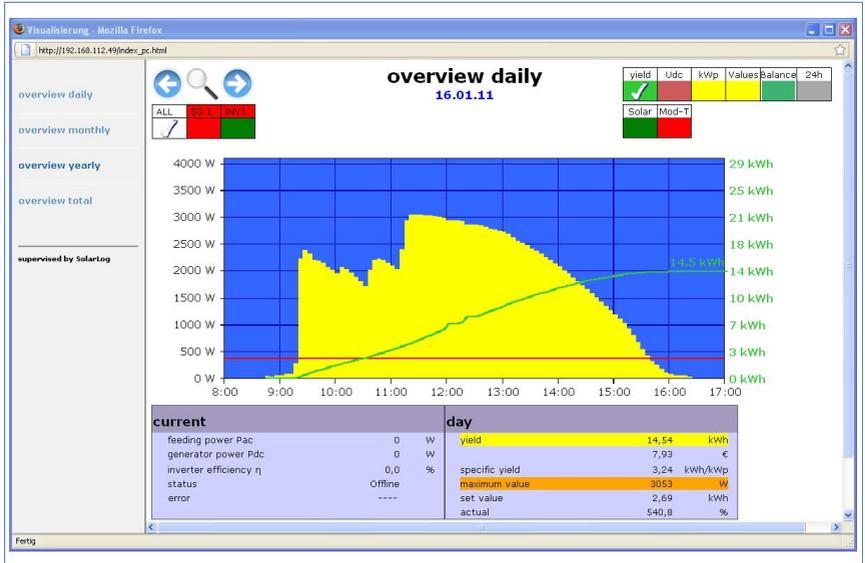
2.3.2 What the values in the overviews mean

Description	Unit	Meaning
Power input Pac	W	The current power input P on the AC voltage side
Generator output Pdc	W	The current power input P on the DC voltage side (solar generator)
Inverter efficiency η	%	The current efficiency from the generator output and the power input. The manufacturer's specifications regarding the efficiency of the inverter can be checked here.

Description	Unit	Meaning
Status / Error		Status and error codes for the inverter. The codes shown are dependent on the manufacturer and must be looked up in the manual for the respective inverter. Status messages that are the same are collated.
Yield	kWh	The yield for the period of time shown (day, month, year, total)
Yield, specific	kWh/kWp	The output divided by the plant size. This value is a good reference value with respect to other plants.
Maximum value	W	The maximum output value within the period of time shown.
Target	kWh	The device runs a forecasting statistics function that specifies a certain target value for each time period. If the target value is attained or exceeded the forecast output has been achieved.
Actual	%	The actual value shows the percentage share for the actual yield and the target yield.

2.3.3 Day overview

- ▶ Select **Overview Daily** in the left navigation bar.



The daily yields are shown in a curve chart. The red line shows the target value for each day.

Buttons for the day overview

- **Yield:** Yield line via which the yield trend can take place. In addition, a red line is displayed as the total daily target.
- **Udc:** Generator voltage. To display voltage of the individual strings only one inverter may be selected.
- **kWp:** Converting the scaling from "Output in watts" to "Output in kWh/kWp". This makes all of the curves comparable in terms of their specific output. This also makes it easier to identify decreased outputs from specific inverters/strings.
- **°C / °F :** Display showing the inverter's internal temperature. This allows you to check that the fans are functioning correctly. **Please note that inverters are designed to have high internal temperatures.**

The temperature display is shown only for inverters that provide the corresponding measured value.

- **24h:** Display showing the output over 24 hours of the day for a complete visualisation of the power consumption over the course of one day.

Additional functions using S0 meter reader

The following displays are also available to you by connecting an S0 meter to the Solar-Log™:

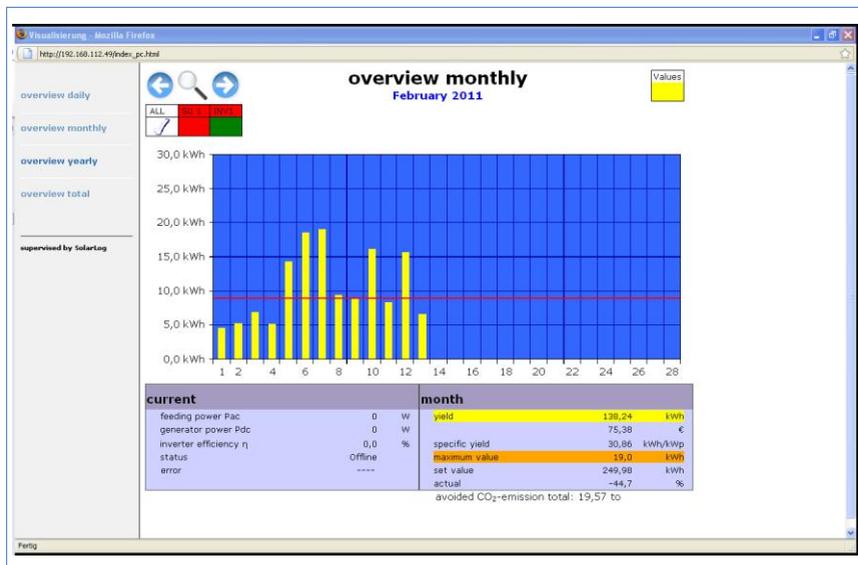
- **S0:** Shows the power consumption for your building as a graph, in watts.
- **Cons.:** Shows the power consumption for your building as a rising line, in kWh.
- **Values:** Shows various values for your inverter in text form.
- **Balance:** Shows you the ratio of your power consumption to your power yield. In the lower left text field the ratio is also shown as a percentage.

Additional functions with the sensor box

- **Solar:** Shows the reference value of an irradiation sensor. The daily output of the plant must be within the measuring range of the sensor.
- **Mod T:** Shows the module temperature. The temperature is detected by the sensor box.

2.3.4 Month overview

- ▶ Select **Overview Monthly** in the left navigation bar.

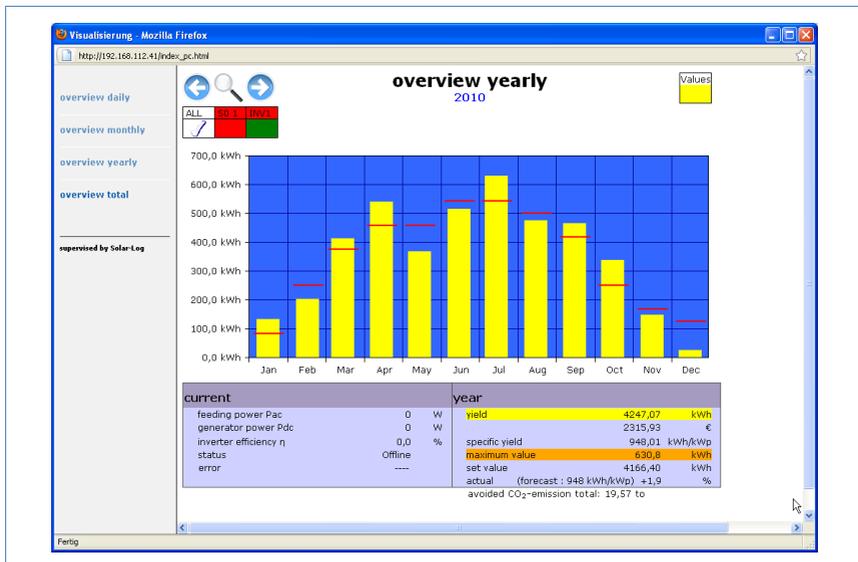


The daily yields for one month are shown as a total in a bar graph. The red line shows the target yield for each month.

- 1 Move the mouse over a day bar.
→ The corresponding day's yield is shown.
- 2 Click on an individual bar to switch to the corresponding day overview.

2.3.5 Year overview

- ▶ Select **Overview Yearly** in the left navigation bar.



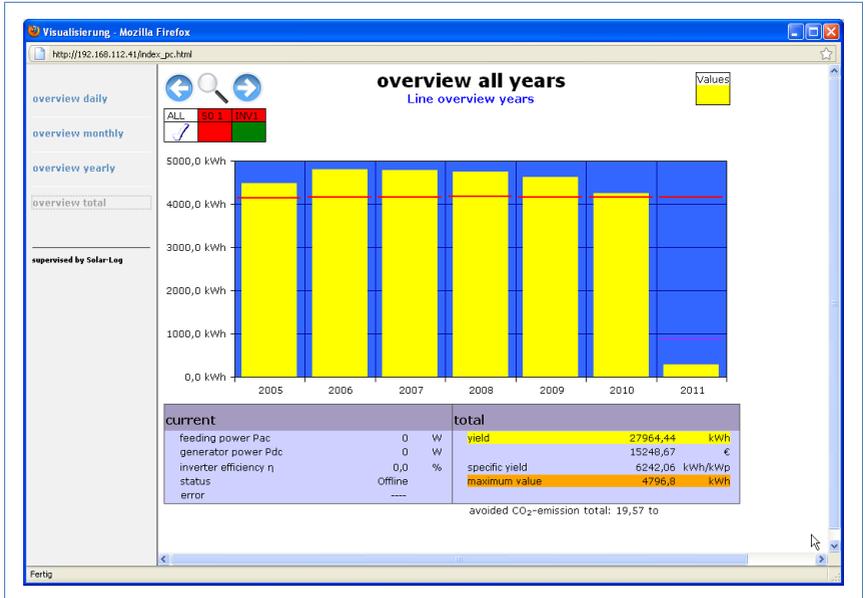
The individual monthly yields are shown as a total in a bar graph. The red line shows the target yield for each month.

The "Forecast" value is calculated using the yields already achieved for the year and is then projected using the target yields for the remaining months of the year.

- 1 Move the mouse over a month bar.
→ The corresponding month's yield is shown.
- 2 Click on an individual bar to switch to the corresponding month overview.

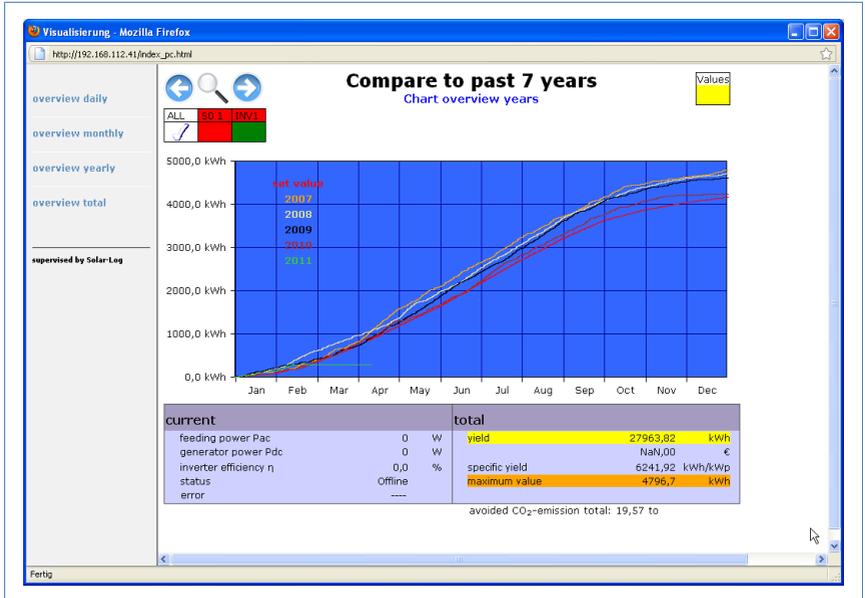
2.3.6 Total overview

- ▶ Select **Overview Total** in the left navigation bar.



The individual annual yields are shown as a total in a bar graph. The red line shows the total target yield. For the current year two red lines are shown:

- The top line shows the annual target.
 - The bottom line shows the annual target accumulated to the present day.
- 1 Move the mouse over a year bar.
→ The corresponding year's yield is shown.
 - 2 Click on an individual bar to switch to the corresponding year overview.
 - 3 Click on **Line overview, years** to display a line view for the total yield.



- 4 Click on **Chart overview, years** to display a bar view for the total yield.

2.4 Calling up yield data on a mobile computer

You can also call up the current yield data for your plant via mobile computer (e.g. smart phone). To do this your smart phone logs onto the internet or your local server and calls up your data.



Note

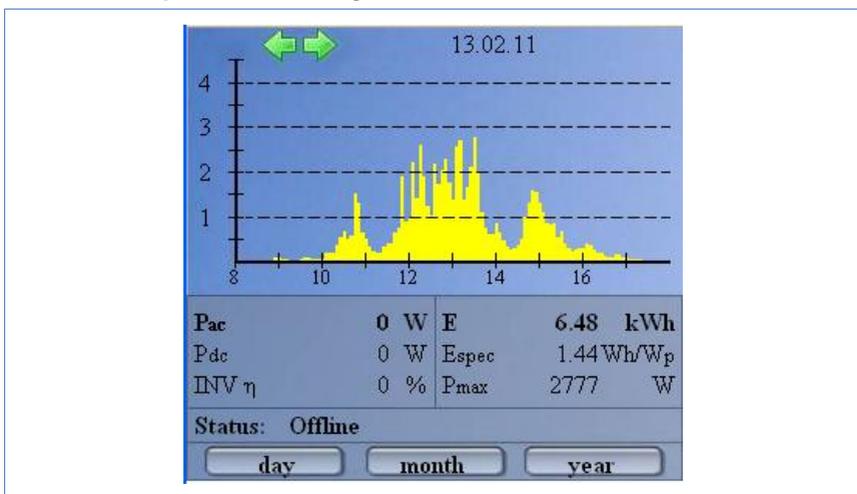
This function is only available in the local network or for plants which run on our "Classic 1 Server".

Please note that additional costs for the internet connection may be charged by your mobile service provider.

- 1 Start the web browser on the mobile computer and enter "solar-log" or the IP address for the Solar-Log™ in the address line of the browser or select the bookmark in the browser's navigation bar.
→ The homepage is displayed.
- 2 Select **PDA/Pocket PC** in the left navigation bar.

2.4.1 Day

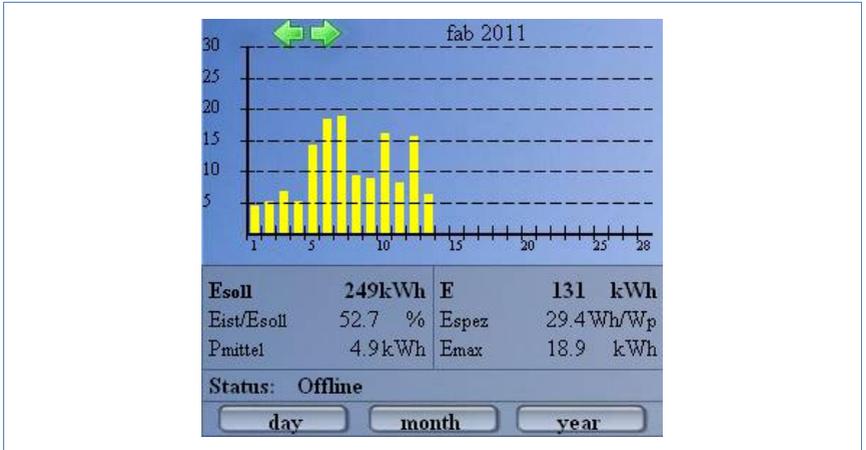
- ▶ Select **Day** in the left navigation bar.



The updated yield data for the day is shown.

2.4.2 Month

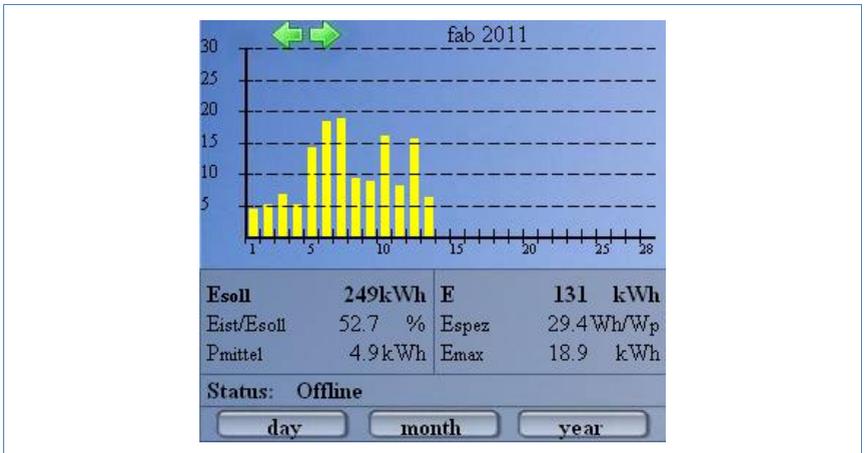
- ▶ Select **Month** in the left navigation bar.



The yield data for the current month is shown.

2.4.3 Year

- ▶ Select **Year** in the left navigation bar.



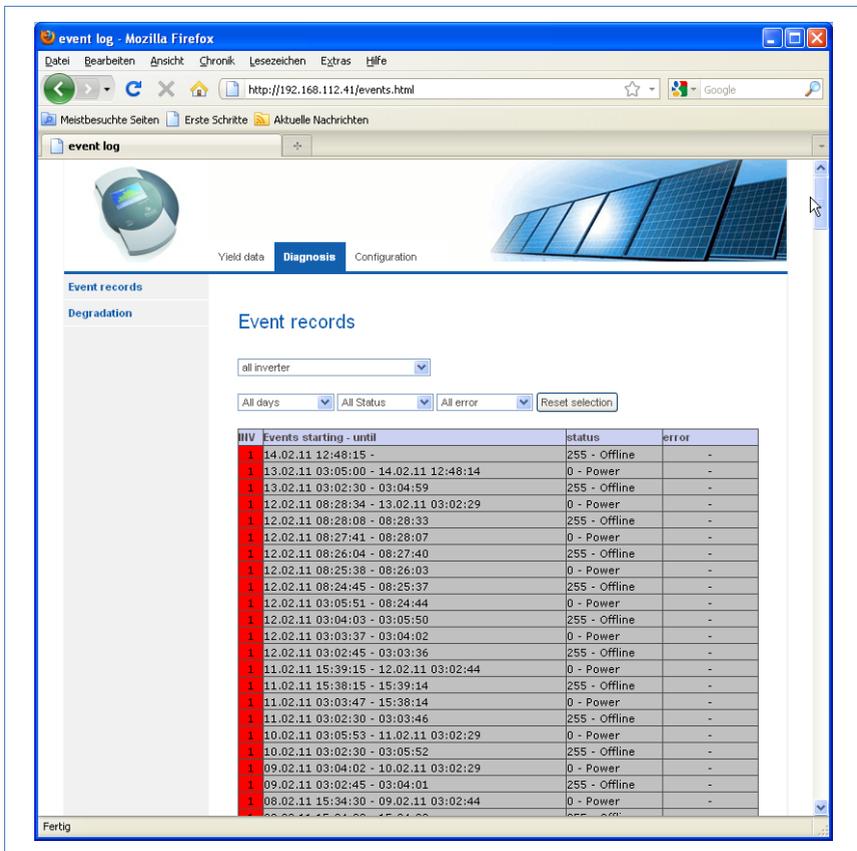
The yield data for the previous year is shown.

2.5 Calling up the diagnosis function

With the diagnosis function you are accessing the device's event log. You can display a total overview of all of the errors, malfunctions and status changes that have occurred for the connected inverters. You can also filter them according to your desired criteria.

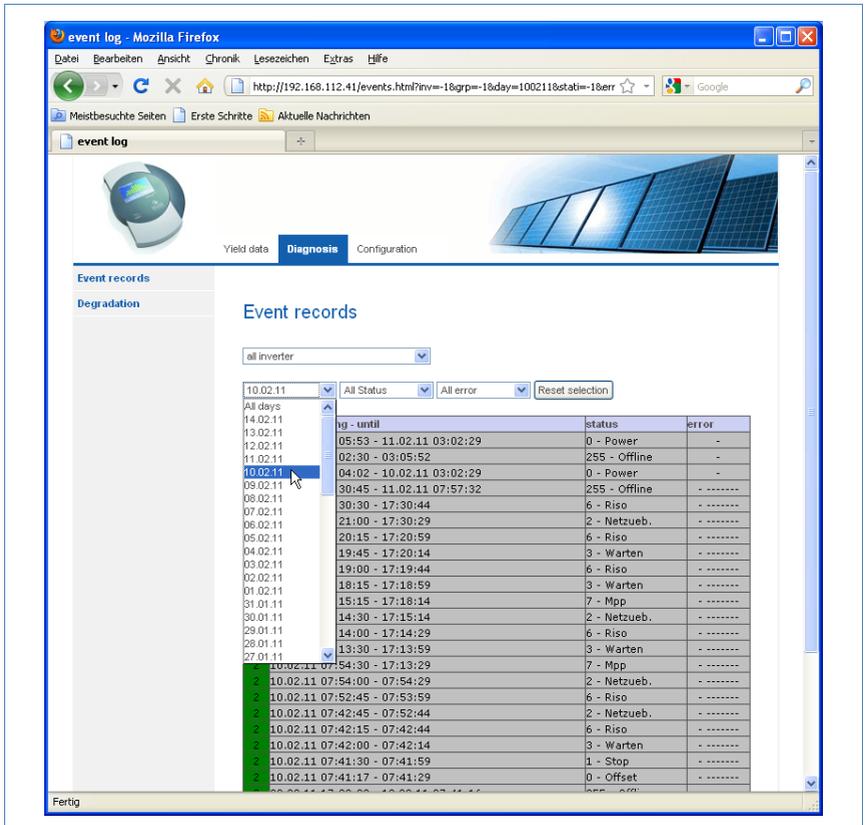
Moreover, the diagnosis menu also shows you the decrease in output ("degradation") of your plant.

- 1 Start the web browser and enter "solar-log" in the address line of the browser or select the bookmark in the browser's navigation bar.
→ The homepage is displayed.
- 2 Select **Diagnosis** in the main navigation menu.
→ The event log is shown.



2.5.1 Calling up and filtering the event log

- ▶ Select **Even log** in the left navigation bar.
 - The complete list of all system events is shown.



To display only certain events or events that occurred on a certain day in the previous 35 days, use the filter function.

- 1 Select the desired inverter in the **All inverters** drop-down menu.
→ Only the events for the selected inverter are shown.
- 2 Narrow down the selection by selecting the desired day in the **All days** drop-down menu.
→ Only the events for the selected day are shown.
- 3 Narrow down the selection further by selecting the desired status in the **All statuses** drop-down menu.
→ The only statuses available are those which occurred within the selected period of time.

- 4 Narrow down the type of error by selecting the desired error in the **All errors** drop-down menu.
 - Only those errors are shown which occurred within the selected period of time.
- 5 Click on **Reset selection** to cancel all of the filter settings.

2.5.2 Displaying the decrease in output for your plant

To obtain an overview of the total output for the previous years and the current performance, the device offers a tabular view.

- 1 Start the web browser and enter "solar-log" in the address line of the browser or select the bookmark in the browser's navigation bar.
 - The homepage is displayed.
- 2 Select **Diagnosis** in the main navigation menu.
- 3 Select **Degradation** in the left navigation bar.
 - Your plant's decrease in performance is shown.

Calculation of the gradual decrease (degradation) - Mozilla Firefox

http://192.168.112.41/degradation.html

Yield data **Diagnosis** Configuration

Event records

Degradation

Degradation

Calculation of annual decrease (degradation) of the solar energy plant

For this purpose the annual "average max. day value" is calculated. This value is calculated with the effective maximum values and a statistical adjustment, in order to filter extreme peaks. The comparison of the calculated max. values provides an indication on the system performance. Data comparison requires a sufficient number of data records per year as well as identical system technology.

Data analysis for the years 2005 Until 2011

Year 2005

Top	Max. value Wh	Date	Graduation %	Benchmark	Hit	Average max Wh
1	31050	12.05.05				
2	29559	22.04.05				
3	29349	19.06.05	100			
4	29215	03.06.05	95.1			
5	29154	19.05.05	92.8			
6	29150	28.05.05	92.7			
7	28876	20.06.05	82.7			
8	28651	25.05.05	74.5			
9	28273	11.08.05	60.7			
10	28212	26.05.05	58.5	4		
11	28061	11.05.05	53	6	←	
12	28010	17.07.05	51.1	6	←	

Fertig

The performance of your modules decreases gradually over the years. Depending on the quality of the modules, this leads to a continuous reduction in the total yield of your plant, so-called "degradation".

To this end the "average maximum day value" is calculated for each year. It is calculated from the actual maximum values and a statistical adjustment to filter out extreme peaks. The comparison of these calculated maximum values allows conclusions to be drawn regarding the performance on the plant.

2.6 Changing settings in the configuration menu

The configuration menu allows you to make changes and adjustments to the device software. The device should have been put into service and fully configured by your solar technician. However, you may like to make changes at a later date, such as changing your password or the network settings (because you want to use a new router, for example), etc.

- ▶ To make changes to the configuration please contact your solar technician.
- ▶ If you would like to make changes yourself, obtain the installation manual that is available for download from our internet site ([↗](#)page 84).

3 Operation using the touchscreen

The Solar-Log¹⁰⁰⁰ has a touchscreen via which plant performance can be observed, problems diagnosed, logs viewed and USB data exchanges accomplished.



Note

Never touch the touchscreen with a sharp or pointed object! This will damage the sensitive surface.



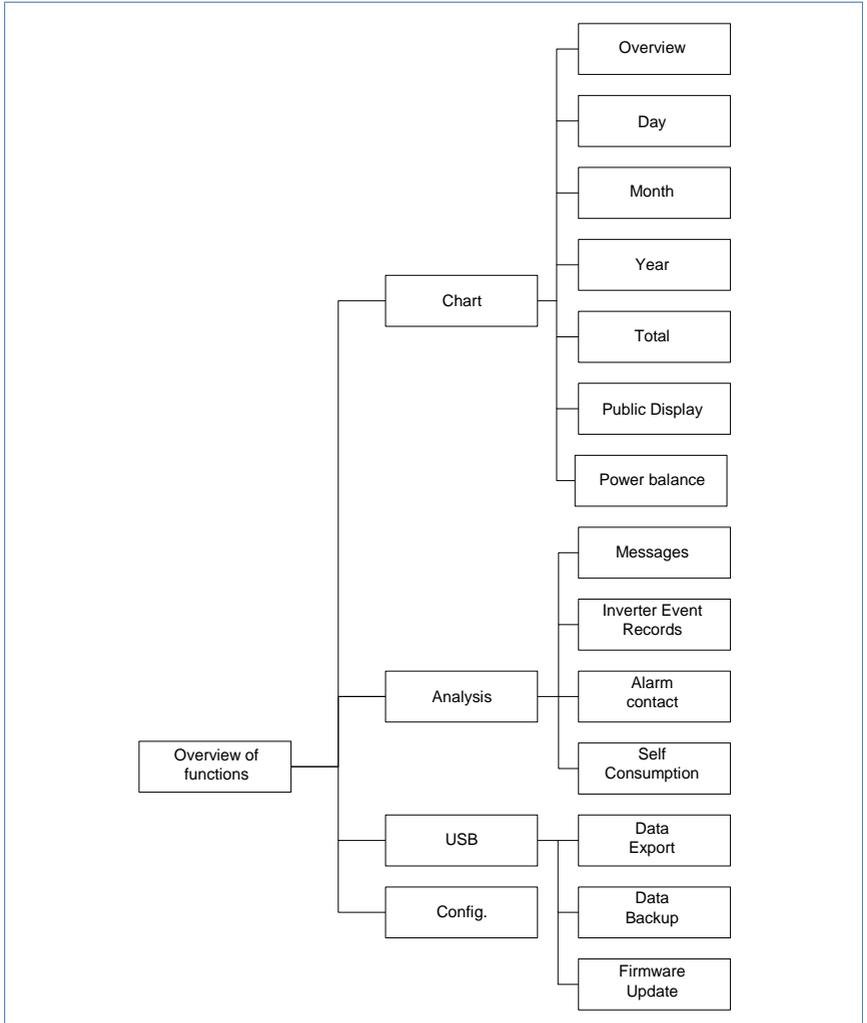
Note

To protect the display, the display switches itself off after a few minutes. You can set the length set in the configuration settings.

Take note of the information provided in our installation manual on the internet regarding the settings in the configuration menu.

3.1 Overview

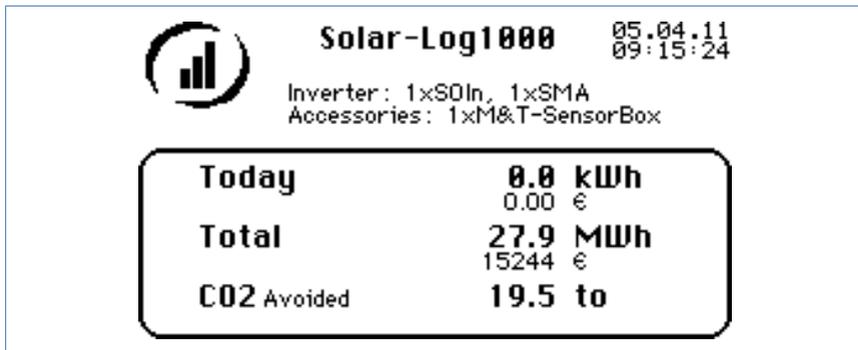
3.1.1 Navigation overview



These changes were made to reflect the actual menu names in the Solar-Log – DELETE ME

3.1.2 How to navigate the touchscreen

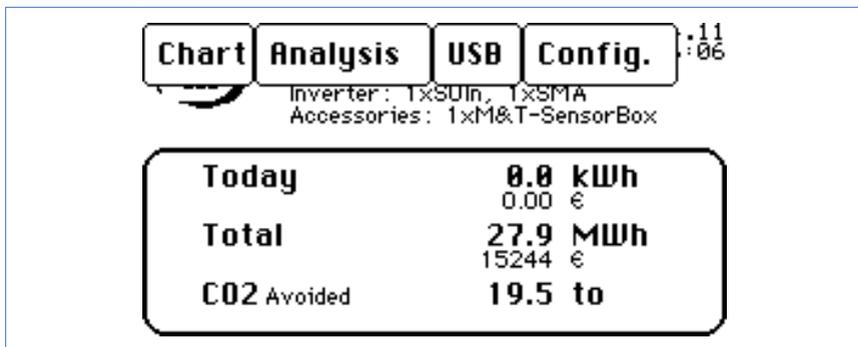
- ▶ Tap the display with your finger.
 - The display shows the overview the first time you tap it.



If the display for the Solar-Log¹⁰⁰⁰ is tapped, it automatically shows the yield for the current day, the total yield for the plant and the calculated CO₂ savings.

- ▶ Tap the display again.
 - The main navigation menu is displayed.

Main navigation menu



The main navigation menu displays four areas:

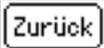
- **Chart:** Here you can call up the yield data. The content of this menu corresponds with the "Yield data" menu in the browser (➔page 9).

- **Analysis:** Here you can call up system messages, cancel alarm messages and adjust your own power consumption.
- **USB:** If your device is not connected to a local network, you can save the data on an inserted USB stick and restore it as well. You can extract data for viewing on your PC as well as update the firmware for the Solar-Log™.
- **Config:** The configuration menu allows you to make changes and adjustments to the device software (➔page 25).

3.2 Calling up yield data

- 1 Tap the display with your finger.
→ The main navigation menu is displayed.
- 2 Tap on **Chart**.
→ The various yield time periods are shown.
- 3 Tap on **Overview** to return to the overview of the current values.

3.2.1 How to navigate within the overviews

Symbol	Meaning
 	Arrow keys: used to move to the previous or next period of time shown.
	The "Back" key closes the window that is currently open.

THIS BUTTON IS IN GERMAN – DELETE THIS BEFORE PRINT

3.2.2 What the values in the overviews mean

The values and their meaning can be found here in alphabetical order.

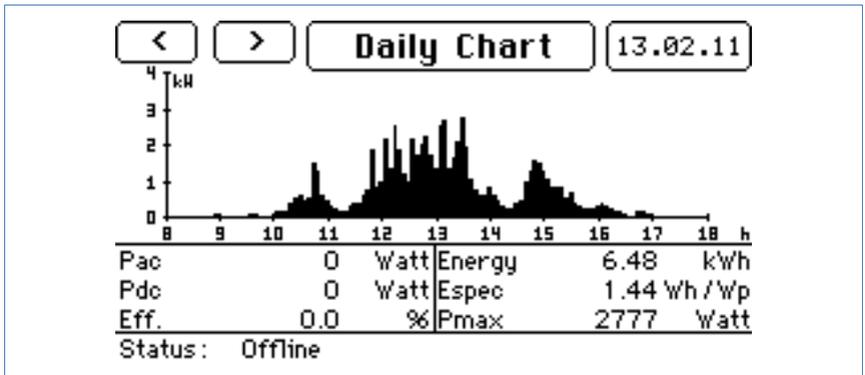
Description	Unit	Meaning
CO2	to	The calculated quantity of reduced carbon dioxide emissions
Eactual	kWh	The actual yield for the selected period of time
Eactual/Etarget	%	The actual value shows the percentage share between the actual yield and target yield for the selected period of time.
E _{max}	kWh	The maximum yield for the selected period of time
E _{min}	kWh	The minimum yield for the selected period of time
E _{Mean}	kWh	The average output for the selected period of time
Energy	kWh	The total daily output
E _{target}	kWh	The device runs a forecasting statistics function that specifies a certain target value for each month. If the target value from the monthly yield is attained or exceeded the forecast output has been achieved.
E _{spec}	Wh/Wp	The energy yield divided by the maximum output. This value is a good reference value with respect to other plants.
P _{ac}	Watts	The current power input P on the AC voltage side
P _{dc}	Watts	The current power input P on the DC voltage side (solar generator). If only one single multi-string inverter is selected, the individual strings are shown separately.
P _{max}	Watts	Maximum daily output

Description	Unit	Meaning
Eff	%	The current efficiency from the generator output and the power input. The manufacturer's specifications regarding the efficiency of the inverter can be checked here.

CHANGES MADE HERE TO REFLECT ACTUAL DEVICE FIRMWARE
 – DELETE THIS COMMENT BEFORE PRINTING

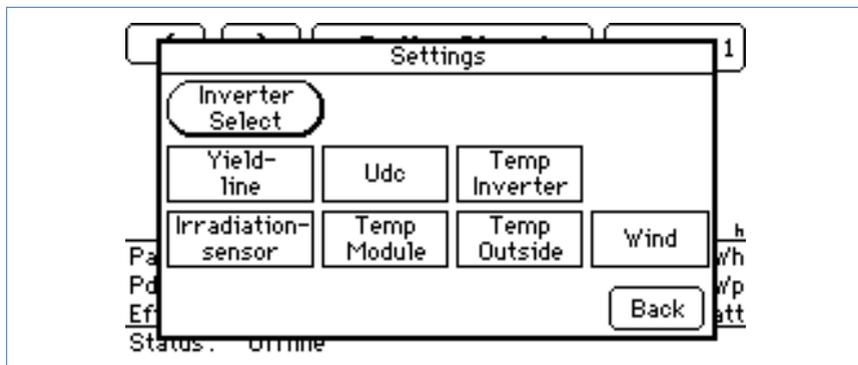
3.2.3 Daily chart

- 1 Tap the display with your finger.
 → The main navigation menu is displayed.
- 2 Tap on **Chart** and tap on **Day**.

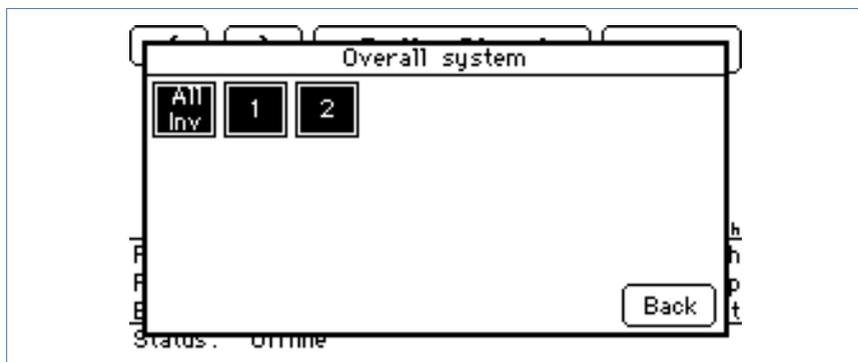


The day chart shows you the current values for the selected day.

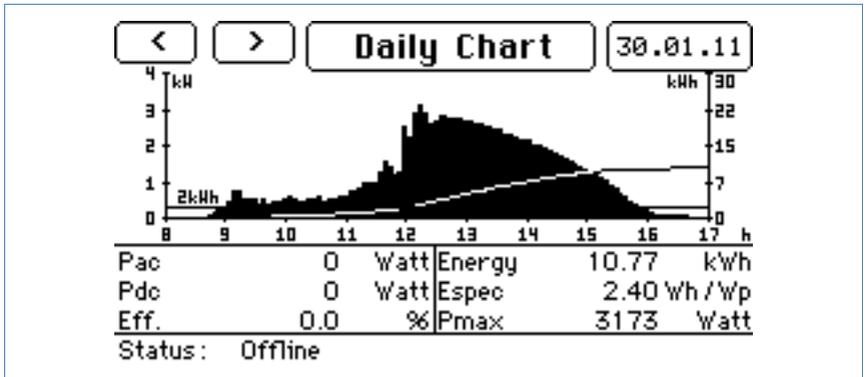
- 3 Tap on the date to show the display for the desired day.
- 4 Tap on **Day chart** to show the yield values for the connected inverters.
 → The menu window settings are shown.



- 5 Tap on **Inverter selection** to select the desired inverter.
→ The total plant menu window is shown.



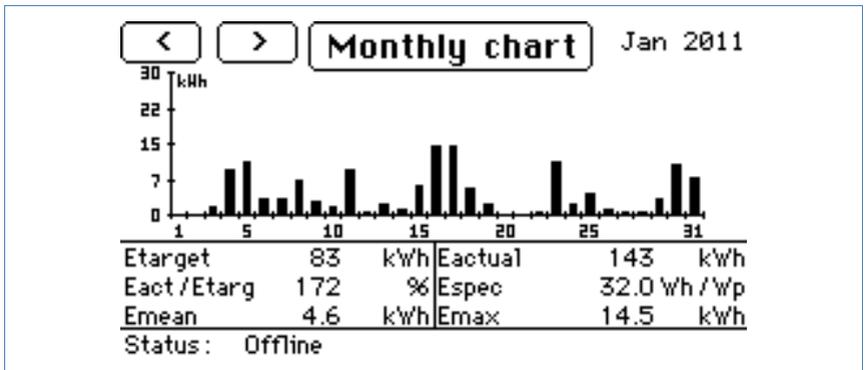
- 6 Select the desired inverter and tap on **Back**.
→ The values for the selected inverter are shown.
- 7 Tap on **Day chart** to show the display for additional measured values.
- 8 Select the desired display and tap on **Back**.
→ The selected setting is shown.
→ If you have selected **Yield line** the target value is also shown.



- 9 Tap on the display to call up the main navigation menu.

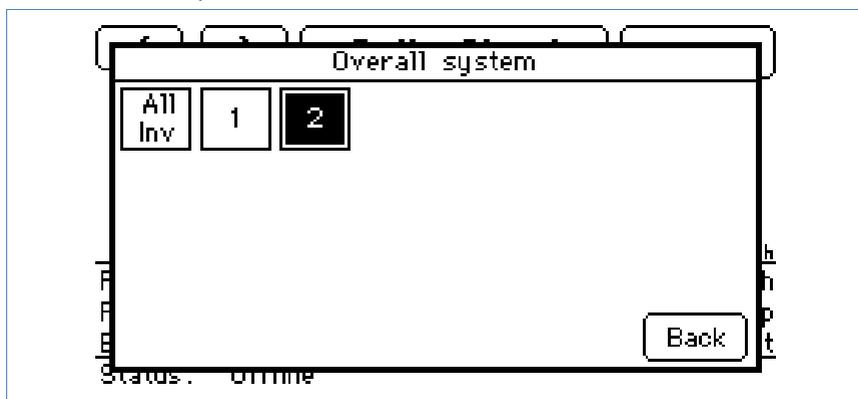
3.2.4 Month chart

- 1 Tap the display with your finger.
→ The main navigation menu is displayed.
- 2 Tap on **Chart** and tap on **Month**.



- The month chart shows you the current values for the selected month.
- 3 Tap on any bar displayed to show the day chart for the selected day ([page 31](#)).
 - 4 Tap on **Monthly chart** to show the yield values for the connected inverters.

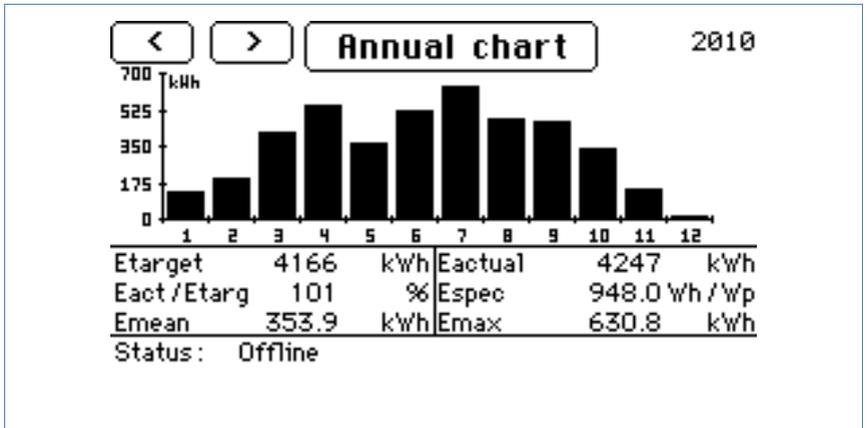
→ The total plant menu window is shown.



- 5 Select the desired inverter and tap on **Back**.
→ The values for the selected inverter are shown.
- 6 Tap on the display to call up the main navigation menu.

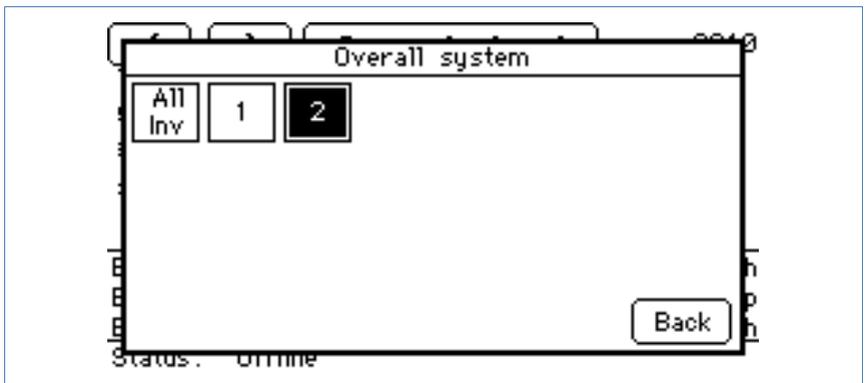
3.2.5 Year chart

- 1 Tap the display with your finger.
→ The main navigation menu is displayed.
- 2 Tap on **Chart** and tap on **Year**.



The year chart shows you the current values for the selected year.

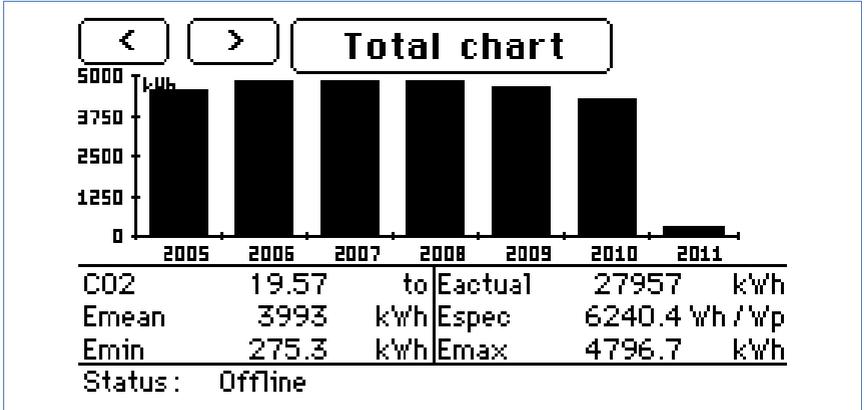
- 3 Tap on any bar displayed to show the month chart for the selected month ([page 33](#)).
- 4 Tap on **Yearly chart** to show the yield values for the connected inverters.
 - The total plant menu window is shown.



- 5 Select the desired inverter and tap on **Back**.
 - The values for the selected inverter are shown.
- 6 Tap on the display to call up the main navigation menu.

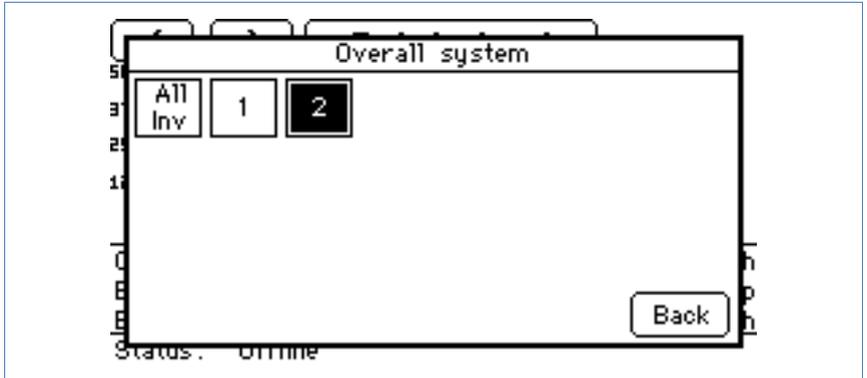
3.2.6 Total chart

- 1 Tap the display with your finger.
→ The main navigation menu is displayed.
- 2 Tap on **Chart** and tap on **Total**.



The total chart shows you the values for the plant for the entire period of operation.

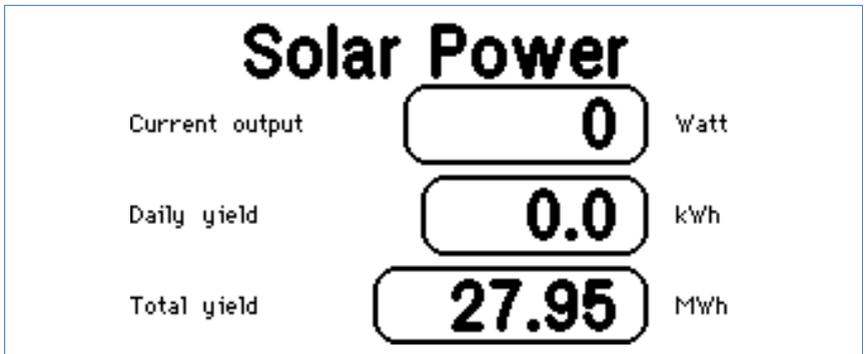
- 3 Tap on any bar displayed to show the year chart for the selected year (➔page 34).
- 4 Tap on **Total chart** to show the yield values for the connected inverters.
→ The total plant menu window is shown.



- 5 Select the desired inverter and tap on **Back**.
→ The values for the selected inverter are shown.
- 6 Tap on the display to call up the main navigation menu.

3.2.7 Large display

- 1 Tap the display with your finger.
→ The main navigation menu is displayed.
- 2 Tap on **chart** and tap on **Large display**.
→ The large view for the current yield values is displayed.



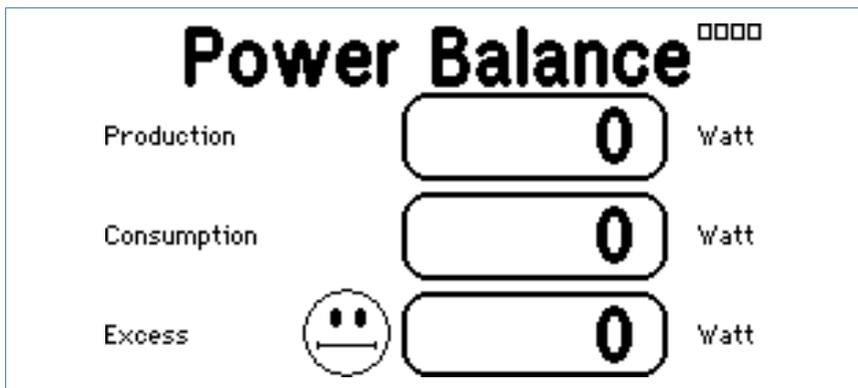
The large display shows you the current output of your plant.

- 3 Tap on the display to call up the main navigation menu.

3.2.8 Power balance

If a meter is set as a "consumption meter" type for the Solar-Log¹⁰⁰⁰, an additional "Power balance" menu is shown on the touchscreen.

- 1 Tap the display with your finger.
→ The main navigation menu is displayed.
- 2 Tap on **Chart** and tap on **Power balance**.
→ The large view for the current power balance is displayed.



The power balance shows you the current yield, your own current consumption and the difference between the two values.

If you are taking more from the grid than you are supplying, the specified surplus is shown as a negative figure and the smiley symbol shows a sad face.

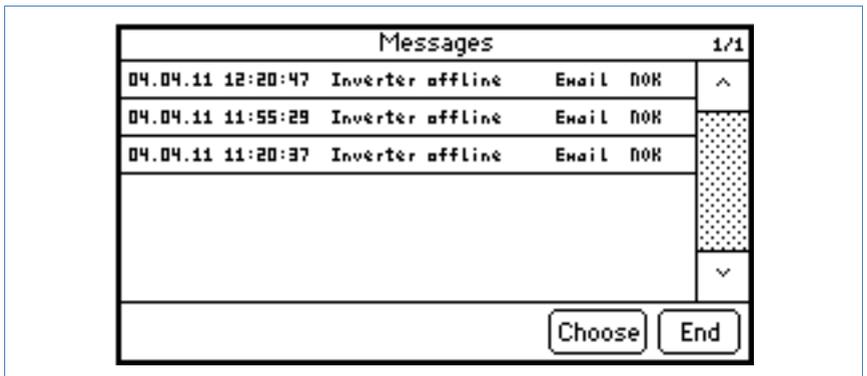
- 3 Tap on the display to call up the main navigation menu.

3.3 Calling up the analysis function

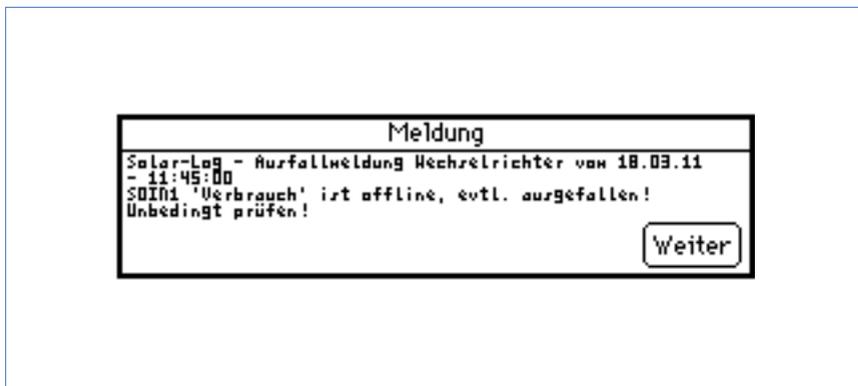
With the analysis function you are accessing the device's event log. You can display a total overview of all of the errors, malfunctions and status changes that have occurred for the connected inverters.

3.3.1 Calling up messages

- 1 Tap the display.
→ The main navigation menu is displayed.
- 2 Tap on **Analysis** and **Messages**.
→ The display shows a list of messages.



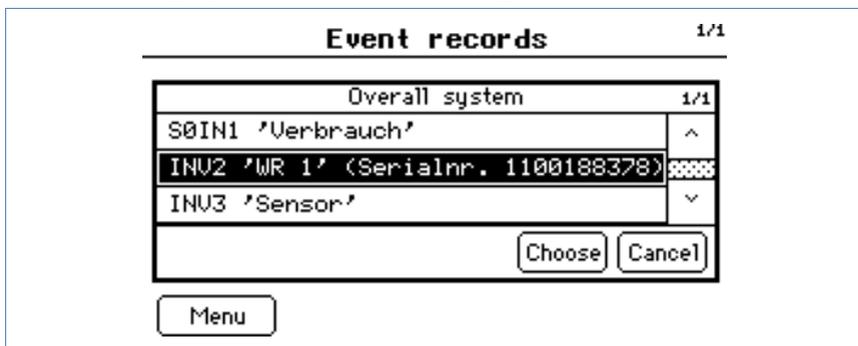
- 3 Select the desired message from the list.
→ The content of the selected message is shown.



- 4 Tap on **Next** to show the next message or to return to the list of messages.
- 5 Close the list of messages by tapping on **End**.

3.3.2 Showing inverter events

- 1 Tap the display.
→ The main navigation menu is displayed.
- 2 Tap on **Analysis** and **Inverter event records**.
→ The display shows a list of event logs for the connected inverters.



- 3 Select the desired inverter from the list.
→ The event log for the selected inverter is shown.



- 3 Tap on **Acknowledge alarm manually**.
→ The alarm message is cancelled.
- 4 After the malfunction has been remedied, tap on **Reset alarm**.
→ The device returns to the operating mode.
- 5 Tap on **Menu**.
→ The main navigation menu is displayed.

3.3.4 Optimising your own power consumption

To transfer your own power consumption to times during which sufficient production of power is taking place, the Solar-Log¹⁰⁰⁰ offers the option to switch on up to 4 consumers automatically and switch them off again if required. These consumers are shown as "switches" on the display.

The appliances are controlled based on current power surpluses, i.e. "production minus consumption". If no consumption meter has been connected, control can only take place in connection with simple production of power.



Note

To set the switches, follow the installation manual or contact your solar technician.

Setting internal switches

The following description for setting a switch applies to all four switches.



Note

If there is only one external switch set on the Solar-Log™, the power surplus is always used for the automatic switching function. If there are several switches, the surplus is not used; instead only the simple power production is used as the power consumption of the consumers is generally not constant during the switching time period (e.g. washing machine) and changes continually. If there are several such consumers the calculated power surplus would therefore continually fluctuate, making optimal control impossible.

- 1 Tap the display.
→ The main navigation menu is displayed.
- 2 Tap on **Analysis** and **Self Consumption**.
→ The display shows the first switch.

Power self consumption 1/4

Switch 1 (None)

Manually

Automatically Active Inactive

Threshold (Watt) On: Off:

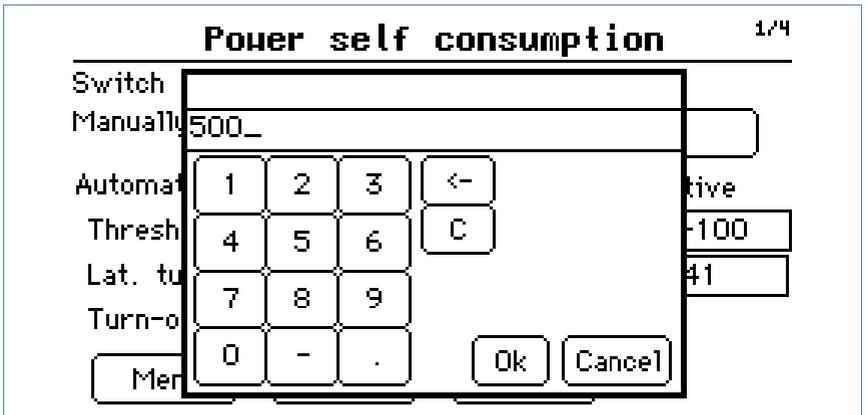
Lat. turn-on bw. a.

Turn-on duration min

The setting options are shown for each switch:

- **Manually** and **Automatically**. You can switch the switches on or off manually or define an automatic switching procedure.

- **Threshold.** The threshold values "On" and "Off" define the switch on and switch off value depending on the current power surplus. If an appliance is supposed to run permanently after switching on (e.g. a washing machine), the "Off" threshold value must be set to "-9999". The appliance is always switched off as soon as the switch off time is reached (see below).
 - **Latest switch on.** With the "latest switch on" function, a period of time can be defined in which the appliance definitely switches on, even if the "On" threshold value has not been attained (example: The wash cycle should definitely be finished by evening and therefore must start in time for this to happen). The exact switch on point is redefined daily within the selected period of time via a random generator so that the network load due to consumers switching on at the same time is avoided.
 - **Turn-on duration.** To prevent switches from being triggered immediately when there is sunlight for only a short period, you can specify a minimum length of time after which the appliance switches on.
- 3 Tap the value to be set.
→ The virtual keypad is shown.



- 4 Enter the desired values and confirm the entry by pressing **OK** or **Cancel** to abort the entry.

- 5 To abort, press **Menu**.
 - The main navigation menu is displayed.
 - The changes are rejected.
- 6 After making the changes press **Save** to save the settings for this switch.
- 7 Tap on **Next** to select the next switch.

3.4 Using data transfer via USB

If your Solar-Log¹⁰⁰⁰ is not connected to a local network you can also save and import data such as event logs or settings, using a USB stick. The Solar-Log¹⁰⁰⁰ has a USB interface on the top side of the housing under the cover. You also require a USB stick with has been formatted with the Windows operating system and which has a maximum of 4 GB memory.

- ▶ Pull the cover frontwards to remove it from the top side of the housing and insert the USB stick into the USB port.

3.4.1 Saving current data on the USB stick (copying data)

You can save the current yield values on the USB stick in order to show it on the PC using an internet browser. The data is saved as a website. You can observe the values on your computer using a browser.

- 1 Tap the display.
 - The main navigation menu is displayed.
- 2 Tap on **USB** and **Data Export**.
 - The display shows the usage of the USB stick.



- 3 Tap on **Export data**.
→ The current data for the Solar-Log¹⁰⁰⁰ is copied on the USB stick.
- 4 Tap on **Cancel** if you do not wish to transfer data.
→ The main navigation menu is displayed.

Displaying data on the computer

- 1 After the data has been successfully transferred, remove the USB stick from the Solar-Log¹⁰⁰⁰ and insert it into the USB port of your computer.
- 2 Using the browser, open the file "index.html" in the source directory of the USB stick.

3.4.2 Performing data back-up

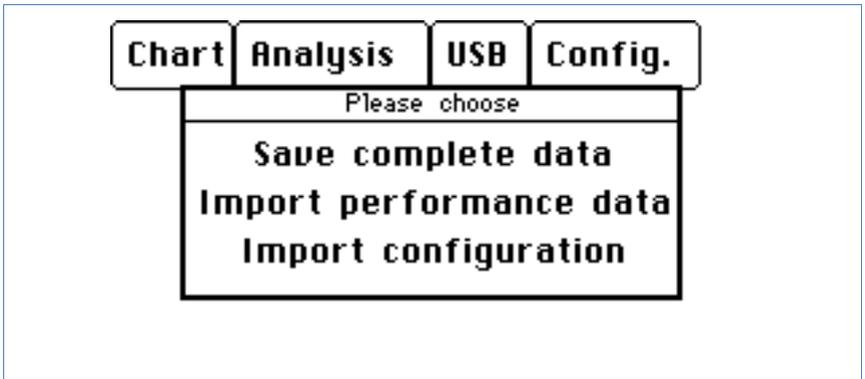
You can also use the USB stick to perform a data back-up. You can select whether you want to

- save the yield and settings data or
- copy onto the device yield data which has already been saved on the USB stick or
- copy onto the device settings which have already been saved on the USB stick.

**Caution**

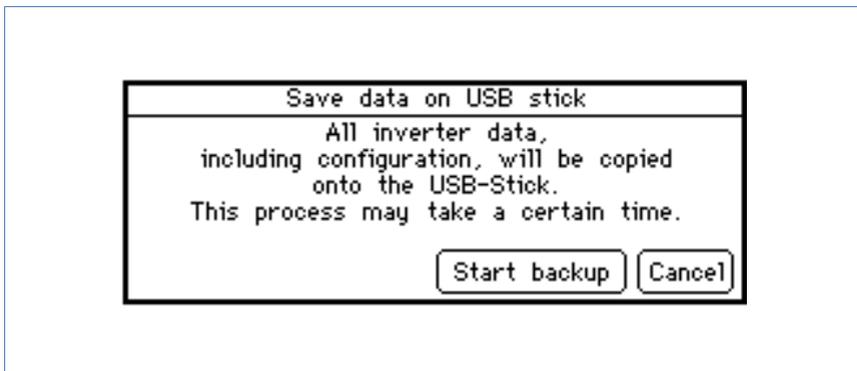
When importing the data from the USB stick all of the data on the device is deleted and replaced.

- 1 Tap the display.
→ The main navigation menu is displayed.
- 2 Tap on **USB** and **Data backup**.



- 3 Select the desired option.

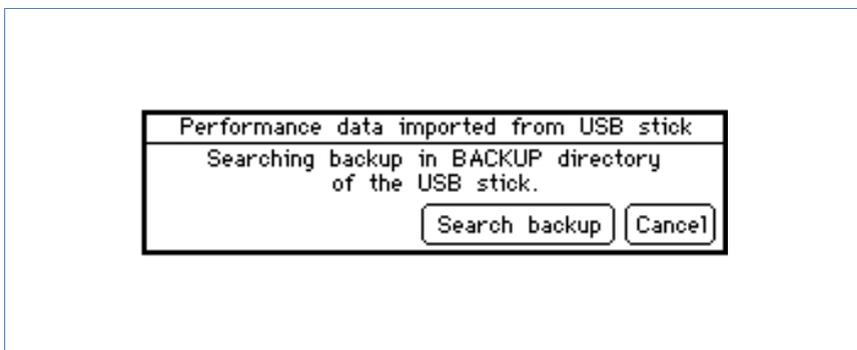
Performing complete data back-up



- 1 Tap on **Start backup**.
 - The current data for the Solar-Log¹⁰⁰⁰ is copied on the USB stick. Depending on the quantity of the data, the transfer can take several minutes.
- 2 Tap on **Cancel** if you do not wish to back-up data.
 - The main navigation menu is displayed.

Importing the configuration

- 1 Tap on **Import configuration**.



- 2 Tap on **Search backup**.

→ The device searches for the back-up directory on the USB stick and copies the data. Depending on the quantity of the data, the transfer can take several minutes.

- 3 Tap on **Cancel** if you do not wish to transfer the configuration settings.

→ The main navigation menu is displayed.

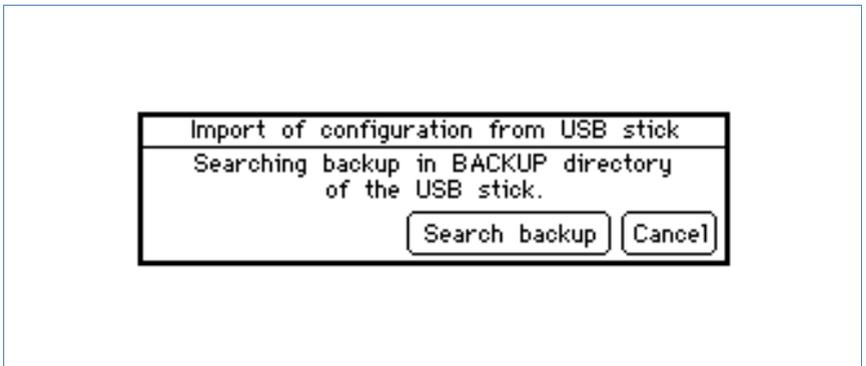
Import yield data



Information

Before importing the saved yield data you should import the current configuration ([↗page 48](#)).

- 1 Tap on **Import performance data**.



- 2 Tap on **Search backup**.

→ The device searches for the back-up directory on the USB stick and copies the data. Depending on the quantity of the data, the transfer can take several minutes.

- 3 Tap on **Cancel** if you do not wish to transfer the yield data.

→ The main navigation menu is displayed.

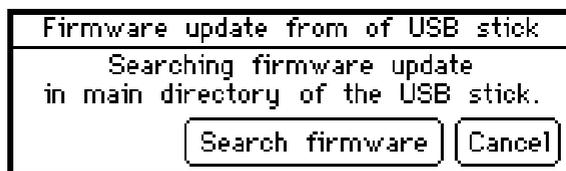
3.4.3 Updating the firmware

The firmware for the Solar-Log™ can be updated via the USB port.

- 1 Use the web browser of your PC to navigate to our download site and download the updated firmware onto the hard disk of the PC. The firmware can be found at the following web address:

<http://www.solar-log.com/en/service-support/downloads/firmware.html>

- 2 Select the Solar-Log¹⁰⁰⁰ and copy the firmware onto the USB stick.
- 3 Insert the USB stick into the Solar-Log¹⁰⁰⁰.
- 4 Tap on **USB** in the main navigation menu.
- 5 Tap on **Firmware update**.



- 6 Tap on **Search Firmware**.
- 7 The updated firmware is found on the USB stick and imported.
- 8 Tap on **Cancel** if you do not wish for the update to take place.
→ The main navigation menu is displayed.

3.5 Changing settings in the configuration menu

The configuration menu allows you to make changes and adjustments to the device software. The device should have been put into service and fully configured by your solar technician. However, you may like to make changes at a later date, such as changing your password, the network settings (because you want to use a new router, for example) etc.

- ▶ To make changes to the configuration please contact your solar technician.
- ▶ If you would like to make changes yourself, obtain the installation manual that is available for download from our internet site ([↗page 84](#)).

4 Using Solar-Log WEB

You can also use Solar-Log™ WEB to call up the yield data and event logs for your plant via the internet, as well as set up a daily email containing the yield and fault reports to be sent out to an email address. To do this you need a Solar-Log™ WEB account.

In addition to this option we also offer further levels of expansion with a corresponding range of service to fulfil every requirement. For further information, contact your solar technician directly or visit the following address

<http://www.solar-log.com/en/products-solutions/solar-log-web.html>

4.1 Register with Solar-Log™ WEB "Classic 2nd Edition"

Registration for the Solar-Log™ WEB "Classic 2nd Edition" takes place quickly and simply online.



Information

It is important to note that the following addresses are for the German "Classic 2nd Edition". To determine which address to visit for your country ask your installer or visit

<http://www.solar-log.com/?L=1> for more information

I ADDED THE ABOVE AS I THOUGHT IT WAS NECESSARY TO MENTION. DELETE THIS COMMENT BEFORE PRINT

- 1 Open the browser and navigate to the Solar-Log™ WEB registration page under

<http://home2.solarlog-web.de/register.html>

Or open the homepage under

<http://home2.solarlog-web.de/willkommen.html>

- 2 Select **Registration** in the left navigation bar.
→ The registration form is shown.

Solar-Log™ WEB „Classic-2nd Edition“

Registration on Solar-Log™ WEB „Classic-2nd Edition“

Plant data

Solar-Log™ Serial Number: [Where can I find the serial number?](#)

Publicly visible: Yes No [What does this mean?](#)

Location data

Title:

First name:

Last name:

Company:

Street / house no.:

Zip Code:

Town:

Country:

State:

Contact information

Email address:

Telephone:

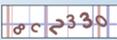
Mobile phone:

Fax:

Terms & Privacy Policy

Please confirm that you have read and agree to our [Terms](#) and the [Privacy Policy](#).

I have read and agree with the [Terms](#).

 Please enter the keyword contained in the image on the left side.
 [Why check this?](#)

* optional information

- 3 Enter the **Serial number** of your device.
→ The serial number (SN) can be found under the top cover (page 83).
- 4 Select whether you would like the data to be **Publicly visible** to the internet.

- Your plant information is then able to be viewed by other visitors to the site. If you select "No", you must log in using the user data that you receive from Solare Datensysteme GmbH in the course of the registration process ([7](#)page 55).
 - The "publicly visible" setting can be changed at any time afterwards on your website in the "Configuration" area.
- 5 Enter your **Location data** and your **Contact information**.
 - 6 Confirm acceptance of the General Terms and Conditions (**AGB**) and the **Privacy Policy** after you have read them.
 - 7 Enter the **Code word** shown in the chart in order to ensure that no automated programs (Bots) are performing the registration which could then paralyze the server.
 - 8 Confirm your entries by pressing **Register now**.
 - If you have not entered a code word or have entered the code word incorrectly, a new code word is automatically displayed and you do not need to re-enter your data.

On successful completion of your registration you will receive an email sent to your designated email address which you must confirm. After your data has been manually checked your access will be granted.



Note

The activation takes place during normal business hours and can take up to 24 hours.

4.2 Calling up plant data

- ▶ In the browser, open the homepage for Solar-Log™ WEB or enter the URL in the address line of the browser:

<http://home2.solarlog-web.de/>

→ The homepage is displayed.



Logging in to Solar-Log™ WEB

If you have refused "visibility to all" when registering, you must log in to the Solar-Log™ WEB internet site. If your plant is visible to all, you can skip the log in.

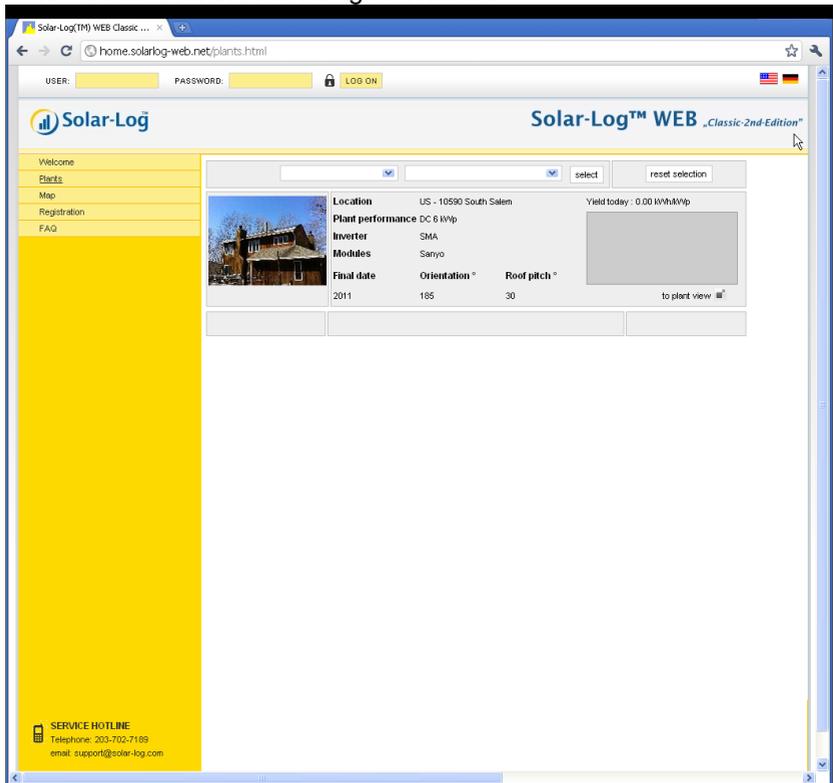
- ▶ In the header enter your **User** and **Password** information and click on **Log On**.

Calling up the plant overview

All of the plants are shown in the overview. The plants are anonymous. You can directly display the plants that are visible to all under the day chart.

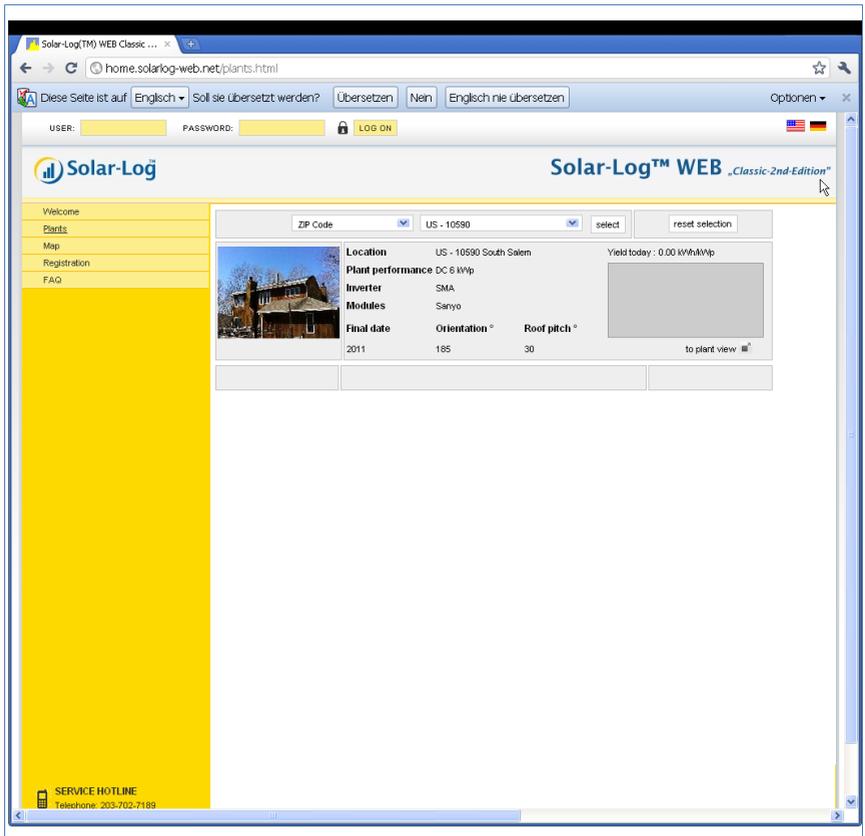
Plant data that has been given a password can only be called up by registering.

- ▶ Select **Plants** on the left navigation menu



- 1 Select the **Zip Code** of your location, **Inverter** manufacturer, **Final Date** of installation or the manufacturer of the **Modules** in your plant.

- Click on **Select** to filter the list according to the criteria selected or click on **Reset selection** to cancel the selection criteria.
→ A list of plants is shown that correspond with the filter criteria.



The overview shows the installed inverters, their output, module manufacturer, year of manufacture, orientation and the roof slope of the plants. If no picture of the plant has been made visible to all, a standard image is shown.

In addition, in the right column you can find an overview of the plants' current yield.

- Click on **to plant view** below the yield diagram.
→ The detailed overview of the plant is shown.

The screenshot displays the Solar-Log WEB Classic 2nd Edition interface. At the top, there is a login section with fields for 'USER:' and 'PASSWORD:', and a 'LOG ON' button. The main header features the Solar-Log logo and the text 'Solar-Log™ WEB „Classic 2nd-Edition“'. A navigation menu on the left includes links for 'Welcome', 'Plants', 'Map', 'Zip Code 0*', 'Zip Code 1*', 'Lands_Filter', 'Graphics', 'Events', 'Registration', and 'FAQ'. The central area shows a photograph of a two-story wooden house. To the right of the photo, there are two summary boxes: 'present' showing 'Last data transfer' (Time: 11.04.11 14:52:03) and 'Feed power' (Pac: 3766 W, Pdc: 51710 W); and 'Plant status' showing 'Status: 1X Wp' and 'error: -----'. Below the photo, there are two tables: 'Plant performance' and 'Location'. The 'Plant performance' table lists 'Orientation *' as 185 and 'Roof pitch/slope *' as 30. The 'Location' table lists 'US - 10590 South Salem'. Below these are two more tables: 'Inverter' and 'Modul'. The 'Inverter' table shows 'Count: 1', 'Manufacturer: SMA', and 'Type: SB6000US'. The 'Modul' table shows 'Count: 1', 'Manufacturer: Sunyo', and 'Type: 195 HT (mono)'. At the bottom left, there is a 'SERVICE HOTLINE' section with contact information: Telephone: 203-702-7189 and email: support@solar-log.com.

The detailed overview shows additional technical details about the plant as well as the plant status including any error messages that have occurred.

- 4 To navigate directly to the plant details, place a bookmark in your browser.

4.3 Calling up yield data

4.3.1 How to navigate within the overviews

The navigation on the internet site for the overviews is similar to the navigation on the overview pages in your local network ([↗page 9](#)).

Switching between the overviews

- 1 Move the cursor onto the small triangle on the left next to the display for the period of time.
→ An overview of the time periods is shown.



- 2 Click on the desired time period.
→ The overview of the time period is shown.

4.3.2 What the values in the overviews mean

The values provided below the diagrams are similar to the values on the overview pages in your local network ([↗page 10](#)).

Any information regarding revenue is not shown on the internet site for reasons related to privacy.

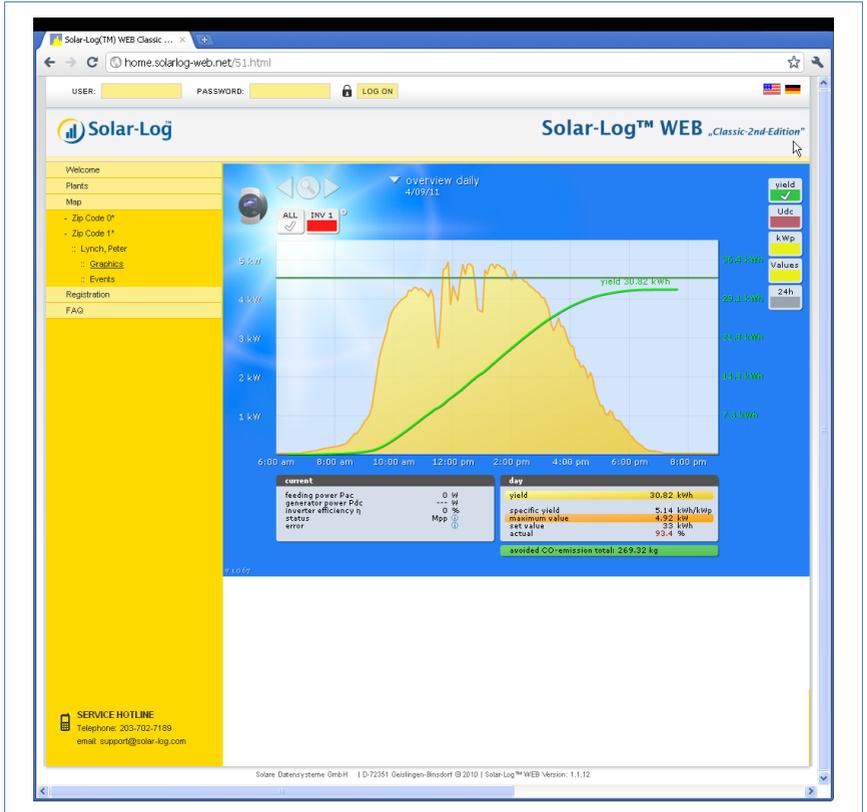
4.3.3 Day overview

- 1 Open the browser and click on the bookmark for your plant.
→ You may have to log in ([↗page 55](#)).

→ The detailed overview of your plant is shown.

2 Select **Graphics** in the left navigation bar.

→ The day overview of the plant is shown.



The daily yields are shown in a curve chart. The dark green line shows the target value for the day.

Move the cursor over the curves to display the corresponding values.

Buttons for the day overview

- **Yield:** Yield line via which the yield trend can take place. In addition, a dark green line is displayed as the total daily target.

- **Udc:** Generator voltage. To display voltage of the individual strings only one inverter may be selected.
- **kWp:** Converting the scaling from "Output in watts" to "Output in kWh/kWp". This makes all of the curves comparable in terms of their specific output. This also makes it easier to identify decreased outputs from specific inverters/strings.
- **24h:** Display showing the output over 24 hours of the day for a complete visualisation of the power consumption over the course of one day

Additional functions using S0 meter reader

The following displays are also available to you by connecting an S0 meter reader to the Solar-Log™:

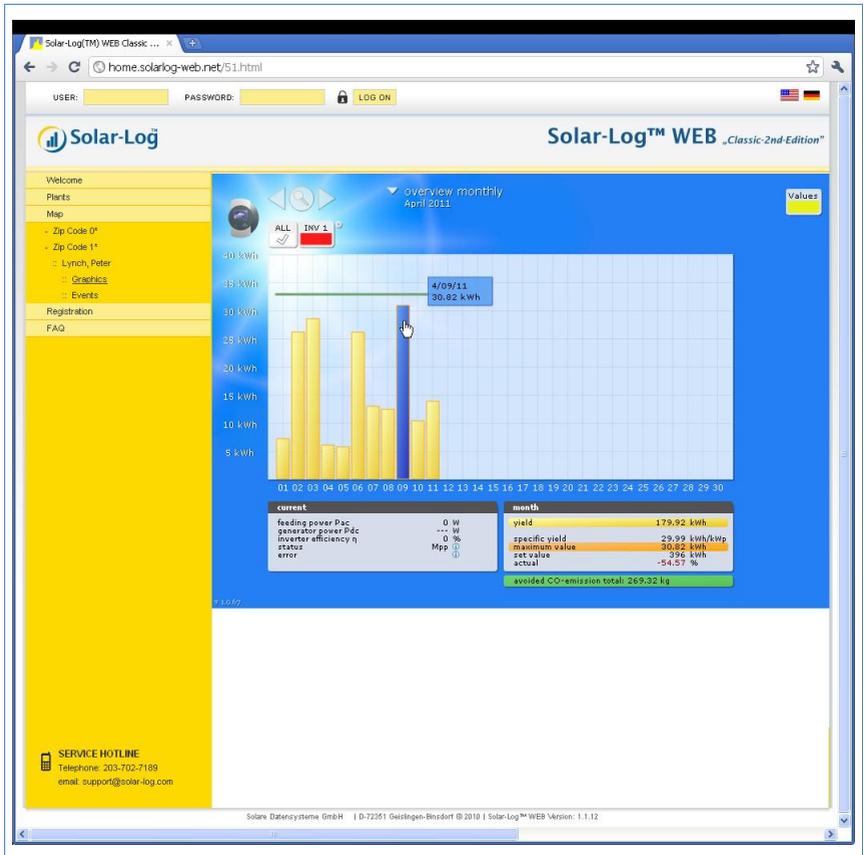
- **S0:** Shows the power consumption for your building as a graph in watts.
- **Cons.:** Shows the power consumption for your building as a rising line in kWh.
- **Values:** Shows various values for your inverter in text form.
- **Balance:** Shows you the ratio of your power consumption to your power yield. In the lower left text field the ratio is also shown as a percentage.

Additional functions with the sensor box

- **Solar:** Shows the reference value of an irradiation sensor. The daily output of the plant must be within the measuring range of the sensor.
 - **Mod T:** Shows the module temperature. The temperature is detected by the sensor box.
- 3 Click on one of the buttons and then on the magnifying glass symbol.
→ The selected curve is shown.

4.3.4 Month overview

- ▶ Select **Overview Monthly** in the navigation menu.

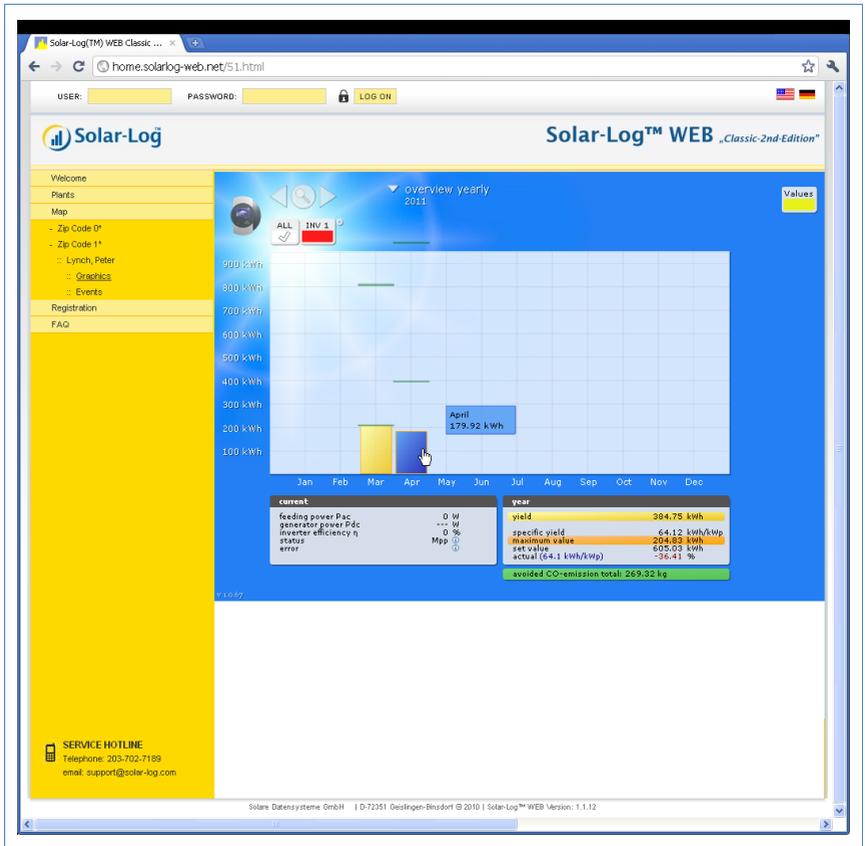


The daily yields for one month are shown as a total in a bar graph. The dark green line shows the target value for the month.

- 1 Move the mouse over a day bar.
→ The corresponding day's yield is shown.
- 2 Click on an individual bar to switch to the corresponding day overview.

4.3.5 Year overview

- ▶ Select **Overview Yearly** in the navigation menu.



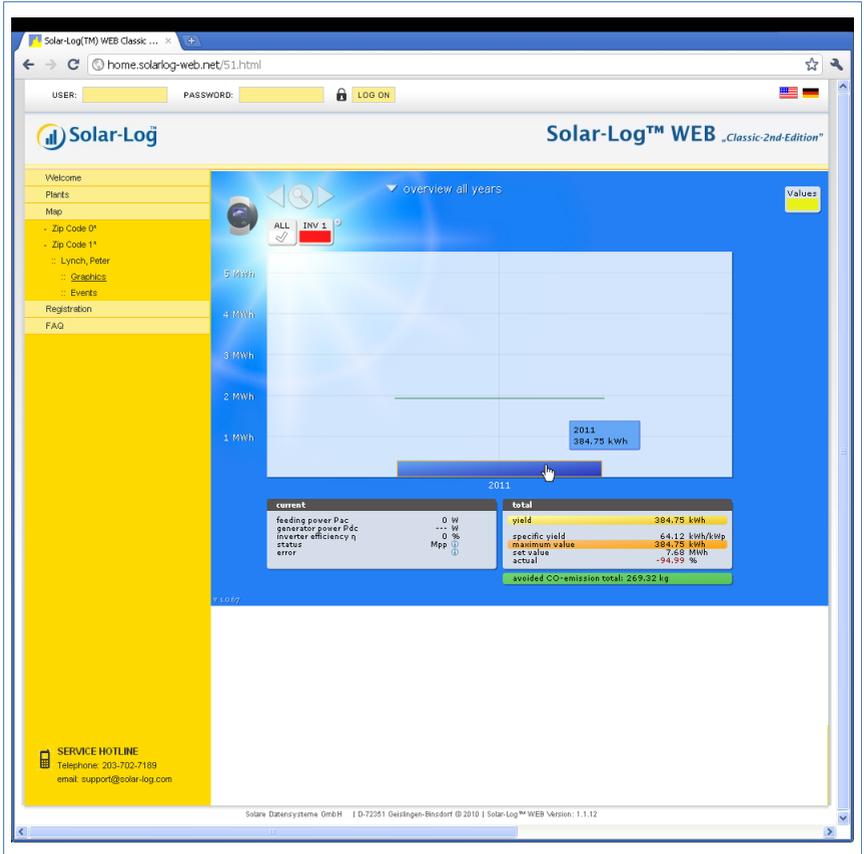
The individual monthly yields are shown as a total in a bar graph. The dark green line shows the target value for the month.

The "Forecast" value is calculated using the yields already achieved for the year and is then projected using the target yields for the remaining months of the year.

- 1 Move the mouse over a month bar.
→ The corresponding month's yield is shown.
- 2 Click on an individual bar to switch to the corresponding month overview.

4.3.6 Overview of all years

- ▶ Select **Overview all years** in the navigation bar.



The individual annual yields are shown as a total in a bar graph. The dark green line shows the target value for the year. For the current year two green lines are shown:

- The top line shows the annual target.
 - The bottom line shows the annual target accumulated to the present day.
- 3 Move the mouse over a year bar.

- The corresponding year's yield is shown.
- 4 Click on an individual bar to switch to the corresponding year overview.
- 5 Click on **Line overview, years** to display a line view for the total yield.

4.3.7 Calling up and filtering the event log

- ▶ Select **Events** in the left navigation bar.
- The complete list of all system events is shown.

The screenshot shows the Solar-Log WEB interface. The left navigation bar has 'Events' selected. The main content area displays a table of events for the period 02.04.2011 - 12.04.2011. The table has columns for Inverter, Events From - To, Status, and Error. The filter section at the top of the table shows 'All inverters' selected in the 'All inverters' dropdown, 'All days' selected in the 'All days' dropdown, and 'All errors' selected in the 'All errors' dropdown. The 'Reset selection' button is also visible.

Inverter	Events From - To	Status	Error
1	11.04.2011 07:44:45 - 07:44:59	6 - Mpp-Search	-
1	11.04.2011 07:34:45 - 07:44:44	7 - Mpp	-
1	11.04.2011 07:34:30 - 07:34:44	6 - Mpp-Search	-
1	11.04.2011 07:24:30 - 07:34:29	7 - Mpp	-
1	11.04.2011 07:24:00 - 07:24:29	6 - Mpp-Search	-
1	11.04.2011 07:14:00 - 07:23:59	7 - Mpp	-
1	11.04.2011 07:13:45 - 07:13:59	6 - Mpp-Search	-
1	11.04.2011 07:13:30 - 07:13:44	2 - Grid monitoring	-
1	11.04.2011 07:13:15 - 07:13:29	3 - Walling	-
1	11.04.2011 07:12:15 - 07:13:14	7 - Mpp	-
1	11.04.2011 07:12:00 - 07:12:14	6 - Mpp-Search	-
1	11.04.2011 07:11:30 - 07:11:59	2 - Grid monitoring	-
1	11.04.2011 07:11:15 - 07:11:29	6 - Mpp-Search	-
1	11.04.2011 07:10:45 - 07:11:14	2 - Grid monitoring	-
1	11.04.2011 07:10:30 - 07:10:44	7 - Mpp	-
1	11.04.2011 07:10:15 - 07:10:29	6 - Mpp-Search	-
1	11.04.2011 07:10:00 - 07:10:14	2 - Grid monitoring	-
1	11.04.2011 07:09:45 - 07:09:59	3 - Walling	-
1	11.04.2011 07:09:30 - 07:09:44	6 - Mpp-Search	-

To display only certain events or events that occurred on a certain day in the previous 35 days, use the filter function.

- 1 Select the desired inverter in the **All inverters** drop-down menu.
→ Only the events for the selected inverter are shown.
- 2 Narrow down the selection by selecting the desired day in the **All days** drop-down menu.
→ Only the events for the selected day are shown.

- 3 Narrow down the selection further by selecting the desired status in the **All status** drop-down menu.
 - Only those statuses are available which occurred within the selected period of time.
- 4 Narrow down the type of error by selecting the desired error in the **All errors** drop-down menu.
 - Only those errors are shown which occurred within the selected period of time.
- 5 Click on **Reset selection** to cancel all of the filter settings.

5 Using the Solar-Log™ APP for iPhone

In order to allow you mobile access to your plant data, we offer you a Solar-Log™ APP for iPhone, iPad and iPod Touch. The app can be downloaded free of charge from Apple's app store.

The app shows you current and past yield data in chart form. Using the intuitive operation you can quickly navigate between day, month, year and total overviews.

Requirements

Our Solar-Log™ APP is compatible with all versions of iPod Touch, iPhone and iPad firmwares from system version iOS 3.0 and upwards.

The Solar-Log™ app works with any server solution from Solare Datensysteme GmbH.

5.1 Installing the app

You can obtain the app free of charge from the app store.

Downloading the app

- 1 Look for "Solar-Log" in the [App store](#).
- 2 Follow the instructions for download and installation on your iPhone, iPad or iPod Touch.

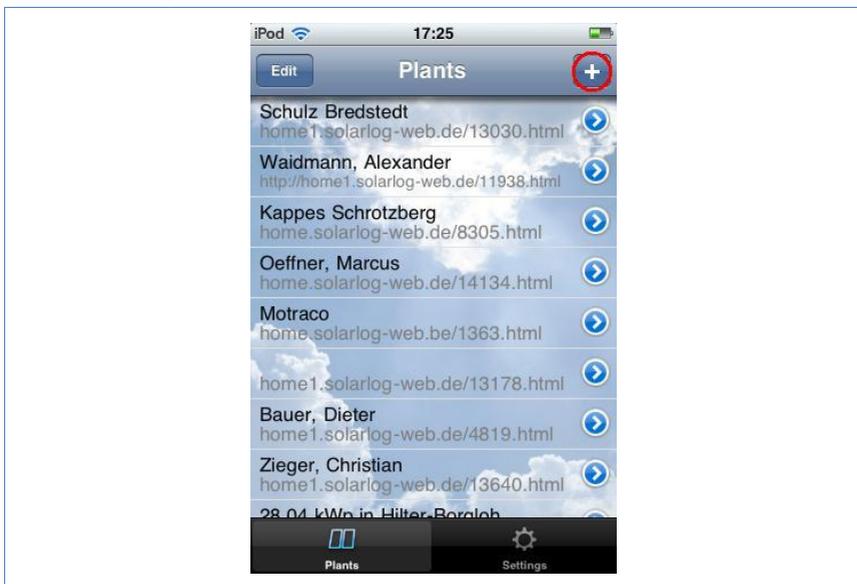
Starting the app



- 3 Start the app on your iPhone, iPad or iPod Touch.
→ The start screen is shown.

5.2 Adding plants

You can use the app to monitor any of up to 10 that are each connected to a Solar-Log™.



- 1 Click on the + symbol.
→ The **New plant** view is shown.



2 Select the **Service Type** of the server:

- **Home.** Your plant is located on the Classic 1 server.
- **Web.** Your plant is located on the Classic 2 server.
- **Local.** You can call up the data directly from your Solar-Log™ in the local network.

Home

1 Enter the complete **URL** of your Solar-Log™ website, for example

www.solarlog-home.de/myPlant

2 **Save** the entry for the plant.

Web



- 1 Enter the **URL**, **Serial number** and **Password** that you received in the registration email from Solare Datensysteme GmbH.
- 2 **Save** the entry for the plant.

Local



- 1 Enter the IP address of the Solar-Log™ as a **URL**.
- 2 **Save** the entry for the plant.

5.3 Calling up yield data

If your plant has been correctly recognised it is shown in the overview.



Note

Please note that the data is only updated if your iPhone, iPad or iPod Touch has an existing internet connection.

5.3.1 How to navigate within the overviews

Tap on the screen to obtain a menu on the lower edge of the picture in which you can select the desired overviews.



5.3.2 What the values in the overviews mean

The values provided in the diagrams correspond to the values on the overview pages in your local network ([↗](#)page 10).

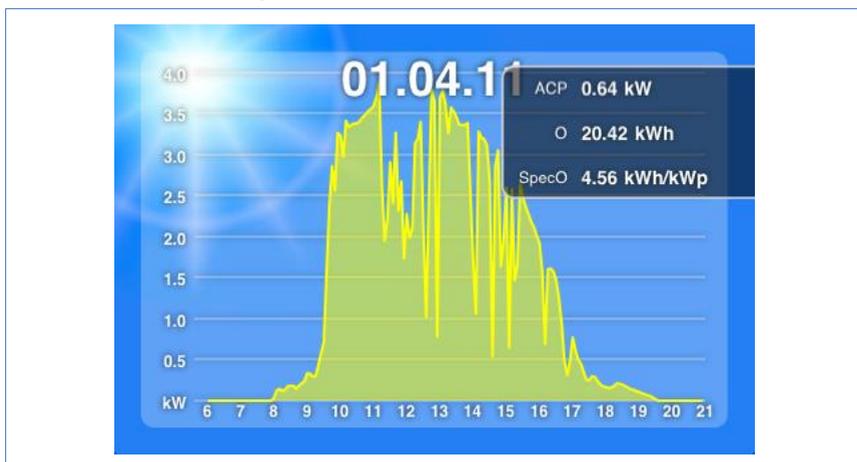
- ▶ In the views tap on **Stats** to show the current values for each view.

5.3.3 Day overview

- 1 Start the app.



- 2 Tap on the blue arrow key next to the name of your plant.
→ The current day overview is shown.

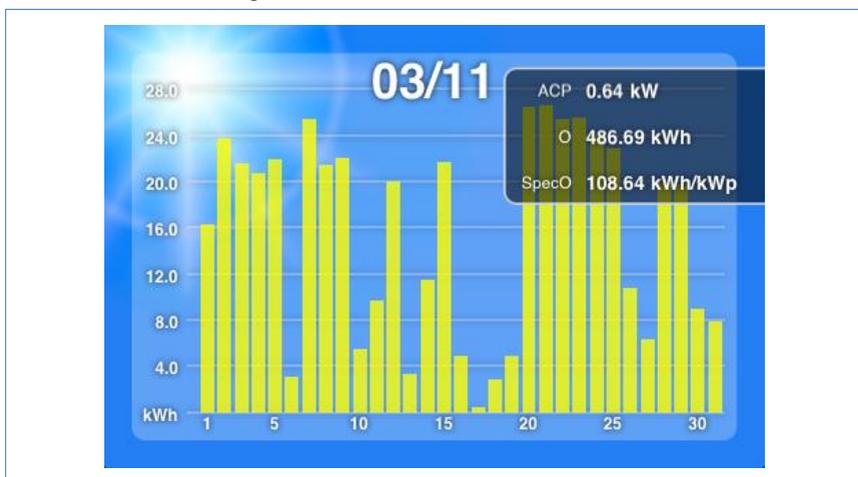


The yields for the selected day are shown as a curve.

- 3 Turn your iPhone, iPad or iPod Touch horizontally to obtain a better view.
- 4 Swipe to the left or right to go to the next or previous overview.

5.3.4 Month overview

- 1 Tap the screen.
→ The overview navigation menu is shown on the lower edge of the screen.
- 2 Select **Month** to go to the month overview.



The yields for the selected month are shown as a bar.

- 3 Swipe to the left or right to go to the next or previous overview.

5.3.5 Year overview

- 1 Tap the screen.
→ The overview navigation menu is shown on the lower edge of the screen.
- 2 Select **Year** to go to the year overview.



The monthly yields for the selected year are shown as a bar.

- 3 Swipe to the left or right to go to the next or previous overview.

5.3.6 Total overview

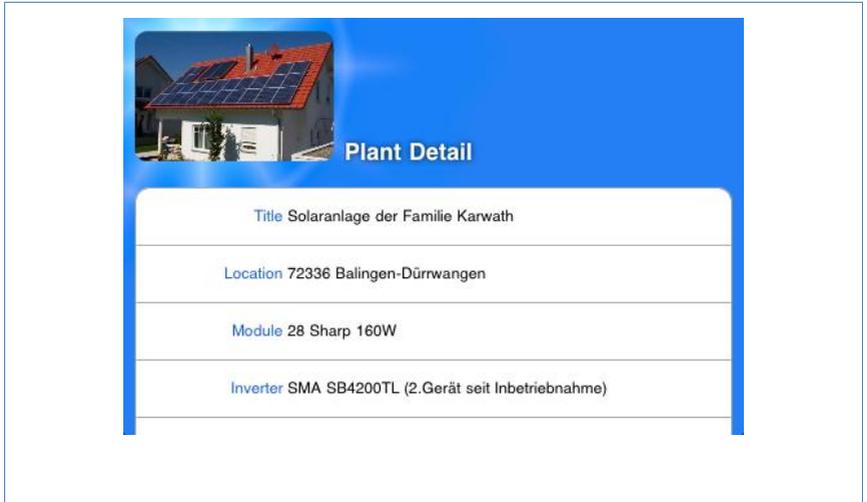
- 1 Tap the screen.
→ The overview navigation menu is shown on the lower edge of the screen.
- 2 Select **Total** to go to the total overview.



- 3 Swipe to the left or right to go to the next or previous overview.

5.4 Calling up data

- 1 Tap the screen.
→ The overview navigation menu is shown on the lower edge of the screen.
- 2 Select **Data** to go to the data view.



The data view shows you the owners, the location of the plants, the installed modules and inverters as well as output and orientation of the plant and the date of its commissioning entered.

5.5 Calling up CO₂ savings

- 1 Tap the screen.
→ The navigation menu is shown on the lower edge of the screen.
- 2 Select **CO₂**.
→ The total accumulated amount of carbon dioxide emissions that have been prevented by your plant is shown.



The saving shown is calculated using the quantity of carbon dioxide that would have been created in order to generate the same amount of energy using fossil fuels.

5.6 The yield data as a slide show

You can use the slide show function to turn your iPod Touch or your iPad into an "electronic picture frame". This "picture frame" shows in rotation the various overviews contained within the Solar-Log™ app.



Note

You can find suitable holders (cradles) for mounting the devices in specialist stores.

- 1 Tap the screen.
→ The slide show function is shown on the upper edge of the screen.



- 2 Select **Slide show** and place the iPad or iPod Touch in a cradle.
→ Now you are able to read off the updated values at any time.

6 Cleaning and care

6.1 Cleaning tips



Caution

Be sure to unplug the device prior to cleaning it!

- ▶ Clean the device on the outside only with a dry, lint-free cloth.
- ▶ If very dirty, the device can be cleaned with a slightly damp cloth and a commercially available household cleaner.



Caution

When cleaning, ensure that no moisture enters the device!

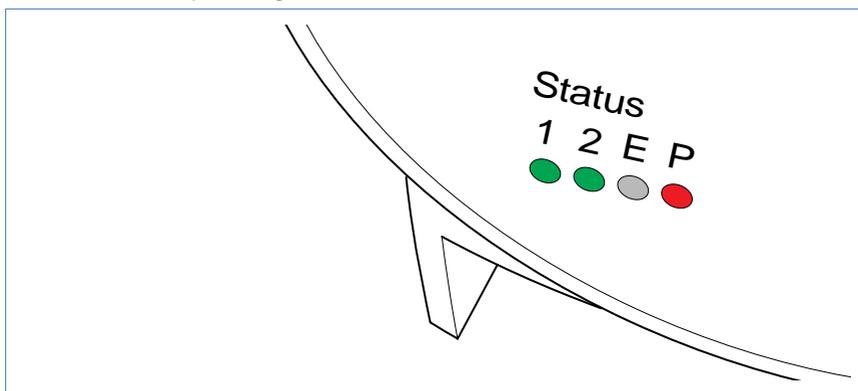
6.2 Care tips

- ▶ Ensure that the device is not exposed to any moisture at the location where it is kept.
- ▶ Ensure that the device is not exposed to any heat or strong sunlight at the location where it is stored.
Please take note of the Technical Data ([↗](#)page 86).

7 Malfunctions

7.1 Status display for the LEDs

On the front side of the device in the lower left area there are four LEDs that show the operating status of the device.



Depending on the operating status, LED 1, LED 2, and LED E can flash quickly or slowly, be permanently illuminated or not be illuminated.

The red LED P indicates the power supply.

The LED E is generally not illuminated during normal fault-free operation. If it is illuminated or flashing, this indicates that a system malfunction has occurred.

Normal operation

Normal operation			
LED 1	LED 2	LED E	Meaning
quickly	quickly	off	Max. 5 min.: Device starts
illuminated	slow	off	Import time via internet
off	quickly	off	Read configuration from inverter

Normal operation			
illuminated	illuminated	off	Normal operation, inverter online
illuminated	off	off	Normal operation, inverter offline

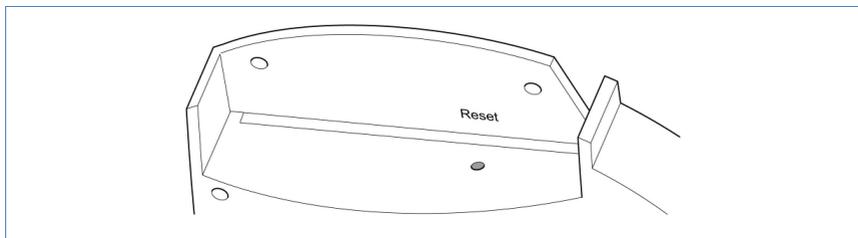
System malfunctions

System malfunctions			
LED 1	LED 2	LED E	Meaning and possible remedy
quickly	quickly	off	For 5 min. during initialization: Error! ▶ Unplug power plug and plug in again.
illuminated	slow	slow	Import time via internet failed: ▶ Set time manually ▶ Check internet access
off	slow	slow	Configuration invalid or nonreadable: ▶ Check interface ▶ Check cable ▶ Perform re-start (🔗page 84)
		illuminated	Only for Fronius inverters: No data communication! ▶ Wait until inverters import ▶ Check wiring
		quickly	Plant has signalled a fault. ▶ Cancel on the touchscreen in the Analysis/reports menu (🔗page 41)

7.2 Remediating faults yourself

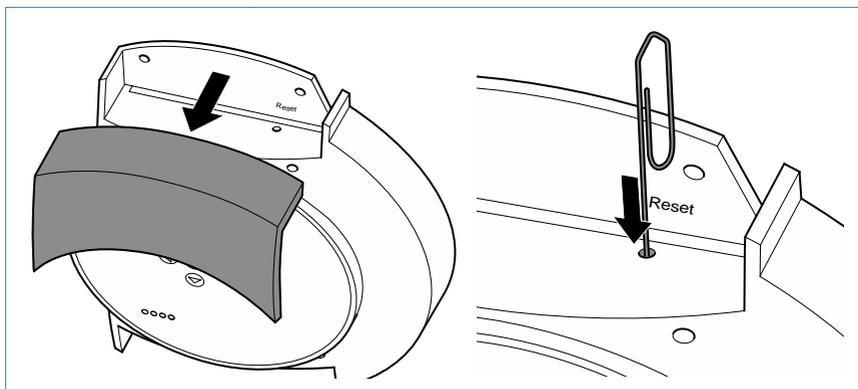
You can remedy faults yourself by restarting the device. A restart is necessary if the device no longer reacts to entries in the web browser. All of the settings made on the device remain in place, as does the saved yield data.

To restart the device, use the reset button at the top of the device.



Opening the cover

If the cover is fitted, you must first open the cover of the device.



- ▶ Pull the cover frontwards to remove.

Performing a restart

- 1 Press the reset button e.g. with an open paper clip.
→ LED 1 goes out.
- 2 Release the reset button.
→ After approx. 5 seconds LED 1 illuminates again.
→ After approx. 20 seconds LED 1 and LED 2 start to flash, the device restarts with the set values.
- 3 Wait until normal operation has recommenced and then close the cover.



Caution

Do not perform a restart by pulling out the power plug!

7.2.1 Obtaining information from the internet

You can also obtain support for operating the device or the settings on our internet site under the following URL:

<http://www.solar-log.com/en/service-support/technical-support.html>

Here you will also find additional product information and manuals available for download.

7.2.2 Informing a specialist technician

Should problems occur with the Solar-Log¹⁰⁰⁰ that are not able to be remedied using the measures described, we recommend that you contact your solar technician or our customer service.

The contact addresses for our customer service can be found on the back of the envelope.

8 Disposal



Caution

Your Solar-Log™ contains electronic components that can release highly toxic substances if burned or disposed of via the domestic garbage disposal system.

- ▶ Be sure to dispose of the Solar-Log™ in a recycling center as electronic scrap.

9 Technical data

Supply voltage	12V DC (24V DC max)
Energy consumption	approx. 3 watts
Power supply	External wall power supply 12V DC
Dimensions in cm	22.5 / 28.5 / 4 (W x H x D)
Housing	Plastic housing, passively ventilated
Interfaces	Ethernet RJ45 bushing 10/100MBit RS485/RS422 combined S0 impulse in/output (in accordance with DIN43864 and DIN62056) Reset buttons USB
Memory capacity	8 MB RAM + 2 GB SD RAM (internal only)
Protection class	IP 20 (exclusively for inside use)
Temperature range	-10°C to 50°C
Display	4 LEDs for status displays
Mounting	Wall mounted
Weight	0.61 kg

Glossary

Term	Meaning
Account	User account on a server into which the user must log with their name and password.
App	Abbreviation for application, programme
Back-up	Data back-up A method of archiving or to ensure against loss of data.
Browser, web browser	Programme used to display internet sites in the worldwide web
Derating	Loss in power of an electronic component depending on the surrounding temperature, e.g. decrease in output delivered in order to protect against overheating.
DHCP	Dynamic Host Control Protocol. Characteristic setting in local networks in which the IP addresses for the connected devices are assigned by the router.
Firmware	Operating system for your device
Gateway	Router that serves as a "gateway" for network access from outside, e.g. via the internet.
iOS	iOS is an operating system from Apple for mobile devices.
IP address	Network address for the device. Each device in the network is identified by its own number. This number consists of four blocks of maximum three figures. The network address is usually assigned by the router.
Local network	Several computers or network-compatible devices that exchange data with one another within a closed area.

Term	Meaning
MPP	The Maximum Power Point (MPP) is the point of maximum output. It is not constant but depends on the irradiation intensity, the temperature and the type of solar cells.
PDA	Personal Digital Assistant, a form of mobile computer
Server	Computer in the local network or internet which provides the available data to authorised users.
SMS	Short Message Service. Transfer of short messages in text form. They can be received by numerous types of mobile phones.

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Non-compliance resulting in contradiction of the above-mentioned specifications shall result in obligation to provide compensation for damages.

All of the brands mentioned in these instructions are the property of the respective manufacturer and hereby recognised as such.



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