

Fronius Solar.access

 Operating instructions
Data Communication

Start

Home gives you an overview of your system. If several systems are registered, you will receive a total overview. The lower diagram shows information from the last 3 days. Important or missing system information is also displayed.

The picture on the Home page can also be changed in:

("Administration - Set Up Startsite")

Administration

In Fronius Solar.access Administration, you can set up your Home, create, edit and delete PV systems, as well as edit your e-mail data.

Topic areas

- [Home](#)
- [PV Systems](#)
- [E-mail Configuration](#)

Set Up Startsite

("Administration - Set Up Startsite")

You can select and save a picture for the Home here. Because the picture is not scaled automatically for display on the Home page, the picture size should be approx. 460 x 460 pixels.

PV System

("Administration - PV Systems")

Provides a system management function. You can create any number of systems here as well as edit or delete existing systems.

Create PV System

("Administration - PV Systems - Create PV System")

Important Fronius Solar.access must be able to make a connection between the PC and the PV system at the time of installation (via Ethernet, USB, serial or Modem) in order to set up the system.

Important PV system setup also requires that system data be filled out completely. If data is incomplete, the "Save" button remains inactive and the data cannot be saved.

Enter the following data completely in the **Create PV System** menu item:

PV system data

To ensure a thorough data evaluation in Fronius Solar.access, please enter all PV system data.

- PV system name
- Country
- State (USA only)
- Time zone
- Tariff (this will serve as the basis for calculating your system earnings)
- Currency
- Connection type

According to connection type

- Ethernet
IP address (of Datalogger, alternative, enter the host and domain name, example: samplesystem.fronius.com)
- USB
USB connection (recognized automatically by the PC)
- Serial (serial interface - RS232)
COM interfaces (COM1, COM2, COM3 ...)
- Modem
phone number (of modem to the photovoltaic system)

Module data

The data entered here will be displayed as additional information when opening the system.

- Orientation
- Gradient
- Module manufacturer
- Module type

The module manufacturer and module type fields are for your information only and will not be processed further.

Optional data

Optional data are for your information only and will not be processed further.

Using "Browse" you can upload a picture (e.g. of your system). This picture will be displayed in the "PV System" menu in the general view. Because the picture is not scaled automatically for display in the general view, the picture size should be approx. 460 x 460 pixels.

Edit PV System

("Administration - PV Systems - Edit PV System")

You can edit your PV system data here (for explanations about individual items, see "[Create PV System](#)").

- PV system data
- Module data
- Optional data

Delete PV System

("Administration - PV Systems - Delete PV System")

Important All data is lost when a PV system is deleted.

You can delete PV systems here.

E-mail Configuration

("Administration - PV Systems - E-mail Configuration")

You can set the e-mail configuration for all PV systems in this menu.

Basic settings

- LAN: If the PC is in a network, select the LAN option.
- Dial-up: If the PC connects to the Internet via a modem, select the Dial-up option. A list of all PC-installed dial-up connections will appear in the selection field.
- Outgoing mail server: Enter the outgoing mail server of the e-mail address being used.
See: [Outgoing Mail Servers for Different E-mail Providers](#)
- Sender address: Enter the e-mail address used for sending service messages.

Advance e-mail options

- Displayed name: This name appears as the sender name for the recipient.
- SMTP login or POP3 login: For many e-mail providers, you must enter the login data to be able to send e-mails.
See: [Login Data For Different E-mail Providers](#)
- POP3 server, user name, password: Fill in the data that corresponds to your e-mail account.
- SSL encryption: If your e-mail provider uses SSL encryption, check this field.
- SMTP port: The default SMTP port for sending e-mail addresses is 25.

Recommendation Send a test e-mail after all settings are complete at:

("PV Systems - Settings - Datalogger - Service Messages").

PV Systems

This menu provides access to all systems entered in Fronius Solar.access. It provides a detailed, long-term data recording function as well as access to all setting options for the photovoltaic system.

Real-time shows incoming power from the inverter as well as current sensor data.

Archive contains all saved inverter and sensor data in diagram form.

The Settings menu contains all settings options for the photovoltaic system.

When a PV system is selected, a connection is established automatically - except for the modem option.

Real-time

("PV Systems - *System Name* - Real-time")

Real-time contains the total view of the photovoltaic system with the following data:

- Photovoltaic system power data
- CO₂ savings per day and total
- Earnings per day and total earnings
- Values of individual sensors

The images of the sensors can be changed in Settings - Sensors.



Archive

("PV Systems - *System Name* - Archive") - Total PV System

("PV Systems - *System Name* - Archive - Inverters") - List All Inverters

("PV Systems - *System Name* - Archive - Inverters - Inverter x") - Individual Inverter

("PV Systems - *System Name* - Archive - Sensors") - Sensor Overview

("PV Systems - *System Name* - Archive - Sensors - *Sensor Type*") - Sensor Type Diagram

The Datalogger saves data from inverters and sensors that are connected to the sensor cards/boxes at regular intervals. This data is then saved to a database on the hard drive after the data transfer.

Fronius Solar.access uses this data to calculate diagrams that display daily, monthly and yearly data of different types.

When the Archive is opened, the monthly overview for the respective month is displayed in which the last data transfer took place.

Navigation in diagrams

("PV Systems - *System Name* - Archive") - In All Archive Diagrams

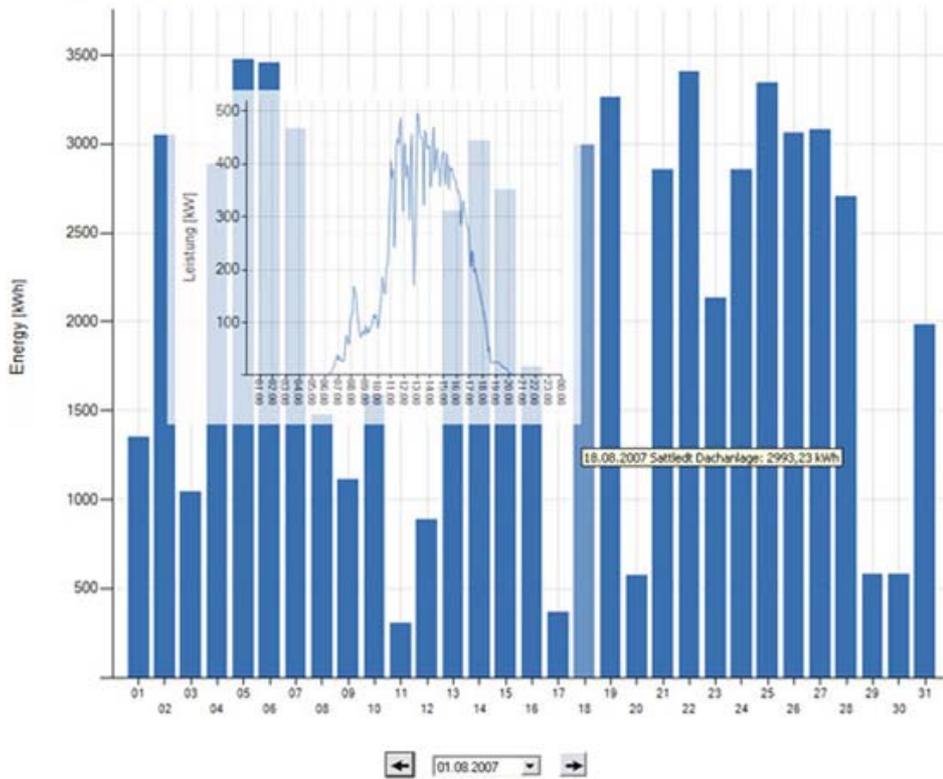
("PV System Overview")- In the Total and Comparison View

Navigating diagrams is easy and the most important functions can be learned quickly by simply trying it out. If you click on something by mistake, you can use the right mouse button to return to the previous screen.

Daily, monthly and yearly selection

Navigate to a daily bar. A preview window will appear for the day.

Total PV System - August 2007

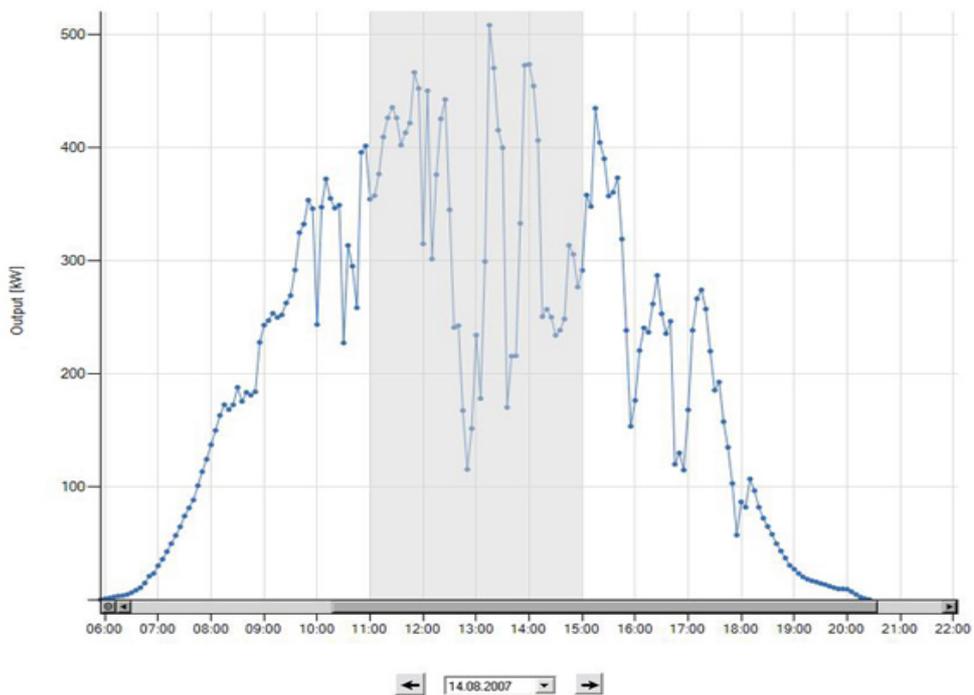


Clicking on it will open the daily view.

A desired time (day, month, year) can be chosen in the Date selection menu.

Zooming

Total PV System - Saturday, May 03, 2008



To get a detailed view of the desired time period, hold down the left mouse button and drag the mouse pointer over the desired area of the diagram. The right mouse button can also be used to reduce the size of the image section.

Navigation icons and their function

E, CO2, Euro	E = Energy yield diagram CO ₂ = CO ₂ reduction diagram Euro = Earnings diagram
Add Curve	A curve can be added to the existing diagram.
Add Diagram	Up to 4 diagrams can be displayed next to / below each other.
Data Points	Hide / Show data points
Scaling	Automatic scaling of the y axis
Standardization	To enable a better comparison of individual systems, you have the option here to display the diagram in kWh/kWp.
Print	Prints the diagram.

Settings

("PV Systems - *System Name* - Settings")

Settings in Fronius Solar.access can be made either in Fronius Solar.access (Settings - PV System Monitoring) or directly in the respective system component (Settings - Components).

PV System Monitoring

("PV Systems - *System Name* - Settings - PV System Monitoring")

Using Fronius Solar.access, you can set up automatic system monitoring for your photovoltaic system. When an error occurs, you will receive a warning message via e-mail.

General

General

Earnings: 0.35 EUR

Earnings Comparison

IG's... Max. Energy Deviation: 10 %

Threshold: 0.3 kWh/kWp

Energy Balance

Energy Offset (max. 10 Mio. kWh) 0 kWh

Correction Factor 1

- Earnings: Enter the amount that you receive for one kWh and select or enter a currency
- [Earnings Comparison](#): Activate/Deactivate the earnings comparison
- IG's...: Select inverters and set PV power (Wp)
- Max. Energy Deviation: Set the max. energy deviation as a percentage (see "[Earnings Comparison](#)")
- Threshold: Set the threshold for when an error message should appear (see "[Earning Comparison](#)")
- Energy Offset: Set the energy offset (this is added to the energy of the inverters). This only affects the current system data.
- Correction Factor: Set the correction factor. This parameter corrects inverter measurement inaccuracies. All energy data and values dependent on this data (earnings, CO2 reduction) are multiplied by this factor.

Important The correction factor does not change the data on the inverter display. It only affects the values in Fronius Solar.access.

Automatic Download

Automatic Download

Modem Password

Weekly

On Monday At 11:11:00 Time

Daily

At 11:11:00 Time Daily

Mon Tue Wed Thu Fri Sat Sun

Hourly

<input type="checkbox"/> 0:00	<input type="checkbox"/> 6:00	<input type="checkbox"/> 12:00	<input type="checkbox"/> 18:00
<input type="checkbox"/> 1:00	<input type="checkbox"/> 7:00	<input type="checkbox"/> 13:00	<input type="checkbox"/> 19:00
<input type="checkbox"/> 2:00	<input type="checkbox"/> 8:00	<input type="checkbox"/> 14:00	<input type="checkbox"/> 20:00
<input type="checkbox"/> 3:00	<input type="checkbox"/> 9:00	<input type="checkbox"/> 15:00	<input type="checkbox"/> 21:00
<input type="checkbox"/> 4:00	<input type="checkbox"/> 10:00	<input type="checkbox"/> 16:00	<input type="checkbox"/> 22:00
<input type="checkbox"/> 5:00	<input type="checkbox"/> 11:00	<input type="checkbox"/> 17:00	<input type="checkbox"/> 23:00

Hourly

You can set an automatic download of system data. This can take place weekly, daily or hourly.

For a regular download, large quantities of data should not be transmitted at one time. This will help to speed up the download.

An automatic download requires that Fronius Solar.access is running at that time and there is a connection to the system. For a modem connection, the modem must be available for dialing and the modem password must be entered.

Important If Fronius Solar.access is not running at the set time, dialing will take place the next time the program is started.

Earnings Comparison

("PV Systems - *System Name* - Settings - PV System Monitoring")

Explanation

After each data transfer, Fronius Solar.access calculates the output of all daily energy per kWp for all inverters with active monitoring turned on. It then calculates the average from this data. If one or more inverters deviate from this average (more than x %), Fronius Solar.access generates an error message. When output energy is low, the differences between the inverters can be proportionally higher. For this reason, a threshold can be set from which error messages are sent.

Example

The following example explains how Fronius Solar.access calculates the earnings comparison.

The following system configuration is used:

Inverter no.	Inverter type	Connected PV power [Wp]	Output energy [kWh]	Output energy [kWh/kWp]
1	IG60	5500	33	6
2	IG30	2750	16,5	6
3	IG30	2750	11	4
4	IG30	2750	16,5	6

Settings in Fronius Solar.access:

Max. energy deviation: 10 %

Threshold: 0.3 kWh/kWp

This results in an average output energy of 5.5 kWh/kWp. This is under the threshold and the earnings comparison is carried out. The output energy per kWp for IG 3 is 27% under the threshold, thus over the max. permitted deviation. This would result in an error message (if the data transfer was not carried out automatically) or a message via e-mail (if the data transfer was carried out automatically).

Datalogger

("PV Systems - *System Name* - Settings - Datalogger")

Passwords

Access to the Datalogger is regulated by assigning passwords.

There are 2 different password types available:

- The user password
- The administrator password

Users with a user password can access the following settings:

- All system monitoring settings
- Start date for a download (under Settings - Datalogger)
- PV power of an inverter (under Settings - Inverters)
- Real-time - Comparison View (under Settings - Inverters)

Users with a user password must enter "user" as a user name and a password when opening Settings.

Users with an administrator password can access the following settings: When administrators open Settings, they must enter "admin" as a user name along with their password.

Date/Time

You can manually set the Datalogger time and date here or synchronize it with the PC.

The date and time handles several tasks in the system. The time and date are saved for every data record that is logged.

Important You must set the time and date in order to operate Fronius Solar.access. This is the only way in which Datalogger data can be transmitted.

Logging

The Datalogger saves the current data of all inverters as well as all sensor cards and Fronius sensor boxes integrated into the system at regular intervals. The save interval can be defined in a range of 5 - 30 minutes.

The Datalogger has a memory capacity of up to 3 years for a photovoltaic system with one inverter and a save interval of 15 minutes. However, the memory capacity is reduced accordingly depending on the number of inverters and/or Fronius sensor cards / boxes that are integrated into the system.

When the Datalogger memory is full, the oldest data will be overwritten by the newest data.

Network (only with an Ethernet connection)

- Obtain IP address static:
The user enters a fixed (static) IP address for the 'Fronius Datalogger Web' and also manually sets the subnet mask and the gateway address.
- Obtain IP address dynamic:
The 'Fronius Datalogger Web' obtains its IP address from a DHCP server (DHCP = dynamic host configuration protocol).
The DHCP server must be configured so that the 'Fronius Datalogger Web' is always assigned the same IP address. This enables you to always know under which IP address the 'Fronius Datalogger Web' can be reached.
- Host name:
If the DHCP server supports the 'DNS dynamic updates' function, a name can be entered for the 'Fronius Datalogger Web' in the 'Host name' field.
The connection to the 'Fronius Datalogger Web' can then take place via the name instead of the IP address.

, e.g.:

Hostname = samplesystem,
Domainname = fronius.com

The 'Fronius Datalogger Web' can be accessed via the 'samplesystem.fronius.com' address.

When using a static IP address, the following items must be filled out.

- IP address:
The IP address selected may not be already assigned in the network.
- Subnet mask:
The subnet mask must correspond to the existing network.

- Gateway address:
If the 'Fronius Datalogger Web' will be sending service messages and/or data to 'Fronius Solar.web,' then a gateway address must also be entered. 'Fronius Datalogger Web' uses the gateway address to access the Internet. The IP address of the DSL router can be used as a gateway address, for example.
- DNS server address: Enter DNS server address (can be found in the network settings)

Solar.web

Here you can:

- register for Fronius Solar.web
- define a fixed time to send archive data to Fronius Solar.web automatically
- manually send archive data to Fronius Solar.web

Service Messages

Service messages as well as errors from inverters or the 'Fronius String Control' are sent to the Datalogger and saved. The 'Service messages' selection option is used to define how services messages are sent.

Communication can take place via:

- E-mail
- Fax
- SMS
- Relay contact
- Buzzer

Along with the acoustical signal of the buzzer, additional warnings can also be triggered via the relay output (signal horn, warning light ...).

The box under the relay and buzzer indicates whether or not the alarm has been activated or deactivated on the Datalogger. The "Run test" button turns the relay and the buzzer on for 1 second.

System Information

System information can be helpful for service calls.

Firmware Update (only for Datalogger Web)

Follow the instructions and enter the IP address of your computer.

Inverters

("PV Systems - *System Name* - Settings - Inverters")

Current Comparison View

Select inverters to be displayed in the Comparison View.

PV Power

Set the PV power for the individual inverters.

Inverter Setup Menu

There is a separate Setup menu for each inverter.

The screenshot shows the 'Setup Menu' for 'Inverter 0 - IG 20'. The menu is organized into several sections:

- Service Message:** A dropdown menu set to 'All Service Codes'.
- Sensor Values on Display:** A grid of dropdown menus for various sensors:
 - Module Temperature: Sensor Card 1, Temperature 1
 - Outdoor Temperature: Sensor Card 1, Temperature 2
 - Irradiation: Sensor Card 1, Insolation
 - Energy Usage: Sensor Card 1, Digital 1
- Earnings:** A text input field for 'Tariff: (0.01 - 100):' containing '0.43', followed by 'per kWh', and a dropdown for 'Currency:' set to 'EUR'.
- Other Settings:** Two dropdown menus: 'Display Light:' set to 'Auto' and 'Status:' set to 'Running', and a dropdown for 'Isolation Warning:' set to 'On'.

At the bottom of the window are two buttons: 'Save' and 'Cancel'.

- Service message: Here you can set whether no service messages, continuous service codes or all service codes are sent.
- Displayed sensor values: Make various sensor settings here.
- Earnings: Set the earnings that you receive per output kWh and set the currency.
- Other settings: You can set display illumination to Automatic, On or Off, set the inverter to Standby or Running, and turn the insulation warning On / Off.

Important The insulation warning should be turned off for ungrounded solar modules.

String Control

("PV Systems - System Name - Settings - String Control")

The Fronius String Control is a system upgrade for large systems with several solar modules. The String Control combines up to 5 solar module strings into one measuring channel and compares the current of each measuring channel with the average of all measuring channels. Any excessive deviation will result in a status message. Users/operators have the option of specifying how great a deviation from the mean is permissible.

The screenshot shows the 'String Control' settings for 'String Control 11'. It includes five 'Measuring Channel' settings, each set to 3 strings. The 'Limit Values' section shows 'Max. Energy Deviation' at 10% and 'Threshold' at 1 Ah per String. The 'Ultrasound Signal' checkbox is checked. At the bottom are 'Save', 'Cancel', and 'Min/Max Reset' buttons.

Measuring Channel	Strings
Measuring Channel 1	3
Measuring Channel 2	3
Measuring Channel 3	3
Measuring Channel 4	3
Measuring Channel 5	3

Limit Values

Max. Energy Deviation:	10	%
Threshold:	1	Ah per String

Ultrasound Signal

Save Cancel Min/Max Reset

Make the following settings:

- Strings per measuring channel
- Max. energy deviation (similar to [Earnings Comparison](#) for inverters)
- Threshold (similar to [Earnings Comparison](#) for inverters)
- Ultrasonic signal

To protect the String Control from rodents, an ultrasonic signal can be activated. This ultrasonic transmitter sends ultrasonic signals at regular intervals which are unpleasant to rodents. Activating the ultrasonic transmitter increases power consumption for the String Control by approx. 100 mW.

Sensors

("PV Systems - *System Name* - Settings - Sensors")

For the Fronius sensor card / box to be operational, you must define the sensors connected to the inputs of the sensor card.

To do this proceed as follows:

1. Select sensor card / box (the number corresponds to the number that can be set directly on the sensor card / box using a screwdriver)
2. Select a measuring channel
3. Enter parameters
4. Select a picture
5. Press Save

Sensor Card 1 ▾

Measuring Channel	Status	Channel Name	Unit	Measuring R...	Calibration Factor
Temperature 1	Activated	Temperatur 1	°C	---	--
Temperature 2	Not Activated		°C	---	--
Insolation	Activated	Einstrahlung	W/m ²	0-100mV	73.5
Digital 1	Not Activated		Wh	---	10.24
Digital 2	Not Activated		Wh	---	10.24
Current	Not Activated		ltr	0-20mA	10

Temperature 1

Activate Sensor

Channel Name

Unit

Measuring Range

Calibration Factor

PV System Overview

("PV System Overview - Total View")

("PV System Overview - Comparison")

The PV System Overview provides a look at all entered systems.

The available menus provide two different display options.

Total View

The Total View summarizes all power data for the registered systems.

Diagram [navigation](#) is identical to that in the archive of an individual system.

Comparison

Comparison displays the power data for all registered systems. By displaying in kWh/kWp, you can compare your systems to each other and check their efficiency.

It also enables you to limit the comparison to specific systems via the selection menu.

Diagram navigation is identical to that in the archive of an individual system.