



SHIFTING THE LIMITS



## Fronius Datalogger Web

EN-US

Operating Instructions

System monitoring





# Dear reader,

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## **Introduction**

Thank you for the trust you have placed in our company and congratulations on buying this high-quality Fronius product. These instructions will help you familiarize yourself with the product. Reading the instructions carefully will enable you to learn about the many different features it has to offer. This will allow you to make full use of its advantages.

Please also note the safety rules to ensure greater safety when using the product. Careful handling of the product will repay you with years of safe and reliable operation. These are essential prerequisites for excellent results.



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# General

## General

The 'Fronius Datalogger Web' is a network-compatible Datalogger. The 'Fronius Datalogger Web' website provides a quick overview of the PV system.

The website can be accessed via a direct connection from the Intranet or with the proper configuration via the Internet.

The 'Fronius Datalogger Web' is equipped with an easy-to-configure system monitoring feature with an automatic alarm. The alarm can be signaled via SMS, e-mail, fax, relay contact or buzzer.

When connected to 'Fronius Solar.access,' realtime PV system data as well as archived data can be saved to a PC and analyzed. You can also make settings to all devices in 'Fronius Solar Net.'

When connected to 'Fronius Solar.web,' realtime PV system data as well as archived data can be easily accessed via the Internet - no difficult configuration required. Data is sent automatically from 'Fronius Datalogger Web' to 'Fronius Solar.web.'

## Applicable DAT-COM components

'Fronius Datalogger Web' can be used with the following DATCOM components:

- Up to 100 x 'Fronius IG Plus,' 'Fronius IG' or 'Fronius CL' inverters
- Up to 10 x 'Fronius Sensor Cards' or 'Fronius Sensor Boxes'
- Up to 10 x 'Fronius Public Display Cards' or 'Fronius Public Display Boxes'
- Up to 1 x 'Fronius Interface Card' or 'Fronius Interface Box'
- Up to 200 x 'Fronius String Controls'

## Prerequisites for operation

The inverter requires a 'Fronius Com Card' in order to operate 'Fronius Datalogger Web.'

For a proper function of the 'Fronius Datalogger Web' an appropriate Internet connection is required:

- For cable-bound internet solutions Fronius recommends a download speed. of min. 512 kBit/s and an upload speed of min. 256 kBit/s.
- For solutions with mobile internet services Fronius recommends min. 3G transmission standard with a reliable signal strength.

This information does not constitute an absolute guarantee of proper operation. High error rates in the transmission, reception fluctuations or transmission interruptions can affect the online operation of the 'Fronius Datalogger Web' in a negative way. Fronius recommends testing connections with minimum requirements on site.

## Required Inverter Software

The correct display of daily energy using Fronius Datalogger Web requires the following inverter software versions:

Inverter	Required software version according to display (MainControl)
Fronius IG 15 - 60	V2.9.4 or higher
Fronius IG 2000 - 5100	starting from series no. 19153444

<b>Inverter</b>	<b>Required software version according to display (MainControl)</b>
Fronius IG 300 - 500	V3.6.4.0 or higher
Fronius IG Plus 35 - 150	V4.22.00 or higher

The respective inverter software version can be downloaded for free from our homepage (<http://www.fronius.com>).

Please use a Fronius Update Card to update inverter software.

If you have any questions, please contact [pv-support@fronius.com](mailto:pv-support@fronius.com).

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### **Scope of supply**

- 1 x 'Fronius Datalogger Web' Datalogger with wall mounting device
- 1 x 'Safety' leaflet
- 1 x 'Quick Installation' leaflet
- 1 x Ethernet cable 5 m, blue
- 1 x Solar Net cable 2 m, red
- 2 x Terminating plugs
- 2 x Installation anchors + screws
- 1 x 'Fronius Solar.access' CD
- 1 x Relay plug
- 1 x Relay connector housing
- 1 x Sticker set



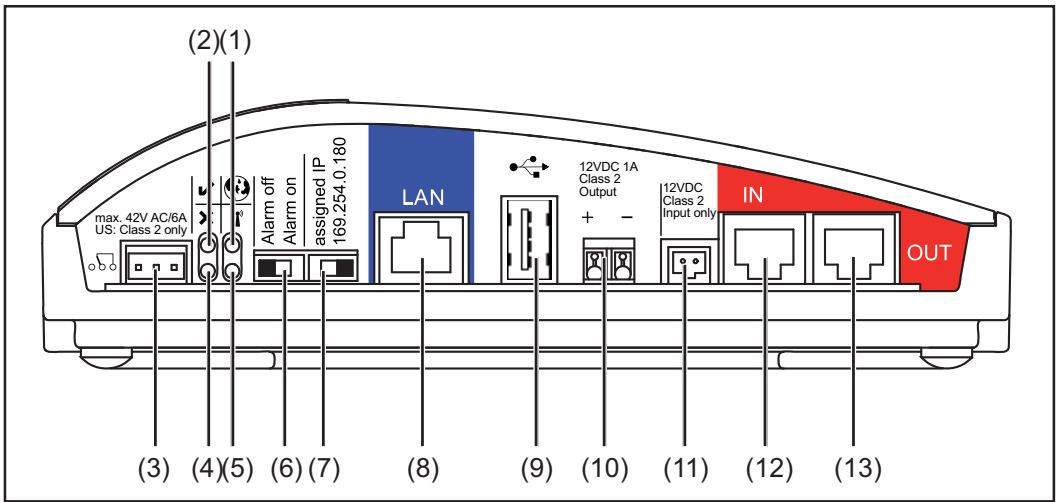
# Controls, connections and indicators

## Safety


**WARNING!** Operating the device incorrectly can cause serious injury and damage. Do not use the functions described until you have thoroughly read and understood the following documents:

- these operating instructions
- all operating instructions for system components, especially the safety rules

## Controls, connections and indicators



No.	Function	
(1)	<b>Solar Web connection LED</b>	🌐
	<ul style="list-style-type: none"> <li>- lights up green: when there is an existing connection to 'Fronius Solar.web'</li> <li>- lights up red: when there is no connection to 'Fronius Solar.web' but one is required</li> <li>- does not light up: when no connection to 'Fronius Solar.web' is required</li> </ul>	
(2)	<b>Supply LED</b>	✓
	<ul style="list-style-type: none"> <li>- lights up green: when there is sufficient power coming from 'Fronius Solar Net' - 'Fronius Datalogger Web' is operational</li> <li>- does not light up: when there is no power or not enough power coming from 'Fronius Solar Net' - an external power source for 'Fronius Datalogger Web' is required</li> <li>- flashing red: during updating</li> </ul> <p><b>IMPORTANT</b> Do not interrupt the power supply while updating.</p> <ul style="list-style-type: none"> <li>- lights up red: the update process failed</li> </ul>	
(3)	<b>Relay connection</b>	🔌
	Equipped as an NCC (normally closed contact) and NOC (normally open contact), switches when there is an error	
(4)	<b>Connection LED</b>	✗
	<ul style="list-style-type: none"> <li>- lights up green: when there is an active connection within 'Fronius Solar Net'</li> <li>- lights up red: when there is an interrupted connection within 'Fronius Solar Net'</li> </ul>	
(5)	<b>WLAN LED</b>	📶
	<ul style="list-style-type: none"> <li>- lights up green: when there is a network connection</li> <li>- lights up red: when there is no network connection</li> <li>- does not light up: the 'WLAN stick' is not inserted</li> </ul>	

No.	Function
(6)	<p><b>Alarm switch</b> for switching the alarm function on/off</p> <p>Alarm off: Alarm function, relay and buzzer deactivated</p> <p>Alarm on: Alarm function, relay and buzzer activated; when 'Alarm on' is selected, the buzzer and relay are briefly activated as a test of the alarm function</p>
(7)	<p><b>IP address switch</b> used to switch from an assigned IP address to a default IP address '169.254.0.180' (only relevant to LAN)</p> <p>Assigned IP: 'Fronius Datalogger Web' operates using an assigned IP address (factory setting 192.168.1.180). The IP address can be set on the 'Fronius Datalogger Web' website</p> <p>169.254.0.180: 'Fronius Datalogger Web' operates using a fixed IP address 169.254.0.180; the fixed IP address is used for a direct connection to a PC without having to pre-configure the PC</p>
(8)	<p><b>LAN connection</b> Ethernet interface colored blue for connecting an Ethernet cable</p>
(9)	<p><b>USB connection</b> USB interface for connecting the 'WLAN stick' or 'WLAN stick outdoor' options </p>
(10)	<p><b>Power supply connection 12 V DC / 1 A</b>, electronic fuse protection for supplying power to external components (e.g., external routers)</p>
(11)	<p><b>External power supply connection</b> for connecting an external power supply when the power supply within 'Fronius Solar Net' is insufficient (e.g., when too many DATCOM components are installed in 'Fronius Solar Net').</p> <p><b>Important</b> The external power supply unit for the Fronius Datalogger Web must have a secure disconnect between components supplying grid voltage (SELV or Class 2 for USA/Canada). The output of the power supply unit may not exceed a max. of 15 VA / 1.25 A. If the power supply is sufficient, the Supply LED (2) lights up green.</p>
(12)	<p><b>Solar Net IN connection</b> 'Fronius Solar Net' input colored red for connecting other DATCOM components (e.g., inverters, sensor cards)</p>
(13)	<p><b>Solar Net OUT connection</b> 'Fronius Solar Net' output colored red for connecting other DATCOM components (e.g., inverters, sensor cards)</p>

# Installing Fronius Datalogger Web

## Safety

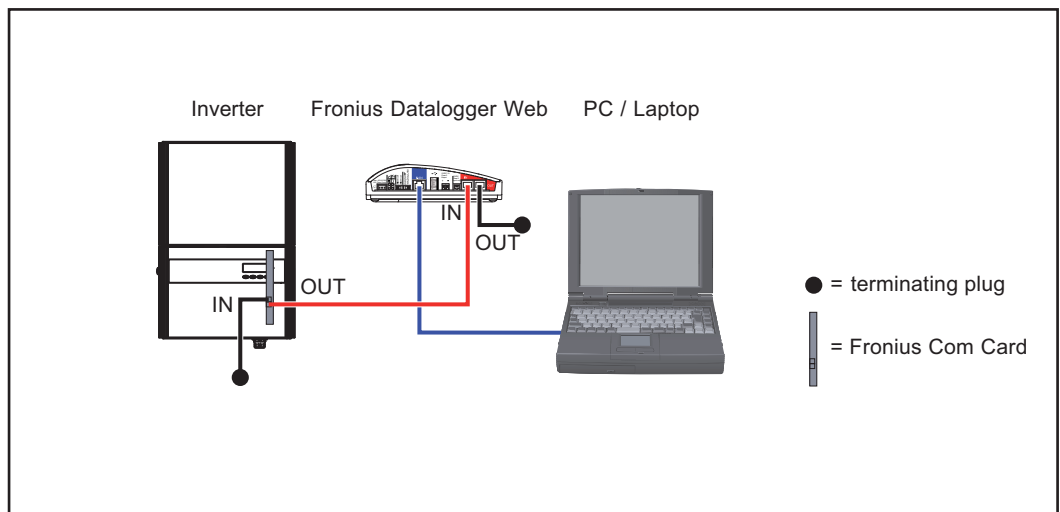
**WARNING!** Operating the device incorrectly can cause serious injury and damage. Do not use the functions described until you have thoroughly read and understood the following documents:

- these operating instructions
- all operating instructions for system components, especially the safety rules

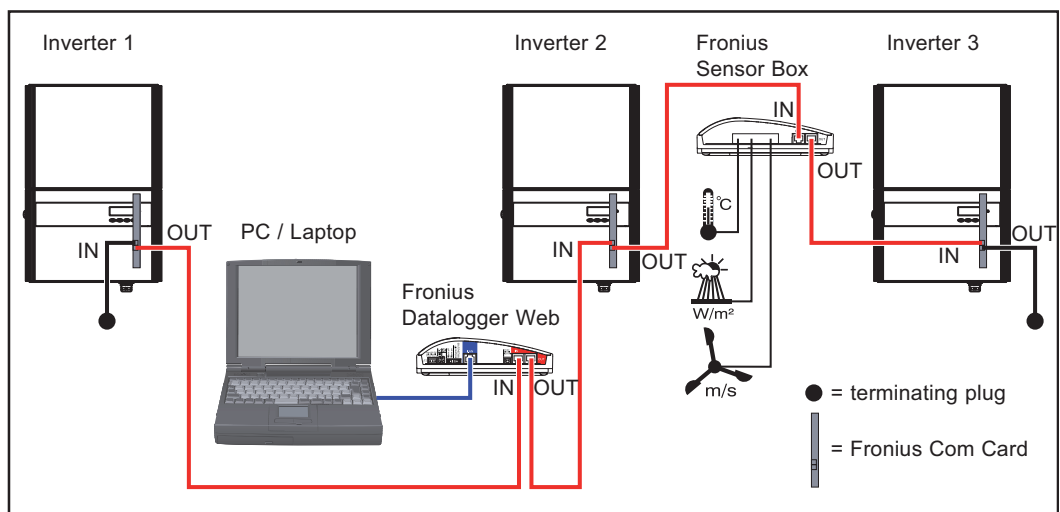
**NOTE!** Installing the 'Fronius Datalogger Web' Datalogger requires knowledge of network technology.

## Configuration examples

'Fronius Datalogger Web' networks with an inverter and a PC:



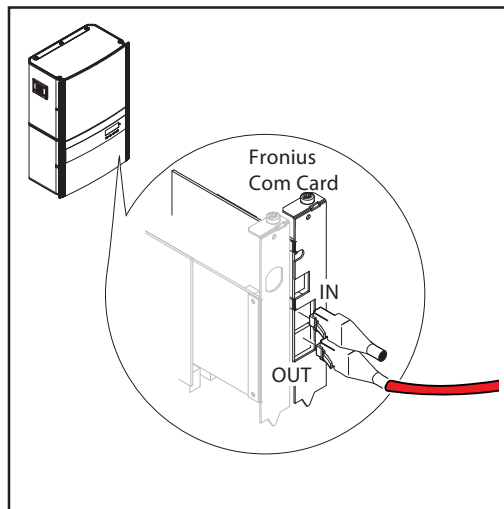
'Fronius Datalogger Web' networks with several inverters, a 'Fronius Sensor Box' and a PC:



**NOTE!** When networking several DATCOM components, a termination plug must be placed on each free IN and/or OUT connection of a DATCOM component.

## Preparation

**IMPORTANT** Please follow the operating instructions for the inverter as well as the 'Fronius IG DATCOM Detail' operating instructions.



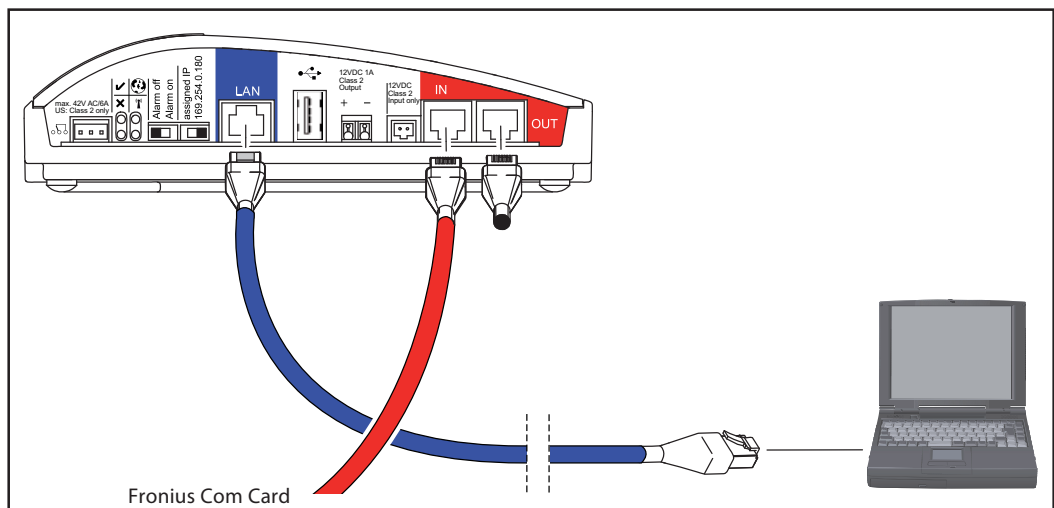
- 1 Install 'Fronius Datalogger Web' in the proper position using the screws and installation anchors provided in the scope of supply
- 2 Insert the red Solar Net cable into the Solar Net output (OUT) of the 'Fronius Com Card'
- 3 If the 'Fronius Com Card' is the last DATCOM component in the network: Insert a terminating plug into the Solar Net OUT connection

## Installing 'Fronius Datalogger Web'



**CAUTION!** DATCOM components and/or the PC/laptop will be damaged if the Ethernet or Solar Net cables are connected incorrectly.

- The Ethernet cable should only be inserted into the LAN connection (colored blue)
- The Solar Net cable should only be inserted into the Solar Net IN or Solar Net OUT connections (colored red)



- 1 Insert the red Solar Net cable into the Solar Net output (OUT) of the 'Fronius Com Card'
- 2 If the 'Fronius Com Card' is the last DATCOM component in the network: Insert a terminating plug into the Solar Net OUT connection

If there are additional DATCOM components in the network after the 'Fronius Datalogger Web':

Insert an additional Solar Net cable into the Solar Net OUT connection

- 3 Insert the blue Ethernet cable into the LAN connection
- 4 Insert the blue Ethernet cable into the PC/laptop or into a corresponding network connection

# Fronius Datalogger Web network configuration

- General**
- The network configuration function patented by Fronius enables the 'Fronius Datalogger Web' to:
- establish an easy connection between 'Fronius Datalogger Web' and the PC/laptop
  - make settings
  - display important system data

## Requirements



**NOTE!** The network configuration of the 'Fronius Datalogger Web' Datalogger requires knowledge of network technology.

If the 'Fronius Datalogger Web' is being integrated into an existing network, the 'Fronius Datalogger Web' address must be adapted to the network.

Example: Network address range = 192.168.1.x, subnet mask = 255.255.255.0

- An IP address between 192.168.1.1 and 192.168.1.254 must be assigned to the 'Fronius Datalogger Web.'
- The IP address selected may not be already assigned in the network.
- The subnet mask must correspond to the existing network (e.g., 255.255.255.0).

If the 'Fronius Datalogger Web' will be sending service messages and/or data to 'Fronius Solar.web,' then a gateway address and a DNS server 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.

### IMPORTANT

- 'Fronius Datalogger Web' may not have the same IP address as the PC/laptop.
- 'Fronius Datalogger Web' cannot connect by itself to the Internet. A router must be used for a DSL connection to the Internet.

If the network connection uses WLAN, then one of the following options is required:

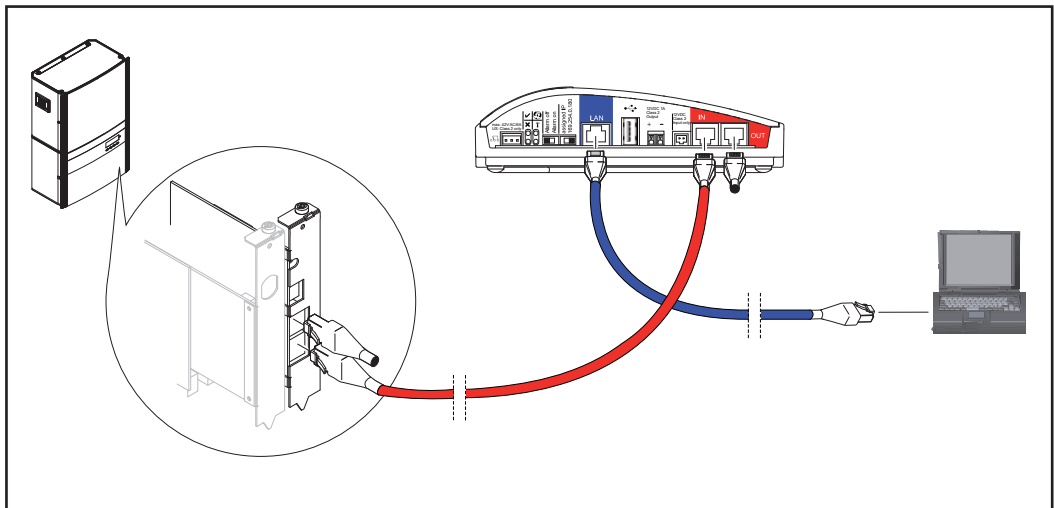
- 'WLAN stick' (41,0018,0070)
- 'WLAN stick outdoor' (41,0018,0071)

## 'Fronius Datalogger Web' network configuration

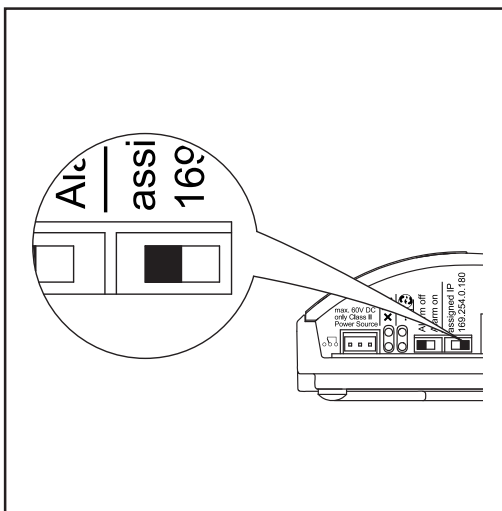
- The Fronius Datalogger Web network configuration comprises the following steps:
- Installing 'Fronius Datalogger Web' and going to the 'Fronius Datalogger Web' homepage
  - Entering network data
  - Setting 'Fronius Datalogger Web' for the WLAN connection
  - Setting the IP address and connecting 'Fronius Datalogger Web' to the network

## Installing 'Fronius Datalogger Web' and going to the 'Fronius Datalogger Web' homepage

- 1 Only if you are using the WLAN network connection: connect the 'WLAN stick' or 'WLAN stick outdoor' option to the USB port
- 2 Install 'Fronius Datalogger Web'



- 3 Set the IP address switch on the 'Fronius Datalogger Web' to '169.254.0.180'



- 4 Wait approx. 1 minute until the 'Connectivity' icon appears in the PC/laptop taskbar.

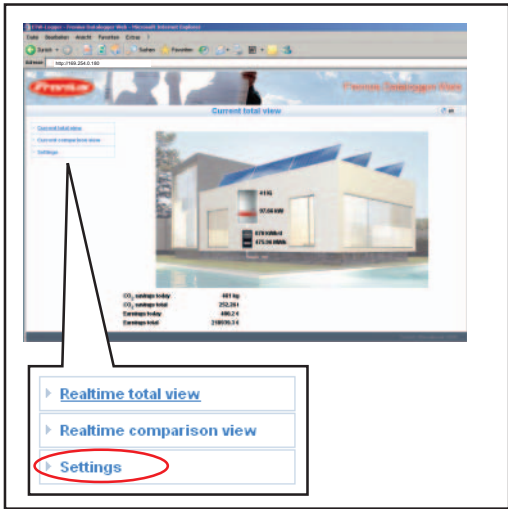


- 5 Open the PC's/laptop's Internet browser (e.g., Microsoft Internet Explorer)
- 6 Enter 'http://169.254.0.180' in the address field

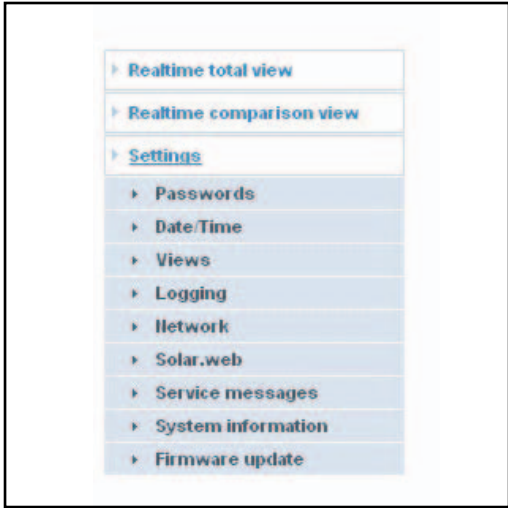
The 'Fronius Datalogger Web' website will appear.

**Entering network data**

The 'Fronius Datalogger Web' website will appear.



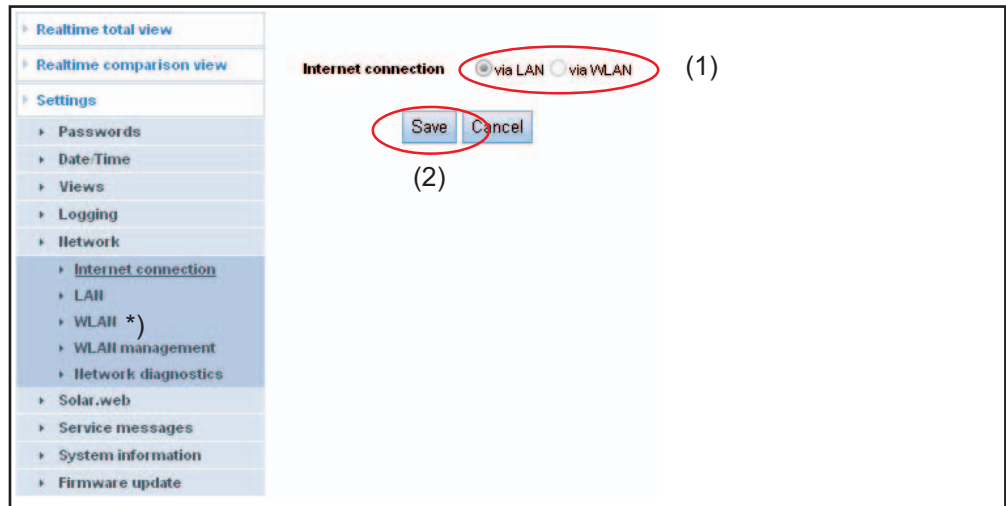
- 1 Click on the 'Settings' menu item  
The 'Settings' submenu is displayed.



- 2 Click on 'Network'  
The 'Network' submenu is displayed.



- 3 To define the Internet connection (e.g., to 'Fronius Solar.web'):  
Click on 'Internet connection'  
The Internet connection settings are displayed.



\*) WLAN can only be used when one of the two options ('WLAN stick' or 'WLAN stick outdoor') is inserted in the 'Fronius Datalogger Web.'

4 Select the type of Internet connection (LAN or WLAN) (1)

5 Click on 'Save' (2)

After the changes have been loaded, the message 'Changes have been applied' is displayed.

6 Click on 'OK'

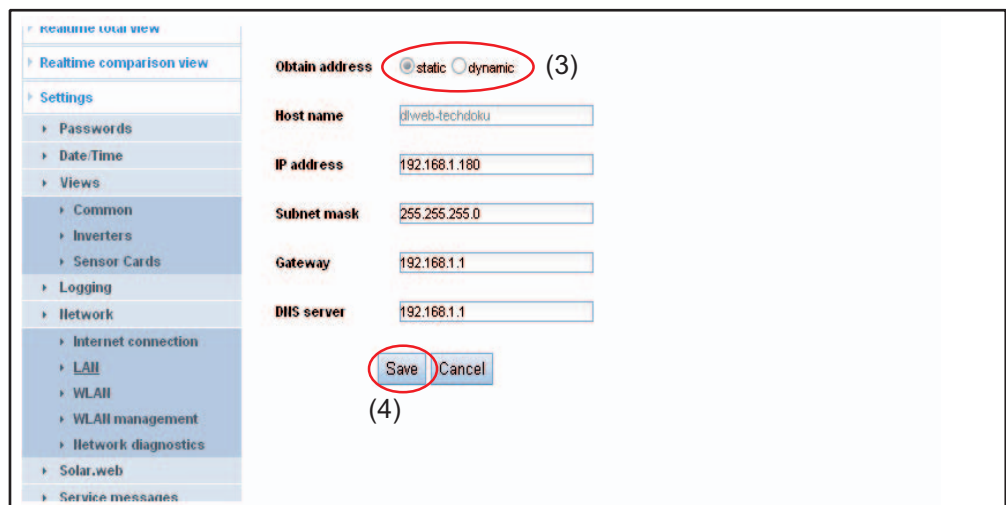
The Internet connection data are displayed.

**IMPORTANT** You may also have to enter a gateway and a DNS server depending on the Internet connection option selected.

For example, if 'LAN' was selected for the Internet connection, a gateway and a DNS server must be entered for the 'LAN' interface.

7 Click on 'LAN' or 'WLAN' in the 'Network' submenu depending on the network connection interface you are using.

The interface settings are displayed (LAN or WLAN).





**8** Select either a static or dynamic IP address (3)

Obtain IP address statically (factory setting):

- The user enters a fixed (static) IP address for the 'Fronius Datalogger Web' and also manually sets the subnet mask, gateway address and the DNS server address (from provider). Obtain IP address dynamically:

Obtain IP address dynamically:

- 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.
- If the DHCP server supports the 'DNS dynamic updates' function, a name can be entered for the 'Fronius Datalogger Web' in the 'Hostname' field. The connection to the 'Fronius Datalogger Web' can then take place via the name instead of the IP address.

Example: Hostname = samplesystem, Domain name = fronius.com

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

**9** Click on 'Save' (4)

After the changes have been loaded, the message 'Changes have been applied' is displayed.

**10** Click on 'OK'

The interface settings are displayed (LAN or WLAN).

### Setting 'Fronius Datalogger Web' for the WLAN connection

The following steps are only required if you decide to use the WLAN network connection at a later date.

- 1** Click on 'WLAN' in the 'Network' submenu.
- 2** Enter the settings for the WLAN interface
- 3** Click on 'WLAN management' in the 'Network' submenu.

'WLAN management' is displayed with the available networks (1).

**Available networks**

SSID	Signal Strength	Signal Quality	Encryption	Channel
nDatcom	-16 dBm	57 %	[WPA2-PSK-CCMP]	1
Datalogger WLAN Test	-24 dBm	56 %	[WPA-PSK-TKIP]	11
	-80 dBm	46 %	[WPA-EAP-TKIP]	6

Update    Configure Network

(2)                      (3)

**Configured networks**

SSID	Encryption	Status
Datalogger WLAN Test	NONE	
nDatcom	WPA-PSK	Connecting...
[Netname]	NONE	
Datalogger WLAN Test	NONE	

Update    Delete Network                      Save Order

- 4 Click on 'Update' (2) to update the networks
- 5 Select a suitable network by clicking on it
- 6 Click on 'Configure Network' (3).

'Configure Network' is displayed.

Configure Network

SSID: Datalogger WLAN (4)

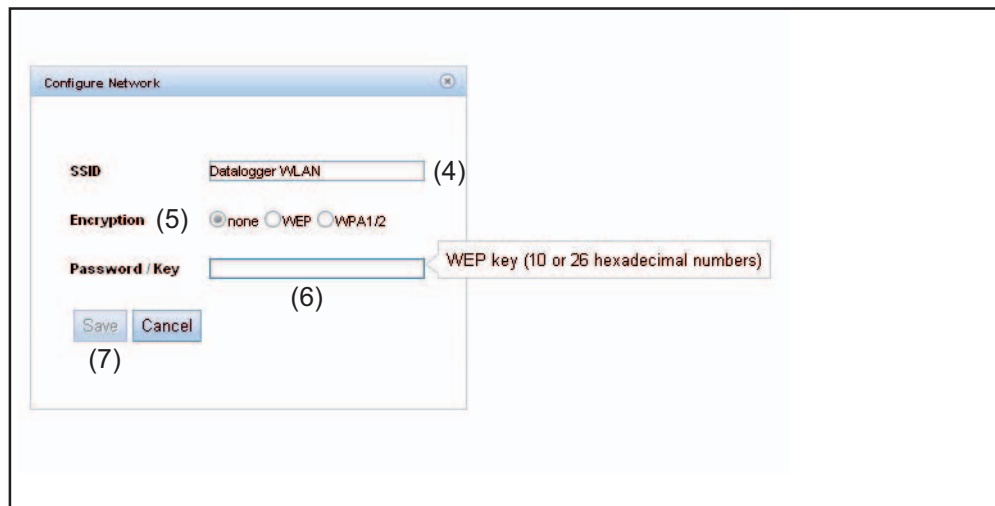
Encryption (5):  none  WEP  WPA1/2

Password / Key: [Yellow field with warning icon] (6)

Save    Cancel

(7)

- 7 Enter the SSID network name (4)
- 8 Enter the encryption type (5):  
 none = no encryption  
 WEP = hexagonal encryption  
 WPA1/2 = encryption via pass phrase (8 - 63 ASCII characters)
- 9 Only if WEP or WPA1/2 encryption has been selected:  
 enter the corresponding pass phrase / key (6)

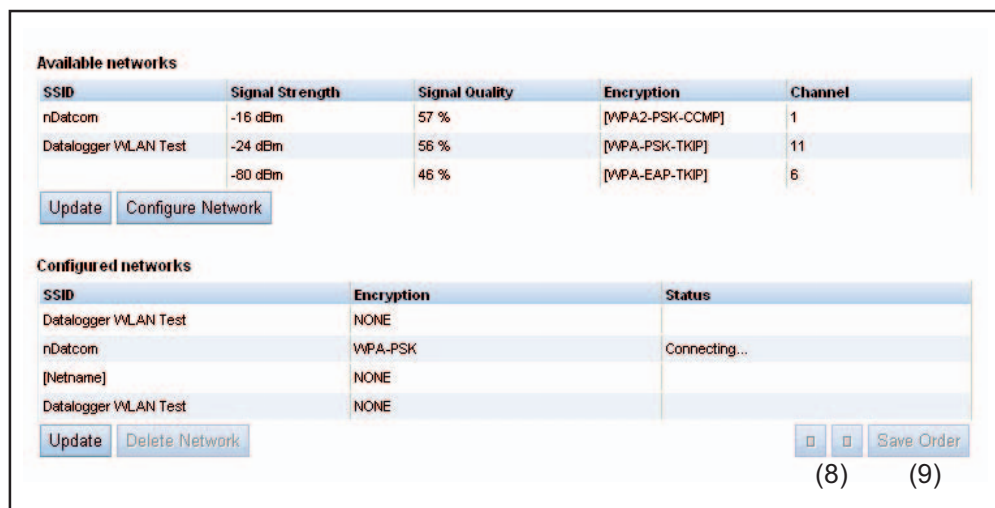


- 10 Click on 'Save' (7)

After the changes have been loaded, the message 'Changes have been applied' is displayed.

- 11 Click on 'OK'

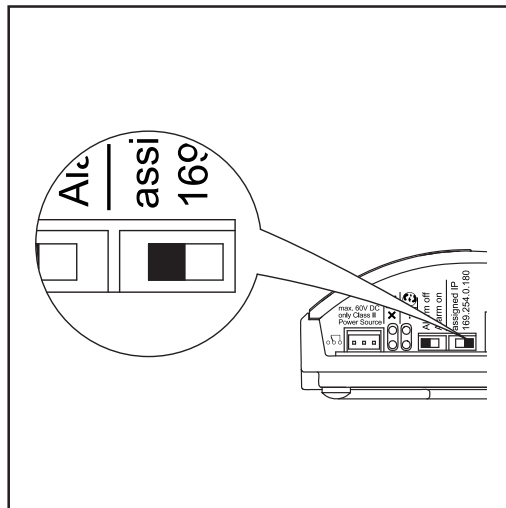
'WLAN management' is displayed.



You can use the arrow keys (8) and the 'Save Order' key (9) to change the sequence of displayed networks.

## Setting the IP address and connecting 'Fronius Datalogger Web' to the network

- 1 Set the IP address switch on the 'Fronius Datalogger Web' to 'assigned IP'



The network settings are applied.

- 2** Connect 'Fronius Datalogger Web' to the respective network via the LAN or WLAN connection

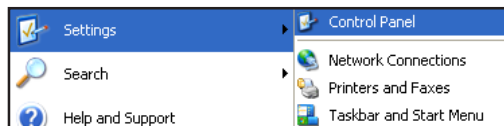
# Network settings for PC/laptop

## General

The PC/laptop is also a member of the network and must also be assigned a unique network address like the Datalogger.

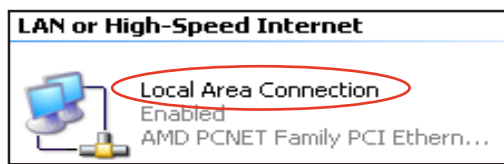
If the PC is already integrated in the network, no further settings are required.

## Network settings for PC/laptop

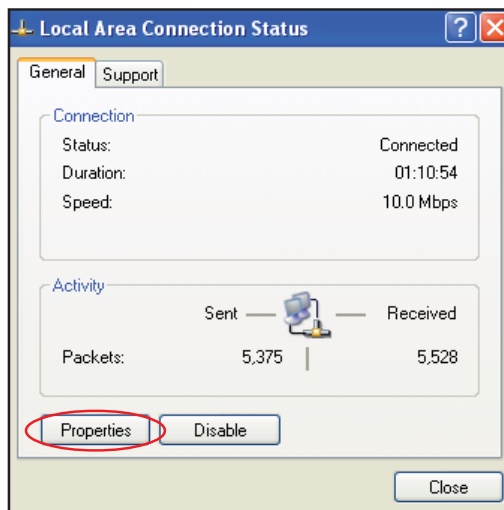


1 Start / Control Panel / Network and Internet Connections

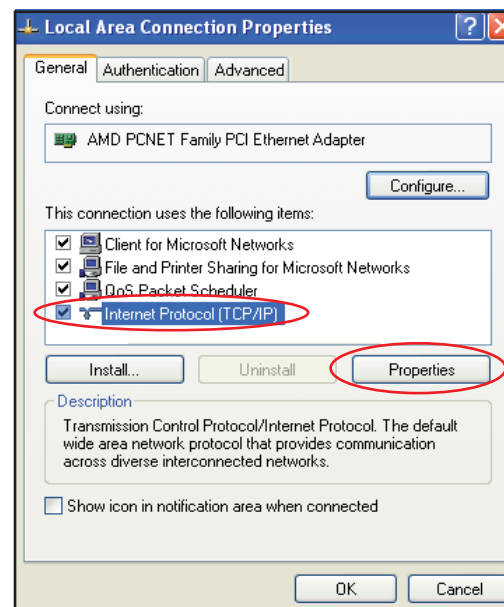
2 Double-click on 'Network Connections'



3 Double-click on 'Local Area Connection'



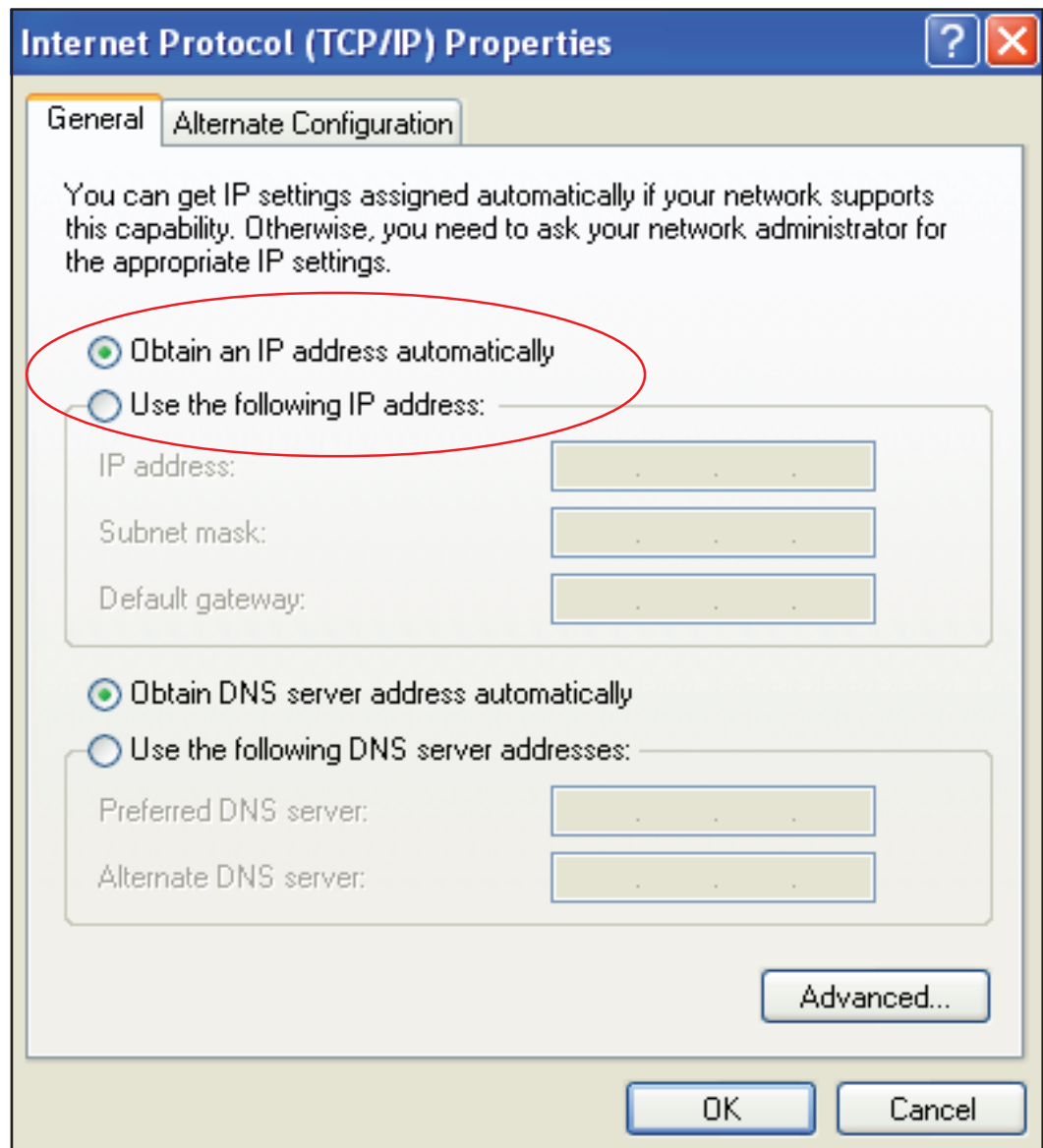
4 Click on the 'Properties' button in the 'General' tab



5 Click on 'Internet Protocol (TCP/IP)'

6 Click on the 'Properties' button

The 'Internet Protocol (TCP/IP) Properties' window will appear.



**If a DHCP server is available in the network:**

7 Select 'Obtain an IP address automatically'

**If a DHCP server is not available in the network:**

7a Select 'Use the following IP address'

7b Assign a unique IP address to the PC/laptop

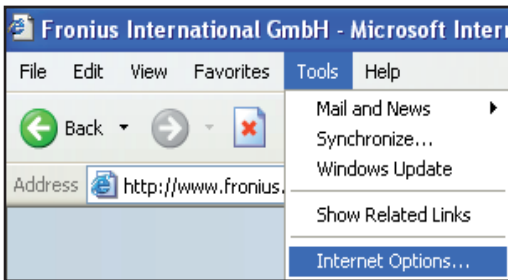
Example: Network address range = 192.168.1.x, subnet mask = 255.255.255.0

- An IP address between 192.168.1.1 and 192.168.1.254 must be assigned to the PC/laptop.
- The IP address selected may not be already assigned in the network.
- The subnet mask must correspond to the existing network (e.g., 255.255.255.0).
- The 'Default gateway' setting is not relevant to the 'Fronius Datalogger Web' connection.

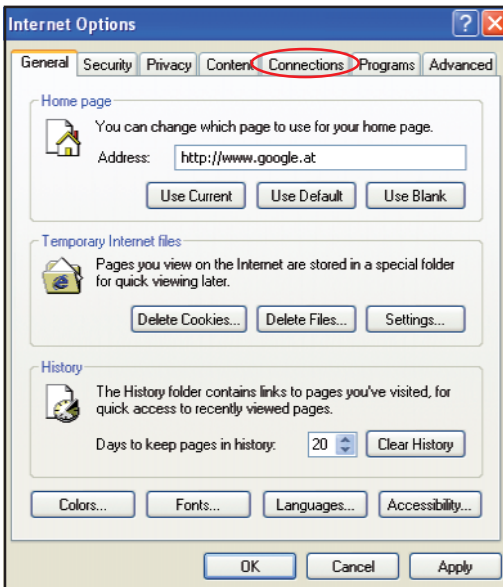
**IMPORTANT** The PC/laptop must not have the same IP address as the 'Fronius Datalogger Web.'

8 Activate 'Obtain DNS server address automatically'

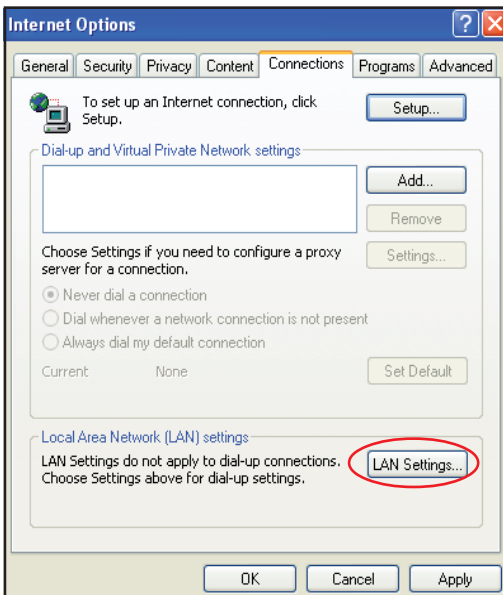
Internet options for PC/laptop



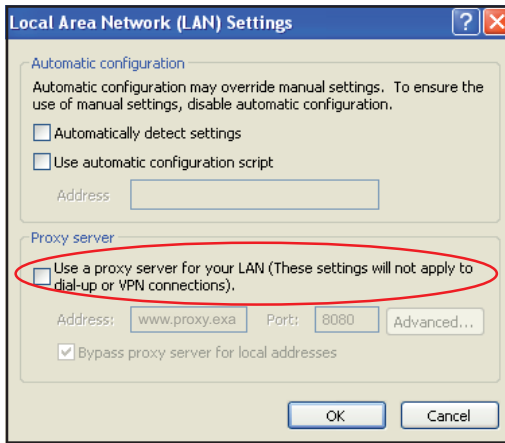
- 1 Open the Internet browser (e.g., Microsoft Internet Explorer)
- 2 Click on 'Tools'
- 3 Click on 'Internet Options'



- 4 Click on the 'Connections' tab



- 5 Click on the 'LAN settings' button at the bottom



6 When the 'Use a proxy server for your LAN' option is not activated like in the picture, the setting options below it are grayed and not accessible.

When 'Use a proxy server for your LAN' is activated:

- Click on 'Advanced'



- Enter the IP address of the 'Fronius Datalogger Web' in the 'Exceptions' field, e.g., 192.168.1.180
- Click on "OK"



# Connecting to 'Fronius Datalogger Web' via Internet browser

## General

The connection to the 'Fronius Datalogger Web' via an Internet browser is suitable for accessing simple information by several PC users in a LAN (e.g., company networks, schools).

For example, total and daily yields can be accessed and/or inverter comparisons can be made on the 'Fronius Datalogger Web' website.

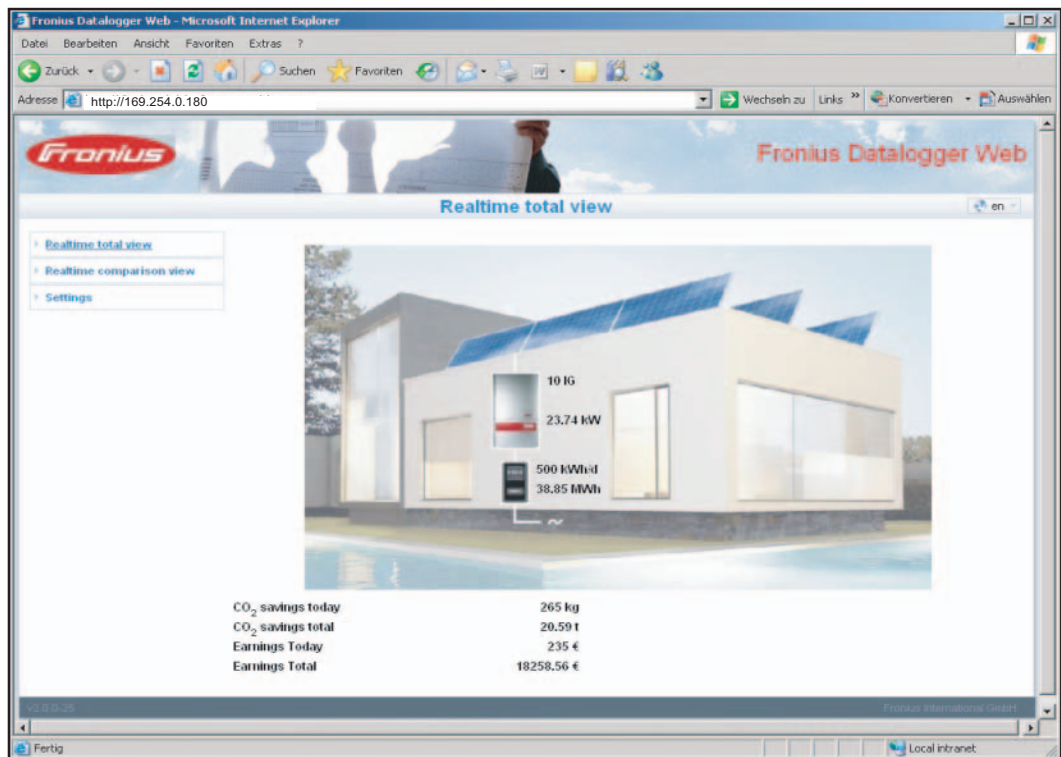
## Requirements

- At least a LAN or WLAN connection
- Internet browser (e.g., Microsoft Internet Explorer IE6.0, Firefox 2)
- PC/laptop in the same network segment as the 'Fronius Datalogger Web'

## Connecting to 'Fronius Datalogger Web' via Internet browser

- 1 Open Internet browser
- 2 Enter the IP address or the hostname and domain name of the 'Fronius Datalogger Web'

The 'Fronius Datalogger Web' website will appear.



Assign an IP address or hostname as per the section 'Fronius Datalogger Web network configuration'.

## For the network administrator

To access the Datalogger website outside of the LAN:

- Configure the network router so that requests are forwarded to port 80/TCP on the Datalogger

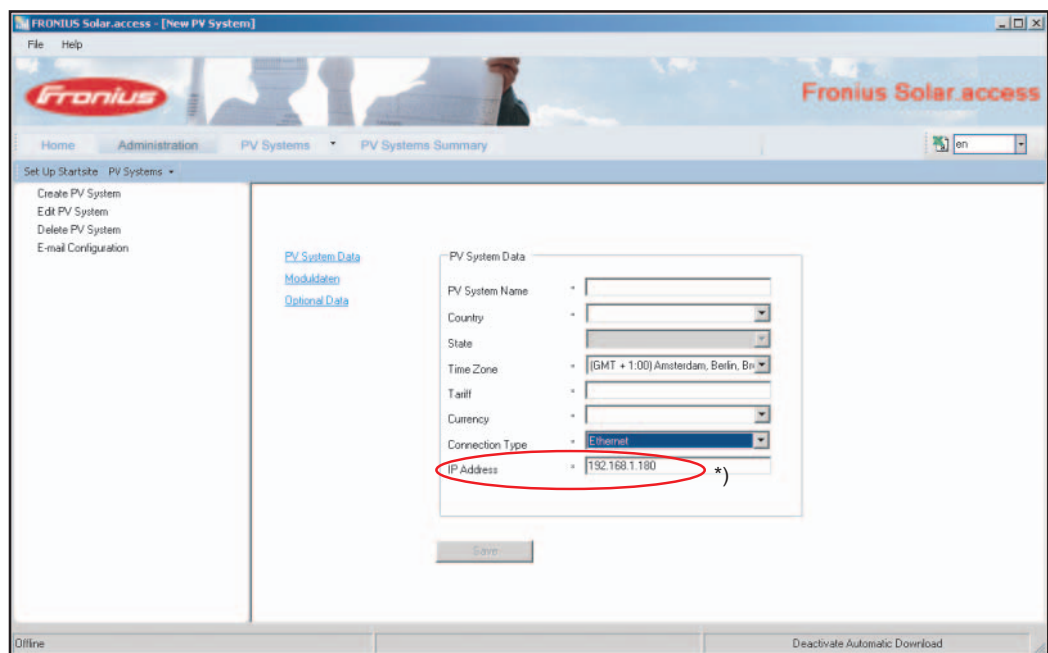
# Connecting to 'Fronius Datalogger Web' via 'Fronius Solar.access'

## General

The connection to the 'Fronius Datalogger Web' via 'Fronius Solar.access' is suitable for detailed long-term data recording and offers full settings options and data preparation for the photovoltaic system.

## Requirements

- At least a LAN or WLAN connection
- Internet browser: Microsoft Internet Explorer IE6.0
- Network configuration of Datalogger as per section 'Fronius Datalogger Web network configuration'
- PC/laptop in the same network segment as the 'Fronius Datalogger Web'
- PC/laptop operating system: Win 2000, Win XP, Win Vista or Win 7
- 'Fronius Solar.access' software installed on the PC/laptop (the 'Fronius Solar.access' software is included on the CD)
- Photovoltaic system created in 'Fronius Solar.access' as per 'Fronius Solar.access' online help (Open 'Fronius Solar.access' / Administration / PV Systems / Set up PV System)



\*) Assigned IP address or assigned hostname for 'Fronius Datalogger Web'

## Connecting to 'Fronius Datalogger Web' via 'Fronius Solar.access'

- 1 Open 'Fronius Solar.access' software
- 2 Select 'PV Systems'
- 3 Select the desired photovoltaic system

After a brief time, the connection is made to the selected photovoltaic system. 'Online' and the version of the Datalogger will be displayed in the bottom left status bar.

---

**For the network administrator**

To access the Datalogger outside of the LAN:

- Configure the network router so that requests are forwarded to port 80/TCP and port 15015/TCP on the Datalogger

# Connecting to 'Fronius Datalogger Web' via the Internet and 'Fronius Solar.web'

## General

Using the connection to the 'Fronius Datalogger Web' via the Internet and 'Fronius Solar.web,' you can access archived data and realtime PV system data from anywhere via the Internet.

In addition, you can also provide other users with guest access so that they can view your photovoltaic system as well as make a comparison of several systems.

## Function overview

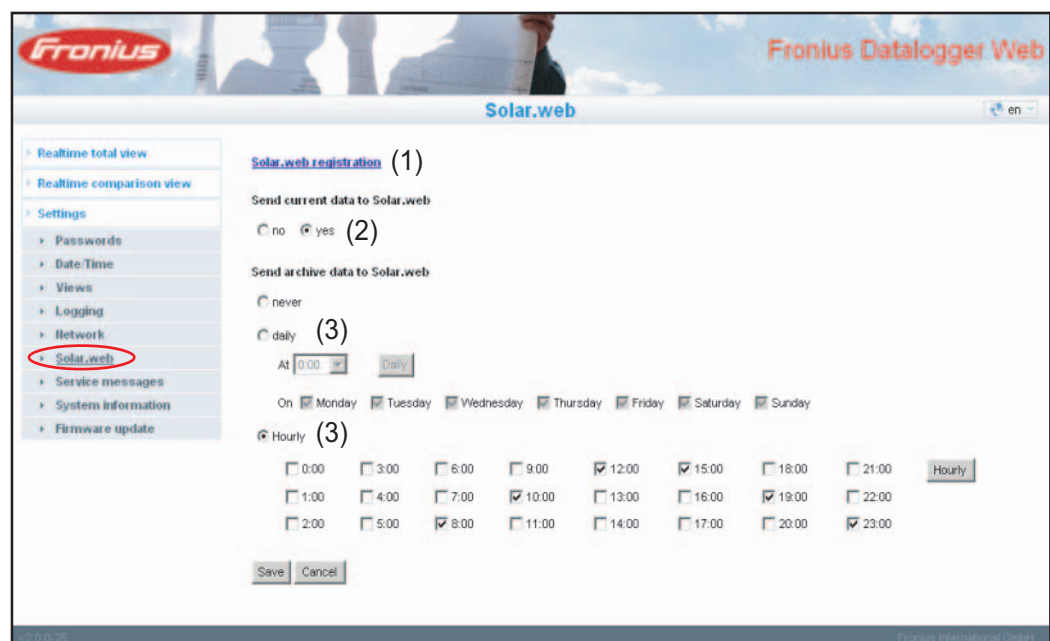
The Datalogger is connected to the Internet (e.g., via a DSL router). The Datalogger logs on to 'Fronius Solar.web' on a regular basis and sends its saved data every day. 'Fronius Solar.web' can establish active contact with 'Fronius Datalogger Web', e.g., to display realtime data.

## Requirements

- Internet access
- Internet browser

**IMPORTANT** 'Fronius Datalogger Web' cannot connect by itself to the Internet. A router must be used for a DSL connection to the Internet.

- Registration of photovoltaic system with 'Fronius Solar.web' (1)  
The Datalogger ID is required for the registration. The Datalogger ID is available in Settings / System Information.
- In order to access realtime data in 'Fronius Solar.web,' the 'Yes' selection option must be activated under 'Send current data to Solar.web' in 'Fronius Datalogger Web' (2).
- In order to access archived data in 'Fronius Solar.web,' the 'Daily at' or 'Hourly' selection option must be activated under 'Send archive data to Solar.web' in 'Fronius Datalogger Web' (3).



---

**Accessing data from 'Fronius Datalogger Web' via the Internet and 'Fronius Solar.web'**

To access realtime and archived data from 'Fronius Datalogger Web' using 'Fronius Solar.web':

- 1 Open the 'Solar Electronics' heading on the Fronius website 'www.fronius.com'
- 2 Start 'Fronius Solar.web'

For more information about 'Fronius Solar.web,' see the online help.

---

**For the network administrator**

Configure the firewall so that the IP address of the Datalogger can send data to port 49049/UDP from 'solarweb.fronius.com.'

DSL routers mostly enable you to send data to the Internet and, therefore, do not normally have to be configured.

# Calculating the data volume

## General

During operation of the 'Fronius Datalogger Web' data accumulate, that must be transmitted over the internet.  
Calculating the data volume is necessary for the selection of an appropriate internet connection.

The following calculation of the data volume provides an overview about the amount of data accumulating during the operation of the 'Fronius Datalogger Web'.

## Firmware versions for calculating the data volume

The calculation of the data volume is based on the 'Fronius Datalogger Web' firmware version V 2.3.x-x and below.

Due to expanded range of functions higher firmware versions may cause a higher data volume.

## Calculating the data volume

The calculation of the data volume depends on the active functions of the 'Fronius Datalogger Web'.

Function	Data volume	
Making available current data within 'Fronius Solar.web'	singular <sup>1)</sup>	150 Byte 32 kByte/h
Viewing current data in 'Fronius Solar.web'	Current total view per sensor card / sensor box	42 kByte/h + 300 kByte/h
	Current comparison view per inverter	13 kByte/h + 4 kByte/h
	website	0 kByte/h
	PV system comparison view	0 kByte/h
Sending archive data / logging data to 'Fronius Solar.web'	(memory sectors per day <sup>2)</sup> x 4 kByte) + 8 kByte transmission time <sup>3)</sup>	600 Byte/Minute
Communication of service messages or errors	With daily communication per service message or error	1 kByte/day + 300 Byte
	With immediate communication per service message or error	1 kByte

1) only after a data logger reboot or a disconnected internet connection

2) Calculation of the memory sectors per day according to chapter "Logging" section "Calculating memory capacity"

3) depends on the quality of the internet connection

**IMPORTANT!** Since the values listed in the table are "raw data" of the 'Fronius Datalogger Web' and due to differences by various counting variants at the providers settlement, increase the calculated total value about 10 - 20 %.

If the functions are disabled, no data volume accumulates.

An update of the 'Fronius Datalogger Web' firmware also requires a certain data volume. This data volume depends on the size of the update package and can not be considered in the pre-calculation of the data volume.

**Calculation examples**

**Example 1 - home PV system**

1 inverter;	+ 0,15 kByte
No sensor card / sensor box;	
The 'Fronius Datalogger Web' has a 24 h internet connection;	+ 32 kByte/h x 24 h = 768 kByte
Archive data are sent to the 'Fronius Solar.web';	
30 minutes transmission time;	+ 0,6 kByte/min x 30 min = 18 kByte
Inverter runs 14 h/day;	
15 minutes save interval;	+ (1 memory sectors/day x 4 kByte) + 8 kByte
(according to section "Calculating memory capacity" 1 memory sector per day results)	= 12 kByte
Current data are daily viewed for 15 minutes	+ 42 kByte/h x 0,25 h = 10,5 kByte
Average error rate is assumed to be one service message per day	+ 1 service message x 1 kByte = 1 kByte
Subtotal without safety	0,15 kByte
	768,00 kByte
	18,00 kByte
	12,00 kByte
	10,50 kByte
	1,00 kByte
	809,65 kByte
Safety factor is calculated with 10%	809,65 kByte + 10 %
<b>End result</b>	<b>890,615 kByte/day</b>

**Example 2 - industrial PV system**

100 inverters;	+ 0,15 kByte
10 sensor cards / sensor boxes;	
The 'Fronius Datalogger Web' has a 24 h internet connection;	+ 32 kByte/h x 24 h = 768 kByte
Archive data are sent to the 'Fronius Solar.web';	
120 minutes transmission time;	+ 0,6 kByte/min x 120 min = 72 kByte
Inverters run 14 h/day;	
5 minutes save interval;	+ (173 memory sectors/day x 4 kByte)
(according to section "Calculating memory capacity" 173 memory sectors per day results)	+ 8 kByte = 700 kByte

The current total view and the current comparison view are daily viewed for 2 h.

$$\begin{aligned} &+ 42 \text{ kByte/h} \times 2 \text{ h} \\ &+ 300 \text{ kByte/h} \times 10 \times 2 \text{ h} \\ &+ (13 \text{ kByte/h} + 100 \times 4 \text{ kByte/h}) \times 2 \text{ h} \\ &= 6910 \text{ kByte} \end{aligned}$$

Average error rate is assumed to be 50 service messages per day

$$+ 50 \text{ service messages} \times 1 \text{ kByte} = 50 \text{ kByte}$$

Subtotal without safety

$$\begin{aligned} &0,15 \text{ kByte} \\ &768,00 \text{ kByte} \\ &72,00 \text{ kByte} \\ &700,00 \text{ kByte} \\ &6910,00 \text{ kByte} \\ &50,00 \text{ kByte} \\ \hline &8500,15 \text{ kByte} \end{aligned}$$

Safety factor is calculated with 10%

$$8500,15 \text{ kByte} + 10 \%$$

End result

$$\begin{aligned} &9350,165 \text{ kByte/day} \\ &(\text{appr. } 9,35 \text{ MByte/day}) \end{aligned}$$



# General information for the network administrator

**General firewall settings**

The firewall must be configured as follows in order to be able to use the different 'Fronius Datalogger Web' functions:

	49049/UDP output	15015/TCP input	80/TCP input
Sending service messages	x	-	-
Connecting to Datalogger via 'Fronius Solar.web'	x	-	-
Connecting to Datalogger via 'Fronius Solar.access'	-	x	x
Access to the 'Fronius Datalogger Web' website	-	-	x

Service messages are sent via Fronius Solar.web.

**Sending service messages via a DSL Internet connection**

Normally, no additional router configuration is required for a regular DSL Internet connection for accessing 'Fronius Solar.web' and/or sending service messages, because connections from the LAN to the Internet are open.

**Using 'Fronius Solar.web' and sending service messages**

However, an Internet connection is required to use 'Fronius Solar.web' and send service messages.

'Fronius Datalogger Web' cannot connect by itself to the Internet. A router must be used for a DSL connection to the Internet.

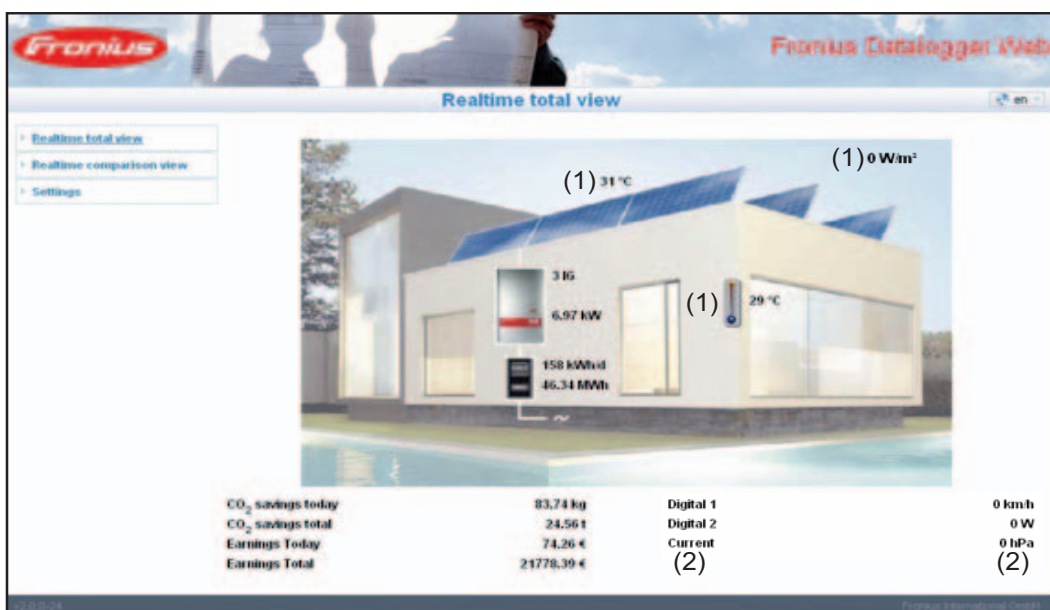
# 'Fronius Datalogger Web' views

**Overview** The following views are displayed on the 'Fronius Datalogger Web' website:

- Current total view
- Current comparison view

**Current total view** The Current total view contains:

- PV system power data
- CO<sub>2</sub> savings per day and total
- Yield per day and total
- Sensor Card data (if available)



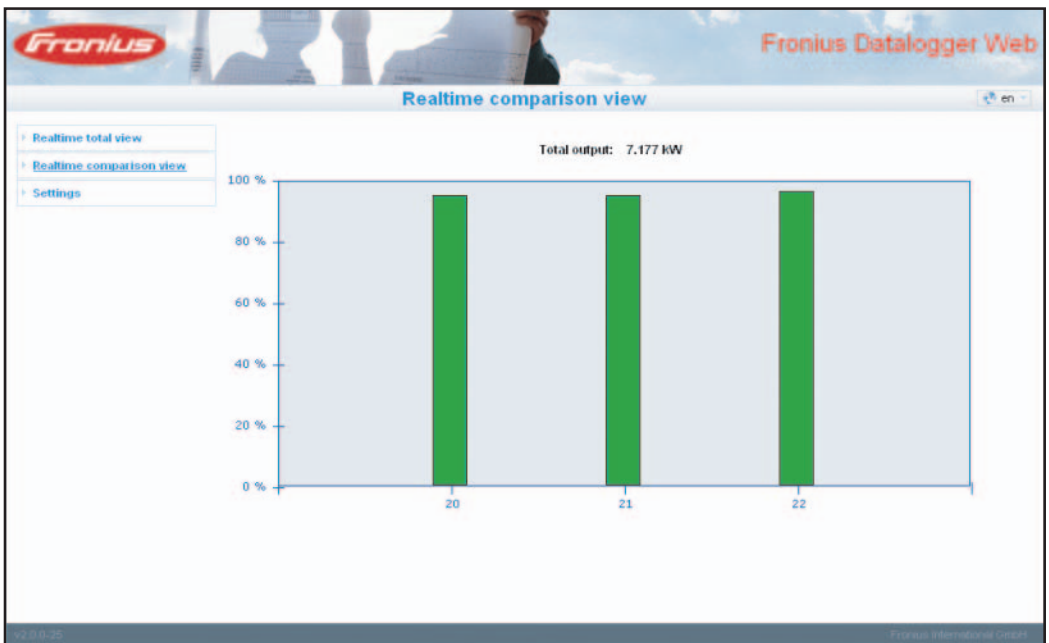
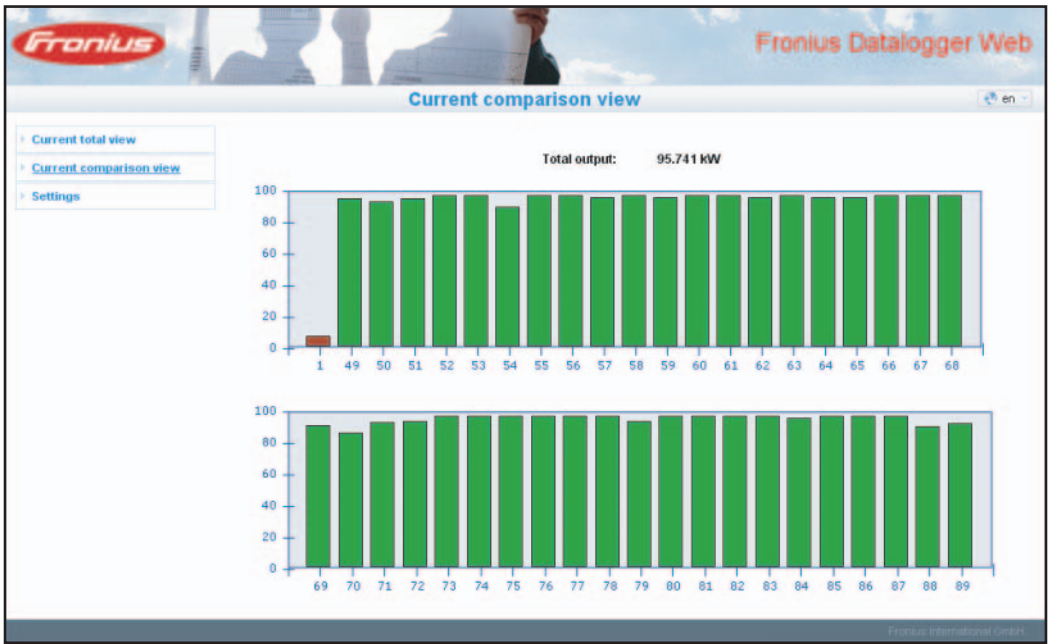
Sensor Card data in graphic display (1):  
the first three measuring channels of 'Sensor Card 1' are displayed

Sensor Card data under graphic display (2):  
starting with Sensor Card 0, the first four active measuring channels of Sensor Cards available in the system are displayed

**Current comparison view** Several inverters in the same PV system can be compared to each other in the Current comparison view.

The realtime inverter AC power is displayed as a percentage of the power from the solar module connected to the respective inverter (shown in a bar diagram). A bar is displayed for each inverter. The bar color indicates the power range of the inverter:

- Green: the inverter power corresponds to the average power of all inverters
- Yellow: the inverter power deviates slightly from the average power of all inverters
- Red: the inverter power deviates strongly from the average power of all inverters or an error has occurred in the inverter



# 'Fronius Datalogger Web' settings

## Overview

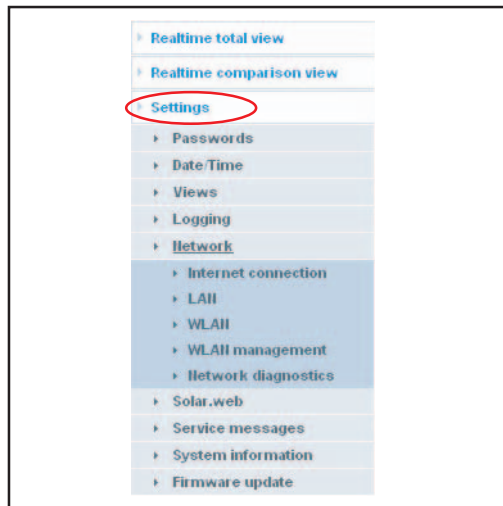
The following selection options are available in the 'Settings' menu of the 'Fronius Datalogger Web' website:

- Passwords
- Date / Time \*)
- Views
- Logging
- Network
- Solar.web
- Service Messages
- System Information
- Firmware Update

\*) The Date/Time setting is mandatory

The individual selection options will be explained in the following sections.

## Accessing and editing selection options



- 1 Connect to 'Fronius Datalogger Web'
- 2 Click on the 'Settings' menu item
- 3 Click on the desired selection option

The desired selection option will open

- 4 View/Edit selection option
- 5 If required, click on the respective button (e.g., Save, Synchronize, Update)

The changed data are applied.

# Passwords

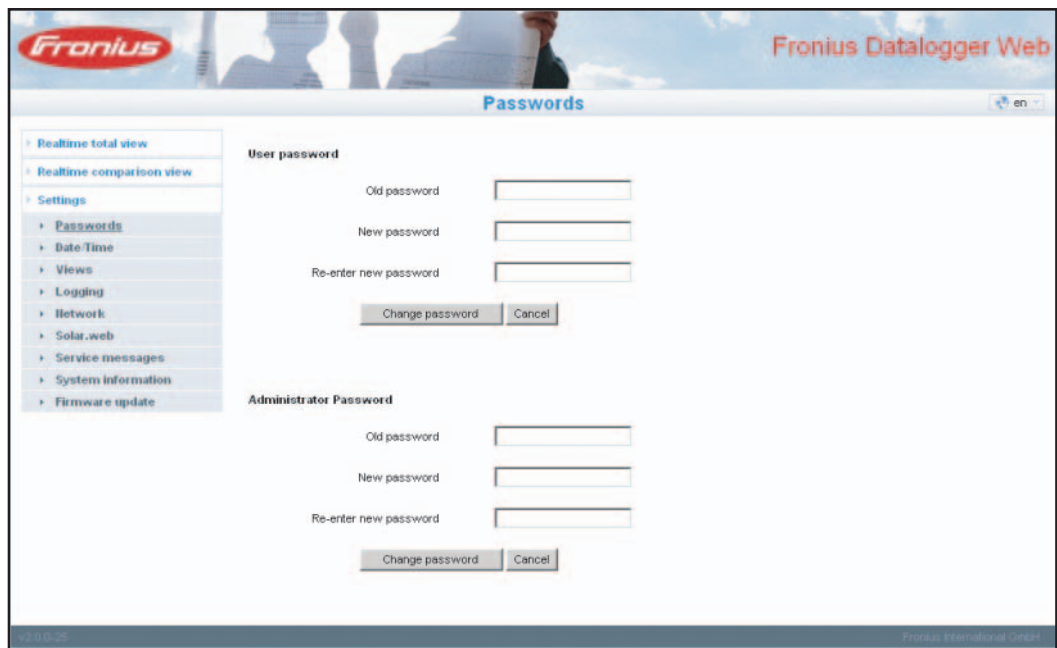
## General

Access to 'Fronius Datalogger Web' is regulated by assigning passwords. There are 2 different password types available:

- The user password
- The administrator password

**IMPORTANT** New passwords are only activated when the 'IP address' switch on the Datalogger is set to 'assigned IP.'

## Passwords



## User password

An assigned user password only gives the user read access to 'Fronius Datalogger Web.' The user cannot open the 'Settings' menu.

Users must enter their username and password every time they connect to 'Fronius Datalogger Web.'



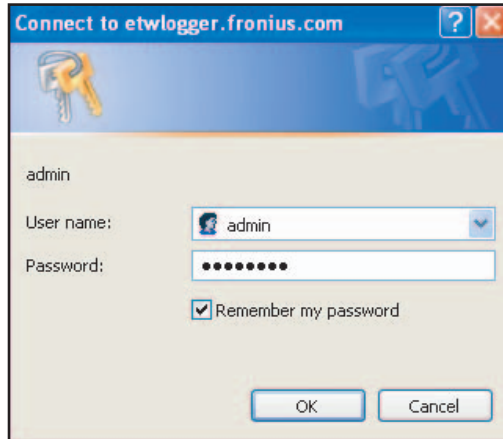
Username = user

---

## Administrator Password

An assigned administrator password gives the user both read and write access to 'Fronius Datalogger Web.' The user can then open the 'Settings' menu and make any changes as desired.

When assigning an administrator password, the user must enter the username and password in 'Fronius Datalogger Web' to open the 'Settings' menu.



Username = admin

---

## Forgot Your Password?

- 1 Make a direct connection to 'Fronius Datalogger Web' as per the 'Quick Installation' leaflet


The 'Fronius Datalogger Web' website will appear (no request for passwords)

- 2 Enter new passwords

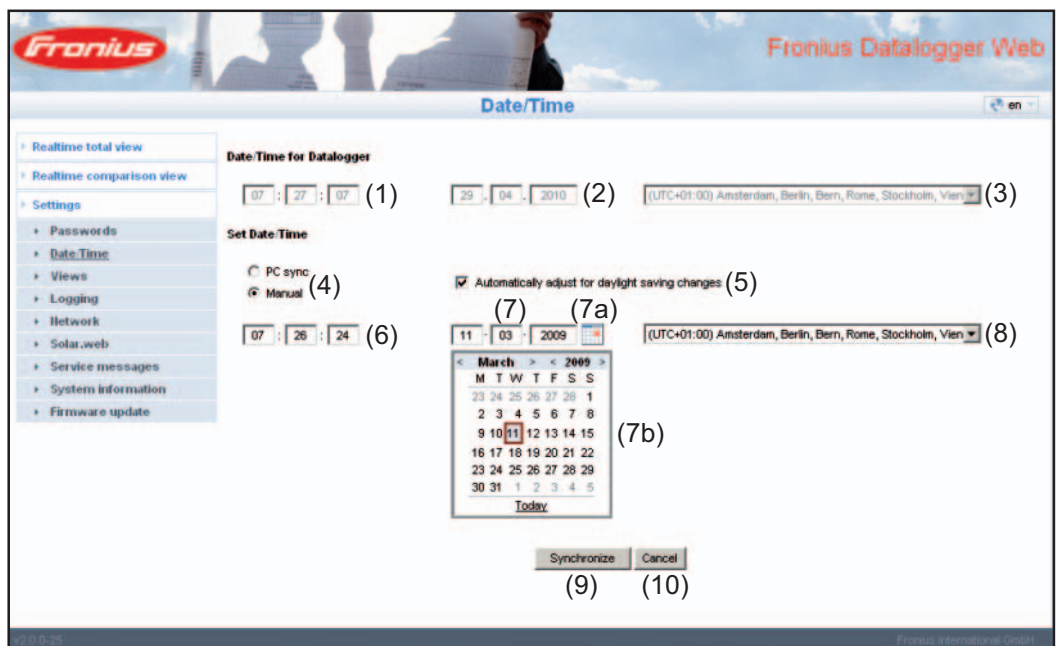
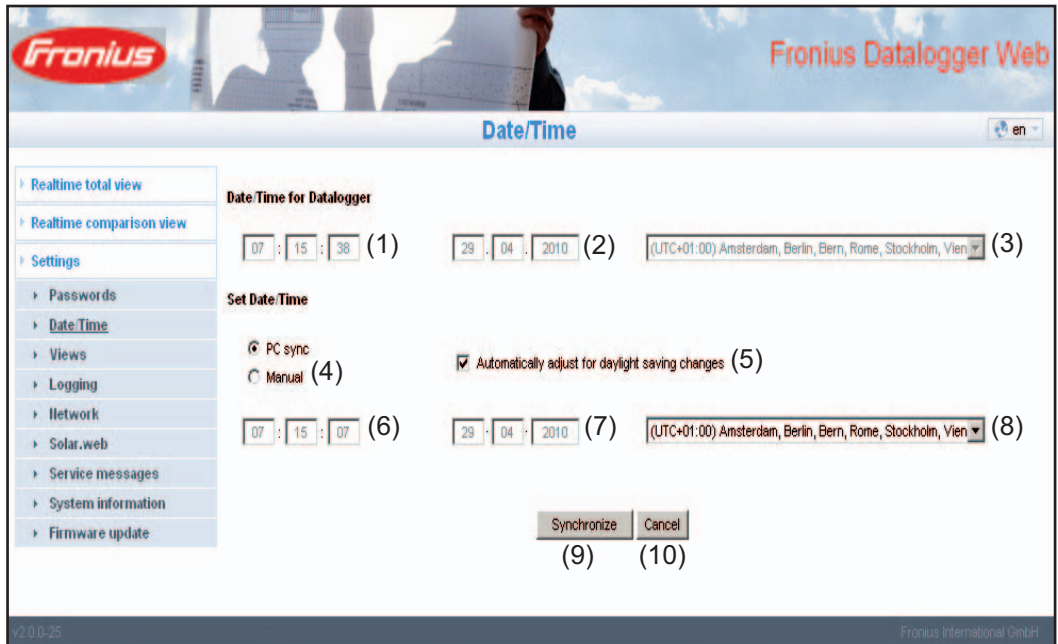
# Time/Date

## General

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

 **NOTE!** You must set the time and date in order to operate 'Fronius Datalogger Web.' This is the only way in which Datalogger data can be recorded.

## Time/Date



- (1) Datalogger time display
- (2) Datalogger date display
- (3) Datalogger time zone

- (4) Date/Time setting option: synchronize to PC/laptop or manual
- (5) Automatically adjust for daylight savings time

**IMPORTANT** For the automatic daylight savings time setting, the correct time zone must be selected.

- (6) Time from PC/laptop for PC synchronization setting Field for setting the time for the manual setting
- (7) Date from PC/laptop for PC synchronization setting
- (7a) Calendar icon
- (7b) Calendar (opens when you click on the calendar icon)
- (8) Field for setting the time zone
- (9) 'Synchronization' button
- (10) 'Cancel' button

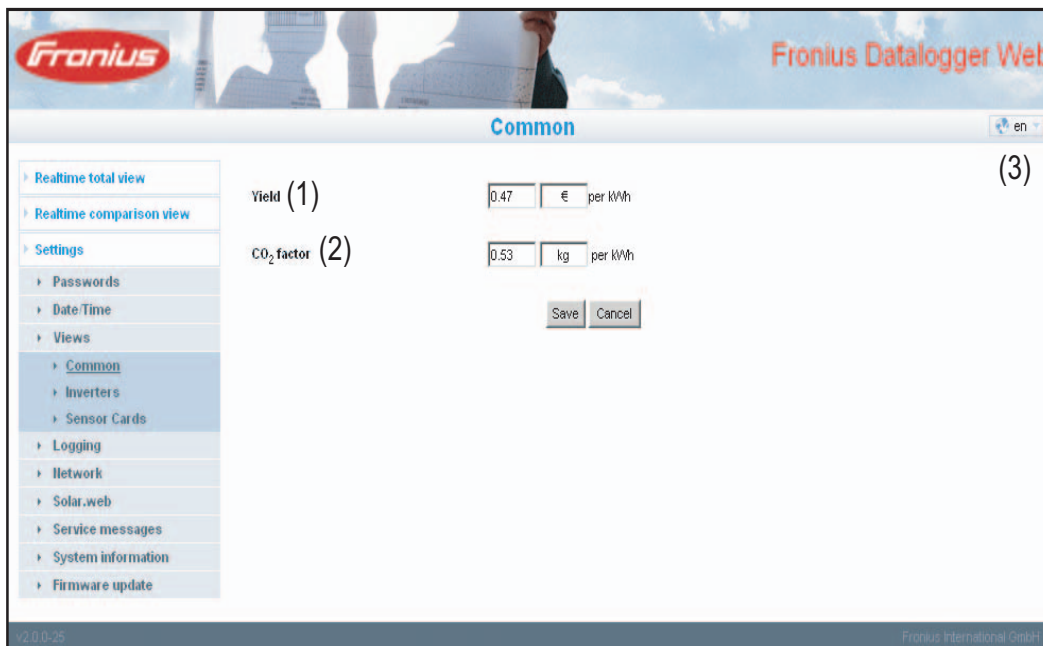


# Views

## General

Configuration of the 'Fronius Datalogger Web' website takes place in the views. The language, yield and data for the Comparison and Total view can be set here. A sub-menu is available for settings related to inverters and Sensor Cards.

## Views



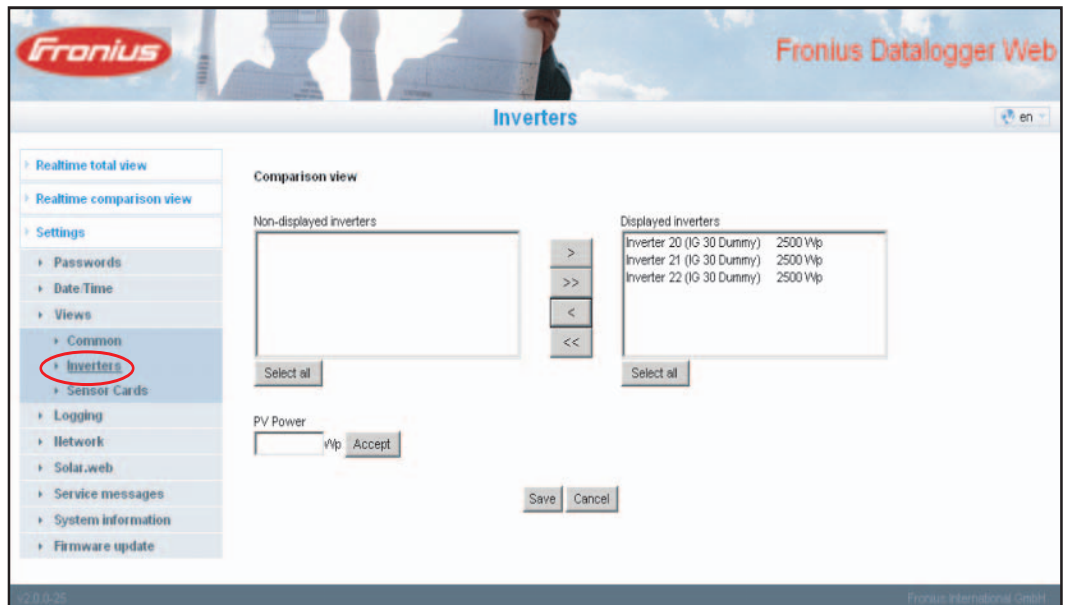
## 'General' view

You can enter the charge rate per kWh and the currency for calculating the yield in 'Yield' (1). The yield is shown in the Current total view.

You can enter the CO2 savings per kWh and the unit for calculating the CO2 savings in 'CO2 factor' (2). The CO2 savings are shown in the Current total view.

The 'Fronius Datalogger Web' website will appear in the language set in the browser or in the last language selected. The language can be changed in the language selection fields (3).

## Inverter views

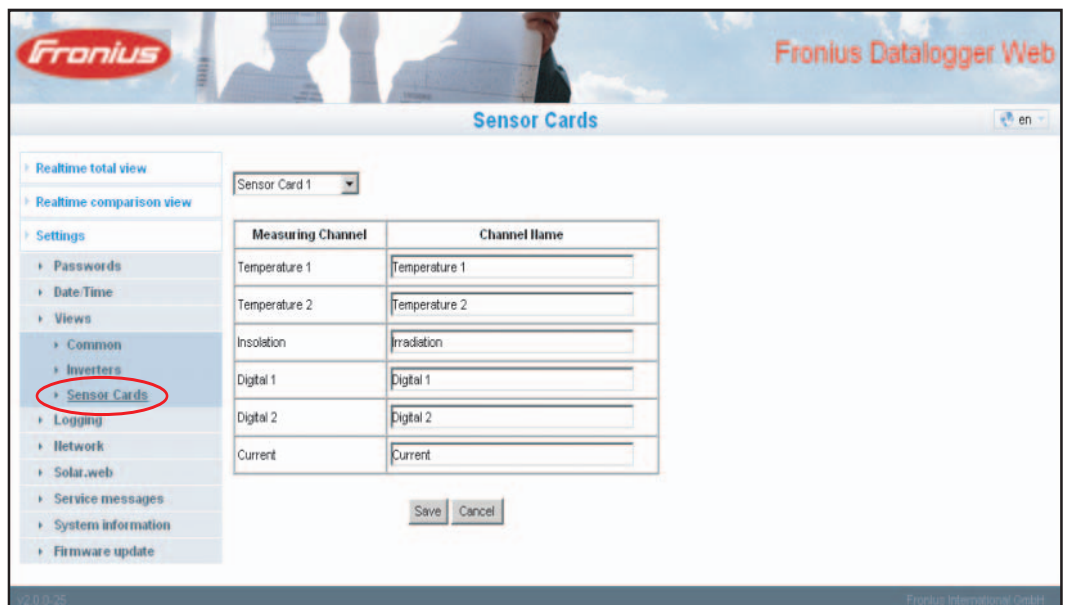


The data for the comparison view is defined in 'Inverters:'

- 1 Select an inverter to be displayed in the Comparison view
- 2 Enter the respective solar module power for each inverter (the nominal output of the inverter is entered by default)
- 3 Assign PV power to the respective inverter using the 'Accept' button
- 4 Click on 'Save'

The settings for the Comparison view are applied.

## Sensor Card views



A specific channel name can be assigned to each sensor value of a Sensor Card in 'Sensor Cards' (e.g., wind speed).

- 1 Select Sensor Card for which the channel names are to be changed
- 2 Enter the desired channel names

3 Click on 'Save'

The settings for the Total view are applied.

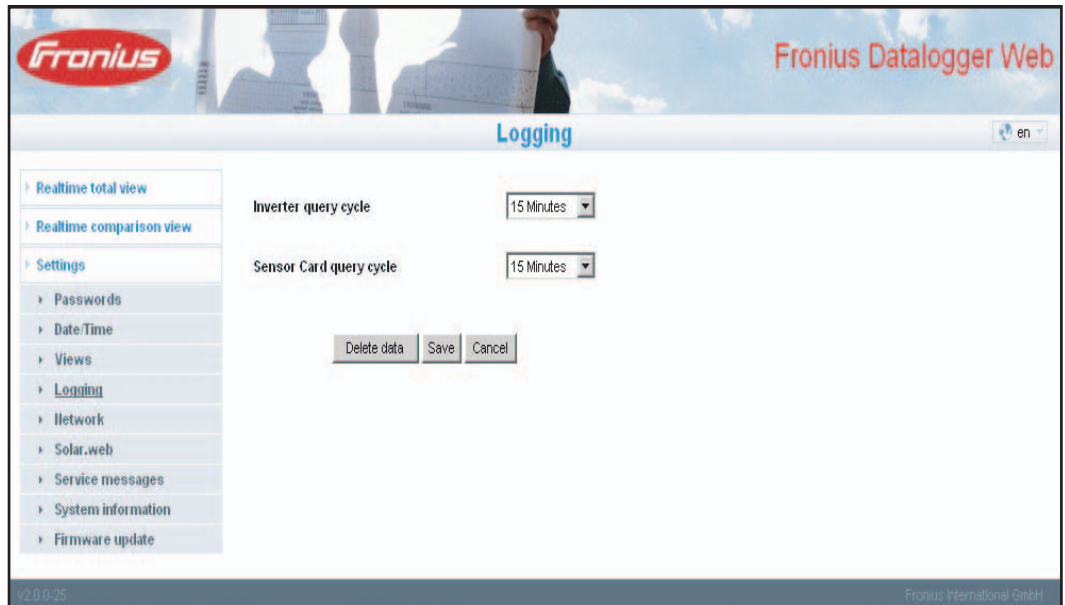
# Logging

## General

The Datalogger saves the realtime 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 data can be prepared, archived and viewed easily with a PC or laptop using the "Fronius Solar.access" software.

## Logging



## Memory capacity

The Datalogger has a memory capacity of up to 5 years and 7 months for a PV 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.

## Calculating memory capacity

- 1 Determine logging points for inverters and Fronius sensor cards/boxes

$$\text{Logging points per day} = \frac{\text{Logging duration [min]}}{\text{Save interval [min]}}$$

Logging duration [min]

- For inverter: e.g., 14 hours = 840 minutes
- For Fronius Sensor Card/Fronius Sensor Box: 24 hours = 1440 minutes

- 2 Calculate the total logging points

Total logging points =

= (number of inverters x logging points per day) + (number of Fronius Sensor Cards/Boxes x logging points per day)

- 3 Determine memory sectors per day

$$\text{Memory sectors per day} = \frac{\text{Total logging points}}{114}$$

4 Round to whole numbers

5 Determine memory capacity

$$\text{Memory capacity [days]} = \frac{2048}{\text{Memory sectors per day}}$$

### Calculation example

2 inverters, logging duration = 14 hours (840 minutes)

1 Fronius Sensor Card, logging duration = 24 hours (1440 minutes)

Save interval = 15 minutes

1. Logging points per day:

$$\text{Inverter logging points} = \frac{840 \text{ min}}{15 \text{ min}} = 56$$

$$\text{Sensor Card logging points} = \frac{1440 \text{ min}}{15 \text{ min}} = 96$$

2. Total logging points:

$$\text{Total logging points} = (2 \times 56) + (1 \times 96) = 208$$

(2 x 56) ... 2 inverters, (1 x 96) ... 1 Sensor Card

3. Memory sectors per day:

$$\text{Memory sectors} = \frac{208}{114} = 1,825$$

4. Rounded:

$$1,825 \quad \Rightarrow \quad 2$$

5. Memory capacity [days]:

$$\text{Memory capacity} = \frac{2048}{2} = 1024 \text{ days} (= 2 \text{ years, } 9 \text{ months, } 18 \text{ days})$$

$$\text{Memory capacity [days]} = \frac{2048}{\text{Memory sectors per day}}$$

### Overwriting data when memory is full

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

### 'Delete Data' button

All 'log data' saved to 'Datalogger Web' is deleted using the 'Delete Data' button.

**IMPORTANT** The power supply to 'Datalogger Web' must not be interrupted during the deletion process.

# Network

## General

The 'Network' selection option is used to configure 'Fronius Datalogger Web' for integration with an existing network.

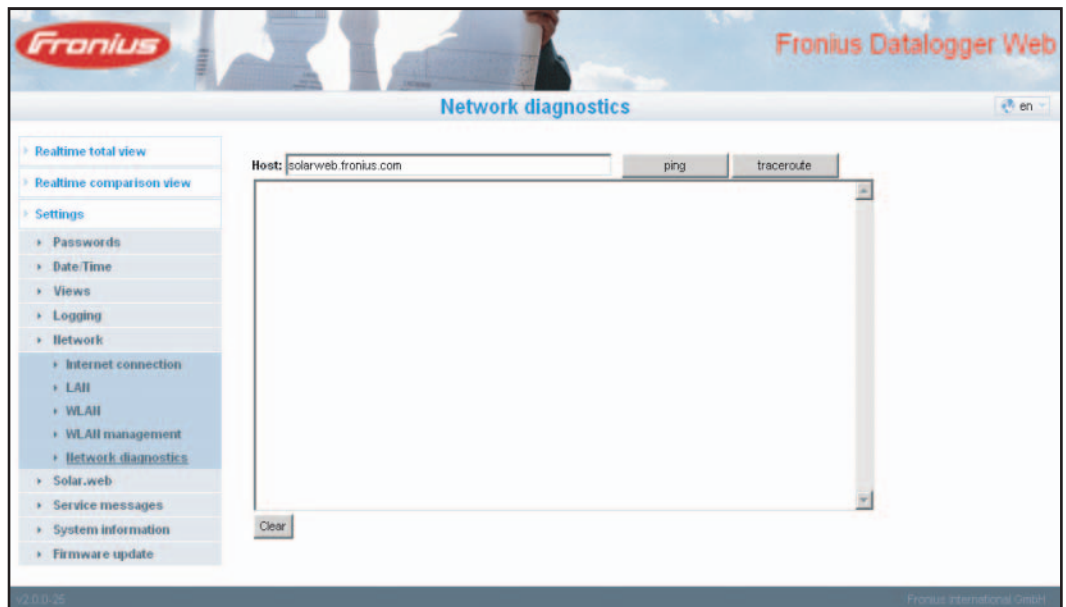
For more information about network configuration for 'Fronius Datalogger Web,' please see the section 'Fronius Datalogger Web network configuration.'

## Network



## Network diagnostics

The 'Network diagnostics' selection option under 'Network' is used to enter 'ping' and 'trace route' commands.'



### **'Ping command'**

The 'ping command' is used to determine whether or not a 'host' is available and how much time a data transfer will take.

Sending a 'Ping command':

- 1 Enter a host name in the 'Host' field
- 2 Click on the 'Ping' button
  - 'Ping command' is sent
  - The resulting data is displayed

### **'Trace route command'**

A 'trace route command' is used to determine the intermediate stations the data takes to reach the 'host.'

Sending a 'trace route command':

- 1 Enter a host name in the 'Host' field
- 2 Click on the 'Trace route' button
  - 'Trace route command' is sent
  - The resulting data is displayed



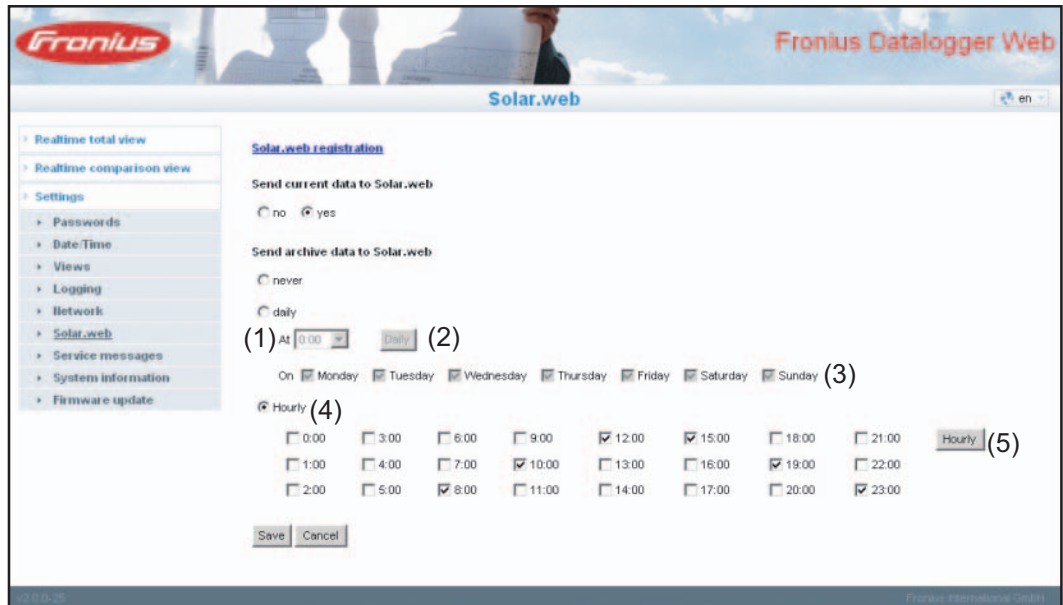
# Solar.web

## General

The 'Solar.web' selection option is used to make a direct connection to 'Fronius Solar.web' from 'Fronius Datalogger Web.'

For more information about 'Fronius Solar.web,' please see the section 'Connecting to Fronius Datalogger Web via the Internet and Fronius Solar.web' or the 'Fronius Solar.web' on-line help.

## Solar.web



### Daily data transmission to Solar.web

- If the 'daily' selection option is activated, you can select:
- The time of day when data is transmitted (1)
  - Whether data is transmitted each day (2)
  - Whether data is transmitted only on specific days (3)

### Hourly data transmission to Solar.web

- If the 'hourly' selection option is activated, you can select:
- The times of day when data is transmitted (4)
  - Whether data is transmitted each day on the hour every hour (5)

# Service messages

## General

Service messages as well as errors from inverters, the 'Fronius String Control,' etc. are sent to the Datalogger and saved. The 'Service messages' selection option is used to define how service messages are communicated. Communication can take place via:

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

Service messages can be analyzed further using 'Fronius Solar.web' or 'Fronius Solar.access.'

## Service messages

- (1) PV system name  
Included in the service message text  
**IMPORTANT** The system name is used to identify the PV system that sent the message. Always enter a system name.
- (2) Selection field for the language in which the service message should be sent
- (3) Message to e-mail recipient  
Activate to send service messages to one or more e-mail addresses
- (4) Field for up to a max. of 10 e-mail addresses  
Separate e-mail addresses with ','
- (5) Selection field to determine whether the service message will be sent immediately via e-mail or at a specific time
- (6) Selection field for the time when a service message will be sent via e-mail

- (7) 'Send test e-mail' button
  - (8) Message to fax recipient  
Activate to send service messages to a fax number
  - (9) Field to enter country code  
Example: +43 = country code for Austria
  - (10) Field to enter the fax area code
  - (11) Field to enter the fax number
  - (12) Field for sending daily
  - (13) Selection field for the time when a service message will be sent via fax
  - (14) 'Send test fax' button
  - (15) Message to SMS recipient  
Activate to send service messages as an SMS to a telephone number
  - (16) Field to enter country code  
Example: +43 = country code for Austria
  - (17) Field to enter area code
  - (18) Field to enter the telephone number
  - (19) Field for sending daily
  - (20) Selection field for the time when a service message will be sent via SMS
  - (21) 'Send test SMS' button
- IMPORTANT** Check your settings by sending a test message.
- (22) 'Save' button
  - (23) 'Cancel' button
  - (24) Field to enter country code  
For a direct warning onsite.

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

The relay contact is an NCC (normally closed contact) and NOC (normally open contact) and is designed for the following max. voltage/current values:

42 V AC / 6 A  
60 V DC / 400 mA  
40 V DC / 1 A  
30 V DC / 6 A

The buzzer and relay are activated or deactivated using the Alarm switch on the Datalogger. An alarm is acknowledged by switching it briefly to 'Alarm off.'

When 'Alarm on' is selected, the buzzer and relay are briefly activated as a test function.

- (25) 'Run test' button  
Switches the relay and buzzer on for 1 second when the Alarm switch is set to 'Alarm on'
  
- (26) 'Reset alarm' button  
Resets a triggered alarm, switches off the relay and buzzer

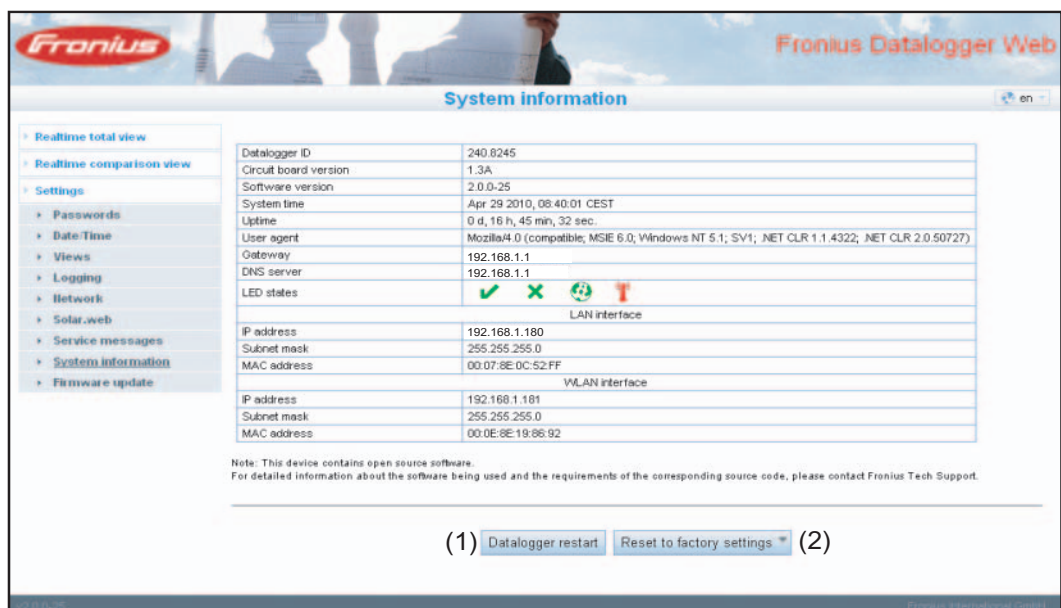
# System information

## General

The following system information for 'Fronius Datalogger Web' can be viewed in the 'System information' selection option:

- Datalogger ID
- PC board version
- Software version
- System time
- Uptime
- User agent
- Gateway
- DNS server
- LED states
- IP addresses
- Subnet masks
- MAC address

## System information



- (1) 'Datalogger restart' button  
Used to restart 'Datalogger Web'
- (2) 'Reset to factory settings' button with the following selection options:

All settings except for the network  
Used to reset 'Datalogger Web' to factory settings.  
Network settings remain unchanged.

All settings  
Used to reset 'Datalogger Web' and network settings to factory settings

**IMPORTANT** Using the 'Reset to factory settings' button does not affect the time and date settings. When 'Datalogger Web' is reset to factory settings, the time and date settings must be checked.

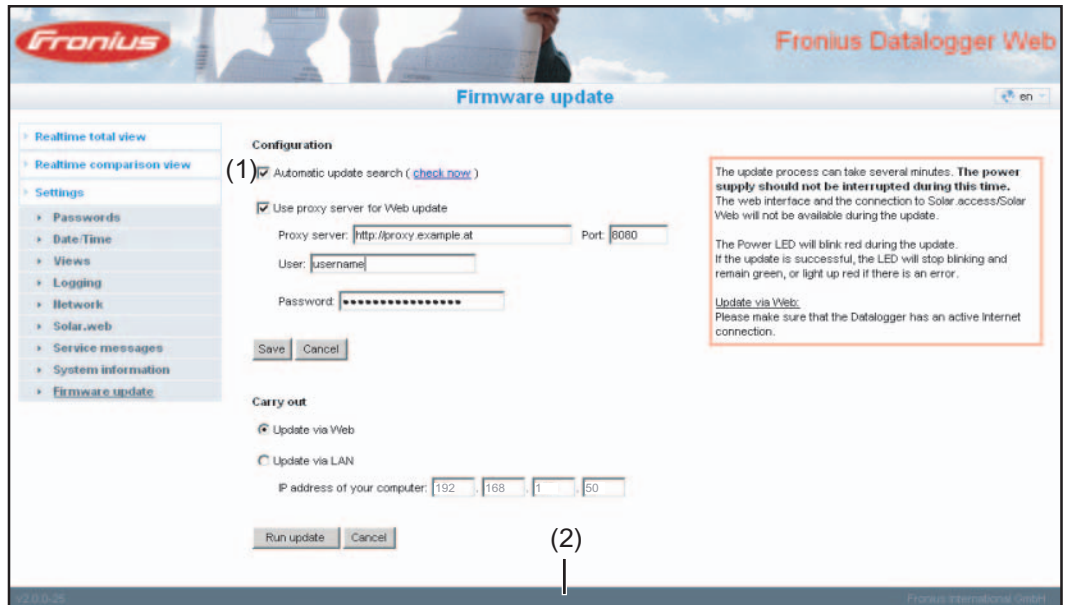
# Firmware update

## General

You can update the 'Fronius Datalogger Web' firmware from the 'Firmware update' selection option. A 'firmware update' can be carried out via LAN or web.

## Automatic update search

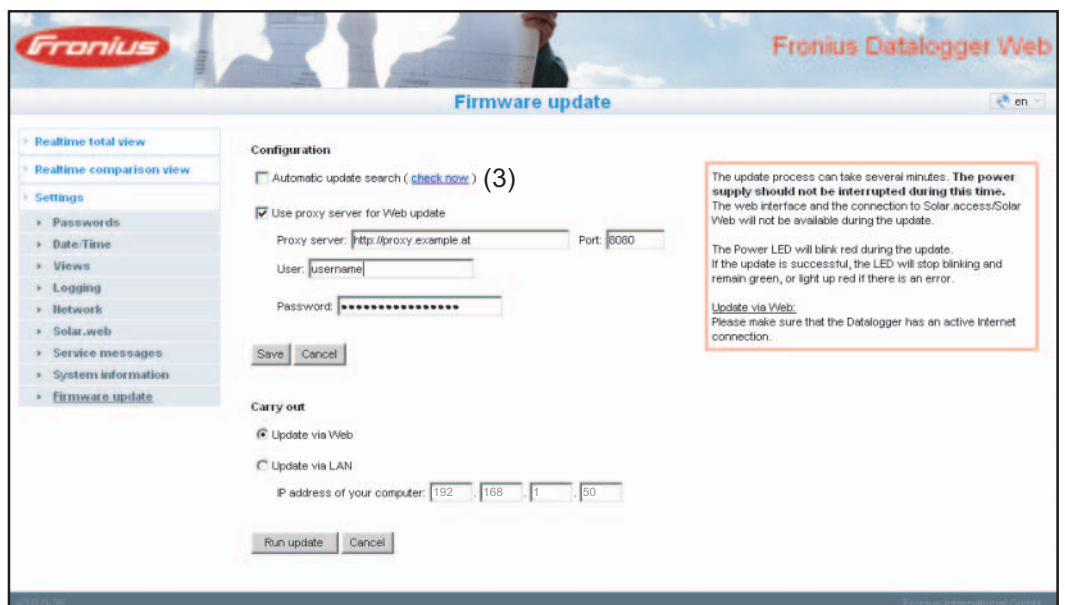
When the 'Automatic update search' option (1) is activated, 'Datalogger Web' will automatically search once a day for updates. If new updates are available, they will be shown in the grey display bar (2).



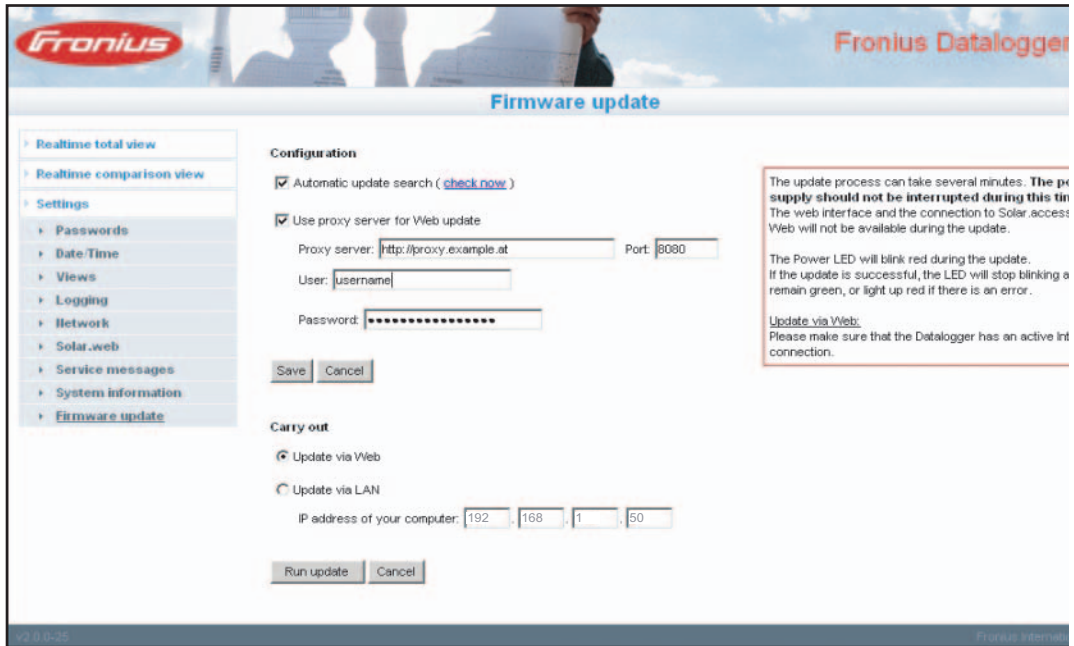
## Manual update search

When the 'Automatic update search' function is deactivated, there will be no automatic update search.

1 To search manually for updates, use the 'Check now' button (3)




**Firmware update via web**



Procedure:

- 1 Use your Internet browser to open the 'Fronius Datalogger Web' website
- 2 Open Settings / Firmware update
- 3 Click on the 'Run update' button

 **NOTE!** The update process can take several minutes. The power supply to the 'Fronius Datalogger Web' and the Internet connection should not be interrupted during this time. The web interface and the connection to 'Fronius Solar.access' or 'Fronius Solar.web' will not be available during the update process.

The update is complete when the 'Supply LED' lights up green.

If the connection to the server should fail:

- deactivate the firewall for the duration of the update
- retry the update

**IMPORTANT** If a proxy server is used to connect to the Internet:

- The 'Use proxy server for Web update' selection option must be activated
- The required data must be entered

## Firmware update via LAN


The screenshot shows the 'Firmware update' page of the 'Fronius Datalogger Web' interface. On the left is a navigation menu with 'Firmware update' selected. The main area is divided into 'Configuration' and 'Carry out' sections. The 'Configuration' section has two checked options: 'Automatic update search (check now)' and 'Use proxy server for Web update'. Below these are input fields for 'Proxy server' (http://proxy.example.at), 'Port' (8080), 'User' (username), and 'Password' (masked with asterisks). There are 'Save' and 'Cancel' buttons. The 'Carry out' section has two radio buttons: 'Update via Web' (unselected) and 'Update via LAN' (selected). Below is an IP address input field with values 192, 168, 1, and 50. There are 'Run update' and 'Cancel' buttons. A red-bordered warning box on the right contains the following text: 'The update process can take several minutes. The power supply should not be interrupted during this time. The web interface and the connection to Solar access/Solar Web will not be available during the update. The Power LED will blink red during the update. If the update is successful, the LED will stop blinking and remain green, or light up red if there is an error. Update via LAN. First, please run the downloaded update archive on your computer. This will start a server on your computer from which the Datalogger can download the necessary files. If there is a firewall between your computer and the Datalogger, please deactivate it for the duration of the update.'

Procedure:

- 1 Download the current firmware from the Fronius homepage
- 2 Run the downloaded update file on the PC/laptop

This will start a web server from which 'Fronius Datalogger Web' will download the required files.

- 3 Use your Internet browser to open the 'Fronius Datalogger Web' website
- 4 Open Settings / Firmware update
- 5 Enter the IP address of the PC/laptop
- 6 Click on the 'Run update' button

 **NOTE!** The update process can take several minutes. The power supply to the 'Fronius Datalogger Web' and the Internet connection should not be interrupted during this time. The web interface and the connection to 'Fronius Solar.access' or 'Fronius Solar.web' will not be available during the update process.

The update is complete when the 'Supply LED' lights up green.

If the connection to the server should fail:

- deactivate the firewall for the duration of the update
- retry the update



# Technical data

## Technical data

Memory capacity	16 MB
Supply voltage	12 V DC
Power consumption	typ. 1.43 W
Degree of protection	IP 20
Dimensions	190 x 114 x 53 mm 4.69 x 4.49 x 2.09 in.
Relay output*	42 V AC / 6 A 60 V DC / 400 mA, 40 V DC / 1 A, 30 V DC / 6 A
Maximum cable cross section for the relay output	0.08 - 1.5 mm <sup>2</sup> AWG 14 - 28 (USA/Canada)
Ethernet (LAN) (WLAN)	RJ 45, 100 Mbit via USB WLAN stick**
RS 485 (Solar Net)	RJ 45
External power supply connection	12 V DC, max. 1 A, Class 2
Cable cross section for external power supply connection	0.13 - 1.5 mm <sup>2</sup> AWG 16 - 24 (USA/Canada)
Ambient temperature	0 - 50 °C 32 - 122 °F

\* Values are only valid for pure ohmic load

\*\* Available option



**EU-KONFORMITÄTSERKLÄRUNG 2010  
EC-DECLARATION OF CONFORMITY 2010  
DECLARATION DE CONFORMITE DE LA CE, 2010**

Wels-Thalheim, 2010-06-28

Die Firma

Manufacturer

La compagnie

**FRONIUS INTERNATIONAL GMBH**  
Günter Fronius Straße 1, A-4600 Wels-Thalheim

erklärt in alleiniger Verantwortung,  
dass folgendes Produkt:

Hereby certifies on it's sole  
responsibility that the following  
product:

se déclare seule responsable du fait  
que le produit suivant:

**Fronius Datalogger Web 2**  
Solar-Wechselrichter Zubehör

**Fronius Datalogger Web 2**  
Photovoltaic inverter accessories

**Fronius Datalogger Web 2**  
Onduleur solaire Accessoires

auf das sich diese Erklärung  
bezieht, mit folgenden Richtlinien  
bzw. Normen übereinstimmt:

which is explicitly referred to by this  
Declaration meet the following  
directives and standard(s):

qui est l'objet de la présente  
déclaration correspondent aux  
suivantes directives et normes:

Richtlinie 2004/108/EG  
Elektromag. Verträglichkeit

Directive 2004/108/EC  
Electromag. compatibility

Directive 2004/108/CE  
Électromag. Compatibilité

Europäische Normen inklusive  
zutreffende Änderungen  
EN 55022:2006  
EN 61000-6-2:2005

European Standards including  
relevant amendments  
EN 55022:2006  
EN 61000-6-2:2005

Normes européennes avec  
amendements correspondants  
EN 55022:2006  
EN 61000-6-2:2005

Die oben genannte Firma hält  
Dokumentationen als Nachweis der  
Erfüllung der Sicherheitsziele und  
die wesentlichen Schutzanforder-  
ungen zur Einsicht bereit.

Documentation evidencing  
conformity with the requirements of  
the Directives is kept available for  
inspection at the above  
Manufacture's.

En tant que preuve de la satisfaction  
des demandes de sécurité la  
documentation peut être consultée  
chez la compagnie susmentionnée.

**CE 2010**

*ppa Hackl*  
ppa. Mag. Ing. H. Hackl



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