SHIFTING THE LIMITS

Fronius DATCOM Detail

Dear reader,

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.

Contents

Safety Instructions

Explanation of Safety Instructions

⚠️ **DANGER!** Indicates an immediate danger. Death or serious injury may result if appropriate precautions are not taken.

⚠️ **WARNING!** Indicates a possibly dangerous situation. Death or serious injury may result if appropriate precautions are not taken.

⚠️ **CAUTION!** Indicates a situation where damage or injury could occur. Minor injury or damage to property may result if appropriate precautions are not taken.

☞ **NOTE!** Indicates the possibility of flawed results and damage to the equipment.

IMPORTANT! Indicates tips for correct operation and other particularly useful information. It does not indicate a potentially damaging or dangerous situation.

If you see any of the symbols depicted in the "Safety Rules," special care is required.

General

The device is manufactured using state-of-the-art technology and according to recognized safety standards. If used incorrectly or misused, however, it can cause
- injury or death to the operator or a third party,
- damage to the device and other material assets belonging to the operator,
- inefficient operation of the device

All persons involved in commissioning, maintaining and servicing the device must
- be suitably qualified,
- have knowledge of and experience in dealing with electrical installations and
- read and follow these operating instructions carefully

The operating instructions must always be at hand wherever the device is being used. In addition to the operating instructions, attention must also be paid to any generally applicable and local regulations regarding accident prevention and environmental protection.

All safety and danger notices on the device
- must be kept in a legible state
- must not be damaged/marked
- must not be removed
- must not be covered, pasted or painted over

For the location of the safety and danger notices on the device, refer to the section headed "General" in the operating instructions for the device.

Before switching on the device, remove any faults that could compromise safety.

Your personal safety is at stake!

Utilization in Accordance with "Intended Purpose"

The device is to be used exclusively for its intended purpose.

Utilization for any other purpose, or in any other manner, shall be deemed to be "not in accordance with the intended purpose." The manufacturer shall not be liable for any damage resulting from such improper use.

Utilization in accordance with the "intended purpose" also includes
- carefully reading and obeying all the instructions and all the safety and danger notices in the operating instructions
- performing all stipulated inspection and servicing work
- installation as specified in the operating instructions

The following guidelines should also be applied where relevant:
- Regulations of the utility regarding energy fed into the grid
- Instructions from the solar module manufacturer

Environmental Conditions

Operation or storage of the device outside the stipulated area will be deemed as "not in accordance with the intended purpose." The manufacturer is not responsible for any damages resulting from unintended use.

For exact information on permitted environmental conditions, please refer to the "Technical data" in the operating instructions.

Qualified Service Engineers

The servicing information contained in these operating instructions is intended only for the use of qualified service engineers. An electric shock can be fatal. Do not perform any actions other than those described in the documentation. This also applies to those who may be qualified.

All cables and leads must be secured, undamaged, insulated and adequately dimensioned. Loose connections, scorched, damaged or inadequately dimensioned cables and leads must be immediately repaired by authorized personnel.

Maintenance and repair work must only be carried out by authorized personnel.

It is impossible to guarantee that externally procured parts are designed and manufactured to meet the demands made on them, or that they satisfy safety requirements. Use only original replacement parts (also applies to standard parts).

Do not carry out any modifications, alterations, etc. without the manufacturer's consent.

Components that are not in perfect condition must be changed immediately.

Safety Measures at the Installation Location

When installing devices with openings for cooling air, ensure that the cooling air can enter and exit unhindered through the vents. Only operate the device in accordance with the degree of protection shown on the rating plate.

8

Data Regarding Noise Emission Values

The inverter generates a maximum sound power level of < 80 dB(A) (ref. 1 pW) when operating under full load in accordance with IEC 62109-1:2010.

The device is cooled as quietly as possible with the aid of an electronic temperature control system, and depends on the amount of converted power, the ambient temperature, the level of soiling of the device, etc.

It is not possible to provide a workplace-related emission value for this device, because the actual sound pressure level is heavily influenced by the installation situation, the power quality, the surrounding walls and the properties of the room in general.

EMC Device Classifications

Devices in emission class A:
- Are only designed for use in industrial settings
- Can cause line-bound and radiated interference in other areas

Devices in emission class B:
- Satisfy the emissions criteria for residential and industrial areas. This is also true for residential areas in which the energy is supplied from the public low-voltage grid.

EMC device classification as per the rating plate or technical data.

EMC Measures

In certain cases, even though a device complies with the standard limit values for emissions, it may affect the application area for which it was designed (e.g., when there is sensitive equipment at the same location, or if the site where the device is installed is close to either radio or television receivers). If this is the case, then the operator is obliged to take appropriate action to rectify the situation.

Grid Connection
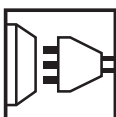
High-performance devices (> 16 A) can affect the voltage quality of the grid because of a high output current in the main supply.

This may affect a number of types of device in terms of:
- connection restrictions
- criteria with regard to maximum permissible mains impedance *)
- criteria with regard to minimum short-circuit power requirement *)

*) at the interface with the public grid

see Technical Data

In this case, the operator or the person using the device should check whether or not the device is allowed to be connected, where appropriate through discussion with the power supply company.

Electrical Installations

Electrical installations must only be carried out according to relevant national and local standards and regulations.

Protective Measures against ESD

Danger of damage to electrical components from electrical discharge. Suitable measures should be taken to protect against ESD when replacing and installing components.

Safety measures in normal operation

Only operate the device when all safety devices are fully functional. If the safety devices are not fully functional, there is a risk of

- injury or death to the operator or a third party
- damage to the device and other material assets belonging to the operating company
- inefficient operation of the device

Safety equipment that is not fully functional must be repaired by an authorized specialist before the device is turned on.

Never bypass or disable safety devices.

Safety Symbols

Devices with the CE marking satisfy the essential requirements of the low-voltage and electromagnetic compatibility directives. Further details can be found in the appendix or the chapter entitled "Technical data" in your documentation.

Disposal

Do not dispose of this device with normal domestic waste! To comply with the European Directive on Waste Electrical and Electronic Equipment and its implementation as national law, electrical equipment that has reached the end of its life must be collected separately and returned to an approved recycling facility. Any device that you no longer require must be returned to your dealer, or you must locate the approved collection and recycling facilities in your area. Ignoring this European Directive may have potentially adverse affects on the environment and your health!

Backup
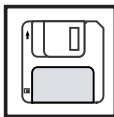
The user is responsible for backing up any changes made to the factory settings. The manufacturer accepts no liability for any deleted personal settings.

Copyright

Copyright of these operating instructions remains with the manufacturer.

Text and illustrations are technically correct at the time of going to print. The right to make modifications is reserved. The contents of the operating instructions shall not provide the basis for any claims whatsoever on the part of the purchaser. If you have any suggestions for improvement, or can point out any mistakes that you have found in the operating instructions, we will be most grateful for your comments.

General

Fronius Solar Net - Basics

Fronius Solar Net is the basis for unlimited, individual application of DATCOM components. Fronius Solar Net is a data network which enables several Fronius inverters to exchange data with DATCOM components.

The Fronius Solar Net data network operates as a ring-shaped bus system. A single data link between the individual components enables communication between one or more Fronius inverters and the DATCOM components. This minimizes the cabling effort for the individual DATCOM components.

DATCOM / Plug-in card principle

DATCOM components are available as plug-in cards (similar to the PC). Depending on the country setup, Fronius inverters can be equipped with up to three plug-in cards within the housing.
Plug-in cards communicate within the inverter via its internal network. External communication to Fronius Solar Net takes place via Fronius Com Cards.

DATCOM components with external housing

For increased flexibility, DATCOM components are also available in versions with an external housing (box).

DATCOM components with an external housing are designed in accordance with protection class IP 20. For this reason, they are suitable for interior applications only or must be placed in an appropriately rated weather-proof housing. If required, the base of an external housing can be clipped onto a commercially-available DIN rail.

DATCOM components with external housings are equipped with an input "IN" and output "OUT" for data communication within the network.

Maximum number of DATCOM components and inverters

The following maximum number of DATCOM components and inverters can be connected to a total system (as of August 2016):

- 100 Fronius inverters (different models can be combined)

- 1 Fronius device with data logging function
  (a list of the Fronius devices with data logging function can be found in the next section

"Core of Fronius Solar Net: the Datalogger")

- 1 Fronius Power Control Card/Box

- 10 Sensor Cards/Boxes

- 10 Public Display Cards/Boxes

- 1 Interface Card/Box

- 200 Fronius String Controls

However, the system is designed to be easily upgradeable as new DATCOM components are developed.

Core of Fronius Solar Net: the Datalogger

The core of Fronius Solar Net is the Datalogger. It coordinates data transmissions and ensures that even large volumes of data are distributed and stored quickly and securely. In addition, the Datalogger also records data for the entire system over long periods of time.

The following devices have a Datalogging function:

Fronius Datalogger pro
 The Datalogger pro can record data from up to 100 inverters and 10 sensor cards/boxes.

Fronius Datalogger easy
The Datalogger easy can only record data from the inverter and sensor card/box using Address 1.

The Fronius Datalogger easy/pro has
- two data interfaces for direct data transfer to the PC (RS232 and USB)
- one data interface for remote PC data queries via modem and telephone line (RS232)

Fronius Datalogger Web
The Datalogger Web can record data transmitted via the Internet from up to 100 inverters and 10 sensor cards/boxes.

The Fronius Datalogger Web has a 10/100 MBit Ethernet interface.

IMPORTANT! In the rest of this manual, the Datalogger pro, Datalogger easy and Datalogger Web are only referred to specifically if the information relates solely to that version. The term "Datalogger" is used on its own for information that relates to Datalogger pro, Datalogger easy and Datalogger Web.

Fronius Personal Display DL Box
The Fronius Personal Display DL Box can record data from up to 100 inverters and one sensor card/box.

Fronius Datamanager, Fronius Datamanager 2.0, Fronius Datamanager Box 2.0
Ethernet interface, digital inputs and outputs, antenna for WLAN, control via Modbus possible

For additional information on the Fronius Datamanager, please see the following operating instructions:

- 42,0426,0169,xx ... Fronius Datamanager for the inverters Fronius IG, Fronius IG Plus, Fronius IG Plus V, Fronius IG Plus Arc

- 42,0426,0173,xx ... Fronius Datamanager for the inverters Fronius Galvo, Fronius Symo, Fronius Eco, Fronius Primo

- 42,0426,0191,xx ... Fronius Datamanager 2.0 and Fronius Datamanager Box 2.0

Fronius Com Cards for connecting inverters to Fronius Solar Net

Fronius Com Cards provide the data link from a Fronius inverter to Fronius Solar Net and to the DATCOM components connected to it. In addition, Fronius Com Cards also offer galvanic isolation between the photovoltaic system and the inverters, providing additional safety. Fronius Com Cards must be installed in each inverter connected to Fronius Solar Net.

NOTE! Every Fronius inverter to be monitored using a datalogger requires a Fronius Com Card, even if the system only contains one Fronius inverter. In this case, the Fronius Com Card serves as a link between the internal network of the inverter and the Fronius Solar Net interface of the Datalogger.

Each Fronius Com Card is equipped with two RS-422 interfaces – an input and an output. The input is labeled "IN" and the output is labeled "OUT."

A Fronius Com Card is not required if
- the inverter has a Fronius Com Card function (e.g. Fronius Galvo, Fronius Symo, Fronius Eco, Fronius Primo)
- a Fronius Datamanager with Fronius Com Card function is available.

Example of system component networking in Fronius Solar Net
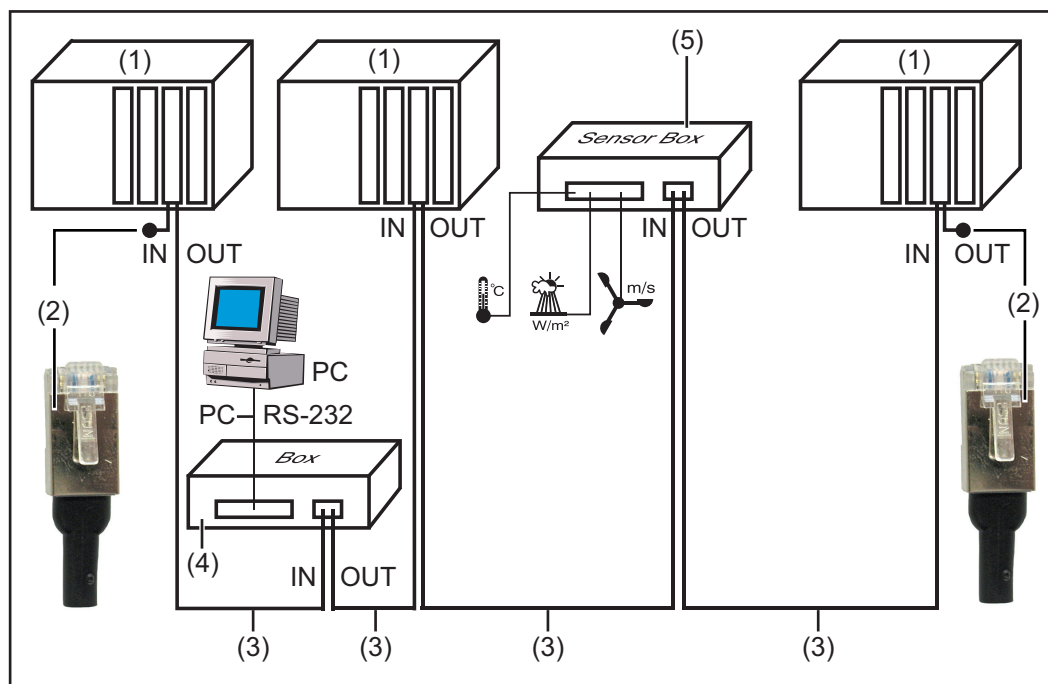
(1)   Inverter with Fronius Com Card or with integrated Com Card function
(2)   Termination Plugs
(3)   Data cable

(4)   Datalogger
(5)   Sensor box in external housing

NOTE! Potential differences can lead to malfunctions or in the worst case to the destruction of DATCOM components. DATCOM components must not be networked with one another across buildings. Photovoltaic systems with inverters and DATCOM components in different buildings require DATCOM systems that are installed separately.

General connections and displays

General

IMPORTANT! The following figure shows the connection area for DATCOM components using the Datalogger pro box as an example. Area (5) / (6) may differ depending on the DATCOM components.

General connections and displays
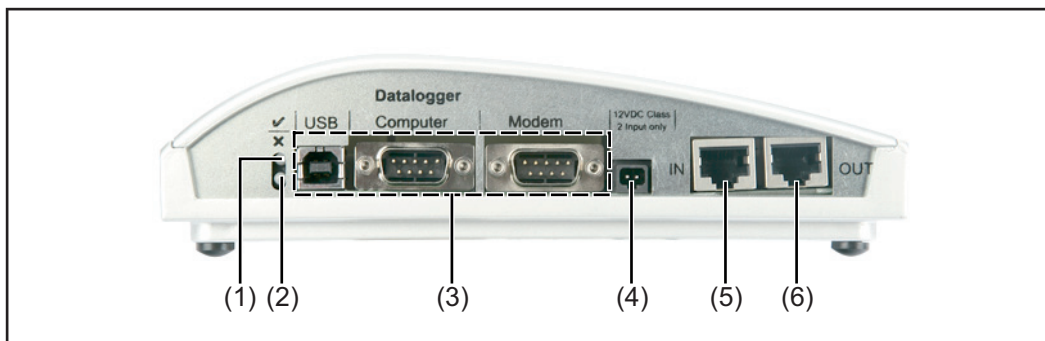
(1)   **Green status LED** ... lights up when there is sufficient power supply to the components. When the green LED is not lit, sufficient power supply should be provided (section "Mains supply").

(2)   **Red status LED** ... lights up continuously when there is sufficient supply, but an error has occurred in the data communication (e.g., two sensor cards with the same address).

Also lights up when the termination plug is not inserted correctly.

IMPORTANT! The "red status LED" may turn on briefly during operation. This does not indicate an error. The "red status LED" is also used for additional functions for various DATCOM components.

(3)   **Specific connections** ... depending on the functionality of the respective component.

(4)   **Mains supply connection socket ...** ...... used to connect the power pack to the power supply ("Mains supply" section).

(5)   **Data communication input "IN"**

(6)   **Data communication output "OUT"**

Mains supply to DATCOM components

General

Power is supplied to DATCOM components independently of the inverter. This ensures a power supply when there is no power from the photovoltaic modules. Power is supplied to DATCOM components via Fronius com cards or plug-in power packs. This is particularly important when using a Fronius Sensor Card because this ensures that the datalogger will be able to record all data even at night.

Power supply to DATCOM components via Fronius Com Card

Fronius Com Cards are responsible for powering DATCOM components. The integrated power supply of a Fronius Com Card is implemented via special contacts in the slot, which continue to supply power even when there is no power from the photovoltaic modules.

Fronius Com Cards version 1.7 and higher are equipped with a switchedmode power supply and can be used with several supply voltages (208 V / 220 V / 230 V / 240 V / 277 V).

⚠️ **WARNING!** An electric shock can be fatal. Danger of an electrical shock due to insufficient dimensioning for US-specific grid voltages. Fronius Com Cards up to version 1.4B (item number 4,070,769) cannot be used with the Fronius IG Plus USA.

Up to version 1.4B:
Item number 4,070,769

(1)   AC fuse
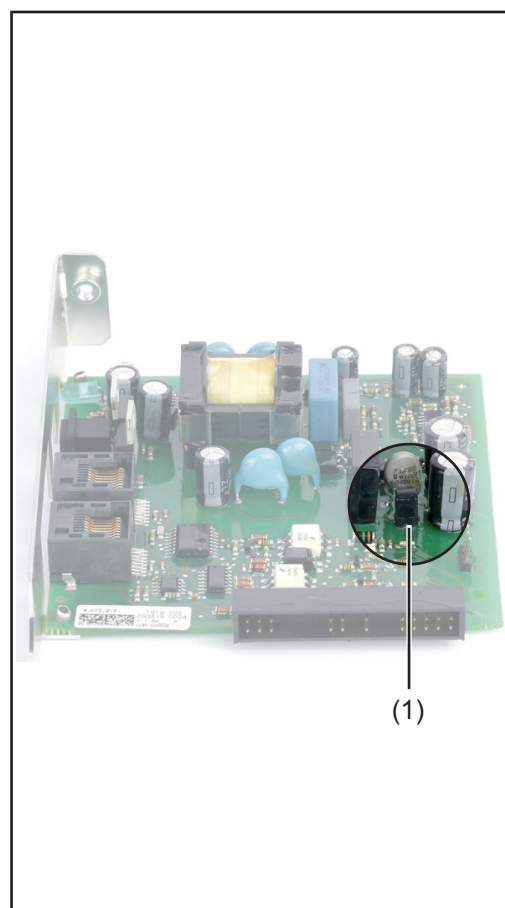
Version 1.7 and higher:
Item number 4,070,913

(1)   Jumper

One Fronius Com Card can supply three additional DATCOM components, or one additional DATCOM component if it is located in a Datalogger Web. Because the power is supplied via the data cable, the DATCOM components in an external housing are also supplied.

☞ **NOTE!** When using more than 12 inverters in a system, the power supply can be deactivated for individual Fronius Com Cards to decrease the power consumption for the DATCOM.

Deactivating Fronius Com Cards

Up to version 1.4B:
Item number 4,070,769
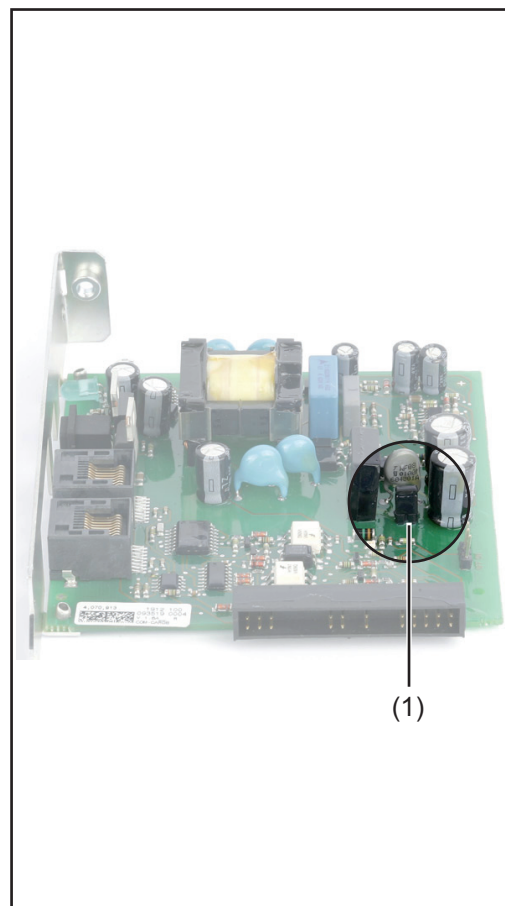
(1)   AC fuse

Version 1.7 and higher:
Item number 4,070,913

(1)   Jumper

1 This can be done by removing the AC fuse (MST 315 mA / 250 V) or the jumper for every second Fronius Com Card.

Checking the power supply via Fronius Com Cards

Once cabling and installation of system components is complete, including the network connection to all inverters, the green LED should light up on all Fronius Solar Net clients. If this is not the case:
- Check cable connections
- Check that all inverters are connected to the network

IMPORTANT! Once the power has been turned on, the Fronius Com Card requires approx. 10 s until the green LED lights up.

If the green LED is not lit for individual system components:
- Plug another power pack into the corresponding DATCOM component

Power pack

Each DATCOM component with external housing and the Fronius Com Card is equipped with a 12 V power pack connection socket.

NOTE! If a system only has one inverter but more than three DATCOM components, the Fronius Com Card in the inverter may not provide sufficient power for all DATCOM components. This means that the green LED would not light up on all DATCOM components. In this case, the additional power pack should be plugged into one of the DATCOM components on which no green LED lights up.

If there is a Fronius Datalogger Web or a Fronius Datamanager in Solar Net, the Fronius Com Card can only supply one additional DATCOM component, e.g., inverter + Fronius Datalogger Web/Fronius Datamanager + Fronius Sensor Box. One power pack can supply up to eight DATCOM components. No additional supply cables are needed for this. The data communication cable is used to provide power between components.

NOTE! The power pack available from Fronius was designed specifically for DATCOM components. Do not use any other power pack.

IMPORTANT! The scope of delivery for the power pack includes a power adapter for the following regions:
- Australia
- EU
- UK
- USA

Cabling

Fronius Solar Net clients	Inverters with Fronius Datamanager, Fronius Hybridmanager or Fronius Com Card, DAT-COM components with external housing or other DATCOM components will hereinafter be referred to as Fronius Solar Net clients.
Fronius Solar Net Client Cabling	The data connection for the Fronius Solar Net client is a 1:1 connection using 8-pin data cables and RJ-45 plugs. The overall line length in a Fronius Solar Net ring must not exceed 1000 m.
Requirements for the Solar Net Data Cables	Shielded CAT5 (new) and CAT5e (old) cables compliant with ISO 11801 and EN 50173 must be used for the Fronius Solar Net client cabling. Other cables are not permitted. **IMPORTANT!** Do not use ISO/IEC-11801 U/UTP cables!

Permitted cables:

- S/STP	- F/FTP	- F/UTP
- F/STP	- SF/FTP	- U/FTP
- S/FTP	- S/UTP	- U/STP

The shield must be crimped onto a CAT5-compatible shielded plug.

Due to the fact that the wires in Ethernet cables are twisted, you must make sure the twisted pairs of wires are assigned correctly for cabling in accordance with TIA/EIA-568B:

Fronius Solar Net contact		Pair no.	Color	
1	+12 V	3		white/orange line
2	GND	3		orange/white line or orange
3	TX+ IN, RX+ OUT	2		white/green line
4	RX+ IN, TX+ OUT	1		blue/white line or blue
5	RX- IN, TX- OUT	1		white/blue line
6	TX- IN, RX- OUT	2		green/white line or green
7	GND	4		white/brown line
8	+12 V	4		brown/white line or brown

Cabling compliant with TIA/EIA-568B

- Make sure that the wires are assigned correctly.
- When setting up an independent ground connection (e.g., in patch panels), make sure that the shield is grounded on one side of the cable only.

The following structured cabling standards must generally be observed:
- EN 50173-1 for Europe
- ISO/IEC 11801:2002 internationally
- TIA/EIA 568 for North America

Rules for use of copper cables apply.

Preassembled data cables

The following preassembled data cables are available from Fronius:
- CAT5 cable 1 m ... 43,0004,2435
- CAT5 cable 20 m ... 43,0004,2434
- CAT5 cable 60 m ... 43,0004,2436

The cables listed above are 8-pin, 1:1 LAN network cables, shielded and twisted, including RJ 45 plugs.

IMPORTANT! Data cables are not UV resistant. They should be protected from sunlight when laid outdoors.

Fronius Solar Net client cabling
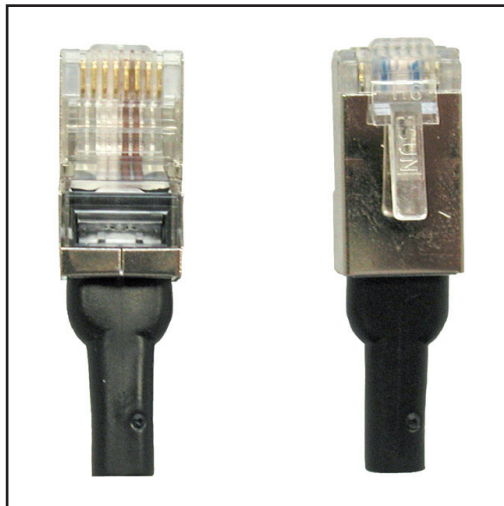
Termination Plugs

Two termination plugs are included in the scope of delivery of the Fronius Datalogger, and of each DATCOM component that has a Datalogger function.

Fronius Solar Net client cabling:

1 Following the cable connections described below, connect each "OUT" socket of the previous Fronius Solar Net client to the "IN" socket of the next client.

2 Connect a termination plug at the "IN" input of the first Solar Net client

3 Connect a termination plug at the "OUT" output of the last Solar Net client

IMPORTANT!
- When using the termination plugs, the total individual lengths of all connection cables must not exceed 1000 m.
- In systems with a total cable length of over 1000 m, the ring must be closed using a cable between the first and last client. The distance between two devices must not be more than 1000 m.

NOTE! All "IN" inputs and "OUT" outputs of Fronius Solar Net clients must be filled either with cable connections or termination plugs.

20
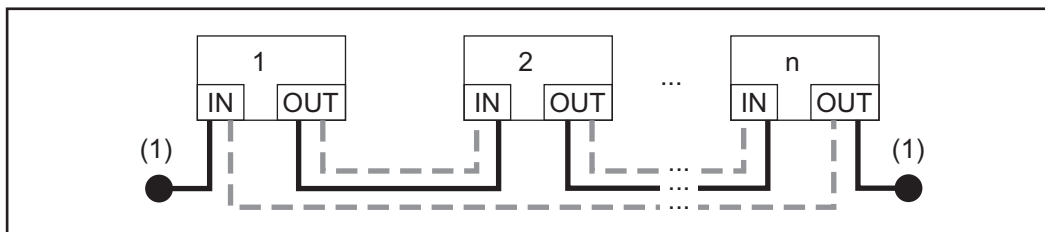
(1)   Termination Plugs

⎯⎯⎯   Cabling with termination plugs

⎯ ⎯ ⎯   Cabling without termination plugs

Further information on the cabling can be found in our guidelines for the DATCOM cabling:

http://www.fronius.com/QR-link/4204101938

Installing plug-in cards into inverters

General   Please see the operating instructions for the respective inverter for information regarding plug-in card installation.
Please note the safety and warning information in your inverter's operating instructions.

Safety

> ⚠️ **WARNING!** An electric shock can be fatal. Danger from grid voltage and DC voltage from solar modules.
> - The connection area should only be opened by a licensed electrician.
> - The separate power stage set area should only be disconnected from the connection area after first being disconnected from the grid power.
> - The separate power stage set area should only be opened by Fronius-trained service personnel.
>
> Before making any connections, make sure that the AC and DC sides are disconnected from the inverter, e.g.:
> - Switch off the AC automatic circuit breaker for the inverter
> - Cover solar modules
>
> Please observe the 5 safety rules.

> ⚠️ **WARNING!** An electric shock can be fatal. Danger from residual voltage from capacitors.
> You must wait until the capacitors have discharged.

👉 **NOTE!** Follow general ESD precautions when handling plug-in cards.

Defining system components in Fronius Solar Net

General
Fronius Solar Net will recognize different DATCOM components automatically (datalogger, sensor card, etc.). However, there is no automatic distinction between several identical DATCOM components. For this reason, each system component must have an individual number (address) to uniquely identify each system component in Fronius Solar Net (inverter or DATCOM component).

Fronius inverters give you the option to set the address directly on the display. However, some versions of Fronius IG are not equipped with a display. In this case, the address can be set via two keys.
DATCOM components are equipped with a special setting wheel for addresses. A small screwdriver is required for this.

Setting the address on the inverter
Please see the inverter operating instructions for setting the inverter address.

Setting the address on DATCOM components
Proceed as follows for all DATCOM components (whether card or box):

1 Turn the setting wheel (1) to the desired address using a screwdriver

(1)
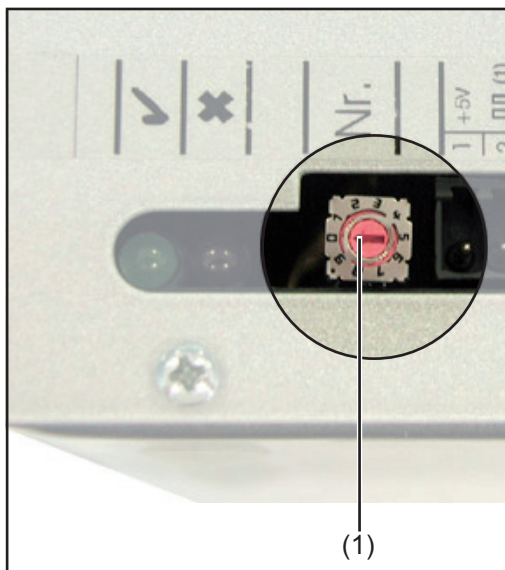
IMPORTANT! You do not have to set the address for the datalogger because there is always only one datalogger per system.

NOTE! Two identical devices should never have the same address in a network.

Example:
- Permitted:
  Fronius IG „Adress 1", Sensor Card „Adress 1"
- Not permitted:
  Fronius IG 20 „Adress 1", Fronius IG 30 „Adress 1"

Detailed description of DATCOM components

Available DAT-COM components

The following DATCOM components are currently available (as of: August 2016):
- Fronius Datalogger *
- Fronius Com Card *
- Fronius Sensor Card/Box *
- Fronius Public Display Card/Box *
- Fronius Interface Card/Box *
- Fronius Datalogger Web **
- Fronius String Control **
- Fronius Power Control Box **
- Fronius Power Control Card **
- Fronius Personal Display DL Box **
- Fronius Datamanager **
- Fronius Datamanager 2.0/Fronius Datamanager Box 2.0 **

* is described in these operating instructions

** is described in the device's operating instructions

Software
- Fronius Solar.access
- Fronius Solar.web

IMPORTANT! "Fronius Solar.access" is only dealt with briefly in these operating instructions. For a more detailed explanation of the functions of "Fronius Solar.access" and "Fronius Solar.web," please see the respective help files.

Overview

"Detailed description of DATCOM components" is composed of the following sections:
- Fronius Datalogger Card/Box
- Fronius Com Card
- Fronius Sensor Card/Box
- Fronius Public Display Card/Box
- Fronius Interface Card/Box
- Overcurrent and Under-voltage Shutdown
- Fronius Solar.web
- Fronius Solar.access software
- Technical Data

Fronius Datalogger Card / Box

General

The Datalogger is available as a card or box. It is required for networking several DATCOM components and inverters.

☞ **NOTE!** The entire network may not contain more than one Datalogger.

As the system component with a real-time clock, the Datalogger is responsible for system management. It continuously identifies which devices are in the system and regulates the data traffic between the individual system components.

The Datalogger also establishes PC connections for external data processing.

Versions
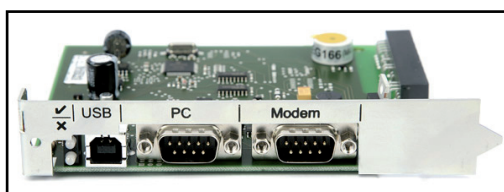
Datalogger Card
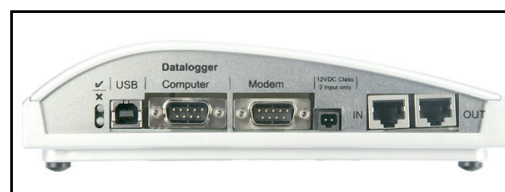
Datalogger Box
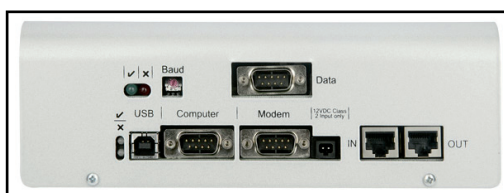
Datalogger & Interface

The datalogger is available in the following versions
- Datalogger pro as card and box
- Datalogger easy as card and box
- Datalogger & Interface as box
- Datalogger Web

☞ **NOTE!** Datalogger easy can only record data from the inverter and sensor card/ box using Address 1. The data from the remaining components is recorded without restriction.

In addition, Datalogger pro and Datalogger & Interface record data from all inverters and sensor cards/boxes in the system.

The Dataloggers listed above are no longer available (as of: August 2016).

Number of system components for Datalogger pro and Datalogger & Interface

Datalogger Pro and Datalogger & Interface can manage and store operating data for the following max. number of system components:
- 100 Fronius solar inverters (different models can be combined)
- 10 Fronius Sensor Cards / Boxes
- 10 Fronius Public Display Cards / Boxes
- 1 Fronius Interface Card / Box
- 200 Fronius String Controls
- 1 Fronius Power Control Card / Box

Connections

The datalogger is equipped with the following connections:
- two RS232 interfaces with 9-pin submin connections
- a USB port

The connections are used for data transfers
- one directly to the PC
- one for remote PC data queries via modem and telephone line

The Datalogger & Interface is equipped with an additional RS 232 interface that is used to transmit operating data in another format. For more information, please see section „Fronius Interface Card/Box."

Terminal assignment of connection cable between Datalogger Card and PC:

NOTE! The 9-pin cable may not exceed 20 m in length.

IMPORTANT! The interface cable is not included with the datalogger. A 1.8 m interface cable can be purchased from Fronius (43,0004,1692).
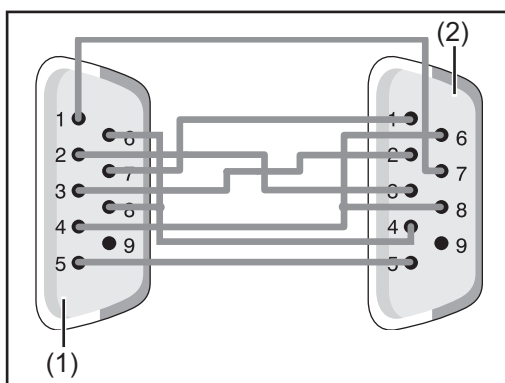
(1)   „Computer" interface on Datalogger
(2)   Serial interface on PC

Please use a USB A/B cable to connect the Datalogger Box to the PC.

Please use the cable that comes with the modem to connect the modem to the datalogger. For cable connection instructions, please see your modem's operating instructions.

Modem

Different modems can be connected to the Datalogger for reading system data via modem. All modems described in the following have been tested by Fronius. The "Fronius Solar.access" software enables easy configuration.

US Robotics (or 3COM Courier) "V.Everything 56 K"

NOTE! Automatic call acceptance must be activated on the modem in order to function correctly with the Datalogger.

To activate automatic call acceptance:
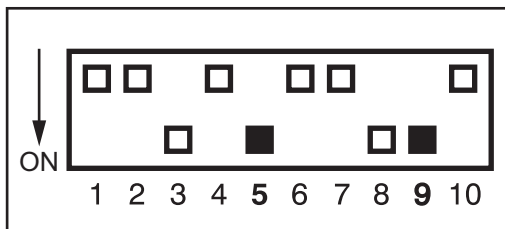
Before
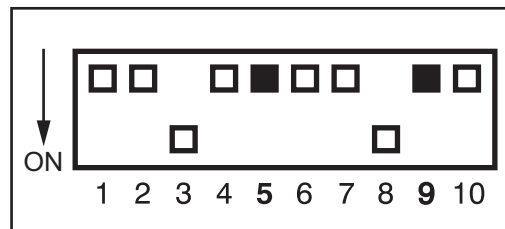
After

- Set DIP switches (5) and (9) underneath the modem to the "OFF" position
- The "AA" LED on the modem must light up

Other 56K modems
You can also use other 56K modems that support the V.90 standard. However, please note the following:
- Only the modems listed below are guaranteed to work correctly with the Datalogger
- When using other modems, you may be required to modify the initialization string (see section "Fronius Solar.access software")

SMS messages using the Datalogger

The Datalogger has SMS capability when connected to a modem. In this configuration, the Datalogger can send an SMS to up to 3 mobile phones. The Datalogger automatically logs in to the Fronius SMS center (SMSC). The Fronius SMS center then generates an SMS from the data.

The telephone number of the Fronius SMS center is 0043 7242 241 8120.

IMPORTANT! Always remember to enter the country code when entering a mobile number to ensure the Datalogger can send an SMS to that number.

Saving data

The datalogger saves the current data of all inverters and sensor cards / boxes integrated into the system at regular intervals. This interval can be set using the „Fronius Solar.access" software (range of 5 to 30 minutes).

The saved data can be downloaded for further processing using a PC.
The „Fronius Solar.access" software enables efficient and organized editing, archiving and display of data.

If the system only has one inverter, the datalogger can store data for a duration of up to 3 years (approx. 1000 days). However, the memory capacity is reduced accordingly depending on the number of inverters and/or sensor cards / boxes that are integrated into the system. If the Fronius Solar Net has 10 inverters and/or sensor cards / boxes, this duration is reduced to a tenth (=100 days).

IMPORTANT! Even when the maximum number of 100 inverters and 10 sensor cards is used, the storage duration of the datalogger is still 1000/ 110 = approximately 9 days (for a storage interval of 30 minutes).

Please note the following when decreasing the storage interval using the „Fronius Solar.access" software: If the interval is decreased from 30 to 15 minutes, for example, the data storage duration will be reduced by half (e.g., from 1000 days to 500 days).

IMPORTANT! When the datalogger memory is full, all data is not immediately deleted. The oldest data will be continually overwritten by the newest data. The latest data at the last PC download will therefore remain in the datalogger over the entire storage time.

Fronius Com Card

General
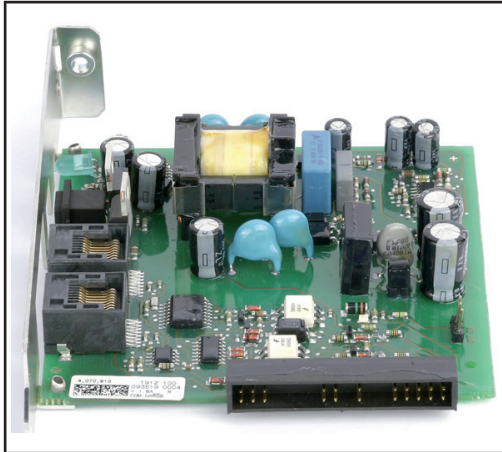
Fronius Com Cards provide the data link from an inverter to Fronius Solar Net and to the DATCOM components connected to it. For this reason, Fronius Com Cards are only available as plug-in cards.
One Fronius Com Card is required or each inverter.

Connections

The Fronius Com Card is equipped with two RS 422 interfaces for data transfer
- Data communication input „IN"
- Data communication output „OUT"

Fronius Com Card as the power supply

Fronius Com Cards are responsible for powering DATCOM components. Therefore, Fronius Com Cards are equipped with an integrated power supply. The integrated power supply of Fronius Com Cards is implemented via special contacts in the slot. These contacts continue to supply power even when there is no power from the photovoltaic modules. One Fronius Com Card with an integrated power supply can supply three additional DATCOM components, or one additional DATCOM component if it is located in a Datalogger Web.

IMPORTANT! Additional DATCOM components can be supplied even if they are located in a different inverter or in an external housing.

Each DATCOM component has an LED that lights up green when there is sufficient power. The green light for the Fronius Com Cards described here indicates that the integrated power supply is functioning.

NOTE! When a Fronius Com Card is inserted and the inverter is connected to the AC side, the green LED must light up after a max. of 10 s.

If this is not the case, please check for the following errors:
- The Fronius Com Card is not inserted correctly.
- The inverter is not correctly connected to the AC side.
- There is a short circuit in the connection cables to the other system components.
- The Fronius Com Card has to supply more than three DATCOM components.

If too many DATCOM components are being supplied by one Fronius Com Card, proceed as follows:
- Plug a power pack into the DATCOM component lacking the green LED.

NOTE! If a system only has one inverter but more than 3 DATCOM components, the Fronius Com Card in the inverter may not provide sufficient power for all DATCOM components. This means that the green LED would not light up on all DATCOM components. In this case, the additional power pack should be plugged into one of the DATCOM components with no green LED.

See also section „Power supply to DATCOM components."

Fronius Com Card power output

The output of a Fronius Com Card with an integrated power supply for additional DATCOM components is approx. a max. of 3 W (depending on the grid voltage).

NOTE! At particularly weak points in the grid (where the AC voltage is less than 200 V), one Fronius Com Card may only be able to supply two additional DATCOM components, or only one additional DATCOM component if it is located in a Datalogger Web.

Fronius Sensor Card / Box

General

The Fronius Sensor Card is available as a card or box. The Fronius Sensor Card / Box is equipped with inputs for a total of six measurement signals:

- Two analog inputs for two Pt1000 temperature sensors
- One analog input for analyzing a voltage signal from an irradiance sensor
- Two digital inputs, e.g., for a power consumption sensor and a wind speed sensor
- One analog input for analyzing a current signal (0 to 20 mA, 4 to 20 mA)

Connections
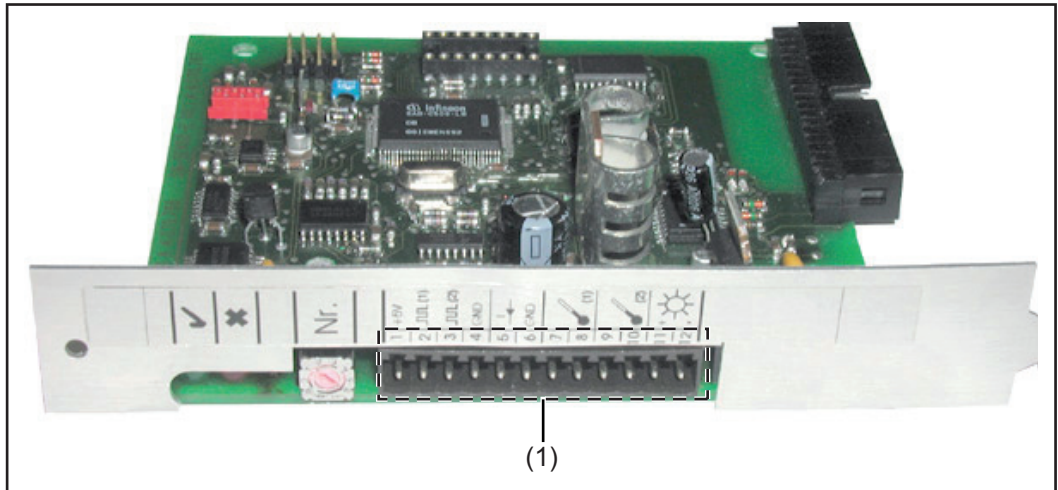
Fronius Sensor Card
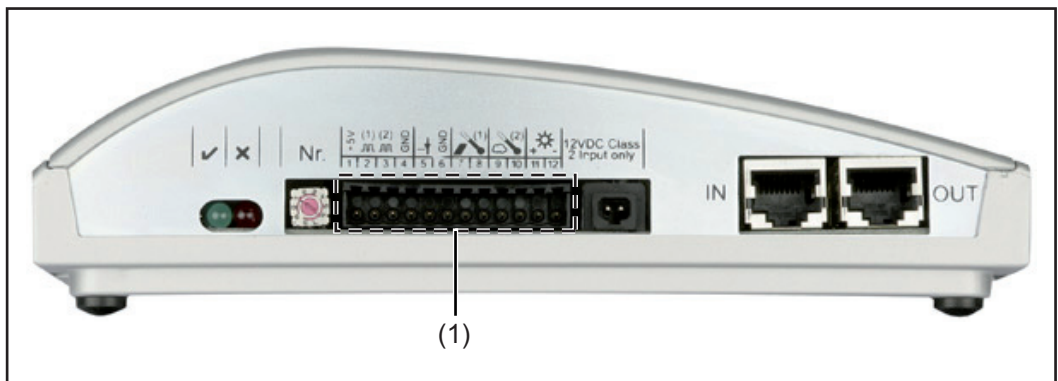
Fronius Sensor Box

(1)   Connection area for measurement signal inputs
       Screw-type terminals are used to connect the sensor wires

NOTE! The maximum cross section of the sensor wires at the screw terminals should not exceed 1.5 mm² (AWG 17).

Overview of measuring signal inputs

Fronius also offers ready-made sensors for measuring ambient temperature, module temperature, irradiance, wind speed and energy.

NOTE! Each measuring signal input must be activated and configured before use via the "Fronius Solar.access" software. Always connect an appropriate sensor to activated inputs. Otherwise, free inputs will also be recorded by the datalogger. The result is a misleading value for the parameter that is not based on a measurement signal.

When using a Fronius Datamanager with a software > V 3.3.1-x, the configuration no longer works via Fronius Solar.access – use Fronius Solar.service.
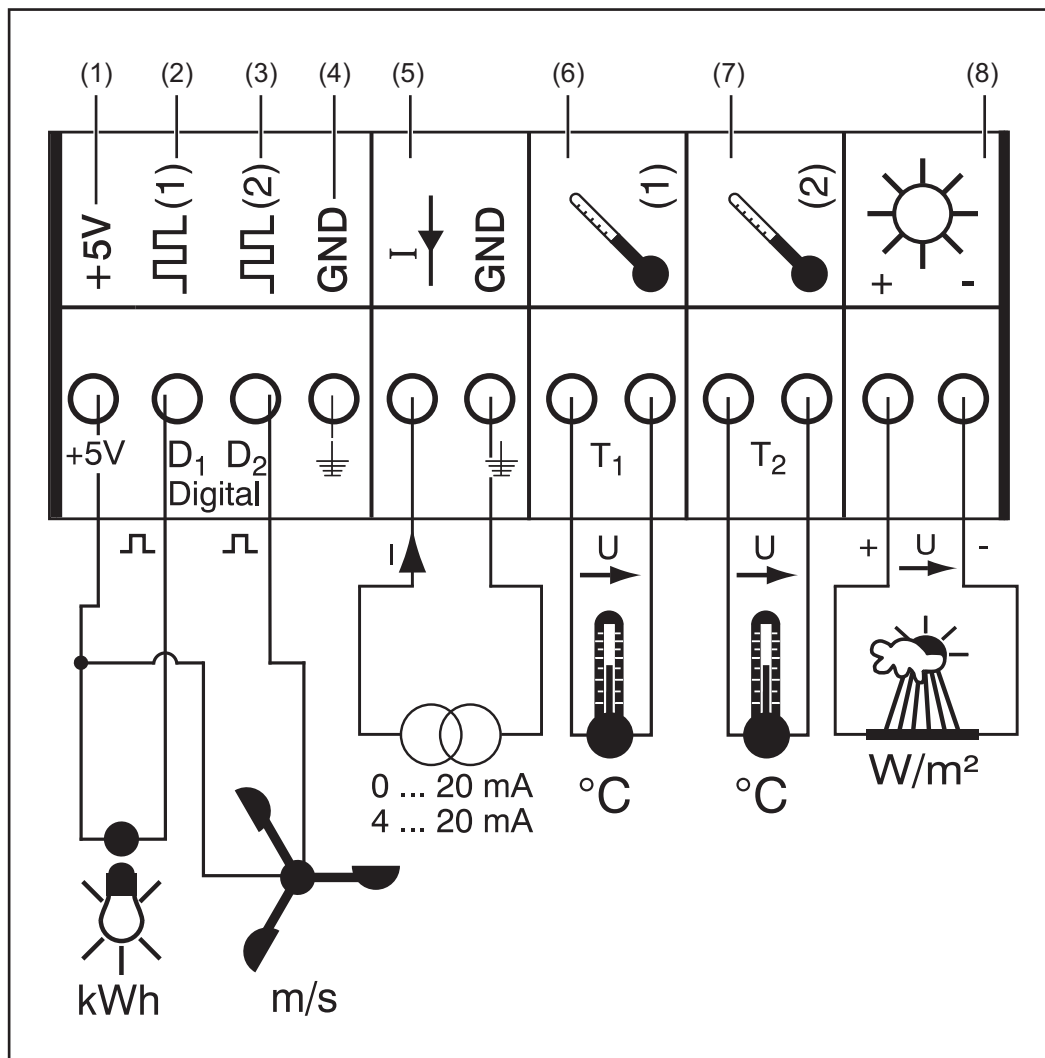
Calibration Factors for Fronius Wind Sensors:
km/h ... 1.45 Hz
m/s   ... 5.22 Hz

NOTE! For Fronius radiation sensors, the calibration factor is specified on the reverse of the sensor.

(1)	Power supply +5 V for digital channel
(2)	Digital input channel D1
(3)	Digital input channel D2
(4)	GND for digital channel
(5)	Analog input for current signal
(6)	Temperature measurement T1
(7)	Temperature measurement T2
(8)	Analog input for voltage signal

Digital inputs

Digital input channels (2) and (3) are used to analyze voltage pulses (e.g., from an electricity meter). Sensor data is analyzed using the "Fronius Solar.access" software.

When a sensor is connected to one of the digital channels (2) or (3), the signal can also be analyzed on the inverter display.
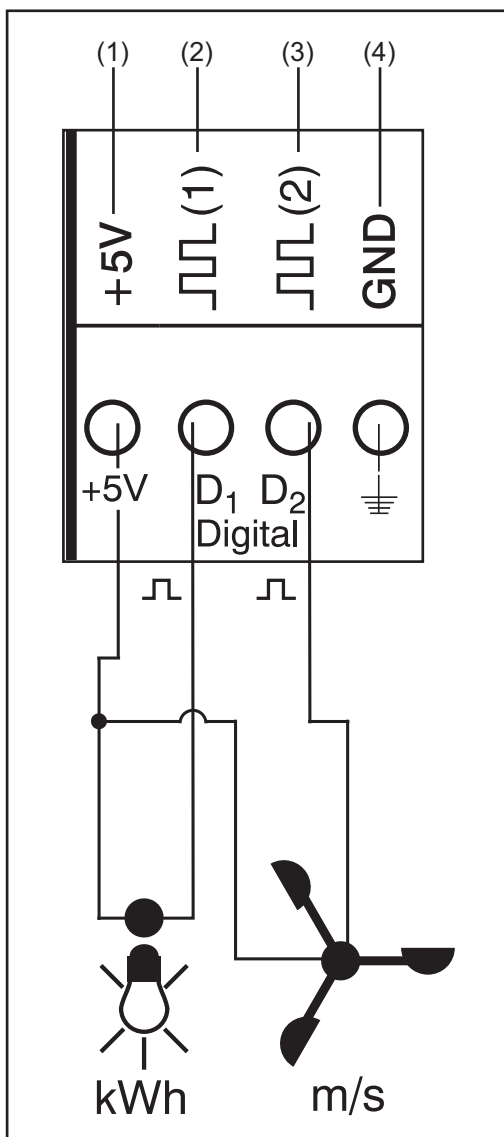
Channel assignment example:
- Channel D1 (2) for electricity meter
- Channel D2 (3) for wind speed sensor

Connect sensors without their own power supply to:
- D1 (2) or D2 (3)
- "+5 V" (1)

Connect sensors with their own power supply to:
- D1 (2) or D2 (3)
- "GND" (4)

Functional principle using electricity meter as an example:
- The Fronius Sensor Card/Box counts the pulses of the electricity meter
- The Fronius Sensor Card calculates the kWh being used from the number of pulses

For this purpose, you need to set the conversion factor using the "Fronius Solar.access" software (e.g. 10240 pulses = one kWh)

When using a Fronius Datamanager with a software > V 3.3.1-x, the configuration no longer works via Fronius Solar.access – use Fronius Solar.service.

Functional principle using wind speed sensor as an example:
- The Fronius Sensor Card counts the pulses of the wind speed sensor
- The Fronius Sensor Card calculates the wind speed from the number of pulses per second

For this purpose, you need to set the conversion factor using the "Fronius Solar.access" software (e.g. 7 pulses/second = one km/h)

Set up and commissioning first example:
Measuring the energy used via the electricity meter at channel D1 (2)

| 1 | Install electricity meter on the corresponding AC lines |
| 2 | Connect the pulse output of the electricity meter to channel D1 (2) and "+5 V" (1) |

3 Activate channel D1 (2) via the "Fronius Solar.access" software
- Assign desired channel name (e.g., "Power Consumption")
- Select unit (e.g., "kWh")
- Enter conversion factor

When using a Fronius Datamanager with a software > V 3.3.1-x, the configuration no longer works via Fronius Solar.access – use Fronius Solar.service.

Set up and commissioning second example:
Measuring the wind speed via the wind speed sensor at channel D2 (3)

1 Install wind speed sensor in the proper position

2 Connect the wind speed sensor to channel D2 (3) and "+5 V" (1) or "GND" (4)

3 Activate channel D2 (3) via the "Fronius Solar.access" software
- Assign desired channel name (e.g., "Wind Speed")
- Select unit (e.g., "km/h")
- Enter conversion factor

NOTE! The length of the sensor cable should not exceed 30 m so that measurement results are not distorted.

Analog input for current signal

The analog input (5) is used to connect a sensor using a standard 20 mA current interface. Analysis can only take place using the "Fronius Solar.access" software.
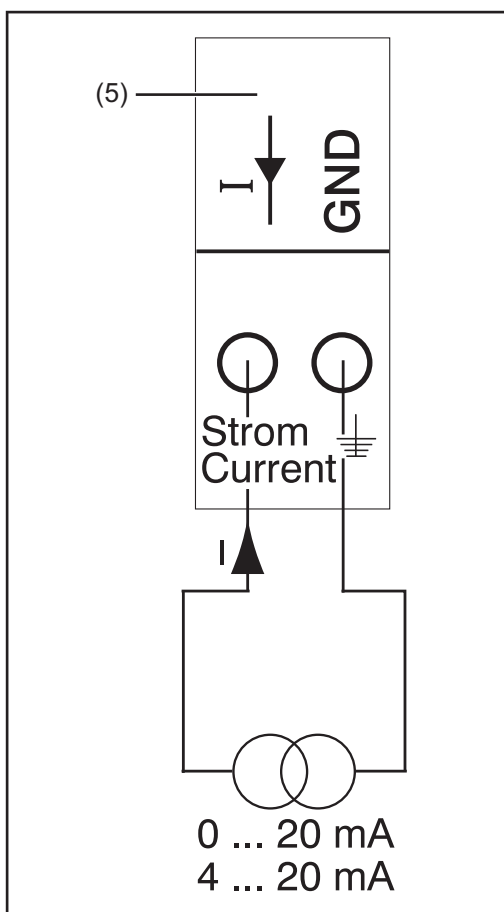
Channel assignment example:
- Connecting a humidity sensor with a current signal to the analog input (5)

Functional principle:
- A humidity sensor with a current signal is an active sensor that sends out current that rises as the humidity increases.
- The Fronius Sensor Card measures the current between both connections of the analog input (5).
- The humidity level is derived directly from the measured current

Parameters:
The Fronius Sensor Card/Box has two measuring ranges at the analog input (5).
Select the measuring range using the "Fronius Solar.access" software:
- Measuring range 1 ... 0 to 20 mA
- Measuring range 2 ... 4 to 20 mA

IMPORTANT! Enter the conversion factor using the "Fronius Solar.access" software so that the Fronius Sensor Card/Box can convert from mA to the desired unit.
The conversion factor depends on the sensor and can be obtained from the respective sensor datasheet.

When using a Fronius Datamanager with a software > V 3.3.1-x, the configuration no longer works via Fronius Solar.access – use Fronius Solar.service.

Set up and commissioning example:
Measuring the humidity via the humidity sensor at the analog input (5)

1	Install the humidity sensor in a suitable position
2	Connect humidity sensor to the analog input (5)
3	Activate the analog input (5) via the "Fronius Solar.access" software

   - Assign channel name (e.g., "Humidity")
   - Select unit (e.g., "%")
   - Set measuring range
   - Enter conversion factor

Temperature channels

Channels T1 (6) and T2 (7) are used for temperature measurements using Pt1000 temperature sensors.

☞ **NOTE!** Pt100 temperature sensors are not permitted.

The analysis can take place on the inverter display as well as via the "Fronius Solar.access" software. Channel T1 is used for the solar module temperature and channel T2 is used for the ambient temperature.
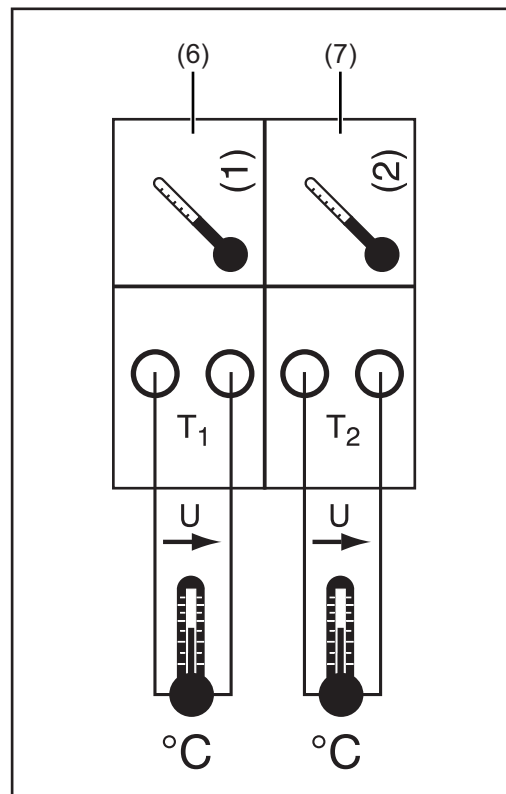
Channel assignment example:
- Channel T1 (6) for solar module temperature
- Channel T2 (7) for outside temperature

Functional principle:
- Temperature sensors consist of resistors that change their resistance value in response to changes in temperature
- The Fronius Sensor Card/Box measures the voltage drop at the resistor when a constant current is flowing through the resistor
- The Fronius Sensor Card calculates the temperature from this voltage drop

Set-up and commissioning example:
Temperature measurement at solar modules using Pt1000 temperature sensor at connection T1 (15)

| 1 | Attach Pt1000 temperature sensor to solar module |

| 2 | Connect Pt1000 temperature sensor to channel T1 (6) |

| 3 | Activate channel T1 (6) via the "Fronius Solar.access" software |

-    Assign desired channel name (e.g., "Module Temperature")
-    Select unit (°C/°F)

When using a Fronius Datamanager with software > V 3.3.1-x, Fronius Solar.access no longer works – use Fronius Solar Service.

NOTE! The length of the sensor cable should not exceed 20 m so that measurement results are not distorted.

Analog input for voltage signal

The analog input (8) is used to analyze a voltage signal from an irradiance sensor. The analysis can take place on the inverter display as well as via the "Fronius Solar.access" software.

When using a Fronius Datamanager with software > V 3.3.1-x, Fronius Solar.access no longer works – use Fronius Solar Service.
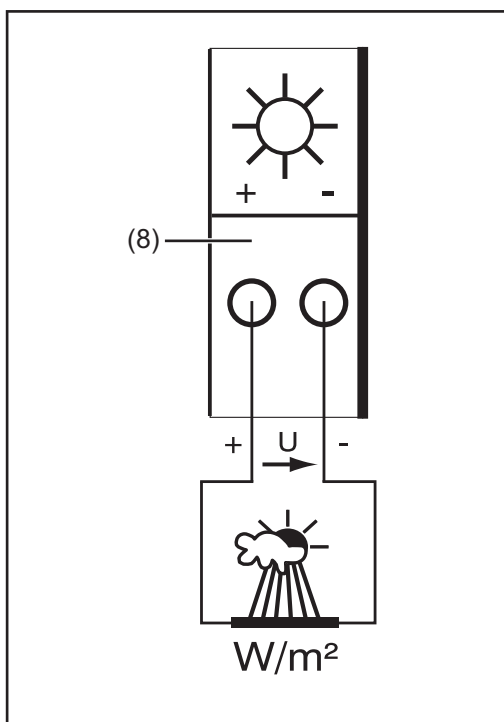
Channel assignment example:
-    Irradiance sensor at solar module level

Functional principle:
-    An irradiance sensor with a voltage signal is an active sensor that outputs voltage that rises as the irradiance increases.
-    The Fronius Sensor Card/Box measures the voltage between both connections of the analog input (8).
-    The irradiance level is derived directly from the measured voltage.

Parameters:
The Fronius Sensor Card has three measuring ranges at the analog input (8).
Select the measuring range using the "Solar.access" software:
-    Measuring range 1 ... 0 to 100 mV
-    Measuring range 2 ... 0 to 200 mV
-    Measuring range 3 ... 0 to 1000 mV

IMPORTANT! Enter the conversion factor using the "Fronius Solar.access" software so that the Fronius Sensor Card can convert from mV to the desired unit. The conversion factor depends on the irradiance sensor and is specified in the sensor datasheet (e.g., 70 mV corresponds to 1000 W/m2).

When using a Fronius Datamanager with software > V 3.3.1-x, Fronius Solar.access no longer works – use Fronius Solar Service.

Set-up and commissioning example:
Sunlight measurement at solar modules using irradiance sensor at analog input (8)

1	Attach irradiance sensor parallel to the solar modules
2	Connect irradiance sensor to the analog input (8)
3	Activate the analog input (8) via the "Fronius Solar.access" software

- Assign desired channel name (e.g., "Solar Irradiation")
- Set measuring range
- Enter conversion factor

NOTE! The length of the sensor cable should not exceed 30 m so that measurement results are not distorted.

Fronius Public Display Card / Box

General

The Fronius Public Display Card is available as a card or box. The Fronius Public Display Card/Box is used to connect different large displays. The general connections have the same function as the other DATCOM components (setting wheel for the address, socket for power supply, LEDs).
Up to 10 Fronius Public Display Cards/Boxes can be integrated into one photovoltaic system. This means that one system can have up to 10 different large displays.

For the operation of the Fronius Public Display Card/Box in combination with the inverters Fronius Galvo, Fronius Symo, Fronius Primo and Fronius Eco, the Fronius Public Display Card/Box must have a software version of 1.00.11 or above.

Connections

The Fronius Public Display Card / Box is equipped with an RS 232 interface for a 9-pin submin plug. The 9-pin submin plug is used to connect a large display.

Fronius Public Display Card
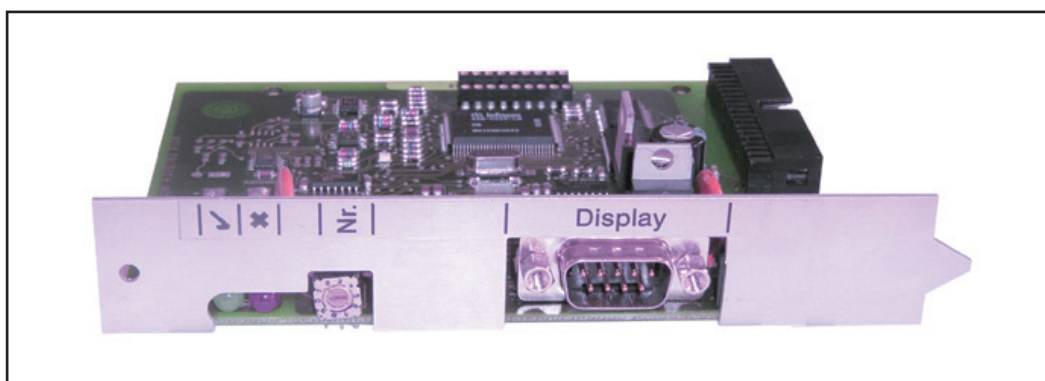
Fronius Public Display Box
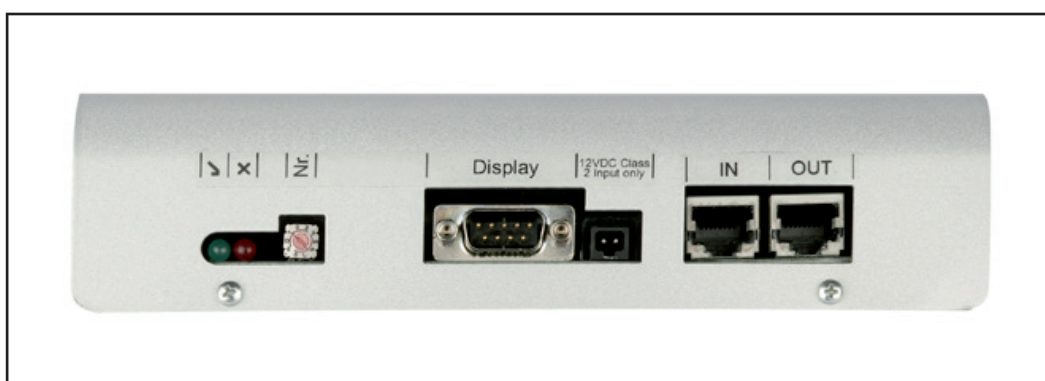
Configuring the Fronius Public Display Card/Box

The Fronius Public Display Card/Box can be configured for two different display types using the "Fronius Solar.access" software.

When using a Fronius Datamanager with a software > V 3.3.1-x, the configuration no longer works via Fronius Solar.access – use Fronius Solar.service.

Display type A:
The "Display type A" setting is used for alphanumeric Fronius displays or Rico displays connected to the Fronius Display Card/Box.
The Fronius Public Display Card/Box is programmed to recognize the display type automatically. No other settings are required.

IMPORTANT! If the display is to show the irradiance, solar module temperature or outside temperature values, the corresponding sensors must be connected to the Fronius Sensor Card/Box with address 1.

Additional, optional settings may also be made using "Fronius Solar.access." Detailed information on settings options can be found in the section "Fronius Solar.access software."

IMPORTANT! The Fronius Public Display Card is already integrated into the Fronius Public Display, which significantly reduces the cabling effort.

Display type B:
When the "Display type B" setting is selected, the Fronius Public Display Card/Box sends a defined data record via the serial interface.

Interface parameters:
- 2400 baud
- 8 data bits
- 1 stop bit
- No parity
- Handshake off

The data record contains the following values:
- Total energy (kWh)
- Daily energy (kWh)
- Present output (kW)
- Irradiation (W/m²) .... only available when a corresponding sensor is connected to the Fronius Sensor Card/Box with address 1.

The data record output corresponds to the following format:
- Total Energy: 6-digit, no decimal places, in kWh
- Daily Energy: 4-digit, no decimal places, in kWh
- Present output: 4-digit, two before and two after the decimal point, in kW (the decimal point is not transferred since it is always in the same place)
- Irradiation: 4-digit, no decimal places, in W/m²

The data record is made up of ASCII characters (97 bytes) and is structured as follows:
- Start: #
- Total Energy: 6 bytes
- Daily Energy: 4 bytes
- Output: 4 bytes
- Empty field: 16 bytes, 20 hex
- Empty field: 2 bytes, 30 hex
- Irradiation: 4 bytes
- Empty field: 2 bytes, 30 hex
- Empty field: 56 bytes, 20 hex
- End: CR LF

Leading zeros are not suppressed.

IMPORTANT! For "Irradiation": If no corresponding sensor is available, then this value will be treated as a "0 W/m²" measured valued.

Fronius Interface Card / Box

General

The Fronius Interface Card / Box is available as a card or box and is used to transmit various system data in a freely accessible format. The communication interface is RS 232 for a 9-pin submin plug.

The following can be integrated into one system:
- One Fronius Interface Card / Box or
- One Datalogger & Interface

Transferable data (serial interface)

Inverter: Pac, Uac, Iac, fac, Udc, Idc, Eac

Sensors: The values from temperature, irradiance and digital channels of all sensor cards / boxes in the system

For a detailed protocol description, please go to www.fronius.com.

The baud rate can be set via the „Baud" adjuster on the device:

Adjuster setting	Speed (baud)
0	2400
1	4800
2	9600
3	14400
4	19200

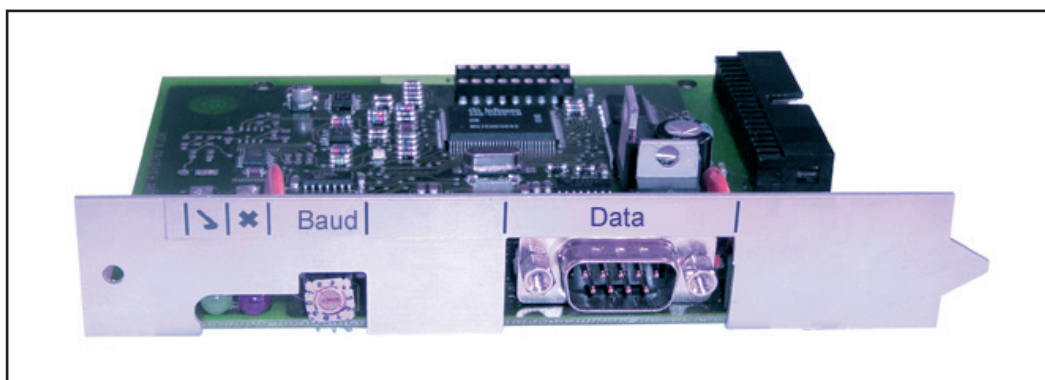**IMPORTANT!** A setting of 5 - 9 on the „Baud" adjuster means a speed of 2400 baud.
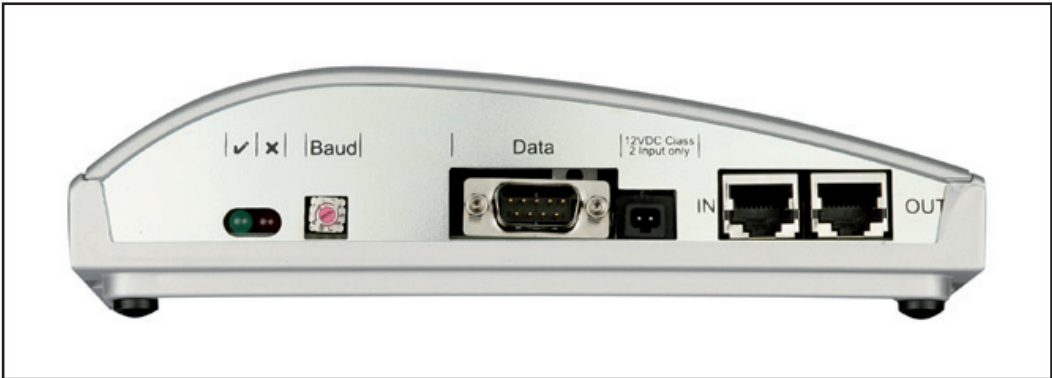
RS 232 pin assignment
2: RxD
3: TxD
5: GND

Interface Card

Interface Box

Overcurrent and Under-voltage Shutdown

General

The Fronius Com Card, Fronius Sensor Box, Fronius Public Display Box and Fronius Interface Box have a shutdown function that interrupts the energy supply in Fronius Solar Net:
- in the event of over-current, e.g., in case of a short circuit
- in the event of under-voltage

Functional principle

The over-current and under-voltage shutdown function does not depend on the direction of the current flow. If one of the DATCOM components previously mentioned measures a current flow > 3 A or a voltage < 7 V in Fronius Solar Net, the energy supply in the Solar Net is interrupted.
The energy supply can be restored automatically or manually.

Safety

⚠️ **WARNING!** An electric shock can be fatal. Danger from DC voltage from solar modules.
- Make sure that the input and output sides in front of the device are not charged before making any connections or settings to the inverter.
- Any and all connections and settings should only be carried out by qualified electricians.
- Follow the safety rules in the inverter operating instructions.

Restoring the energy supply automatically (factory setting)

The Fronius Com Card, Fronius Sensor Box, Fronius Public Display Box and Fronius Interface Box are set at the factory to automatically restore the power supply. The jumper is set to the „Auto" position.

- After a shutdown due to over-current or under-voltage, the DATCOM component tries to restore the energy supply in the Fronius Solar Net every 5 seconds so long as there is a short circuit, for example.
- The „Power OK" LED flashes briefly every 5 seconds.
- When the power supply is reestablished the „Power OK" LED lights up green.

If there is no short circuit and the „Power OK" LED does not light, then the shutdown is due to under-voltage. In this case, the DATCOM components require an external energy supply via an external power supply unit.

Restoring the energy supply manually

The manual restoration option for the energy supply helps the installer during Fronius Solar Net troubleshooting.

Jumper positions:

Auto	Automatic restoration of the energy supply (factory setting)
Man	Manual restoration of the energy supply

Jumper at „Man" pos. and „Power OK"
LED on Fronius Com Card
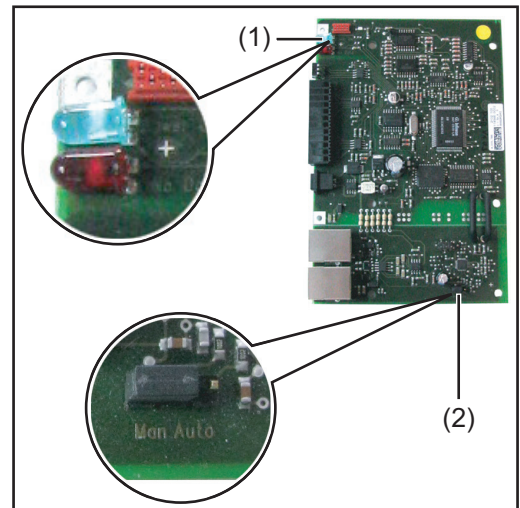
Jumper at „Man" pos. and „Power OK"
LED on Fronius Sensor Box PC board

Jumper at „Man" pos. and „Power OK"
LED on Fronius Public Display Box /
Fronius Interface Box PC board

Open the external housing of the DATCOM component to set the jumper for the Fronius Sensor Box, Fronius Public Display Box and Fronius Interface Box.

The jumper (2) must be set to the „Man" position for manual restoration of the energy supply.

-       After a shutdown due to over-current or under-voltage, there are 2 options available to restore the energy supply manually:

   a)   Unplug and then plug in data communication cables from the RJ 45 IN and OUT connections; if available, unplug the cable for an external power supply

   b)   Cover the „Power OK" LED (1) for 0.5 - max. 2 seconds (e.g., with your finger)

In order for the „Power OK" LED (1) to detect the darkness, certain ambient lighting conditions are required. If the lighting conditions on site are insufficient, the LED will not react. In this case, shine a flashlight into the LED and then cover it to darken it, for example.

-       When the power supply is reestablished the „Power OK" LED (1) lights up green.

If there is no short circuit and the „Power OK" LED (1) does not light, then the shutdown is due to under-voltage. In this case, the DATCOM components require an external energy supply via an external power supply unit.

Fronius Solar.web

General

The "Fronius Solar.web" Internet application can be used to
- monitor a photovoltaic system free-of-charge,
- register the guarantee for a Fronius device,
- find operating instructions.

Fronius Solar.web is available as follows:
- as an Internet application
  www.solarweb.com
- as a free app for Android, Apple and Blackberry
- in the PRO version as a paid app for Android and Apple.

Further information on Fronius Solar.web can be found in the online help available there.

Call up Fronius Solar.web

www.solarweb.com

Fronius Solar.web start page

Fronius Solar.service

General

Fronius Solar.service displays various information about your photovoltaic system. This information helps the installer and technical support during troubleshooting.

Fronius Solar.Service is available on the Fronius homepage:
www.fronius.com
Solar Energy – Info & Support – Software Downloads – Software – Fronius Solar.Service 1.2

Fronius Solar.service operating instructions

For additional information on the Fronius Solar.service, please see the operating instructions:

http://www.fronius.com/QR-link/4204101935

"Fronius Solar.access" software

General

The Fronius Solar.access software is designed for photovoltaic systems with the following inverters:
- Fronius IG
- Fronius IG Plus, Fronius IG Plus V, Fronius IG Plus A
- Fronius IG-TL
- Fronius Agilo

Fronius Solar.access forms the user interface to your photovoltaic system and communicates with your photovoltaic system as follows
- via Ethernet through Datalogger Web
- via USB, RS 232 or an analog modem through Datalogger easy/pro

Fronius Solar.access can be used for the following for your photovoltaic system
- It can change parameters for all inverters and DATCOM components
- It can display current data for all inverters, sensors and string controls
- It can download saved archived data from the datalogger and display it graphically

When using a Fronius Datamanager with software > V 3.3.1-x, Fronius SolarAccess can only be used with restrictions:
Settings for the components and the data manager are not possible.

Properties
- Graphical analysis of archived data
- Graphical display of present data:
    Total view
    Comparison view
    Inverter detailed view
    String Control
    Sensor view
    Component view
- Total view of all systems/system comparison
- Automatic download
- Export function of archived data to Excel files
- It can send an energy report automatically as an Excel file via e-mail
- It can send an energy comparison/service messages via e-mail
- Forward a data download to Fronius Solar.web
- Configuration for inverters (the inverters Fronius Galvo, Fronius Symo, Fronius Primo and Fronius Eco are excluded)
- DATCOM component
- Configuration for sensors (exception: systems with Datamanager)

System require-ments

Min. requirements:
- 600 MB free hard disk space
- CD-ROM drive
- Datalogger Web: Ethernet connection
- Datalogger easy/pro: USB, RS 232 or analog modem
- MS Windows compatible mouse

Suitable operating systems:
- Microsoft Windows XP
- Microsoft Windows Vista

Recommended requirements:
- PC with Pentium 4 (1.3 GHz)
- 1024 MB RAM

Installing the modem

An analog modem must be installed in the PC in order to be able to access your datalogger remotely. If you already have an analog modem installed in your PC, you can skip this step.

NOTE! If „Fronius Solar.access" is already installed, proceed as follows:

|1| Close „Fronius Solar.access"

|2| Click on the the Solar Net Server icon (1) using the right mouse button and close the Solar Net server

IMPORTANT! Once you have installed a modem, you will be able to use all „Fronius Solar.access" functions - even from a remote location.

Installing Fronius Solar.access

"Fronius Solar.access" installation is mostly automatic and requires no special knowledge.

|1| Close all applications and programs on your PC

|2| Insert the CD-ROM that came with the datalogger into the drive *

|3| Select the "Fronius Solar.access" folder *

|4| Start the "setup.exe" file contained therein *

|5| Follow the program steps of the installation software (Wizard)

The selection window appears for the required database

|6| Select the recommended database from the selection menu

*   "Fronius Solar.access" is available on the Fronius homepage:
www.fronius.com – Solar Energy – Info & Support – Software Downloads – Software – Fronius Solar.access

Establishing datalogger/PC connection

|1| Connect the datalogger to a serial or USB interface on your PC

IMPORTANT! Connecting the datalogger via the USB interface first requires the installation of the USB driver.
- When the datalogger is connected via the USB interface, the "New Hardware Found" display window appears.
- Follow the wizard instructions to search for the new hardware.
- Download the USB driver from the Fronius homepage: www.fronius.com – Solar Energy – Info & Support – Software Downloads – Driver – USB driver for Fronius Datalogger easy/pro & Fronius Update Package

2 Enter the path for driver installation and follow the wizard instructions.

The USB interface is set up and the "Fronius Solar.access" software is ready for use.

Starting Fronius Solar.access

"Fronius Solar.access" is started as follows:
- "Start\All Programs\Fronius Product Group\Fronius Solar.access"

You can also start "Fronius Solar.access" from the desktop.

Set up photovoltaic system

1 To create a new photovoltaic system, open the "Administration\Systems\Create System" menu

2 Fill out all fields marked with a *

Datalogger Web/Fronius Datamanager:

3 Set connection type as "Ethernet"

$\boxed{4}$ The following settings should be made for Datalogger Web/Fronius Datamanager in the "IP Address" field:
-    IP address (e.g., "192.168.1.180")
-    or host name + domain name (e.g., "samplesystem.fronius.com")

Datalogger easy/pro – USB:

$\boxed{3}$ Connect Datalogger

$\boxed{4}$ Install USB driver software

$\boxed{5}$ Set connection type as "USB"

$\boxed{6}$ Select the Datalogger in the "USB Connections" field

Datalogger easy/pro – RS 232:

$\boxed{3}$ Insert the Datalogger into the serial interface

$\boxed{4}$ Select the right COM port (e.g., COM1, COM2, COM3)

Datalogger easy/pro – Modem:

$\boxed{3}$ Enter the phone number of the photovoltaic system

$\boxed{4}$ Select modem – must be installed on PC

Connecting to the system

$\boxed{1}$ Open the „PV Systems" menu and select one of the photovoltaic systems

$\boxed{2}$ Click on the corresponding photovoltaic system, the connection to the PV system will take place automatically

Exception: When using a modem, the PV system connection must take place manually.

Help

For a more detailed explanation of the functions of „Fronius Solar.access," please see the respective help in the software.

Technical Data

Datalogger Card / Box

Datalogger Card / Box

Memory capacity	540 kByte
Memory duration	approx. 1000 days
(1 Fronius IG or Fronius IG Plus, memory cycle 30 minutes)	
Supply voltage	12 V DC
Power consumption	0,4 W
- With wireless transceiver box:	max. 0,6 W
Box degree of protection	IP 20
Dimensions (l x w x h)	
- Datalogger Card:	140 x 100 x 26 mm
- Datalogger Box:	190 x 115 x 53 mm

Datalogger Card interfaces	Socket:	Description:
- USB:	USB	„USB"
- RS 232:	9-pin submin	„PC"
- RS 232:	9-pin submin	„Modem"
Datalogger Box interfaces		
- USB:	USB	„USB"
- RS 232:	9-pin submin	„PC"
- RS 232:	9-pin submin	„Modem"
- RS 422:	RJ 45	„IN"
- RS 422:	RJ 45	„OUT"

Datalogger & Interface

Datalogger & Interface (Box)

Memory capacity	540 kByte
Memory duration	approx. 1000 days
(1 Fronius IG or Fronius IG Plus, memory cycle 30 minutes)	
Supply voltage	12 V DC
Power consumption	2.8 W
Box degree of protection	IP 20
Dimensions (l x w x h)	210 x 110 x 72 mm

Interfaces	Socket:	Description:
- USB:	USB	„USB"
- RS 232:	9-pin submin	„PC"
- RS 232:	9-pin submin	„Modem"
- RS 232:	9-pin submin	„Data"
- RS 422:	RJ 45	„IN"
- RS 422:	RJ 45	„OUT"

Sensor Card / Box

Sensor Card / Box

Supply voltage	12 V DC
Power consumption - Sensor card: - Sensor box:	 1.1 W 1.3 W
Box degree of protection	IP 20
Dimensions (l x w x h) - Sensor card: - Sensor box:	 140 x 100 x 26 mm 197 x 110 x 57 mm

Interfaces (only sensor box)	Socket:	Description:
- RS 422:	RJ 45	„IN"
- RS 422:	RJ 45	„OUT"

Channels T1, T2	
- Sensors:	PT1000
- Measuring range:	-25°C...75°C; -13°F...167°F
- Accuracy:	0,5°C; 0,8°F
- Resolution:	1 °C; 1 °F

Irradiance channel	
- Measuring range:	0...100 mV
	0...200 mV
	0...1 V
- Accuracy:	3 %

Channels D1, D2	
- Max. voltage level	5.5 V
- Max. frequency	2500 Hz
- Min. pulse duration	250 us
- Switching threshold „OFF" („LOW"):	0...0.5 V
- Switching threshold „ON" („HIGH"):	3...5.5 V

Current input channel	
- Measuring range:	0...20 mA
	4...20 mA
- Accuracy:	5%

Com Card

Com card up to version 1.4B (4,070,769)

Supply voltage	230 V (+10% / -15%)
Dimensions (l x w x h) - Plug-in card only:	 140 x 100 x 33 mm

Interfaces	Socket:	Description:
- RS 422:	RJ 45	„IN"
- RS 422:	RJ 45	„OUT"

Com card version 1.7 and higher (4,070,913)

Supply voltage	208 V / 220 V / 230 V / 240 V / 277 V (+10% / -15%)	
Dimensions (l x w x h)		
- Plug-in card only:	140 x 100 x 28 mm	
Interfaces	Socket:	Description:
- RS 422:	RJ 45	„IN"
- RS 422:	RJ 45	„OUT"

Public Display Card / Box

Public Display Card / Box

Supply voltage	12 V DC	
Power consumption		
- Public display card:	1.2 W	
- Public display box:	1.6 W	
Box degree of protection	IP 20	
Dimensions (l x w x h)		
- Public display card:	140 x 100 x 26 mm	
- Public display box:	197 x 110 x 57 mm	
Interfaces	Socket:	Description:
- RS 232	9-pin submin	„Display"
- Public display Box additional:		
RS 422:	RJ 45	„IN"
RS 422:	RJ 45	„OUT"

Interface Card / Box

Interface Card / Box

Supply voltage	12 V DC	
Power consumption		
- Interface card:	1.2 W	
- Interface box:	1.6 W	
Box degree of protection	IP 20	
Interface box ambient conditions	0°C - +50°C	
	+32°F - +122°F	
Dimensions (l x w x h)		
- Interface card:	140 x 100 x 26 mm	
- Interface box:	197 x 110 x 57 mm	
Interfaces	Socket:	Description:
- RS 232	9-pin submin	„Data"
- Interface box additional:		
RS 422	RJ 45	„IN"
RS 422	RJ 45	„OUT"

The baud rate can be set via the „Baud" adjuster:

- 2400, 4800, 9600, 14400, 19200

Fronius Manufacturer's Warranty

Fronius Manufacturer's Warranty

Detailed warranty terms and conditions specific to your country can be found online: www.fronius.com/solar/warranty

To take advantage of the full warranty duration for your newly installed Fronius inverter or accumulator, register your product at: www.solarweb.com.

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Under http://www.fronius.com/addresses you will find all addresses of our sales branches and partner firms!