INSTALLATION MANUAL **WGA-330**

Large display

CE

EXAMPLE

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Weigel Meßgeräte GmbH

WEIGEL

Please read before use!

2

This unit exists out of sensitive electronic parts and is therefore to protect from shock influence and sudden climate variations.

Be careful with the large display and don't push at the housing.

We have tried to make this manual complete and correct. If you find any mistakes please inform us.

We don't take any responsibility, guarantee or warranty if you don't use the large display in the recommended way.

All trademarks, into this document cover is taken, is property of the corresponding owner.

Use only original-parts, especially for the power supply unit. Separate the power supply unit from the net if you have finished work with the large display. Power supply only for indoor use!

Protect from high humidity (condensation) and high temperature. Only for indoor use!

Introduction

Congratulation for your decision in purchased this large display.

Please read this manual before use. We wish you good success with your new display.

Please contact us if you have any questions or you don't know exactly how to use the display.
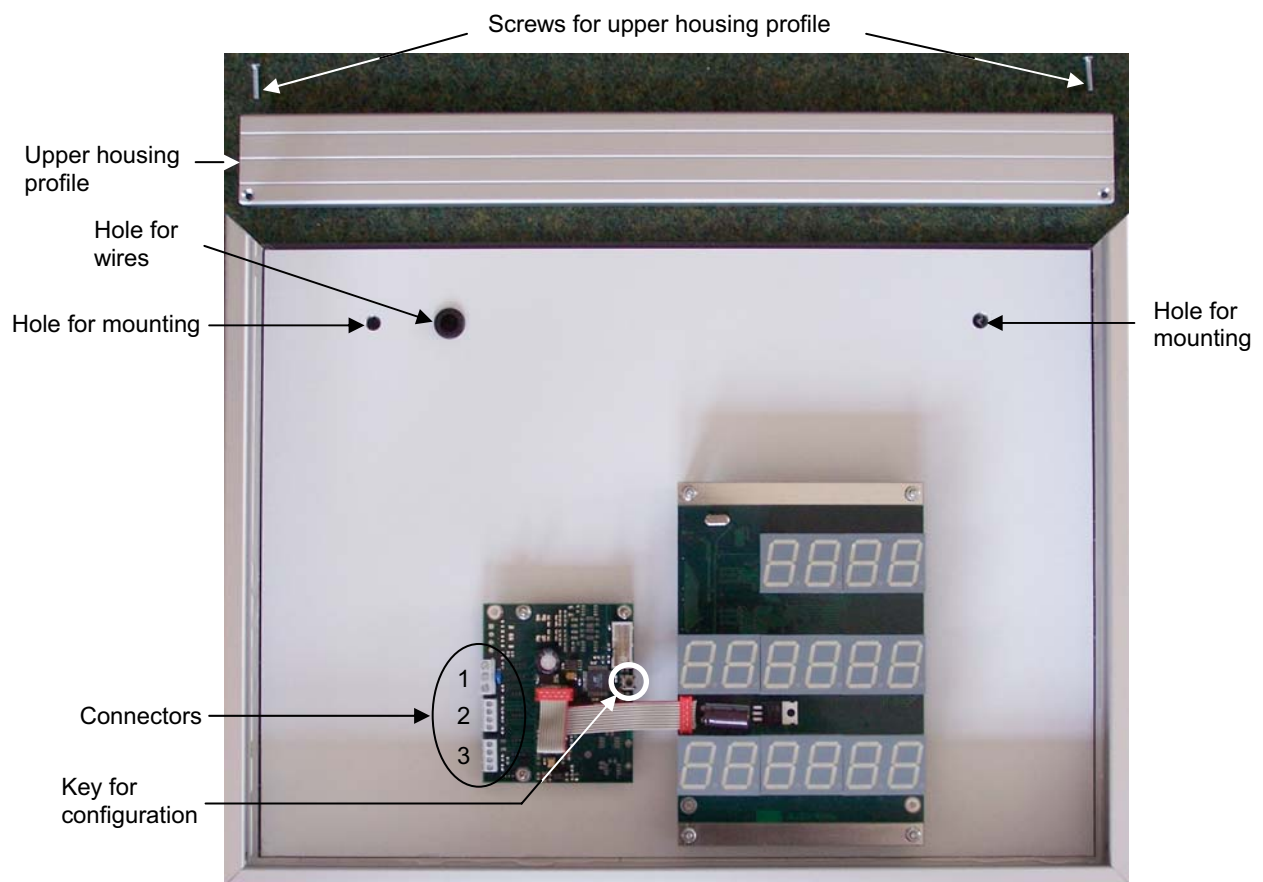
Content

1 Mounting the large display

Warning: Improper use and mounting of the large display can cause serious injuries to personnel and damage to the display.

The large display is designed to mounting on a wall or similar. The connection of the display is described at chapter 2 of this manual.

The large display is only for indoor use!

Important: The large display must be mounted with screws and dowels that fit to the underground of the wall.

To open the housing of the large display unscrews the upper two screws in the upper housing profile. Remove the upper housing profile and carefully remove the front cover by pulling out to the upper side.
Now the mounting holes and the electrical connectors are accessible.

After mounting the large display on the wall the electrical connection is done like described below.

2 General connection description

> **Warning:** Incorrect connection of the large display can cause serious injuries to personnel and damage to the display.
> Especially **never connect the display directly to the 230 VAC grid**!
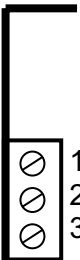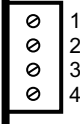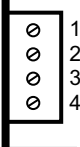
After mounting the display must be connected to the power supply unit and the device who gives the data to the display (data source).

The large display provides different inputs:
- Impulse input for potential free close contacts of energy meters.
- RS-232 interface
- RS-485 interface

Below the connections are described but **please only use the description for the data source you want to use!**

Connectors and pin definition

	Connector	Function	Definition
1 2 3	1	Power supply	Pin 1: 0 V (–) Pin 2: not used Pin 3: + 7.5 VDC; 0.3 A
1 2 3 4	2	RS-232 interface	Pin 1: RxD Pin 2: GND Pin 3: TxD Pin 4: DTR
1 2 3 4	3	RS-485 interface Impulse input (potential free close contact)	Pin 1: Data+ Pin 2: Data– Pin 3: Impulse + Pin 4: Impulse –

Connecting the power supply unit

At **connector 1** the DC output (free wires) of the delivered power supply unit is connected. If you have to lengthen the cable please use cable with about 0.75 mm^2 cross-section.
Please take care of the polarity.

After connecting the power supply unit and the data source (see below) to the large display the power supply unit must plugged into a 230 VAC plug.

Please note that the power supply unit is only for indoor use.

2.1 Connecting the display to an energy meter with impulse output

At **connector 3** the impulse output (potential free close contact) of the energy meter is connected by using a shielded cable.

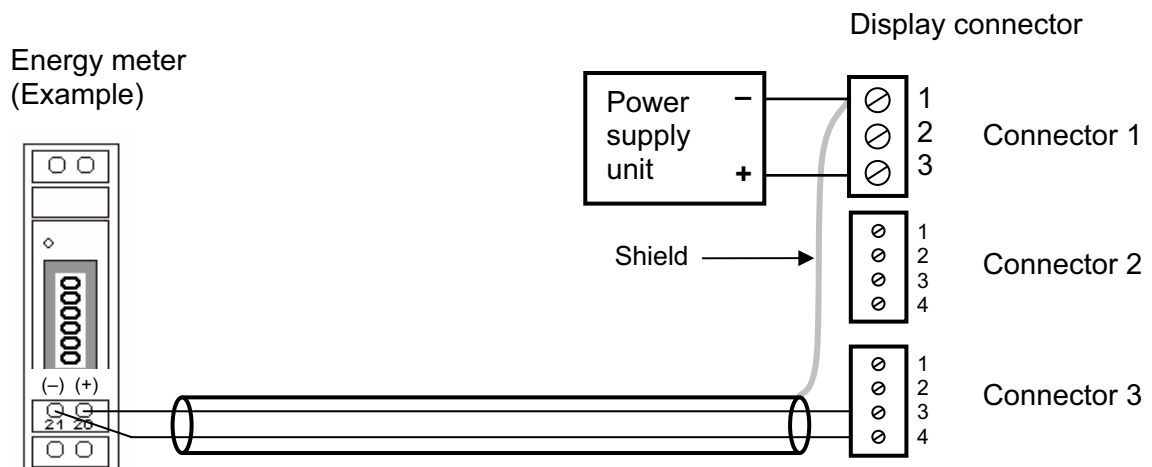**Pin 3 (Impulse +)** of the display is connected to **Impulse +** of the energy meter.
Pin 4 (Impulse –) of the display is connected to **Impulse –** of the energy meter.

The shield of the cable must be connected to 0 V (connector 1 pin 1) of the large display only.
On the side of the energy meter the shield must be unconnected.

The maximum possible cable length is about 100 meters.

Connection scheme

2.2 Connecting the display to a Sunny Boy Control via RS-232

At **connector 2** the Sunny Boy Control is connected via a shielded data cable.

Pin 1 (RxD) of the display is connected to **Pin 3 (TxD)** of COM 2/3 of the Sunny Boy Control.
Pin 2 (GND) of the display is connected to **Pin 5 (GND)** of COM 2/3 of the Sunny Boy Control.

The shield of the cable must be connected to 0 V (socket 1 pin 1) of the display only.

The maximum possible cable length is 15 meters.

Important note:

The Sunny Boy Control must be configured for using with the large display.
Necessary settings:
  Protocol: HvG
  (Baud rate: 2400)

(further details see user manual Sunny Boy Control part ,connections' headword ,large display' and headword ,communication')

Connection scheme

2.3 Connecting the display to a Sunny Boy Control via RS-485

At **connector 2** the Sunny Boy Control is connected via a shielded data cable.

Pin 1 (Data+) of the display is connected to **Pin 3 (Data+)** of COM 2/3 of the Sunny Boy Control.
Pin 2 (Data–) of the display is connected to **Pin 8 (Data–)** of COM 2/3 of the Sunny Boy Control.

The shield of the cable must be connected to 0 V (socket 1 pin 1) of the display only.

Important note:

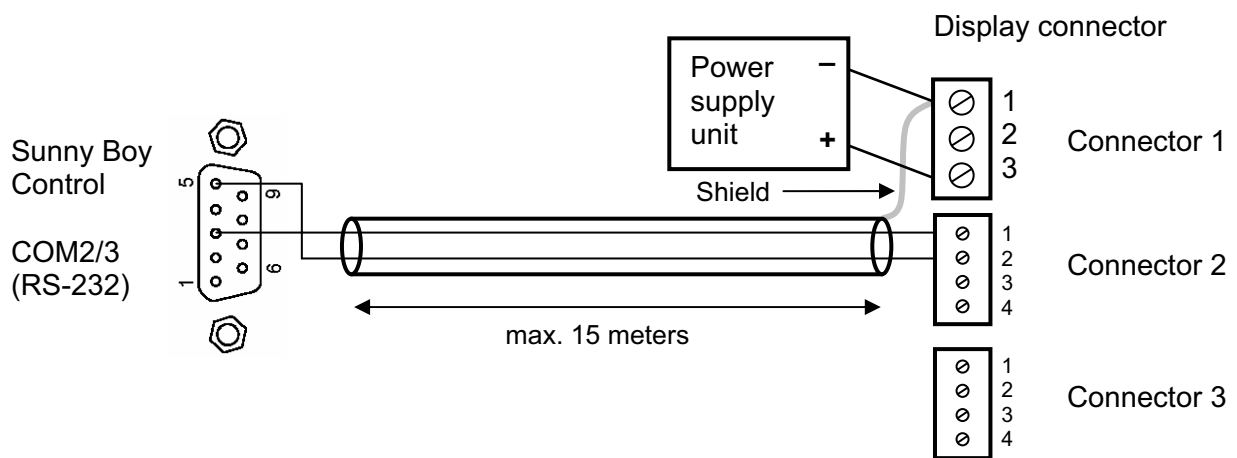The Sunny Boy Control must have a RS-485 interface (Piggy-Back) at COM2/3.
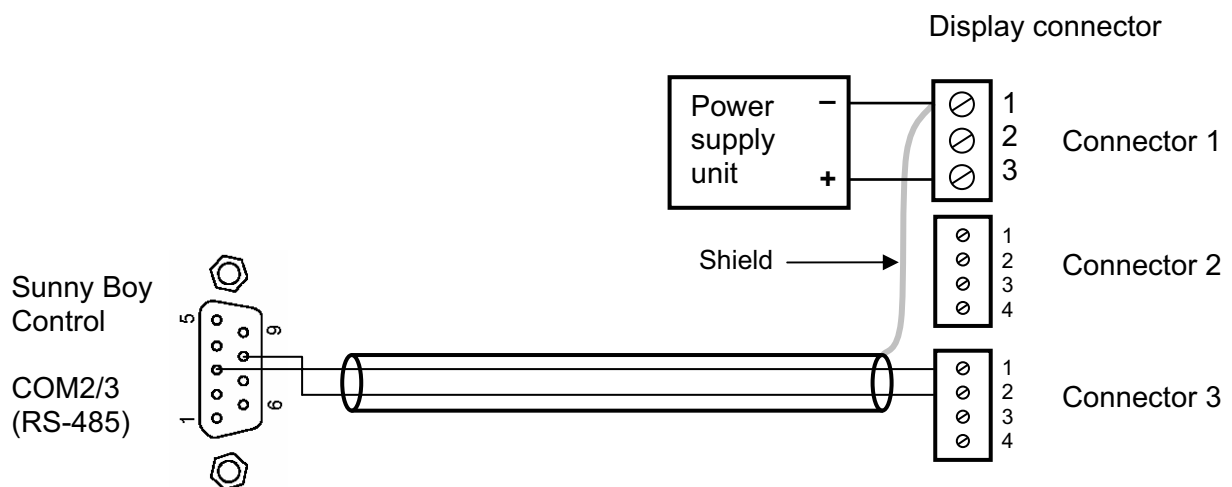
The Sunny Boy Control must be configured for using with the large display.
Necessary settings:
      Protocol: HvG
      (Baud rate: 2400)

(further details see user manual Sunny Boy Control part ‚connections' headword ‚large display' and headword ‚communication')

Connection scheme

2.4 Connecting the display to a Fronius Display Card/Box

At **connector 2** the Fronius Display Card/Box is connected by using a shielded cable.

Pin 1 (RxD) of the display is connected to **Pin 3 (TxD)** of the Fronius Display Card/Box.
**Pin 2 (GND)** of the display is connected to **Pin 5 (GND)** of the Fronius Display Card/Box.
Pin 3 (TxD) of the display is connected to **Pin 2 (RxD)** of the Fronius Display Card/Box.

The shield of the cable must be connected to 0 V (connector 1 pin 1) of the large display only.
At the side of the Display Card/Box the shield must be unconnected.

The maximum possible cable length is 15 meters.

Connection scheme

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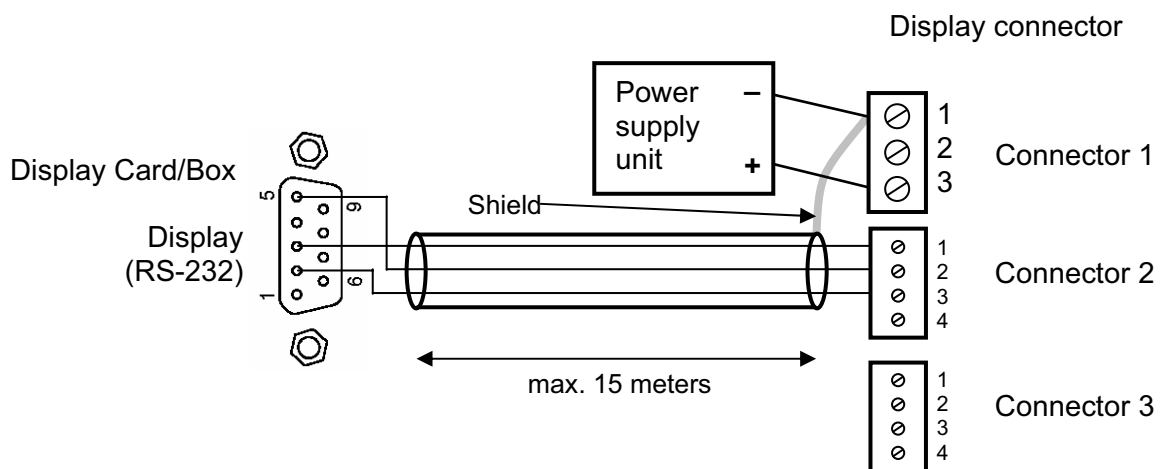
2.5 Connecting the display to a Sputnik MaxComm Basic via RS-485

At **connector 3** the display is connected to the RS-485 network with MaxComm Basic and inverter(s) via a shielded cable.

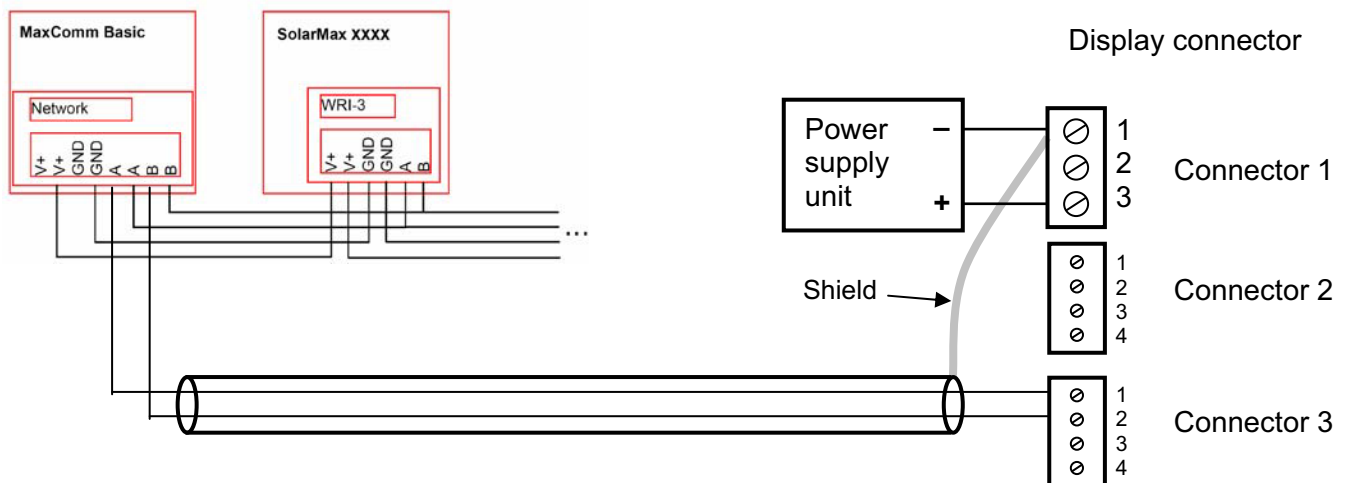**Pin 1 (Data+)** of the display must be connected to **Bus A** of the RS-485 network.
Pin 2 (Data–) of the display must be connected to **Bus B** of the RS-485 network.

The shield of the cable must be connected to 0 V (connector 1 pin 1) of the display only.
At the side of the network the shield must be unconnected.

Hint: MaxComm Basic must have **MaxDisplay 1.0** option!

Connection scheme

2.6 Connecting the display to Power One Aurora inverter(s) via RS-485

At **connector 3** the display is connected to the RS-485 network of the Power One Aurora inverter(s) via a shielded cable.

Pin 1 (Data+) of the display must be connected to **+T/R** (RS485 clamp 2) of the inverter(s).
Pin 2 (Data–) of the display must be connected to **–T/R** (RS485 clamp 3) of the inverter(s).

The shield of the cable must be connected to 0 V (connector 1 pin 1) of the display only.
At the side of the network the shield must be unconnected.

Important hint: In difference to the manual of the Power One Aurora inverters
          ALL **Termin-switches S1 must be in position 'OFF'!**

Please also note the manual of the Power One Aurora inverters.

Connection scheme   Display connector
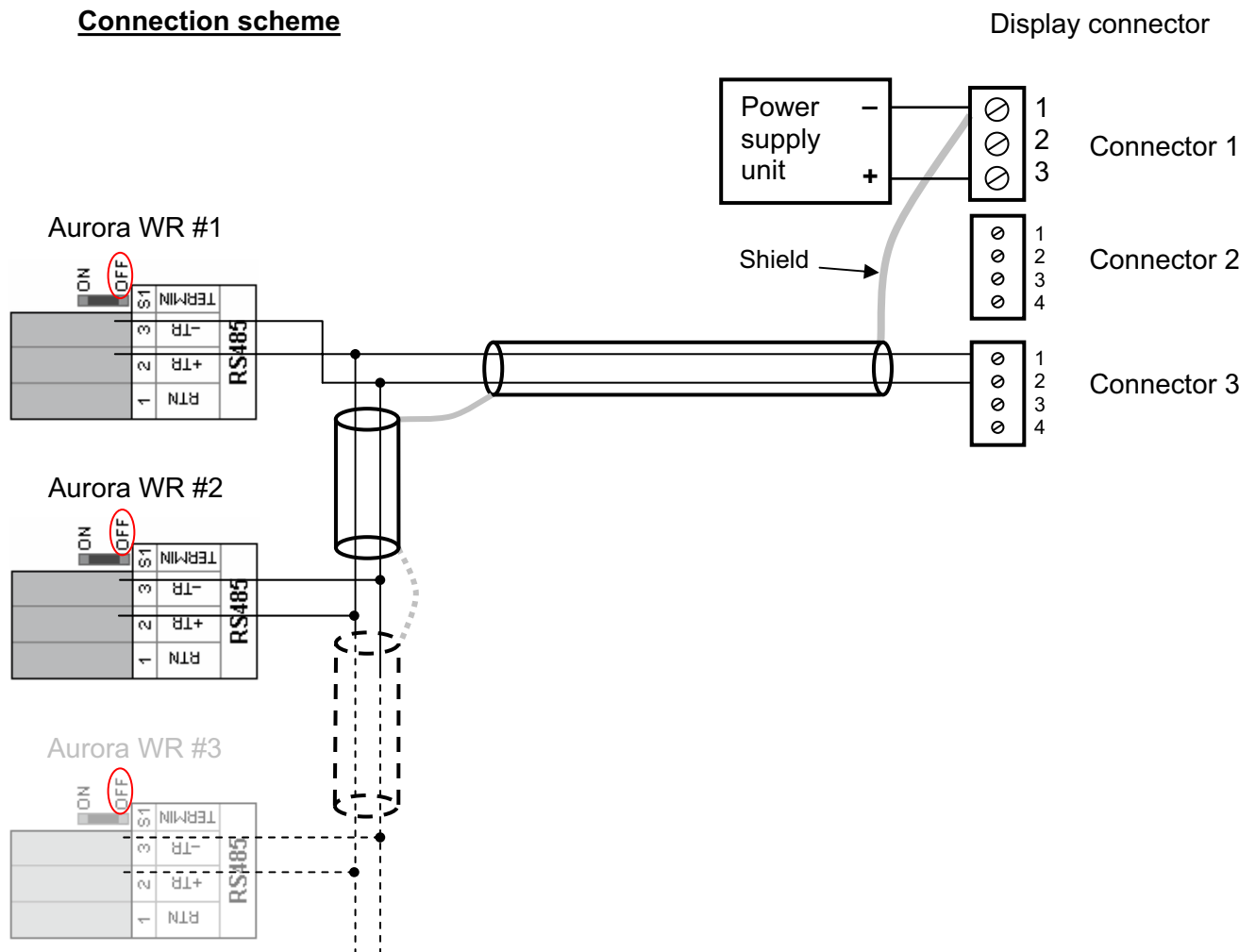
3 Configure the display with the key

After mounting and connecting, the display had to be configured.
The display is preconfigured but it may be necessary to do some adjustments to fit to the local situation.

The following settings can be done:
- **data source** (from where the display get the data to show)

If the data source is an energy meter with impulse output there are two additional settings:
- **Starting value of the total energy (kWh)**
- **Impulse rate of the energy meter (Impulse per kWh)**

The configuration is done with the key on the connection circuit board shown at the picture on page 4.

The **duration of pressing the key** decide the reaction of the display:

	Duration	Reaction	Remark
Short key press	< 1 second	Value of the changeable position is incremented by 1	The increment appears **after releasing** the key
Long key press	> 1,5 second	The changeable position jumps to the next left position **or** save settings	Press key until the decimal point jumps to the next left position **or** display jumps to the next value

Configuration

a) While powering up the display press the configuration key:
 ′**CFG**′ appears in the upper display line.
b) After releasing the key ′**SrC**′ appears in the upper display line.
c) In the second display line appears the number of the current configured data source.
 Now the needed **data source** can be configured:
 (Assignment of number to data source see table below)

 - **Short key press**   ➔ the displayed number increases by 1

 Important: The value of the number changes **after releasing** the key!

 Hint: The value jumps after 9 back to 0.

 - **Long key press**   ➔ the selected data source will be saved

 Important: press key until the display makes a display test in all display lines **or**
            ′**Strt**′ appears in the upper display line!

The numbers in the second display line correspond to the following data sources:

0: Energy meter with impulse output   **5:** RiCo RS-232
1: Sunny Boy Control RS-232   **6:** RiCo RS-485
2: Sunny Boy Control RS-485   **7:** CV 485
3: MaxComm Basic RS-485   **8:** Power One Aurora inverter RS-485
4: Fronius DisplayCard/Box RS-232   **9:** Solutronic inverter RS-232

d) If energy meter with impulse output is selected as data source the starting value of the total energy (kWh) can be configured.

   At all other data sources the configuration is now finished.

e) At energy meter with impulse output as data source now ′**Strt**′ appears in the upper display line. Now the starting value of the total energy can be adjusted:

   - **Short key press**   ➔ the value of the changeable position increases by 1 (starting in the right position)

   <u>**Important:**</u> The value of the number changes **after releasing** the key!

   <u>Hint:</u> The value jumps after 9 back to 0.

   - **Long key press**   ➔ the decimal point jumps to the next left position and the next position can be adjusted.
   Exception: At the first right position no decimal point appears.

   <u>**Important:**</u> Press key until decimal point jumps to the next left position!

   There must all **6** positions be adjusted otherwise the value will not be saved.

f) After adjusting all positions of the starting value press the key long again until ′**PULS**′ appears in the upper display line. Now the adjustment of the impulses per kWh can be done.

   The adjustment of the impulses per kWh is similar to the starting value of the total energy.

   There must all **5** positions be adjusted otherwise the value will not be saved.

g) After another long key press the adjustments will be saved and the display starts the normal measuring mode recognizable by a segment test in all display lines.

4 Technical data

number of values	3
display units	7-segment LED display with 20 mm digits red hyper bright
resolution	Depends on your order Standard: Watt 4 digits kWh 6 digits kg 6 digits
dimension	ca. 397 x 295 x 42 mm^3
material	alloy
business temp	+ 5 ... + 40 °C
storage and transport. temp.	- 20 ... + 60 °C
data source	- Impulse meters (potential free contact) - SMA-Control, Control Light and Control Plus - Sputnik MaxComm Basic - Fronius Display Card/Box - CV485 - Power One Aurora inverter - Solutronic inverter - others on request
power supply	external power supply unit Input: 230 VAC Output to large display 7.5 VDC **Never connect more than 12 VDC direct to the large display**!
warranty	2 years
Norm	CE, EN 61326-1

Changes in every kind possible, printed mistakes possible.