

GoodMeasure Connector Installation Guide



- Before installation, check that you have a portable computer that you can use while on site to login to www.GoodMeasure.net during the installation
- The Connector must be installed by authorised persons in accordance with safe working practices.

This guide shows you how to do the following steps:

- Setup a hotspot device for temporary Internet access
- Mount and connect the GoodMeasure Connector (shortened to Connector subsequently)
- Connect the Connector to the permanent local WiFi network
- Setup the meter or other device(s) to be read online through GoodMeasure
- Final checks
- Not working? – Troubleshooting

Step 1: Setup a hotspot device for temporary WiFi internet access

There are three options for providing temporary Internet access.

NB: Step 1 and Step 5 can be done at any time before the Connector hardware installation.

Note: Some details may vary with different phone or access point makes and models. If in doubt, simply Google your device name and “change SSID” to find instructions online.

Android smartphone hotspot option	iOS/ iPhone hotspot option
<ol style="list-style-type: none"> 1. Ensure mobile data is enabled 2. Go to phone Settings menu 3. Select Wireless and Networks and then Tethering and Portable Hotspot 4. Tick the box next to Portable Wi-Fi Hotspot 5. Tap Portable Wi-Fi Hotspot Settings 6. Set the SSID to 'goodmeasure' and Password to '12412280' 	<ol style="list-style-type: none"> 1. Ensure mobile data is enabled 2. Go to phone Settings menu 3. Select General 4. Select About 5. Select Name and edit the name to 'goodmeasure' 6. Go back to Settings 7. Select Personal Hotspot 8. Tap on Wi-Fi Password and edit the password to '12412280'

'Mobile WiFi' device option

1. Ensure the mobile WiFi device has data enabled and a credit balance for SIM data
2. Using an internet browser, login to the WiFi device using the credentials provided with it
3. Locate the **Settings** menu
4. Locate the **Wireless LAN** menu and **Settings**
5. Change the **SSID** to 'goodmeasure' and the **Password/Key** to '12412280'
6. Make sure that: **Authentication** is set to **WPA/WPA2-PSK**, **Encryption Mode** is set to **AES+TKIP** and **SSID Broadcast** is enabled

Step 2: Mount and connect the Connector hardware

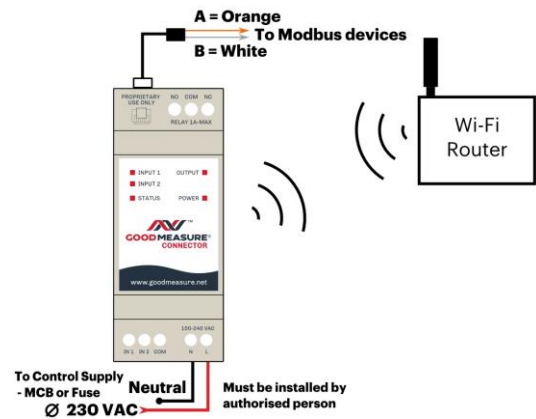
Refer to the wiring diagram specific to your installation or device as supplied. Contact your administrator or info@goodmeasure.net if in doubt. Then;

1. Mount the Connector at least 1m away from the permanent WiFi access point (router) or, if it must be closer than 1m, reduce the WiFi transmit power level to medium or low.
2. Connect the mains power supply.
3. Connect to MODBUS RS485 device (energy meter, environmental sensor, etc) using the supplied orange and white interface cable.



Ensure that the polarity is correct: orange to the A (or +) terminal, and white to the B (or -) terminal.

4. Then connect to other MODBUS devices using 'daisy chain' interconnections.



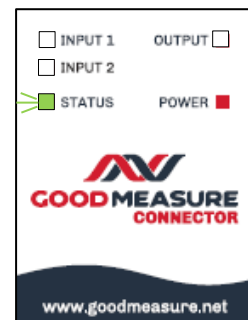
Step 3: Setup temporary WiFi access for the Connector

1. Switch on or activate the temporary WiFi hotspot device you set up in step 1.
2. Switch on the power supply and ensure that **POWER** LED on the Connector is steady **RED**. If not, confirm the hardware has AC Line (red or brown) and Neutral (black or blue) connections.

Please allow up to a minute for initial connections to be made using cellular devices.

The **STATUS** LED should follow this sequence;

Flash RED when no internet connection is available...
Flash RED/AMBER when connecting...
Flash GREEN for up to a minute when successfully connected...
Stay OFF once connected and operating normally
If SOLID GREEN , online firmware update is underway (< 5 minutes).
Please <i>do not interrupt the connection</i> and wait until Status turns OFF .



Step 4: Login to GoodMeasure.net

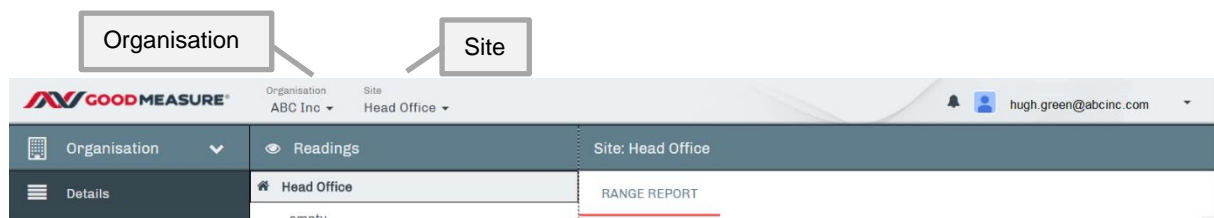
The installation is not complete until the following steps are performed.

1. Go to www.goodmeasure.net using a tablet or laptop computer.
2. Log in using the link in the top right of the screen.

You will need a **Google** or **Microsoft** account that has been authorised on your organisation's GoodMeasure account to perform these steps.

Contact the person who administers these installations or sales@goodmeasure.net if you are unsure which account to use.

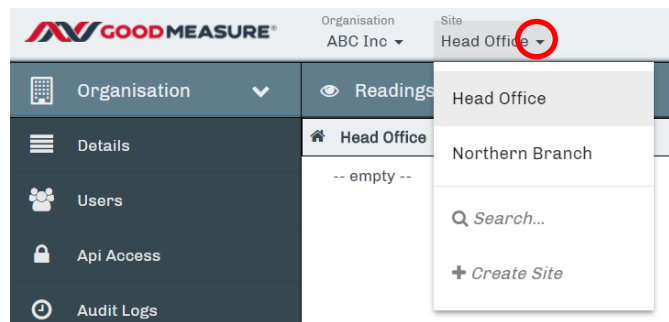
You will see a page heading like the one below.



Step 5: Create or select the Site in GoodMeasure

When a new Connector is installed, it must be added to a Site to enable data collection from devices connected to it. Follow the steps below to select the site or add a new site.

1. Click the down arrow for the site menu.
2. Click the site name if it already exists or click **+ Create Site**.
3. If creating a new Site, enter the site name and location details and click Save. (top right)



Step 6: Configure the Connector



This step requires a Connector to be powered-on at the client site and able to communicate with the Internet through a temporary WiFi access point (such as a smart phone hotspot) which has been setup with the GoodMeasure default SSID: 'goodmeasure' and Password: '12412280'. See Step 1.

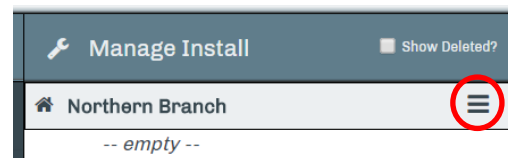
Once connected to the internet, the STATUS LED of the Connector will flash green for a short period and then turn off. With this confirmed;

Select or create the appropriate site as described in the previous section.

1. On the Site selected in Step 5, click the **Install** tab.



2. Click the 3-bar menu symbol then click **Install New Gateway**.



3. Enter the 16-digit Connector **Serial Number** found on the side label of the GoodMeasure Connector.
4. Click **Scan for and add Gateway**.
5. Enter a descriptive name for the new Connector e.g. "Main Meter Connector" in the **Location/Name** field.

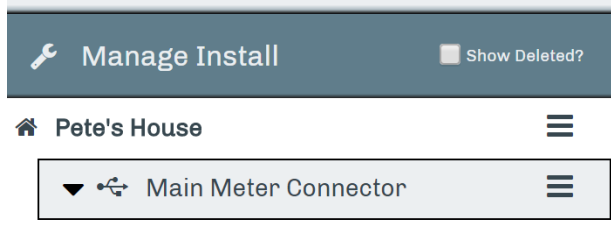
Step 7: Transfer to permanent WiFi access

It is critical that the following steps are achieved.

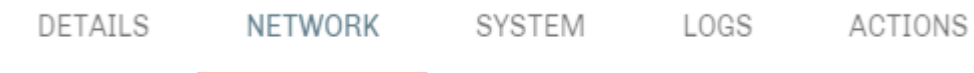
GoodMeasure Connectors rely on an ongoing internet connection after the hotspot is removed.



Transfer the Connector onto permanent WiFi access as follows:

1. Select the Install  tab
2. Select the Connector device from the middle menu



3. Select **NETWORK** on the right side of the screen



4. GoodMeasure will display a list of WiFi access points that the Connector can see.
5. In the **Visible SSIDs** list Click the  button next to the permanent access point that you wish to connect to
6. Enter the access point password
7. Click **Save** (top right)
8. Click the connect  button under the **Configured** list to switch to the newly configured WiFi access point.
9. Repeat steps 3 to 5 to add any additional alternative WiFi access points if required.
10. **Deactivate** the temporary WiFi hotspot/tether.

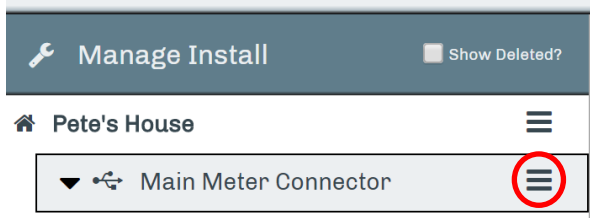


11. Make sure the temporary hotspot is deactivated. Then Check the Status light on each Connector. It must either be **flashing GREEN** or **blank** to indicate that it still has an internet connection.

Step 8: Setup the meter device(s)

The following steps are used to give the Connector the details of the meter(s) that it is 'talking' to over Modbus

1. With the Install tab selected, click the 3-bar menu button next to the desired Connector



2. Select **+Add New Device**
3. Select the required device type from the list e.g. Eastron SDM 220, then click **Next>>** at the upper right.
4. Fill in the following device fields.

Required fields:



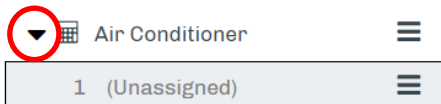
- a. **Location/Name** – This is a name that you choose. It is recommended that this name includes a reference to the device itself e.g. “Apartment 1 meter”
- b. **Address** – This is the **Modbus** address of the meter or sensor. This field must match the address that is programmed into the relevant meter or sensor.

Pre-filled fields – **only change as necessary:**

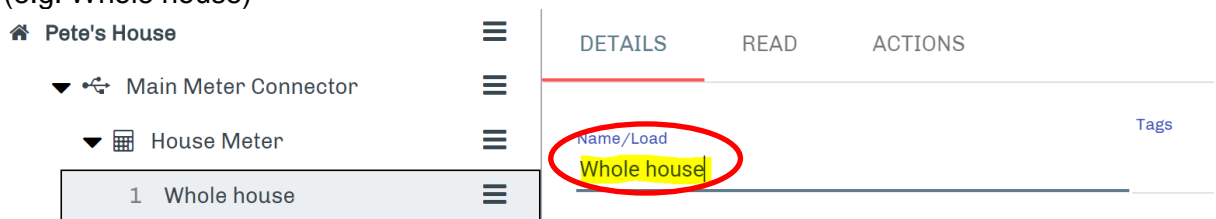
- c. Port – The port on the GoodMeasure Connector that the device is physically connected to.
 - i. If the device is wired to the Connector using *orange and white* wires from a GoodMeasure supplied cable, it is Port 1 (standard)
 - ii. If the device is wired to the Connector using *red and green* wires from a GoodMeasure supplied cable, it is Port 2.
 - iii. If the device is wired into the 'In 1', 'In 2' or 'COM' ports, then it is Port 3.
- d. Baud Rate – This must match the device settings
- e. Framing – This must match the device settings

5. Fill in **Location** and **Address**, then click **Save** (top right)

6. Click on the down arrow for the device type



7. Click (Unassigned) for the desired Device channel and name the channel (e.g. Whole house)



8. Repeat this process for every meter or sensor that is wired to the Connector

Step 9: Confirm that it works

1. Select “Readings” from the main menu
2. Select the Channel name from the middle menu e.g. “Whole house” from Step 8.6
3. Check that all of the properties appear as you would expect
4. Check that they all make sense
5. If the reading doesn’t work, try Step 11 Troubleshooting or contact your administrator

The screenshot shows the GoodMeasure web interface. The top navigation bar includes 'Organisation embrium' and 'Site Pete's House'. The left sidebar has 'Readings' circled in red. The middle menu shows 'Whole house' circled in red. The main content area displays 'Channel: Whole house' with tabs for 'READ', 'REPORT', 'CHART', 'HEAT MAP', and 'LOGS'. Below this are two tables: 'Cumulative' and 'Instantaneous'. Both tables are circled in red.

Property	Value
Energy Active Export	0.00 kWh
Energy Active Import	783.78 kWh
Energy Active Sum	783.78 kWh
Energy Reactive Export	50.07 kvarh
Energy Reactive Import	1.05 kvarh
Energy Reactive Sum	51.12 kvarh

Property	Value
Current	0.89 A
Frequency	50.00 Hz
Power Active	0.20 kW
Power Apparent	0.21 kVA
Power Factor	0.95 PF
Power Reactive	-0.06 kvar
Voltage	237.50 V

Step 10: Perform a final check of the WiFi

Stay logged in to GoodMeasure.net while a final check of the WiFi is made with all doors closed. NB If the WiFi signal is weak then switchboard doors can interfere with the connection and something will need to be done to improve the signal.

1. Ensure all cables are secure and tucked in as far as possible.
2. Ensure all connections are secure
3. Refit terminal covers where provided
4. Close all doors
5. In GoodMeasure.net, select **Readings** from the left hand menu
6. Select the correct meter channel from the middle menu
7. Click the ‘refresh’ symbol

The screenshot shows a portion of the 'Cumulative' data table. The 'refresh' button (a circular arrow icon) is circled in red.

Property	Value
Energy Active Export	0.00 kWh
Energy Active Import	1262.79 kWh

8. Ensure the meter(s) read as you would expect

Step 11: Not working? – Troubleshooting

If Status LED doesn't follow the proper sequence (Step 3) or "Gateway unavailable"

- If permanent WiFi isn't yet setup, verify that the hotspot device is working
 - Check hotspot device has mobile data enabled and there is a positive data balance
 - Check **SSID** and **Password** settings of hotspot device are correct (see Step 1)
 - Check Connector and hotspot device are not too close or too far from each other (greater than 1m and less than 10m)
- Verify the permanent local WiFi access point
 - Check that other devices, such as a cell phone, are able to connect to the Internet through the local WiFi access point
 - Check that the local WiFi **SSID** and **Password** settings have been correctly entered into the Connector as per Step 7.
 - Check that the WiFi signal level is in the range of **-30 to -80dB** (use the 'Network' tab in GoodMeasure from Step 7 to view signal strength)
- Verify building WiFi settings
 - Check with the site owner that no restrictions or limitations have been applied to the site's WiFi access

If GoodMeasure is unable to read data from the EDM1 meter...

- Check Step 8 that the device has correct meter details:
Port=port2, Baud rate=9600, framing=8n1, User ID and password correct,
Serial=meter serial number.

If GoodMeasure is unable to read attached MODBUS RS485 devices...

- Check that the interface cable is inserted into Connector RJ12 socket
- Check device connections use the correct polarity e.g. that the orange and white/red and green Modbus cable supplied is installed the right way around at the meter.
- Check that:
 - The correct device address is selected in Step 8 (starting with the default '1' then changed to another address)
 - There are no other devices with the same address
 - Settings are compatible between the Connector and devices including: baud rates, framing, and addresses

End