



# Solo II LED: Microgeneration

## USER MANUAL



*making energy engaging*  
*in-home | mobile | online*

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Welcome to **geo's** energy management service. You'll find everything you need here to gain visibility and control of your microgeneration. Your new **Solo II** will help you manage, regulate and visualise your energy use – supporting you as you learn more and more about energy efficiency.

In this guide you'll find everything you need to quickly and simply set up and start using your display. You'll also find more information about how the monitor works and how it can help you. In **microgeneration mode** you can identify the best times to use heavy-load appliances (such as your washing machine or tumble dryer).



You will also have access to **energynote**, our online energy management service that presents all your data in greater detail. There is no limit to the amount of data you can upload. See, analyse and explore for years to come.

You should find everything you need in this guide, but if you don't, get in touch and we'll be happy to help.

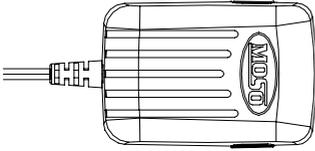
## Microgeneration and consumption modes

The **Solo II** can measure either **consumption** (default) or **microgeneration** – but not at the same time. **Please note that when you have chosen either of these modes then it is not advisable to switch to the other. If you do, you will lose the data you have been collecting (from whichever mode you had previously set up). If you choose to switch modes, the display will reset to day one.**

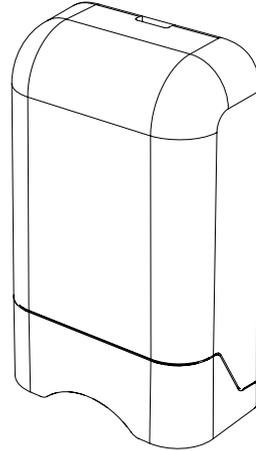
## SAFETY INFORMATION

-  Keep the display away from water
-  Clean with a soft, dry cloth
-  If any of the components appear damaged, contact us
-  This is a self-installing display. There is no need for you to connect or disconnect any cabling – and you won't need access to your electricity meter
-  Do not fit rechargeable batteries
-  To protect the environment, please take your batteries to a recycling centre for safe disposal
-  For use in a dry, indoor environment only
-  Please only use the power supply provided
-  This product is RoHS compliant and CE approved

# What's in the box?



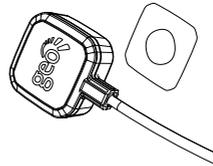
Power supply x 2



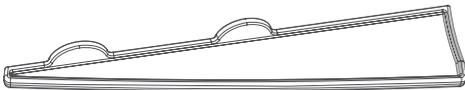
Transmitter (batteries included)



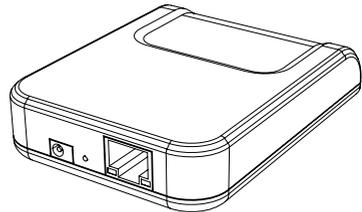
Solo II display



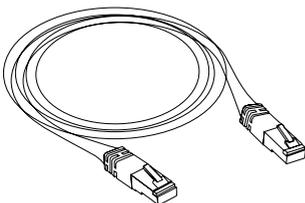
LED sensor and Velcro



Display stand



Internet bridge



Ethernet cable

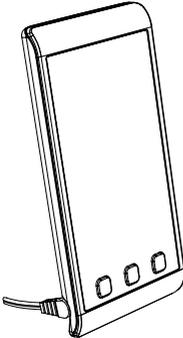
# Solo II LED: Microgeneration

## Setting up

**Please note:** by choosing [MICRO-GEN] mode, you will not be collecting data for [CONSUMPTION] mode. If you choose to switch modes you will lose all data you have collected as the display will reset to day one.

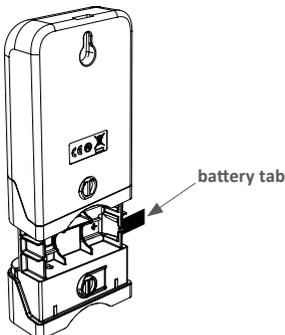
1. Plug the power supply into the **display**. Your **display** will turn on automatically when you plug it into the mains supply.

Whenever the **display** is turned on, you will see the [SET CLOCK] screen.



Use the ◀ and ▶ buttons on the front of the **display** to adjust the time and date – then press the centre button (⏸) when you have finished.

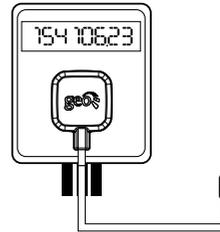
2. Open the **transmitter** and remove the battery tab.



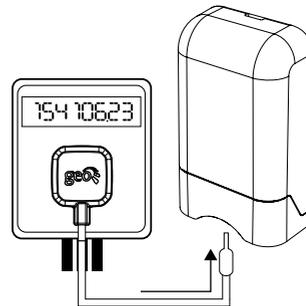
3. The pulse output is a flashing red light on the front of your generation meter. Stick the square Velcro around the pulse output.



4. Place the **LED sensor** over the square Velcro on the meter ensuring that the **geo** logo is facing you.



5. Plug the **LED sensor** cable firmly into the socket in the bottom of the transmitter.



## ⚠ Microgeneration mode

Your Solo II's default mode calculates energy consumption. In order to set it up for microgeneration you'll need to change the mode. Press and hold the centre button for three seconds to enter the settings menus. Press ▶ to select [ADVANCED] and press the centre button to confirm. Press ▶ again to select [MICRO-GEN] then press the centre button to confirm.

## Advanced configuration



You are now in the Advanced menu which has the following settings:

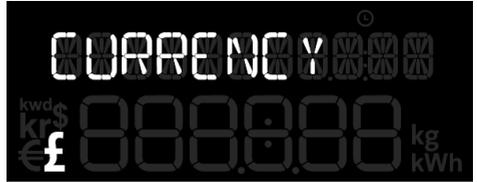
- [PV ARRAY KW]
- [CURRENCY]
- [TEMPERATURE UNITS]
- [PULSE]
- [DISPLAY OFF]
- [DISPLAY ON]
- [WEEK START]

## PV array (kW)



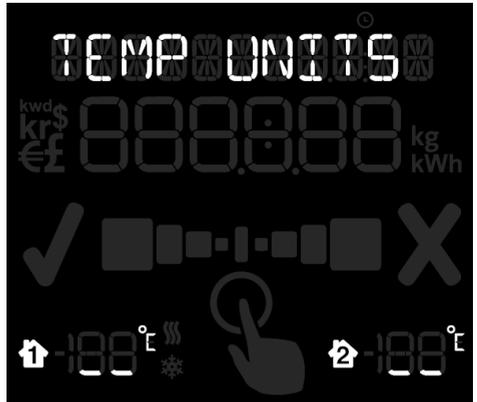
Set the PV array size to best match your installation. Simply round up the actual size of your PV installation to either 2, 4, 6, 8 or 20kW.

## Currency



Using the ◀ and ▶ buttons select your currency and press the centre button to confirm.

## Temperature units



Select whether you want the temperature to be shown in centigrade (°C) or fahrenheit (°F).

Using the ◀ and ▶ buttons select °C or °F and press the centre button to confirm.

## Generation meter



You need to tell the **display** about your generation meter. The **display** works by detecting the LED flashing on the meter, but it needs to be told how many times the pulse flashes per kWh of energy generated. This is normally written on the front of your meter, e.g. '1000 imp/kWh'.

Using the ◀ and ▶ buttons enter the value for imp/kWh from your meter and press the centre button to confirm.

## Sleep mode



The sleep mode allows you to tell the **display** to turn the backlight off overnight. This is done by entering the [DISPLAY OFF] time and the [DISPLAY ON] time. During this time the backlight of the **display** will be turned off – if you want to see the **display** whilst it is asleep simply press any button and it will wake up for 60 seconds.

If you set a [DISPLAY OFF] time, you will then need to set the [DISPLAY ON] time again using the ◀ and ▶ buttons and then press the centre button to confirm.

If you don't want to use the sleep mode then you can set it to OFF. Using the ◀ and ▶ buttons set the [DISPLAY OFF] time to OFF then press the centre button to confirm.

## Week start



Set your preferred day for the start of the week. This is used by the **display** when showing the energy generated for the [LAST WEEK] and [THIS WEEK].

Using the ◀ and ▶ buttons select your preferred day and press the centre button to confirm.

## Basic configuration



Press and hold the centre button for three seconds to enter configuration mode then press ◀ and ▶ to choose [BASIC] mode and press the centre button to select [BASIC] settings.

You will be asked to set the following:

- [SET TIME]
- [SET YEAR]
- [SET MONTH]
- [SET DAY]
- [FIT]
- [SET-POINT]

## Time and date



If you've already set the time and date then press the centre button to confirm all. If you need to set the time and date then use ◀ and ▶ to adjust the time and date accordingly. Press the centre button to confirm.

## Feed-in tariff [FiT]



The feed-in tariff is the price you are paid for the energy you generate. You can find that on your electricity bill. It's usually shown per kilowatt. e.g. Feed-in tariff = £0.20/kW

## Temperature - set point



The **display** can tell you if your home is running warmer or cooler than your ideal temperature.

Use the ◀ and ▶ buttons to set the temperature and press the centre button to confirm.

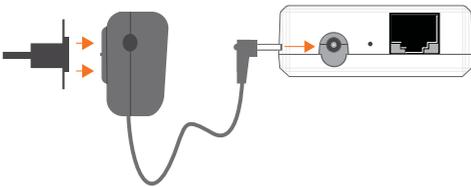
# Internet bridge

The **Solo II** pack comes with a **bridge**. The **bridge** connects wirelessly to your **display** and to the internet via an Ethernet connection to your broadband router.

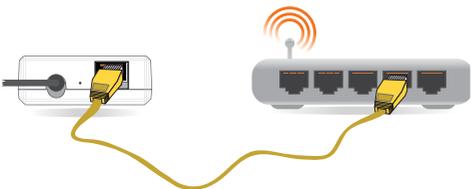
This lets you connect your **Solo II** to the internet and access our online energy service, **energynote**. Here you'll find live information, data storage and in depth analysis. You can also monitor your home and control appliances remotely via your online account or your mobile phone.

## Setting up

1. Select the correct set of pins. Insert and twist clockwise to clip the pins to the power supply. Plug the power supply into a mains socket and insert the other end into the internet bridge.



2. Using the Ethernet cable provided, connect the internet bridge to your broadband router.



3. You'll be able to tell if the **display** is paired correctly as the cloud icon will be lit (top left of the **display** ☁).
4. Go to **www.energynote.co.uk** to log in or, if it is your first visit, to set up an account. The website will take you through this process step by step.

## Cloud not lit

If it isn't lit either your **display** is out of range of the bridge or it's not paired correctly. Press ◀ and ▶ at the same time for a few seconds to enter pairing mode: the display will show [PAIRING MODE] for a second then show [MAIN SENSOR]. Press ▶ twice to get to [BRIDGE]. If the unit is paired it will show [CONN] and the signal strength will be shown by the signal strength icon at the top left of the **display**. This will be flashing if it is out of range: move the **display** closer to the bridge until you get a signal. If the unit is not connected go to the Pairing section (page 13) to see how to pair the bridge.

## Cloud lit but flashing

If the cloud icon is flashing it's because your display is paired to the bridge but the bridge is not connected to the internet. Check that your router is switched on and that you have an internet connection.

# Display overview



# Reading your display

## Icons

### Signal strength



The signal strength icon shows the quality of the radio connection to the **transmitter**. If  is flashing the communication is intermittent. Try moving the **display** and the **transmitter** closer together.

### Battery



This  will flash when the batteries in the **transmitter** are running low. If you loose power altogether the **transmitter** will not be recording any data.

### Cloud



When the  icon is on solid without flashing it means the **Solo II** is paired to the bridge and connected to the internet.

When the  icon is flashing it means the **Solo II** is paired to the bridge but not connected to the internet (this maybe because the bridge is not connected to the router). For more information please see page 9.

## Speedometer



The speedometer gives an up-to-date graphical view of the amount of electricity you are generating right now depending on which mode you have selected. The speedometer shows generated power for microgeneration dependent on your array size and will update every three seconds.

Segment index	Step per segment (kW)	Number of segments
1 <sup>st</sup> to 20	0.05	20
21 to 35	0.50	15
36 to 40	2.50	5

## Upper numbers



This shows how much electricity you are generating right now depending on which mode you have selected. You can view this in kWh, earnings and carbon. You can change how you display the units by pressing the centre button.

## Lower numbers



These show how much energy has been generated over the time period you have asked it to show. You can view this in cost, earnings, currency or carbon.

## Microgeneration threshold



This lights up when you are generating enough power to run a heavy-load appliance (e.g. your tumble dryer or washing machine).

## Temperature



The **Solo II** has one built-in sensor that is displayed on the left. If the temperature of your home is higher than the temperature you set on the display, the display will show the heatwave icon (☰). If the temperature is lower, the display will show the snowflake icon (❄). You can purchase an additional sensor that you can pair to the second slot on the right.

## LED indicator

The LED gives you an at-a-glance overview of the current level of energy generated in your home. Green is low, amber is medium and red is high.



- = low
- = medium
- = high

## Changing units

You can change how you display the unit of generation by pressing the centre button. You can view usage in kWh, cost/earnings or carbon.

## Viewing your history

To view previous usage, press the ◀ button. The display will cycle through the previous periods of usage:

- Today
- Yesterday
- Day before yesterday (displayed as the named day of the week)
- This week (from the start day to now)
- Last week (the previous week, start day to start day)
- This month (calendar month, from the 1st of the month to now)
- Last month (previous calendar month)

A long press of the ◀ or ▶ buttons will take you back to the home screen.

Note that the speedometer and upper digits always relate to 'Today'.

## Energy stopwatch



⚠ [CONSUMPTION] mode only

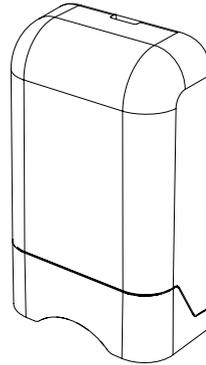
The energy stopwatch allows you to measure energy consumption of a particular task (like running your dishwasher) to see how much that one task costs you. It is not relevant when you are running the **Solo II** in [MICRO-GEN] mode, but if you are interested in monitoring your energy consumption we can tell you much more at [www.energynote.eu/products](http://www.energynote.eu/products)

## Pairing

The **transmitter**, **display** and **bridge** are supplied pre-paired. If you need to re-pair them or add new components to your system this section tells you how to do so.

To enter pairing mode press ◀ and ▶ at the same time for a few seconds.

## Transmitter [MAIN SENSOR]



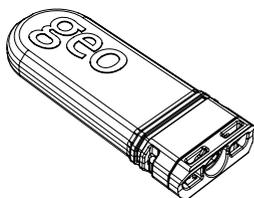
If the **transmitter** (main sensor) is already paired it will show [CONN] (connected). If not, it will show [NONE].

To unpair the **transmitter** press and hold the centre button until the **display** shows [NONE].

## For the LED transmitter

To pair the **transmitter** press and hold the button on the **transmitter** until the LED flashes. The **display** is now paired and will show [CONN].

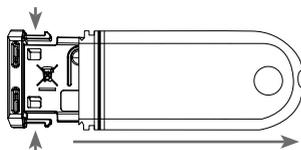
## Temperature sensors



The **Solo II** uses an integrated temperature sensor. By default, this is represented as **temperature sensor 1** on the display. If you choose to pair an additional temperature sensor you should pair this to **temperature sensor 2** (currently empty). If you wish to use two additional temperature sensors, you'll need to overwrite **temperature sensor 1**.

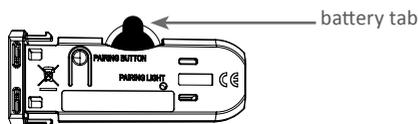
### Step 1

Squeeze the two clips on each side and slide the cover off.



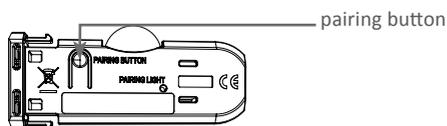
### Step 2

Remove the battery tab from the temperature sensor.



### Step 3

Press the pairing button on the temperature sensor.



## Temperature sensor 1

For when you want two additional temperature sensors.

The **display** will show [T1 SENSOR], and will show [NONE] if it is using its integrated sensor.

1. To pair an additional sensor, ensure the **display** is showing [NONE] and then press and hold the button on the additional temperature sensor until its LED flashes. The **display** will pair and change to [CONN]

To unpair the additional sensor and use the integrated sensor instead, press and hold the centre button until the **display** shows [NONE].

## Temperature Sensor 2

(available separately)

The **display** will show [T2 SENSOR], and will show [CONN] if a sensor is paired.

1. To unpair the additional sensor press and hold the centre button until the **display** shows [NONE]

To pair an additional sensor, ensure the **display** is showing [NONE] and then press and hold the button on the additional temperature sensor until its LED flashes. The **display** will pair and change to [CONN].

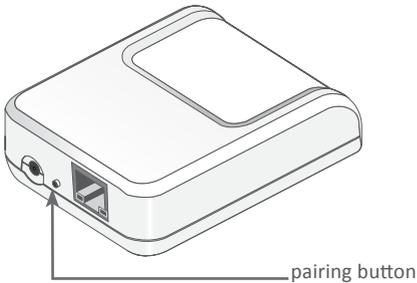
## Bridge

The **Solo II** connects to the web using the **bridge**.

The display will show [BRIDGE CONN] if it is already paired with the **bridge** (bridge must be powered on).

If the bridge needs pairing the display will show [BRIDGE NONE].

1. To unpair the **bridge**, press and hold the centre button until the **display** shows [NONE]
2. To pair the **bridge**, ensure the **display** is showing [NONE]. The button is in the middle on the back of the **bridge** (between the Ethernet and power sockets). Keep it held in for three seconds. The **display** will change to [CONN]



If you're having problems pairing any of the sensors see the FAQs section for more help.

# Energynote online services



[www.energynote.co.uk](http://www.energynote.co.uk)

The **Solo II** pack comes with a **bridge**. The **bridge** connects wirelessly to your **display** and to the internet via an Ethernet connection to your broadband router.

The online service allows you to:

- Personalise the display on your website – you can view your energy use in lots of different ways so you can choose the one that suits you best.
- View your entire energy history – the **display** holds up to one month of information, but your website keeps a complete record.
- Do all of the above from anywhere you can access the internet. You can use your smartphone to do all of this.

# FAQs

## Q. Why is my display not showing any data?

- A. 1. The **display** is out of range of the **transmitter**. Either move them closer together or move the **display** to somewhere with better signal strength.
2. The batteries could be running low in the **transmitter**, please insert new batteries.

If you're still having problems, please refer to the pairing steps on page 13.

## Q. Why has my display turned itself off?

- A. You have sleep mode enabled. You can change this under configurations [ADVANCED].

## Q. How can I see the signal strength for my sensors and the bridge?



- A. The signal strength can be viewed on the pairing screen. Press ◀ and ▶ at the same time for a few seconds to enter pairing mode: the display will show [PAIRING MODE] for a second then show [MAIN SENSOR]. Press either ◀ or ▶ to cycle through the sensors. If the unit is paired it will show [CONN] and the signal strength will be shown by the signal strength icon at the top left of the **display**. This will be flashing if it is out of range.

## Q. What is the microgeneration threshold?

- A. The threshold is set to 750W. If you're generating more than this, the  icon will light up.

## Q. How do I reset my display?

- A. Turn off your **display** by disconnecting the power supply and taking out the cable. Hold down all three buttons on the front and re-insert the power supply. The **display** will ask [RESET DATA?]. Select the ◀ button for **no** and the ▶ for **yes**. The **display** now asks [RST DEVICE?]. If you select yes all the paired **sensors** will disconnect.

## Q. Can I export the data from my Solo II into Excel?

- A. Yes. First upload your data from your **display** onto **energynote**. You can then export it as a .csv file into Excel. From your **energynote** homepage, go to Devices and press download (as shown below).



## Q. Why is the background load indicator lit?

- A. The icon lights up when the display has detected a rise in your baseload of more than 30W and it's lasted more than an hour. This can happen when you leave an appliance on by mistake and you have gone out for the day or gone to bed. Once you've turned off the appliance the icon will disappear when the baseload returns to normal.

For further technical support please visit [www.greenenergyoptions.co.uk/solo2](http://www.greenenergyoptions.co.uk/solo2)

# Technical information

Model	Display	Transmitter	LED Reader
Rated voltage	230Vac 50Hz	3 x AA 1.5V batteries	N/A
Input power	0.25W	0.2W	N/A
Operation	0 to 40 °C	-20 to 50 °C	-20 to 50 °C
Humidity	85% non-condensing	85% non-condensing	85% non-condensing

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