

# Solo II P1

## USER MANUAL



# Contents

<b>Welcome</b>	<b>3</b>
<b>Safety information</b>	<b>3</b>
<b>What's in the box?</b>	<b>4</b>
<b>Solo II P1</b>	<b>5</b>
<ul style="list-style-type: none"><li>• Setting up</li><li>• Basic configuration<ul style="list-style-type: none"><li>◦ Time and date</li><li>◦ Budget</li><li>◦ Tariffs</li><li>◦ Standing charge</li><li>◦ Temperature set-point</li></ul></li><li>• Advanced configuration<ul style="list-style-type: none"><li>◦ Mode and preferences</li><li>◦ Currency</li><li>◦ Temperature units</li><li>◦ Electricity meter</li><li>◦ Sleep mode</li><li>◦ Week start</li></ul></li></ul>	
<b>Internet bridge</b>	<b>10</b>
<b>Display overview</b>	<b>11</b>
<b>Reading your display</b>	<b>12</b>
<ul style="list-style-type: none"><li>• Icons</li><li>• Speedometer</li><li>• Upper numbers</li><li>• Lower numbers</li><li>• Budget bar and prediction</li><li>• Temperature</li><li>• LED indicator</li><li>• Changing units</li><li>• Viewing your history</li><li>• Energy stopwatch</li><li>• Pairing</li><li>• Transmitter</li><li>• Temperature sensors</li><li>• Bridge</li></ul>	
<b>Energynote online service</b>	<b>18</b>
<b>Smart Plug pack</b>	<b>19</b>
<b>FAQs</b>	<b>21</b>
<b>Technical information</b>	<b>22</b>
<b>Legal information</b>	<b>22</b>
<b>Notes</b>	<b>23</b>

Welcome to **geo's** energy management service. You'll find everything you need here to gain visibility and control of your consumption. Your new **Solo II P1** 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 **consumption** mode you can use the display to help you reduce CO<sub>2</sub> and save money by giving you real-time, visual feedback on your energy consumption.



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.

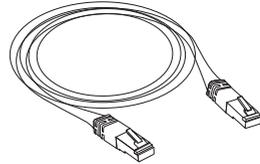
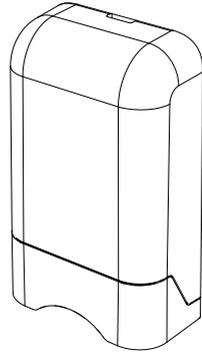
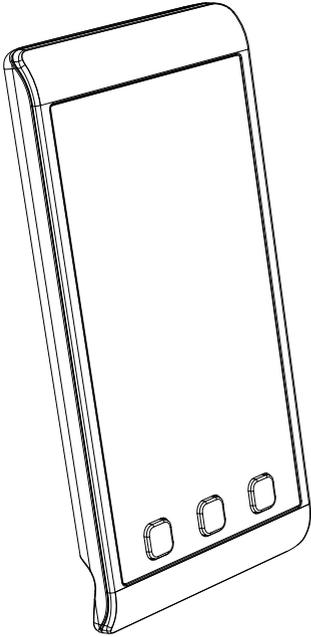
## Microgeneration and consumption modes

The **Solo II P1** 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.**

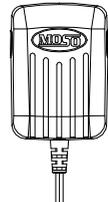
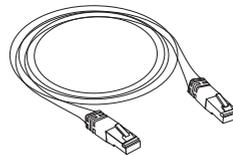
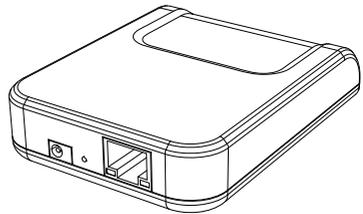
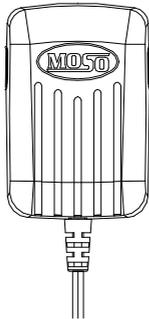
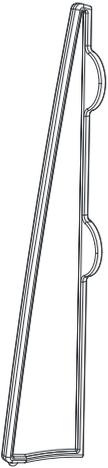
## SAFETY INFORMATION

-  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?



Transmitter + P1 cable  
(batteries may be included)



Solo II P1 display + stand + power supply

Internet bridge + power supply + cable  
(if supplied)

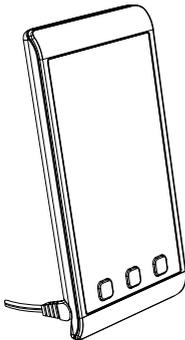
# Solo II P1

## Setting up

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

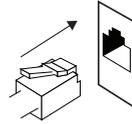
1. Plug the power supply into the **display**. Your **display** will turn on automatically when you plug it into the mains supply.

Whenever the **display** is turned on, you will see the [SET TIME] 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. Connect the P1 cable (supplied) to the meter. You should hear a “click” to indicate the cable is fully inserted.



3. Connect the other end of the P1 cable to the transmitter.
4. Connect the power supply (provided) for the transmitter.

**This product is designed as ‘permanently connected equipment’ and should only be installed by a qualified electrician in accordance with local regulations.**

## Configuring your display

Before you start using your **Solo II P1** you need to take you through a few simple set-up steps. The **Solo II P1** has two sets of configuration: [BASIC] configuration (information you may wish to change often) and [ADVANCED] configuration (information you may only set up once or alter occasionally).



### 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]
- [BUDGET]
- [TARIFF 1]
- [TARIFF 2]
- [TARIFF 3]
- [STANDING CHARGE]



- [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 change a setting use



◀ and ▶ to adjust accordingly. Press the centre button to confirm.

### Budget

You can set yourself a daily, monthly or annual personal budget which the **display** will use to help you manage your electricity. The **display** can then tell you whether you're on target to be within your budget, and how you've compared over the past few days, months or annually.

You can enter your budget as a daily, monthly or annually figure. Whichever you enter the **Solo II P1** will automatically calculate for the other two. i.e. if you enter a daily budget the **Solo II P1** will know what that means for the month and the annual and so on.

You can get an idea of what to set as your budget in one of the following ways:

1. If you pay monthly by direct debit, enter that figure into your monthly budget
2. If you pay quarterly by direct debit, divide that by three and enter that into monthly budget.
3. Look at your recent bills (and the period they cover) and work out an average of how much you've been paying each month then enter that into the monthly budget

If you have a standing charge remember to include this in your budget.

Use the ◀ and ▶ buttons to select whether you want a daily, monthly or annually budget, then press the centre button to confirm.

## Tariffs



You need to enter the price you pay for your energy. If you have only one tariff, then enter the cost per kWh. This can be found on your electricity bill.

If you have a block tariff you can work out an average from your recent bills and enter as one tariff.

What is a block tariff? A block tariff means that for the first x number of kWh in each billing period you pay a more expensive tariff than normal.

How to calculate it: take the total cost of electricity for the period (e.g. £120) and divide it by the amount of kWh you used.

Example:

If you were billed £120 this quarter and you used 1000kWh, then enter the sum of  $£120/1000\text{kWh} = £0.12/\text{kWh}$  in the display setting [TARIFF 1].

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

If you don't have a second tariff, then leave [TARIFF 2] cost as zero.

If you do have a second tariff, for example cheaper electricity overnight, then enter the cost per kWh for that second tariff. If a second tariff is entered then you need to enter the time that tariff starts and ends.

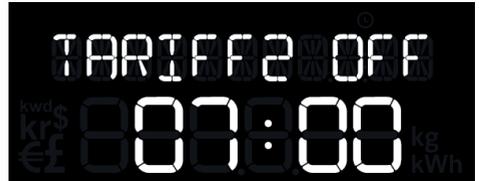


Use the ◀ and ▶ buttons to set the second tariff and then press the centre button to confirm.

Use the ◀ and ▶ buttons to set the time the second tariff switches on and then press the centre button to confirm.



Use the ◀ and ▶ buttons to set the time the second tariff comes off and then press the centre button to confirm.



If you have entered a second tariff then you are prompted to enter a third tariff. If you don't have one then simply leave it as zero.

## Standing charge



If you pay your supplier a standing charge you can enter that amount here.

Use the ◀ and ▶ buttons to set the daily standing charge and press the centre button to confirm.

## 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 your ideal temperature and press the centre button to confirm.

## Advanced configuration



Press and hold the centre button for three seconds to enter the configuration mode. Using the ◀ and ▶ buttons select [ADVANCED] and then press the centre button to confirm.

Next you need to tell the display about your electricity meter and the rate at which your electricity flows. You can read more about this under the Electricity meter section on page 9.

You will be asked to set the following:

- [CONSUMPTION] or [MICRO-GEN]
- [CURRENCY]
- [TEMPERATURE UNITS]
- [DISPLAY OFF]
- [DISPLAY ON]
- [WEEK START]

## Mode and preferences



You can use the display to monitor your energy use [CONSUMPTION] or generated energy [MICRO-GEN]. The default is [CONSUMPTION] mode.

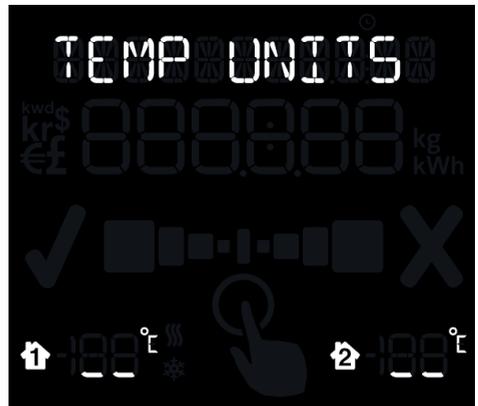
Using the ◀ and ▶ buttons select [CONSUMPTION] and press the centre button to confirm.

## Currency



Using the ◀ and ▶ buttons select your currency (from £/€/\$/kr/kwd) 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.

## 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 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.



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.

## Week start

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

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



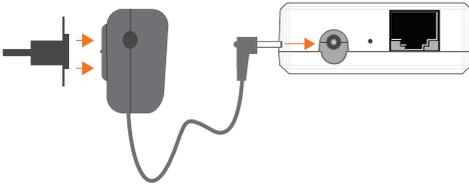
# Internet Bridge (if supplied)

The **Solo II P1** may come with a **bridge**. The **bridge** connects wirelessly to your **display** and to the internet via an Ethernet connection to your broadband router.

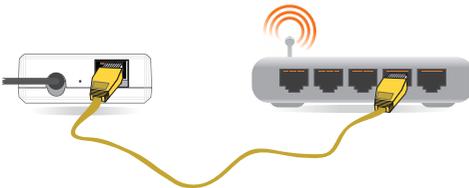
This lets you connect your **Solo II P1** to the internet and access our online energy service, **energynote**. Here you'll find live information, data storage and in depth analysis. You can also monitor your home and control appliances remotely via your online account or your mobile phone.

## 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.eu** 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 ▶ three times 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**. If the unit is not connected go to the Pairing section (page 17) 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



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

### Cloud



When the  icon is on solid without flashing it means the **Solo II P1** is paired to the bridge and connected to the internet.

When the  icon is flashing it means the **Solo II P1** 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 10.

## Tariff



The money bags light up to tell you which of your tariffs is currently active and are a handy reminder for when your electricity is costing you the least.

**One tariff:** only one money bag will light up.

**Two tariffs** (e.g. day and night): two money bags will light up during the day (higher rate) and one at night (lower rate).

**Three tariffs:** three money bags will light up during the day, two on your middle rate and one on the lowest.

When the tariff you are on is due to change in the next 30 minutes the money bag of that tariff will flash.

## Background load indicator



The background load is the sum of all the appliances in your home that are permanently on or on standby. It is calculated by the **Solo II P1** and continuously monitored and updated throughout seasonal changes and other permanent or semi-permanent changes in the home.

If there is a change to the background load of more than 30W the background load indicator will light up to warn you that you may have left an appliance on by mistake. For more information see the FAQs section.

## Speedometer



The speedometer gives an up-to-date graphical view of the amount of electricity you are consuming or generating right now depending on which mode you have selected. The speedometer shows power up to 21kW for consumption mode and will update every three seconds. For microgeneration it will depend on your array size.

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



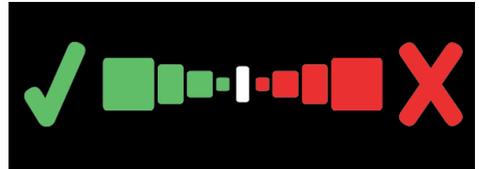
This shows how much electricity you are consuming or generating right now depending on which mode you have selected. You can view this in kWh, cost and carbon. You can change how you display the units by pressing the centre button.

## Lower numbers



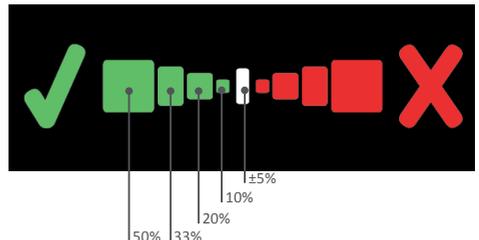
These show how much energy has been consumed or generated over the time period you have asked it to show. You can view this in cost, currency or carbon.

## Budget bar and prediction



If you have set yourself a budget, then the display shows if you are predicted to be under or over your budget (today, this week, this month) or were over/under your budget (yesterday, last week, last month).

The **display** predicts whether you will be within your budget for the period shown. It predicts this from your consumption so far, and its estimate of your future consumption based on how you have used energy previously. If the **display** is predicting you'll be in budget then it will show a tick, if it predicts you will be over budget then it will show a cross. If neither is shown then you are exactly on budget.



## Temperature



The **Solo II P1** 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.

*Please visit our webstore at:*  
<http://store.greenenergyoptions.co.uk/>

## LED indicator

The LED gives you an at-a-glance overview of the current level of energy consumed 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 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



The energy stopwatch mode is entered by pressing the ▶ button on any of the consumption screens.

The energy stopwatch allows you to measure the energy consumption of a task, such as running the dishwasher, to see how much it costs.

On entering the stopwatch mode the display will briefly show the word [STOPWATCH] and then show the current status.

The stopwatch is started and stopped by pressing the ◀ button.



- The stopwatch is reset by pressing and holding ◀
- The stopwatch units can be changed by pressing the centre button
- To leave the stopwatch screen, press ▶

Whilst the stopwatch is running the ⏸ icon is shown. You can return to the home screen or any other screen whilst the stopwatch is running.

### Note:

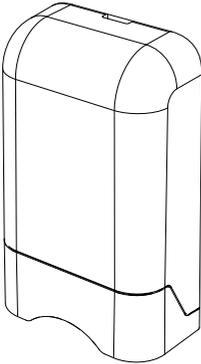
- The upper portion of the display continues to show today's usage whilst in stopwatch mode.
- The maximum duration for the stopwatch is 24 hours.

## 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]



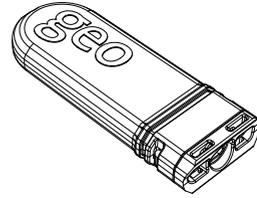
If the **transmitter** (main sensor) is already paired it will show [CONN] (connected). If not, it will show [NONE].

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

To pair the **transmitter**, first remove the cover from the sensor and then press and hold the button on the top left of the **transmitter** until the LED flashes.

The **display** is now paired and will show [CONN].

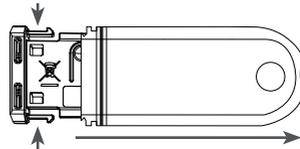
## Temperature sensors



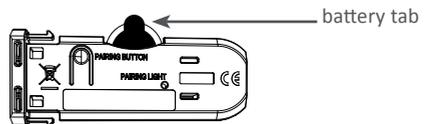
The **Solo II P1** uses an integrated temperature sensor. By default, this is represented as **temperature sensor 1** on the display. If you choose to pair an additional temperature sensor you should pair this to **temperature sensor 2** (currently empty). If you wish to use two additional temperature sensors, you'll need to overwrite **temperature sensor 1**. To enter pairing mode press ◀ and ▶ at the same time for a few seconds.

### Step 1

Squeeze the two clips on each side and

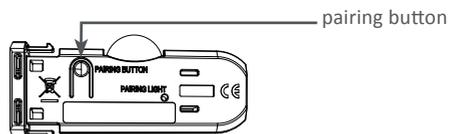


slide the cover off.



### Step 2

Remove the battery tab from the **temperature sensor**.



### Step 3

Press the pairing button on the **temperature sensor**.

### Temperature sensor 1

(available separately)

For when you want up to 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

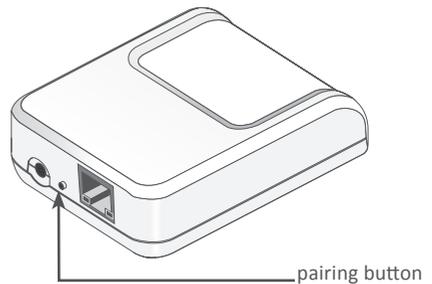
### Bridge

The **Solo II P1** connects to the web using the **bridge**. To enter pairing mode press ◀ and ▶ at the same time for a few seconds.

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]. Press and hold the button on the back of the **internet bridge** and continue to hold it whilst switching the power on at the wall. Keep the button held in for three seconds, then let go. The display will show [BRIDGE CONN] to confirm that it has successfully paired to the **bridge**.



# Energynote online service



[www.energynote.eu](http://www.energynote.eu)

The **Solo II P1** may come with an **internet bridge**. The **internet 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 consumption history – the **display** holds up to one month of information, but your website keeps a complete record.
- Name each of your **Smart Plugs** for easy reference. That way you are less likely to turn off the wrong appliance.
- Switch individual active **Smart Plugs** on/off.
- Schedule active **Smart Plugs** to switch on/off at set times.
- Do all of the above from anywhere you can access the internet. You can use

# Smart Plug pack

## Shop online:

<http://store.greenenergyoptions.co.uk/>

## energynote:

<http://www.energynote.eu/>



European plug socket

UK plug socket

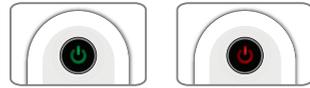
**Smart Plugs** (available separately) help you track and control appliances. Set up through **energynote** – our online energy management service – you can schedule **Smart Plugs** to turn appliances on/off at particular times of the day. You can also keep a close eye on the true cost of running appliances, as scheduling, consumption and control can all be viewed from the home PC or on the move on a smartphone. Wherever you are, you have full control over your energy use.

Two types of **geo Smart Plugs** are available: an **active** version that can be monitored and controlled and a **passive** version that can only be monitored – suitable for appliances that shouldn't be turned off such as fridges or freezers.

The button on the front of the **Smart Plugs** will show one of two colours:

**Green:** power will be provided to the appliance.

**Red:** the **Smart Plug** is isolated and no power will be provided to the appliance.



European plug socket



UK plug socket

## Adding a Smart Plug

The **Solo II P1** system is only possible through the **energynote** website with a web pack. [www.energynote.co.uk](http://www.energynote.co.uk)

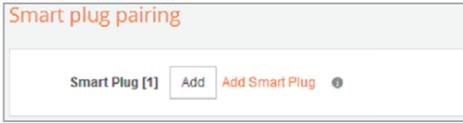
1. First set up an account.



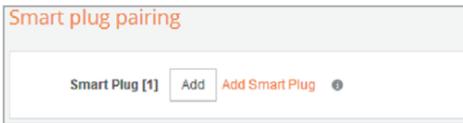
2. From your home screen on the **energynote** site, click on the settings link in the top right hand corner.



1. Scroll down the page to the **Smart Plug Pairing** section.
2. Hover your cursor over **Add** for the **Smart Plug** you would like to pair.



3. Click on the **Add Smart Plug** link that becomes available. The system will now give you five minutes to complete the next steps.



4. With the **Smart Plug** plugged into a mains socket, press and hold the button on the front for 10 seconds until the button colour changes to amber. It will pair with the system after a few seconds. Energy**note** will confirm a successful pairing.



European plug socket

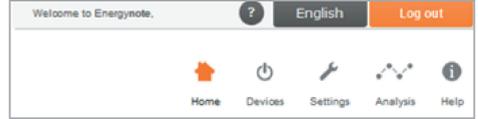


UK plug socket

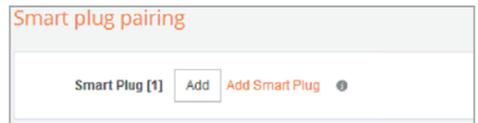
You can now label the **Smart Plug** choosing from a drop-down menu.

## Renaming a Smart Plug

1. From your home screen on the energynote site, click on the settings link in the top right hand corner.



2. Scroll down the page to the **Smart Plug Pairing** section.



3. Hover your cursor over the **Smart Plug** you would like to rename.



4. Click on the **label device** link that becomes available and choose from one of the options in the drop-down list.



5. Click **set** to confirm.



# 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. If powered by batteries, 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 16.

**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. 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 P1 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
Rated voltage	230Vac 50Hz	3 x AA 1.5V batteries
Input power	0.25W	0.2W
Operation	0 to 40 °C	-20 to 50 °C
Humidity	85% non-condensing	85% non-condensing

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# Notes

