

Getting started with

ONL[®] *i*ntuition-pv

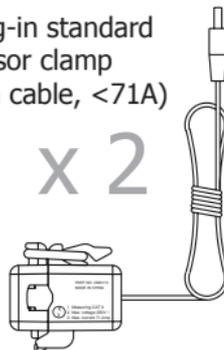
Electricity consumption & Solar PV generation monitoring
– single phase, for homes fitted with Solar PV

IN THE BOX:

Transmitter unit
3 channel



2 x plug-in standard
Sensor clamp
(<10mm cable, <71A)



3 x AA
alkaline battery



Introduction

This Electricity Transmitter is a part of the OWL Intuition range of cloud connected monitoring and control products. Its operation is dependant upon being paired to the broadband Internet connected Network OWL (supplied separately).

This version of the Electricity Transmitter is designed for monitoring single phase electricity consumption and Solar PV generation. It is suitable for use in homes and some smaller light commercial premises.

Access to both live and historic energy information collected by this Transmitter is via the OWL Intuition web dashboard, from any Internet connected computer anywhere in the World. iPhone and Android smartphone apps are also available for free download.

For details on using your new OWL Intuition-pv system, please download the Electricity Monitoring User Manual document by clicking on Manuals on the web dashboard (lower right).

Installation Instructions

BEFORE YOU START - Determine PV System Type

Intuition-pv will NOT work correctly unless the correct wiring configuration has been identified and the 2 or 3 Sensor clamps are correctly installed.

Intuition-pv Type 1 (solar PV - Henley block)

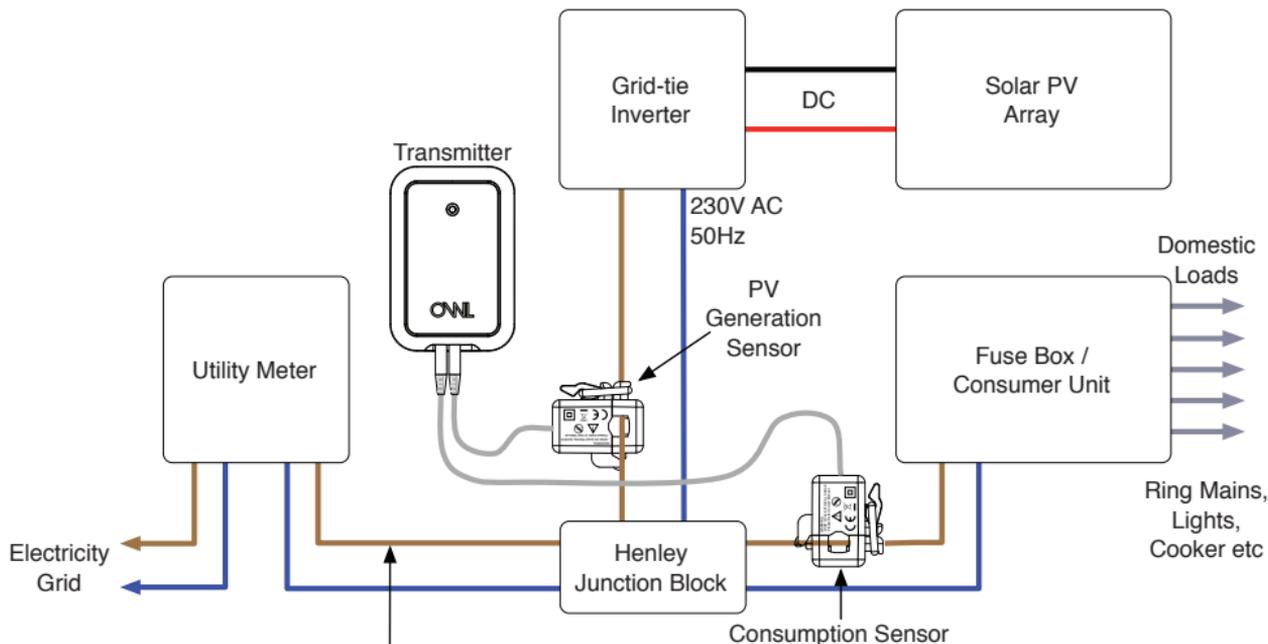
The standard Intuition-pv package is only suitable for a Type 1 wiring configuration where the PV generation feed is connected to the properties existing mains wiring via a Henley Junction Block. Please refer to wiring diagram on page 4 to identify if this installation is a Type 1 configuration.

Intuition-pv Type 2 (solar PV - Consumer unit)

If the PV generation feed is connected to the properties existing mains wiring via a circuit breaker or fuse within your main Consumer Unit / Fuse Box then this is a Type 2 wiring configuration. Please refer to wiring diagram on page 5 to identify if this installation is a Type 2 configuration. **IMPORTANT:** If you have a Type 2 wiring configuration you MUST also purchase a Y-Cable Pack (Part Number: TSE200-010). This includes a third Sensor clamp and a "Y-Cable".

Type 1 Intuition-pv (solar PV - Henley block)

Transmitter & Sensor Installation

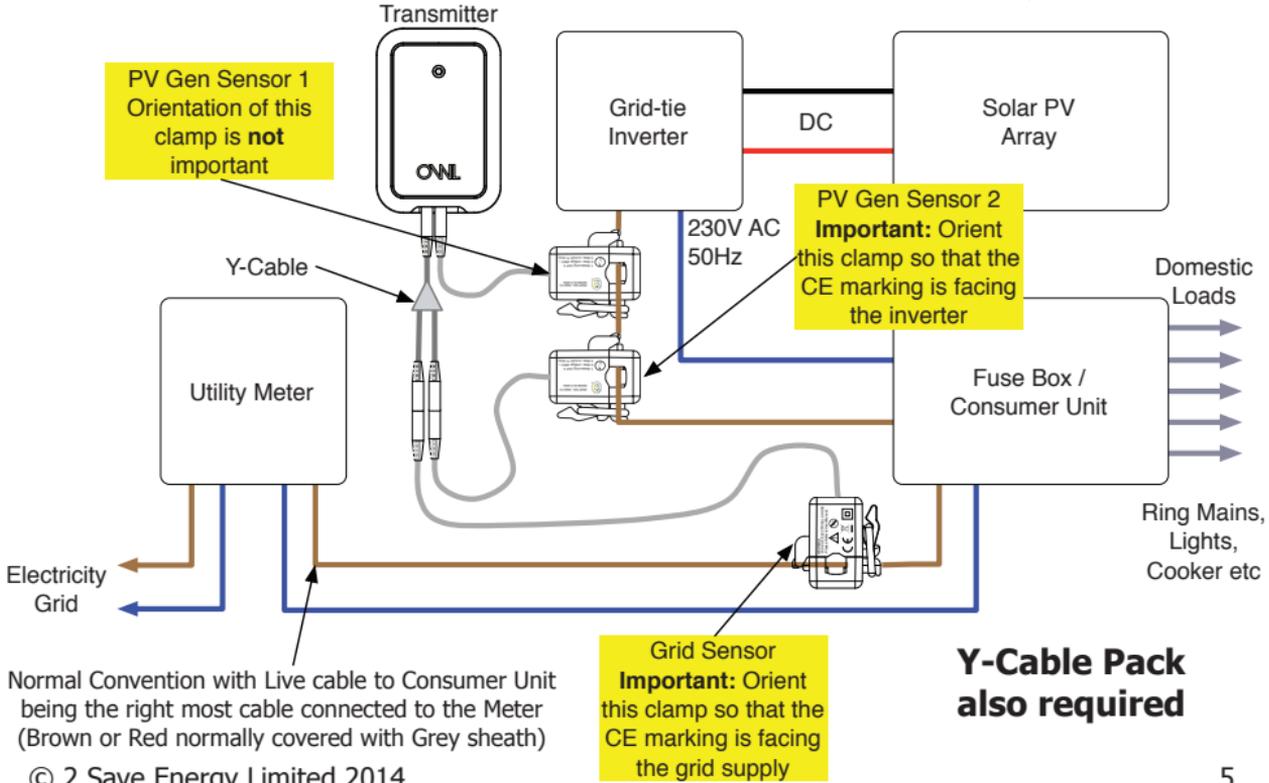


Normal Convention with Live cable to Consumer Unit being the right most cable connected to the Meter (Brown or Red normally covered with Grey sheath)



Type 2 Intuition-pv (solar PV - Consumer unit)

Transmitter & Sensor Installation



STEP ONE - Install Network OWL

- If you are adding PV monitoring to an existing Intuition installation then please jump to STEP THREE - Log in and follow Wizard.
- If this is a new Intuition installation then you will first need to install the Network OWL (supplied separately). For full details please refer to the Network OWL installation guide supplied with that product, however a summary of the steps are listed below:
 1. Connect Ethernet cable between spare active LAN port on your broadband Internet router and the Network OWL.
 2. Plug the power supply into the mains and insert the DC jack connector into the base of the Network OWL.
 3. Wait until the green LED on the top of the Network OWL is flashing with a "triple blip" pattern. This should not normally take longer than 2 minutes.
 4. **Do NOT proceed to STEP TWO until this flashing pattern is observed.**

STEP TWO - Create Intuition online account

- If you are adding PV monitoring to an existing Intuition installation then please jump to STEP THREE - Log in and follow Wizard.
- If this is a new Intuition installation then you will first need to create a new OWL Intuition account. For full details please refer to the Network OWL installation guide supplied with that product, however a summary of the steps are listed below:

1. Using a web browser visit **<https://www.owlintuition.com>**
2. Click "Create Account".
3. Check and confirm that the Network OWL is online.
4. Fill in the information requested.
5. Click "Create Account" button.
6. Ensure successful account creation completion message is displayed.

STEP THREE - Log in and follow Wizard

- Log in to the OWL Intuition account with username and password.
- If this is a new system the installation & configuration Wizard will automatically open. For existing Intuition installations you should start the Wizard by clicking the Wizard menu bar option at the top of the screen.
- Select "Electricity / Solar Monitoring" from the drop down box.
- Click the "Start" button and follow the Wizard through these steps:
 - Select Electricity Transmitter

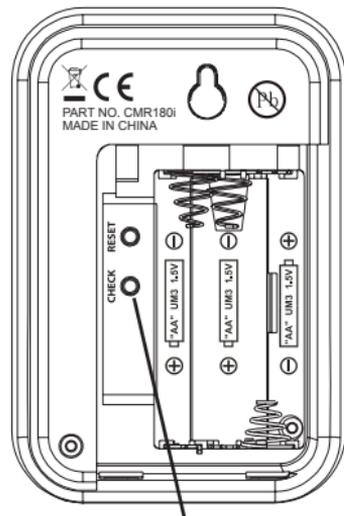


type as "CMR180i" and click "Next".

- Slide back cover off of the Transmitter and insert the batteries into the unit.
- Press the small "Check" button in the Transmitter battery compartment until the red LED on the front starts flashing.
- The Transmitter is now in Pairing / Check Mode and the red LED on the front will start flashing every 2 seconds (for 30 seconds). Click the Wizard "Next" button.

IMPORTANT Pairing Notes:

- **Please DO NOT remove the Transmitter batteries once fitted or the pairing will be lost.**
- You can quickly check for correct pairing at any time by pressing the Transmitter "Check" button until the red LED starts flashing - if the Transmitter red LED and Network OWL blue LED flash within a fraction of a second of each other, they are correctly paired.
- When the "Pairing Successful" message is displayed in the Wizard click "Next".
- Select Electricity Monitoring System type as either "Intuition-pv Type 1 (Solar PV - Henley block) OR "Intuition-pv Type 2 (Solar PV - Consumer unit) to suit the wiring configuration used by this installation (see page 3 for details)



**PRESS
CHECK BUTTON**

and click "Next".

- Adjust consumption Voltage and Power Factor settings to measured values if available. If in doubt leave the default values (Voltage = 230; Power Factor = 1.0) and click "Next".
- Configure the Solar Settings (Generation) settings to measured values / current meter readings if available. If in doubt leave the default values (Voltage = 240; Power Factor = 1.0).
- Enter the PV System Rating (kW) and select the direction that the majority of the solar panels are facing then click "Next".
- Ensure message "Device successfully added to your Intuition system." is displayed.
- Click the "Finish" button.
- Unless you have further Intuition devices to install / configure then click the "Finish" button.
- Click the "OK" button to close the Wizard. The web dashboard will then automatically refresh itself and you should now have an Electricity and Solar widget within the web dashboard, although the live readings will be zero at this stage until the Sensors are correctly attached in the next step.

STEP FOUR - Install Transmitter and attach Sensors

IMPORTANT:

- You must ensure that each Sensor is ONLY around the live core and NOT around a sheathed cable containing live, neutral and earth.
- The Sensors must be a loose fit onto the cables.
- After the Sensors have been installed, the Transmitter should be hung on the wall in a free area as far from large metal objects as possible.

In the section BEFORE YOU START on page 3 you will have determined whether you are installing an Intuition-pv Type 1 (solar PV - Henley block) OR an Intuition-pv Type 2 (solar PV - Consumer unit) system. Please now follow the relevant sub-section below, referring to the diagrams on pages 4 and 5 as required.

Intuition-pv Type 1 (solar PV - Henley block)

- Consumption Sensor - Locate the supply cables between the Henley block and consumer unit (fuse box). Using the latch, clamp the first Sensor around the insulated Live cable going into the consumer unit. Plug this Sensor into the Transmitter left hand socket. The orientation of this Sensor is not important.
- Generation Sensor - Locate the PV generated power cable between the Henley block and Generation meter / Inverter. Using the latch, clamp the second Sensor around the insulated Live cable going into the Henley Block. Plug this Sensor into the Transmitter centre socket. The orientation of this Sensor is not important.

Intuition-pv Type 2 (solar PV - Consumer unit)

- PV Generation Sensor 1 - Locate the PV generated power cable between the inverter and consumer unit (fuse box). Using the latch, clamp the first Sensor around the insulated Live cable going into the consumer unit. Plug this Sensor into the Transmitter centre socket. The orientation of this Sensor is not important.
- PV Generation Sensor 2 - **For correct operation it is important that the CE mark on this Sensor is oriented to face the Inverter end of the cable.** Taking this into account, using the latch, clamp this second Sensor around the same insulated Live cable that PV Generation Sensor 1 is attached to. Plug this Sensor into either of the arms of the Y-Cable.
- Grid Sensor - Locate the supply cables between your electricity meter and consumer unit (fuse box). **For correct operation it is important that the CE mark on this Sensor is oriented to face the electricity meter end of the cable.** Taking this into account, using the latch, clamp this third Sensor around the insulated Live cable going into the consumer unit. Plug this Sensor into the remaining arm of the Y-Cable.
- Y-Cable - With both Sensors attached, plug the Y-Cable into the Transmitter left-hand socket.

Tip: Orient the Sensor clamps such that the CE mark faces the direction the power is coming from.

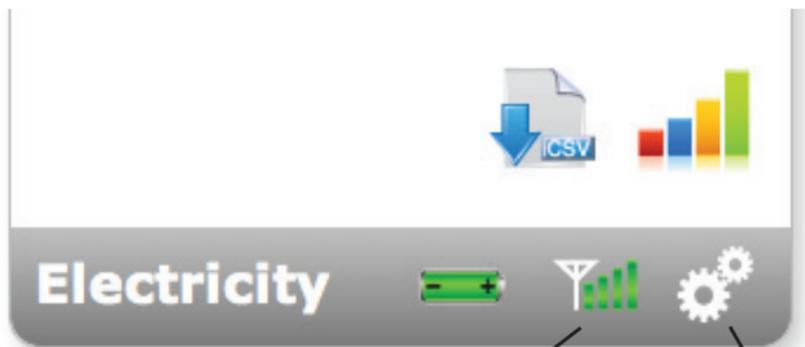
STEP FIVE - Log in to your OWL Intuition account

If you are not already, please log in to your OWL Intuition account with your username and password at: <https://www.owlintuition.com>

- You should now have an Electricity and Solar widget within your web dashboard.
- If you watch these new widgets, you should see the live consumption and generation values updating every 12 to 60 seconds.
- Type 2 systems only - If when the Generation figure changes you see the Consumption figure change by a similar amount you need to reverse the direction the cable is going through Grid Sensor. Undo the Sensor latch, remove, twist 180 degrees and re-attach around the cable. If unclear please see web site Support for further information.



- Check the signal strength of the radio signal between your Transmitter and Network OWL:
 - If the signal strength is only 1 or 2 bars, to reduce the chance of intermittent / inconsistent data reception it is suggested that you reposition the Network OWL so that it is physically closer to the Transmitter.



Signal strength indicator

Settings icon

- The Network OWL should ideally be hung on the wall in a free area as far from large metal objects as possible. Position the antenna in a vertical orientation.
- If necessary you can replace the Ethernet cable with a longer cable (up to 100 meters long). If installing a long Ethernet cable is a problem, you can use a "Powerline Range Extender" or "Wireless Range Extender" - please search for these common products online.
- Click on the Electricity widget Settings icon - here you can set details of your electricity tariff.

- Click on the Solar widget Settings icon - here you can set details of your feed in / export tariff.
- For details on using your new OWL Intuition-pv system, please now download the Electricity Monitoring User Manual document by clicking on Manuals on the web dashboard (lower right).
- Please ensure you retain this document for future reference.

INFORMATION & TROUBLE SHOOTING TIPS

- Unless the Transmitter is in Check Mode, the red LED does not flash, in order to prolong battery life.
- Check that the blue LED on the Network OWL flashes at least every 12 seconds if the monitored electricity supply consumption is varying, or every 60 seconds when at a steady state.
- For wireless range testing you can make the Transmitter send its signal every 2 seconds (for 30 seconds) by pressing the "Check" button in the battery compartment for 10 seconds. The red LED will flash with each transmission, the Network OWL blue LED will flash to confirm the signal has been received.
- If the blue LED does not flash then the Transmitter signal is not being received or the Transmitter Pairing has been lost.
 - On the web dashboard click on the Devices menu, then click on Electricity Transmitter. If the Last Reported time is greater than 60 seconds then it is likely the batteries have been removed from the Transmitter since pairing. Click on the "Change Batteries" button and follow the instructions provided.
 - If necessary undo the Transmitter's Sensors and move it so it is close to the Network OWL. Repeat step above to confirm if radio range is an issue.
- **Battery change** - when the Transmitter batteries require replacement the battery icon on the Electricity widget will change to red. Use web dashboard Devices menu / Electricity Transmitter / Change Batteries feature to ensure that pairing is not lost.

SAFETY INFORMATION

To ensure that you use your product safely and correctly please read the warnings & safety precautions below before installing your OWL Intuition Transmitter & Sensor.

- This product uses a Type C current Sensor. Do not apply around or remove from hazardous LIVE conductors.
- When fitting the Sensor if in any doubt always contact a qualified electrician.
- Do not immerse the unit in water or other liquids. If you spill liquid over it, dry it immediately with a soft cloth.
- Do not use or store the product in conditions that could adversely affect the product such as rain, snow, desert and magnetic fields.
- Do not subject the product to excessive force, shock, dust, temperature or humidity.
- Keep the product away from heat sources - radiators, stoves, heaters etc.
- Do not use the product in or near water or in high moisture areas such as bathrooms.
- Do not tamper with the product's internal components. This invalidates the warranty.
- Do not attempt to repair the product yourself.
- Contact the retailer or Customer Services if your product requires servicing.
- If the equipment is used in a manner not specified in this manual, the protection provided by the equipment may be impaired.
- Take care when handling all battery types. Batteries can cause injuries, burns or damage to property if they come into contact with conducting materials, heat, corrosive

materials or explosives.

- Remove the batteries before storing the product for extended periods.
- Only use fresh batteries. Do not mix new and old batteries.
- Do not dispose of old batteries as unsorted municipal waste, only do so in accordance with your local waste disposal regulations.
- When disposing of this product do so in accordance with your local waste disposal regulations.

CARING FOR YOUR PRODUCT

- Before cleaning, disconnect the Sensor and remove the batteries from the Transmitter.
- Use a lightly dampened cloth. Do not use liquid or aerosol cleaning agents, benzene, thinners, abrasive or corrosive materials.
- Do not scratch hard objects against the product.
- Do not leave discharged batteries in the product.

SPECIFICATIONS

Transmitter dimensions	64mm x 95mm x 40mm
Sensor dimensions (max when closed)	50mm x 50mm x 30mm
Radio frequency band	433MHz unlicensed ISM band
Operating range	Up to 30m (in free space)
Power source	3 x 1.5V Alkaline AA batteries
Operating temperature range	0°C to +40°C
Storage temperature range	-25°C to +65°C
Relative humidity	25% to 95% non-condensing

COMPLIANCE

The CE marking certifies that this product meets the main requirements of the European Parliament and Council Directive 1999/5/EC. A copy of the signed and dated Declaration of Conformity is available on request. OWL Intuition products are manufactured to ISO-9001 Quality Assurance Standards.

WARRANTY INFORMATION

2 Save Energy Limited guarantees that OWL Intuition products will work for a minimum period of 24 months from date of purchase and that it will be free from defects in materials, workmanship or design. If during this limited 2 year period of guarantee, from date of purchase, you find that the equipment is not working properly, you may return it to us and we will replace, or, (at our discretion) repair it, free of charge.

2 Save Energy Limited will not accept any liability for defects arising from fair wear and tear, accidental or wilful damage, misuse or failure to follow product or safety instructions. If you return any equipment as faulty, 2 Save Energy Limited reserves the right to test the equipment and if found to be in perfect working order, to return it to you. In this event, 2 Save Energy Limited reserves the right to charge for any testing or postage costs incurred. This does not affect your legal rights relating to equipment, which is faulty. Warranty conditions only apply where Proof of Purchase is provided.

To return your OWL Intuition product please contact customer.services@theowl.com to report the issue and your reason for wishing to return your product. 2 Save Energy Limited will issue you an RMA number. You should ensure that the returned product is clearly marked with the issued RMA number. Once we have received the product and proof of purchase we will commence the returns process.

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Customer Support

If you have any further questions please check our knowledge base at:

<https://theowl.zendesk.com>

You can also email us at: **customer.services@theowl.com**

(please ensure you state your Network OWL MAC ID)

2 Save Energy Limited operate a policy of continuous development and improvement, therefore the content of this document is subject to change without notice.

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