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OWL micro+
WIRELESS ELECTRICITY MONITOR

USER MANUAL AND INSTALLATION GUIDE

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WIRELESS ELECTRICITY MONITOR

Table Of Contents

General safety and care guidelines

To ensure that you use your product safely and correctly please read the warnings, safety precaution and caring for your product.

⚠ Please observe the following warning and safety precaution guidelines when setting up and using this product.

• SENSORS MUST BE INSTALLED BY A QUALIFIED/LICENSED ELECTRICIAN UNLESS OTHERWISE PERMITTED BY COUNTRY/LOCAL REGULATIONS.

• 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 unit to excessive force, shock, dust, temperature or humidity.

• The LCD panel behind the display is made of glass and may break if dropped.

• Take special care when handling a damaged display, the LCD may be harmful.

• Keep the product away from heat sources - radiators, stoves, heaters.

• Do not use the product in or near water or in high moisture areas - bathrooms.

• Do not tamper with the unit's internal components. This invalidates warranty.

• Do not attempt to repair the product yourself.

• Contact the retailer or customer services if your unit requires servicing.

• Do not cover any part of the unit with loose insulation or materials such as curtains or newspapers.

- 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, 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 batteries from the sender.
- Use a damp cloth to clean the the OWL Micro+
- Do not use liquid or aerosol cleaning agents, benzene, thinners, abrasive or corrosive materials to clean the the OWL Micro+.
- Do not scratch hard objects against the Display.
- Do not leave discharged batteries in either the display or sender units.

This product uses Type C current transformer, do not apply around or remove from HAZARDOUS LIVE conductors.

Overview

This measurement category II product for use with domestic electricity supplies uses current transformer sensing technology to detect and monitor a tiny magnetic field around your household electricity power cable. It measures the current using either the Standard (to 71Amp) or Large (to 200Amp) sensors and this information is sent from the transmitter to the display on a radio frequency of 433MHz, up to 30 metres (unbroken transmission) away.

The display unit then uses that information and multiplied to a fixed voltage set in the display (100-400V) to reflect the supply voltage being used to calculate amount and cost of electricity used.

This product is designed for use indoors

      Monitor 5°C to 40°C --- Transmitter -5°C to 40°C

      Rel. Humidity 25 to 85% (non-condensing)

The intention of the OWL Micro+ electricity monitor is primarily as an educational device to aid understanding of the cost of operating appliances in the home. There is no intention for the OWL Micro+ electricity monitor to replace your accurate electricity revenue meter.

Technical specifications are subject to change without notice.
Contents of the manual may not be reproduced without permission.
Images shown in this manual may differ from the actual display

Display Layout
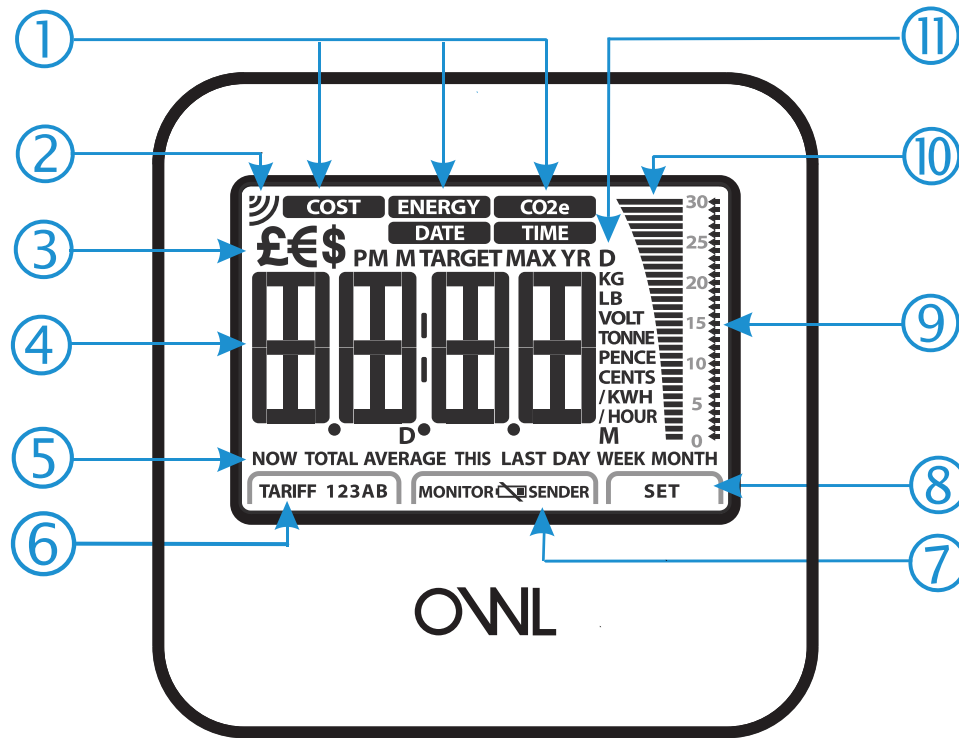
1. Display and Set-up Mode indicators
2. Pairing indicator - Flashes when pairing
3. Function mode indicators
4. Main display digits
5. Period display modes
6. Active tariff display
7. Battery low display indicators
8. SET mode indicator
9. Target display
10. Graphical usage display
11. Measurement units

BEFORE YOU START

Please locate/find a small implement such as a paperclip for access to recessed buttons.

Most recent electricity bill so that you can input current cost per unit (KWH) of electricity based on your tariff plan.

Bring the Transmitter and Display units together

Please read STEP ONE through to STEP NINE before starting

STEP ONE - Insert batteries into the Transmitter

Slide battery cover off of the Transmitter and insert the batteries into the unit.

Do not replace the battery cover at this stage

INSERT 2xAA BATTERY

INSERT 3xAA BATTERY

STEP TWO – Insert batteries into the Display

• Press clip to remove battery cover from the Display unit and insert the batteries.

• Do not replace the battery cover at this stage

Steps three and four need to be taken quickly after each other

STEP THREE – Place the Transmitter into Pairing Mode
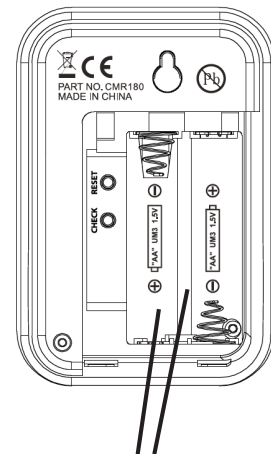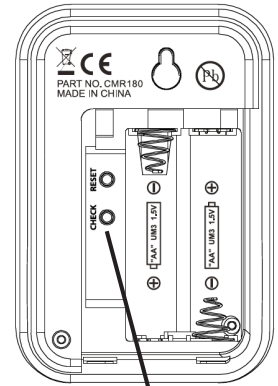- Take the small implement and press the RESET button in the back of the battery compartment.
- Press and hold the small "Check" button in the Transmitter battery compartment until the red LED on the front starts flashing.
- The Transmitter is now in Check Mode and the red LED on the front will start flashing every 2 seconds (for 30 seconds)

PRESS / HOLD
CHECK BUTTON
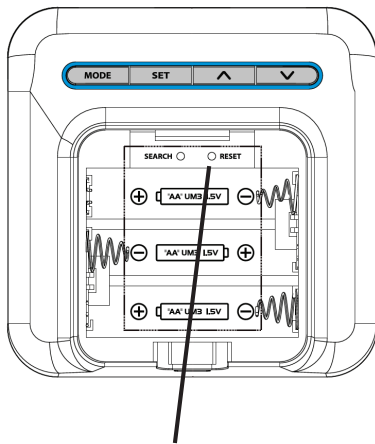
STEP FOUR – Pairing the Display and Transmitter
- Take the small implement and press the RESET button in the back of the display battery compartment.
- While the transmitter and display go through the pairing process the display will automatically go into set up for the time / date / in the display.

PRESS RESET BUTTON

When the transmitter & display complete the pairing process the display will automatically go into SET mode, requiring the TIME/DATE to be set.

STEP FIVE – Set the Time in the display
• Press the UP/DOWN keys to select 24 or 12 Hr clock
• Press the SET key to confirm
• Press the UP/DOWN keys to set the hours (HOUR)
• Press the SET key to confirm
• Press the UP/DOWN keys to set the minutes (MINS)
• Press the SET key to confirm

STEP SIX – Set the date in the display
• Press the UP/DOWN keys to set the year (YR)
• Press the SET key to confirm
• Press the UP/DOWN keys to set the date format DDMM or MMDD
• Press the SET key to confirm
• Press the UP/DOWN keys to set the month (M)
• Press the SET key to confirm
• Press the UP/DOWN keys to set the day (D)
• Press the SET key to confirm

STEP SEVEN – Units Paired
• Press the MODE key to select COST or ENERGY display.
• If the Communications Link symbol is illuminated and a 0 appears in the display you have successfully paired your units.
• Replace battery covers on the Transmitter and Display

Note: If the units have not paired please repeat steps 3 through 7.

STEP EIGHT – Set the tariff in the display

Identify the tariff type you have, your tariff rate and then follow the applicable steps to setup the tariff you have

SINGLE TARIFF SETUP
• Press the MODE key to take you to the COST screen.
• Press and hold [SET] key until a currency symbol is flashing.
• Press the UP/DOWN keys to select CURRENCY SYMBOL and press the SET key to confirm
• Press the UP/DOWN keys to turn "TARIFF 1" ON and press the SET key to confirm
• Press the UP/DOWN keys to set Start Hour for "TARIFF 1" and press the SET key to confirm (The Start Hour can be set to any value)
• Press the UP/DOWN keys to set Start Minutes for "TARIFF 1" and press the SET key to confirm (The Start Minutes can be set to any value)
• Press the UP/DOWN keys to select cost units to enter tariff value into the display and press the SET key to confirm (ie £, pence, $, € or Cents per KWH)
• Press the UP/DOWN keys to set the tariff value into the display and press the SET key to confirm
• Press the UP/DOWN keys to turn "TARIFF 2" OFF and press the SET key to confirm
• Press the UP/DOWN keys to turn "TARIFF 3" OFF and press the SET key to confirm

DUAL TARIFF SETUP (ie Economy 7, Day/Night)

• Press the MODE key to take you to the COST screen.

• Press and hold [SET] key until a currency symbol is flashing.

• Press the UP/DOWN keys to select CURRENCY SYMBOL (£; $; €) and press the SET key to confirm

• Press the UP/DOWN keys to turn "TARIFF 1" ON and press the SET key to confirm

• Press the UP/DOWN keys to set Start Time (Hours:Mins) for "TARIFF 1" and press the SET key to confirm (The Start Hour should be set to coincide with Start Time for the Tariff)

• Press the UP/DOWN keys to select cost units to enter tariff value into the display and press the SET key to confirm (ie £, pence, $, € or cents per KWH)

• Press the UP/DOWN keys to set the tariff value into the display and press the SET key to confirm

• Press the UP/DOWN keys to turn "TARIFF 2" ON and press the SET key to confirm

• Press the UP/DOWN keys to set Start Time (Hours:Mins) for "TARIFF 2" and press the SET key to confirm (The Start Hour should be set to coincide with Start Time for the Tariff)

• Press the UP/DOWN keys to select cost units to enter tariff value into the display and press the SET key to confirm (ie £, pence, $, € or cents per KWH)

• Press the UP/DOWN keys to set the tariff value into the display and press the SET key to confirm

• Press the UP/DOWN keys to turn "TARIFF 3" OFF and press the SET key to confirm

**BLOCK TARIFF SETUP** (ie based on amount of electricity used)
• Press the MODE key to take you to the COST screen.
• Press and hold [SET] key until a currency symbol is flashing.
• Press the UP/DOWN keys to select CURRENCY SYMBOL (£; $; €) and press the SET key to confirm
• Press the UP/DOWN keys to turn "TARIFF 1" OFF and press the SET key to confirm
• Press the UP/DOWN keys to turn "TARIFF 2" OFF and press the SET key to confirm
• Press the UP/DOWN keys to turn "TARIFF 3" ON and press the SET key to confirm
• Press UP/DOWN keys to set a Start Date (Year:Month:Day) for block tariff and press the SET key to confirm (The Start Date will normally be the start date of your quarterly billing period)
• Press the UP/DOWN keys to set Start Time (Hours:Mins) for "TARIFF 3" and press the SET key to confirm (The Start Time can be set to any value)
• Press the UP/DOWN keys to select cost units to enter tariff value into the display and press the SET key to confirm (ie £, pence, $, € or cents per KWH)
• Press the UP/DOWN keys to set the tariff value into the display and press the SET key to confirm
• Press the UP/DOWN keys to set the number of KWH this tariff value applies into the display and press the SET key to confirm (ie Tariff for first block of kWH used)
• Press the UP/DOWN keys to set the tariff value for all other KWH used into the display and press the SET key to confirm

STEP NINE - Connect the sensor over your electricity cable
- Locate the supply cables between the Utility Meter and consumer unit (fuse box).
- Using the latch, clamp the Sensor around the insulated Live cable going from the meter into the consumer unit (the cable coming out on the right hand side of the meter as you look at it). The live cable is normally a red or brown insulated cable although in a lot of instances these are double insulated with a grey insulation
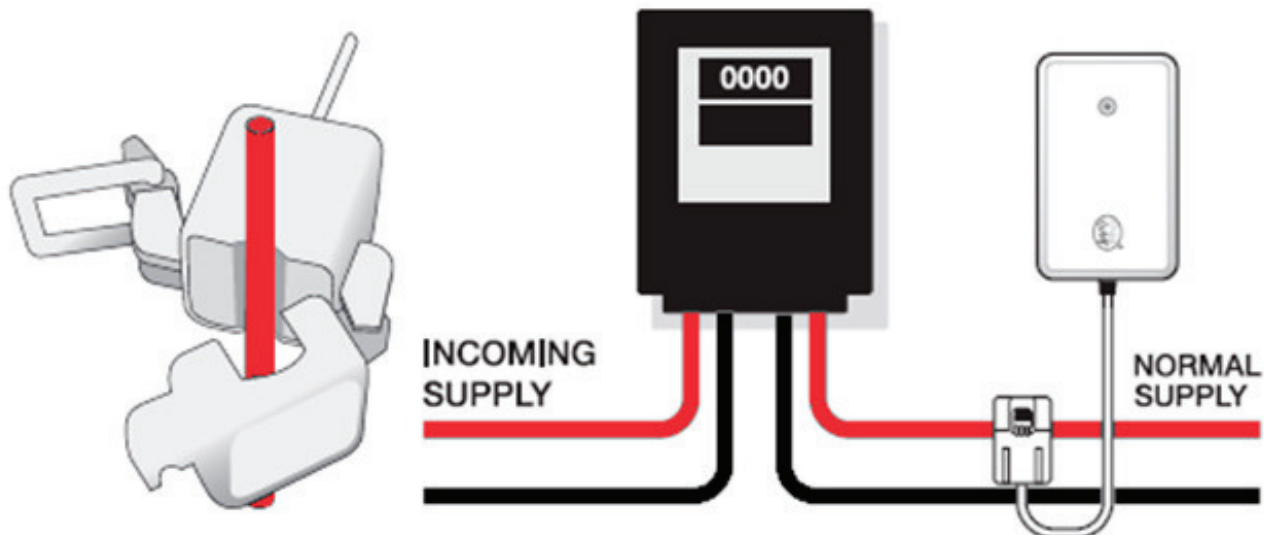
- The Sensor should be a loose fit onto the cable, and can be fitted anywhere along the live cable from the meter to the consumer unit.
- At no time should force or undue pressure be applied to any wiring or connections.
- The Transmitter should be hung on the wall in a free area away from large metal objects in line with the display unit.

IMPORTANT PAIRING NOTES:

• If you don't complete the pairing process by the time you have setup up the display then repeat steps 3 through 8

• If you remove / change the batteries in the transmitter or the Display the units will need to be paired together again.

• If you remove / change the batteries in the Display all data/settings will reset back to factory default.

ALARM FUNCTION (MAX)

The alarm function is a setting which allows you to set up a warning for high level of electricity consumption at any given time.

If you go above that figure the Digital display will Flash to indicate that you have gone over your MAX value.

DAILY CONSUMPTION FUNCTION

The daily consumption function allows for a daily consumption target to be set, which will add markers on the chart. The chart fills based on the use through the day, and if the target value is exceeded the bars that fill in above the set target value will flash.
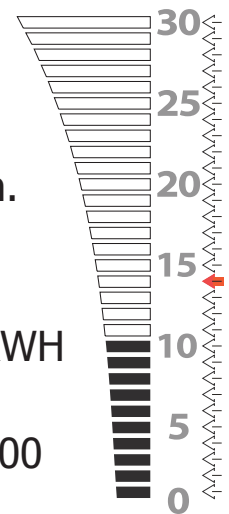
The graph values change depending on the target value set.
  • Target set between 0 and 30, then the graph shows 0 to 30KWH
  • Target set between 30 and 300, then the graph scale is x10
  • Target set between 300 and 3000 then the graph scale is x 100

Settings for the VOLTAGE, ALARM and TARGET can be adjusted from the Energy Display Mode.
- From the ENERGY screen, press and hold SET key until a value for VOLTs is flashing.
- Press the UP/DOWN keys to set the voltage (100-400V)
- Press the SET key to confirm
- Press the UP/DOWN keys to Turn ON/OFF the ALARM Function
- Press the SET key to confirm
- Press the UP/DOWN keys to select number of kW to trigger the ALARM
- Press the SET key to confirm
- Press the UP/DOWN keys to select target daily use of kWH
- Press the SET key to confirm

Generating electricity can result in the production of CO_2 and some of this is emitted into the atmosphere, this is the equivalent CO_2 emissions (CO_2e) figure. Your OWL comes pre-programmed with a conversion value. However, this figure varies from supplier to supplier, your electricity supplier should be able to supply you with a figure for their own generation per KWH.

To enter the new figure into the OWL:
- From the CO_2e screen, press and hold [SET] key until the conversion value for CO_2e is flashing.
- Press the UP/DOWN keys to set the conversion value units
- Press the SET key to confirm
- Press the UP/DOWN keys to set the conversion value
- Press the SET key to confirm

KEY FUNCTIONS

KEY IDENT	BUTTON	DISPLAY MODE	KEY FUNCTION
MODE	Press	Normal	Changes display mode ➔ COST-ENERGY-CO2E-TIME-DATE-COST
		History	
		Average	
		SET	No Function
	Press and Hold	Normal	Enters History Mode
		History	Enters Average Mode
		Average	Returns to Display Mode
		SET	No Function
SET	Press	Normal	No Function
		History	
		Average	
		SET	Confirms selection
	Press and Hold	Normal	Enters SET Mode
		History	
		Average	
		SET	Returns to Display Mode
▲ & ▼	Press	Normal	Changes displayed value ➔ NOW & TOTAL
		History	Changes displayed value between ➔ This/Last – Day/Week/Month
		Average	Changes displayed value between ➔ Average – Day/Week/Month
		SET	Increments / Decrements Values
MODE and SET	Press and Hold (At the same time)	Normal	Resets the TOTAL COST, KWH & CO2e to Zero
		History	No Function
		Average	No Function
		SET	No Function

DISPLAY MODES OVERVIEW

TIME	
NOW	Displays current time

DATE	
NOW	Displays current date

COST	
NOW	Cost of electricity in use at that time if used at this level for 1hr
TOTAL	Total cost of electricity used from when display first setup or when last reset to zero.
HISTORY	Total cost of electricity used so far This Day / Week / Month and electricity used for Last Day / Week / Month
AVERAGE	Average daily, weekly and monthly cost of electricity used.

ENERGY	
NOW	Amount of electricity in use at that time (KW)
TOTAL	Total amount of electricity used from display first setup or when last reset to zero (KWH)
HISTORY	Total amount of electricity used so far This Day / Week / Month and electricity used for Last Day / Week / Month (KWH)
AVERAGE	Average daily, weekly and monthly amount of electricity used (KWH).

DISPLAY MODES OVERVIEW

CO2e	
NOW	Equivalent CO2 emissions for amount of electricity in use at that time (KG)
TOTAL	Equivalent CO2 emissions for total amount of electricity used from display first setup or when last reset to zero (KG)
HISTORY	Equivalent CO2 emissions for total amount of electricity used so far This Day / Week / Month and electricity used for Last Day / Week /Month (KG)
AVERAGE	Displays equivalent CO2 emissions for average daily, weekly and monthly amount of electricity used (KG).

HISTORY	
This Day	Total use so far this since midnight
This Week	Total use so far this week from midnight on Monday
This Month	Total use so far this month from midnight of 1st of the month
Last Day	Total used yesterday
Last Week	Total used for the previous week
Last Month	Total used for the previous month

AVERAGE	
Day	Calculated over last 30days usage
Week	Calculated over last 60days usage
Month	Calculated over last 90days usage

RESETTING OWL MICRO+

RESET THE TOTAL TO ZERO

Press / hold the MODE and SET keys together until the value for TOTAL resets to 0.

Resetting the TOTAL to zero does not zero any other history or average values held in display.

RESET TO FACTORY DEFAULTS

Press the RESET button in the battery compartment in both the transmitter and display units, which requires a small implement such as a paperclip to access the recessed buttons.

Please be careful not to use excessive force on this switch as it may damage the electronics inside.

RESET BUTTON IN THE DISPLAY CLEARS ALL DATA IN MEMORY

If you press the RESET button it will set the monitor back to its factory default settings and all user history and user input settings will be lost.

The unit will also need to be paired to its transmitter again after a reset.

2 Save Energy Limited guarantees that your OWL electricity monitor will work for a minimum period of 2 years 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 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 fault.

Warranty conditions only apply where Proof of Purchase is provided.
To return your OWL Micro+ contact customer.services@theowl.com to report
the issue and reason for wanting to return your product. You will be issued with a reference number which will be required for you to return your product.

Declaration of Conformity
 2 Save Energy Limited, declares that the CE marking certifies that the OWL Micro+ Wireless Electricity Monitor meets the main requirements of European Directive 1999/5/EC. A copy of the signed declaration of conformity is available on request.