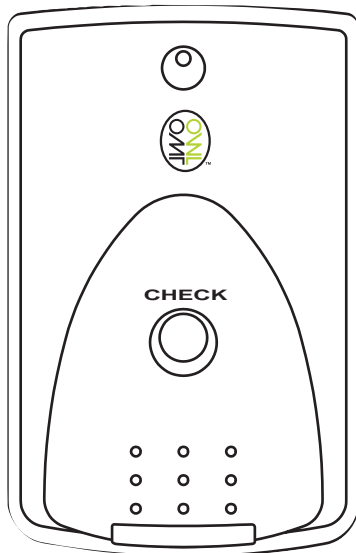




MODEL:
CM113 / CMR113



USER MANUAL



Wireless Energy Monitor

MODEL CM113/CMR113/CMS113

Patent Pending

USER MANUAL

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User Manual Version .10.07.07



INTRODUCTION

Thank you for selecting the ONL™ Wireless Energy Monitor. This product was developed to monitor household electricity use, and can display your electricity cost-per-hour, as well as your instantaneous household electricity consumption. It can also show the amount of greenhouse gas emissions produced by your local power generating authority as a result.

It is designed to give many years of reliable service if used correctly, and performs the following functions:

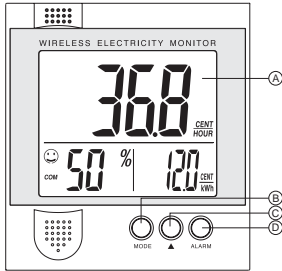
- Monitors and displays electricity cost-per-hour in dollars, pounds or euros
- Monitors and displays total instantaneous household electricity consumption
- Calculates greenhouse gas emissions per hour
- Alerts user to peak load electricity limits via alarm function
- Displays temperature and humidity inside the home
- Transmits information to a portable LCD unit for easy viewing

This manual contains important safety and care information, and provides step-by-step instructions for using this product. Read the manual thoroughly, and keep it in a safe place in case you need to refer to it later.

KEY FEATURES

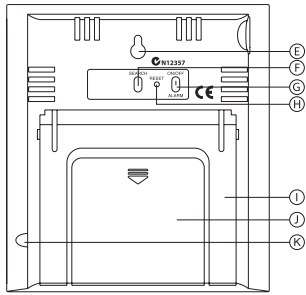
Remote Monitor (Model CM113)

Front view



- A. Main LCD Screen**
- B. Mode Button**
 - a) Toggle between different display screens
 - b) Enable adjustment of settings
- C. Adjust Button**
Used to adjust values
- D. Alarm Button**
Enable/Adjust alarm settings

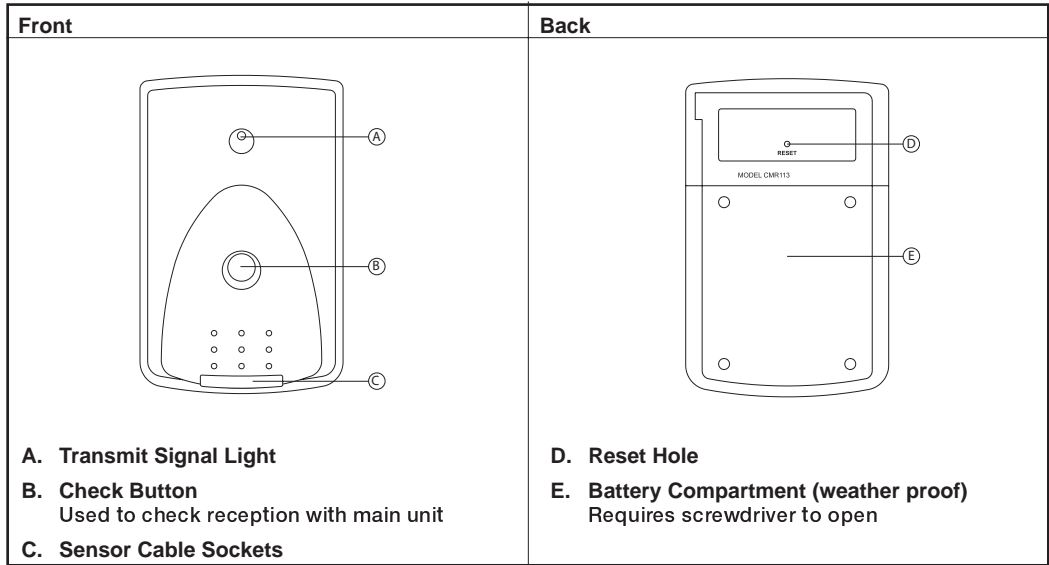
Back view



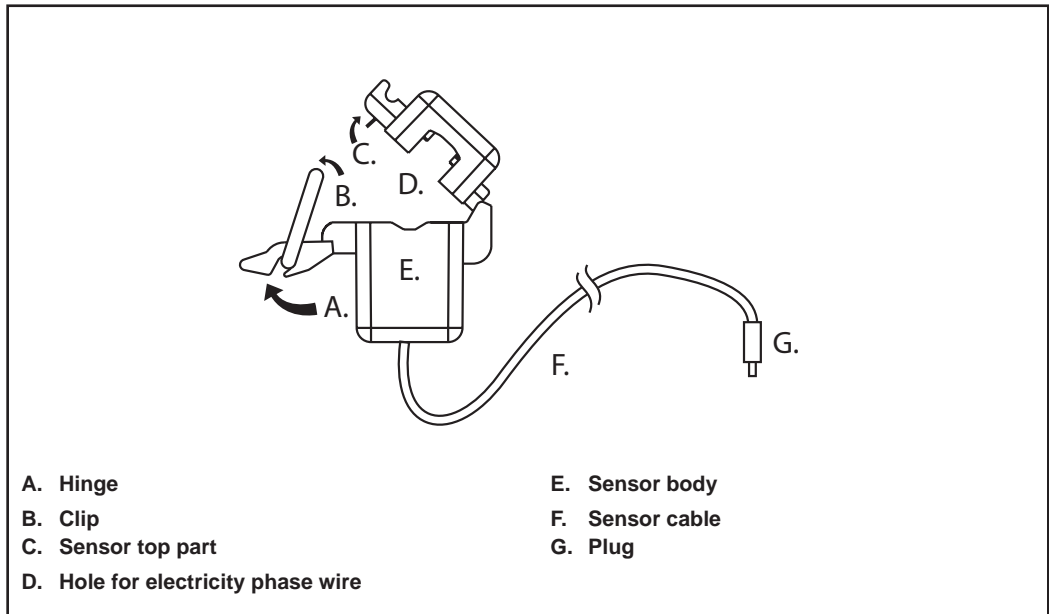
- E. Wall-Mount Recess Hole**
For mounting the unit to a wall
- F. Search Button**
To search for and calibrate with Remote Transmitter
- G. On/Off Alarm Button**
Turn Alarm on or off
- H. Reset Hole**
Returns all settings to default values.
- I. Table Stand**
Can be pulled out and used to stand the unit on a flat surface
- J. Battery Compartment**
- K. Plug pack power socket (optional)**



Sender Box (Model CMR113)







Sensor (Model CMS113)





LCD Display Symbols

Symbol	Description	Explanation
MAX	Maximum receiving speed	Information is received from the Sender Box every 6 seconds instead of every 1 minute. (Use with MAX set off to save battery life).
HI	Alarm limit activated	The electricity cost-per-hour peak load limit is activated. The alarm will sound if it is exceeded.
$\frac{\text{PENCE}}{\text{CENT}} / \text{HOUR}$	Cost per hour (Pence, Cents)	The instantaneous cost per hour of electricity being used in your household in dollars, pounds sterling or euros.
$\frac{\text{PENCE}}{\text{CENT}} / \text{kWh}$	Cost per kWh (Pence, Cents)	The amount (tariff) that your local electricity retailer charges for electricity per kWh (Kilowatts hour).
kW	Kilowatts	The total amount of energy being used in kilowatts
GREENHOUSE GAS	Greenhouse gas display	You are displaying greenhouse gas emissions information.
AMP	Amperes	The amount of current passing into your home.
VOLT	Voltage	The voltage setting for your household power line.
$\frac{\text{KG}}{\text{HOUR}}$	Kilograms per hour	The amount of greenhouse gas emissions per hour in kilograms, emitted by the power station.
$\frac{\text{TON}}{\text{YEAR}}$	Tons / year	The amount of greenhouse gas emissions per year in tonnes, emitted by the power station.
$\%$	Relative Humidity	The relative humidity level in your household.
$^{\circ}\text{C}$	Temperature (Celsius)	The temperature in your household.
 COM	Humidity & Temperature condition	Shows if the environment is comfortable.
 DRY	Humidity & Temperature condition	Shows if the environment is dry.
 WET	Humidity & Temperature condition	Shows if the environment is wet.
----	Alarm disabled/ Transmission broken	The alarm is disabled, or the transmission from the Sender Box has been broken.
REMOTE MAIN 	Low battery	The battery for either the 'main' or 'remote' units is low and should be replaced.



WARNINGS

To ensure you use your product correctly and safely, read these Warnings and the User Manual before using the product. These warnings provide important safety information and should be observed at all times.



WARNINGS

- **When fitting sensors if in any doubt always contact a qualified electrician.**
- Do not attempt to repair the product yourself. Contact the retailer or our customer service department if it requires servicing.
- Take precautions when handling all battery types. They can cause injuries, burns, or property as a result of contact with conducting materials, heat, corrosive materials or explosives. Remove the batteries before storing the product for long periods of time.
- Do not immerse the device in water.
- Do not, under any circumstances, touch the exposed electronic circuitry of the device as there is a danger of electric shock should it become exposed.
- Take special care when handling a damaged LCD display, as the liquid crystals can be harmful to your health.
- Do not use or store the device, including the remote sensor, in locations that may adversely affect the product such as rain, snow, desert, and magnetic fields.
- Do not use this device in aircrafts or hospitals. The use of radio frequency products can cause malfunctions in the control devices of other equipment.
- Do not subject the product to impact or shock.
- When disposing of this product, do so in accordance with your local waste disposal regulations.

SAFETY AND CARE INSTRUCTIONS

Safety precautions

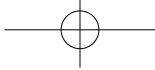
Please observe the following safety precautions when setting up and using this product.

- LCD panel – The LCD panel is made of glass, and may break if the unit is dropped or impacted.
- Heat sources – Keep the product away from heat sources such as radiators, stoves, heaters, and other heat-generating products.
- Water and moisture – Do not use the product in or near water or in high moisture areas such as a bathroom.
- Power source – The product may be susceptible to power surges, and the Sensor cable should be disconnected from the Sender Box during severe storms.

Caring for this product

To ensure you receive the maximum benefit from using this product, please observe the following guidelines.

- Cleaning – Disconnect the Sensor and remove the batteries from the Sender Box and the Remote Monitor before cleaning. Use a damp cloth. Do not use liquid cleaning agents, benzene, thinner, or aerosols.
- Ventilation – The vents and other openings are designed for ventilation and should not be blocked or covered. Blocking the vents can cause the product to overheat and can damage the unit.
- Repair – Do not attempt to repair the product or modify the circuitry by yourself. Contact the retailer or a qualified electrical person if the product requires servicing. Only use replacement parts that are recommended by the manufacturer.
- Do not scratch hard objects against the LCD display as this may cause damage.
- Do not leave discharged batteries in either receiver or transmitter unit for any length of time, as they may leak and cause corrosion.



HOW THE PRODUCT WORKS

Overview

This product uses 'phase' current transformer sensing technology to detect and monitor a magnetic field around your household electricity power cable. It measures the amps being used and, by reference to the system voltage, calculates the amount of power being used, the cost, and the amount of greenhouse gas emissions. It then transmits this information from the Sender Box to a cordless Remote Monitor on a frequency of 433MHz, from up to 30 meters away (unbroken transmission).

NOTE The product is primarily intended as an educational device to aid understanding of the cost of operating electrical appliances in the home. As such, it is not intended to replace your accurate electricity revenue meter, so it cannot be used to check your electricity account.

Voltage and Current

Voltage (volt) is the measure of electrical potential. **Current** signifies the amount of electricity flowing through a conductive material, such as a wire. Electrical current is measured in amperes or "**amps**" for short. Both Amps and Volts are necessary to provide electricity for your household appliances. Power is measured in Watts, and is the product of Volts times Amps. For a particular location, the voltage is usually constant – so the amount of power used is directly proportional to the current used.

Watts and Kilowatts

Refer to the following table:

Watts	Kilowatt (kW)	Kilowatts hour (kWh)
A Watt is the standard unit of measurement for the amount of energy (electric or otherwise) being transferred to or from somewhere each second.	A Kilowatt (kW) is simply a larger unit of measurement (1000 watts = one kilowatt).	Kilowatts hour (kWh) represents the use of 1000 watts of electricity for one whole hour.

NOTE 1 kWh is the equivalent of ten(10)X100-watt bulbs operating at the same time for one hour.

Household power cable and 'phase'

Most household electricity supplies use either single 'phase' or three 'phase' current. In single 'phase' supplies, the current flows to and from your household appliances using a 'neutral' and 'power' line. The neutral line has a voltage close to 0 while the 'power' line carries a fluctuating voltage or 'phase' at about 240 volts. The difference between these two lines makes the current flow through your appliances.

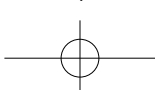
In three 'phase' supplies, current flows to and from a device through a group of three lines - each one carrying a fluctuating voltage or 'phase'. The Sensor should be connected to each of the three phase lines before using the ONL™.

Greenhouse gas

Fossil fuel power stations emit gases such as carbon dioxide when producing electricity. This causes an atmospheric imbalance, which in turn has been linked to global warming (global temperature rise).


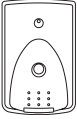
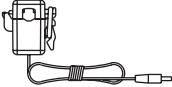
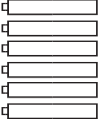

Every power station has a slightly different ratio of emissions to electricity production, depending on the type of fuel used to generate electricity. Sustainable energy sources such as hydro, solar and wind power do not create any emissions.

The default greenhouse emission rate on the Portable Main Unit is set to 1 kilogram of greenhouse gas for every 1KW of electricity produced (1:00). This can be changed depending upon the fuel or energy source used by your power generating authority (**see customized settings**).



QUICK INSTALL GUIDE

Step 1: Remove all items from packaging

Remote Monitor	Sender Box	Sensor	Batteries x6 AA Alkaline	User Manual
				

Step 2: Locate Sender Box and Senso

The Sensor comprises a small plastic component with a hinged clip and a wire with a jack plug connector on the other end. The hinged clip is designed to clip around the Live insulated power supply cable coming from the Electricity Meter to the Consumer Unit (Fuse Box).

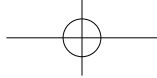
WARNING: Extreme care must be taken when working with electrical equipment as touching exposed electrical wires or components may result in electrocution causing death. If in any doubt consult a qualified electrical installer.

Step 3: Locate Electricity Meter and identify live supply cable

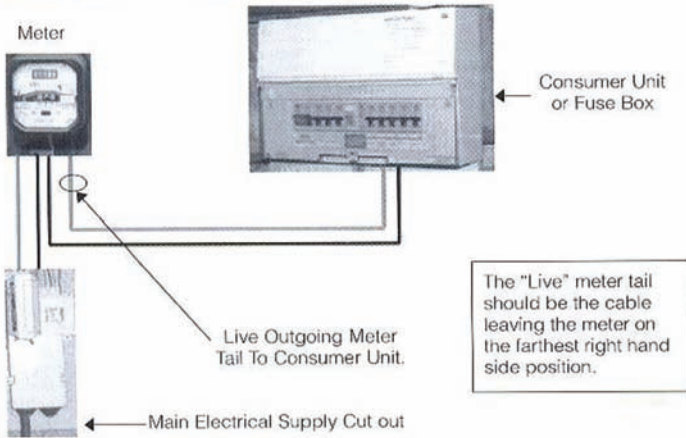
- Locate your electricity meter
- Look at the cables entering the meter at the bottom. You will need at least 150mm (6") of cable from the meter to the consumer unit to be accessible to fit the sensor around the wire. Where the cables inside walls or enclosures and are not accessible, consult a qualified electrical installer for advice.
- Before touching any cables, visually inspect the insulation (Plastic Covering) for any signs of damage or deterioration such as cracks in the outer covering, visible copper cores, burnt or blackened covering. If damage is seen, do not touch anything and contact a qualified electrical installer for advice.
- If there is any water present in the fuse box, caused by rain or leakage, do not install the sensor until everything is absolutely dry.
- You should see four cables entering the bottom of the meter, these are the incoming electrical supply cables (Live and Neutral) from the suppliers main fuse (electrical cut out) and the outgoing "Meter Tails" (Live and Neutral) that run from the meter to the consumer unit (fuse box). **Note if you have an off-peak supply there may be more cables seen here, if that is the case consult a qualified electrical installer.**

Step 4: Clip the Sensor (s) around the live outgoing supply cable (not the neutral) which goes into your consumer unit. Do not pull or bend the cables, all that is required is for you to ease the cable into position where you can clip the sensor around the cable.

If in any doubt always consult a qualified electrical installer.



Identifying the “Live” meter tail.



- Step 5:** Locate sender box mounting bracket on the wall adjacent to the meter or consumer unit. Check length of Sensor(s) cables to ensure that they will reach the location of the transmitter mounting bracket.
- Step 6:** Unscrew backing plate on the sender box and install batteries provided. You will need a small cross-head screwdriver for this task.
- Step 7:** Plug Sensor cable Jack Plug into any one of the sockets located at the bottom of sender unit.
- Step 8:** Whilst at the sender box location, install the batteries into the Remote Monitor. **(Note: The Remote Monitor may not connect to and lock with the Sender Box if the batteries are not installed into the Sender Box before the Remote Monitor).**
- Step 9:** Push the CHECK button on the Sender Box for more than 2 seconds to force the sender box to send wireless signals to the Remote Monitor to help the Sender Box connect to the Remote Monitor.
- Step 10:** Push SEARCH button on the back of the Remote Monitor and the Remote Monitor and Sender Box should connect and lock. When they have connected you should see a usage reading based on default settings.
- Step 11:** To customise settings refer to the “CUSTOMISING THE SETTINGS” section in the User Manual.
- Step 12:** For trouble shooting refer to the “TROUBLE SHOOTING GUIDE” in the User Manual.

Alternative sensor installation. The sensors are suitable for use with wire diameters of up to 11mm. They must not be forced over cables greater than 11mm or the sensor will break. If wiring is larger than 11mm diameter the sensor may be clipped over a number of circuit wires from the same phase, to read the total current being drawn. If all of these wires do not fit into one sensor then another sensor can be used to measure the current in the remaining circuit wires – providing these wires are of the same phase.

Note If this is the case always consult a qualified electrical installer

Additional sensors may be used to measure the current in the other phases. The sensors are suitable for a maximum current of up to 71 amps. If used on wires carrying a greater current the readings will not be accurate. If the current in any one wire or group of wires is more than 71 amps, additional sensors can be used to share the current.

GETTING STARTED

You will need

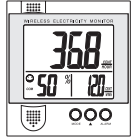
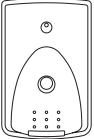
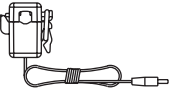
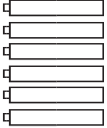

As you unpack and begin to set up your new ONL™ you will need the following equipment:

- User manual – for instructions on how to set up and use the product.
- A hammer and 2x 2mm head nails – to fix the mounting bracket/unit to the wall. Alternatively you may screw the bracket to the wall.
- A small cross-head screw driver - to open the battery compartment of the Sender Box.

Unpacking the product

When you unpack your ONL™, make sure to keep all the packing materials in a safe place, in case you need to later transport or return it for servicing.

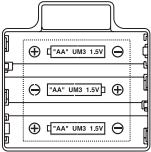
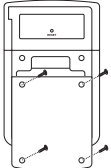
In the box, you will find:

Remote Monitor	Sender Box	Sensor	Batteries x 6 AA AA alkaline	User manual
				

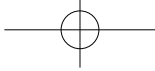
Batteries

The Portable Main Unit Receiver and the Remote Transmitter both use 3 x UM-3/AA 1.5V alkaline batteries. Do not use other types of batteries. No other power source is necessary to run the units.

Loading the batteries:

Remote Monitor		Sender Box	
Diagram	Instructions	Diagram	Instructions
	Install the batteries by matching the correct polarity. Always use the correct battery type (3 x UM-3/AA 1.5V alkaline batteries). Warning: Reversing the polarity may damage the product.		Remove the cover with a screwdriver. Then follow the same instructions as the main unit. Once done, replace the cover and screw back the cover onto the unit.

NOTE Replace the batteries whenever the weak battery mark 'main' or 'remote' (⚡) shows, the display is dim, or the display does not illuminate when the power is on. Replace all the batteries at the same time – it is unwise to mix old and new batteries.



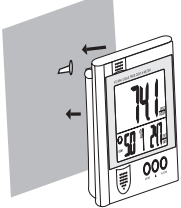
Contact your local waste disposal authority for instructions on how to dispose of used batteries. Used batteries can be harmful to the environment, and should not be thrown out with household rubbish.

AC Adapter

The main unit receiver can operate with a 6.0V AC/DC adapter, which can be purchased separately.

Mounting the Remote Monitor

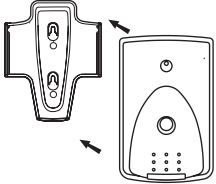
The Remote Monitor can either be placed on a flat surface with the back stand pulled out or mounted as shown below:

Diagram	Instructions
	1. Mount by using nails or screws.
	2. Hammer in nail or screw halfway.
	3. Attach main unit

Mounting the Sender Box

The Sender Box should be placed on a flat surface or mounted on a wall using the wall bracket provided within 30 metres of the . It should be mounted outside of the electrical meter or fuse box, if these are made of metal. **WARNING:** If installed inside a metal meter box, the signal transmission distance between the Sender Box and the Remote Monitor will be reduced.

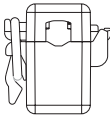
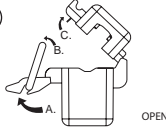
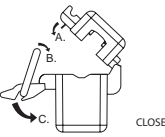
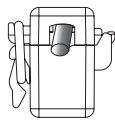
To fix the wall bracket follow the instructions below:

Diagram	Instructions
	1. Position the wall bracket.
	2. Insert nail or screw through the mounting hole.
	3. Hammer in nail or fix the screw halfway.
	4. Attach wall bracket.
	5. Slide Sender Box into place.



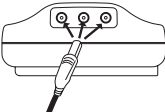
EN Attaching the Sensor

To attach the Sensor to the household power line (see HOW THE PRODUCT WORKS) follow the steps below: **WARNING: If in doubt about installing this product yourself, please consult a qualified electrician.**

<p>① </p> <p>Locate the main household active or 'phase' cable (see How the product works).</p>	<p>② </p> <p>Unclasp the housing, following the letters in the Diagram above.</p>
<p>③ </p> <p>Place Sensor around cable. Re-clasp the housing.</p>	<p>④ </p> <p>Current Sensor with cable attached.</p>

Plugging the Sensor into the Sender Box

Once the Current Sensor is attached to the household power line you may plug it into any of the three outlets in the Sender Box by following the steps below:

Diagram	Instructions
	<p>1. Choose one of the three outlets.</p> <hr/> <p>2.. Plug in.</p>

NOTE The signal wiring (approx. 1 volt, 1 milliamp) on the current sensor is double insulated suitable for installation in a 240 volt domestic power supply meter box. When passing through an enclosure opening, the wiring should be protected from sharp edges by fixed bushes.

It is possible to purchase further Sensors and use them simultaneously on multiple power lines (up to 3). This may be useful in buildings with high rates of power consumption such as factories or offices.

If more than one Sensor is used the total power consumption displayed will be a combined reading.



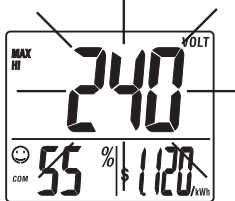
CUSTOMISING SETTINGS

When the Sender Box and Sensor have been connected, the ONL™ Remote Monitor immediately starts receiving information. The LCD screen displays electricity consumption and greenhouse gas readings based on default factory settings (see SPECIFICATIONS). In order to obtain a more accurate reading, it is advisable to make more customised settings.

Setting the Voltage

The 'voltage' of the power line (see Voltage and current) can be set by following the instructions:

NOTE The default voltage setting is 240v. For the UK a voltage setting change to 230v is required.

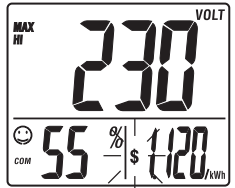
Diagram	Instructions
	1. Press mode and alarm simultaneously. The current voltage setting is displayed.
	2. Press mode again. The voltage value blinks.
	3. Use the arrow key to change the value. (110-250)
	4. Press mode when finished.

Setting the electricity cost-per-hour

The ONL® initially displays the electricity cost-per-hour as a default or factory setting of 12 pence per kWh (see Watts and Kilowatts). To find the local electricity charge per kWh, refer to your last electricity bill and then change the currency unit and value by following the instructions below:

Setting the cost-per-hour currency unit

NOTE The default currency setting is \$. For the UK a currency setting change to £ is required.

Diagram	Instructions
	1. Press mode and alarm simultaneously.
	2. The currency value blinks. Use the arrow key to change the flash value (in \$, £, or €)
	3. Press mode to set value.
	4. Press mode when finished.



EN

Setting the cost-per-hour value

Diagram	Instructions
	1. Press and hold mode for 2 seconds. The first digit of the electricity cost-per-hour flashes.
	2. Use the arrow key to change the flashing value (0-9). Press mode to set value. Repeat for all digits.
	3. Press mode when finished.

Setting the greenhouse gas emission per kW rate (see Greenhouse Gas)

To set the unit and rate of greenhouse gas emissions per electric current production (see Greenhouse gas) follow the instructions below:

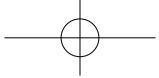
Diagram	Instructions
	1. Press mode to change to the Greenhouse Gas display.
	2. Press and hold mode for 2 seconds.
	3. The Greenhouse Gas emission unit blinks. Use the arrow key to toggle between units (Kg/Hour or Ton/Year). Press mode to confirm.
	4. The Greenhouse Gas value blinks. Use the arrow key to change the value.
	5. Press mode again to return to the Greenhouse gas display.

NOTE It may be necessary to change this setting for a product used in the UK, where average greenhouse gas emissions are approximately 1 kilogram per kW. If a precise rate is required, or if you have purchased a “Green Energy” product, contact your local electricity retailer.

Setting the Battery power save mode

You can save battery power by changing the receiving speed of the Remote Monitor from every 6 seconds (MAX) to every minute. To change the setting, follow the instructions below:

Diagram	Instructions
	1. When 'MAX' icon is displayed, press and hold the arrow key for 2 seconds.
	2. The 'MAX' icon disappears. Repeat these steps to re-enable “MAX” receiving speed.

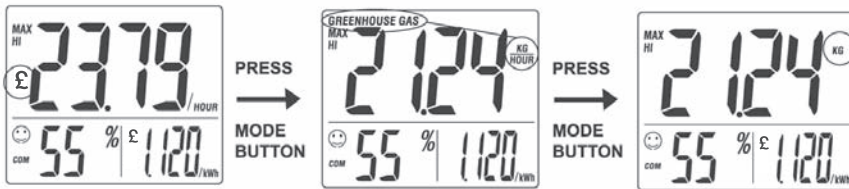


MAIN UNIT INFORMATION

After customizing your ONL™ three information modes can be displayed on the Remote Monitor:

- cost of household power consumption in dollars/pounds/euros per hour
- amount of greenhouse gas emissions produced in kilograms per hour or tonnes per year
- household power consumption in kilowatts or amps (see **To display power consumption in amps**)

To display the information, simply use the mode key to switch between screens.



To display power consumption in amps

Household power consumption can be displayed in terms of amps instead of kilowatts (see **HOW THE PRODUCT WORKS**). To display the amount of electrical current passing into your home (amps), instead of the amount of energy consumed (kW) follow the instructions below:

Diagram	Instructions
	<ol style="list-style-type: none"> 1. Press mode to change to kW display. 2. Press and hold mode for 2 seconds. The AMP display is shown.
	<ol style="list-style-type: none"> 3. Press mode again to return to kW display.

SETTING THE ALARM

The ONL™ comes equipped with an alarm that alerts users when the electricity cost-per-hour exceeds a pre-set limit. This helps control energy consumption and may reduce electricity bills and the possibility of blackouts during peak load periods.

To set the alarm limit

To set the alarm limit follow the instructions below:

Diagram	Instructions
	<ol style="list-style-type: none"> 1. Press and hold alarm key for 2 secs.
	<ol style="list-style-type: none"> 2. Use the arrow key to change a value.
	<ol style="list-style-type: none"> 3. Press alarm again and continue until all values are set.



Activating the alarm

To activate the alarm follow the instructions below:

Diagram	Instructions
	1. On the back of the unit locate the grey alarm on/off button (furthest to the right).
	2. Press the alarm on/off button once to activate or deactivate the alarm.
	3. Hi icon will appear when the alarm is activated and disappear when it is deactivated.

NOTE The alarm will sound for 4 seconds and the display will flash continually when the alarm is exceeded. It will cease if the cost-per-hour falls below the limit, or you can press any button to stop the alarm. A "----" message means the alarm is disabled.

USING THE SEARCH AND CHECK FUNCTIONS

The ONL™ Remote Monitor and Sender Box include search and check functions to quickly re-establish a connection should the transmission be broken (i.e. if the units are too far apart, or experience interference from other devices such as a radio or television).

Using the search function

To activate the search and check function, follow the instructions below:

Diagram	Instructions
	1. Locate the search button on the back of the Remote Monitor (left hand grey button). Press once and hold for 2 seconds (unit will beep twice).
	2. Connection with the Sender Box will be re-established, when the next transmission signal is received.
	3. If no connection can be made, locate the check button on the Sender Box. Press once.
	4. Press the search button on the back of the Remote Monitor again as in step 1.

NOTE Make sure you press the Search button within 30 seconds of activating the Check function. If a connection is not made try resetting both the Remote Monitor and the Sender Box. If you are resetting



both units to re-establish a connection between the units, the Remote Monitor must be reset last.

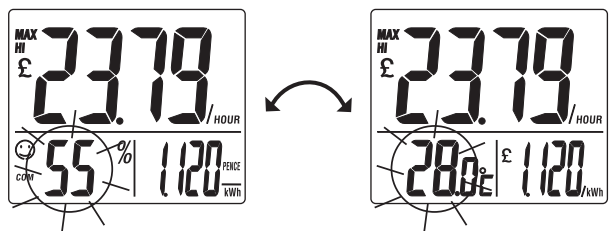
Resetting the Remote Monitor and the Sender Box

To reset both units to default factory settings follow the instructions below:

Diagram	Instructions
	1. Locate the reset point on the back of the Remote Monitor.
	2. Push a blunt stylus (pen) gently into the reset point.
	3. Follow the same steps for the Sender Box.

TEMPERATURE AND HUMIDITY

An added feature of the ONL™ is a temperature and humidity display. Both temperature and humidity are alternately displayed in the bottom left hand corner of the Remote Monitor for three seconds. Humidity is shown as %, and temperature in Celsius °C (a factory setting of Fahrenheit °F is also available).



An extra feature of this display is a series of icons to indicate if the environment is comfortable, dry or wet:

Zone	Temperature	Relative Humidity
 COM	20-25 °C (68-77 °F)	40-70%
 DRY	Any	<40%
 WET	Any	>70%

NOTE The readings given are for the surrounding environment and may change according to the position of the unit. HHH or LLL will be shown if the temperature is over or under range (+50°C to -5°C).

TROUBLESHOOTING GUIDE

This section includes a list of frequently asked questions for problems you may encounter with your unit. If your ONL™ is not operating as you think it should, check here before arranging for servicing.

Problem	Symptom	Check this	Remedy
No power or no reading	Power will not turn on or no display reading on LCD screen	Batteries are exhausted.	Replace with new batteries.
		Batteries are inserted incorrectly.	Insert the batteries correctly (-> Batteries).
"----" reading	"----" display readings on LCD screen or, Display does not change when power use is changed	Sender Box and Remote Monitor are not synchronised or transmission link has been broken	Reset both units, Sender Box first, Remote monitor second.
"00.00" reading	Current not detected	Check cable from sensor into transmitter	Call Electrician to check
No Alarm	"----" reading in Alarm	Alarm disabled	Activate alarm
"----" flashing	Automatic search underway	-	Allow search to run to completion
Remote Monitor receives data from another Sender Boxr	Display does not respond as expected	Incorrect Sender Box detected during installation or following battery replacement or "reset"	Refer to installation instructions

NOTE After resetting the main unit receiver it may take up to 2 minutes to re-establish the communications link. This can be expedited by pressing the "CHECK" button on the remote transmitter for 2 seconds to force transmissions every 2 seconds.

SPECIFICATIONS

Dimensions

Remote Monitor (Model CM113)

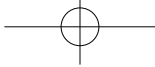
Width x Height x Depth	107 W x 117 H x 30 D mm
Weight	160 g

Sender Box (Model CMR113)

Width x Height x Depth	78 W x 113 H x 40 D mm
Weight	110 g

Sensor (Model CMS113)

Width x Height x Depth	50 W x 50 H x 30 D mm
Weight	20 g



Power On Factory Default Settings:

AC voltage	240VOLT
1kg Co2	1 kW/hr
GHG unit (greenhouse gas)	KG/HOUR
GHG conversion	1 Kg CO ₂ = 1 kW/hr
Tariff charge (cost-per-hour)	12.0 CENT / kWh
Temperature unit	°C
Currency	\$ and CENT
Hi alarm	\$2.00/HOUR, HI=on
Receiving cycle	MAX=6 second
Display Mode	Cost Rate Display (cent/hour)

Current (RMS) Accuracy:

	<u>Tolerance</u>
Less than 1A	Not Specified
1A to <3A	<10 %
3A to 71A	<5 %

Radio frequency:

System	433 MHz radio frequency
Range	30 metres in open area (partitions, walls, and electrical appliances may affect reception range)

Power:

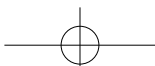
Power supply	Main unit – 3 x AA / UM-3 1.5V batteries (or 6.0V AC/DC adapter) Remote unit – 3 x AA / UM-3 1.5v batteries
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Operating environment:

Operation temperature	5° C ... 45° C (41° F...113° F) at 85% relative humidity
Storage temperature	-5° C60° C (23° F ... 140° F) at 85% relative humidity

Compliance:

Manufactured to ISO9000 Quality Assurance Standards and tested for compliance with European CE certification RTTE/CE approved (Europe), FCC, UL (USA), IC (Canada) and applicable Australian and New Zealand Communications and Electricity Authorities Regulation N12357.



DEFAULT VALUES

FUNCTION	DEFAULT VALUES	CUSTOMISED SETTINGS
AC voltage	240V	
Greenhouse gas emission rate per kW	1.0	
Greenhouse gas unit	kg/hour	
Tariff charge (cost per kWh)	12 cents per kWh	
Currency	\$ and cent	
Hi alarm	\$2.00/hour, HI on	
Battery save (receiver)	MAX on	

WARRANTY

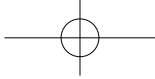
LIMITED ONE YEAR WARRANTY

2 Save Energy Plc warrant this product for a period of 1 year from date of purchase for all defective in workmanship or materials. All defective parts will be replaced or repaired free of charge.

The following exclusions do not include the purchaser from those statutory rights consumers have under the Consumer laws that exist in the UK.

Warranty Conditions

1. The product must be installed and operated in strict accordance with instructions. 2 Save Energy Plc will not accept liability for any damage or injury caused by misuse or non-compliance with the instructions.
2. Warranty will only be given where proof of purchase date is provided. Eg. original invoice or copy.
3. This instrument must not be modified in any way.
4. Batteries are specifically excluded from this warranty.
5. 2 Save Energy Plc will not be liable for indirect, consequential or incidental damages.
6. 2 Save Energy Plc reserves the right to change specifications or designs described in this manual without notice or obligation.



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PROOF OF PURCHASE

If you need any service or warranty support, please contact the Supplier giving the following details:

Product Name:

Purchaser Name and Address:

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Supplier Name and Address:

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Date of Purchase:

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