

## Introduction

Thanks for using AML Wireless Energy In-Home-display unit. This product is a semi-portable communication product used in the household market. You can view the instant electricity consumption, cost-up-to-current-hour and records (e.g. hourly, daily, weekly, and monthly) as well as estimated CO2 emission produced. The product provides various wireless options (e.g. 315, 433MHz, 868MHz, and 915MHz) with proprietary communication coding for different market segments.

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## General Safety Guidelines

1. Do not subject the devices to impact and shock.
2. Do not use the current clamp and sender outside and near water or in high moisture places.
3. Do not touch the electronic circuitry as it may result in electric shock
4. Take special care when handling a broken LCD display, as the chemical inside can be harmful to your health
5. Take special care when handling batteries and don't expose them in the air for a long time.
6. Only use new batteries to ensure the best battery life performance.

## Getting started

### What's inside in the packing?

- 1x Current sensor
- 1x Sender Unit
- 1x Display Unit
- 1x Desk Stand
- 2x AAA battery for display unit
- 2x AA battery for transmitter

With the standard electricity In-Home-Display unit, you can clip the current sensor around the electricity meter's live feed supply such that it measures the total electrical power entering to home or office. Power consumption will be recorded and transmitted to the display unit wirelessly. The following features are provided also:

- Support dollars, ponds and euros for cost monitoring.
- Dual battery system is used to extend operation period and to prevent data lost during battery changing.
- Indicate existing cost alert level by Tri-color LED
- Display Temperature and current time
- Clock alarm and cost alert level setting.
- Monitor up to 8 sensors
- Support >30m RF transmission

## Products Key Features

### Monitor Features

TOP View:

1. SET/MODE Key

2. MEM/ESC Key

3. UP KEY

4. DOWN KEY

Back View

5. RESET KEY

Bottom View

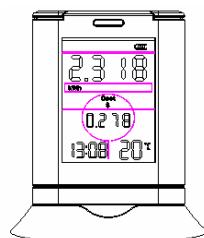
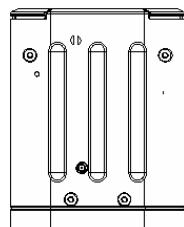
6. Battery compartment

Front View

7. Main LCD

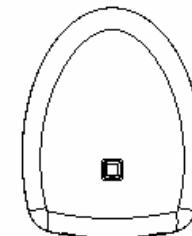
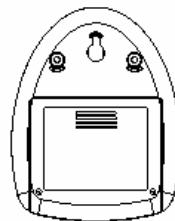
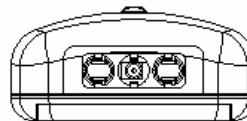
8. LED to indicate the data transmission and level of cost limit

9. Desk Stand



### Sender Features

1. LED to indicate the data transmission and Link Key to pair the sender to the monitor linkage and re-establish the connection after losing tracking.
2. Battery compartment
3. Sensor cable sockets (3pcs)



## System Settings

### Setup In-Home-Display Unit

Remove all packing, insert two AA batteries into sender and two AAA batteries into display unit. Additionally two AAA batteries can be added to display unit to extend operating life and to prevent data lost during battery changing. It is recommended

that the users carry out setting (e.g. clock, alarm level etc.) for your customized uses.

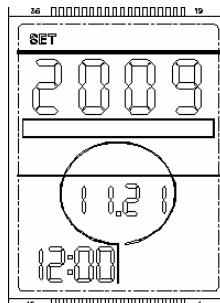
#### Start the setting mode

Press the SET/MODE key for two seconds to access the setting mode. Customization setting will start with Calendar/Time setting as below.

#### Calendar/Time Setting

STEP 1. Press arrow keys to change the flashing value for year. Press SET/MODE key to set and move on to month setting.

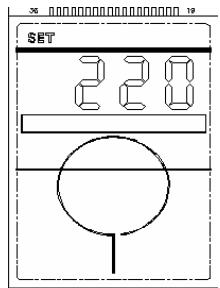
STEP 2. Repeat above process for the month, date and the time in order to complete the calendar settings.



#### Voltage Setting

STEP 1. Press arrow keys to change the flashing voltage value between 110V, 220V, 230V, 240V and 250V.

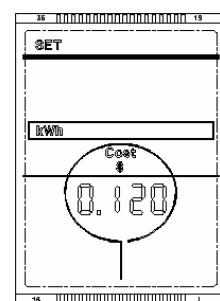
STEP 2. Press SET/MODE key once to store the voltage and move on to the next function setting.



#### Currency & Cost/kWh Setting

STEP 1. Press arrow keys to change flashing currency between English pound £, Dollar \$, and Euro €.

STEP 2. Press SET/MODE key to store currency setting you have selected.



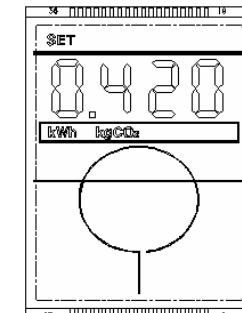
STEP 3. The first digit of Cost/kWh flashes. Use arrow keys to change first flashing value.

STEP 4. Press SET/MODE key to set the value of flashing digit. Repeat for all digits and move to CO2 emission setting.

#### CO2 Emission Setting

STEP 1. Press arrow keys to change the first flashing digit of CO2 emission value.

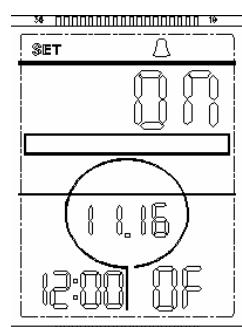
STEP 2. Press SET/MODE key to set the value of flashing digit and repeat for all digits.



#### Alarm Clock Setting

STEP 1. Press arrow keys to turn ON or OFF the alarm system. If OFF is chosen, it will go to the next setting mode.

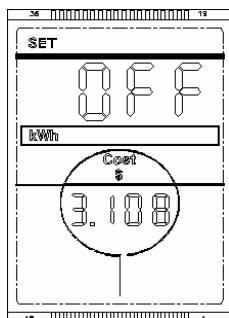
STEP 2. If ON is set, press Arrow Keys and SET/MODE to complete alarm time setting. You can set the alarm to repeat everyday by setting to ON and alarm once by setting to OFF at the last stage.



#### Cost Alarm Level Setting

STEP 1. Press arrow key to turn **ON** or **OFF** the cost level alarm. If OFF is chosen, it will go to Temperature Unit Setting mode directly.

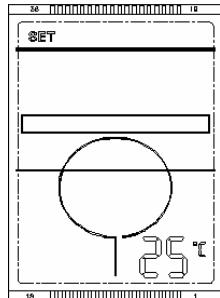
STEP 2. Press Arrow and **SET/MODE** key to adjust and set the value of first flashing digit. Repeat the process for all digits to complete.



#### Temperature Setting

STEP 1. Press arrow keys to change the flashing units between Celsius  $^{\circ}\text{C}$  and Fahrenheit  $^{\circ}\text{F}$ .

STEP2. Press **SET/MODE** key to confirm the save the new setting and complete the whole customization setting.



#### Exit Setting Mode

System will return to monitor mode and corresponding device information (e.g. Sensor ID, instant consumption and cost) will be shown at display unit.

During the customization process, press **ESC/MEM** key at any time, previous modifications will be saved.

## System Installation

Step 1: Remove all items from packaging

Step 2: Carry out customization processes

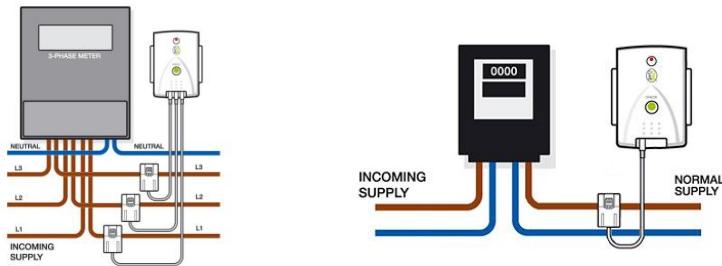
Step 3: Locate Electricity Meter and identify live supply cable

- Locate your electricity meter
- Visually inspect the insulation (plastic covering) to ensure no damage or deterioration such as cracks in the outer covering, visible copper cores etc;
- Extreme care must be taken when working with electrical equipment as touching exposed electrical wires may result in electrocution casing death. If you are in any doubt during the inspection, please consult a qualified electrician.

Step 4: Clip the sensor(s) around the live outgoing supply cable. If you are in any doubt during the inspection, please consult a qualified electrician.

Step 5: Locate transmitter on the wall using provided wall mount kit, check length of sensor cable to ensure that it will reach the location of the transmitter.

Step 6: For Single Phase system, Plug sensor cable jack into any one of the sockets located at the bottom of transmitter unit. For the 3-phase system, 2 additional sensors are required per phase. Cable will be locked by self-locking mechanism of transmitter.



Step 7: System is ready to record your power consumption. Please check sensor ID (e.g. E-01) has been shown at the display unit, otherwise please proceed to learning mode process.

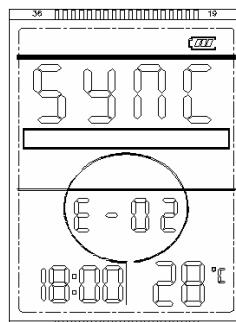
## Linking and unlinking the senders

### Linking a sender

STEP 1. Press both **SET/MODE** and **ESC/MEM** keys for 2 seconds to access the learn mode and **SYNC** will be displayed.

STEP 2. Press **Link** key on the sender for two seconds to setup up the linkage between the sender and display unit.

STEP3. The Link LED will flash to indicate the finish of the process. The ID of the sender (e.g. E-01) will be shown.



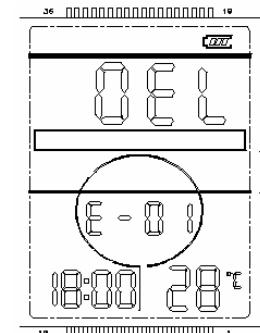
Note: Users can learn up to 8 sensors but learn mode will terminate if display unit has found no signal for more than 10 seconds or **ESC/MEM** is pressed during the process.

### Deleting device

STEP 1. To enter the delete mode, press the **Set/Mode** in the synchronizing mode.

STEP 2. Press Arrow keys to browse the senders and remove it from the system by pressing **SET/MODE** key.

Note: **NULL** will be shown when no sender in the system.



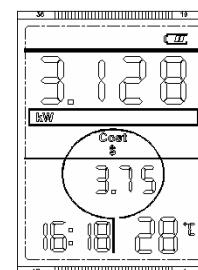
## Operating Mode

### Instant Mode

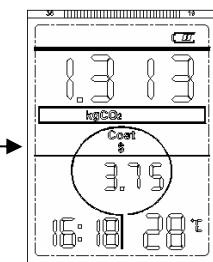
User can record the energy consumption instantly after paired sensor and customization process. The following figures show display using in normal operation mode for each sender.

- Cost of household power consumption within an hour
- Amount of CO2 gas generated in kg with an hour
- Instant household power consumption

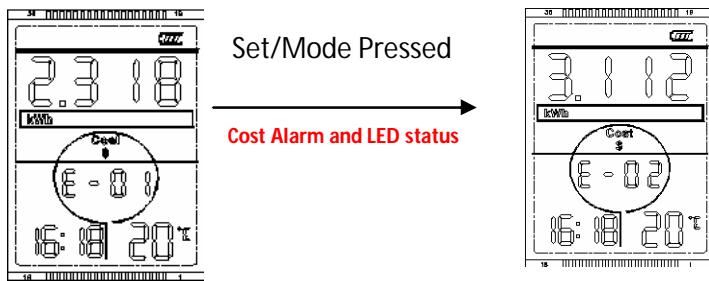
To display the CO2 emission from the current device instantly, press **SET/MODE** to change to **kgCO2** display.



Set/Mode Pressed

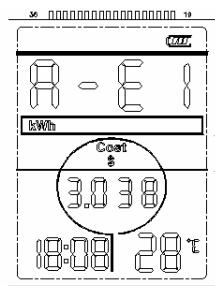


To switch from one sender to another, press Arrow keys to browse the paired sender in the system.



The LED flashes every 10 seconds to indicate the data transmission and show if the cost consumed within the current hour for a sender exceeds the setting limit for an hour according to the following table.

Percentage of cost limit	Action
<80%	LED: Green
>=80%	LED: Yellow
>=100%	<ul style="list-style-type: none"> <li>LED: Red,</li> <li>Buzzer: ON for 30s</li> <li>The sender exceeding the limit and the limit are shown e.g. A-E1 for E1, exit whenever any key is pressed</li> </ul>



#### Reset

2 types of reset are available to the system. To reset the parameters in setting mode, press reset for 2s. To reset the system to default factory mode, press reset and SET/MODE for 2s.

#### Memory Mode

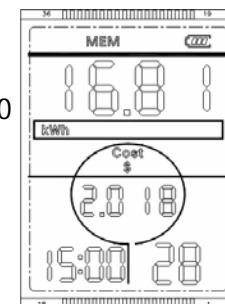
Push MEM/ESC to access the previous 48 hours, 7 days, 4 weeks and 12 months stored information including kWh, kgCO<sub>2</sub> (in kgCO<sub>2</sub> instant display mode) and cost. Press *SET/MODE* to move from hourly mode to daily, weekly, and monthly. Press arrow keys to scroll the previous information.

Memory Mode flow example:

Hourly

Date: 28

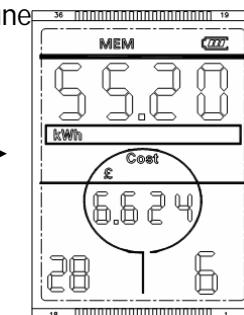
Time: 15:00



Daily

Month: June

Date: 28

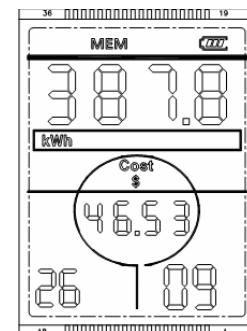


Set/Mode Pressed

Weekly

Year: 2009

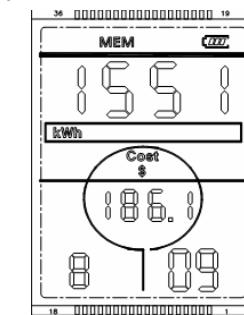
Week number: 26



Monthly

Year: 2009

Month: August



Set/Mode Pressed

## **Troubleshooting**

1. The reading shows 0.000 and flashes.

Try this:

- Re-establish the linkage by pressing the link key on the sender.
- Check the batteries of the sender.
- Take the sender or display closer than each other.

2. The reading always shows 0.000.

Try this: Check the clamp from the sensor and ensure that it is clamped on the live cable.

3. The alarm doesn't work.

Try this: Please ensure the alarm is turned on in the setting mode.

4. No display reading on the LCD.

Try this: Please check to see if the batteries are exhausted.

## Radio Frequency and Range:

System: 433MHz radio frequency, >30m

## Power Supply:

Display Unit: 3V (2XAAA, can use 4AAA to extend the battery life)

Sender: 3V (2XAA)

## Operating environment:

Operating temperature: 0°C -50°C

Storage temperature: 0°C -70°C

Manufactured to ISO-9001. Product compliance to CE and C-tick Aus & NZ.

NOTE: The Technical specifications for this product and the content of the user manual are subject to change without notice. Images shown in this manual may differ from the actual products.

## **Specification**

### Power On Factory Default Settings:

AC Voltage: 220VAC

No. of kgCO2 per 1 kWh: 0.420

Temperature Unit: °C

Currency: \$

Cost Alarm: 9.999/hour, OFF

Tariff charge: 12.0cent/kWh

### Current (RMS) Accuracy:

Less than 3A: Not specified

3A to 60A: <5%

## FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference

to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices).

This equipment complies with Part 15 of FCC RF Rules. Operation is subject to the following two conditions:

- 1) This device may not cause interference and
- 2) This device must accept any interference, including interference that may cause undesired operation of the device.

## Caution!

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user authority to operate the equipment.