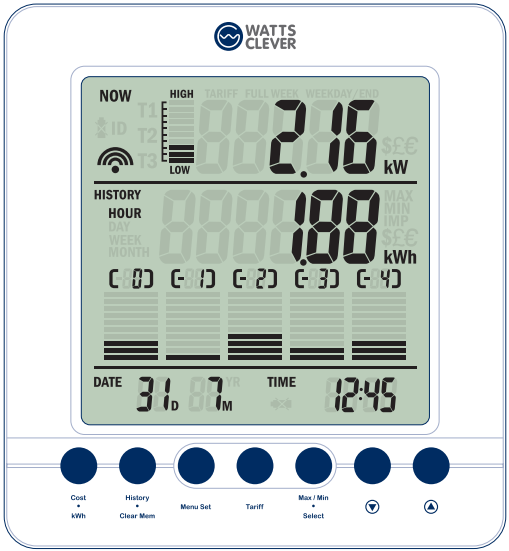
WATTS CLEVER

Energy saving made simple

MONITOR • CONTROL • SAVE



WIRELESS Energy Monitor

- Smart Meter

Monitors your electricity use and cost in real time

Instruction Manual

EW4500

IMPORTANT

Please retain your Instruction Manual for future use.
If you need some assistance with your Watts Clever WIRELESS Energy Monitor – Smart Meter, please email us at support@wattsclever.com or visit our support website at http://support.wattsclever.com

OVERVIEW

The WIRELESS Energy Monitor – Smart Meter helps you conserve electricity by showing you how much you use, and what it costs, as you use it. This feedback will help you take steps to reduce your consumption and save money.

The WIRELESS Energy Monitor – Smart Meter will show you:

- Your current electricity usage
- Your accumulated electricity usage over any time period
- Your per hour usage

And when you program the WIRELESS Energy Monitor – Smart Meter with your electricity billing rates, it will show you:

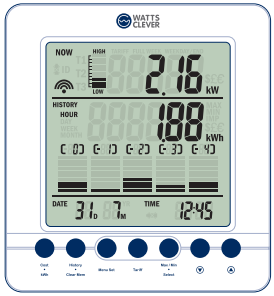
- Your electricity cost per hour
- Your accumulated electricity cost over an hour, a day, weeks or months
- Your estimated monthly bill

It is important to understand that the Watts Clever WIRELESS Energy monitor - Smart Meter is only a tool, the actual saving is up to you. By keeping the values in the display as low as possible you can contribute in saving energy and money for your household.

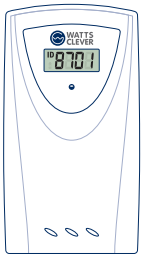
CONTENTS

What elements does your package contain?

Your package contains all of the elements shown below. If any item is missing, please contact your installer immediately.

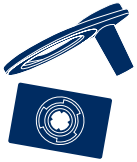


Display Unit



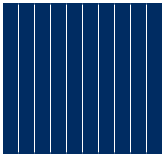
Power Transmitter

LED Sensor with mini jack (500mm cable)

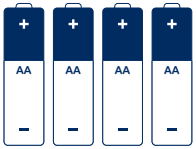


2 x Mounting plate

4 x Double-side adhesive sticker



10 x Strip Tape



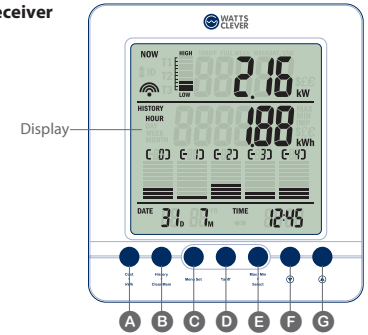
4 x AA Batteries

Screwdriver

What are the different parts of the Energy Monitor for?

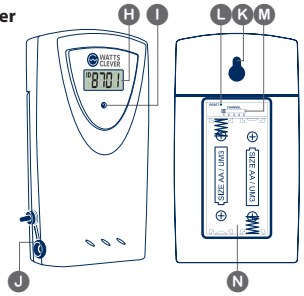
The wireless energy monitor consists of a display unit (wireless receiver), a wireless transmitter and a sensor.

Receiver



- A Cost - Display Electricity Cost ($)
  kW/kWh - Display Energy consumption (kWh)
- B History - Historical data
  Clear Mem – Historical data clearance
- C Menu Set - Menu set up
- D Tariff - Tariff set up
- E Max - Maximum value
  Min - Minimum value
  Select
- F ▼ - Down button
- G ▲ - Up button

Transmitter



- H Sensor Display
- I LED Indicator
- J Sensor Plug
- K Wall-Mount Recessed Hole
- L Reset Button
- M Channel Switch (Channel 1-5)
- N Battery Housing (2 x AA batteries)

Sensor

- O Sensor Head
- P Mini jack plug

How do I replace batteries?

IMPORTANT: For Initial set up, it is important to place batteries in the transmitter before batteries are placed in the receiver.

1) Power Transmitter

When the batteries in the transmitter are low on power, an indicator on the display will be shown (Fig.1).

Fig.1

Remove the battery cover of the power transmitter by loosing the screws with a screwdriver (Fig.2).

Place the 2 x AA batteries in the battery housing. The Power Transmitter will now begin to transmit a signal. Finally the battery cover is again screwed on carefully but firmly.

An ID code will be shown on the display of the transmitter (Fig.2) after replacing new batteries.

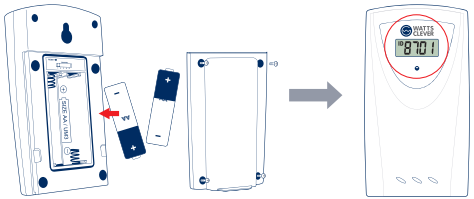


Fig.2

NOTE

NOTE: Make sure the + and – of the batteries are placed as indicated inside the battery housing.

IMPORTANT: Do not change the preset channel of the channel switch when replacing batteries (Fig.3).

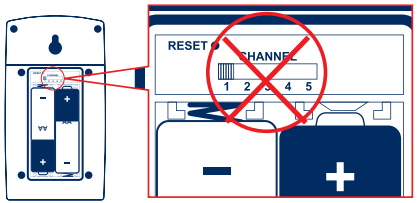


Fig.3

How do I replace batteries?

2) Display Unit

When the batteries in the Display Unit are low on power, an indicator will be shown on the display (Fig.4).

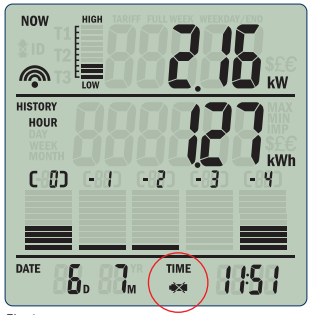


Fig.4

Remove the battery cover at the back of the Display Unit, after 2 x AA 1.5V batteries are placed in the battery housing, put the battery cover on again (Fig.5). Full segments on the display will light up for a short moment.

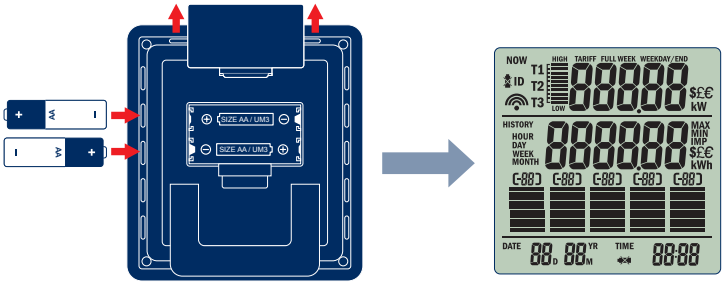


Fig.5

How do I install and set up the wireless energy monitor correctly?

Watts Clever Energy Monitors fit all newer electronic meters with a so-called impulse LED. This is a small LED lamp indicating how much electricity you are using, with few blinks you use a little, with many blinks you use more. Normally these meters are set up to blink 1,000 – 10,000 times (imp) per kilowatt hour (kWh)(some meters will show as imp/unit).

Power Transmitter

Step 1.) Channel selection

Open the battery compartment, select the desired channel, and then press the [RESET] button with a pin to confirm your selection. The CHANNEL is now been stored in memory.

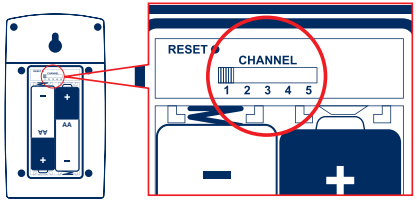


Fig.6

IMPORTANT: Do not change the default channel of the channel switch, unless you have any difficulty in Channel pairing (Fig.6). Please contact your installer or contact us at support@wattsclever.com for assistance.

Step 2.) ID Code

An new ID will be generated and shown upon the display (Fig.7).

NOTE

NOTE: Write down the CHANNEL number you selected and the ID number displayed. You will need this information later to pair the Display Unit with Transmitter during setup.

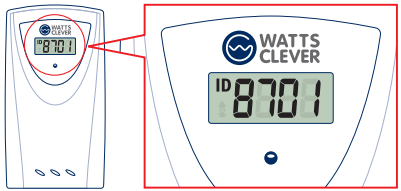


Fig.7

How do I install and set up the wireless energy monitor correctly?

Display Unit

Step 1.) Display menu set up

Press-and-hold [Menu Set G] (Fig.8) for 3 seconds to enter the menu setting.

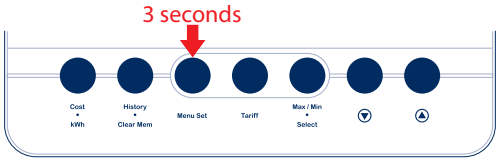


Fig.8

NOTE

NOTE: For initial use you will enter the menu set mode automatically after installing the batteries.

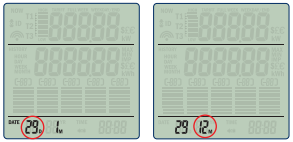
IMPORTANT: The Display must be set within 15 minutes of the transmitter being powered up, otherwise, the display cannot link up with the Transmitter even after entering the correct ID shown on the Transmitter Display.

If you cannot finish the setup in 15 minutes, reset the Transmitter to generate a new ID, redo the setup process for the Display within 15 minutes.

IMPORTANT: DO NOT connect the LED Optical Sensor with Power Transmitter until the pairing is done and the LED sensor is attached to the meter.

How do I install and set up the wireless energy monitor correctly?

Step 2.)Procedure of Menu set up as below:

Display Blinks	Image	Setting procedure
1. Hour (24 hours mode) /Minutes		Using ▼ and ▲ to adjust the value, and press [Select Ⓔ] to confirm.
2. Day / Month of date		
3. Year of date		
4. Currency		
5. Transmitter Channel The channel you selected on the transmitter (Default: CH 1)		

How do I install and set up the wireless energy monitor correctly?

Display Blinks	Image	Setting procedure
6. Transmitter ID The ID shown on the transmitter display		Using ▼ and ▲ to adjust the value, and press [Select Ⓔ] to confirm.
7. Meter Impulse This is shown on the front of the Smart Meter on imp/kWh (e.g.) - Credit 500: 3200, - Credit 400: 1600)		
8 . Electricity price per kWh You may take a look at your electricity bill to see what you pay kWh inclusive of taxes. Or call your electricity supplier and ask them. (Default as Flat-rate tariff)		

NOTE

NOTE: If you are using Tiered-rate, skip this by press [Select Ⓔ] and enter tiered-rate mode with the procedures shown under "How do I set the tiered-rate?" section.

NOTE

NOTE: If the setup is already in tiered-rate, press ▼ or ▲ in menu set up mode while setting up electricity price to change the value to flat-rate.

NOTE

NOTE: The last hour and minute (TIME STAMP) will be stored in the memory after installing new batteries. The date and time can only be moved forward unless the memory is cleared and time can be set.

How do I install and set up the wireless energy monitor correctly?

Optical Sensor

Step 1.) Determine the LED port (LED light) of the electricity meter and determine the impluse rate indicated by imp/kWh or imp/unit.

NOTE

NOTE: Write down the impulse rate as this information may not be visible after installing the sensor.

Step 2.) Installing the sensor

Use the mounting materials or sticker provided to stick the sensor base hole over the flashing LED found on your electricity meter. Attach it firmly in place (Fig.9).

It is important that the LED diode of your meter is exactly in the middle of the sticker / mounting plate.

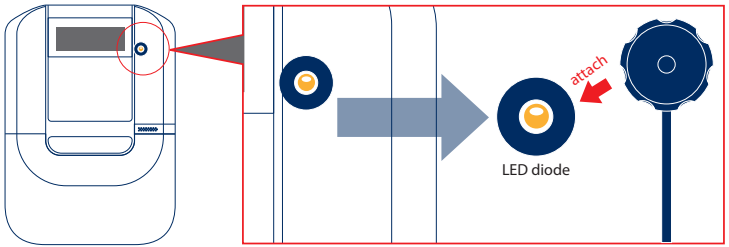


Fig.9

How do I install and set up the wireless energy monitor correctly?

You will need to use the mounting materials provided with some meters.

i-Credit 500 / i-Credit 500 PRI

Use the i-Credit mounting plate provided to mount the sensor base hole over the flashing LED found on your electricity meter. Carefully place the sensor eye onto the mounting plate. Turn the sensor eye clockwise until you hear a click to ensure it is locked (Fig.10).

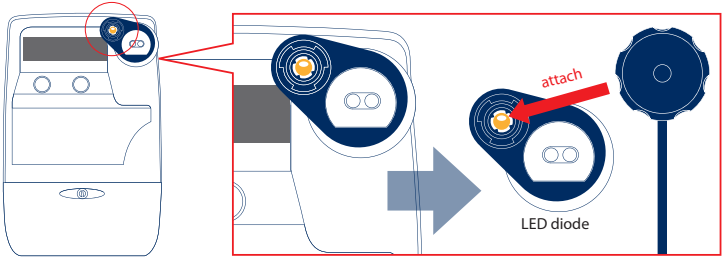


Fig.10

Landis GYR E350

Use the E350 mounting plate provided to mount the sensor base hole over the flashing LED found on your electricity meter (Fig.11).

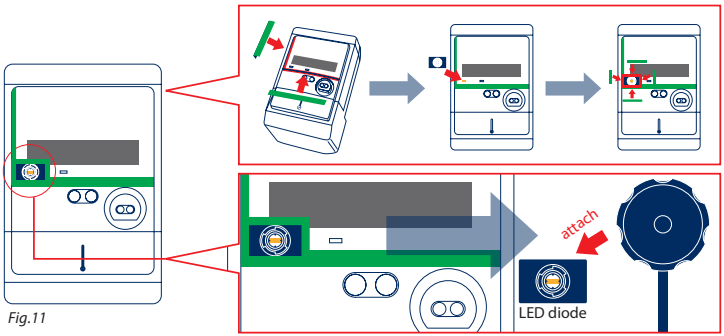


Fig.11

Cover the left and bottom glass frame edge of the meter with the provided strip tapes. Also cover around the bracket to avoid any light interference.

How do I install and set up the wireless energy monitor correctly?

Sprint 200

Use the double sided adhesive round sticker provided to mount the sensor base hole over the flashing LED found on your electricity meter, carefully place the sensor eye onto the adhesive sticker (Fig.12).

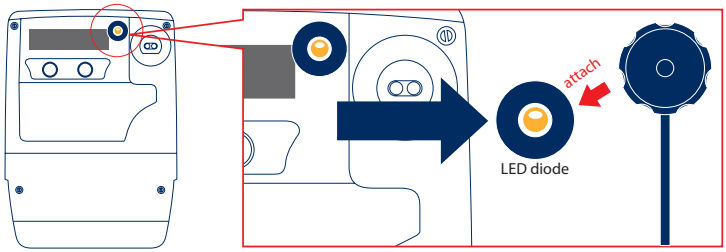


Fig.12

Step 3.) Connect sensor to the Power Transmitter

After mounting the sensor to your electricity meter, connect the mini jack of the sensor to the Power Transmitter (Fig.13).

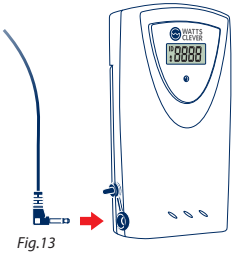


Fig.13

IMPORTANT: DO NOT connect the LED sensor until the pairing is done and the LED sensor is attached to the meter. This will stop inaccurate readings occurring from the LED sensor detecting normal light and indoor lighting.

IMPORTANT: Avoid direct light to the sensor when it is operating as this may cause errors in readings.

How do I set the tiered-rate?

Exit menu set up mode and set your tiered-rate.

Step 1) Press-and-hold [TARIFF (D)] for 3 seconds (Fig.14)

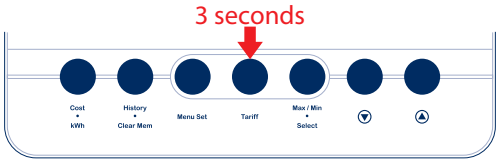


Fig.14

At the top of the display it will say TARIFF.

Step 2) Press (▼) or (▲) to select **FULL WEEK** mode or **WEEKDAY/END** mode, and press [Select (E)] to confirm (Fig.15).

Fig.15

NOTE

NOTE: FULL WEEK tariff means, you have same rate during the week.
WEEKDAY / END tariff means, you have different rate on weekends and weekdays.

How do I set the tiered-rate?

FULL WEEK MODE

Enter T1 electric cost (Fig.16) and the tariff period starting time (Hour only) (Fig.17).

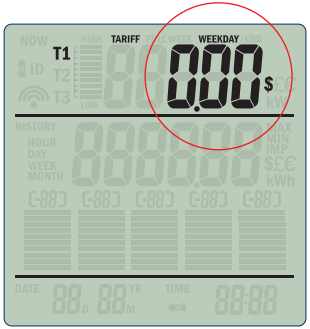


Fig.16

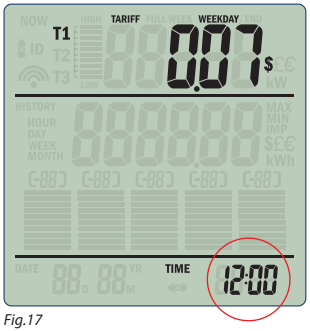


Fig.17

NOTE

NOTE: User with only 2 tiered-rates, please enter same value & time in T3 as T2.

Using ▼ and ▲ to adjust the value, and press [Select E] to confirm. Repeat the same procedure for setting up T2, and T3 accordingly.

For Example:

Shoulder Tariff: 05:00 - 07:00 at 20 cents
Peak Tariff: 07:00 - 23:00 at 27 cents
OFF Peak Tariff: 23:00 - 05:00 at 12 cents

Enter as shown below:	Cost	Time
T1	$0.2	05:00
T2	$0.27	07:00
T3	$0.12	23:00

How do I set the tiered-rate?

WEEKDAY / END Mode

Set the Weekday T1..T3 (Fig.18), follow by the Weekend T1…T3 (Fig.19)

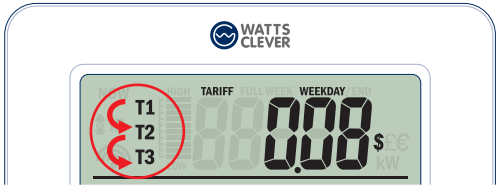


Fig.18 Tariff Weekday T1 ➡ T2 ➡ T3

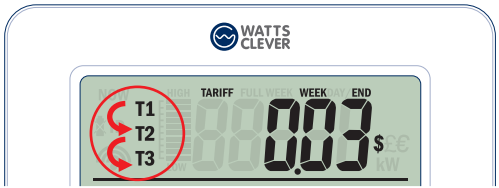


Fig.19 Tariff Week End T1 ➡ T2 ➡ T3

NOTE

NOTE: To change TARIFF MODE back to FLAT RATE MODE, please go back to the Menu setup by press-and-hold [MENU SET C] for 3 seconds, press [Select E] until in electricity cost set up mode, then press ▼ or ▲ to return the flat-rate mode. The Display will change into flat-rate mode (Fig.20).

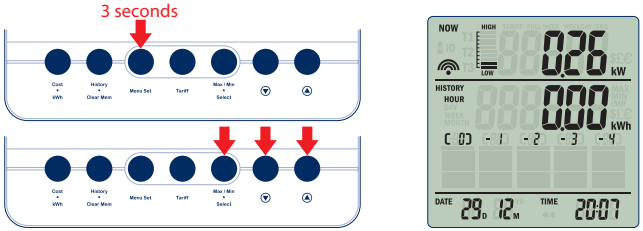


Fig.20

How do I use the wireless energy monitor?

The Watts Clever wireless energy monitor shows the amount of energy that a household is consuming at the time the display is read. The display can also give the user a reading showing usage in financial terms. You can walk around the home with your monitor, switching appliances on and off, to see the difference that each one uses. Other useful data on the display includes:

- Accumulated energy / cost usage in the last 24 hours, 50 days, 7 weeks and 4 months.
- The maximum & minimum energy / cost usage in real time and in the last 24 hours, 50 days, 7 weeks & 4 months.
- Energy usage analysis bar chart.
- Power consumption level indicated bar.

1. Check historical usage

Press [History B] (Fig.21) to check the record of HOUR, DAY, WEEK, and then MONTH

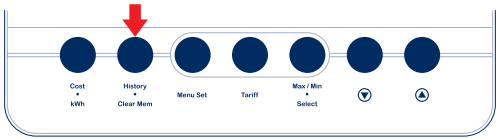


Fig.21

In the [0] current mode, it will show up the current hour / day / week / month usage (Fig.22)

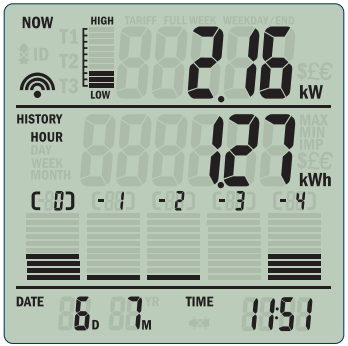
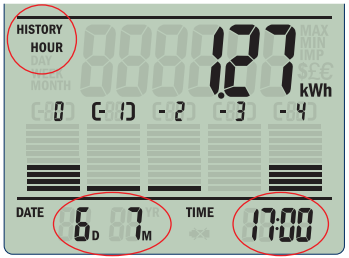


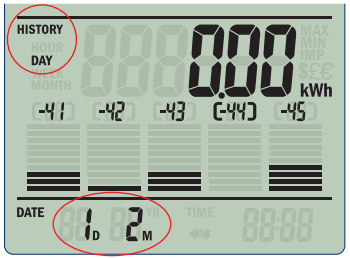
Fig.22

How do I use the wireless energy monitor?

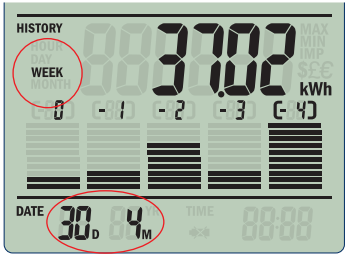
Press ▼ or ▲ to scroll through the past history of HOUR, DAY, WEEK and MONTH.
Press-and hold ▼ or ▲ to fast forward the data.



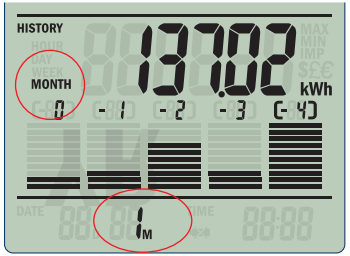
For hour history, it shows the selected HOUR of the DATE



For day history, it shows the selected DATE



For week history, it shows the selected WEEK starting date



For month history, it shows the selected month

How do I use the wireless energy monitor?

2. Check records of a specific date

At the DAY mode (Fig.23), select a date by ▼ and ▲ button.

Fig.23

Press-and-hold [Select E] for 3 seconds (Fig.24) to check the detail of each hour in the selected day.

Press ▼ and ▲ to scroll the data.

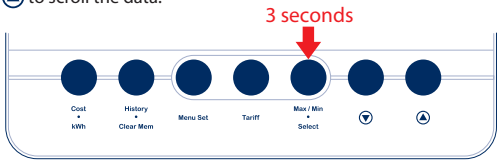


Fig.24

Press [History B] to return back to the DAY mode(Fig.25).

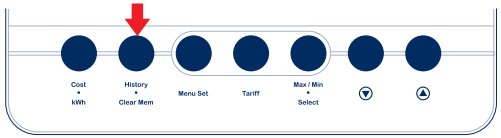


Fig.25

NOTE

NOTE: Press [Cost · kW/kWh A] to switch between kWh and cost (Fig.26).

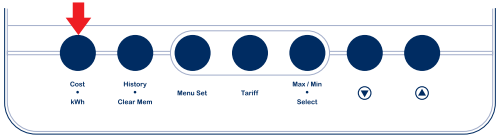


Fig.26

How do I use the wireless energy monitor?

3. Check tiered-rate of the selected date

Simple press [Tariff D] to check the tariff rate of the hour of the selected day (Fig.27).

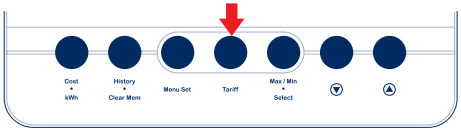
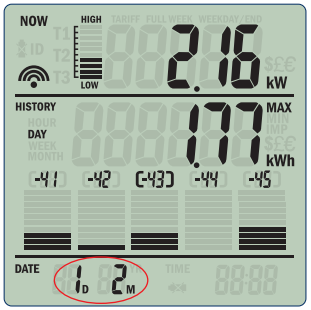


Fig.27

4. Check maximum and minimum record of the selected date

Simply press [Max/Min E] to show the Max kWh and press [Max/Min E] to show the Min kWh of the SELECTED date. Press [Cost · kW/kWh A] to switch between kWh or cost (Fig.28).



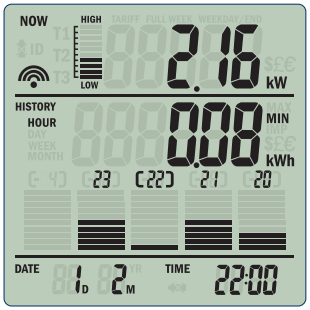


Fig.28 Show the selected DATE

How do I use the wireless energy monitor?

5. Max / Min of the Day / Week / Month

NOTE

NOTE: For HOUR max/min, it only shows the max/min of the CURRENT DAY.

Press [History Ⓑ] to check for the record of HOUR, DAY, WEEK, MONTH (Fig.29)

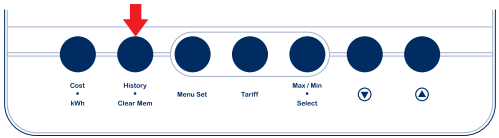


Fig.29

Press [Max/Min Ⓔ] to go the Max value checking no matter at the history HOUR, DAY, WEEK, and MONTH (Fig.30).

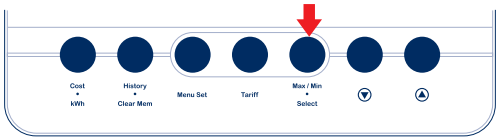


Fig.30

Press [Max/Min Ⓔ] again to Min record checking no matter at the history HOUR, DAY, WEEK, and MONTH (Fig.31).

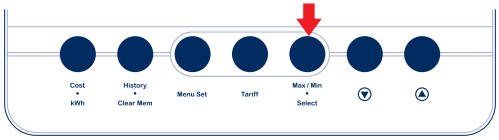


Fig.31

How do I use the wireless energy monitor?

Press [Max/Min Ⓔ] to exit the Maximum and Minimum mode (Fig.32).

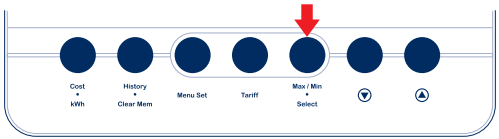


Fig.32

NOTE

NOTE: Press [Cost · kW/kWh Ⓐ] to switch between kWh and cost (Fig.33).

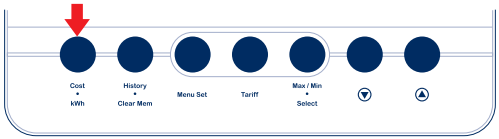


Fig.33

NOTE

NOTE: If there are two or more MIN or MAX figures, it is only show up the closest MAX or MIN record to the current time.

6. Check the current Tariff

Press [Tariff Ⓓ] to check for current tariff rate, it will show up for 3 seconds (Fig.34).

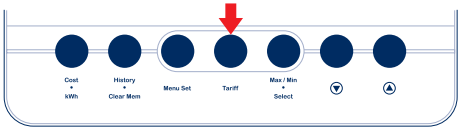
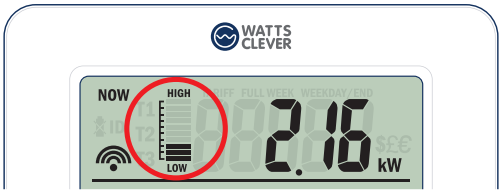


Fig.34

show up for 3 seconds

What does the bar on the top section of the display show?



The bar provides a graphical representation of real time energy usage of households.

It learns on a rolling basis the high levels of usage for the home in where the monitor is used. If the previous high usage levels have been exceeded, all the bar will show and flash to warn the user of their high levels of energy use.

A quick glance at the display can show the user if they are using normal levels of electricity or high level. Having a quick visual indicator that is specific to the household usage patterns allows users to be quickly alerted to increases in electricity consumption.

What should I do if the wireless connection is lost?

Press-and-hold [Cost · kW/kWh Ⓐ] (Fig.35) for 3 seconds to force search the signal.

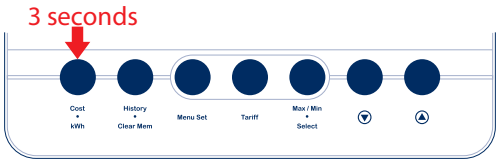


Fig.35

If there is still no signal received, reset the Transmitter and the Display by reinstall the batteries if necessary, and follow the Power Transmitter set up procedure.
A new ID will be generated on the transmitter, please enter the ID into display. Make sure the Display is not out of the transmitter wireless transmission effective area.

How do I clear the historical data?

Press-and-hold [Clear Mem Ⓑ] (Fig.36) for 5 seconds to clear up all the past 50 days record, and all MAX. MIN records.

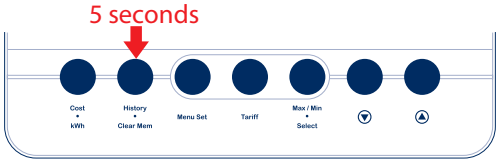


Fig.36

Full Reset

Press-and-hold [Select Ⓔ] (Fig.37) for 10 seconds to reset the Display Unit, all memory, channel record, ID code will be clear completely. You will then enter the Menu set up mode as initial use.

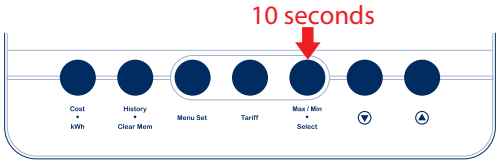


Fig.37

IMPORTANT SAFETY NOTES

IMPORTANT: Please retain your instruction manual for future use.

Watts Clever believes that the safe performance of your product is the first priority. We ask that any electrical appliance that you use should be operated in a sensible fashion with due care and attention placed on the following points :

• Carefully read all instructions before operating the Wireless Energy Monitor – Smart Meter for the first time and save for future reference.

• Do not expose the unit to exaggerated impact, shaking, dust, extreme temperatures, or air humidity, as this may result in malfunction, shorter electronic life, damaged batteries, and damaged parts.

• Do not tamper with the internal components of the unit. This will make the warranty of the unit invalid and may result in unnecessary damage. There are no parts in the unit which will require service on the part of the user.

• Only use new batteries as described in the instruction manual. Do not mix new and old batteries, as the old batteries may leak.

• Do not locate the Display Unit, Power Transmitter and Optical Sensor within reach of children.

• Do not open the product other than to replace the batteries and Channel reset.

• Periodically check all components to ensure there is no damage.

• Keep the Display Unit, Power Transmitter and Optical Sensor away from source of heat, water and any other liquid.

• Use a dry cloth to clean. Don't use solvents, abrasive cleaners or water.

• Don't rely on the displayed information to calculate the cost of your electricity bill. The WIRELESS Energy Monitor - Smart Meter is an educational device and is NOT intended to replace your energy supplies energy meter.

• Don't use this product where the use of radio frequency products can cause malfunction in other equipment (for instance hospitals, aircraft, etc.).

TROUBLESHOOTING & PRODUCT SUPPORT

The Display shows '0' when the wireless connection to the Power Transmitter has been lost for 15 minutes.
1. Check or replace the batteries on the Power Transmitter.
2. Press and Hold the [Cost · kW/kWh Ⓐ] for 3 seconds, to start searching for the wireless signal.

Although wireless signals can pass through solid items and walls, the optimum situation is that there is free space to the Energy Monitor.

The following may be the reason for reception problems:
• The distance between the Power Transmitter and the display unit being too big.
• The signal is disturbed by materials such as metal surfaces, concrete walls or dense plants.
• Disturbances from wireless devices (such as wireless telephones, radio headset, baby alarms) and other electronic devices.

If you have any questions about this product or need any help then please visit our support website at: **www.support.wattsclever.com**

EC-DECLARATION OF CONFORMANCE
This product contains the approved transmitter and lives up to the essential requirements of Article 3 of the R&TTE 1999/5/EC
Directive, if it is used for its intended use and that the following standards have been applied:

Effective use of radio frequency spectrum
(Article 3.2 of the R&TTE Directive)
applied standards EN 300 220-2 V2.1.2 (2007-06)

Electromagnetic compatibility
(Article 3.1.b of the R&TTE Directive)
applied standards EN 301 489-3 V1.4.1 (2002-08)

Low voltage directive
Applied standards EN 60950-1 : 2006
Further information:
Therefore this product is in accordance with the 73/23/EC directive,
EMC Directive 89/336/EC and R&TTE Directive 1999/5/EC (appendix II)
and carries the respective CE labelling.

If you are going to discard this product in the future, you should be aware that: Electrical products should not be discarded with the household garbage. If possible, recycle it. You may contact your municipality or the dealer for advice on recycling. (Directive about waste of electrical and electronic equipment)

CE Tested to comply with CE-standards

1 YEAR FULL REPLACEMENT WARRANTY

One year replacement warranty offered with proof of purchase.
If you have any question about your warranty coverage, please contact your installer.

Product Specifications
Model • EW4500

Dimensions •
Display Unit 117 (W) x 127 (H) x 27.8 (D) mm
LCD Display: 79(W) x 48.5 (H) mm
Power Transmitter: 59 (W) x 110 (H) x 26 (D) mm

Wireless transmission • 433.93 MHz | Transmission cycle • App. 30 sec
Transmission Distance • 80m

N30505

Made in China

For product support, please visit http://support.wattsclever.com
For further assistance please contact us on support@wattsclever.com

http://www.wattsclever.com http://shop.wattsclever.com

Due to continual improvement in design or otherwise,
the product you purchase may differ slightly from the illustration in this book