PowerCost Monitor™

User Guide
Install your PowerCost Monitor™ before reading this Guide
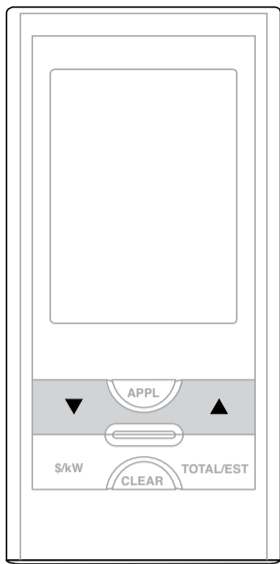
BUTTON	FUNCTION
$/kW	Toggles the display of values between dollar and kilowatt amounts.
TOTAL/EST	Toggles the display of values between current consumption and estimated 30-day consumption.
CLEAR	Press and hold to reset the consumption totals to zero.
APPL	Toggles the APPL function on and off. The APPL function allows you to measure the amount of power consumed by a single appliance.

Normal Operation

Your Display Unit should be displaying a short, thick bar scrolling across the screen from left to right, immediately under the top value on the Display. This indicates that your Display Unit is correctly receiving the signals trasmitted by your Sensor Unit. This Guide explains all the values and icons that your Display Unit can show, as well as all its various functions. It also contains a *Troubleshooting* section on the reverse where you can find answers to specific issues.

## Time and Temperature – *Bottom Row*

The bottom row displays the current day of the week, as well as the temperature and time in the formats you selected when configuring the Display Unit (degrees Fahrenheit or Celsius and 12-hour or 24-hour clock).

Resetting the Totals

Press-and-hold the **CLEAR** button located on the front of the Display Unit until you hear a beep.

This resets the Total values (Dollars and kW) that appear on the middle row, and starts a new 30 day cycle. All the other values remain the same.

By resetting the totals on the first day of your billing cycle, you can always have a rough idea of your next monthly electricity bill.

Dollars & Cents Mode   **Kilowatt Mode**
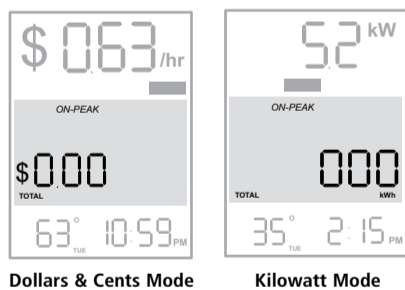
SLEEP Mode

In the event that your Display Unit loses the signal transmitted by your Sensor Unit, the middle row displays SLEEP. You will also notice that the first row displays dashes instead of values, and since the Sensor Unit also transmits temperature information, the temperature disappears from the last row.

For example, loss of signal may occur if you move the Display Unit to a location in your house that is too far from the Sensor Unit.

Here are a few causes of loss of signal:

➢ The Sensor Unit batteries are exhausted.

➢ The Display Unit has been moved out of range of the Sensor Unit.

➢ There is a strong interference from other electronic devices, such as wireless weather stations.

To restore communications between the two units, simply press any key on the Display Unit. The bar should start moving and values should start being displayed after a short time.

If the problem persists, see the *Troubleshooting* section on the reverse side.

Dollars & Cents Mode

Kilowatt Mode
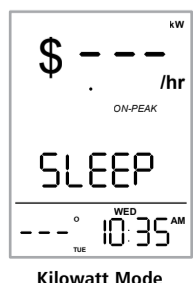
Current Consumption – *Top Row*

The **top row** displays your current energy consumption. If you press the **$/kW** button repeatedly, the display alternates between values in dollars per hour and kilowatts per hour.

In the examples on the right, you are currently using $0.83 (top) and 5.2 kW (bottom) worth of electricity per hour.

IMPORTANT: If your Display Unit shows unusually low consumption (0.4 KW or less) for an extended period of time when you are performing normal household tasks such as cooking or laundry, your Sensor Unit may be misaligned. See the *Troubleshooting* section on the reverse side.

Dollars & Cents Mode

Kilowatt Mode
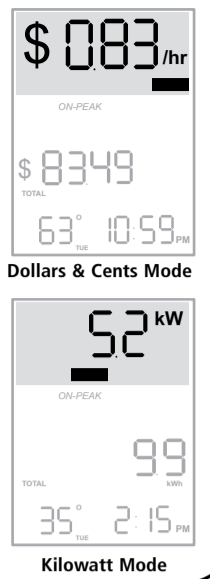
Consumption Totals – *Middle Row*

Pressing the TOTAL/EST key alternates the displayed values on this row between your current total consumption (the TOTAL indicator is displayed) and a calculated estimated consumption for 30 days (the EST indicator is displayed).

The value in the middle row shows the cumulative total of electricity consumed since you last reset the totals. If you press the $/kW button repeatedly, the display alternates between values in dollars and kilowatts per hour. In the examples on the right, you have used $27.09 (top) and 36.9 kWh (bottom) worth of electricity since you last reset the totals.

When the ESTIMATE indicator is displayed, the value shown represents the estimated total amount of electricity you will have consumed during a 30-day period starting on when you last reset the totals (press $/kW to alternate between dollars and kilowatt-hours).

Finally, if your Sensor Unit or Display Unit batteries are low, the LOW BATT and with either SENSOR or DISPLAY (or both) appear on this row. It is best to change the batteries as soon as these indicators appear.

Dollars & Cents Mode

Kilowatt Mode
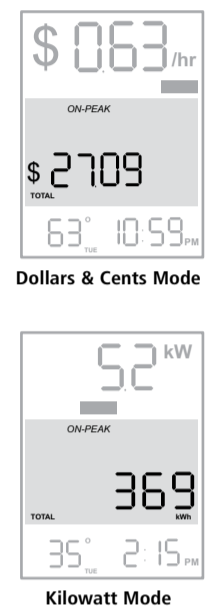
Factory (Hard) Reset

To reset the Display Unit to its factory-set default values, simultaneously press-and-hold the CLEAR and PROG/SYNC buttons until you hear a beep.

All the values you entered are deleted and your Display Unit is configured with its default factory settings.

APPL – *Measuring a single appliance*

The APPL button allows you to measure how much electricity is consumed by a single appliance.
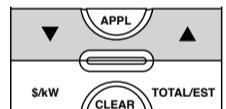
When you press APPL, the Display Unit memorizes the total current consumption and then displays only the consumption above that value until you press APPL again.

First, turn off the appliance you wish to measure, wait a few minutes, press the APPL button, then turn on the appliance. The APPL indicator is displayed in the top row and, after a few more minutes, the values displayed represent the energy currently consumed by that particular appliance.

You can also choose to press APPL first, then turn off the appliance. The value displayed will still be positive, as it will represent the quantity of electricity that the appliance was consuming before you turned it off.

When you are done, press APPL again to return to normal mode.

NOTE: To obtain realistic results, you should ensure that no other appliance, light bulb, etc. is turned on or off while you are measuring an appliance.

PowerCost Monitor

Troubleshooting

Q *I am unsure of my utility meter type. How can I find out which type of meter I have?*

A The illustrations in *Step 4* of the *Installation Guide* represent various kinds of meters that we have grouped arbitrarily under "types", based on different sequences of operations that are required to mount a Sensor Unit correctly. The majority of existing meters fall under one of these generic types. Determine which illustration most closely matches your meter, and remember to follow the installation instructions for that meter type. Also find the meter's power factor on the face of the meter and write it in the box labeled "Power factor". The power factor is a number (usually 1.0 or 7.2) preceded by two letters (usually Kh or Ks or Kt). Proceed with the installation steps in order and, in *Steps 8* and *9*, follow the installation instructions for that meter type.

Q *After installing the Sensor Unit on my meter and pressing the RESET button, nothing happens. The red indicator does not light up.*

A The STATUS light in the Sensor should light up solid red within 10 seconds afterpressing the RESET switch. If it does not, try these steps:

1. Confirm that the batteries are inserted in the correct orientation. + and – symbols are printed on the green circuit board inside the battery compartment.

2. Confirm that the batteries are not dead. We recommend lithium batteries for longer life in freezing conditions.

3. Confirm that the battery lid is closed and screwed down. The lid has to be fastened down for the batteries to make contact.

Q *The red STATUS indicator on my Sensor Unit is flashing rapidly. Is this the indication of a problem?*

A The STATUS indicator starts flashing very rapidly if the Sensor Unit still has not detected the signal of a meter 20 minutes after being powered up. This is normal. Simply press the RESET button and wait 10 seconds for the STATUS indicator to light up solid. You can then proceed with the installation as described.

Q *My Sensor Unit STATUS LED is flashing regularly, but every now and then, there is an extra flash. Is there anything wrong with my unit?*

A This is exactly what you should see. Electronic meters produce one single pulse every time you have consumed one watt-hour. When the Sensor Unit first detects a pulse from an electronic meter, the STATUS indicator starts flashing. Thereafter, the indicator keeps on flashing at the same frequency, but in addition, it will flash once every time it reads a pulse from your meter, at intervals that vary according to your current rate of electricity consumption. This periodic irregular flashing is absolutely normal.

Q *When I try to synchronize my Display and Sensor Units, the Display Unit keeps showing "id" on the screen.*

A This indicates that the Display Unit is in ID mode, meaning that is searching for your Sensor Unit. Press the RESET button on the Sensor Unit. If the Display Unit remains in ID mode, move it to a location between 2 and 10 feet (60 cm to 3m) of the Sensor Unit, and then press the RESET button again.

Q *The Sensor Battery indicator shows a low battery level, but I installed fresh batteries not long ago.*

A Regular alkaline batteries can become exhausted very rapidly when it is extremely cold outside. If you are expecting an extended period of temperatures below -20°C (-4°F), try using lithium type AA batteries in the Sensor Unit. These batteries are commonly available and they provide better performance in cold weather.

Q *The Sensor Unit appears to have detected my meter properly, but I only see dashes (--) on my Display Unit.*

A This indicates that the Display Unit is not receiving transmissions from the Sensor Unit. Ensure that the Display Unit is located within 100 feet (30m) of the Sensor Unit. Note that each wall of your house reduces the range by approximately 15 feet (5m). Also, aluminium siding on your house will significantly reduce the range. If this is the case, try to position the Display Unit so that there is a window between it and the Sensor Unit.

If neither range nor wall construction seem to cause be the problem, repeat *Step 10* in the *Installation Guide* to re-synchronize your Display and Sensor Units, ensuring that you keep the RESET button pressed for at least 5 seconds.

Lastly, it is possible that the batteries in the Sensor Unit are exhausted. Replace the batteries with fresh ones.

Q *The power usage shown on my Display Unit is not updating or is unusually low.*

A Try turning on an electric appliance that consumes a large amount of power such as a stove or dryer. If the values on the Display Unit do not start to update within a few minutes, then the Sensor Unit is likely not aligned correctly on your utility meter. Try repeating the appropriate alignment steps described in the *Installation Guide*.

Q *The temperature shown on the Display Unit does not match weather reports or appears to be incorrect.*

A The temperature shown on the Display Unit is the ambient temperature at your utility meter; it may vary from other sources, such as TV weather reports, because of distance and other factors. Also, if your utility meter is exposed to direct sunlight during any part of the day, then the reading will be higher than normal. The reading will return to the correct value when the utility meter is in the shade.

Q *My Display Unit behaves erratically and shows illogical values.*

A Should your Display Unit start displaying any unexpected values, reset it to the factory settings by pressing on the PROG/SYNC and CLEAR keys simultaneously until you hear 3 beeps (about 5 seconds). However, doing so will erase all your existing rate entries and you will have to follow the instructions in *Steps 6* and *7* of the *Installation Guide* to setup your Display Unit again.

Q *The consumption information shown on my Display Unit is not correct and it jumps randomly.*

A Several factors can affect the accuracy of the information shown on your Display Unit and they all relate to interference. If your neighbour also has a PowerCost Monitor system, you may be receiving their information. In this case, you need to change the Sensor Unit address and resynchronize the Display Unit. Repeat *Step 10* in the *Installation Guide*, but press and hold the RESET button for five (5) seconds. The Sensor Unit then selects a new address randomly on which to base the synchronization.Wireless devices, such as weather stations or old-style baby monitors and cordless phones, transmit information on frequencies similar to the PowerCost Monitor. If you have a wireless weather station try turning it off briefly and check to see if the PowerCost Monitor Display Unit returns to normal operation. If it does, then check to see if you can change the weather station's operating channel.

Q *My display Unit is showing SLEEP and dashes. What do I do?*

A This means that your Display Unit has stopped receiving the signal from your Sensor Unit for more than 10 minutes. Go to your Sensor Unit, taking the Display Unit with you. Remove the batteries from the Display Unit and put them back in. After a few seconds, press PROG/SYNC unil you hear two beeps to put the Display Unit in ID mode, then press the RESET button on the Sensor Unit. Normal operation should resume.

Q *The total shown on my Display Unit does not match the total shown on my electricity bill.*

A In order for the two totals to match, you would need to clear the totals on the Display Unit on the exact day and time the utility company reads your meter. In addition, your electricity bill also may include other fees, as well as any applicable taxes. The total amount shown on the PowerCost Monitor is accurate, but is really meant as a reference to indicate how much power you have consumed since you last cleared the totals. For example, if you clear the totals at the beginning of every monthly cycle, then you can use the PowerCost Monitor to compare against your monthly budget.