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Energy Display

INSTEON® In-Home Display

Model : 2448A2



SMARTHOME™

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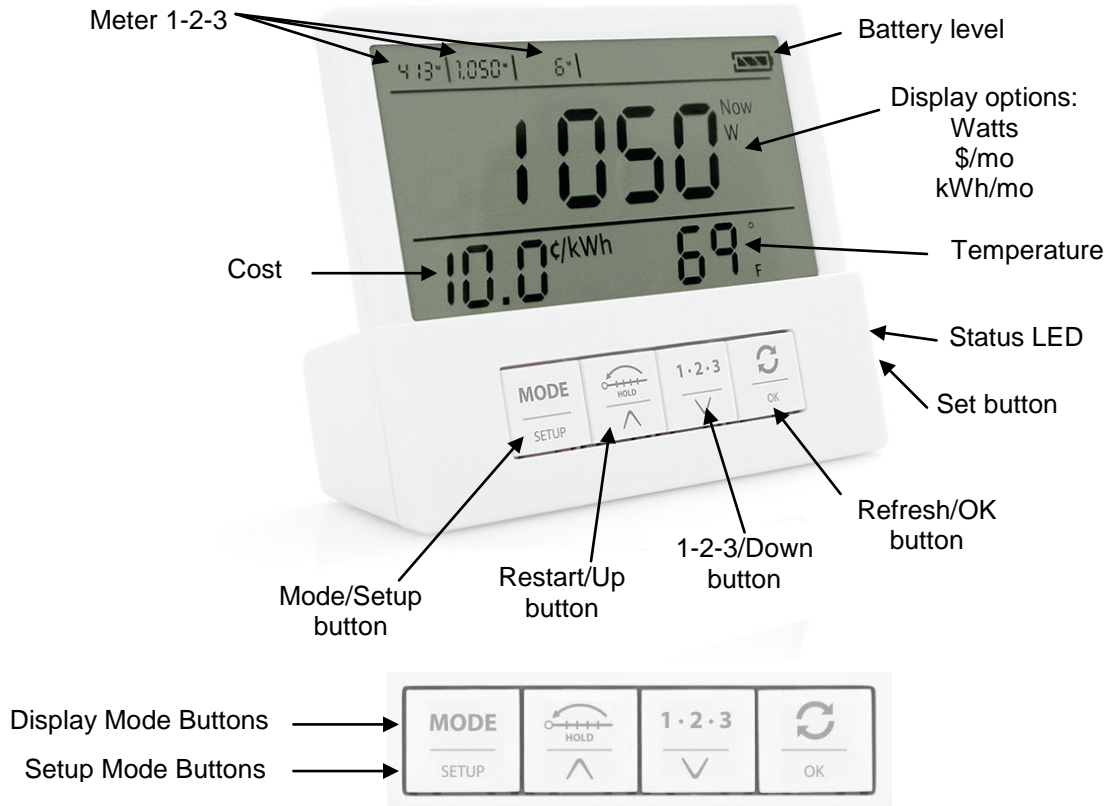


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ABOUT ENERGY DISPLAY

The Energy Display allows you to view power consumption of your appliances (current power use, average energy use per month, and average cost per month based on your monthly billing rate). Its sleek, compact design uses radio frequency (RF) to communicate and retrieve information from INSTEON power meter devices (e.g., iMeter Solo, #2423A1).



Key Energy Display Features

- Installs and Links to other INSTEON devices in minutes
- Displays energy information from up to three power meter devices (current Watts used as well as cost and energy consumption per month for each device)
- Communicates wirelessly over radio frequency (RF) to eliminate messy and unsightly wires
- Built-in thermometer displays current temperature
- Indicates INSTEON setup mode activity and operational states with a Status LED and beeper
- Stores setup state in memory so settings aren't lost when replacing batteries
- Two-year warranty

What is Included with Energy Display

- Energy Display – INSTEON In-Home Display
- Two (2) AAA batteries
- Quick-Start Guide

INSTALLATION

Installing Energy Display

NOTE: Energy Display uses 2 AAA batteries which will provide approximately one year of use.

- 1) Be sure you have properly installed at least one dual-band INSTEON device and an INSTEON meter device (such as iMeter Solo #2423A1)
- 2) Remove the battery compartment door from the rear of Energy Display
- 3) Observe the polarity markings, install two AAA batteries, and then replace the battery compartment door

The Energy Display screen will turn on and all the LCD segments will turn on

After a few seconds, the screen will go to Display Mode

Energy Display is now ready to use. See [Linking Energy Display to an INSTEON Meter Device](#) to begin receiving energy information about your appliances.

HOW TO SET UP ENERGY DISPLAY TO MONITOR AN APPLIANCE'S POWER CONSUMPTION

Linking Energy Display to an INSTEON Meter Device

Follow these steps to Link Energy Display to an INSTEON meter device (e.g., iMeter Solo). See the meter device's Owner's Manual for detailed instructions on how to properly install and Link it to Energy Display.

The following will work for the most common INSTEON devices:

- 1) Make sure the meter device is properly installed with the appliance you wish to monitor
- 2) Tap the 1-2-3/Down button until the desired meter position is blinking (Meter 1, 2, or 3)
- 3) Set Energy Display to Linking Mode by pressing & holding the Set button until it beeps (3 seconds)

*The Energy Display Status LED will begin blinking **GREEN***

You will have 4 minutes to complete the next step before Linking Mode automatically times out.

- 4) On the meter device, press & hold the Set button until it beeps (3 seconds)

Energy Display will double-beep and its Status LED will turn off.

A few moments later the Energy Display screen will display information for the meter device you are metering

Unlinking an INSTEON Meter Device from Energy Display

If you are no longer going to use an INSTEON meter device, it is very important that you Unlink it. Otherwise, Energy Display will retry gathering information from the unused meter device, thus slowing down the system and reducing battery life.

The following will work on the most common INSTEON devices:

- 1) Use the 1-2-3,Down button to select the meter device you wish to Unlink
- 2) Set Energy Display to Linking Mode by pressing & holding the Set button until it beeps (3 seconds)

*The Energy Display Status LED will begin blinking **GREEN***

- 3) Set Energy Display to Unlinking Mode by pressing & holding the Set button until it beeps again (3 seconds)

The Energy Display Status LED will begin blinking red

You will have 4 minutes to complete the next step before Unlinking Mode automatically times out.

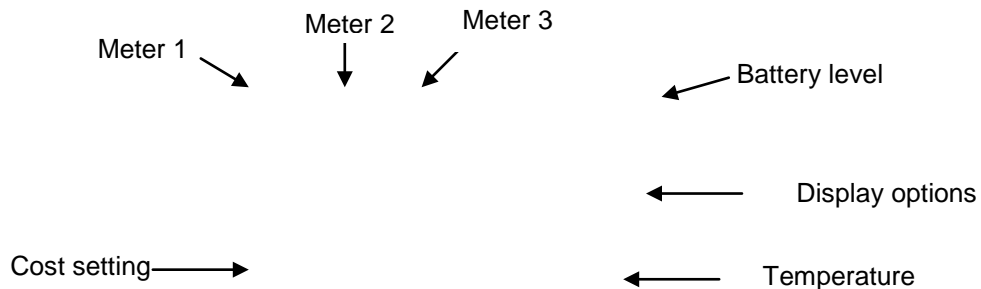
- 4) Press & hold the meter device's Set button until it beeps (3 seconds)

Energy Display will double-beep and its Status LED will turn off

- 5) Confirm that Unlinking was successful by checking the Energy Display screen

The Energy Display screen will no longer display information for the meter device you just Unlinked from

USING ENERGY DISPLAY



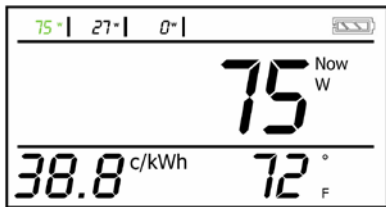
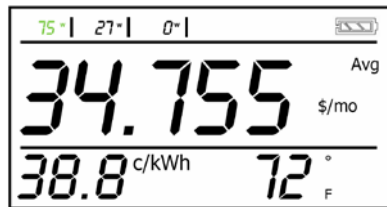
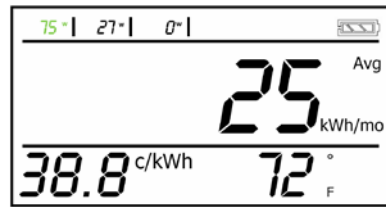
Data is retrieved when:

- Energy Display is first Linked to a meter device
- Refresh button is tapped while Energy Display is in Display Mode
- Any button is tapped in Standby Mode

Power-related information will display for one minute before Energy Display enters Standby Mode. In Standby Mode, only the battery level and temperature will display. Tap any button to exit Standby Mode and return to Display Mode.



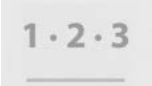

Display Mode

NOTE: Green text indicates flashing text on the Energy Display screen.


 <p>Instantaneous Watts used</p>	 <p>Average cost per month</p>	 <p>Average energy used per month</p>
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Energy Display Owner's Manual



Button	Action
 Mode/Setup	<ul style="list-style-type: none"> • Tap to cycle between display setting options: <ul style="list-style-type: none"> • Instantaneous Watts used (Now W) • Average cost per month (Avg \$/mo) • Average energy used per month (Avg kWh/mo) • Press & hold until the cost setting field begins blinking to enter Setup Mode. See Setup Modes.
 Restart/Up	Press & hold for 10 seconds to reset the energy value for the currently displayed meter (for calculating average energy used and cost/month)
 1-2-3/Down	Tap to cycle between each meter device to be displayed (Meter 1, 2, or 3) <i>The Energy Display will display information about your meter device after a few seconds.</i>
 Refresh/OK	Tap to read current information for all meter devices
Set button	Press & hold for 3 seconds to Link a meter device to the current meter position on Energy Display (Meter 1, 2, or 3). See Linking Energy Display to an INSTEON Meter Device .

Setup Modes

Button	Action
	To enter Setup Mode, press & hold the Mode/Setup button until the cost setting field begins blinking. Then tap the Mode/Setup button to cycle to the desired settings.

To exit Setup Mode:

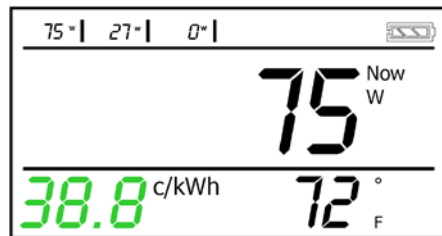
- Tap the Refresh/OK button to accept the current value
- Wait for Energy Display to time out and automatically accept the current value (~1 minute)
- Tap the Mode button to accept the current value and move to the next Setup Mode

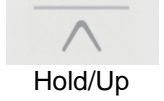
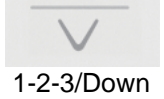
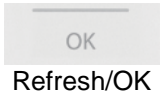
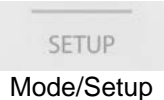
Once Energy Display exits a setup mode, it will return the screen to Display Mode.

Cost Setting

NOTE: Green text indicates flashing text on the Energy Display screen.

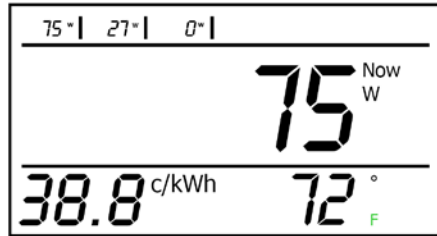
Range is 0.1 to 999 cents/kWhr (\$9.99/kWhr). Once the counter reaches 999 cents, it will reset to 0.1 cents. The default is 10 cents.



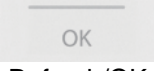



Button	Action
 <p>Hold/Up</p>	Tap up to increase or down to decrease the cost. If cost is less than 100 cents, cost will change by 0.1 cents. If cost is greater than 100 cents, cost will change by 1 cent. Press & hold to continuously increase or decrease cost.
 <p>1-2-3/Down</p>	
 <p>Refresh/OK</p>	Tap to accept current Cost setting and exit Setup Mode
 <p>Mode/Setup</p>	Tap to cycle to the next setting mode (Temperature Format)

Temperature Format Setting

NOTE: Green text indicates flashing text on the Energy Display screen.
 Format toggles between Celsius and Fahrenheit. The default is Fahrenheit.

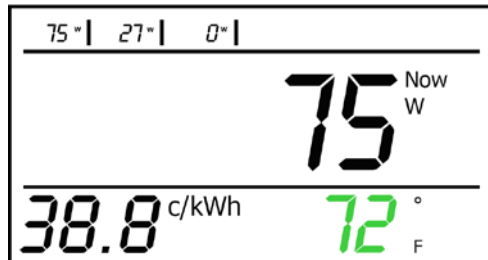




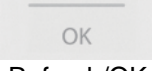

Button	Action
 Hold/Up	Tap to toggle the temperature display between Celsius and Fahrenheit
 1-2-3/Down	
 Refresh/OK	Tap to accept current Temperature Format setting and exit Setup Mode
 Mode/Setup	Tap to cycle to the next setting mode (Temperature Calibration)

Temperature Calibration Mode

NOTE: Green text indicates flashing text on the Energy Display screen.

The Energy Display temperature comes pre-calibrated. Only perform these steps if re-calibration is necessary. Please allow 20 minutes for temperature to adjust when moving to an area with a significant temperature change.



Button	Action
 Hold/Up	Tap to set local temperature (based on a thermostat or other device) Note: Place Energy Display close to your temperature reference device (e.g., thermostat or thermometer) for approximately 20 minutes to ensure it is settled to a stable temperature.
 1-2-3/Down	
 Refresh/OK	Tap to accept current local temperature
 Mode/Setup	Tap to exit Setup Mode

ADVANCED FEATURES OF ENERGY DISPLAY

Restoring Power to Energy Display

Energy Display stores all of its settings, such as Links to other INSTEON devices, with non-volatile memory. Because settings are saved in this non-volatile memory, they will not be lost in the event of a power failure.

Resetting Energy Display to its Factory Default Settings

The factory reset procedure can be used to clear the Energy Display memory and restore its factory default settings. This procedure will clear Energy Display of all INSTEON Links and Settings Mode changes. Note: this procedure does not reset any INSTEON meter devices linked to Energy Display.

- 1) If you are using Energy Display to retrieve power consumption from an INSTEON device, Unlink those devices from Energy Display. See [Unlinking an INSTEON Meter Device from Energy Display](#).
- 2) Remove the battery compartment cover on the back of Energy Display
- 3) Remove one battery from Energy Display for at least 10 seconds
The Energy Display screen will turn off
- 4) While holding down the Set button, reinsert the battery into Energy Display, making sure not to let go of the Set button
The Energy Display screen will turn on and all LCD segments will turn on
- 5) Continue to hold the Set button until the Energy Display screen goes blank (10 seconds) and then release
Once you release the Set button, Energy Display will beep
After a few more seconds, Energy Display will beep again and after a few flashes of the display, its screen will be in Display Mode
- 6) Replace the battery compartment cover

ADDITIONAL RESOURCES

Find home automation solutions, helpful tips, interactive demos, videos, user forums, and more at the Smarthome Learning Center: www.smarthome.com/learningcenter.html

TROUBLESHOOTING

Problem	Possible Cause	Solution
The Status LED on Energy Display is not turning on and nothing is displaying on the screen.	The batteries may be missing or are inserted improperly.	Open the cover on the back of Energy Display to check that the batteries are installed properly (according to the polarity markings).
	The batteries may be depleted.	Replace the batteries with a fresh set.
Energy Display won't Link or work with an INSTEON device.	The INSTEON device may not be receiving the RF command.	Be sure that you have properly installed at least one dual-band INSTEON device.
	Energy Display may be out of wireless range or the INSTEON signal may be too weak.	Try using Energy Display from a different location, closer to a dual-band INSTEON device. Add additional INSTEON devices or move around existing INSTEON devices. All INSTEON devices act as INSTEON network repeaters.
Energy Display doesn't always display energy information from an INSTEON device.	Energy Display may be attempting to retrieve energy information from a lost or broken INSTEON device.	If the INSTEON device is still available, Unlink it from Energy Display. See Unlinking an INSTEON Device from Energy Display .
		Perform a factory reset on Energy Display. See Resetting Energy Display to its Factory Default Settings .
The temperature on Energy Display does not match the temperature reported by my thermostat.	Energy Display may not be calibrated to its environment.	Calibrate the temperature. See Setup Modes .
Energy Display is not showing the proper energy usage for a Linked INSTEON device – 65,535 appears on the Energy Display screen for that particular INSTEON device.	The total power used for that INSTEON device may be more than the digits can display.	Use Display Mode to exhibit the particular INSTEON device in the main display to see its actual value.
		View the energy information via INSTEON home automation software (e.g., HouseLinc).
Energy Display is locked up.	Fluctuating battery current may have glitched Energy Display.	Remove the battery from Energy Display for 10 seconds, and then reinstall.
		Install fresh batteries.
		If the above doesn't work, perform a factory reset. See Resetting Energy Display to its Factory Default Settings .

If you have tried these solutions, reviewed this Owner's Manual, and still cannot resolve an issue you are having with Energy Display, please call:

INSTEON Gold Support Line
800-762-7845

SPECIFICATIONS, CERTIFICATION, AND WARRANTY

Specifications

View specifications for Energy Display at: www.smarthome.com/2448A2.html

FCC & Industry Canada Compliance Statement

This device complies with FCC Rules Part 15 and Industry Canada RSS-210 (Rev. 7). Operation is subject to the following two conditions:

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

The digital circuitry of this device 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 residential installations. 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 and television reception. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause such interference, which can be verified by turning the device off and on, the user is encouraged to eliminate the interference by one or more of the following measures:

- Re-orient or relocate the receiving antenna of the device experiencing the interference
- Increase the distance between this device and the receiver
- Connect the device to an AC outlet on a circuit different from the one that supplies power to the receiver
- Consult the dealer or an experienced radio/TV technician

WARNING! Changes or modifications to this device not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Industry Canada license-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Limited Warranty

Seller warrants to the original consumer purchaser of this product that, for a period of two years from the date of purchase, this product will be free from defects in material and workmanship and will perform in substantial conformity to the description of the product in this Owner's Manual. This warranty shall not apply to defects or errors caused by misuse or neglect. If the product is found to be defective in material or workmanship, or if the product does not perform as warranted above during the warranty period, Seller will either repair it, replace it, or refund the purchase price, at its option, upon receipt of the product at the address below, postage prepaid, with proof of the date of purchase and an explanation of the defect or

Energy Display Owner's Manual



error. The repair, replacement, or refund that is provided for above shall be the full extent of Seller's liability with respect to this product. For repair or replacement during the warranty period, call the INSTEON Gold Support Line at 800-762-7845 with the Model # and Revision # of the device to receive an RMA# and send the product, along with all other required materials to:

Smarthome, Inc.
ATTN: Receiving Dept.
16542 Millikan Ave.
Irvine, CA 92606-5027

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Limitations

The above warranty is in lieu of and Seller disclaims all other warranties, whether oral or written, express or implied, including any warranty or merchantability or fitness for a particular purpose. Any implied warranty, including any warranty of merchantability or fitness for a particular purpose, which may not be disclaimed or supplanted as provided above shall be limited to the two-year of the express warranty above. No other representation or claim of any nature by any person shall be binding upon Seller or modify the terms of the above warranty and disclaimer.

Home automation devices have the risk of failure to operate, incorrect operation, or electrical or mechanical tampering. For optimal use, manually verify the device state. Any home automation device should be viewed as a convenience, but not as a sole method for controlling your home.

In no event shall Seller be liable for special, incidental, consequential, or other damages resulting from possession or use of this device, including without limitation damage to property and, to the extent permitted by law, personal injury, even if Seller knew or should have known of the possibility of such damages. Some states do not allow limitations on how long an implied warranty lasts and/or the exclusion or limitation of damages, in which case the above limitations and/or exclusions may not apply to you. You may also have other legal rights that may vary from state to state.

INSTEON Technology Patent

U.S Patent No. 7,345,998, International patents pending

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