LEVITON

Getting Started Guide

WiFi CERTIFIED

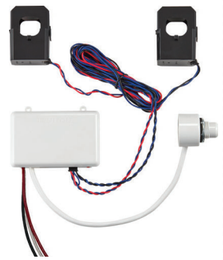
WHOLE HOME ENERGY MONITOR

PLEASE READ THESE INSTRUCTIONS BEFORE INSTALLING

PK-A3446-10-00-0B

Cat. No. LWHEM

Welcome



Leviton's Whole Home Energy Monitor (LWHEM) is the smart solution for your home's electrical system. It provides real-time energy consumption data and controls Leviton Smart Circuit Breakers. With inputs for up to three pairs of optional LSMMA Current Transformers (CTs) to measure energy sources, the LWHEM provides an aggregate view of your energy consumption and generation. A set of contact inputs allows integration with an Automatic Transfer Switch (ATS). When paired with Leviton 2nd Gen Smart Circuit Breakers, the LWHEM provides unparalleled control of your home's electrical system, including alerts for circuit breaker trips, notifications for unusual activity, and the ability to remotely control circuit breakers.

We are here to help

ONLINE
mylevitonsupport.leviton.com

CHAT
www.leviton.com/support

EMAIL
loadcentersupport@leviton.com

CALL
1-800-824-3005 (USA)
1-800-405-5320 (Canada)

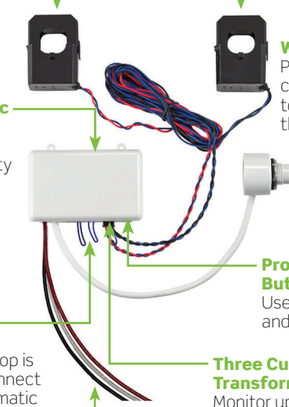
See Leviton's complete portfolio of load centers, smart circuit breakers and accessories at leviton.com/loadcenter

The Whole Home Energy Monitor is compatible with:

- **Leviton Load Centers, only.** This device is not intended for use in non-Leviton panels.
- The provided CTs are compatible with the service mains on all Leviton Load Centers except LP8xx-TMC and LS8xx-BTD models.
  - If installing in this panel type, please refer to leviton.com/support for recommendations on calculating whole-home consumption data with the addition of Leviton 2nd Gen Smart Circuit Breakers.
- Leviton 2nd Gen Smart Circuit Breakers with Remote Control.
- Leviton 1st Gen Smart Circuit Breakers.
- LSBMA Smart Breaker Metering Accessory.
- LSMMA Smart Mains Metering Accessory
- Additional support materials options can be found in the My Leviton app or at mylevitonsupport.leviton.com

RATINGS	
Electrical	120/240VAC, 60Hz
Operating Temp	-4 °F to 185 °F (-20°C to 85°C)
Operating Humidity	< 95% non-condensing
Current Draw	40mA
NETWORK	
Wi-Fi	802.11 b/g/n networks - 2.4GHz only
Security	WPA, WPA2, or WPA3 security, or open
Bluetooth	v5.0
MY LEVITON APP	
iOS	Version 12.0 or later
Android™	Version 8.0 or later

At a glance



Current Transformers
Monitor power consumption or production for the panel or individual circuits.

Wi-Fi Antenna
Provides communication to the app via the internet.

Diagnostic LED
Provides connectivity and power status.

Programming Button
Use during setup and configuration.

Contact Inputs
The blue loop is used to connect to an automatic transfer switch. The purple loop should not be used at this time and is reserved for future applications.

Three Current Transformer Ports
Monitor up to three 2-pole circuits using LSMMA Current Transformers.

Power Connections
Power is provided from a 2-pole breaker.

Features

- Remotely monitor whole-home energy usage via provided LSMMA Current Transformers (CTs).
- Inputs for up to two additional pairs of CTs to monitor alternate energy sources (e.g., solar, battery, generator) or loads connected to dedicated 2-pole circuit breakers.
- Supports the features of Leviton 1st and 2nd Gen Smart Circuit Breakers with Remote Control.
- Integrates with Automatic Transfer Switches via contact loops to trigger automated responses and control Leviton 2nd Gen Smart Circuit Breakers with Remote Control.
- View real-time energy consumption down to the circuit level with Leviton Smart Circuit Breakers.
- Review historical energy consumption data in the My Leviton app to explore possible energy savings.
- Schedule 2nd Gen Smart Circuit Breakers with Remote Control to turn ON or OFF based on time of day resulting in energy and financial savings.
- Receive notifications and alerts for Leviton Smart Circuit Breaker activity. Know when and why a Smart Circuit Breaker trips.
- Remote firmware updates.
- Remotely access your Leviton Load Center, Decora Smart Wi-Fi lighting and load control products from anywhere via the My Leviton app.

See Leviton's complete line of load centers, circuit breakers, and accessories at leviton.com/loadcenter

Limited 2 Year Warranty & Exclusions

For Leviton's limited product warranty, go to **www.leviton.com**. For a printed copy of the warranty, call 1-800-824-3005.

FOR CANADA ONLY
For warranty information and/or product returns, residents of Canada should contact Leviton in writing at Leviton Manufacturing of Canada ULC to the attention of the Quality Assurance Department, 165 Hymus Blvd, Pointe-Claire (Quebec), Canada H9R 1E9 or by telephone at 1 800 405-5320.

FCC COMPLIANCE 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 when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
Any changes or modifications not expressly approved by Leviton could void the user's authority to operate this equipment

IC STATEMENT
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.

Leviton Manufacturing Co., Inc.
201 North Service Road, Melville, NY 11747

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Specifications subject to change at any time without notice.

What you need to make it work:

- A 2.4GHz Wi-Fi network with high speed internet.
- An iOS (12.0 or later) or Android™ (8.0 or later) mobile device.
  NOTE: Make sure Wi-Fi and Bluetooth are enabled on your mobile device.
- A Leviton Load Center installed in a location with Wi-Fi access. Test the Wi-Fi signal at your Load Center with a smart phone to verify the signal is acceptable. For some outdoor or basement installations, you may need a Wi-Fi extender or mesh system for optimal performance.
- A dedicated 2-pole Circuit Breaker is required to power the Whole Home Energy Monitor.
  NOTE: The LWHEM should NOT be powered by a Smart Circuit Breaker.

Get the app

To download the My Leviton app, visit **my.leviton.com** and select the link or scan the QR code below for your device.

Download on the App Store

GET IT ON Google Play

Wi-Fi antenna installation

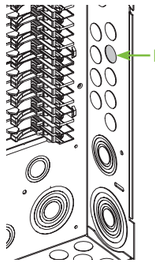
WARNING: TO AVOID FIRE, SHOCK, OR DEATH, TURN OFF POWER SUPPLYING THIS EQUIPMENT, AND CONFIRM POWER IS OFF before installing, removing, or servicing equipment.

CAUTIONS:
- Unless the power at the meter is turned off, the service mains that feed the main breaker are live.
- This equipment **MUST BE** installed and serviced by an electrician.
- Replace all doors and covers before connecting power to this equipment.
- To be installed and used in accordance with electrical codes and regulations.
- No user serviceable components. DO NOT attempt to service or repair.

1. Using a mobile device, confirm a strong Wi-Fi signal is available in the area in which you are installing the Whole Home Energy Monitor.

Wi-Fi antenna installation (continued)

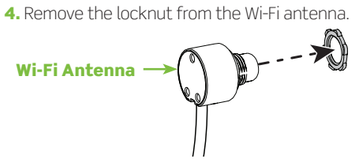
2. Select an available 1/2 inch knockout to install your Whole Home Energy Monitor's Wi-Fi antenna.



- If installing in an indoor, surface mounted load center, any available 1/2 inch knockout may be used.
- If installing in a flush-mounted load center, the Wi-Fi antenna will need to be installed in an available 1/2 inch knockout **at the bottom of the enclosure** with the provided rubber grommet.
- If installing in an outdoor load center, the Wi-Fi antenna must be installed in a knockout **at the bottom of the enclosure**.
- If a 1/2 inch knockout is not available, drill a 7/8 inch hole in an appropriate location.

3. Remove the knockout.

4. Remove the locknut from the Wi-Fi antenna.

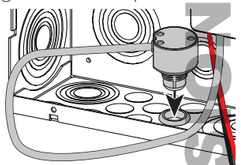


Wi-Fi antenna installation (continued)

5. Install the Wi-Fi antenna.

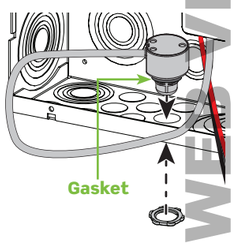
a. For indoor or flush-mounted load centers where the knockout is inside the wall, the Wi-Fi antenna may be secured in the knockout with the supplied rubber grommet.

- Install the rubber grommet into the open knockout, then insert the small end of the Wi-Fi antenna into the grommet. The locknut and gasket are not required.
- If the Wi-Fi antenna is difficult to press-fit into the grommet, apply a small drop of dish soap to the rubber grommet for lubrication.



b. For outdoor or surface-mounted load centers where both sides of the knockout can be accessed, the Wi-Fi antenna should be secured in place with the locknut.

- Insert the small end of the Wi-Fi antenna through the open knockout hole, making sure the gasket is between the Wi-Fi antenna and the inside panel wall, and screw and tighten the locknut onto the Wi-Fi antenna.

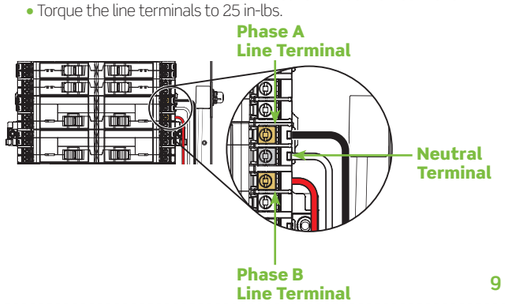


WEBVERSION

Power connection

WARNING: TO AVOID FIRE, SHOCK, OR DEATH, TURN OFF POWER SUPPLYING THIS EQUIPMENT, AND CONFIRM POWER IS OFF before installing, removing, or servicing equipment.

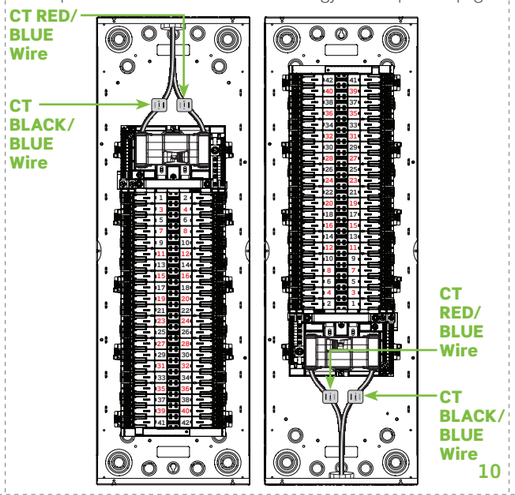
1. Remove power to the load center as close to the power meter as possible using one of the following methods:
   a. Disconnect at the meter main.
   b. Breaker in an external panel feeding the load center.
   c. Main breaker at the top of the load center.
   NOTE: Unless power is removed upstream from the main breaker, the feeds tied to the main lugs will remain energized.
2. Install a dedicated 2-pole circuit breaker to power the Whole Home Energy Monitor in an available space in your Leviton Load Center.
   NOTE: The Whole Home Energy Monitor should NOT be powered by a Smart Circuit Breaker.
3. Connect the BLACK power wire from the Whole Home Energy Monitor to the line terminal on the Phase A side. Connect the RED power wire from the Whole Home Energy Monitor to the line terminal on the Phase B side and connect the WHITE wire from the Whole Home Energy Monitor to the neutral terminal. Do not share the breaker connections.
   - Refer to the phase map on the next page if you are unsure of the phase locations on your 2-pole breaker.
   - The neutral terminal on the circuit breaker will be marked with an "N".
   - Torque the line terminals to 25 in-lbs.



Phase map

The illustration below is intended to help identify the phase locations of circuit breaker positions and service mains in a main breaker Leviton Load Center.

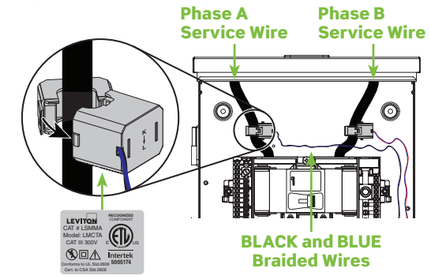
- The color of each circuit breaker position corresponds to which power wire on the Whole Home Energy Monitor to terminate on the brass line terminal for a 2-pole circuit breaker installed in this position.
- To ensure the Current Transformer (CT) readings are correct, the CT with BLACK/BLUE wire must be on Phase A service main, and the CT with RED/BLUE wire must be on Phase B service main.
  NOTE: To reference the phase locations for a 66 space Leviton Load Center, or main lug Leviton Load Center, refer to the phase map document on the Whole Home Energy Monitor product page.



Current transformer installation

1. To monitor the panel's total energy consumption, install the provided Current Transformers (CTs) onto the service mains. Consult the phase map to confirm the phase locations, and pay close attention to the CT orientation as noted below:
   - Clamp the CT with the BLACK and BLUE wires to the Phase A service wire with the Leviton logo sticker and arrow on the embossed K ➔ L facing the main breaker or lugs.
     NOTE: This CT must be on the same phase as the BLACK power wire from the Whole Home Energy Monitor.
   - Clamp the CT with the RED and BLUE wires to the Phase B service wire with the Leviton logo sticker and arrow on the embossed K ➔ L facing the main breaker or lugs.
     NOTE: This CT must be on the same phase as the RED power wire from the Whole Home Energy Monitor.
   - If installing CTs on a main lug Leviton Load Center, refer to the phase map document on the Whole Home Energy Monitor product page to confirm the phase locations.
   - The Leviton logo sticker is on the Load (L) side of the CT and should be facing the main breaker or lugs.
   - There is no sticker on the power source (K) side of the CT. It should be facing the feed coming in from the meter.
   - The Letters K ➔ L are embossed on the base of the CT.
   - Use the sticker and/or K ➔ L to orient the CT.
   - The braided wires will be fed down the sides of the load center to the Whole Home Energy Monitor.
   - Extra CT wire can be coiled and may be run parallel with Romex.

Current transformer installation (continued)



2. Additional CTs can be added and connected to CT ports.
   - To monitor alternate energy sources, such as solar, battery storage, or generator, install the CTs with the Leviton logo sticker facing the 2-pole circuit breaker.
   - To monitor a standard 2-Pole branch circuit breaker (not back-fed), install the CTs with the Leviton logo sticker facing away from the 2-Pole circuit breaker.

Contact input

The Whole Home Energy Monitor and Leviton 2nd Gen Smart Circuit Breakers with Remote Control can be used to control high current loads to eliminate the need for a secondary Essential Loads Panel. A BLUE dry contact input loop is available, which can be opened to initiate an automated response. The Whole Home Energy Monitor can be integrated with an Automatic Transfer Switch (ATS).

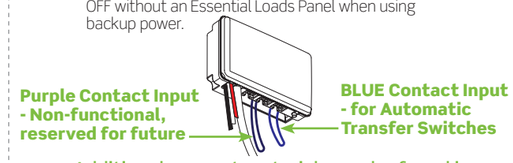
- The BLUE input loop connection is located behind a sticker directly below the CT ports on the bottom of the Whole Home Energy Monitor.
- The loop is designed to be cut and connected to a dry contact. **DO NOT APPLY VOLTAGE**.

Contact input (continued)

- In most installations an isolation relay will be required.
- The input loop is normally closed, and is opened to create an automated response, which will turn OFF all nonessential Circuit Breakers.
  NOTE: Ensure the backup power system is properly sized and all nonessential loads are powered via 2nd Gen Smart Circuit Breakers and configured as nonessential to ensure the backup power system safely remains within the manufacturer's specifications.
- Closing the loop will end the automated response.
- Automated responses are configured in the My Leviton app.
- Be certain to follow national and local electrical code and use proper insulation ratings which conform with the installation location.
- The second purple contact loop in the Whole Home Energy Monitor is non-functional at this time and reserved for future use-cases.

Common use-cases for the contact input:

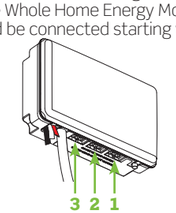
- Create an automated response to the activation of an ATS.
  - When the input loop is opened, all 2nd Gen Smart Circuit Breakers with Remote Control designated as nonessential will turn OFF and will remain in the OFF state while backup power is active.
  - When utility power is restored and the ATS closes the contact input, the 2nd Gen Smart Circuit Breakers will return to normal operation.
- Prioritize loads when using Portable Generators via Manual Switch.
  - Use the Leviton Interlock Kit (LITLK) and a low voltage switch to easily turn 2nd Gen Smart Circuit Breakers with Remote Control OFF without an Essential Loads Panel when using backup power.



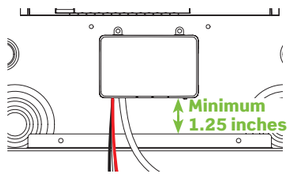
Additional support materials can be found in the My Leviton app or at mylevitonsupport.leviton.com

Mounting

1. Prior to mounting the Whole Home Energy Monitor, connect any CT wires that will be used for monitoring to the dedicated ports on the bottom of the Whole Home Energy Monitor.
   - The CT wires should be connected starting with port 1.



2. Select a mounting location on the back wall of the panel.
   - Make sure that the Leviton logo is upright (horizontal).
   - Ensure that the location provides ample access to all wiring and connections on the Whole Home Energy Monitor.
   - Make sure to follow NEC code when installing this unit.
3. Remove the backing of the double-sided tape on the back of the Whole Home Energy Monitor and adhere to the panel's back wall.
   - For most installations, the double-sided tape will keep the unit securely in place without the screws.
   - To secure the Whole Home Energy Monitor with the supplied #6-32 thread forming mounting screws, use a #31 drill bit to drill pilot holes through the mounting tabs, then screw the Whole Home Energy Monitor to the panel backwall.



Add your device to My Leviton

1. Power the Whole Home Energy Monitor by turning on the breakers.
2. Make sure the unit is in setup mode (status LED should be blinking GREEN). If the status LED is not blinking GREEN, see page 16 for instructions on how to put the unit in setup mode.
3. Launch the My Leviton app.
4. Log in or choose "Sign Up" for an Account.
5. Follow the instructions on the screen.
6. Once logged in, tap the "+" in the upper-right corner of the devices page and select "Add Device".
7. Choose Load Center: 2nd Generation LWHEM.
   - If you are replacing a previously installed 1st Gen Smart Hub (LDATA), the process is made easier by an app wizard which will backup your breaker information and reestablish connections with the new Whole Home Energy Monitor. Simply select "I'm replacing the LDATA or LWHEM at an existing panel" and follow the prompts.
8. Follow the app instructions to pair smart breakers and connect the unit to the home's Wi-Fi network.

Adding breakers

1. The Whole Home Energy Monitor connects to the My Leviton app using the Bluetooth radio in your phone. During the enrollment process you will see a breaker blink and will be asked to confirm the location, give the breaker a name, and the type of load being controlled. The process will repeat until all breakers are enrolled.
2. Once the breakers have been configured, an installer can stop or continue with the enrollment and connect the Whole Home Energy Monitor to Wi-Fi. Once on Wi-Fi, the user will be able to test communication and update firmware as needed.

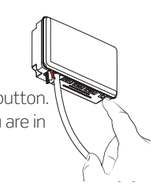
Status LED

COLOR	ACTIVITY	STATUS
GREEN	Flashes	In Setup Mode and ready to be added to a Wi-Fi network.
GREEN	Slow Blink	Connecting to a Wi-Fi network on power up.
Off	Solid	Normal operation.
AMBER	Slow Blink	Device is not connected to the Wi-Fi network, but attempting to reconnect.
GREEN/ RED/AMBER	Alternating Blink	Identify feature triggered from the My Leviton app.

Visit My.Leviton.com and select the "Support" option for additional diagnostic assistance.

Setup mode

1. Hold the control button for 7 seconds.
2. After the first 7 seconds the status light changes to AMBER. Release the control button.
3. When the status LED flashes GREEN, you are in the Setup Mode.



Factory default reset

1. Hold control button for 14 seconds.
2. After the first 7 seconds, the status LED turns AMBER. Continue to hold.
3. After 7 more seconds, the LED quickly flashes RED and AMBER.
4. Release control button and the device resets.

Diagnostic LED

If your device is not connecting to the My Leviton app, the Status LED can be used as a diagnostic tool. Press the button for at least 2 seconds (but no more than 7 seconds), and then release. The status LED blinks a diagnostic code for 2 seconds.

COLOR	STATUS
AMBER	Not connected to Wi-Fi.
RED	Connected to Wi-Fi, but not able to connect to the My Leviton cloud.
GREEN/ AMBER, Alternating	Connected to Wi-Fi and My Leviton cloud, but unable to set the time from the internet.
GREEN	Connected to Wi-Fi and My Leviton cloud is working properly.

App testing

1. On the Devices screen, scroll to the bottom and select your Load Center.
2. If Current Transformers (CTs) are configured correctly you should see the total panel consumption in watts.
3. Choose Panel.
   - Each Smart Breaker should show consumption in watts.
   - Select a 2nd Gen Smart Circuit Breaker with Remote Control icon and use the "Turn Breaker Off" feature to test breaker control.

What to do if...

Current Transformer Readings Do Not Read Correctly:

- Review the phase map.
- Make certain the CTs are oriented correctly.
- Confirm the power wires and CTs are correctly phased.
- Confirm that the CT is configured to the correct channel and usage type under "Device Settings".

Not connected to Wi-Fi:

- Make certain the Whole Home Energy Monitor is wired to a 2-pole breaker and the breaker is in the ON position.
- If your unit is enrolled in the My Leviton app, select "Device Settings", and select "Device Health" to see the current Wi-Fi signal strength.
- If signal is weak, make certain the antenna is installed correctly or add an additional access point to increase your home's Wi-Fi network coverage.

Safety first

WARNINGS:

- **TO AVOID FIRE, SHOCK, OR DEATH: TURN OFF POWER SUPPLYING THIS EQUIPMENT, AND CONFIRM POWER IS OFF** before installing, removing, or servicing equipment.
- This product is to be installed and/or used in accordance with electrical codes and regulations.
- This equipment **MUST BE** installed and serviced by an electrician.
- Replace all doors and covers before connecting power to this equipment
- Leviton Wi-Fi enabled devices rely on Wi-Fi communication. For customers looking to install a large number of devices it is recommended to consult the wireless network's access point specifications to determine the maximum number of supported Wi-Fi devices. In some cases, for example large installations, it may be necessary to upgrade to newer high performance wireless grade access points to ensure proper operation.

CAUTIONS:

- Unless the power at the meter is turned off, the service mains that feed the main breaker are live.
- No user serviceable components. **DO NOT** attempt to service or repair.

WEB VERSION