



## **Installation & User Guide**

*1.0.2 (2016.06)*

## HAZARD CATEGORIES AND SPECIAL SYMBOLS

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### **DANGER**

DANGER indicates an immediately hazardous situation which, if not avoided, **will result in** death or serious injury.

### **WARNING**

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

### **CAUTION**

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

### **CAUTION**

CAUTION, used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, **can result in** property damage.

*NOTE: Provides additional information to clarify or simplify a procedure.*

### **PLEASE NOTE**

Electrical equipment should be installed, operated, serviced, and maintained only by qualified electrical personnel. If the equipment is used in a manner not specified by Curb, the protection provided by the equipment may be impaired. No responsibility is assumed by Curb for any consequences arising out of the use of this manual.

### **CLASS B FCC STATEMENT**

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

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

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

This Class B digital apparatus complies with Canadian ICES-003.

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## INTRODUCTION

CURB is the world's smartest home energy monitoring and control system. It is intended to be installed inside a circuit breaker panel and communicates with the CURB cloud for mobile and web-based access.

### Box Contents



## SAFETY PRECAUTIONS

### Before You Begin

This chapter contains important safety precautions that must be followed before attempting to install, service, or maintain electrical equipment. Carefully READ and FOLLOW the safety precautions outlined below BEFORE working with CURB power hub.

 **DANGER****HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- **Only qualified electrical workers** should install this equipment. Such work should be performed only after reading this entire set of instructions.
- NEVER work alone.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power. Assume that all circuits are live until they have been completely de-energized, tested, and tagged. Pay particular attention to the design of the power system. Consider all sources of power, including the possibility of backfeeding.
- Turn off all power supplying the power hub and the equipment in which it is installed before working on it.
- All circuit-breakers powering the power hub must meet the relevant requirements of IEC 60947-1 and IEC 60947-3.
- Always use a properly rated voltage sensing device to confirm that all power is off.
- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. In the USA, see NFPA 70E.
- Before closing all covers and doors, carefully inspect the work area for tools and objects that may have been left inside the equipment.
- Use caution while removing or installing panels so that they do not extend into the energized bus; avoid handling the panels, which could cause personal injury.
- The successful operation of this equipment depends upon proper handling, installation, and operation. Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.
- Equipment should be used as specified by this manual, otherwise protection provided by equipment may be impaired.
- NEVER bypass external fusing.
- The power hub should be installed in a suitable electrical and fire enclosure.

**Failure to follow this instruction will result in death or serious injury.**

# INSTALLATION

## 1. Check CURB package to ensure that all contents are present

- SEE “Box Contents” section above.
- If anything is missing, contact CURB customer support (844) 629-2872 or [support@energycurb.com](mailto:support@energycurb.com)
- Inform customer to save and shut down their computers and sensitive electronic equipment.

## 2. Label & record circuit breaker panel details

IF CURB PRO (for measuring one breaker panel):

- Find main breaker panel for the house, not sub-panel
- Label each breaker in the panel using the provided green # stickers.



### NOTE

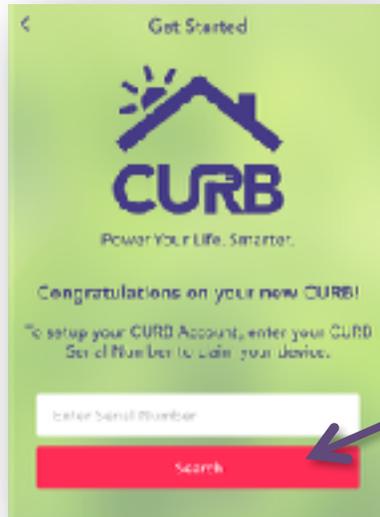
Place sticker on breaker itself, not on cover or throw.

Label each breaker, even if they share a throw switch. If a single breaker spans 2 circuits, then label each half with a number sticker.

Leave room for a second sticker on each breaker, without covering up amperage indicator.

You may number the circuits in any order, however we've found that numbering sequentially from top-to-bottom makes the process easier. For example, label a 40 breaker panel #1-20 down the left and #21-40 down the right.

- On your smartphone, go to: <http://connect.energycurb.com/>
  - Search for this CURB using its serial number (printed on back)  
NOTE: search field is case-sensitive

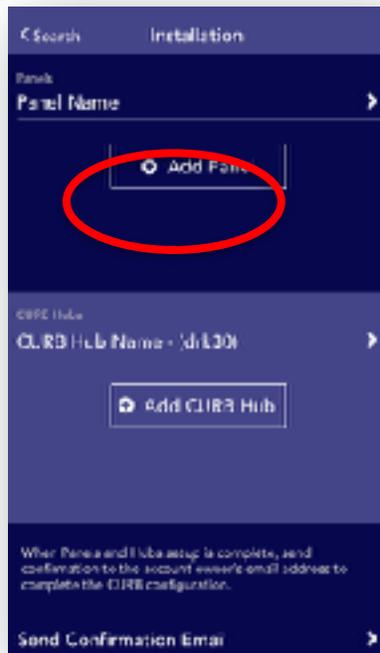


Write the serial number here for future reference:

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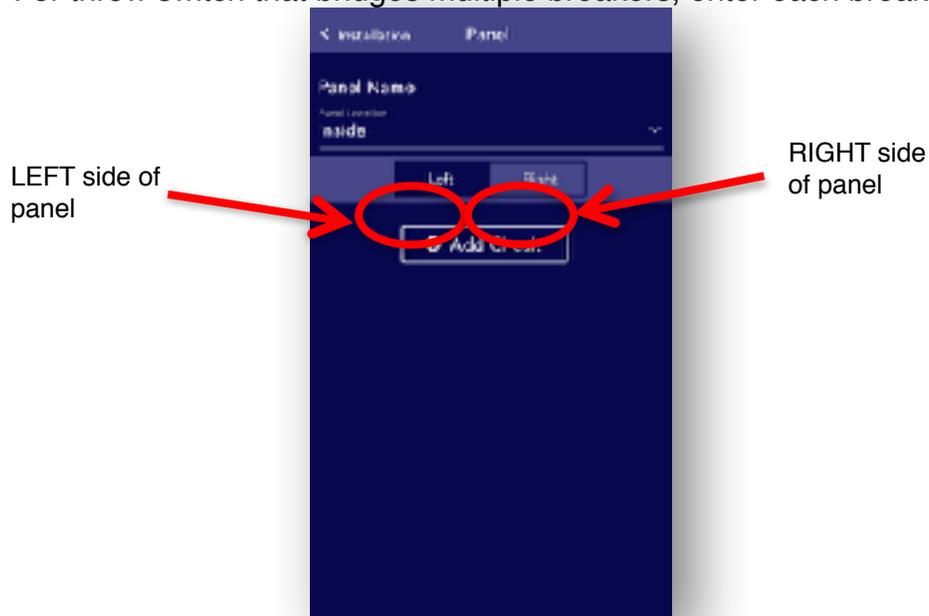
- On the “Installation” page
  - Choose “Add Panel”



- Name the circuit breaker panel
- Specify the panel location in the home



- **NOTE: In the next step, do not specify the A/B phase identifier yet.**  
*(leave it as NULL)*
- Add each circuit to the configuration page  
(first on the left side of the breaker panel, then the right)
  - Enter breaker number (from sticker)
  - Enter breaker name (from any homeowner panel schedule)
  - Enter breaker amperage rating (as indicated on breaker)
  - For throw switch that bridges multiple breakers, enter each breaker separately



*If installing more than one CURB at this location, repeat above process for each panel to be receiving a CURB power hub.*

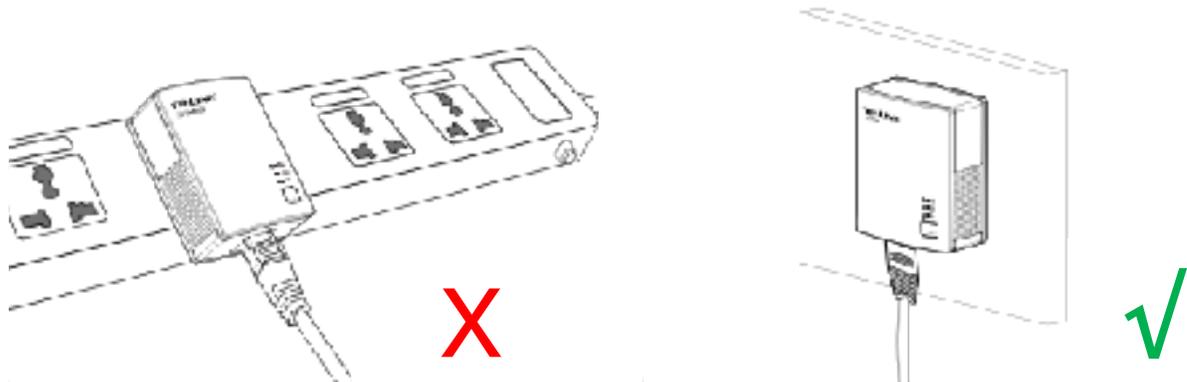
### 3. Connect the HomePlug Receiver

- Remove the HomePlug and Ethernet cable from box.
- Find the wall outlet closest to home or office router.

#### NOTE

Pressing the TP link button for 10 seconds will reset the device back to factory default settings. **DO NOT** try this as it will erase pre-installed CURB configuration settings.

- Plug the HomePlug receiver directly into wall outlet (NOTE: power strips with surge suppression, GFI outlets, and GFI circuit breakers cause HomePlug to fail, so be sure to plug directly into a wall outlet)



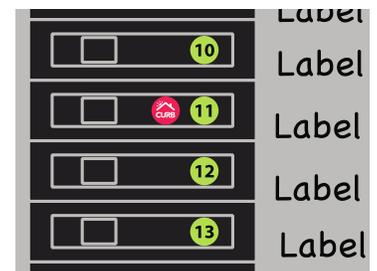
- Confirm that power light on HomePlug is on.
- Connect Ethernet cable from HomePlug receiver to available LAN port on home router.
- At the breaker panel, figure out which circuit breaker controls the outlet with the HomePlug. You'll need to power off the breaker temporarily, so make sure any computers connected to that circuit have saved all open documents and are safely turned off (or are connected through a backup battery). Turn off that breaker to verify that the power light on the HomePlug goes dark. If the HomePlug light is still on, then experiment until you find the right one.

**NOTE**

If installing a single CURB on a main panel for a house with one or more sub-panels, find out which circuit breaker in the subpanel powers the HomePlug. Then, determine which of the lines from the main panel to the sub-panel has phase continuity with the HomePlug circuit (and confirm that that other incoming power main does NOT have continuity with the HomePlug circuit).

Even if two panels look the same, A and B phases on two panels might not match. In other words, A may be top-left in one panel, but B in another. So, be sure to verify actual continuity across panels.

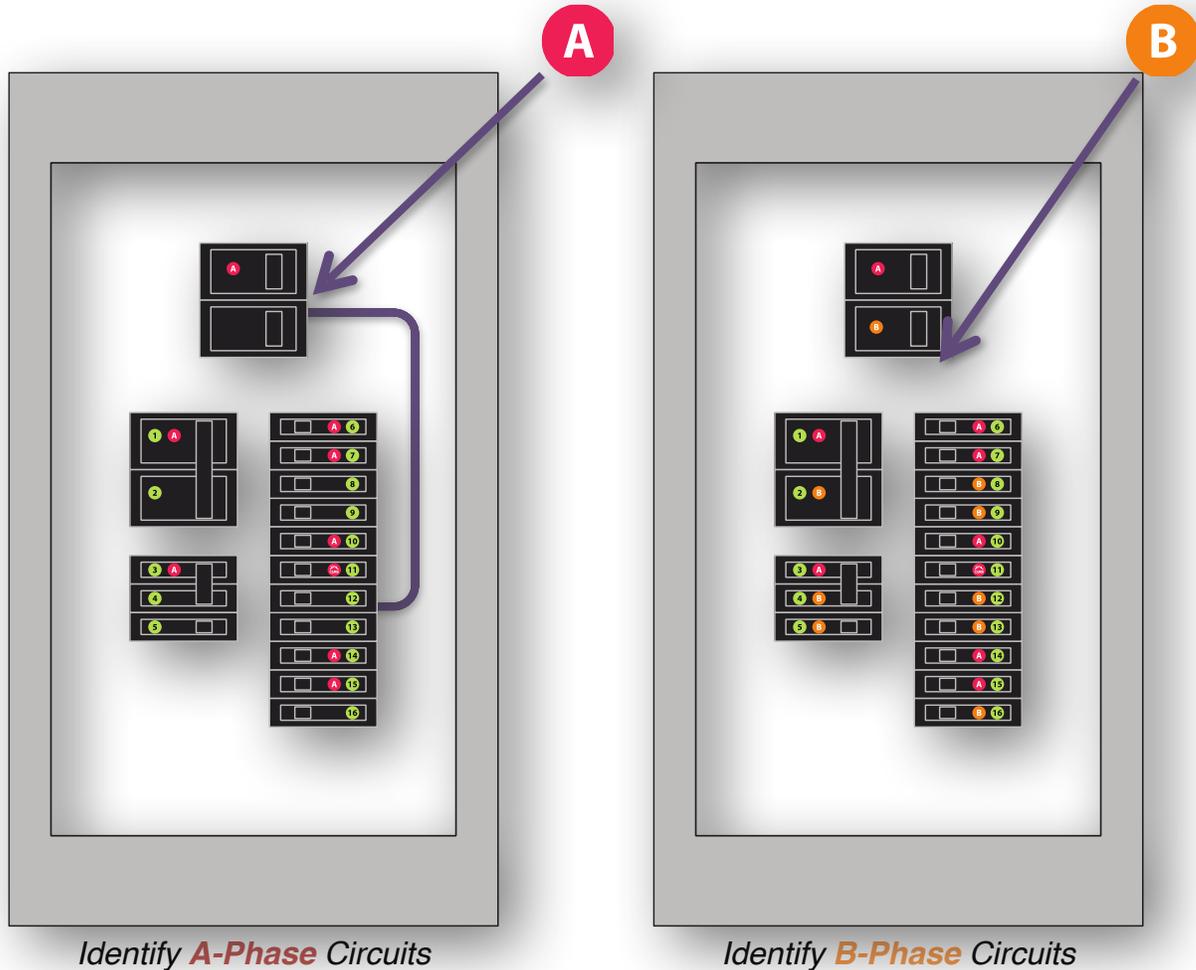
- Place a **red CURB** sticker on this breaker *(in each panel that houses a CURB hub)*.
- Make a note in the configuration software which breaker is powering the CURB.



**NOTE:** The breaker labeled with the **red CURB** sticker signifies the disconnecting device for the equipment.

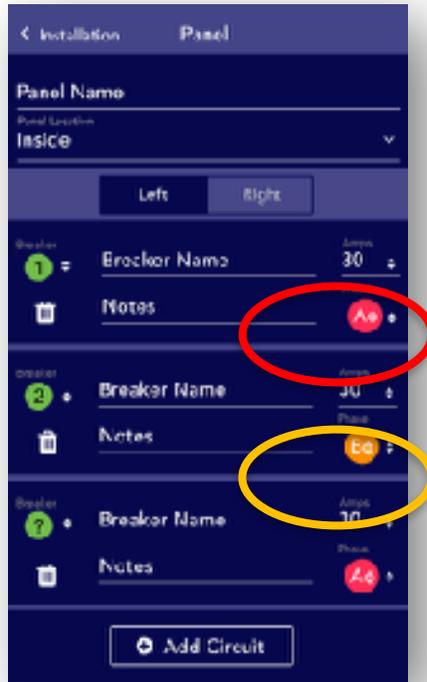
#### 4. Identify and record all circuit phases

- Use a circuit tracer to identify which of the mains has continuity with the circuit labeled with the **red CURB** sticker (and confirm that the other main doesn't).
- Label the main with **red CURB** continuity using a **red A** sticker.
- Label the other main with an **orange B** sticker.



- Determine which circuits have continuity with **Main A**, and label all of those circuits with **red A** stickers. Be sure to leave breaker amp rating visible. Confirm that the other circuits do NOT have continuity with **Main A**.
- Determine which circuits have continuity with **Main B**, and label all of those circuits with **orange B** stickers. Be sure to leave breaker amp rating visible. Confirm that the **red A** circuits do NOT have continuity with **Main B**.

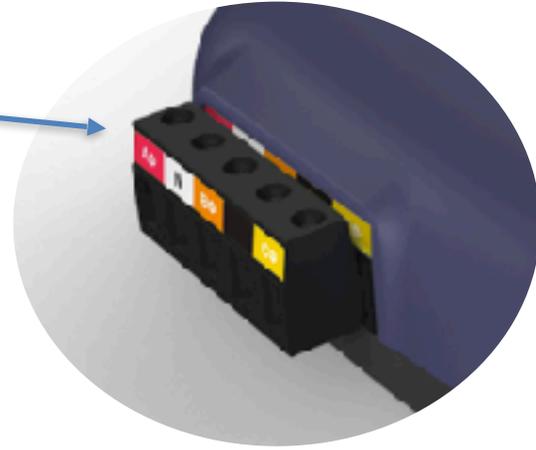
- In the configuration software, specify the phase (A or B) for each circuit in the panel (left and right).



Note: phase will be unspecified by default

## 5. Connect and Power Up CURB

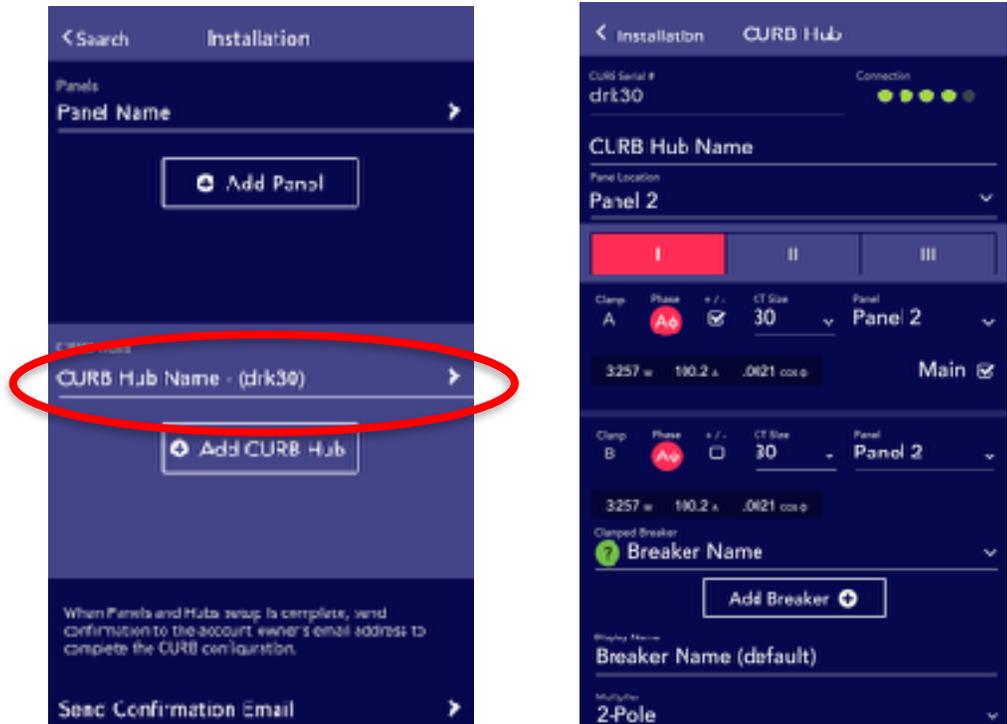
- Find the CURB voltage connector. 
- ⚠ Switch **OFF** the main breakers.
- Connect **white neutral wire** from neutral rail to **white “N” port**.
- T-connect **red power wire** from **red CURB breaker** to **red “A” port**.
- T-connect **orange power wire** from any **orange “B” breaker** to **orange “B” port**.



### NOTE

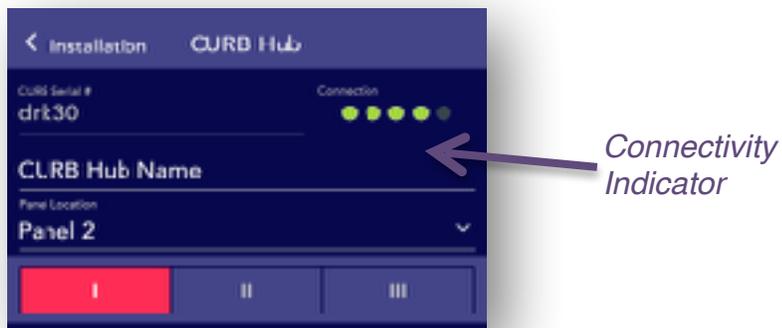
For panel tidiness, select an **orange “B” breaker** near the **red CURB breaker**.  
 Avoid over tightening miniature connector screws.  
 Make sure all new and existing wires are snug.  
**IMPORTANT:** Trim wires so no copper is exposed.

- Attach the wired CURB voltage connector to CURB.
- ⚠ Switch **ON** the main breakers.
- In the configuration software, look for the connectivity indicator to change from red to green. It might take a few minutes for router to reboot and connection to establish.
  - Tap “**Installation**” to get back to the “Installation” main view
  - Tap “**CURB Hub Name – (serial#)**” to get to the CURB power hub being configured



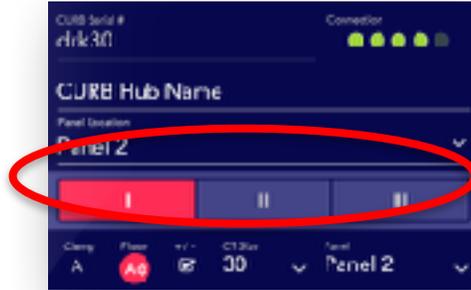
- A single green dot indicates that the hub is establishing connection to the CURB data center. This may take about a minute. Three or more green dots indicate a positive connection. One or two amber dots indicate that the hub is weakly connected. Red indicates a failure to connect.

Note: If named, name will show instead of serial number



## 6. Connect and Configure CURB Sensors

- In the configuration software, select the CURB power hub being configured to access additional details.
- Name the CURB power hub, and specify its respective breaker panel.



- Find the connector with the **red A-F** label.



- Wire one of the two 100 Amp CT clamps to the **red A port**.

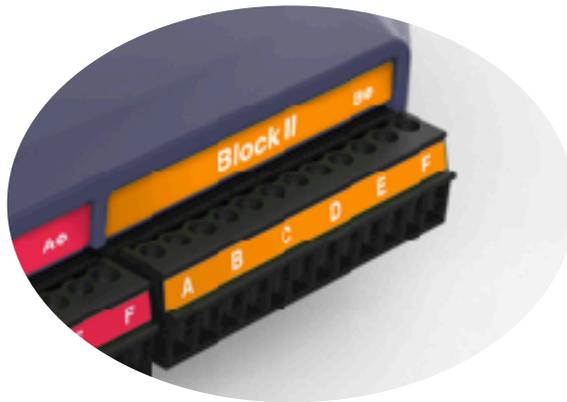
### **⚠ WARNING**

All CT clamps must be installed on insulated wires that meet applicable building codes for the region in which CURB is being installed.

### **NOTE**

If installing a CURB hub in a sub-panel, then sub-panel circuits on main panel should not be clamped. Similarly, sub-panel mains do not need to be measured either, and should not be clamped.

- Attach the clamp to the A-phase main wire coming into the panel, and ensure the clamp is securely closed.
  - Attach the **red A-F** connector to CURB at **Block I**.
  - In software, register slot A as a “MAIN” and choose the “100A” CT size.
  - Confirm live wattage on-screen. If negative, check the “+/-” toggle switch. Confirm that the wattage is now positive.
- Find the connector with the **orange A-F** label.



- Repeat the above wiring steps for the B-phase main, this time connecting to the **orange port A** for the **Block II** connector.
- In software, tap **Block “II”** to view and configure the B-phase clamps; indicating MAIN, CT size and polarity toggle if necessary.



- Confirm live wattage on-screen. If negative, check the “+/-” toggle switch. Confirm that the wattage is now positive.
- Identify the four largest appliances with the highest amperage rated circuits. Ask the homeowner which circuits they want measured, and double check that the breakers are powering correctly.
    - Attach the first of four 50 Amp CT clamps around one of these circuits, and wire to matching A or B-phase connector blocks.
    - One at a time, configure in software (under respective Block I or Block II)

- Tap “Add Circuit”.
  - Choose clamped circuit from available circuits.
  - Specify “50A” CT size
  - Edit name, if desired.
  - Repeat for remaining 50 Amp CT clamps.
- From highest priority circuits (*SEE PRIORITY CIRCUITS APPENDIX*) to lowest, repeat the process of clamping and configuring each of the remaining circuits with 30 Amp CT clamps, ensuring that each is configured as “30A” CT.
    - Once **Block I** and **Block II** are fully wired, find the connector with the **red & orange ABCDEF** label for **Block III**. (On this connector, ports A, B, and C are **A-phase** circuits; while ports D, E, and F are for **B-phase**.)



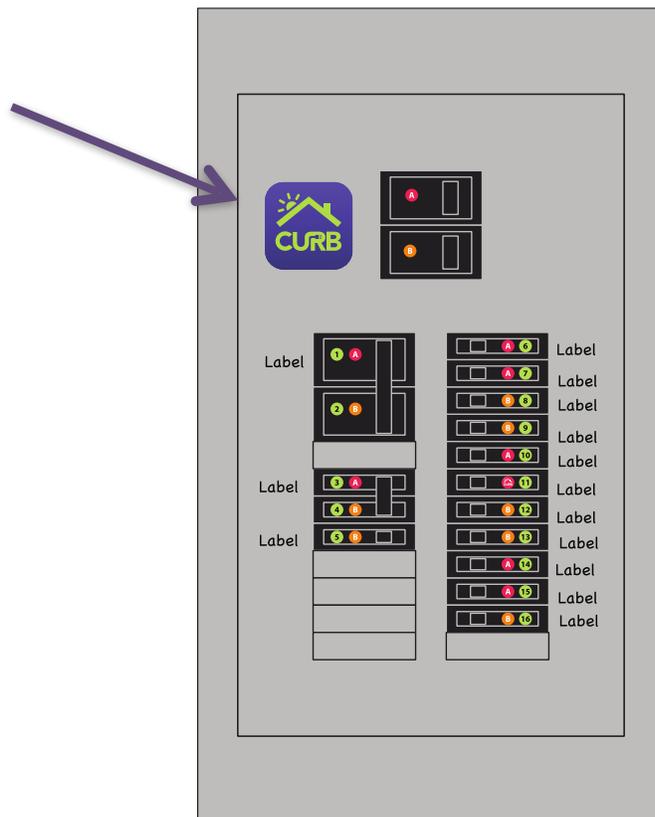
## 7. Check Your Work

- Double check each clamp for secure closure.
- Confirm that each clamped circuit is correct in software (verify panel, selected circuit, and get a level visual check to confirm a match because it is easy to clamp circuits above or below the intended circuit when not looking straight ahead).
- In software, verify that each clamped circuit is getting data on the CURB hub page.
- Inspect the CURB power hub to ensure that the lettered ports match those indicated in software.

## 8. Tidy up

- Once everything checks out, use cable ties to organize and tidy up wires on each side of the breaker panel.
- Add rubber tape across any unused ports.

- Secure CURB into the panel by mounting it to the back or inside wall of the panel with tape, Velcro or another fastener that meets applicable building codes for the region in which CURB is being installed. Make sure that the serial number is not covered by adhesive tape when attaching it.
- 📷 Take a high resolution photograph of the visibly-wired configuration with the panel open and email it to [installer@energycurb.com](mailto:installer@energycurb.com) with the serial number and customer name as the subject line. This will serve as a visual aid for the support team if any future issues arise.
- Close the panel cover.
- Add CURB sticker to panel cover as shown below.



- 📷 Take a high resolution photograph of the closed panel with circuits and the existing panel schedule, and email it to [installer@energycurb.com](mailto:installer@energycurb.com) with the serial number and customer name as the subject line.

## 9. Activate Customer

- After configuring all hubs, In the configuration tool, navigate to the top-level for this location.
  - Tap “Installation” to get back to the Installation page.
  - Select “Send Customer Email”
    - Enter the customer’s email address twice to confirm correct entry.
    - Tap “Send”
  - After receiving confirmation, ask the customer to check their email for a Welcome Email.
  
- The customer’s Welcome Email will now direct them to create a [New Account](#) and claim the newly configured CURB(s) as their own.

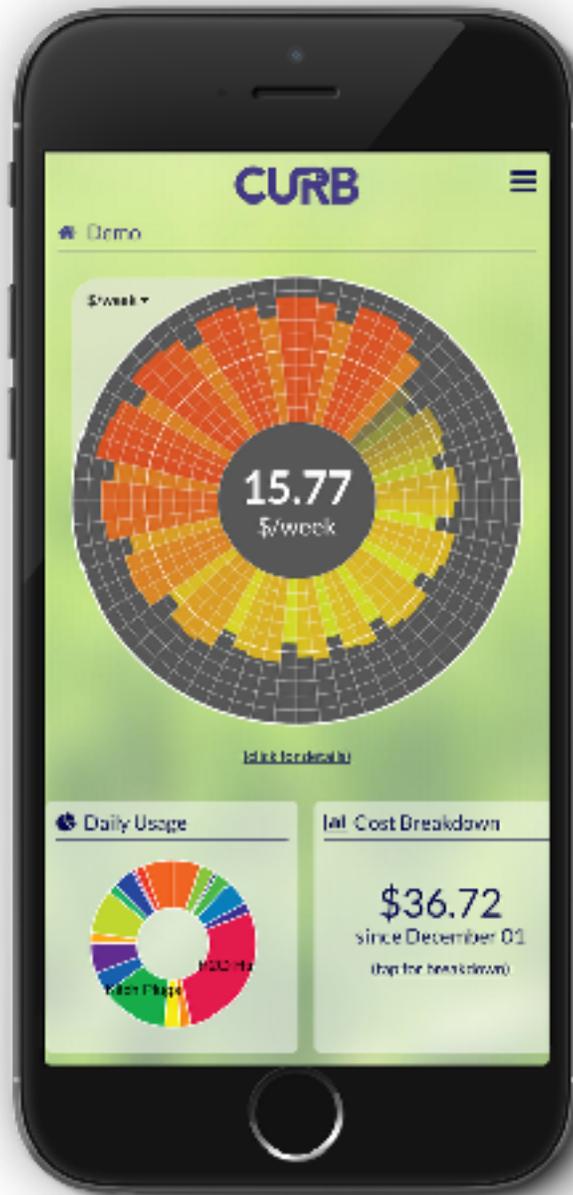
## 10. Congratulations!

- You’ve successfully installed CURB.
- Thanks for empowering someone new to take control of energy usage in their home.
- Please send us feedback to help us improve the process at [installer@energycurb.com](mailto:installer@energycurb.com)

# END-USER OPERATION

## Mobile - Dashboard

CURB’s mobile dashboard displays real-time usage information about your home. Green on the real-time graph indicates that you are currently using less electricity than usual, red indicates that you are using more electricity than usual; and amber indicates average usage.



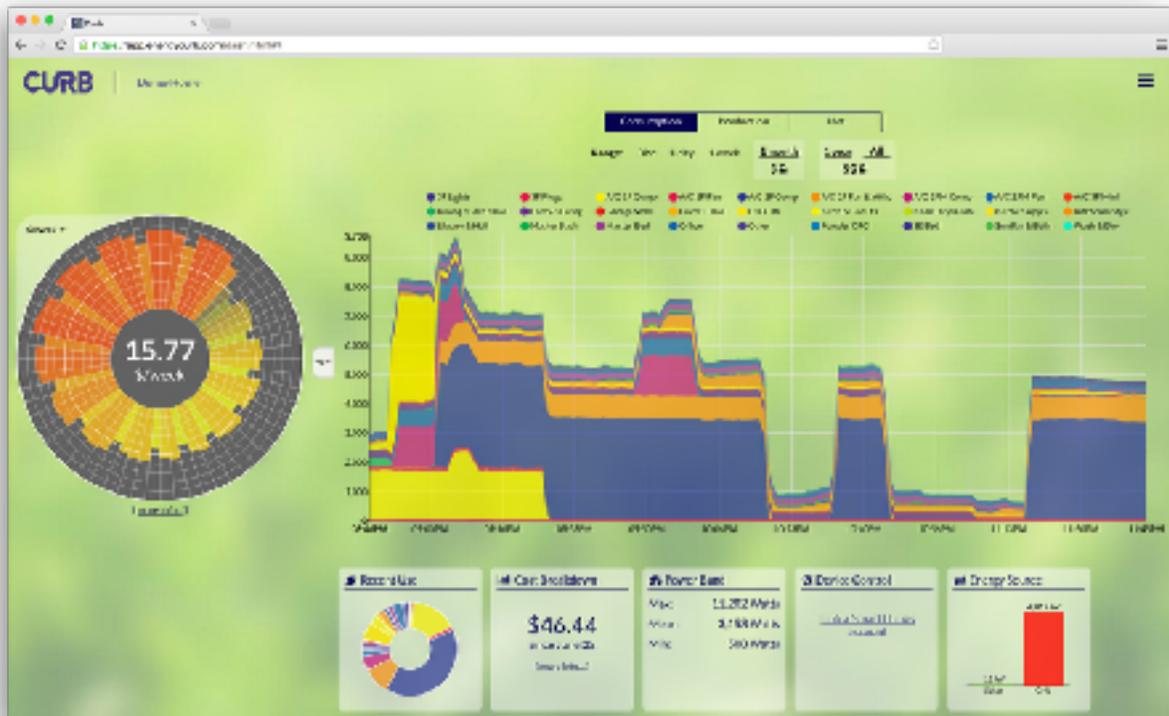
### Mobile – Live Usage by Circuit

CURB’s live usage by circuit display shows how much electricity each appliance or zone of your house is using right now, with an estimate of what it would cost to maintain that level of use for an extended period of time, such as a full week. Be sure to specify your energy provider and rate plan under location settings for the most accurate cost estimates.



## Desktop Web – Dashboard

CURB's web-based dashboard provides more detailed information about your home than the mobile app.



Green on the real-time graph indicates that you are currently using less electricity than usual, red indicates that you are using more electricity than usual; and amber indicates average usage.

The longitudinal graph shows historical usage information. You can zoom in and out between different time scales and focus on specific appliances or zones of your home. Toggle to show/hide appliances or zones by selecting their color key dots in the list of circuits.

Drill down into daily usage, cost breakdown and solar production / consumption detailed views by selecting the respective summary display at the bottom of the screen.

Control lights and appliances in your home by installing *SmartThings* and linking it to your CURB account.



## CONNECTIVITY INDICATORS

The hub configuration page displays connectivity status of each installed CURB hub. Two types of information are reported using colored indicators: (1) connection activity between the CURB hub and the CURB cloud, and (2) strength of signal between the CURB hub and the PLC receiver. Below is a key to reading these indicators.



Red (static)

Hub is NOT connected to CURB cloud.  
No PLC strength info available yet.



Green (blinking)

Hub is connected to CURB cloud.  
No PLC strength info available yet.



Red (blinking)

Hub is connected to CURB cloud.  
PLC strength is less than 20%.



Amber (2<sup>nd</sup> blinking)

Hub is connected to CURB cloud.  
PLC strength is between 20 - 40%.



Green (3<sup>rd</sup> blinking)

Hub is connected to CURB cloud.  
PLC strength is between 40 - 60%.



(Green (4<sup>th</sup> blinking)

Hub is connected to CURB cloud.  
PLC strength is between 60 - 80%.



Green (5<sup>th</sup> blinking)

Hub is connected to CURB cloud.  
PLC strength is between 80 - 100%.

## PRIORITY CIRCUITS

Priority	Name	Poles	Balanced Load?	Notes:
1	AC Compressor	2	Yes	
1	Electric Vehicle	2	Yes	
1	Electric Hot Water Heater	2	Yes	
2	Pool Pump	2	No	Need to measure both legs
2	Sub Panel	2	No	Need to measure both legs
2	Electric Clothes Dryer	2	No	Need to measure both legs
2	Furnace	1	N/A	
3	Washing machine	2	Yes	
3	Cooktop/Range/Oven	2	No	Need to measure both legs
3	Dishwasher	1	N/A	
3	Fridge / Freezer	1	N/A	
3	Whole House Fan	1	N/A	

# MAINTENANCE AND TROUBLESHOOTING

## Introduction

CURB does not contain any user-serviceable parts. If the CURB power hub requires service, contact your local sales representative. Do not open the power hub. Opening the power hub voids the warranty.

## Getting Technical Support

Please refer to the *Technical Support Contacts* provided in the CURB shipping carton for a list of support phone numbers by country. In the United States, contact CURB customer support by calling (844) 629-2872 or sending an email to [support@energycurb.com](mailto:support@energycurb.com).

## Troubleshooting

The information in the following table describes potential problems and their possible causes. It also describes checks you can perform or possible solutions for each. After referring to this table, if you cannot resolve the problem, contact your local CURB sales representative for assistance.

### DANGER

#### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- This equipment must be installed and serviced only by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside.
- Always use a properly rated voltage sensing device to confirm that all power is off.
- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- Carefully inspect the work area for tools and objects that may have been left inside the equipment.
- Use caution while removing or installing panels so that they do not extend into the energized bus; avoid handling the panels, which could cause personal injury.

**Failure to follow this instruction will result in death or serious injury.**

## Troubleshooting Tips – Connectivity

Potential Problem	Possible Solution
<b>What if CURB reports a weak signal?</b>	If the configuration screen shows 2 blinking dots or less, wire the CURB hub to a circuit of different phase.
<b>What if there isn't any connectivity through PLC (Home Plug) device?</b>	If you don't see flashing PLC lights, it probably does not have a connection. Inspect your connections from the CURB to the breaker, a loose wire can cause a bad connection. Make sure the Home Plug is not connected to a power strip. If the CURB hub cannot connect, but local networking is otherwise online, try disconnecting and re-connecting the CURB hub. If it doesn't connect once the local router is online, try wiring the CURB unit to a different circuit. To diagnose your connection strength, view the hubs page within the connection app.
<b>What if the router, PLC and CURB hub are not on the same circuit?</b>	This can cause connection errors and we advise against it. A better solution is to put the CURB hub on different circuit, but on same phase. Disconnect power from the CURB hub, reboot the router, wait for connectivity, then plug the CURB hub back in.
<b>How can I tell if the network is down? What happens if I install two PLCs, and my network stops responding?</b>	Each home generally only needs one PLC device. If CURB can't connect to via PLC, it is possible that the network is down. If the home already has PLC installed, we recommend removing the existing PLC and attempting to use the PLC included with CURB. Be sure that pre-existing devices (such as ADT home security) continue to work before proceeding.

## Troubleshooting Tips – Hardware Configuration

Potential Problem	Possible Solution
<b>What if the home router is on a GFI or arc-fault breaker?</b>	If you are wiring the CURB to a GFI or arc-fault breaker, be sure to connect the neutral (white) wire into the breaker, instead of the neutral rail.
<b>How can I determine which breaker powers the router?</b>	You may need to determine which circuit powers your router through the process of elimination. This is important in order to ensure strongest PLC signal.

<p><b>What if the installation is incomplete, and I need to regain access to the install application?</b></p>	<p>Go to <a href="http://connect.energycurb.com">connect.energycurb.com</a> and reenter the serial number of the hub. The installation process will save your data from where you left off.</p>
<p><b>What if there’s not enough space in the circuit breaker panel for the CURB hub?</b></p>	<p>Install close enough to run CT wires through the panel housing. As long as wiring follows local codes, it is okay to install the CURB hub outside the panel as a last resort. If you install on the outside of your panel, be sure to install in a “suitable” weather-proof enclosure.</p>
<p><b>What if there aren’t any open network ports on the router?</b></p>	<p>You may need to purchase an Ethernet switch to expand to the desired number of ports.</p>
<p><b>What if the router is inaccessible? What if there is no router?</b></p>	<p>An accessible router is specified in the product requirements. However, if the customer has WiFi only, you can optionally use an Ethernet to WiFi bridge, and plug the HomePlug receiver into the bridge. In order to save time, this step should be done before the installation.</p>
<p><b>How do I determine which of the main circuits is of the same phase as the router within the sub-panel?</b></p>	<p>First, use a multi-meter on the sub-panel to determine which incoming phase matches the circuit with the router. Second, label the phases of your circuits with the provided stickers – circuits matching the router phase should be labelled “A” while circuits NOT matching the router phase should be labelled “B”. Third, find the circuit on the main breaker panel that matches the sub-panel main that matches phase of the router. This can be accomplished with a continuity tester, by examining distinguishing characteristics of the wires, or by trial-and-error turning off of the subpanel circuits on the main panel. Once identified, be sure to label the matching circuit “A” along with all other circuits of the same phase.</p>
<p><b>The circuit that has the router is B phase, but you want me to label as A phase. This doesn’t make sense, what should I do?</b></p>	<p>From time to time, the process we’ve outlined leads to labeling breakers in a manner other than expected. This is for the sake of network reliability. We label the circuit leading to the router as A in all cases. This simplifies the install process when connecting clamps to the CURB hub and maximizes PLC connectivity.</p>
<p><b>I don’t have enough of the right size clamps?</b></p>	<p>You can use larger clamps on smaller circuits if needed, but this will decrease accuracy. If you need more large clamps, please contact CURB.</p>

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<b>I only have one CURB, but have multiple circuit breaker panels. What should I do?</b>	Either install an additional CURB hub in each panel, or install one CURB hub in the main panel with CT clamps on each of the sub-panel mains (summarizing subpanel activity).
<b>Which clamp is which?</b>	30 is the physically smallest clamp; 50 is medium-sized; and 100 is the largest.

## Troubleshooting Tips – Installation App

Potential Problem	Possible Solution
<b>What if I get an error when I search for the CURB ID?</b>	Double-check the serial number printed on the bottom of the CURB hub. It is case-sensitive. If you continue to get an error, please contact CURB support.
<b>What should I do if I get HTML or AJAX error?</b>	The CURB hub may have been configured by another installer. Please contact CURB support for help.
<b>I've already secured the CURB hub in circuit panel, but I need to get the serial number?</b>	Check the packaging for serial number sticker. Keep in a safe place. We advise you write the serial number or take a picture before installing.
<b>I entered the panel schedule numbers into the CURB software instead of the green sticker numbers. What should I do?</b>	This is an important part of the installation process because it enables customers (and technicians) to most accurately reference circuits in software. Review the panel screens in the installation software and correct any circuits with the wrong numbers.
<b>What if I don't see anything in the dropdown list of available circuits?</b>	If the list of available circuits is empty or missing circuits, you may have either (a) forgotten to identify that phase of the missing circuits, (b) specified the wrong phase for the missing circuits, or (c) chosen the wrong panel from which to choose circuits.
<b>Amps on mains is reporting as a negative number. What should I do?</b>	If the building is not generating power via solar or other non-grid sources, you can check the "+/-" toggle on the Hubs page for that circuit. If the building is receiving power from solar or another non-grid source, first determine if it is generating more power than being consumed -- which can be the cause of a negative total. If more power is being consumed than generated, it is safe to check the "+/-" toggle for the circuit.
<b>What does the "Display Name" mean in the CURB Hub section?</b>	Display Name is the name of the register that shows up in the User Interface of the customer's dashboard.
<b>What does "Multiplier" mean? Is this used for combo throws?</b>	This option is for combo throws. Choosing a multiplier will multiply the measured voltage of the circuit by 2 (for a double-throw) or by 3 (triple-throw). This is useful if you have a balanced-load appliance (such as a furnace or water heater) and you only want to use one CT clamp on one phase (e.g. one half of a double-throw breaker pair).

## Troubleshooting Tips – Solar

Potential Problem	Possible Solution
<b>What's the difference between line-side and breaker-side solar?</b>	<p>In breaker-side solar installations, the output from the solar system is connected to circuits in the main breaker panel. Thus, in breaker-side installations, the power reported on the mains can fluctuate between positive and negative numbers depending on the balance of power between production and consumption.</p> <p>In line-side solar installations, the output from the solar system is connected to the grid in parallel with the main breaker panel. In such configurations, there will NOT be any circuits in the main panel connected to the solar system. As a result, the mains in the main panel will only report power consumption. CURB software sums the consumption and production values in order to report net power.</p> <p>Be sure to identify the correct solar installation type for each solar circuit in the configuration software.</p>
<b>How do I bridge a solar panel that is far from my circuit panel?</b>	<p>If the solar breaker panel is far away from the main circuit breaker panel, use an approved data cable (such as Cat-5) to extend the length on the CT-clamp wires. Be sure to follow applicable building codes for the region in which CURB is being installed.</p>

## Troubleshooting Tips – Operation

Potential Problem	Possible Solution
<b>How do I create a new account?</b>	<p>In order to create a CURB account, you must purchase a CURB hub. During the installation process, the installer will enter the hub serial number and customer email address into the installation app to initiate account setup.</p>
<b>I lost my password. What should I do?</b>	<p>You can reset your password at <a href="https://app.energycurb.com/account/password/reset">https://app.energycurb.com/account/password/reset</a></p>
<b>How can I change the email address associated with my account?</b>	<p>At this time, if you would like to change the email associated with your account, contact <a href="mailto:support@energycurb.com">support@energycurb.com</a>.</p>

<b>I don't see any active data. What should I do?</b>	If you have just set up CURB for the first time and completed the installation process, it may take up to a 10 minutes for data to display in the app user interface. Double-check the PLC for proper connection. If that doesn't work, inspect the CURB hub within the circuit breaker panel for connectivity status by checking the connection indicators.
<b>My bill is not accurate, what should I do?</b>	Make sure that you have entered the correct zip code and chosen the correct energy plan within the "Energy Providers" section of the app. If the totals still don't match, please contact CURB so we can investigate further.
<b>In my list of circuits, what does "other" mean?</b>	"Other" represents the total of all unmeasured circuits in your home. It is calculated by subtracting the sum of all measured circuits from the total consumption on the mains.

## CURB SPECIFICATIONS

Model	
CURB Device, 18 CT Clamps	00613

Electrical Characteristics		
Type of measurement		Current (18 channels) Voltage (3 channels)
Accuracy	Current	1% from 10% to 110%
	Voltage	1% from 100 to 277VAC – L1 1% from 0 to 277VAC – L2, L3
	Frequency	±0.01 Hz from 45 to 65 Hz
Sample rate		8 kHz
Input voltage	L1	100 to 277VAC
	L2, L3	0 to 277VAC
Input Frequency Nominal		50Hz or 60Hz
Input Power	L1	10 W max
	L2, L3	100 mW max

Mechanical Characteristics	
Weight	250 grams
Dimensions	4.5" x 5.75" X 1.5"

Environmental Characteristics		
Operating Temperature	Curb Power Hub	0 °C to +70 °C
	Power Line Network Rcvr	0 °C to +40 °C
Storage Temperature	Curb Power Hub	-40 °C to +85 °C
	Power Line Network Rcvr	-40 °C to +70 °C
Humidity Rating		5 To 95% RH at 50 °C (non-condensing)
Altitude		2,000 m
Metering category		CAT III – up to 277VAC L-N

Electromagnetic Characteristics	
Conducted and radiated emissions	CE commercial environment / FCC part 15 class B
Electrostatic discharge	Level III (IEC 61000-4-2)
Immunity to radiated fields	Level III (IEC 61000-4-3)
Immunity to fast transients	Level III (IEC 61000-4-4)
Immunity to impulse waves	Level III (IEC 61000-4-5)
Conducted immunity	Level III (IEC 61000-4-6)
Immunity to magnetic fields	Level III (IEC 61000-4-8)
Immunity to voltage dips	Level III (IEC 61000-4-11)

Harmonics	IEC 61000-3-2

Safety	
U.S. Canada, Mexico	IEC 61010-1
Europe	IEC 61010-1
RoHS / Lead Free	compliant

Communications		
HomePlugAV compatible	Same phase as L1	IEEE1901
Ethernet		IEEE 802.3

Firmware Characteristics	
Firmware update	Update via network

Display Characteristics	
None	N/A