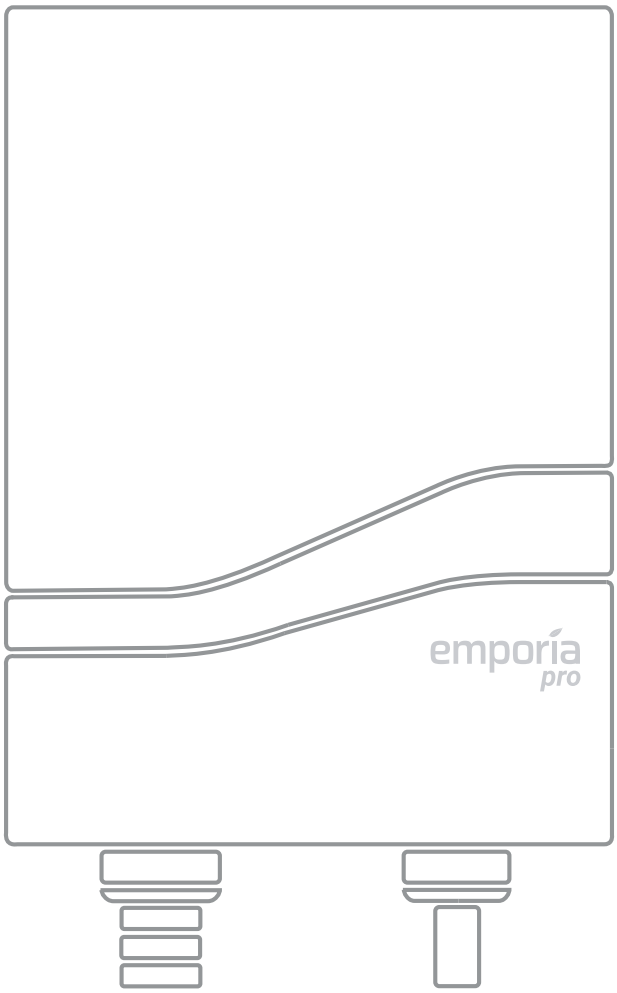
emporia



Emporia Pro EV Charger
with PowerSmart

Installation and Usage Guide

Numérisez le code QR pour le guide d'installation et d'utilisation dans d'autres langues

Escanee aquí para obtener la Guía de instalación y uso en otros idiomas

Introduction

Congratulations on your purchase of the Emporia Pro Level 2 EV Charger!

When paired with the included Vue 3 Energy Monitor, the Emporia Pro Charger brings unparalleled smart charging to your home.

- **Reliably Fast:** Up to 48 amps of fast charging so that your electric vehicle is always ready when you are.
- **PowerSmart Charging:** Overcome limited electricity service and charge at the maximum speed possible, without upgrading your panel.
- **Cost Optimization:** Charge with your surplus solar power or when grid electricity is least expensive.
- **Energy Powerhouse:** Real-time energy monitoring for your whole home to identify wasteful energy consumption, helping you save money on your utility bills. *Upgrade to breaker-level insights by purchasing additional sensors for your Emporia Vue 3 Energy Monitor from Emporia's store.* https://shop.emporiaenergy.com

This guide provides instructions to install the Emporia Pro EV Charger and the Vue 3 Energy Monitor.

Important safety instructions

SAVE THESE INSTRUCTIONS

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

⚠WARNING

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

INSTRUCTIONS PERTAINING TO A RISK OF FIRE OR ELECTRIC SHOCK!
Improper connection of the equipment-grounding conductor may result in a risk of electric shock, leading to death or serious injury. Emporia recommends that installation be performed by a licensed electrician or other qualified professional in accordance with the regional electrical code where it is being installed to ensure the Emporia Pro is properly grounded. Do not modify the provided plug - if it will not fit the outlet, have a proper outlet installed by a licensed electrician or other qualified professional.

GROUNDING INSTRUCTIONS

For Plugged-In Installation:
This product must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce risk of electric shock. This product is equipped with a cord having an equipment grounding conductor and a ground plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

WARNING - Improper connection of the equipment-grounding conductor is able to result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

For Hardwired Installation:
This product must be connected to a grounded, metal, permanent wiring system, or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the product.

⚠ WARNING

• The National Electrical Code (NEC) now requires a GFCI breaker installed on any circuit using a 6-50 or 14-50 outlet. Since the Emporia EV Charger already has built-in GFCI protections, it can cause false/unwarranted tripping when installed on a line with GFCI protections also provided on the breaker.

• If GFCI breaker installation is a requirement for your installation, we recommend using the hardwired installation method since that is not required to be GFCI protected in the same way the NEMA outlet is. Due to conflicting requirements between NEC (NFPA70) and UL certifications related to the behavior of GFCI operations on EV Charging equipment, we can't provide more specific installation recommendations since it will depend on your location and you should consult your professional installer for more details.

Important safety instructions

SAVE THESE INSTRUCTIONS

⚠WARNING

INSTRUCTIONS PERTAINING TO A RISK OF FIRE OR ELECTRIC SHOCK

- Read all the instructions before using this product.
- This device should be supervised when used around children.
- Do not put fingers into the electric vehicle or charger connectors.
- The Emporia Pro is intended for use with electric vehicles only. Specifically, it is intended only for electric vehicles not requiring ventilation during charging.
- The Emporia Pro is intended to be installed in stationary, grid-tied power systems. Do not use the Emporia Pro with back-up generators.
- Do not use the Emporia Pro in any manner other than specified in this installation guide.
- Do not attempt to disassemble or repair any of the components of the Emporia Pro. There are no user serviceable parts inside.
- Do not use this product if the flexible power cord or charging cable is frayed, has broken insulation, or any other signs of damage.
- Do not use this product if the enclosure or the connector is broken, cracked, open, or shows any other indication of damage.
- Do not install the Emporia Pro in environments with explosive gas or vapors; nor where temperatures are outside its operating range of -22°F to 122°F (-30°C to 50°C).
- Use 194°F (90°C) wire, 6 AWG copper when installing a 48A connection in a hardwire installation.

Safety information

⚠WARNING

The Emporia Vue requires installing transformers inside a home's electrical panel and working around dangerous voltage that could lead to injury or death. The installation should be performed by a skilled person such as a licensed electrician or other qualified professional in accordance with the regional electrical code where it is being installed.

Improper installation or use of the equipment can be dangerous or even fatal. In no event shall Emporia be liable to you or any third party for any damages, either direct or indirect, arising from or related to any personal injury as a result of your failure to follow the safety information and instructions in this Installation Guide.

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1-844-EMPORIA (367-6742)

Important safety instructions

SAVE THESE INSTRUCTIONS

⚠WARNING

- Remove power from the electrical panel before inspecting. Wear protective eye wear and protective gloves before attempting to inspect the Emporia Vue system. Ensure no wiring for voltage measurement, current measurement, power, or data are frayed or have exposed conductors. Ensure there are no cracks, breaks, or other defects in the enclosure of the Emporia Vue or CTs.
- If you believe any of the Emporia Vue components may have been damaged, do not attempt to use them. Contact support at support@emporiaenergy.com immediately.
- Do not use the Emporia Vue in any manner other than specified in this installation guide, otherwise, the protection provided by the equipment may be impaired.
- Do not attempt to open, disassemble, or repair any of the components of the Emporia Vue.
- Do not install the Emporia Vue in environments with explosive gas or vapors; nor in damp or wet environments; nor in direct sunlight; nor where temperatures are consistently below -40° F (-40°C) or above 122° F (50° C).
- Ensure the Emporia Vue does not have power during any handling, including installation and disassembly.
- Do not perform any maintenance, service, or cleaning of the Emporia Vue after installation. Contact customer service for support.
- The Emporia Vue should only be used with Listed Energy-Monitoring Current Transformers.
- Basic Insulation, use CTs only on insulated conductor, secured from contacting live parts.
- To reduce risk of electric shock, always open or disconnect circuits from the power-distribution system (or service) of a building before installing or servicing current transformers.
- The Emporia Vue should be wired to power using 16AWG, 600V, UL1015, 105° C (or higher) copper-only wires.
- It is recommended that the Emporia Vue be wired to the breaker closest to the device.

Important safety instructions

SAVE THESE INSTRUCTIONS

⚠WARNING

- Do not position the Emporia Vue so that it is difficult to operate disconnecting devices or breakers.
- Do not use 3rd party accessories or Current Transformers (CTs) with the Emporia Vue. The Vue and CTs are customized and integrated. Third party accessories or CTs may compromise the data accuracy and equipment safety.
- The current transformers may not be installed in equipment where they exceed 75 percent of the wiring space of any cross-sectional area within the equipment.
- Restrict installation of current transformers in an area where it would block ventilation openings.
- Restrict installation of current transformers in an area of breaker arc venting. Do not install the Emporia Vue in any area where breaker arc venting exhaust gasses could be re-directed as a result of submetering equipment installation.
- The Emporia Vue is not suitable for Class 2 wiring methods and not intended for connection to Class 2 equipment. (Refer to NEC 2023, Section 725.)
- Secure current transformers and route conductors so that the conductors do not directly contact live terminals or buses.
- The Emporia Vue shall not be mounted within 50.8 mm (2”) of any live parts including primary conductors, primary terminals, and primary lugs; but excluding insulated cables. It’s acceptable for the Emporia Vue to be mounted to the grounded panel box and near the neutral/ground bus bars. The Emporia Vue employs Class I wiring allowing its wires to safely coexist with all other wires in the panel.
- If the Emporia Vue is attached to the enclosure, it shall not contact the panel interior insulation such as the material that separates the GND and LIVE bus bars.
- Emporia Vue mounting provisions shall not be attached to any energized part.
- Voltage sensing and power supply connections to the primary voltage shall have overcurrent protection through connection to a breaker/MCB.

Moving and storage instructions

- Improper moving or storage of the Emporia Pro may result in damage to the product that could result in a risk of fire or electric shock during subsequent use.
- Handle charger and packaging with care and avoid dropping it. When moving or lifting the Emporia Pro, always grasp the unit by the charging station enclosure. Never carry or lift the Emporia Pro by either the power cable or charging cord.
- Store the Emporia Pro indoors and in its original packaging until it is ready to be installed. Storage temperature should be between -22°F to 122°F (-30°C to 50°C).
- Always place protective cover on the J1772 EV Charger connector when not in use. The NACS connector does not have a cover.
- Modifying the EV Charger in any way not outlined in this installation guide, including drilling holes in the charger, will void the manufacturer warranty.

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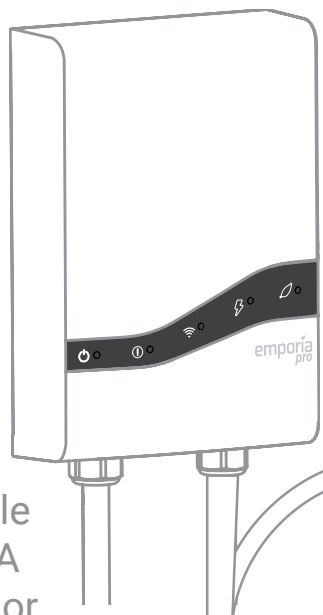
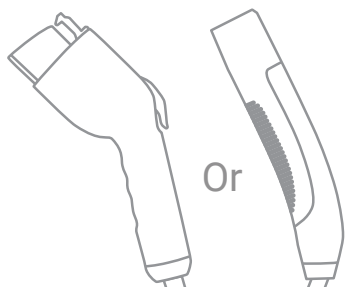
What's in the box

Your new Emporia Pro contains the following items. **If any of these items are missing or if you believe they've been damaged, call support immediately.**



Emporia Pro

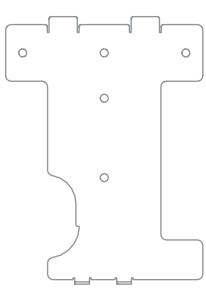
SAE J1772 or J3400 (NACS) connector



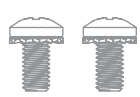
Or

Power cable with NEMA 14-50 plug or hardwire whip

Charging cable

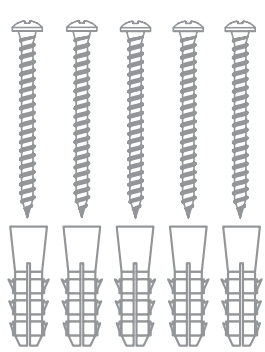


Mounting bracket



Two M5x10mm Pan head screws with lock washer

Wall-mounted holder for J1772 or NACS connector



Five #12-2" Phillips screws and drywall anchors

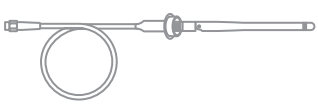
What's in the box (continued)

To enable PowerSmart, you'll also need to install the Emporia Vue 3 Energy Monitor, which consists of the following items. **If any of these items are missing or if you believe they've been damaged, contact support immediately.**

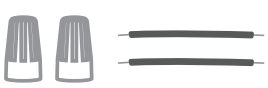
Vue energy monitor

Two main 200A current transformers (CTs) with 22 AWG wire and 5mm screw terminal plugs

Wire harness with 7.6mm screw terminal plugs and 4x14AWG wire leads



WiFi antenna assembly



Two wire nuts 14AWG, 600V splicing wires

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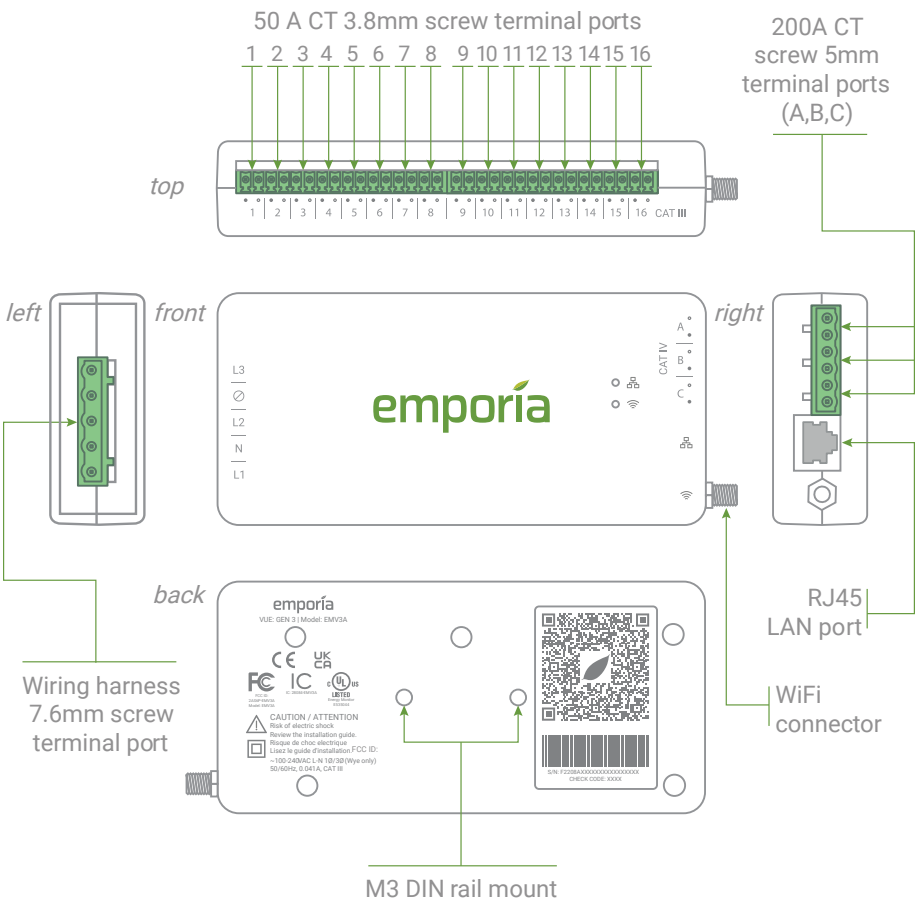
Energy monitor connections

The energy monitor is the hub of the Emporia Vue. The screw terminal port for the wiring harness is located on the left-hand side of the monitor. The screw terminal ports across the top of the monitor are the inputs for the 50A Branch Current Transformers (CTs) that are sold separately. The A, B, and C screw terminal ports on the right side of the monitor are the inputs for the 200A Main CTs. The RJ45 LAN port and coaxial connector for the WiFi antenna cable are also on the right hand side of the monitor. All of the ports are clearly labeled on the energy monitor.



Step 1: Gather tools

To complete the installation of the Emporia Pro EV Charger and Vue 3 Energy Monitor, the main breaker will need to be set to the off position, which will shut off all of the power in the home. **However, the service mains will remain energized and dangerous**. The following may help with safe installation.

- Installation should be performed by a skilled person such as a licensed electrician or other qualified professional
- Install in accordance with the regional electrical code where it is being installed
- Ensure that the product specifications of the Vue are compatible with the system and the panel type where it is being installed.
- Identify the location of service disconnect. It may be outside of the panel.
- Ensure the work environment is clean with additional lighting available.
- Identify empty breakers or breakers that can be tapped for voltage monitoring. The number required corresponds to the system phases.
- The following items are recommended:

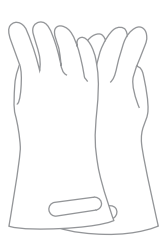
Bubble level

Hammer

Pencil

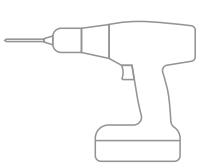
iOS or Android phone or tablet

Alternative light source

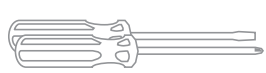


Insulated gloves

Protective eye wear



Drill with 5/16” (8mm) and 1/4” (6mm) drill bits and a 7/64” (3mm) hex bit

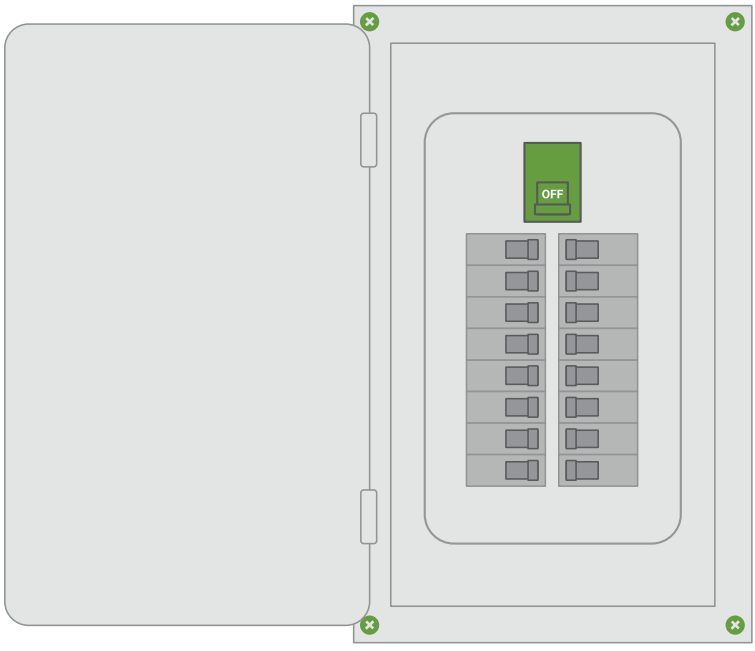


Phillips and flathead screwdrivers

Step 2: Turn off power

The Vue 3 Energy Monitor will be installed in the same electrical panel that the Emporia Pro Charger will be wired to. At that panel, turn service disconnects and/or main breakers to the OFF position. Note that the disconnects may be located elsewhere. Next, remove any screws holding the covers to the panel and remove the cover to access the circuit breakers. **The service mains will still be energized and dangerous.**

Service disconnect may be located outside of the panel.



DANGER: The service mains are energized.

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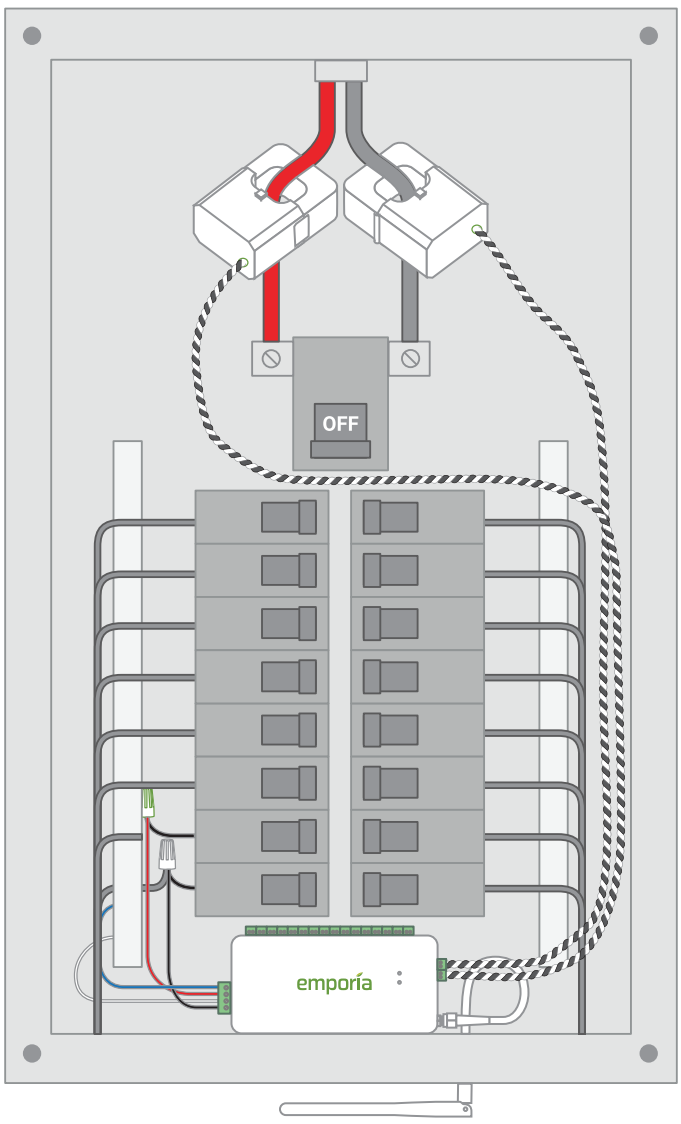
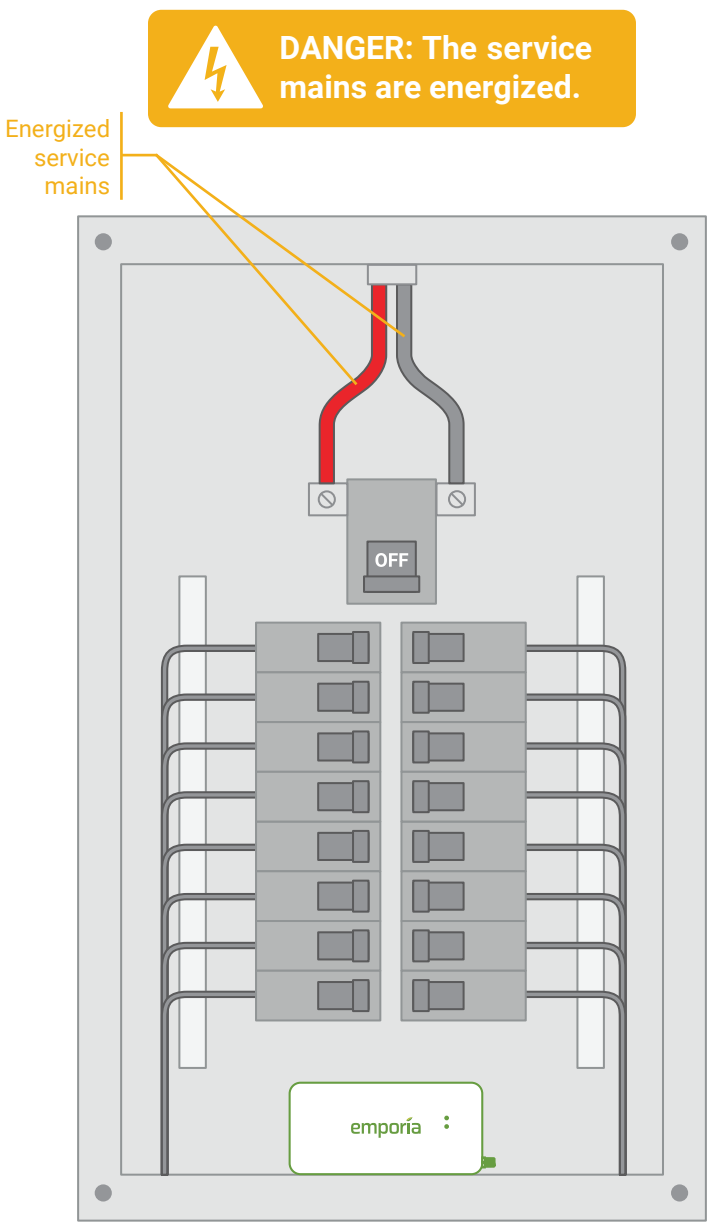
Step 3: Install the Emporia Vue

The following pages will guide youto install the Emporia Vue 3 Energy Monitor, which will enable the full power of Emporia's Energy Management suite, including PowerSmart. To install the Emporia Pro Charger instead, proceed to Step 4.



Step 3-1: Find a place for the monitor

Locate a place within the electrical panel for the Vue 3 Energy Monitor **ensuring it is at least 50.8mm (2“) from any live parts** including primary conductors, primary terminals, and primary lugs; but excluding insulated cables. The breaker box may be oriented differently than below, but the monitor is small and designed to fit easily in the box. Find a place that works. If the Vue is to be mounted on a DIN rail, the monitor has two threaded screw holes to attach mounting hardware using two M3 screws and lock washers (sold separately).

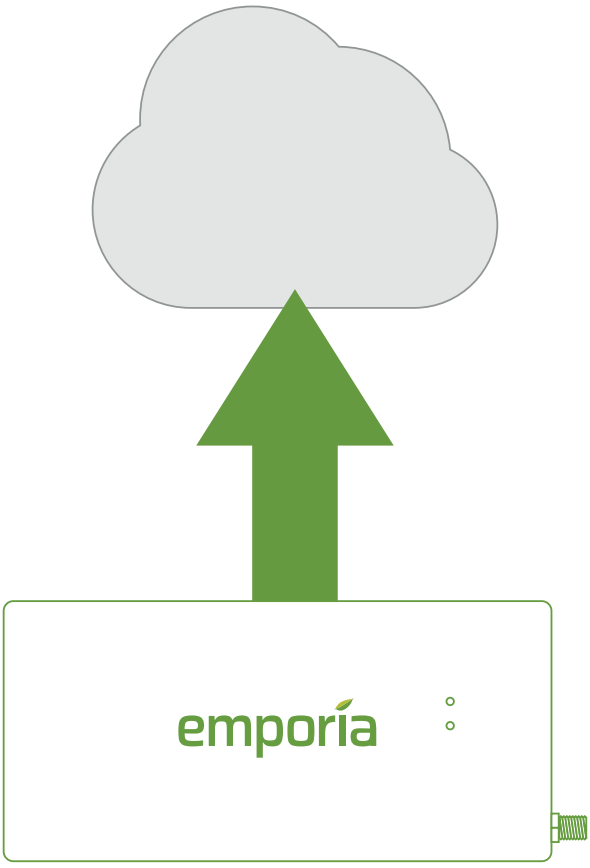


Step 3-2: Prepare for Internet connection

The Vue is capable of connecting to the internet either via a wired LAN connection, a Wi-Fi connection, or both. If both are implemented, the Vue will prioritize wired LAN. If a wired LAN is unavailable, the Vue will attempt to connect over Wi-Fi. Choose the preferred method(s) and goto the corresponding step below.

Step 3-2(a): Prepare for wired LAN connection

Step 3-2(b): Prepare for Wi-Fi connection



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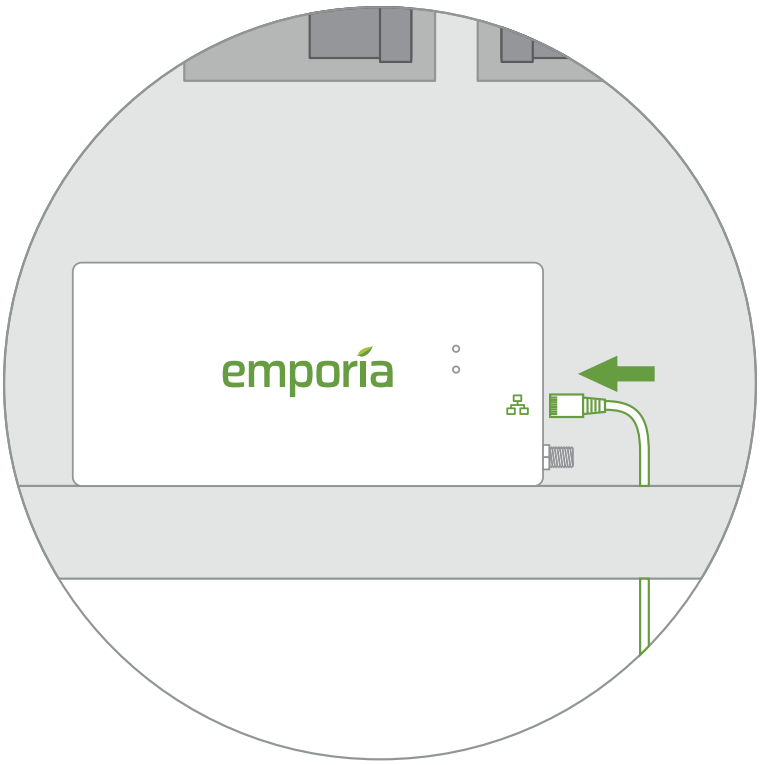
Step 3-2(a): Prepare for LAN connection

This step is to prepare for a wired internet connection. To connect to the internet wirelessly via Wi-Fi, see Step 3-2(b). Run a Cat5e or higher ethernet cable with an RJ45 connector from a router, switch, or modem to the electrical panel. Then, use a screwdriver to remove a knockout from the electrical panel. Next, feed the cable through the hole to the Vue and plug it in the socket on the right-hand side of the energy monitor marked .



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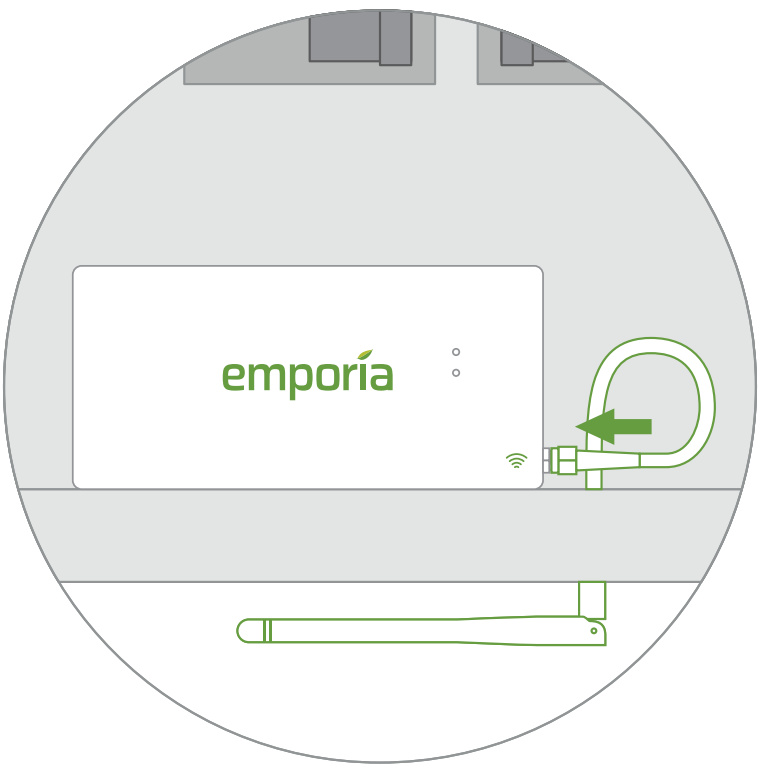
Step 3-2(b): Prepare for Wi-Fi connection

This step is to prepare for a wireless internet connection. To connect to the internet via wired LAN, see Step 3- 2(a). Use a screwdriverto remove a knockout from the electrical panel. Now, feed the antenna through the hole. Then, screw the antenna assembly cable to the right-hand side of the energy monitor in the coaxial connector marked . Finally, plug the hole with the knockout plug. It is acceptable to install the antenna inside of a wall.



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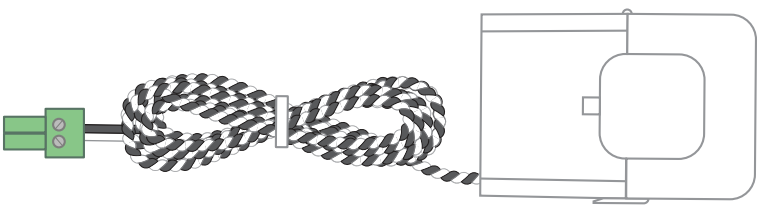
Step 3-3: Installing the Main current transformers

The Main CTs will attach to the incoming live mains. **They should not be used on neutral lines.** They will be installed differently depending upon whether or not the home has solar and how that solar system is connected to the electrical system. The Vue will be installed differently depending on whether the solar is a breaker-fed or a line-side tap installation. The Main CTs that connect to the mains will provide net metering out of the box — displaying electricity used minus electricity produced. These installations are covered in the subsequent pages.

- Step 3-3(a): No solar Main CT
- Step 3-3(b): Breaker-fed solar Main CT
- Step 3-3(c): Line-side tap solar Main CT



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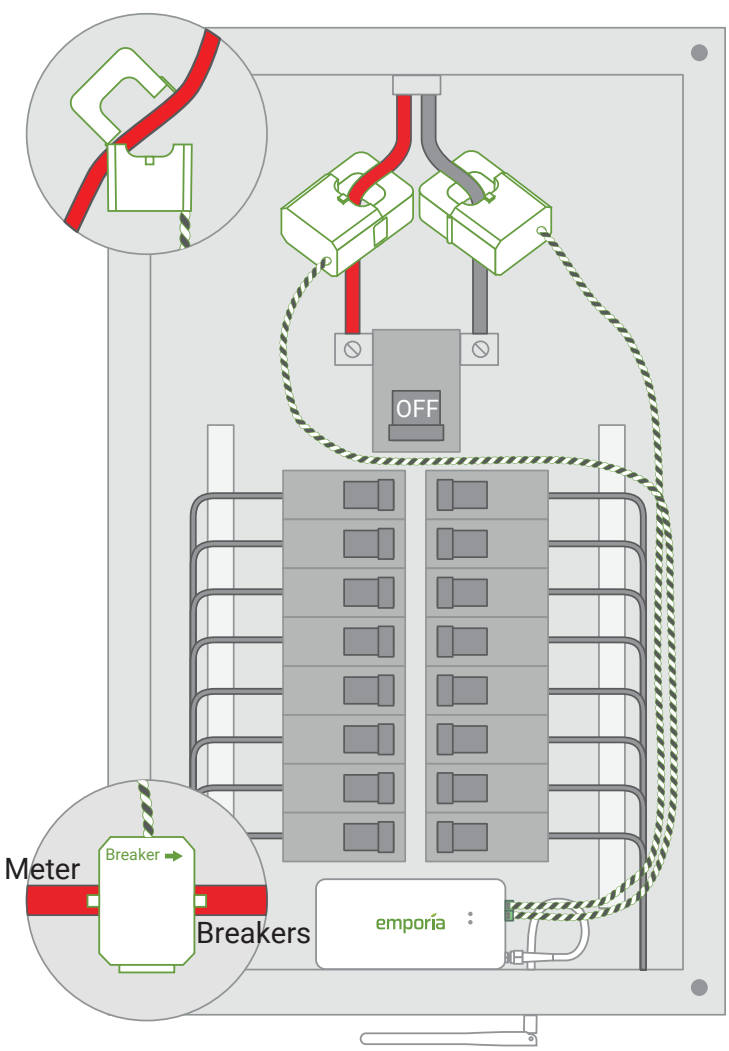
Step 3-3(a): No solar Main CT installation

Open the clasps on the CTs and place each clamp around one of the main service cables. Then, shut the clasps to secure the CTs. **IMPORTANT! The Breaker ⟶ imprint on the bottom of the CTs should point toward the breakers.** Finally, insert the screw terminal plugs into the ports on the right side of the monitor. To avoid clutter, you can unscrew the 22 AWG wires from the screw terminals, cut them to size, and reattach them ensuring the black and white wires match the icons on the front of the Vue.

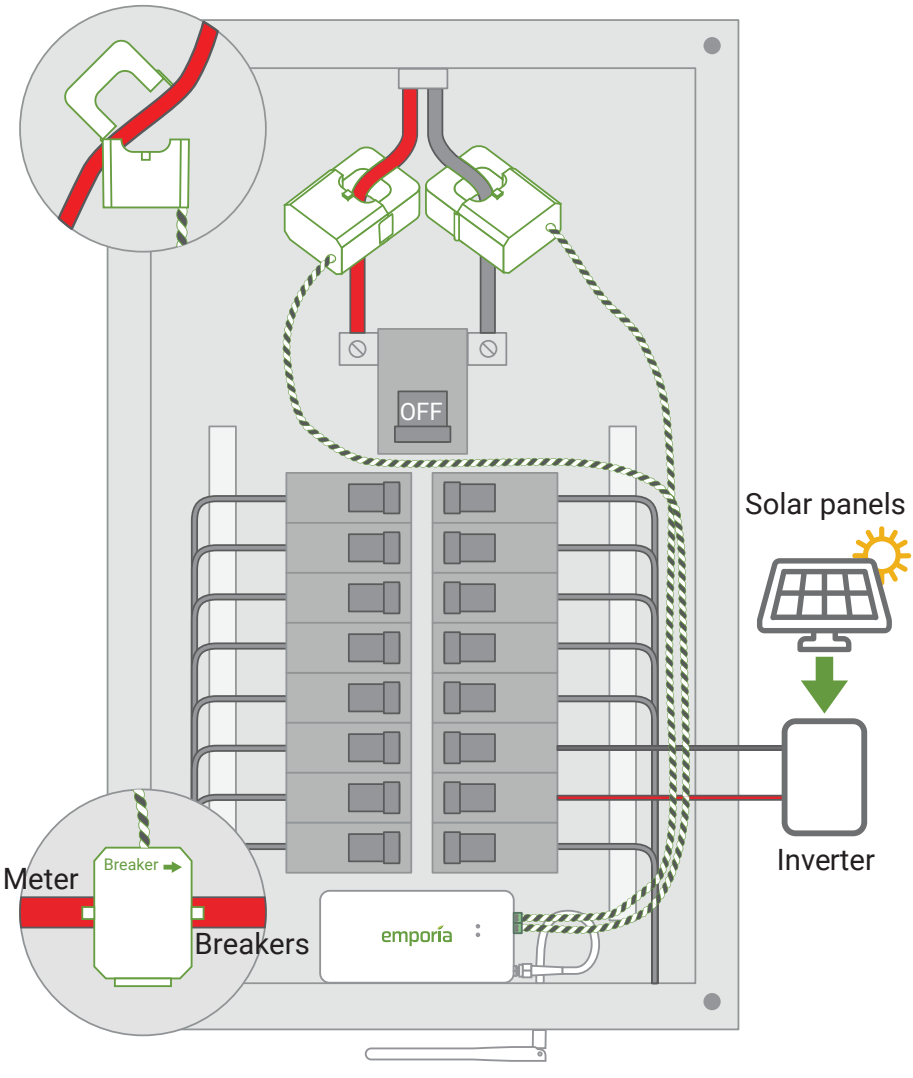
DANGER: The service mains are energized.



Step 3-3(b): Breaker-fed solar Main CT installation

Open the clasps on the CTs and place each clamp around one of the main service cables between the meter and the main breaker. Then, shut the clasps to secure the CTs. **IMPORTANT! The Breaker ⟶ imprint on the bottom of the CTs should point toward the breakers**. Finally, insert the screw terminal plugs into the ports on the right side of the monitor. To avoid clutter, you can unscrew the 22 AWG wires from the screw terminals, cut them to size, and reattach them ensuring the black and white wires match the icons on the front of the Vue.

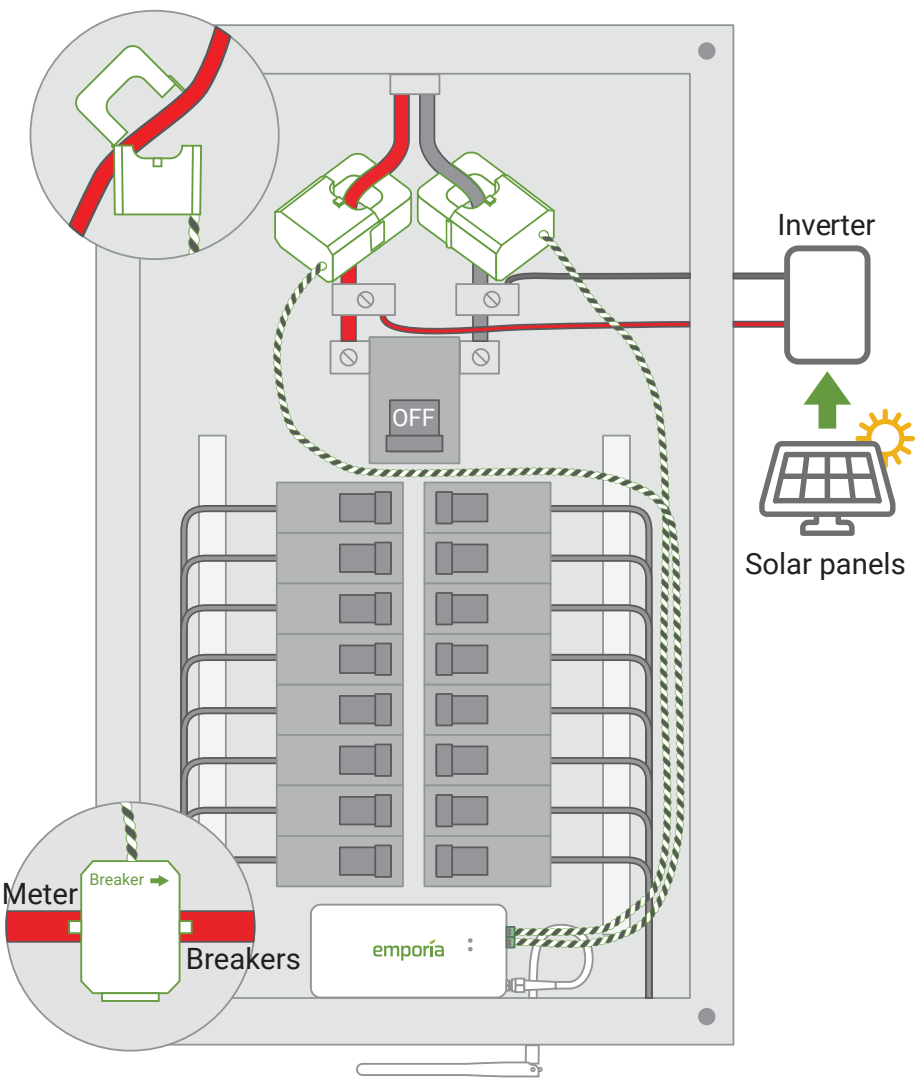
DANGER: The service mains are energized.



Step 3-3(c): Line-side tap solar Main CT installation

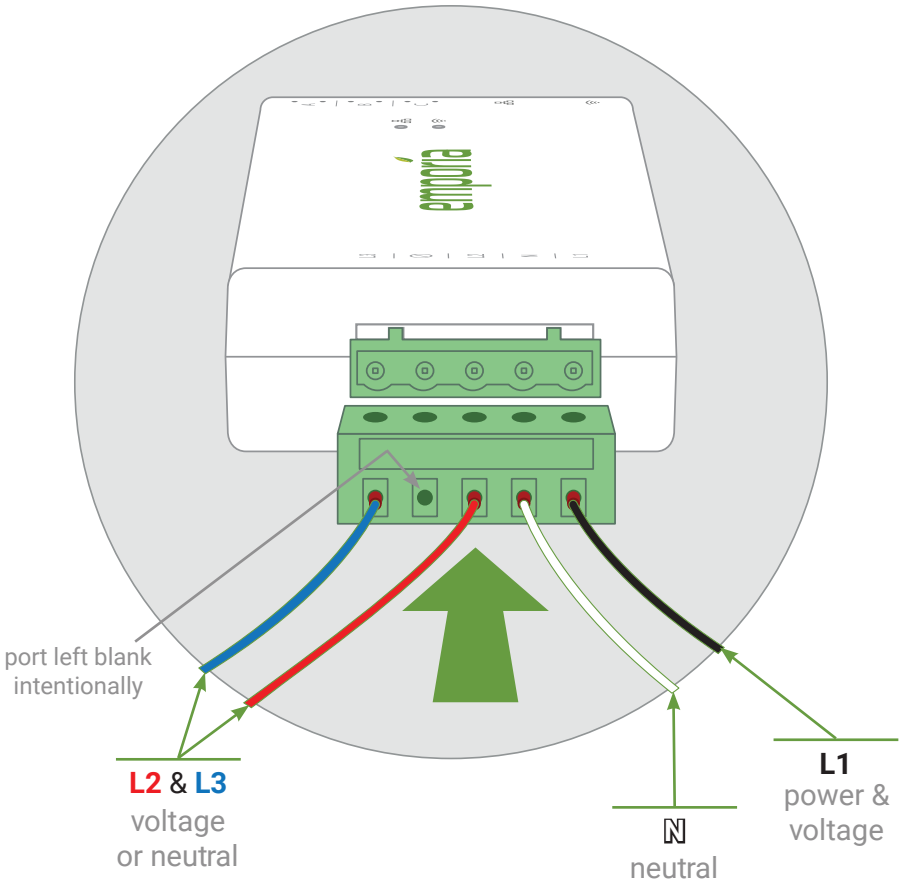
Open the clasps on the CTs and place each clamp around one of the main service cables between the utility meter and incoming line-side inverter taps. Then, shut the clasps to secure the CTs. **IMPORTANT! The Breaker ⟶ imprint on the bottom of the CTs should point toward the breakers.** Finally, insert the screw terminal plugs into the ports on the right side of the monitor. To avoid clutter, you can unscrew the 22 AWG wires from the screw terminals, cut them to size, and reattach them ensuring the black and white wires match the icons on the front of the Vue.

DANGER: The service mains are energized.



Step 3-4: Plug in the voltage sensing wire harness

Insert the 7.6mm screw terminal plug of the power supply wiring harness with four 16AWG wire leads into the port of the left side of the energy monitor until it clicks into place securely. These wires can also be cut to length to reduce panel clutter. The wire harness allows for single-phase power and three-phasevoltage sensing: **Black (L1)** provides power and voltage sensing, White (N) connects to Neutral, and **Red (L2)** and **Blue (L3)** provide voltage sensing only (if applicable).



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Step 3-5: Connect the wire harness

The wire harness is wired to one or more breakers in the electric panel.

1) Wiring to an empty breaker

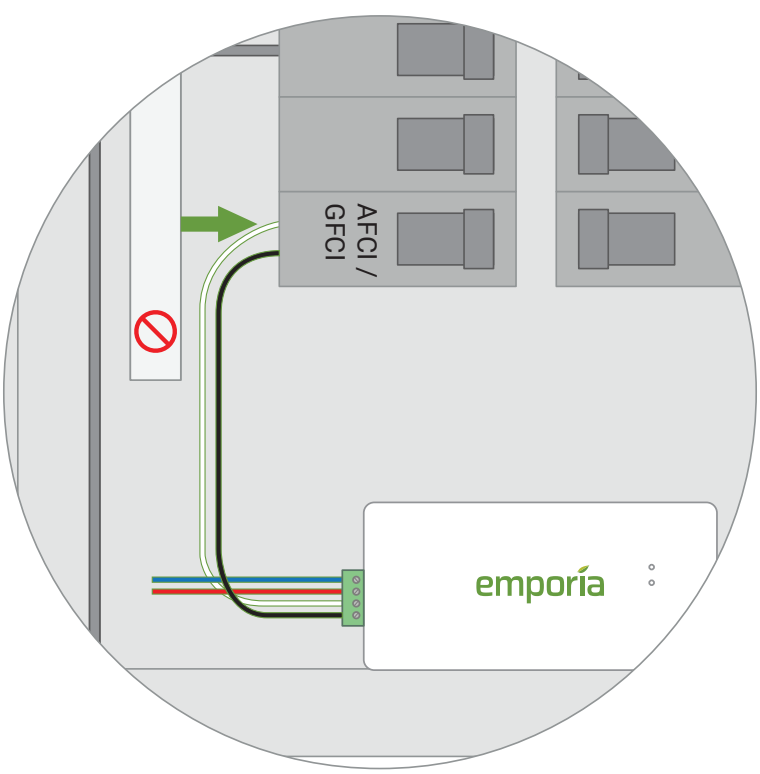
If wiring to an empty (unused) breaker, wire it directly to the breaker. Ampacity rating of this breaker does not matter.

2) Wiring to an in-use breaker

If wiring to an in-use breaker, use the splicing wires / wire nuts included with the Vue for breakers rated up to 15A. For other ampacity breakers, use a splicing wire that meets applicable electrical codes.

3) Wiring to a AFCI / GFCI breaker

If the wire harness is wired to an AFCI / GFCI breaker, **the black wire needs to be wired to the hot side and the white to the neutral on this breaker. The white is not wired to the neutral bus.**



Step 3-5 (continued): Connect the wire harness

The voltage sensing wire harness will be connected differently depending on whether or not there are an adequate number of empty breakers. Go to the step below based on the system. If you're unsure, contact Emporia Support and we'll help you through it.

- Step 3-5(a): Two empty breakers and two Main CTs
- Step 3-5(b): One empty breaker and two Main CTs
- Step 3-5(c): No empty breakers and two Main CTs

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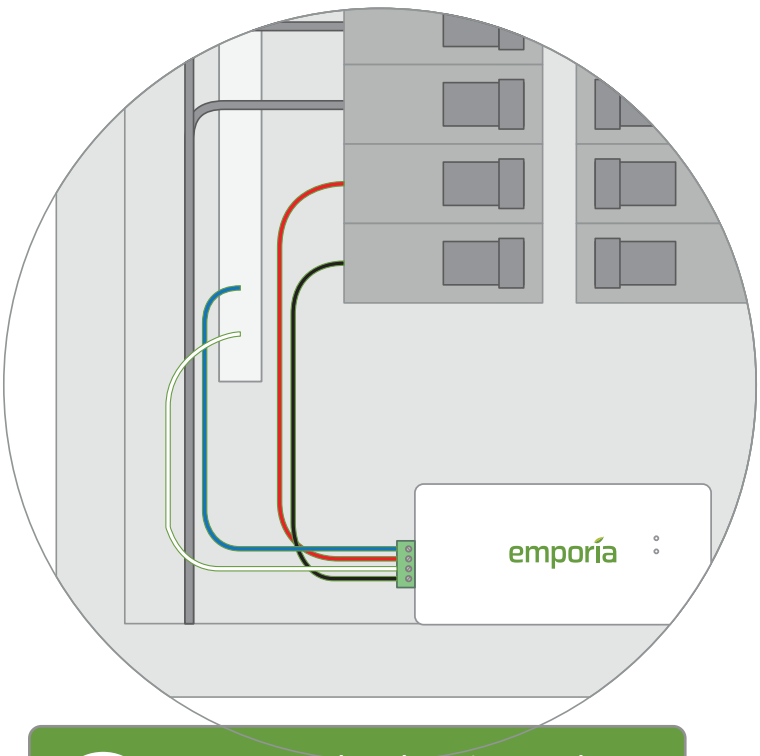
Step 3-5(a): Two empty breakers and two Main CTs

Secure the White (N) and **Blue (L3)** wires from the wire harness to the neutral bus bar. Turn off two vertically adjacent (stacked) single pole breakers and secure the **Black (L1)** and **Red (L2)** wires from the harness to each of the hot leads from each breaker.



Any empty breaker size can be used in this scenario (not limited to 15A)

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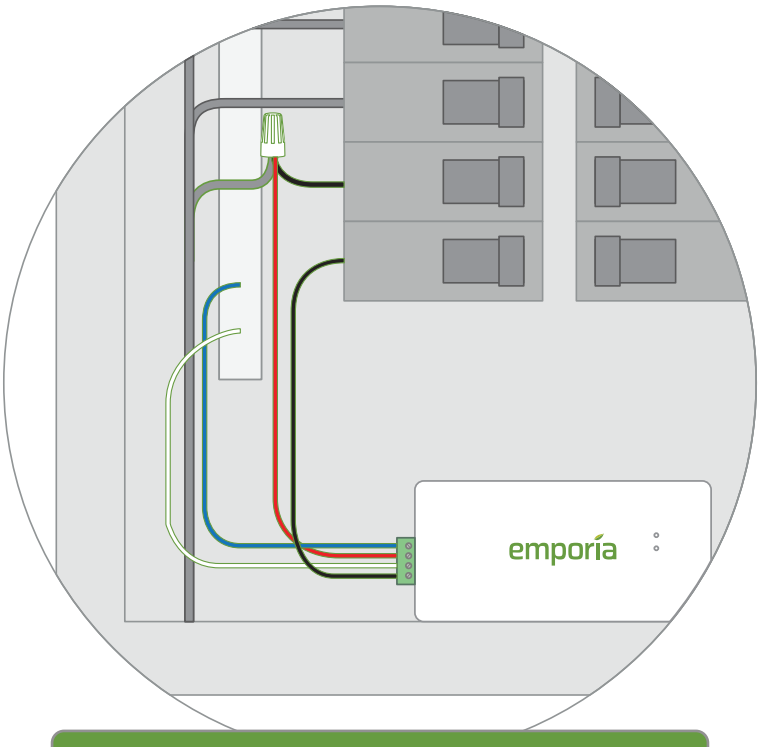
Step 3-5(b): One empty breaker and two Main CTs

Secure the White (N) and **Blue (L3)** wires from the wire harness to the neutral bus bar. Turn off two vertically adjacent (stacked) 15A single pole breakers: one empty and one with a wire already installed. Secure the **Black (L1)** wire from the harness to the empty breaker. Then, remove the wire from the occupied breaker, connect it to the **Red (L2)** harness wire and a splicing wire with a wire nut, and secure the splicing wire back into the breaker.



Any empty breaker size can be used in this scenario (not limited to 15A) with appropriately sized splicing wire.

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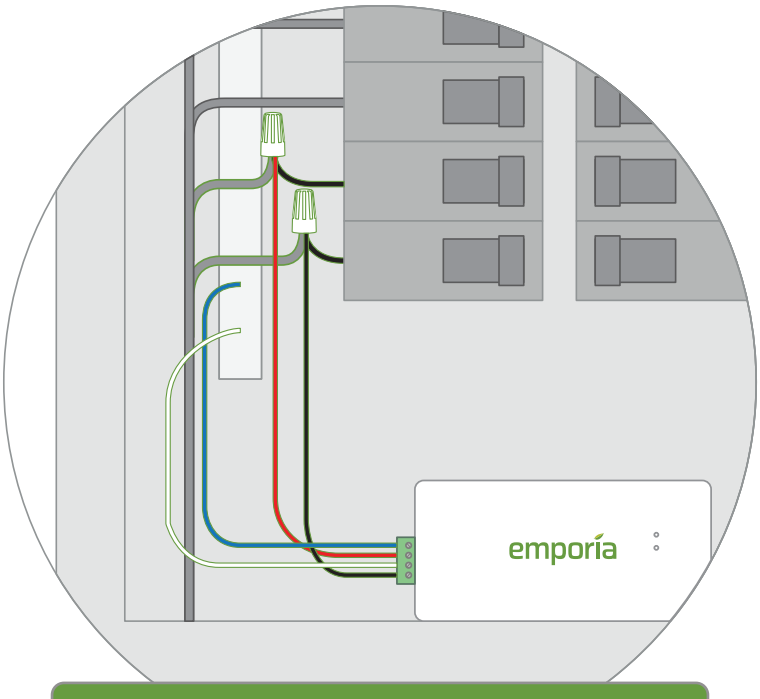
Step 3-5(c): No empty breakers and two Main CTs

Secure the White (N) and **Blue (L3)** wires from the wire harness to the neutral bus bar. Turn off two vertically adjacent (stacked) 15A single pole breakers and remove their wires. Connect one of the breaker wires to the **Black (L1)** harness wire and a splicing wire with a wire nut. Next, connect the second breaker wire to the **Red (L2)** harness wire and a splicing wire with a wire nut.Then secure each of the extra wires to the two breaker poles.



Any empty breaker size can be used in this scenario (not limited to 15A) with appropriately sized splicing wire.

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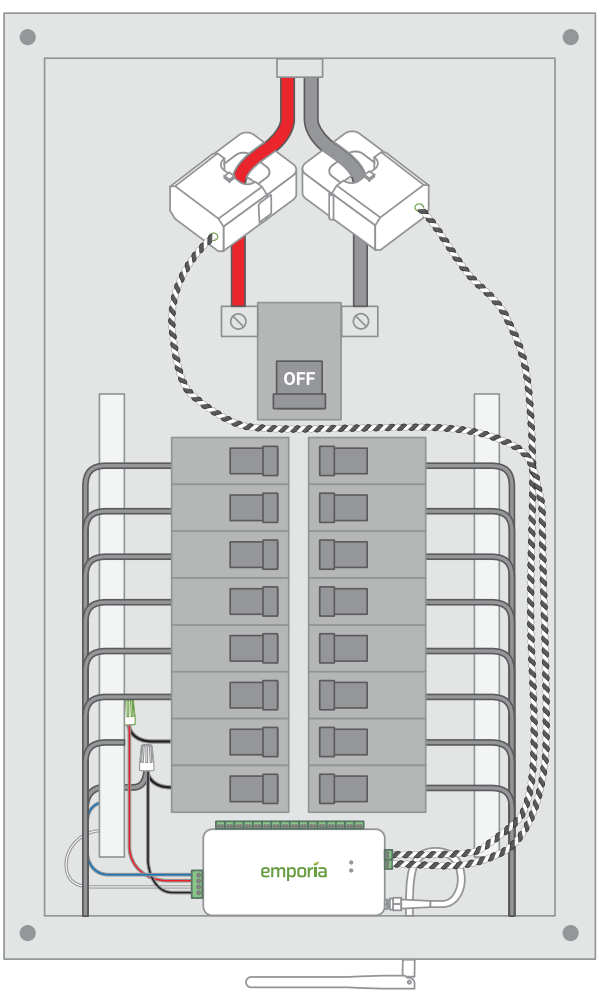
Step 3-6: Take a photo of your system

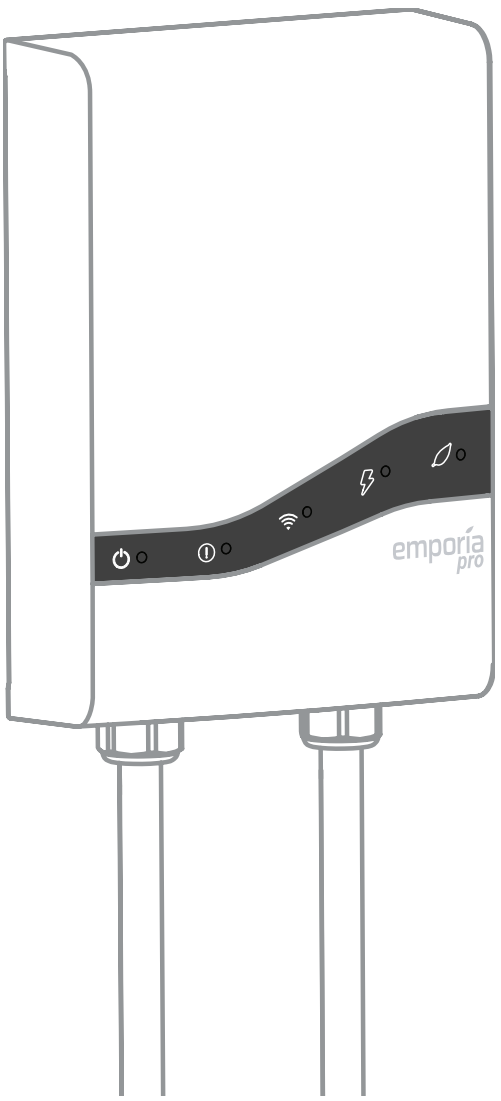
Take photos of the installation in case you needto contact support.

If you're readyto install the Emporia Pro Charger, proceed to Step 4. Otherwise, proceed to Step 5.



Step 4: Install the Emporia Pro Charger

"You'll now install the Emporia Pro Charger. There are multiple options for powering the Emporia Pro and the following instructions will guide you through the entire process."



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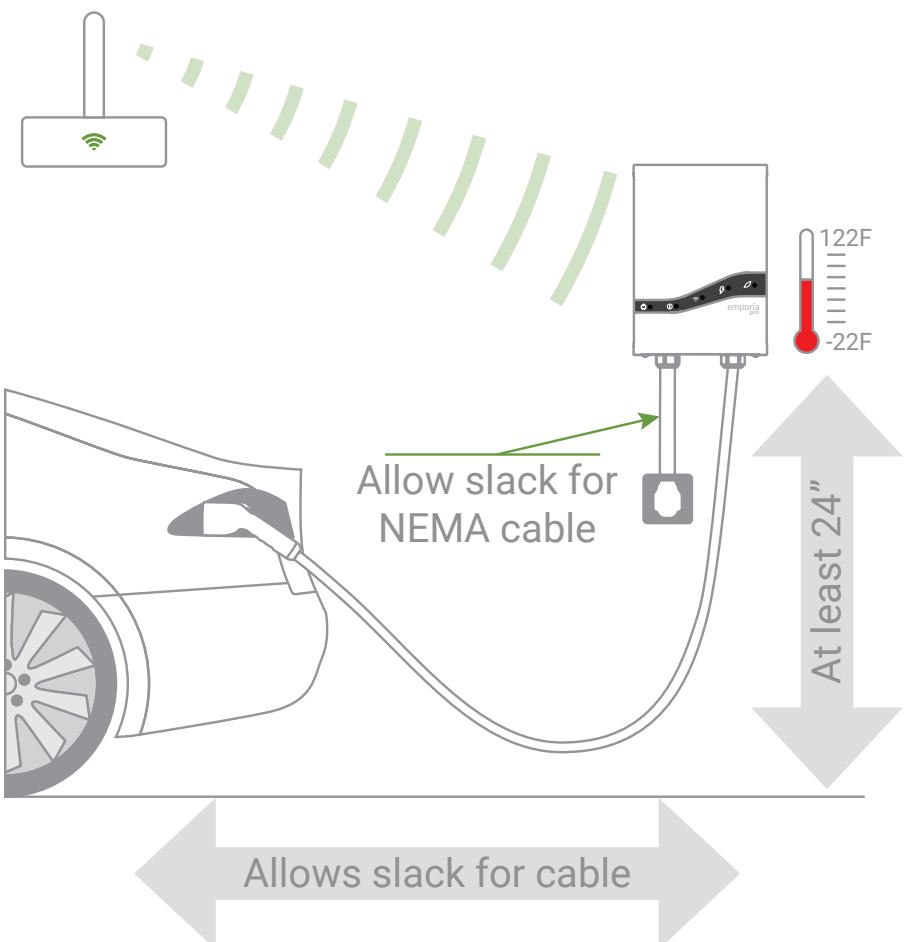
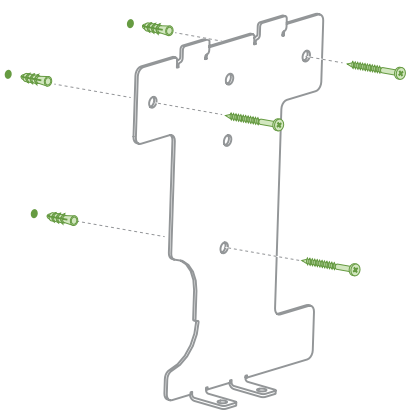
Step 4-1: Find a place for the EV Charger

- The bottom of the Emporia Pro should be wall mounted at least 24” (610mm) above the floor and installed where temperatures remain between -22°F to 122°F (-30°C to 50°C).
- Ensure that there is sufficient slack in the charging cable to reach the vehicle charging port.
- For NEMA 14-50 Plug installations, (see Step 4-5(a)), ensure there is sufficient slack in the NEMA power cable to reach the outlet.
- For Hardwired installations with rear power entry, ensure the power feed from the wall lines up with the intersection formed by the notch in the mounting bracket, as shown in Step 4-5(c).

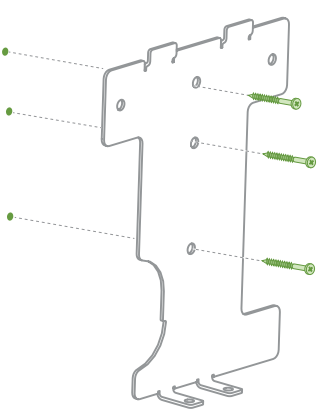


Step 4-2: Install the mounting bracket

The Emporia Pro mounting bracket features multiple mounting holes to accommodate all install scenarios. First, use a bubble level to draw a horizontal line where the top of the charging station will sit on the wall. Then, align the top of the mounting bracket with the line and mark the position of at least three mounting holes. If a stud is available, insert the mounting screws through the mounting holes in the bracket and directly into the stud. If a stud is not available, drill a 5/16” (8mm) hole into the drywall at the marked mounting hole position, use a hammer to tap in one of the provided drywall anchors, and then insert the mounting screw through the mounting hole in the bracket and into the drywall anchor.



Mounting with or without stud



Mounting with stud or post

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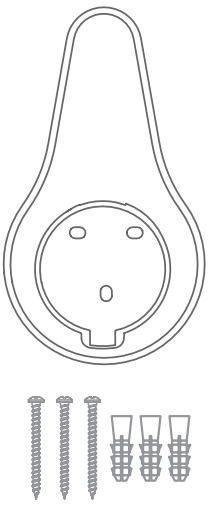
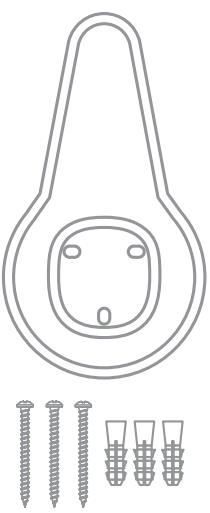
Step 4-3: Install the connector holder

The Emporia Pro comes with either a J1772 or a NACS connector. These variations come with a corresponding wall mounted holder. Please identify the holder that came with your Emporia Pro and follow the subsequent instructions to install the holder for your charger.



J1772 connector holder



NACS connector holder

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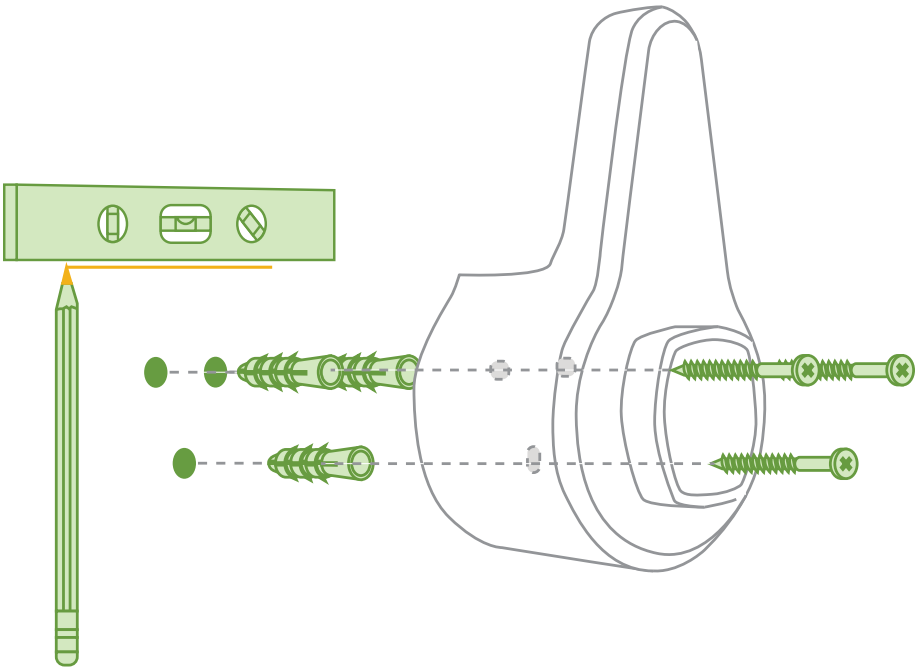
Step 4-3 (continued): Install the connector holder

First, use a bubble level to draw a horizontal line at least 12” away from the mounting bracket at the height you’d prefer. Next, holding the flat part on the top of the holder up to the line, mark the 3 mounting holes of the holder. Drill a ¼” (6mm) hole in the wall for each mark. Then, use a hammer to tap in 3 drywall anchors. Finally, ins tall the holder with 3 Phillips screws into the anchors.



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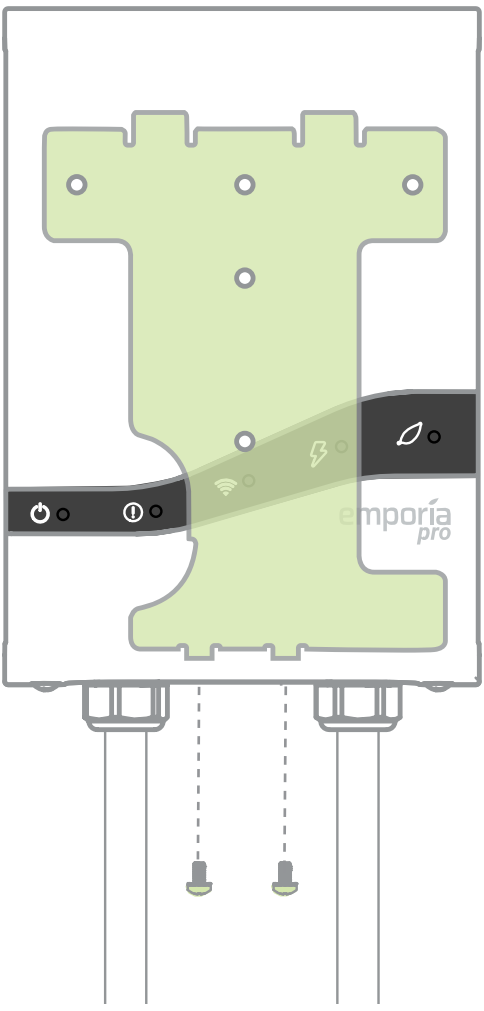
Step 4-4: Mount the charger

Slide the charger down onto the mounting plate. Make sure it rests on the top mounting plate hooks as well as on the two bottom tabs. Use a Phillips screwdriver and the two M5x10 screw to secure the charging station to the mounting bracket.



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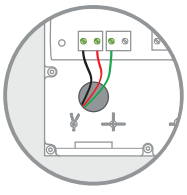
Step 4-5: Power the Emporia Pro

A licensed electrician or other qualified professional can power the Emporia Pro in one of three ways. **The breaker size selected needs to be set in the Emporia app and protected by a PIN in Step 7.**

Plugged-in NEMA 14-50 plug.
Maximum charge rate of 40A. If the NEMA 14-50 outlet is already installed, just plug in the Emporia Pro Charger and proceed to Step 6. Otherwise, proceed to Step 4-5(a).

Hardwired whip
Maximum charge rate of 48A.
Proceed to Step 4-5(b).



Hardwire with rear entry
Maximum charger rate of 48A.
Proceed to Step 4-5(c).

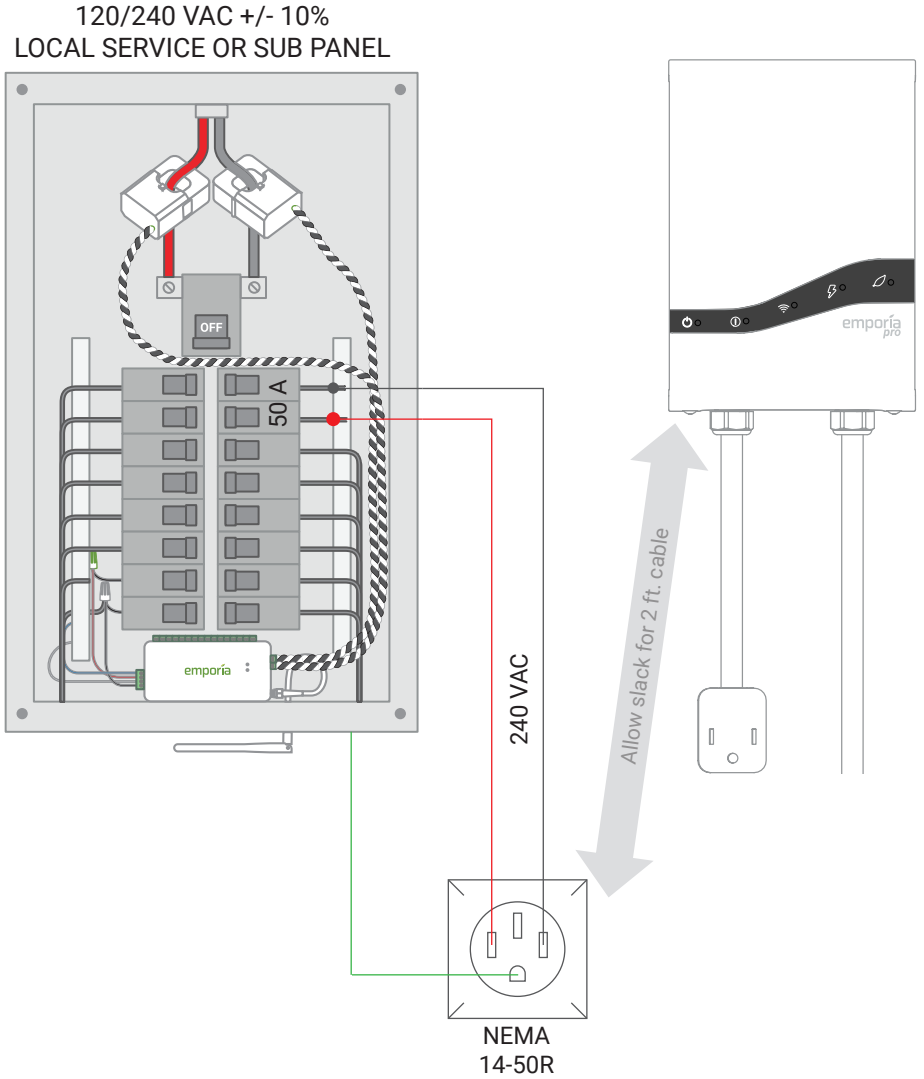
Acceptable breaker/max charge rate combinations

Dedicated Breaker	Maximum Charge Rate	Maximum Charge Power @ 240V
15A	12A	2.9kW
20A	16A	3.8kW
25A	20A	4.8kW
30A	24A	5.8kW
35A	28A	6.7kW
40A	32A	7.7kW
45A	36A	8.6kW
50A	40A	9.6kW
60A	48A	11.5kW

Step 4-5(a): Power the Emporia Pro from NEMA 14-50

Before starting, ensure that service disconnects and/ or main breakers feeding the panel are in the OFF position.

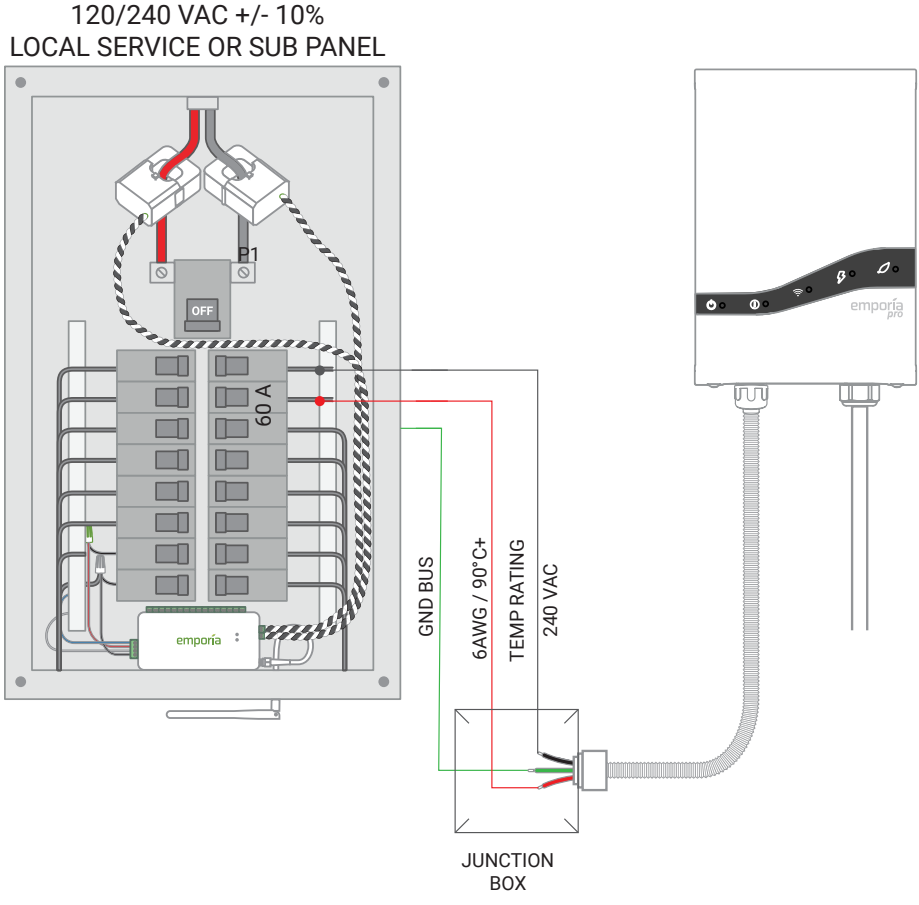
Install a NEMA 14-50 outlet with the ground facing downward, ensuring the distance between the NEMA outlet and the charging station allows sla ck for a short cable. Wire leads from both phases of the breaker, along with a ground/earth lead, to the outlet. Neutral is not required. Consult local electrical codes for the proper wire type and size.



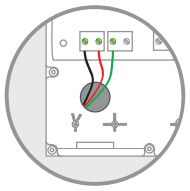
Step 4-5(b): Power the Emporia Pro from hardwire whip

Before starting, ensure that service disconnects and/or main breakers feeding the panel are in the OFF position.

Connect the 3/4” NPT conduit fitting and sealing washer through a 1 1/8” tap in a junction box, tightening to ensure a watertight seal. Route leads from both phases of the breaker, along with a ground/earth lead, in appropriately-sized conduit to the junction box. Connect the leads from the breaker with the pre-installed leads from the Emporia Pro. Consult local electrical codes for the proper wire and conduit types and sizes.

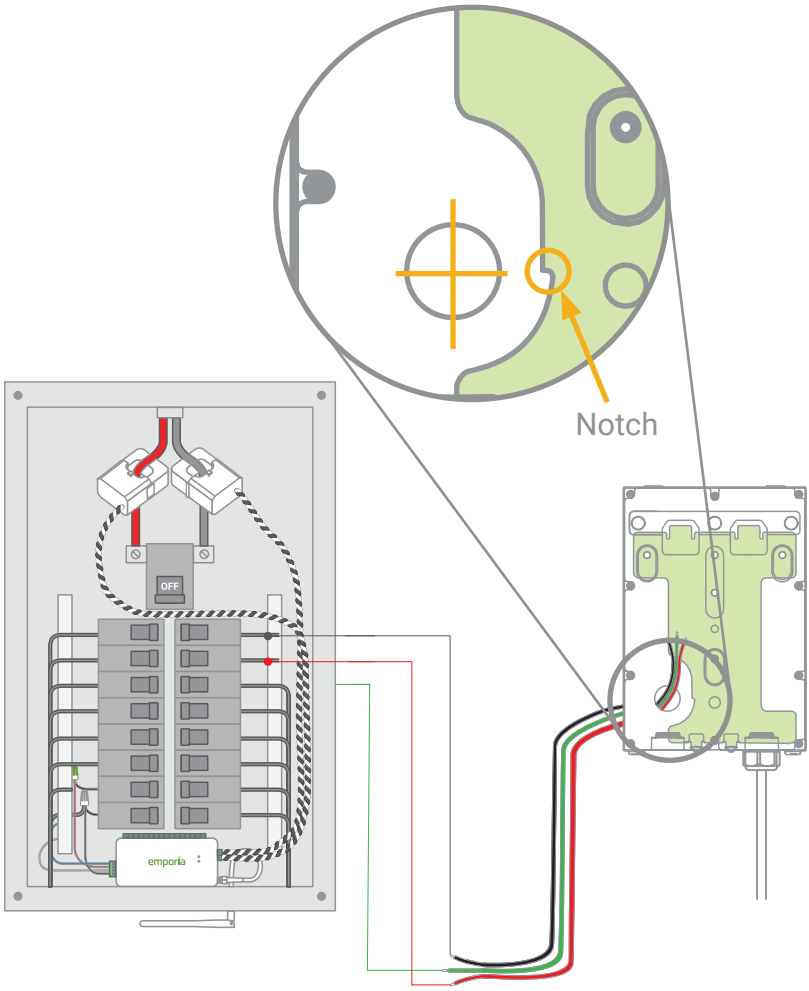


Step 4-5(c): Power the Emporia Pro from hardwire with rear entry

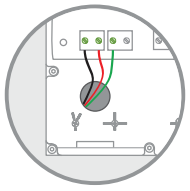


Before starting, ensure that service disconnects and/or main breakers feeding the panel are in the OFF position.

Route leads from both phases of the breaker, along with a ground/earth lead, to the Emporia Pro install location, concealing leads behind a wall. Remove the Emporia Pro from the mounting bracket and cut a 3/4” hole in the wall at the location indicated by the mounting bracket, as shown below. The power leads will be pulled through this hole later. Consult local electrical codes for proper wire type, size, and routing. For outdoor or wet locations, use a watertight conduit and connections to maintain Type 4 ingress protection. Replace the Emporia Pro on the mounting bracket.

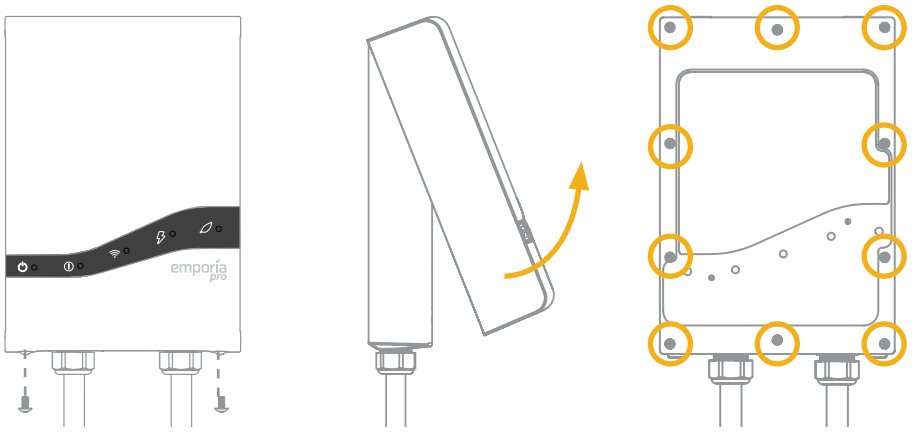


Step 4-5(c)(continued): Power the Emporia Pro from hardwire with rear entry

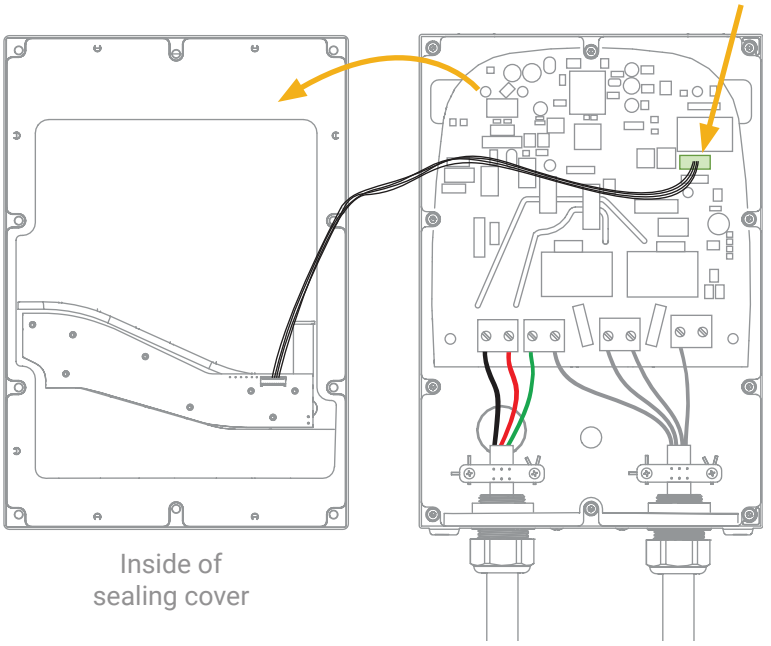


Using a Phillips screw driver, remove the two M5 screws located at the bottom of the cover. Then flip the cover up and unhook it from the tabs at the top of the Emporia Pro. Next, remove the ten M4 socket head screws and washers, using a 3mm hex bit, and flip over the sealing cover.

Caution: There is a cable connecting the sealing cover to the circuit board in the Emporia Pro. To remove the cable, grab the cable bundle near the circuit board and gently pull it away from the circuit board.

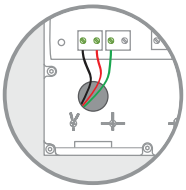


Gently pull here to remove cable bundle.



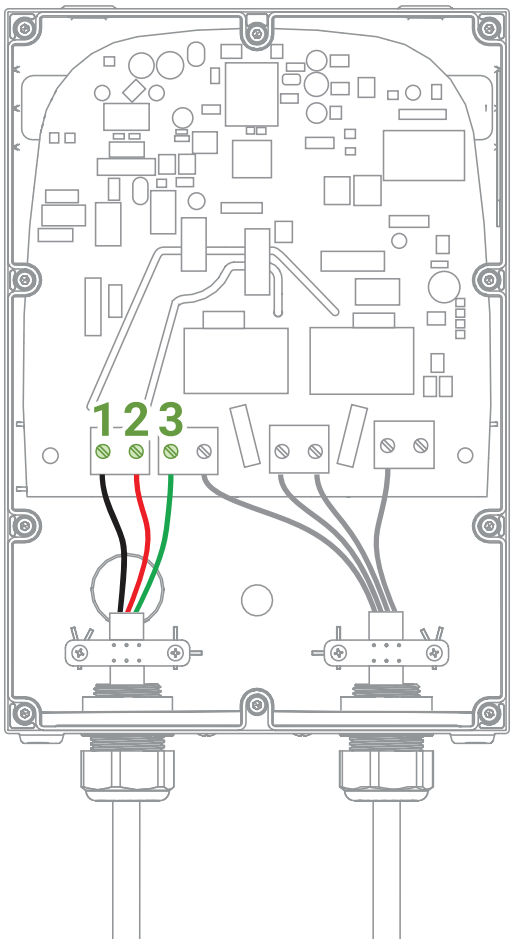
Inside of sealing cover

Step 4-5(c)(continued): Power the Emporia Pro from hardwire with rear entry



Using a flathead screwdriver, gently unscrew (counter clockwise) terminals 1, 2, and 3 so that the black, red, and green NEMA cable wires may be removed from their screw terminal housings.

Be careful not to overtorque the screw terminals. Use a maximum torque of 1.2 Nm (10 in-lb).



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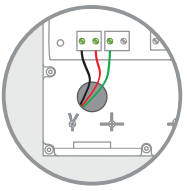
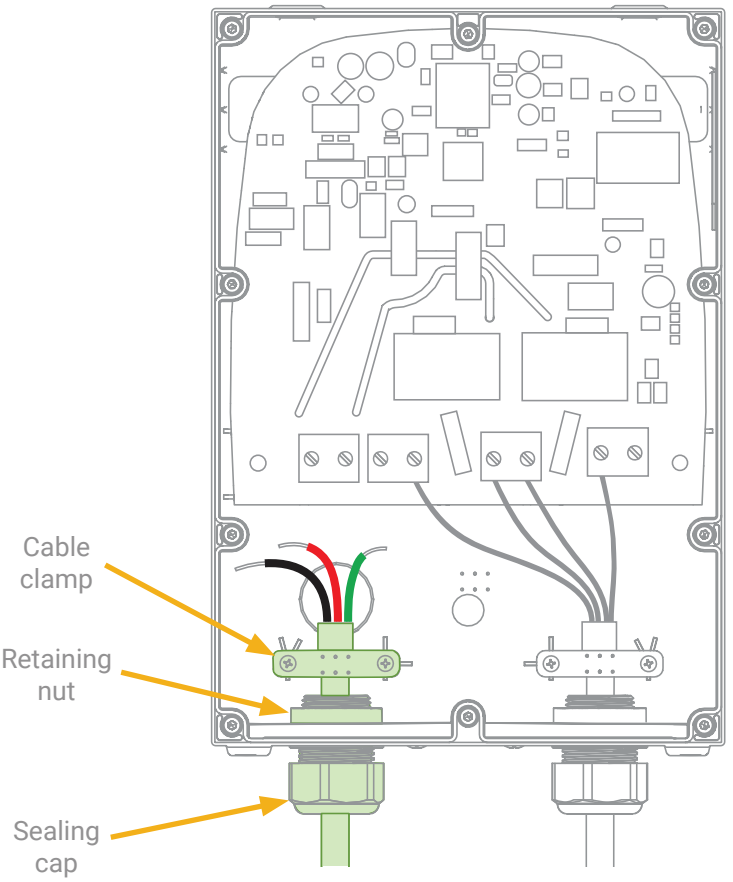
Step 4-5(c)(continued): Power the Emporia Pro from hardwire with rear entry



Using a Phillips #1 screwdriver, remove the two screws of the cable clamp which secure the hardwire whip or NEMA cable to the Emporia Pro housing. Loosen the sealing cap of the cord grip, then remove the hardwire whip or NEMA cable from the assembly. Finally, unscrew the retaining nut inside the Emporia Pro housing while holding the cord grip in place, and remove the cord grip from the assembly. Install a 3/4” watertight knockout plug (not included) to ensure ingress protection.



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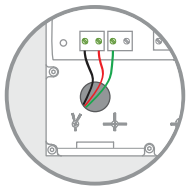
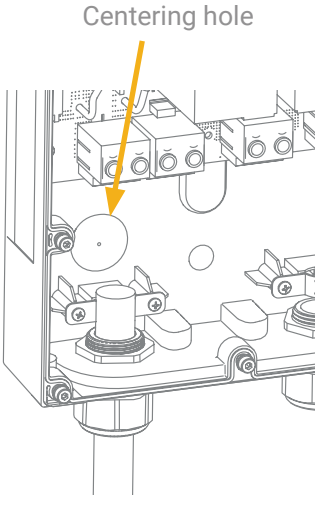
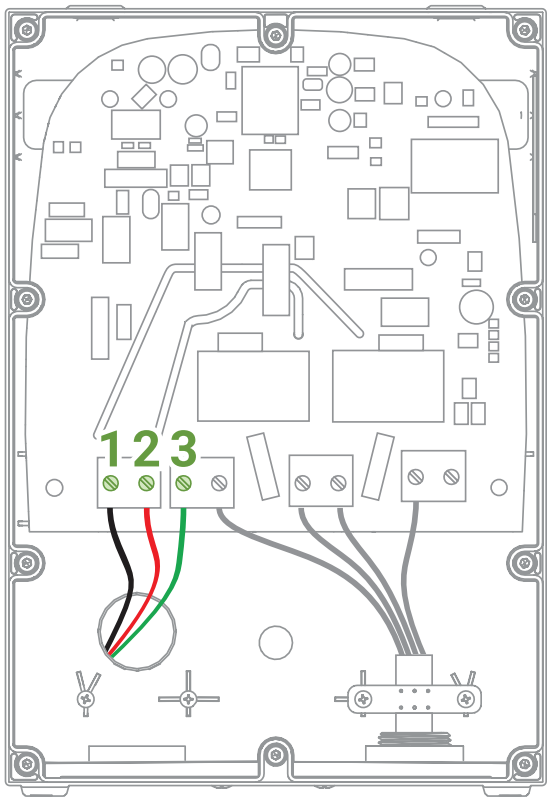
Step 4-5(c)(continued): Power the Emporia Pro from hardwire with rear entry



Align a step bit with the centering hole on the rear enclosure and drill a 3/4” knockout in the rear enclosure. Pull the power leads from the breaker through the holes in the drywall and the rear enclosure. Connect phase 1 and phase 2 wires to terminal 1 and terminal 2. Connect ground/earth to terminal 3. **Be careful not the overtorque the screw terminals. Use a maximum torque of 1.2Nm (10 in-lb).**





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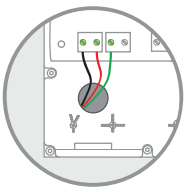
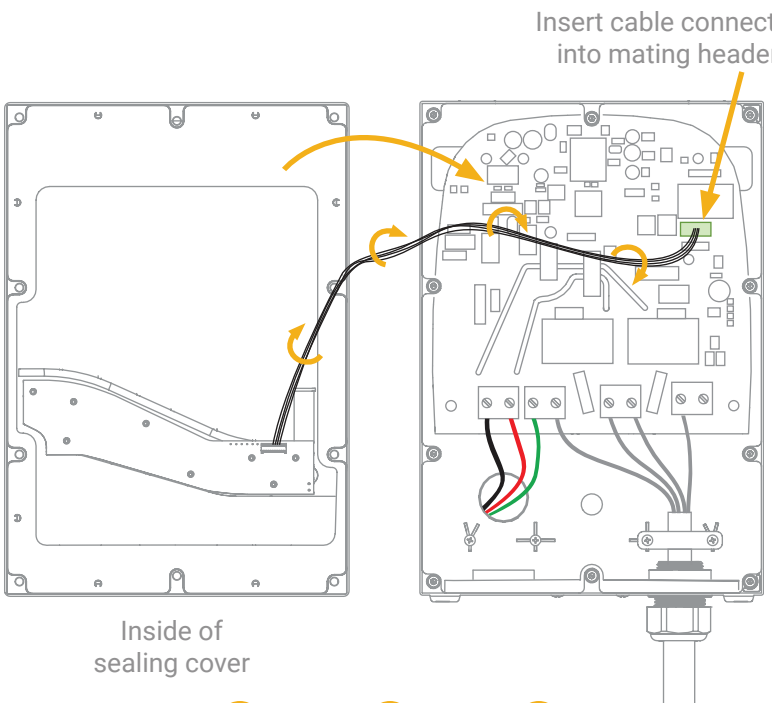
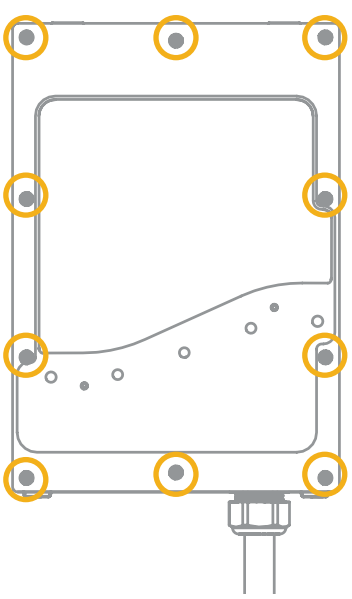
Step 4-5(c)(continued): Power the Emporia Pro from hardwire with rear entry

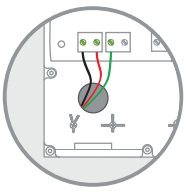


Twist the cable from the sealing cover three times and then insert the cable's connector into its mating header on the Charger's circuit board. Replace the sealing cover back onto the housing and secure with the ten M4 socket head screws and washers, using a 3mm hex bit.

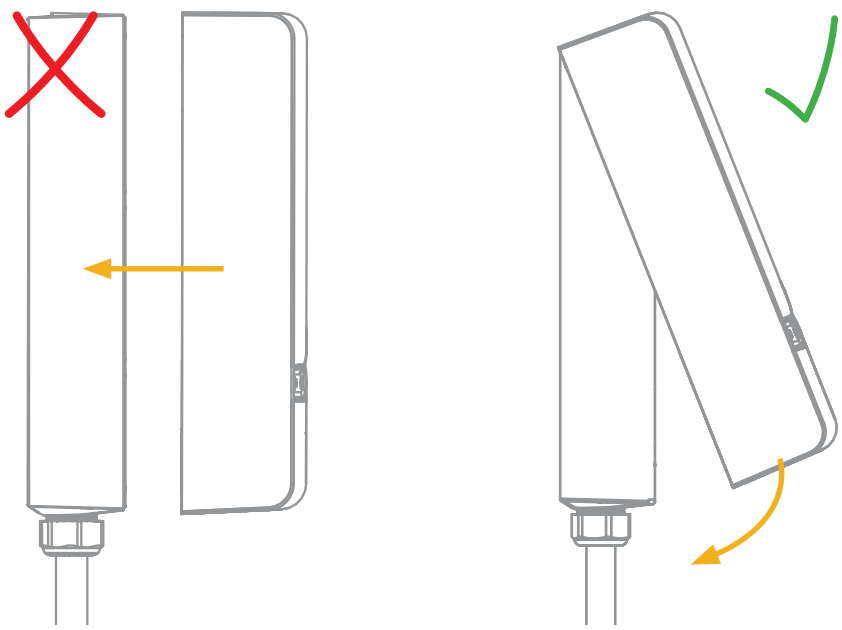


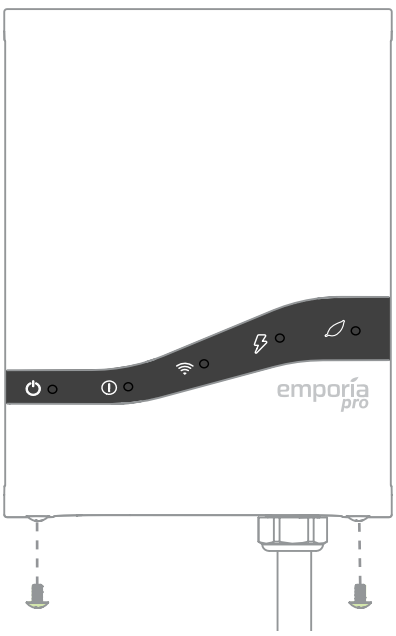


Step 4-5(c)(continued): Power the Emporia Pro from hardwire with rear entry



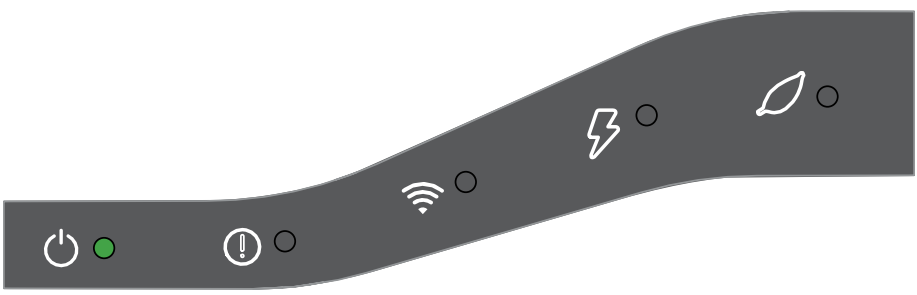
Next, hook the top of the front cover to the top of the Emporia Pro and gently swing the front cover down. Replace the two screws at the bottom to secure the front cover to the Emporia Pro.
WARNING: Do not attempt to replace the front cover straight on or force it into place.





Step 5: Replace the panel cover and turn on all breakers

The Emporia Pro and Vue 3 Energy Monitor are installed and ready to be turned on. Back at the electrical panel, replace the panel cover with any screws removed in Step 2. Next, turn ON any breakers or disconnects that were turned OFF during installation, and restore power to all circuits. Then, close the panel. Ensure that the power light on the front of the Emporia Pro is illuminated.



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Step 6: Get the Emporia app

The Emporia app and a Wi-Fi connection are required to enable PowerSmart and take full control of your charging experience. To complete the setup of the Emporia Pro Charger with PowerSmart, first download the Emporia app onto your phone or tablet from the Apple App Store, from Google Play, or from emporiaenergy.com/app, and create an account.

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Step 7: Complete Setup

Next, you'll connect both the Emporia Vue and the Emporia Pro Charger to the network.

To enable PowerSmart on your Emporia Pro, connect and configure the Emporia Vue before the Emporia Pro.

The Emporia Pro is set from the factory to charge at 40 Amps (NEMA 14-50) or 48 Amps (Hard-wired). Once the Emporia Pro is connected to the network, you can raise or lower the charge rate to match your breaker size and installation type. **A PIN must be set in the app when setting the breaker size.**

Both the Emporia Vue and Emporia Pro may be connected to the network and configured by following instructions in the Emporia app.

Need help?

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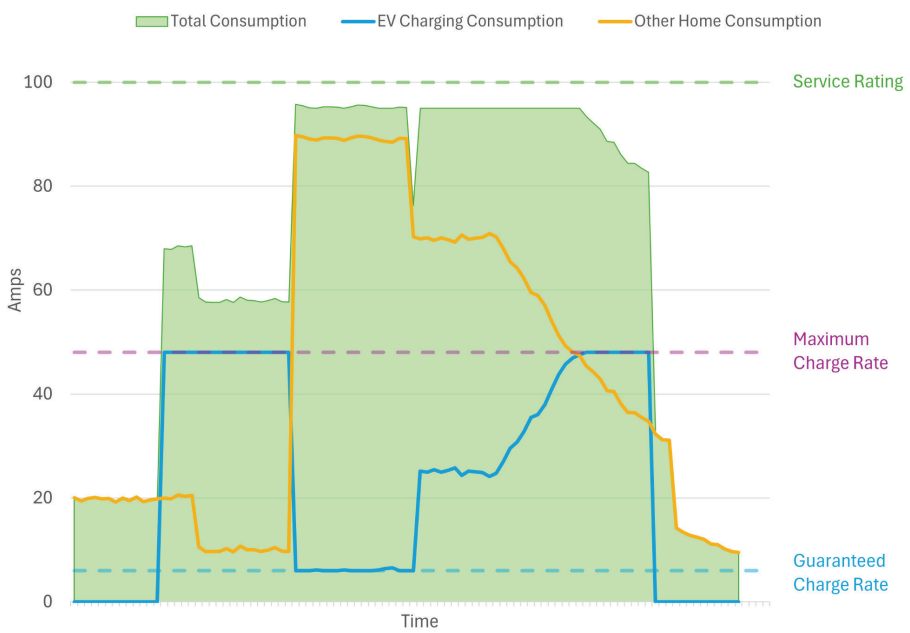
support@emporiaenergy.com
1-844-EMPORIA (367-6742)

Step 8: Configure PowerSmart

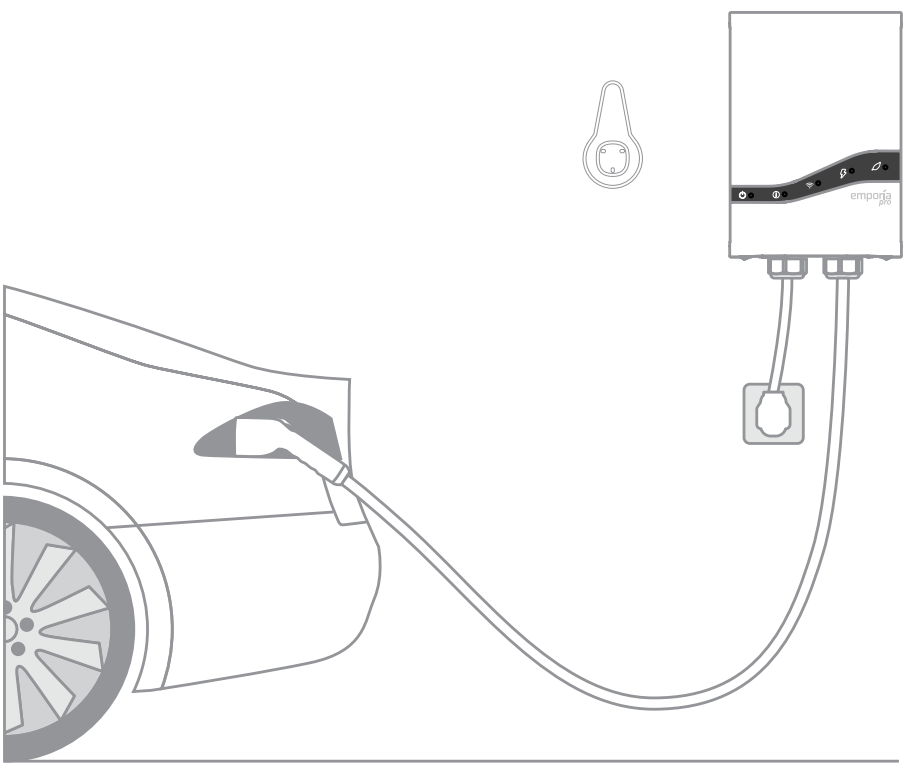
PowerSmart charges your EV at full power when your home consumption is lower, and prevents panel overloads when your home consumption is higher, enabling a fast charging experience without requiring an expensive panel upgrade. To configure PowerSmart in the app, you'll be asked to specify the following:

- **Service Rating** is the maximum current that PowerSmart will permit in the electrical panel. If PowerSmart detects lower home consumption, it will increase the Emporia Pro's charge rate, up to the maximum. If larger home appliances turn on, PowerSmart will reduce the Emporia Pro's charge rate so that overall consumption remains less than the Service Rating. A licensed electrician shall determine the Service Rating from inspecting the electrical panel.
- **Maximum Charge Rate** depends on the size of the breaker your Emporia Pro Charger is powered from. See Step 4-5.
- **Guaranteed Charge Rate** for the Emporia Pro Charger is the excess current capacity that is available in the panel before installing the Emporia Pro Charger. This charge rate is always available, and Emporia Pro Charger will fall back to this charge rate if PowerSmart is unavailable. A licensed electrician shall determine the Guaranteed Charge Rate using load calculation methods in NEC Article 220 or other applicable electrical codes.



Charging your vehicle

Each time the Emporia Pro is used, the cables, charging connector, and charging station should be inspected for damage. To charge your vehicle, open the vehicle port door and plug the charging connector into the port. You will see the charge light on the Emporia Pro turn on when it is connected to the vehicle. It will begin blinking green as the vehicle charges. Additionally, most EVs have indicator lights on the dashboard to let you know that you're charging. Once the EV is fully charged, the light will turn green. Do not attempt to drive your vehicle while the charge cable is connected to your vehicle. Please contact Emporia Customer Support with any questions.



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EV Charger LED lights

Power	State
OFF	Charger does not have power
Solid Green	Charger has power
Network LED	
OFF	Not connected, no SSID configured
Blinking Green - One Pulse	SSID configured, Attempting to connect to WiFi LAN
Blinking Green- Two Pulses	Connected to W-iFi LAN, but not yet connected to Emporia Cloud
Solid Green	Connected to Wi-Fi and Emporia Cloud
Charge LED	
OFF	Vehicle not connected
Solid Blue	Vehicle connected, Charger not ready
Blinking Green	Charging
Solid Green	Charger Ready, Vehicle not Ready (or fully charged)
EMS	
OFF	Emporia Energy Management System is not active
Solid Green	Emporia Energy Management System is active
Fault	
Flashing orange 1 slow/1 fast	Abnormal control pilot circuit - Unplug and plug-in Emporia Pro. If issue persists, contact Support.
Flashing orange 1 slow/2 fast	Charger has exceeded operating temperature lower bound. Ensure the charger is installed where temperatures do not drop below -22F (-30C).
Flashing orange 1 slow/3 fast	Input voltage is too low - If plugged in, check that the NEMA 14- 50P is plugged in securely. Check the supply breaker in your breaker panel for damage and replace if necessary. If issue persists, contact Support.
Flashing orange 1 slow/4 fast	Input voltage is too high - If plugged in, check that the NEMA 14- 50P is plugged in securely. Check the supply breaker in your breaker panel for damage and replace if necessary. If issue persists, contact Support.
Flashing orange 1 slow/5 fast	Charger has exceeded nominal temperature - Ensure the charger is installed where ambient temperatures will not exceed 122°F (50°C). If issue persists, contact Support.

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EV Charger LED lights

Fault	
Flashing orange 1 slow/6 fast	Output surge current - Unplug from car. Disconnect charger from power. Confirm there is no visible damage or foreign material in the EV charging connector. Return power to charger. If issue persists, contact Support.
Flashing orange 1 slow/7 fast	Current leakage - Unplug from vehicle. Disconnect charger from power. Confirm there is no visible damage or foreign material in the EV charging connector. Return power to charger. If issue persists, contact Support.
Flashing orange 1 slow/8 fast	Output short circuit - Unplug from vehicle. Disconnect charger from power. Confirm there is no visible damage or foreign material in the EV charging connector. Return power to charger. If issue persists, contact Support.
Flashing orange 1 slow/9 fast	Output over current - Unplug from vehicle. Disconnect charger from power. Confirm there is no visible damage or foreign material in the EV charging connector. Return power to charger. If issue persists, contact Support.
Flashing orange 2 slow/3 fast	Relay fused in position - Disconnect from power immediately. Contact Support.
Flashing orange 2 slow/5 fast	Charger is not grounded Ensure that the EV Charger is properly wired and grounded. For NEMA 14-50 installations, check the line and neutral connections in the outlet as they may be reversed. Unplug and reboot EV charger. If issue persists, contact Support.
Flashing orange 3 slow/1 fast	The vehicle is requesting ventilation during charging, which is not supported by the Emporia Pro. Contact Support.
Flashing orange 3 slow/2 fast	The vehicle is requesting charge but the charger is not ready. Unplug the charging connector from the port and plug it back in again. If issue persists, contact Support.

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Troubleshooting Tips

Here are some of our most frequent troubleshooting tips. For more help, check out the Emporia Help Center online at help.emporiaenergy.com.

The Emporia app is not finding the Vue after I've installed it.

- Ensure the Vue has power:
  - Check for a flashing Wi-Fi light.
  - Check the wire harness is secure and wired properly.
  - Check that the main breaker is turned on.
  - Check that the breaker powering the Vue is turned on.
- Ensure your phone can connect to the Vue:
  - Check your phone's Bluetooth is on.
  - If you're using an Android, turn on Location Services for your phone to properly scan for Bluetooth devices.
  - If you're using an iPhone, make sure Bluetooth is allowed in the *Settings > Emporia Energy app > Bluetooth allowed*
- Ensure the Vue's Wi-Fi antenna has been installed properly
  - Check the antenna is properly screwed into the energy monitor
  - Ensure the antenna is outside of the electric panel. It's ok if it is inside a wall, just ensure it's not inside the metal box.
- Ensure the Vue's wired LAN connection is installed properly.
  - Check that the ethernet cable is securely connected to the Vue's LAN port
  - Check that the ethernet cable is securely connected to a router, switch, or modem
- Ensure the network does not have a firewall preventing new devices from accessing the Internet.

Troubleshooting Tips (continued)

- Try power cycling the breaker to which the Vue is connected.
- Try restarting the Emporia App.
- Try rebooting your phone.

The Emporia Energy app isn't getting real-time data from the Vue.

- Ensure all current transformers are securely fastened around their respective cables in the electric panel.
- Check the screw terminal plugs are securely plugged into the ports of the energy monitor.
- Check that the CT wires are securely connected to the screw terminals and that the screws are tight.

The Emporia Energy app isn't showing solar net metering or grid measurements from the Vue.

- Ensure the Main CTs are clamped on the mains between the meter and incoming leads from the solar inverter.
- Ensure all CTs are oriented as per the instructions. CTs are directional.
- Check that the appropriate wiring harness wires are attached to adjacent breakers on different phases
- When configuring the Vue with the App, make sure that you temporarily turn the solar off so it is not supplying power to the system. Try running the configuration at night.
- When configuring the Vue with the App, make sure that there is a discernible load on the system. Try turning on an oven, A/C, or dryer.

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Troubleshooting Tips (continued)

The Emporia app is not finding my Emporia Pro after I've installed it.

- Ensure the Emporia Pro has power.
  - Check for the green power light.
  - Check that the Emporia Pro is wired properly.
  - Check that the breaker powering the Emporia Pro is turned on.
- Ensure your phone can connect to the Emporia Pro.
  - Check your phone's Bluetooth is on.
  - If you're using an Android, turn on Location Services for your phone to properly scan for Bluetooth devices.
- Try power cycling the breaker to which the Emporia Pro is connected.
- Try restarting the Emporia App.
- Try rebooting your phone.

My vehicle is not responding or charging.

- Ensure the latch on the EV charging cable handle is locked into place. If the handle is not latched securely, the vehicle will not charge. If the latch is pressed down during charging, the charging automatically stops.
- Ensure the vehicle is not set up to begin charging at a specific time of day, location, or some other setting that is preventing charging.
- Ensure the EV Charger icon is in a **blue** ready state on home page. If it is in a **green** paused state, tap the icon to un-pause Emporia Pro.

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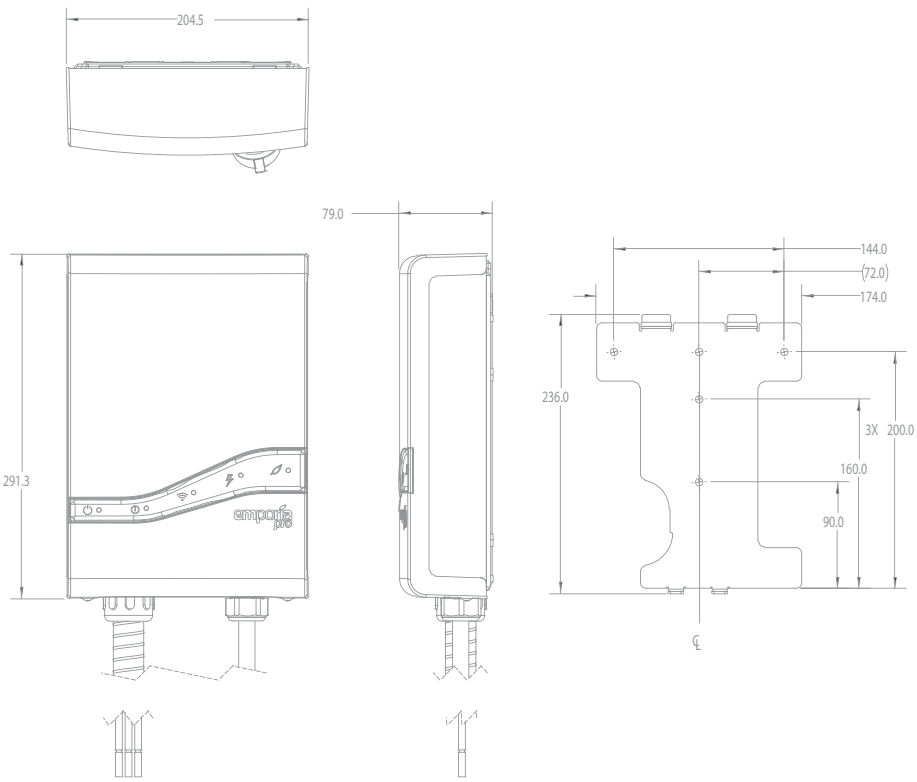
Technical details: Emporia Pro

Input Voltage	208/240VAC 50/60Hz
Charge Power	11.5kW (240V/48A) / 9.6kW (240V/40A) / 10kW (208V/48A) / 8.3kW (208V/40A)
Required Breaker	Dedicated 50A+ dual pole for 40A Dedicated 60A+ dual pole for 48A
Connector	24' cable SAE J1772 or NACS connector with built in UHF sensor that opens the Tesla charging port
Power Wiring	NEMA 14-50 (up to 40A) with 28" cable, Hardwired (up to 48A) with 3' long conduit
Enclosure	Watertight NEMA 4 indoor/outdoor
Temp Range	-22°F to 122°F (-30°C to 50°C)



FCC ID: 2AS6P-EMEVSE1
Model: EMC2

IC:28084-EMEVSE1
CAN ICES-003(B) / NMB-003(B)

The Emporia Pro Smart EV Charger contains FCC ID: 2AS6P-EMEVSE1. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Caution: Any changes or modifications not expressly approved by Emporia void the user's authority to operate the equipment.

Technical details: Emporia Vue

Energy Monitor (EMV3A)

- **Supported system configurations:**
  - Single phase, 2-wire systems (Up to 240V)
  - Single-split phase, 3-wire systems (Up to 240V/480V LN/LL)
  - 3-phase, 4-wire Wye systems with earthed (TN or TT) neutral (no-Delta) (Up to 240V/415V LN/LL)
- **Fuse:** 250VAC/4A (Slow Blow, TH)
- **Maximum voltage sense range:** 264VAC L-N per channel
- **Power usage:** < 3 Watts
- **Wi-Fi:** 2.4 GHz IEEE 802.11b/g/n
- **Ethernet:** 10/100Base-T, IEEE 802.3
- **Operating conditions:** -40° to 122° F (-40° to 50° C) | 0 to 80% RH Up to 3,000 meters above sea level | Indoor | Dry location Pollution Degree 2

Terminals:

- **Ethernet:** Cat5e, RJ45, 600V insulation required
- **WiFi:** SMA coaxial cable, 50Ω impedance, 600V insulation required
- **Voltage Terminals:**
  - ~100-240VAC line-to-neutral, 50/60Hz, 41mA, Overvoltage / Measurement CAT III
  - Field terminal torque value: 5Lb-In/0.56Nm
  - 16AWG, UL1015, 600V, 105C copper-only wiring
- **Main Current Transformer Terminals:**
  - 3.3V, 1mA, Measurement CAT IV
  - Field terminal torque value: 5Lb-In/0.56Nm
  - 22AWG, UL1015, 600V, 105C copper-only wiring
- **Branch Current Transformer Terminals:**
  - 3.3V, 1mA, Measurement CAT III
  - Field terminal torque value: 3Lb-In/0.2Nm
  - 22AWG, UL1015, 600V, 105C copper-only wiring

Main Current Transformers (EMV3CT2-A)

- **Max primary current:** 200A
- **Max voltage:** 250V (Primary) / 333mV (Secondary)
- **Burden resistor:** 5ohm, 1%, 1/4W
- **Cable length:** 1m
- **Inside diameter:** 22 mm
- **Accuracy:** ±2% (above 4° F / -20° C)
- **Operating conditions:** -40° to 122° F (-40° to 50° C) | 0 to 80% RH Up to 3,000 meters above sea level | Indoor | Dry location Pollution Degree 2

Branch Current Transformers (EMV3CT5-A)

- **Max primary current:** 50A
- **Max voltage:** 250V (Primary) / 333mV (Secondary)
- **Burden resistor:** 20ohm, 1%, 1/4W
- **Cable length:** 1m
- **Inside diameter:** 10 mm
- **Accuracy:** ±2% (above 4° F / -20° C)
- **Operating conditions:** -40° to 122° F (-40° to 50° C) | 0 to 80% RH Up to 3,000 meters above sea level | Indoor | Dry location Pollution Degree 2

Technical details: Emporia Vue

LISTED
Energy Monitor
E535044

Measurement categories are defined by the CE and UL safety standard IEC 61010-1 and are used to indicate the ability of an instrument (like the Vue Energy Monitor) to withstand voltage spikes without posing a shock hazard to the operator. An instrument should only be used at or below its rated measurement category and voltage. For example, the Vue Energy Monitor is **CAT III** rated and can be used to monitor **CAT I**, **CAT II**, and **CAT III** circuits.

> **CAT III**: This category is for measurements performed on equipment permanently installed in the building. Examples are measurements on motor control centers, circuit-breaker panels, junction boxes, switches, lighting fixtures, and wiring, including cables, bus-bars, and equipment for industrial use and some other equipment, for example, stationary motors with permanent connections to the electrical distribution system.

There are situations where the Vue Energy Monitor needs to monitor the main service entrance, which is classified as **CAT IV**. In this situation, the Vue voltage inputs (green screw terminal block) must be connected in a breaker panel or panel board, downstream of a the main disconnect, breaker, or fuses. The line voltages at this location will be essentially identical to the voltages measured at the main disconnect, so the Vue's measurements will be accurate.

IC

IC: 28084-EMV3A

This device complies with Industry Canada licence-exempt RSS-247 standard. 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.

Technical details: Emporia Vue

Federal Communication Commission Interference 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 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.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

Caution: Any changes or modifications not expressly approved by Emporia void the user's authority to operate the equipment.

Designed by Emporia Corp in Littleton, Colorado, USA.
Manufactured by VVDN Technologies Pvt. Ltd.
Plot No: CP-07, Sector-8, IMT Manesar, Gurugram, Haryana - 122050.

620-00001-1