

evr-green™

Level 2 - Networked Charging Station for Fleet Applications

LEVITON®

# Installation Guide



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## Level 2 - Networked Charging Station for Fleet Applications

### **IMPORTANT SAFETY INSTRUCTIONS**

#### **SAVE THESE INSTRUCTIONS**

This document provides instructions to install the Evr-Green Fleet Level 2 Networked Charging Station, and should not be used for any other product. Before installing the Evr-Green Fleet Level 2 Networked Charging Station, you should review this manual carefully and consult with a licensed contractor, licensed electrician and trained installation expert to ensure compliance with local building practices, climate conditions, safety standards, and state and local codes.

The Evr-Green Fleet Level 2 Networked Charging Station should be installed only by a licensed contractor and a licensed electrician and in accordance with all local and national codes and standards. The Evr-Green Fleet Level 2 Networked Charging Station, should be inspected by a qualified installer prior to the initial use. Under no circumstances will compliance with the information in this manual relieve the user of his/her responsibility to comply with all applicable codes or safety standards. This document describes the most commonly-used installation and mounting scenarios. If situations arise in which it is not possible to perform an installation following the procedures provided in this document, contact Leviton Manufacturing. Leviton Manufacturing is not responsible for any damages that may occur resulting from custom installations that are not described in this document.

#### **No accuracy guarantee**

Reasonable effort was made to ensure that the specifications and other information in this manual are accurate and complete at the time of its publication. However, the specifications and other information in this manual are subject to change at any time without prior notice.

#### **Warranty information and disclaimer**

Your use of, or modification to, the Evr-Green Fleet Level 2 Networked Charging Station in a manner in which the Evr-Green Fleet Level 2 Networked Charging Station is not intended to be used or modified will void the limited warranty. Other than any such limited warranty, the Leviton products are provided "AS IS," and Leviton and its distributors expressly disclaim all implied warranties, including any warranty of design, merchantability, fitness for a particular purposes and non-infringement, to the maximum extent permitted by law.

#### **Limitation of liability**

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## Level 2 - Networked Charging Station for Fleet Applications

### SAVE THESE IMPORTANT SAFETY INSTRUCTIONS

This Installation Guide contains important instructions that must be followed during installation of the Evr-Green Fleet Level 2 Networked Charging Station.

#### Warnings

- The Evr-Green Fleet Level 2 Networked Charging Station 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 Evr-Green Fleet Level 2 Networked Charging Station's grounding terminal or lead.
- The Evr-Green Fleet Level 2 Networked Charging Station must be installed by a qualified electrician and in accordance with all local electrical codes and ordinances.
- Read all instructions before installing the Evr-Green Fleet Level 2 Networked Charging Station.
- Adult supervision is required when using the Evr-Green Fleet Level 2 Networked Charging Station near children.
- Do not operate a Evr-Green Fleet Level 2 Networked Charging Station with a visibly damaged cable. Contact Leviton Manufacturing immediately.
- Do not operate a Evr-Green Fleet Level 2 Networked Charging Station if the enclosure or the EV connector is broken, cracked, open, or shows any other signs of damage. Contact Leviton Manufacturing immediately.
- Do not put fingers into the EV connector
- Do not install the Evr-Green Fleet Level 2 Networked Charging Station near flammable, explosive, or combustible materials.
- Do not operate the Evr-Green Fleet Level 2 Networked Charging Station in temperatures outside its operating range of -22°F to 131°F (-30°C to +55°C).
- The Evr-Green Fleet Level 2 Networked Charging Station contains no user-serviceable parts. Do not attempt to repair or service the Evr-Green Fleet Level 2 Networked Charging Station yourself. If the Evr-Green Fleet Level 2 Networked Charging Station requires servicing, contact Leviton Manufacturing.
- Ensure that the Evr-Green Fleet Level 2 Networked Charging Station's charging cable is positioned so it will not be stepped on, tripped over, or subjected to damage or stress.
- **Do not use cleaning solvents** to clean any of the Evr-Green Fleet Level 2 Networked Charging Station's components. The outside of the Evr-Green Fleet Level 2 Networked Charging Station, the charging cable, and the connector end of the charging cable should be regularly wiped with a clean dry cloth to remove any accumulation of dust and dirt.

### FCC Declaration of Conformity

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.

#### Radio and Television Interference

The equipment described in this manual has been designed to protect against Radio Frequency Interference (RFI). However, there are some instances where high powered radio signals or nearby RF-producing equipment (such as digital phones, RF communications equipment, etc.) could affect operations.

If interference to your Evr-Green Fleet Level 2 Networked Charging Station is suspected, relocate or turn off nearby electrical appliances during charging, before contacting Leviton Manufacturing for assistance.

### Important Note:

Changes or modifications to this product not authorized by Leviton Manufacturing could void the FCC compliance.

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# 1 Introduction



## Before Installing Evr-Green Fleet Level 2 Networked Charging Station

This document provides step-by-step instructions on how to install any Evr-Green Fleet Level 2 Networked Charging Station

- Installation of the EVR-Green Fleet Level 2 Networked Charging Station should only be performed by a licensed, qualified electrician.
- Ensure that the appropriate wiring, circuit protection, and metering is in place at the installation location. For details, refer to the specifications (page 1-2) and wiring diagrams (page 1-3).
- Ensure that the type of modem in the Evr-Green Fleet Level 2 Networked Charging Station station that you are installing is compatible with the type of modem coverage available at the installation site (CDMA or GPRS for US and GPRS only for Canada)
- Disconnect power.
- Determine the appropriate mounting location for the Evr-Green Fleet Level 2 Networked Charging Station. The Evr-Green Fleet Level 2 Networked Charging Station is designed to be secured to a masonry wall or a hollow wall with wood studs 16" apart. If this is not the case, prepare an appropriate mounting surface.
- Familiarize yourself with the installation procedure by thoroughly reviewing Chapter 2 "Installation Instructions."

## Specifications

### Electrical input

Input Power: 7.2 kW

Input Voltage: 208/240 VAC

Input Current: 30 A

Input Power Connections: Line 1, Line 2, Earth

Recommended Service Panel Breaker: Dual 40 A double pole breaker (non-GFCI type) on dedicated circuit

Standby Power: 5 W typical

### Electrical output

Output Charging Power: 7.2 kW

Output Voltage: 208/240 VAC

Output Current: 30 A

Output Charging Connector: SAE J1772™ EV connector on 18' (5.48m) cable

### Functional interfaces

Card Reader: ISO 15693, 14443

Ground Fault Detection: 20 mA CCID with auto retry (15 minute delay, 3 tries)

Plug-Out Detection: Power terminated per SAE J1772™ specification

Power Measurement: 2% at 5 minute intervals

Local Area Network: 2.4 GHz 802.15.4 dynamic mesh network

Wide Area Network: Commercial CDMA or GPRS cellular data network

### Safety and operational ratings

Safety Compliance: Complies with UL 2594, UL2231-1, UL2231-2, UL 1998, NFPA 70, NEC Article 625

Surge Protection: 6 kV @ 3000 A. In geographic areas subject to frequent thunder storms, supplemental surge protection is recommended.

EMI Compliance: FCC Part 15 Class B

Operating Temperature: -22°F to 131°F (-30°C to +55°C)

Operating Humidity: Up to 95% non-condensing

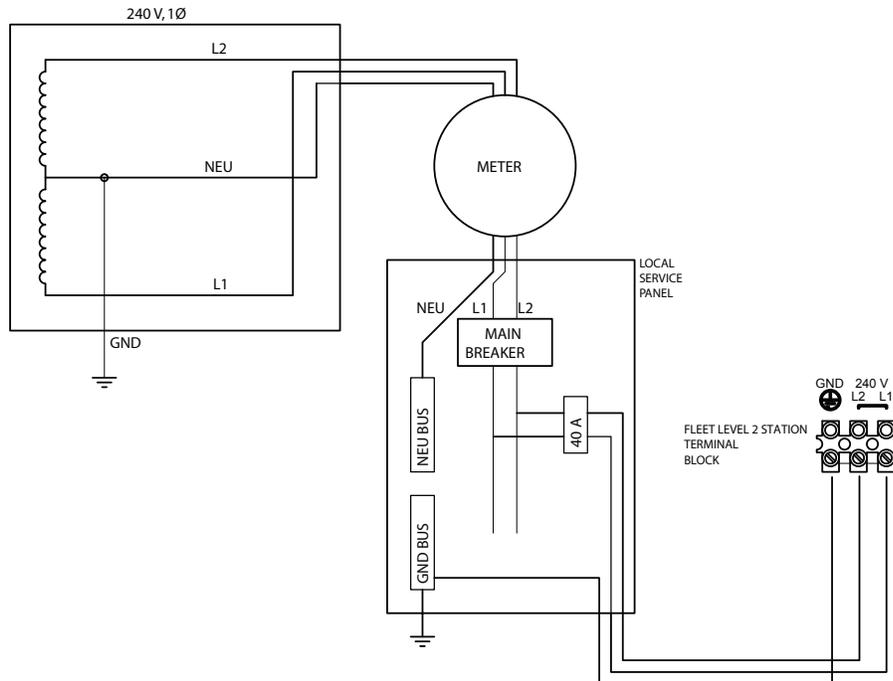
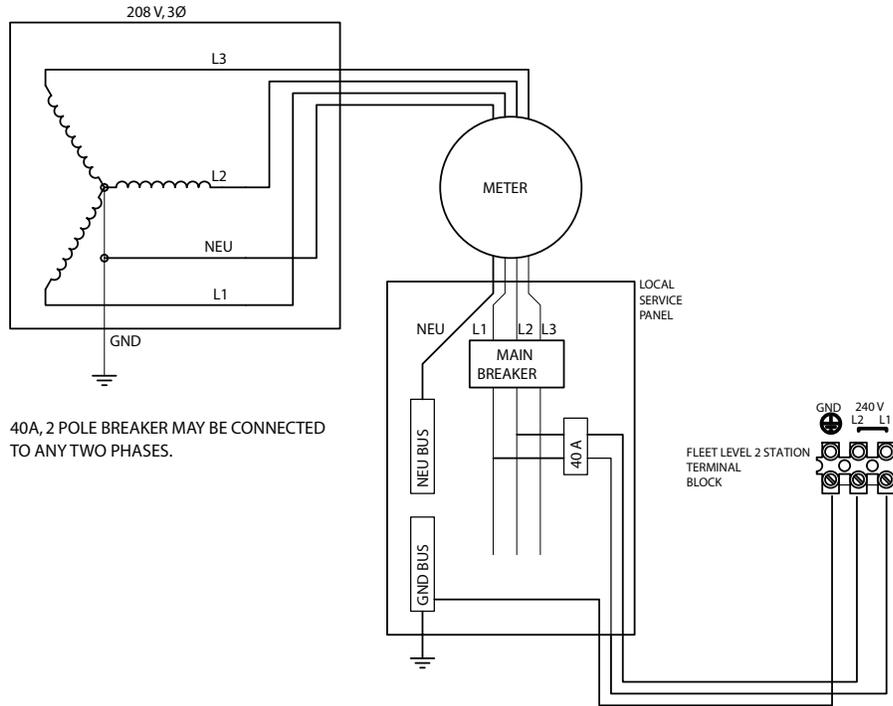
Enclosure: NEMA 3R per NEMA 250-1997

Terminal Block Temperature Rating: 212°F (100°C)

Maximum Charging Stations per 802.15.4 Radio Group: 24, including gateway. Each station must be within 150 feet, "line-of-sight", of at least one other station.



# Wiring information



## 2 Installation Instructions



After the appropriate wiring is in place at the installation site (see “Wiring information” on page 1-3), you are ready to install the Evr-Green Fleet Level 2 Networked Charging Station.

### You will need:

- Evr-Green Fleet Level 2 Networked Charging Station components (see page 2-2)
- 3/4" (19mm) conduit
- #2 Phillips screwdriver
- 3/8" socket wrench
- 1/4" (6mm) x 2" (50mm) hex flange lag bolts (4)
- Obtain Leviton Networked Charging Station Provisioning Instructions and Worksheet. You will need a Leviton Provisioning Portal Log-in and Password. Contact Leviton's Evr-Green EVSE Coordinator at 1-877-338-7473 or via email at [evrgreen@leviton.com](mailto:evrgreen@leviton.com) for these critical documents and access codes.

Installing the Evr-Green Fleet Level 2 Charging Station involves a few simple steps:

1. Check box for correct contents (see page 2-2)
2. Attach holster (see page 2-3)
3. Remove front panel (see page 2-4)
4. Mount to wall (see page 2-5)
5. Install conduit (see page 2-7)
6. Connect wires to wiring terminals (see page 2-8)
7. Replace front panel (see page 2-9)
8. Attach antennas (see page 2-10)
9. Verify that the station operates correctly (see page 2-11)
10. Provisioning the Head (see page 2-12)

These steps are detailed in the remainder of this chapter.

## Level 2 - Networked Charging Station for Fleet Applications

### Step 1 - Check box for correct contents

The Evr-Green Fleet Level 2 Networked Charging Station ships in a box containing:

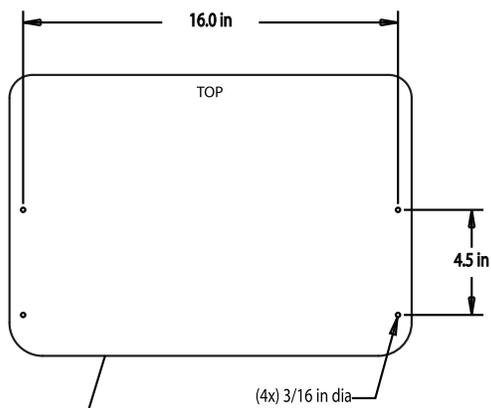
- Main assembly
- Holster
- Holster bolts (3)
- Antenna(s)\*
- Mounting template

\*CTVCN and CTVGN ship with two antennas. CTVDN and CTVUN ship with one antenna.

\*\* For Cat. Nos. and detailed product specifications, please refer to the Evr-Green Fleet Level 2 Charging Station Bulletin available from [www.leviton.com/Evrgreen](http://www.leviton.com/Evrgreen).



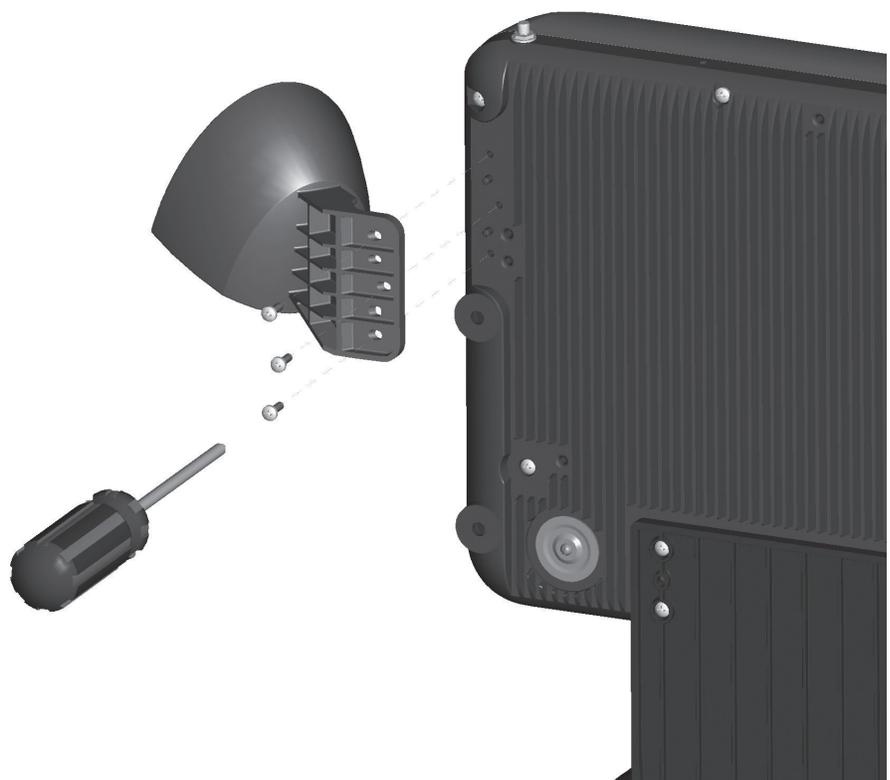
Evr-Green Fleet Level 2 Charging Station  
Wall Mounting Hole Pattern



CT500 enclosure envelope

### Step 2 - Attach holster

Using a #2 Phillips screwdriver, attach the holster to the main assembly using the three supplied bolts.



### Step 3 - Remove front panel

Using a #2 Phillips screwdriver, loosen the 2 screws located on each side of the front panel. Pull the front panel downward to remove.

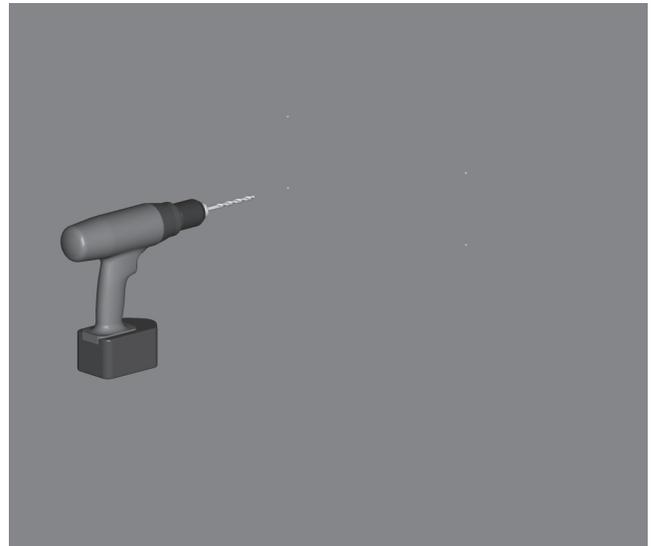


### Step 4 - Mount to wall

Drill four 3/16" holes in the wall, as illustrated. Use the supplied template to ensure correct alignment.

**!** **IMPORTANT:** The top of the Evr-Green Fleet Level 2 Networked Charging Station must be mounted no higher than a maximum height of 48" above the surface to comply with the Americans with Disabilities Act (ADA).

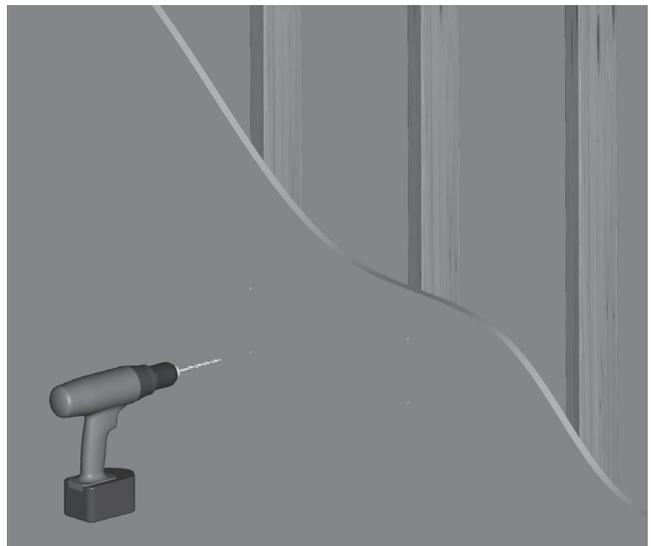
Masonry



Wall Studs



Sheetrock



### Step 4 - Cont'd

Align the Evr-Green Fleet Level 2 Networked Charging Station to the mounting surface, and fasten to the wall using a 3/8" socket wrench to fasten the four 2" x 1/4" lag bolts, to the wall.

We recommend a second person hold the unit in place while it is being fastened.

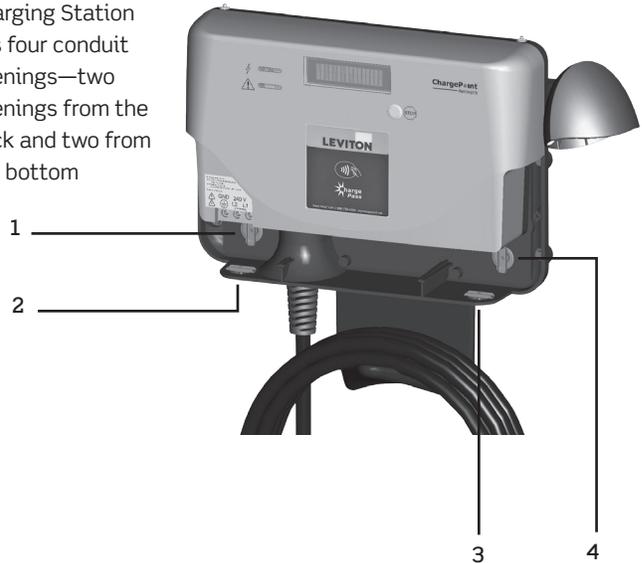


### Step 5 - Install conduit

Choose the appropriate conduit opening and, if necessary, remove its cover.

**NOTE:** The Evr-Green Fleet Level 2 Networked Charging Station has four conduit openings, three of which are covered. When you remove a conduit cover, place it over the uncovered conduit opening.

The Evr-Green Fleet Level 2 Networked Charging Station has four conduit openings—two openings from the back and two from the bottom



After running the wiring through 3/4" (19mm) conduit, insert the conduit into the selected opening.



## Step 6 - Connect wires to wiring terminals

Pull the 240V L1 and L2 wires, and the Ground wire, into body assembly and connect to wiring terminals.

Strip wires ¼" (6 mm), insert in terminal block, and tighten screws to 18 ½ inch-lbs (2.1 Nm).



**IMPORTANT:**

- Requires dedicated 40A breaker.
- Use copper conductors only.
- Do NOT provide GFCI protection at panel. The Evr-Green Fleet Level 2 Networked Charging Station has built-in GFCI protection.
- In areas with frequent thunder storms, add surge protection at the service panel for all circuits.

Before proceeding with the next step, test the unit by restoring power. When the circuit is live, you should see a sequence of power-up message on the Evr-Green Fleet Level 2 Networked Charging Station's display. If this is not the case, turn off power and check the wiring connections.



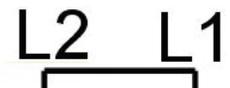
**Use copper conductors only.**  
**Input terminal recommended tightening torque:**  
 18.5 in.-lbs. (2.1 Nm)  
**Input terminal wire size range:**  
 6 to 10 AWG (13mm<sup>2</sup> to 4mm<sup>2</sup>) solid / stranded.

SEE INSTALLATION GUIDE



GND

240 V



### Step 7 - Replace front panel

Align the front panel with the main assembly and push upwards into place until the edges meet.

Insert the two screws and tighten.



Insert the connector into the holster.

You have now finished installing the Evr-Green Fleet Level 2 Networked Charging Station.



### Step 8 - Attach antennas

Attach the antennas to the top of the main assembly as shown. Turn the antenna clockwise to hand-tighten.

**NOTE:** The Evr-Green Fleet Level 2 Networked Charging Station ships with either one or two antennas, depending on the specific model that was ordered.

CTVCN and CTVGN ship with two antennas.  
CTVDN and CTVUN ship with one antenna.

Follow these rules when installing the antenna(s):

- Always install the antenna WITH the yellow band on the right side.
- Always install the antenna WITHOUT the yellow band on the left side.

You have finished installing the EVR-Green Fleet Level 2 Networked Charging Station.



## Step 9 - Verify that the station operates correctly

Follow these instructions to ensure that the charging station is fully operational:

- Turn on the main power to ensure that the head assembly powers up. When the circuit is live and the head assembly's wiring is connected, a sequence of power-up messages will be displayed. When ready to use, the display will read "AVAILABLE: REMOVE CONNECTOR FROM HOLSTER AND PLUG INTO VEHICLE TO START" (if not equipped with reader) or "AVAILABLE: HOLD CARD NEAR LOCK" (if equipped with reader).

If this is not the case, check that the wiring is properly connected. If a different message is displayed, refer to "Chapter 3: Troubleshooting" for a description of error messages.

- Ensure that neither light on the left side of the station's display is illuminated or blinking RED. This indicates that the station has detected an error. If this is the case, an error message will be displayed. Refer to "Chapter 3: Troubleshooting" for a description of error messages.
- If equipped with a ChargePass RFID card reader, tap a valid and authorized ChargePass™ card on the station's front label. After authorizing the card, the EVR-Green Fleet Level 2 Networked Charging Station should display a message indicating that it is ready to charge. If this is not the case, contact ChargePoint Customer Support.
- If possible, plug the connector into an electric vehicle and ensure the top light on the left side of the station's display is blinking green to indicate that the vehicle is charging. If this is not the case, contact ChargePoint Customer Support at 1-888-758-4389.



### Step 10: Provisioning & Testing the Head

#### You will need:

- Leviton Provisioning Instructions and Worksheet
- Log-In and Password for Leviton's Provisioning Portal
- Demo/Test ChargePass Card
- Provisioning Label for each Head
- Provisioning appointment scheduled with Leviton's Evr-Green EVSE installation coordinator.

Contact Leviton's Evr-Green Installation Coordinator at 1-877-338-7473 to complete the provisioning process.



# 3 Troubleshooting



## The station's display

To troubleshoot the EVR-Green Fleet Level 2 Networked Charging Station, you'll need to read the messages displayed on the 2-line display. The display varies slightly depending on whether or not the EVR-Green Fleet Level 2 Networked Charging Station is equipped with a card reader. Under normal conditions, the EVR-Green Fleet Level 2 Networked Charging Station displays the following message to indicate that it is ready for charging:



AVAILABLE  
REMOVE CONNECTOR FROM HOLSTER...

The bottom line scrolls information across the display to indicate what action to take.

**NOTE:** If the EVR-Green Fleet Level 2 Networked Charging Station is equipped with a card reader, the second line of the display will read "HOLD CARD NEAR LOCK."

## Understanding error messages

The following pages describe the error messages that can occur on a EVR-Green Fleet Level 2 Networked Charging Station. If one of the lights to the left of the EVR-Green Fleet Level 2 Networked Charging Station's display illuminates or blinks RED, read the display for information about the type of error that has occurred.

### Power up errors

The follow messages can occur when the station powers up.

FAULT  
GFCI TRIP / SELF-TEST FAILED

**Cause/Other Symptoms:** Upon power-up, the station detected a ground fault.

**Solution/Action:** Press and hold the STOP button for 10 seconds to reboot the EVR-Green Fleet Level 2 Networked Charging Station. If the message continues to be displayed, call ChargePoint Customer Support at 1-888-758-4389.

## Ground fault errors

The following ground fault errors can occur during charging, or when attempting to begin a charging session:

<p>SUSPENDED GROUND FAULT / AUTO RE-TRY IN 00:mm:ss</p>
<p><b>Cause/Other Symptoms:</b> The station detected a ground fault during a charging session.</p>
<p><b>Solution/Action:</b> The charging station will wait 15 minutes before re-attempting to restore power. If after three attempts, the ground fault continues to be detected, the station displays the message below (HALTED). Instead of waiting, you can try pressing and holding the STOP button for 10 seconds to reboot the EVR-Green Fleet Level 2 Networked Charging Station. If the message continues to be displayed, call ChargePoint Customer Support at 1-888-758-4389.</p>
<p>HALTED GFCI HARD FAULT / RETURN PLUG TO HOLSTER</p>
<p><b>Cause/Other Symptoms:</b> During charging, the station detected a ground fault (see message above) and made three unsuccessful attempts to continue charging. Or, the station detected a ground fault when attempting to begin a charging session.</p>
<p><b>Solution/Action:</b> Press and hold the STOP button for 10 seconds to reboot the EVR-Green Fleet Level 2 Networked Charging Station. If the message continues to be displayed, call ChargePoint Customer Support at 1-888-758-4389.</p>

## User errors

The following errors occur as a result of an inappropriate action that was performed by a person using the charging station.

<p>DISABLED BREAKAWAY</p>
<p><b>Cause/Other Symptoms:</b> The vehicle was driven away during a charging session. The charging station is out of service until repairs are completed by a service technician.</p>
<p><b>Solution/Action:</b> Restart the charging session by momentarily returning the charging connector to its holster. If the message continues to be displayed, press and hold the STOP button for 10 seconds to reboot the EVR-Green Fleet Level 2 Networked Charging Station. If the message is still displayed, call ChargePoint Customer Support at 1-888-758-4389.</p>
<p>SUSPENDED OVERCURRENT / AUTO RETRY IN 00:mm:ss / RETURN PLUG TO HOLSTER</p>
<p><b>Cause/Other Symptoms:</b> During charging, this message is displayed if the vehicle attempts to draw more than the maximum power of 30A.</p>
<p><b>Solution/Action:</b> Restart the charging session by momentarily returning the charging connector to its holster. If the message continues to be displayed, press and hold the STOP button for 10 seconds to reboot the EVR-Green Fleet Level 2 Networked Charging Station. If the message is still displayed, call ChargePoint Customer Support at 1-888-758-4389.</p>

### Other errors

The following errors occur as a result of a potential equipment failure or utility failure.

**FAULT**  
**RELAY STUCK OPEN / FOR ASSISTANCE CALL ...**

**Cause/Other Symptoms:** When attempting to charge a vehicle, this message will be displayed if the relay is stuck open. When the relay is stuck open, the charging station can not provide power and therefore you can not charge a vehicle.

**Solution/Action:** Restart the charging session by momentarily returning the charging connector to its holster. If the message continues to be displayed, press and hold the STOP button for 10 seconds to reboot the EVR-Green Fleet Level 2 Networked Charging Station. If the message is still displayed, call ChargePoint Customer Support at 1-888-758-4389.

**FAULT**  
**RELAY STUCK CLOSED / FOR ASSISTANCE CALL ...**

**Cause/Other Symptoms:** When attempting to end a charging session, this message will be displayed if the relay is stuck closed. A new charging session can not be started until this error is resolved.

**Solution/Action:** Restart the charging session by momentarily returning the charging connector to its holster. If the message continues to be displayed, press and hold the STOP button for 10 seconds to reboot the EVR-Green Fleet Level 2 Networked Charging Station. If the message is still displayed, call ChargePoint Customer Support at 1-888-758-4389.



**Drive Smart. Drive Green.**



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**Visit us at: [www.leviton.com/Evrgreen](http://www.leviton.com/Evrgreen)**

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