



Series 4 – Home EV Charging Station Installation Manual

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Installation Manuals

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1. Series 4 – Home EV Charging Station



2. Warnings

WARNINGS

Please read the full document before using this SemaConnect charger. While working with electrical devices please follow basic electrical safety procedures.



Do not try to install this charger while the breaker is still powered on.



Do not try to install this charger near flammable or explosive materials.



Do not try to operate this charger if there are any signs of physical damage, i.e., cracks, corrosion, or exposed wiring.



Do not try to modify this charger in any way not listed in this guide.



Do not try to resolve any issues with the charger that have not been outlined in the troubleshooting section of this guide.



Do not allow an unlicensed individual to wire this charger during the installation process.



Do not insert any finger or any other foreign object into the connector of this charger.



If the user of this device has any medically implanted device, please contact the medical device manufacturer to discuss how charging may affect the medical device before attempting to use this charger.



Follow all instructions in this guide during the installation of this device to avoid any additional complications.

3. Safety & Compliance

This document provides instructions to install the SemaConnect charger and should not be used for any other product. This product must be installed in accordance with the National Electrical Code (NEC), the Canadian Electrical Code (CEC), or any applicable local code.

Review this manual and consult a licensed contractor and/or electrician before installation to ensure compliance with local building practices, climate conditions, safety standards, and state and local codes.

There are 2 options for installation:

1. Option 1: Use the NEMA plug included with the charger
2. Option 2: Hardwired charger should be installed by a licensed contractor/electrician and inspected by a qualified installer prior to initial use. Under no circumstances will compliance with the information in this manual relieve the user of responsibility to comply with all applicable codes and safety standards. This document describes the most common installation and mounting methods. Contact SemaConnect where it is not possible to perform an installation using the procedures provided in this document.

SemaConnect is not responsible for damages that may occur or result from installations that are not described in this document. Please read and understand instructions before attempting to unpack, install, operate, or maintain this equipment. Study the charger and its mechanism carefully before attempting to operate it on an energized circuit. All possible contingencies that may arise during installation, operation, or maintenance, and all details and variations of this equipment do not purport to be covered by these instructions. If further information is desired by the purchaser regarding a particular installation, operation, or maintenance of particular equipment, contact SemaConnect.

General

The SemaConnect charger is grounded through a dedicated conductor to the ground connection at the power distribution panel.

Statements

Reasonable effort has been made to ensure that the specifications and other information in this manual are accurate and complete at the time of publication.

However, specifications and other information in this manual are subject to change at any time without prior notice. Use of the SemaConnect charger in a manner not intended or any modification not approved by the manufacturer will void the limited warranty. Other than the limited warranty, SemaConnect products are provided “AS IS,” and SemaConnect and its distributors expressly disclaim all implied warranties, including any warranty of design, merchantability, and fitness for a particular purposes and non-infringement, to the maximum extent permitted by law.

IN NO EVENT SHALL SEMACONNECT, INC. OR ITS AUTHORIZED DISTRIBUTORS BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST PROFITS, LOST DATA, LOSS OF USE, COST OF COVER, OR LOSS OR DAMAGE TO THE SEMACONNECT™ CHARGER ARISING OUT OF OR RELATING TO THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF SEMACONNECT, INC. OR ITS AUTHORIZED DISTRIBUTORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

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 when the equipment is operated in a residential environment. The equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. 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 to 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.

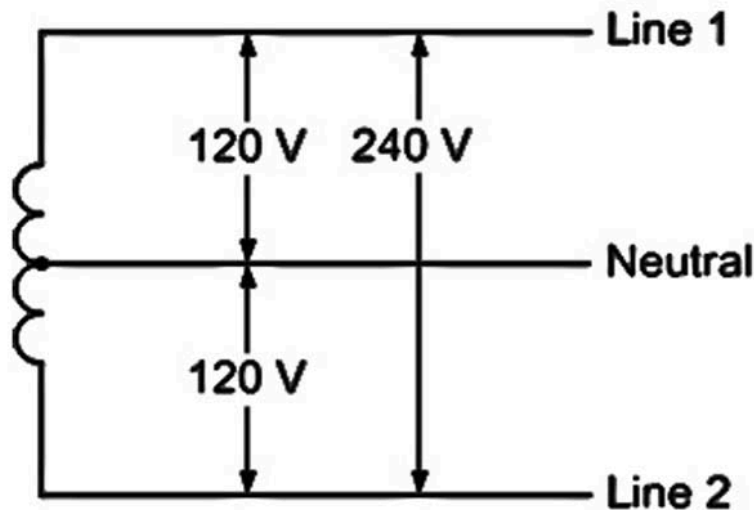
For questions, please contact SemaConnect:

- Email: support@semaconnect.com
- Phone: 1-877-794-2214 Ext: 105

4. Electrical Requirements

Wiring Color Code

Connect the charger to a single phase 120/240 volt, bonded neutral power source. All wire must be sized in accordance with the National Electric Code.



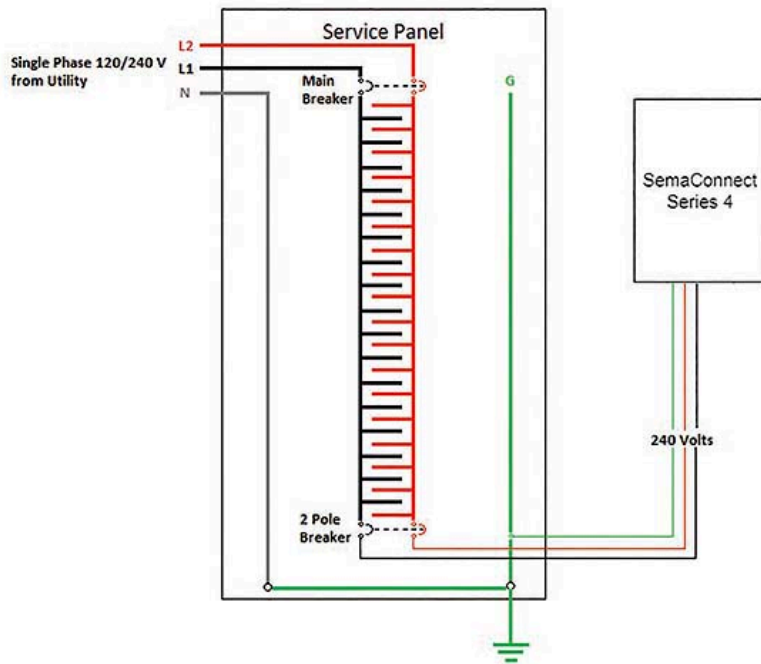
Wiring Diagram

Electric vehicle charging stations must be equipped with an internal Ground Monitor/Interrupter circuit (GMI circuit). For the GMI circuit to function, a reference to ground must be made through a main bonding jumper or system bonding jumper (located where the neutral connection is established and bonded to ground). Without the neutral to ground connection, GMI protection is not possible, and the charger will be inoperable.

If you have an electrical system without a neutral you must upgrade your electrical service from the utility or provide a separately derived system to effectively power and protect the electric vehicle charger.

Wiring to System

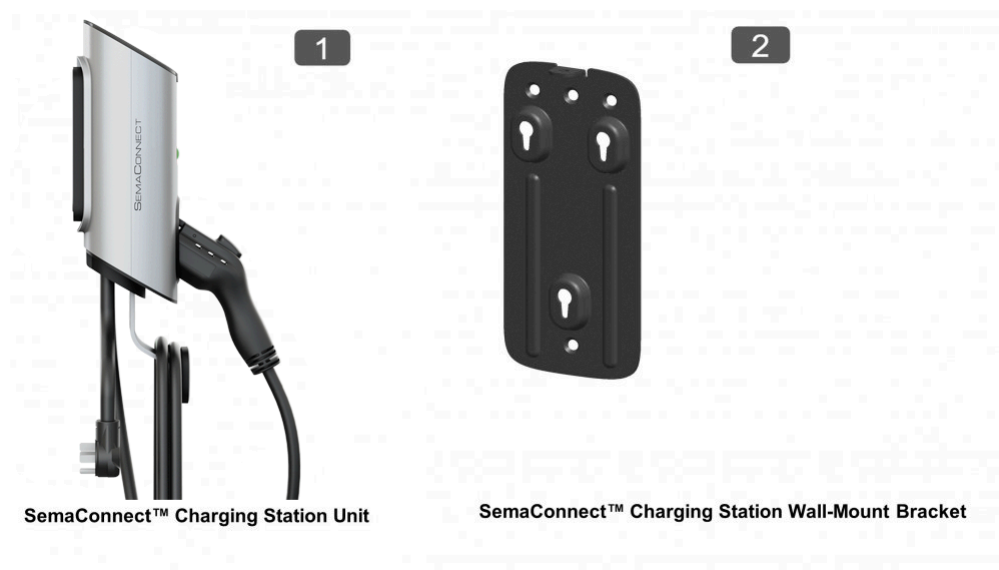
S4 240v Supply



Current Limit	2-Pole Breaker Size	NEMA 14-50 Plug	Hardwired
16 AMPS (default setting)	20 AMP	YES	YES
24 AMPS	30 AMP	YES	YES
32 AMPS	40 AMP	YES	YES
40 AMPS	50 AMP	YES	YES
48 AMPS	60 AMP	NO	YES
50 AMPS	70 AMP	NO	YES

5. Parts List

Materials Included



3. - Allen Wrench and Mounting Hardware

Tools Needed

- Stud finder
- Level
- Marker
- Drill
- Measuring tape

Materials Needed

- 3/4" Liquid Tight Flexible Metal Conduit – Hardwired Version Only
- 3/4" Liquid Tight Flexible Metal Conduit Connector – Hardwired Version Only

6. Installation

Site Selection

The charger should be installed in a location suitable for the 25-foot output cable to extend to the electric vehicle's charging port and which allows sufficient space for output cable storage in the cable hanger. The top of the wall mount bracket is recommended to be installed at a height of 50 inches above the finished floor (check local codes).

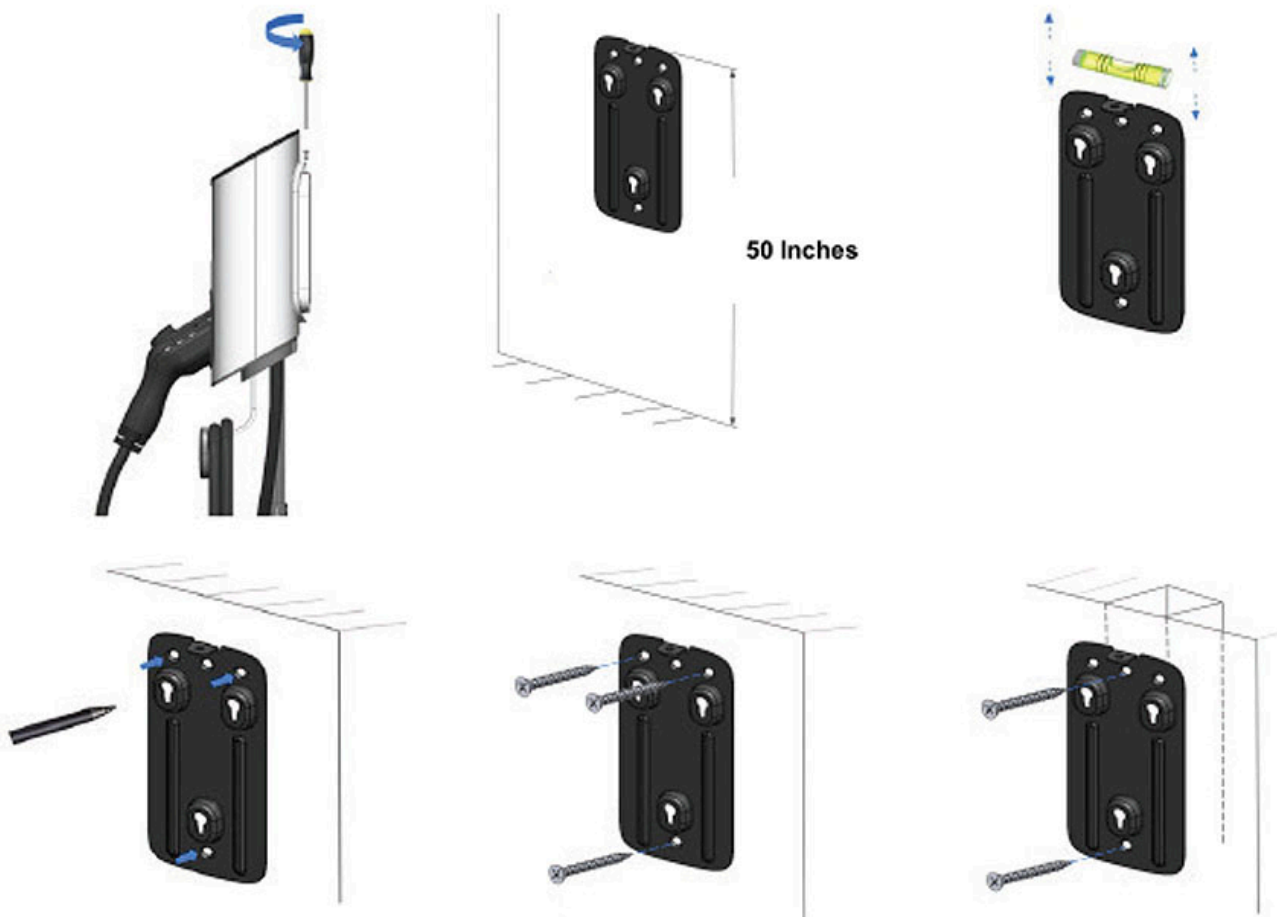
If installing the NEMA 14-50 plug version, ensure the charger location can accommodate a NEMA 14-50 receptacle. The NEMA 14-50 receptacle should be located no less than 24-26 inches from the ground. Consideration should be made to the NEMA 14-50 receptacle orientation (ground terminal in the upward '12 o'clock position' or downward '6 o'clock position'). The NEMA 14-50 receptacle orientation will determine the NEMA 14-50 input cord's installation aesthetics.

Ensure the height of the wall mount bracket and the NEMA 14-50 receptacle are coordinated so the NEMA 1450 plug seats into the NEMA 14-50 receptacle without cable tension or stress. If installing the hardwired version, ensure that the selected charger location is within reach of the site rated junction box using the supplied 3 feet of manufactured cable.



Wall Preparation

1. Locate and remove the top mounting screw from the charger using the supplied Allen wrench.
2. Remove the wall mount bracket from the charger by applying downward pressure on the wall mount bracket until the charger mounting screws unseat from the wall mount bracket keyhole slots.
3. Store the charger and mounting screw in a safe place to avoid damage or loss.
4. At the selected location, mark the center of the stud and place the wall-mount bracket on the wall.
5. Using a level, ensure the wall-mount bracket is in an upright level position. Align center mounting holes with the center of the stud and mark the wall-mounting screws holes.
6. Use mounting holes to secure the bracket to the wall using appropriate site-specific fasteners.



Wall Mounting (NEMA 14-50 Version)

1. Locate the 3 mounting screws on the rear of the charger. Position them into the

corresponding keyhole slots on the wall mount bracket. Slide downward until fully seated.

2. Reinstall the top mounting screw using the supplied Allen wrench to secure the charger. The charger should feel secure after it is fully seated. If the charger can be easily moved then remove the charger, slightly tighten the three mounting screws on the rear of the charger and replace the charger on the bracket.
3. Insert the NEMA 14-50 plug into the NEMA 14-50 receptacle. Ensure that the plug is fully seated into the receptacle.



Wall Mounting (Hardwired Version)

The hardwired version of the SemaConnect Series 4 EV Home Charger is manufactured with 3 feet of cable that has been listed by a Nationally Recognized Testing Laboratory (NRTL) to the appropriate UL standards for the specified ampere

ratings.

Ensure that the selected charger location is within reach of the site rated junction box using the supplied 3 feet of manufactured cable. # To sufficiently attach and tighten the 3/4" Liquid Tight Flexible Metal Conduit (LFMC) to the charger, the bottom plate must be removed. Place the charger face down on a safe surface to avoid damage. Grasp the outside of the charger with both hands, position thumbs on the inner edge of the protective lower cover and apply downward pressure on the cover to unseat it from the charging station. Store protective cover in a safe place to avoid damage or loss.

1. Measure and cut 3/4" LFMC to sufficient length between the charger and site rated junction box. Attach and tighten the 3/4" LFMC to the charger using the manufacturer-supplied 3/4" LFMC connector. Re-install the protective cover.
2. Locate the 3 mounting screws on the rear of the charger. Position them into the corresponding keyhole slots on the wall mount bracket. Slide downward until fully seated.
3. Reinstall the top mounting screw using the supplied Allen wrench to secure the charger. The charger should feel secure after it is fully seated. If the charger can be easily moved then remove the charger, slightly tighten the 3 mounting screws on the rear of the charger and replace the charger on the bracket.
4. Attach and tighten the 3/4" LFMC to the site rated junction box. Connect the supplied black and red conductors to the 240-volt supply (ungrounded) conductors, and the supplied green conductor to the grounding conductor.

Install SemaConnect Series 4 EV Home Charger in accordance with all State, Local, and National Electric Codes.



7. Configuration

Powering Up the Charger

After you have installed the SemaConnect Series 4 EV Home Charger, turn on the power at the breaker. Allow up to 3 minutes for the charger to fully power on. The charger is ready to use when the LED is a steady blue color and icons are visible on the screen. If the charger does not power on, contact your electrician to ensure correct electrical installation. The charger may now be connected to a vehicle to start charging. Please note the following default settings, which may be changed by configuring the charger.

- Power level is set to 16 amps
- Unlocked
- No schedule

Appropriate Amperage Setting

The charger may be configured to charge a range of amperage levels. It is essential not to select a level that is greater than your circuit breaker is rated for. Other factors, such as the electrical capacity of your panel and wiring size, may need to be considered. Please consult with a qualified electrician if in doubt.

The tables below provide guidance on the amperage level to configure on the charger based on the circuit rating.

CIRCUIT RATING	NEMA INSTALLATION	HARDWIRED INSTALLATION
70 A	N/A	50 A
60 A	N/A	48 A
50 A	40 A	40 A
40 A	32 A	32 A
30 A	24 A	24 A
20 A	16 A	16 A

Configuring the Charger

The charger may be configured to provide the optimal power level and, optionally, connect the charger to your home WiFi network. Connecting the charger to WiFi will enable additional features and is recommended if WiFi is available at the installed location.

Connecting to the SemaConnect Mobile App

- Download the SemaConnect mobile application to your smartphone.
- Open the app, click on My Account, and log in (create an account if you do not have one).

Note: The SemaConnect mobile app provides access to all public SemaConnect charging stations in addition to the Series 4 EV Home Charger.

Apple App Store



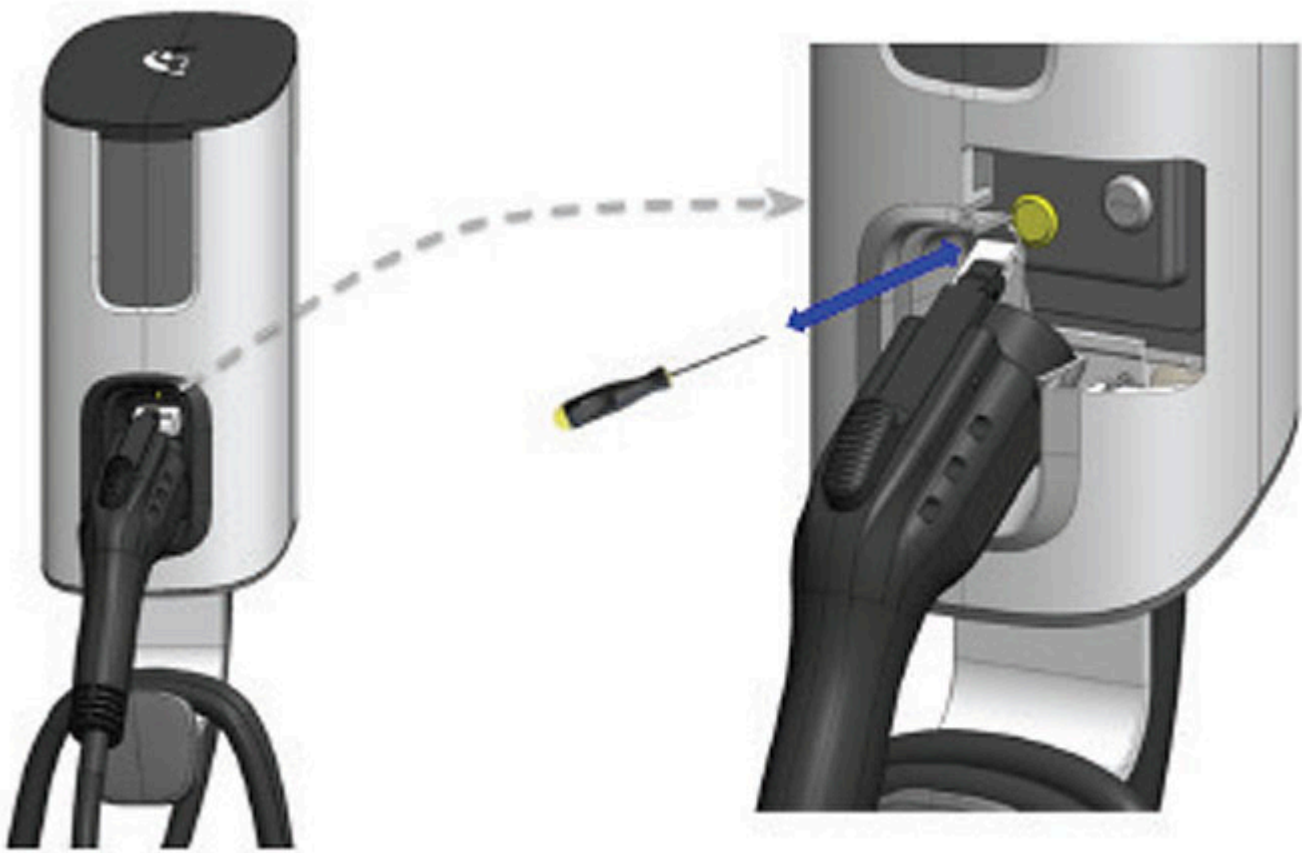
Google Play Store



Basic Configuration

To configure the charger, perform the following steps in the SemaConnect mobile app:

1. Access the Home Charger menu and follow the instructions to add a charger.
 - Initiate the pairing process on the charger by inserting the supplied Allen wrench into the small opening where the vehicle connector attaches to the charger and briefly pressing the recessed button for less than 2 seconds. See diagram below.
 - If connecting to an available WiFi network, select the network and provide the password.
2. The charger will now be listed in the Home Charger section of the mobile application.



Advanced Configuration

Advanced features may be configured if the charger is connected to WiFi.

To perform this configuration, click on the settings icon for your charger in the Home Charger section of the mobile application.

Select one of the following modes:

- Unlocked (default): The charger will start charging immediately after an electric vehicle is connected.
- Locked: The charger requires authorization (using the mobile app) to begin charging once an electric vehicle is connected.
- Scheduled: The charger will only charge the connected electric vehicle during the specified schedule.

8. Operation

Charging Your Vehicle

To start a charging session, connect the vehicle to the charger.

- Unlocked mode – charging will begin immediately.
- Locked mode – charging will begin once authorization is provided using the mobile app. Press the Start Charging button in the Home Charger section.
- Scheduled mode – charging will begin automatically during the specified schedule.

Stopping a Charge

To stop a charging session, disconnect the vehicle from the charger.














LED Lights

The LED light on the station may display the following colors:

COLOR	MEANING
Steady Blue	No vehicle is connected. Plug in to start a charge.
Flashing cyan	Vehicle connected but not charging. The charger is waiting for authorization (from the mobile app) or the schedule.
Flashing green	Vehicle connected and charging in progress.
Steady green	Vehicle connected and charging is complete.
Steady red	Charger error. Please refer to the troubleshooting guide.

On-screen Icons

The charger may show the following icons on the screen:

ICON	MEANING
	No vehicle is connected. Plug in to start a charge.
	The vehicle is charging.
	A vehicle has been plugged-in to the charger.
	The charger has paused the charging session. This could indicate the charger is waiting for a schedule to begin or the session has been stopped by the mobile application.
	The vehicle has paused the charging session. This could indicate that a schedule has been configured in the vehicle.
	The vehicle battery is full.
	There is a charging error reported by the vehicle.
	There is an error reported by the station.
	Access mode: Unlocked and Locked.
	Schedule mode: Schedule is off or on.
	Connected mode: Station is disconnected or connected to WiFi.
	Reserved for future use.
	There is an error connecting to WiFi.

9. Troubleshooting and Maintenance

Troubleshooting

ISSUE	POSSIBLE CAUSE	RESOLUTION
No light or screen icons are displayed.	The charger has no power.	Ensure the breaker is powered on. Ensure the charger is plugged-in or correctly hardwired.
The charger is powered-on but the connected vehicle is not charging.	The vehicle battery is already full.	Reconnect the vehicle when the battery requires charging.
	A schedule is configured on the vehicle.	Wait for the scheduled start time. To start charging immediately, clear the schedule from the vehicle.
	A schedule is configured on the charger.	Wait for the scheduled start time. To start charging immediately, switch the mode to Locked or Unlocked using the mobile app.
	Locked mode is enabled.	Use the mobile app to start charging.
The charger is locked and starting the charging session using the mobile app is not working	The charger has lost connection to home WiFi.	Check that your home WiFi is enabled and has sufficient signal strength to maintain a good connection with the charger.
OR Changes made in the mobile application are not reflected in the charger.	The home WiFi network name or password has changed.	Use the mobile app to repeat the configuration process using the new WiFi network and password.

Other Troubleshooting Steps

If the above table does not resolve the issue, it is possible that the following steps may be attempted:

- **Power cycle:** Turn power off at the breaker, wait 20 seconds, and then restore power. Allow up to 3 minutes for the charger to complete the power-on process.
- **Reconnect the charger to your account:** Delete the charger from your mobile application in the settings section of the charger. Then repeat the configuration process described above.
- **Factory reset:** Delete the charger from your mobile application in the settings section of the charger. Perform a factory reset by using the supplied Allen wrench to press the recessed button and hold it down for 15 seconds before releasing. Allow 3 minutes for the process to complete. Then repeat the configuration process described above.

Maintenance

- Clean the charger by wiping it with a dry or slightly damp cloth.
- Do not exert too much pressure on the charger during cleaning.
- Do not open the device to clean it.
- Do not use a vacuum cleaner.

Updating Charger Firmware

Updated firmware may be made available to add additional features or correct reported issues. The mobile app can be used to check for new firmware and apply it to the charger.

Removing the Charger from your Account

If you no longer wish to access the charger from the mobile application, it can be deleted in the settings section of the mobile application.

Factory Reset

To remove your account information from the charger, perform a factory reset:

- Delete the charger from your mobile application in the settings section of the charger.
- Use the supplied Allen wrench to press the recessed button in the small opening where the vehicle connector attaches to the charger and hold it down for 15 seconds before releasing. Allow 3 minutes for the process to complete.