



breezeEV Level 2 Charging Station Install Guide – R48

BreezEV offers best-in-class hardware and technical support. If you have any questions during installation, please do not hesitate to contact us.



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Safety and Compliance

SAVE THESE SAFETY INSTRUCTIONS

This manual contains important instructions that must be followed during installation of a breezeEV Charging Station.

WARNINGS

This manual contains important instructions for breezeEV EVC-L2 series that shall be followed during installation, operation, and maintenance of the unit.

1. Read all the instructions before using this product.
2. This device should be supervised when used around children.
3. Do not put fingers into the electric vehicle connector.
4. Do not use this product if the flexible power cord or EV cable is frayed, has broken insulation, or any other signs of damage.
5. Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.
6. To reduce the risk of fire, connect only to a circuit provided branch circuit over-current protection in accordance with the CSA C22.1–15 Canadian Electrical Code, Part 1 (Canada) or NOM-001-SEDE Electrical installations (utility) (Mexico) or ANSI / NFPA 70 National Electrical Code (USA).
7. To avoid a risk of fire or electric shock, do not use this device with an extension cord.
8. THE SUITABILITY OF THE USE OF FLEXIBLE CORD IN ACCORDANCE WITH CE CODE, PART I, RULE 4-012, IS TO BE DETERMINED BY THE LOCAL INSPECTION AUTHORITY HAVING JURISDICTION.
9. Risk of electric shock. Do not remove cover or attempt to open the enclosure. No user serviceable parts inside. Refer servicing to qualified service personnel.

AVERTISSEMENT – Ce manuel contient des instructions importantes pour les modèles: série EVC-L2 qui doit être suivie pendant l'installation, le fonctionnement et la maintenance de l'unité.

1. Lisez toutes les instructions avant d'utiliser ce produit.
2. Cet appareil doit être surveillé lorsqu'il est utilisé à proximité d'enfants.
3. Ne pas mettre les doigts dans le connecteur du véhicule électrique.
4. N'utilisez pas ce produit si le cordon d'alimentation flexible ou le câble EV est effiloché, a une isolation cassée, ou tout autre signe de dommage.
5. N'utilisez pas ce produit si le boîtier ou le connecteur EV est cassé, fissuré, ouvert ou montre toute autre indication de dommage.
6. Pour réduire les risques d'incendie, ne connecter qu'à un circuit protection contre les surintensités des circuits de dérivation conformément à la norme canadienne CSA C22.1-15 Code électrique, partie 1 (Canada) ou NOM-001-SEDE Installations électriques (service public) (Mexique) ou ANSI / NFPA 70 National Electrical Code (États-Unis).

FCC Compliance Statement

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,
2. This device must accept any interference received, including interference that may cause undesired operation.

Caution: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WiFi module: FCC ID:2AC7Z-ESPWROOM32D

LTE module: FCC ID: XMR202008EC25AFXD

To satisfy FCC RF exposure requirements, a separation distance of 20cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

DESIGN STANDARDS FOLLOWED

The following UL testing & certification protocols have been followed:

- UL 2594: Electric Vehicle Supply Equipment
- UL 2231-1: Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: General Requirements
- UL 2231-2: Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: Requirements for Protection Devices for Use in Charging Systems
- UL 2251: Plugs, Receptacles and Couplers for Electric Vehicles
- UL 62: Flexible Cords and Cables
- UL 991: Tests for Safety-Related Controls Employing Solid-State Devices
- UL 1998: Software in Programmable Components
- NFPA 70 Article 625: National Electrical Code, Electric Vehicle Charging System
- UL 840 (Clearance and Creepage)

WARRANTY STATEMENTS

Please see breezeEV Standard Limited Warranty & Ultimate-Guard Program Details, both located on our website.



Summary of Shipping Boxes

CHARGER

Part Name	Label/Part # on Box	Box Contents	Example Drawing/Image of Box Contents
Charger Head	EVC-L2-48A-L1-1-NC-N-1	<ol style="list-style-type: none"> Charger head (non-screen unit) (QTY 1) Charger User Manual (QTY 1) Wall-Mount Bracket (QTY 1) M5 Wall-Mount Bracket Screws (QTY 2) M6 Hexagonal Wall-Mount Bracket Expansion Screws (QTY 4) RFID Cards (QTY 5) 	
Hardware Kit	EVC-L2-ACC-HARDWARE KIT	<ol style="list-style-type: none"> Liquid tight for incoming power wires (QTY 2) Incoming power wires (QTY 3) Liquid tight fittings for incoming power cable & charging cable (QTY 2) J1772 Holster (QTY 1) Mounting screws for J1772 Holster (QTY 4) 	

CHARGING CABLE SET





Part Name	Label/Part # on Box	Box Contents	Example Drawing/Image of Box Contents
Charging Cable Set	EVC-L2-CBL-40A-L1-1-XX Or EVC-L2-CBL-48A-L1-1-XX	<ol style="list-style-type: none"> Cable with J1772 plug on one end and crimped terminals on the other 	

WET CONCRETE PEDESTAL ANCHOR KIT (only needed for wet concrete pours)







Part Name	Label/Part # on Box	Box Contents	Example Drawing/Image of Box Contents
Wet Concrete Pedestal Anchor Kit	EVC-L2-ACC-ANCHOR KIT WET	<ol style="list-style-type: none"> Wet concrete J-bolts (QTY 4) Paper template (QTY 1) 	



NON-CABLE MANAGEMENT PEDESTAL (EVC-L2-ACC-BB)



Part Name	Label/Part # on Box	Box Contents	Example Drawing/Image of Box Contents
Pedestal Lower Section	EVC-L2-ACC-LPK	<ol style="list-style-type: none"> 1. Lower pedestal main section (QTY 1) 2. Lower pedestal cover (QTY 1) 3. UL Listed Junction Box w/ integral terminal block (QTY 1) 4. Bag of hardware (QTY 1) 5. Pedestal Base Plate (QTY 1) 6. Existing concrete mounting bolts/washers (QTY 4) 	  
Non-cable Management Top Cover	EVC-L2-ACC-LPC	<ol style="list-style-type: none"> 1. Non-cable management top cover (QTY 1) 2. Bag of hardware (QTY 1) 	

CABLE MANAGEMENT PEDESTAL (EVC-L2-ACC-CM1)

Part Name	Label/Part # on Box	Box Contents	Example Drawing/Image of Box Contents
Pedestal Lower Section	EVC-L2-ACC-LPK	<ol style="list-style-type: none"> 1. Lower pedestal main section (QTY 1) 2. Lower pedestal cover (QTY 1) 3. UL Listed Junction Box w/ integral terminal block (QTY 1) 4. Bag of hardware (QTY 1) 5. Pedestal Base Plate (QTY 1) 6. Existing concrete mounting bolts/washers (QTY 4) 	  
Cable Management Top Cover	EVC-L2-ACC-CM	<ol style="list-style-type: none"> 1. Cable management top cover (QTY 1) 2. Bag of hardware (QTY 1) 3. Cable tensioners (QTY 2) 4. Cable tensioner – cable clamp glands (to change from 40A gland to 48A gland) (QTY 2) 	  



SIDE BY SIDE PEDESTAL MOUNTING BRACKET

Part Name	Label/Part # on Box	Box Contents	Example Drawing/Image of Box Contents
Bracket for either pedestal style to allow for side by side install of chargers	EVC-L2-ACC-SSB	1. Side by side bracket (QTY 1) 2. Bag of hardware (QTY 1)	 

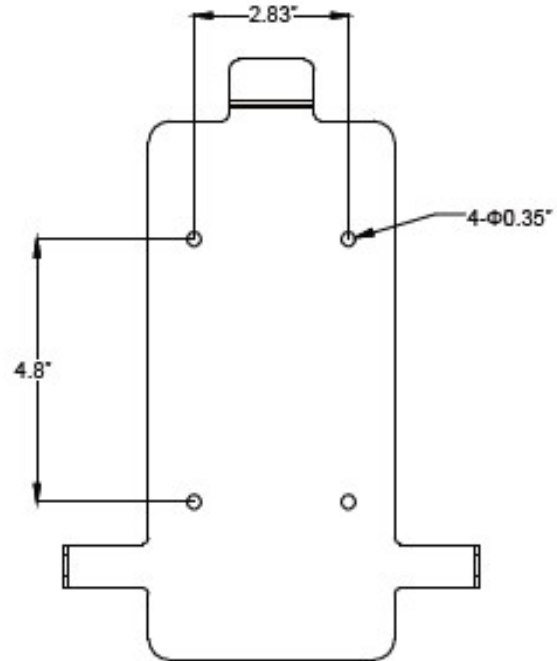
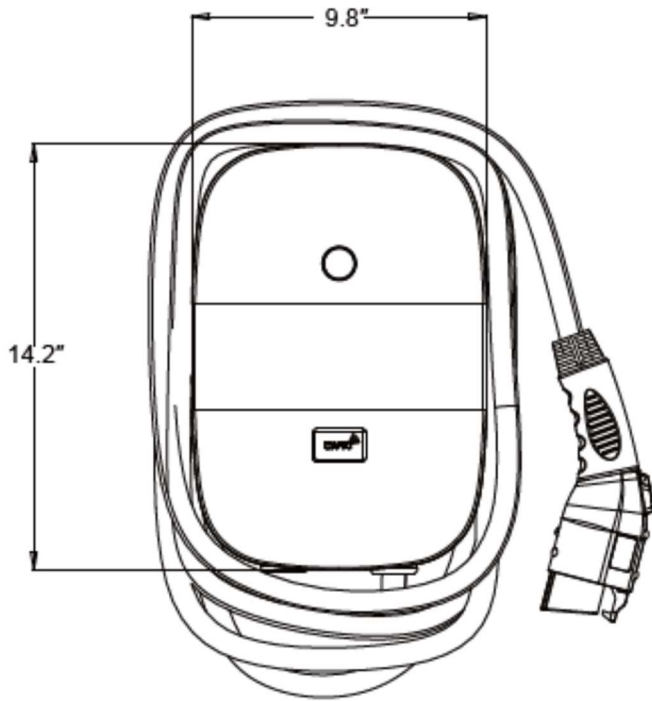
SPECIFICATIONS

Model Name	EVC-L2-N Series
Rated Input Voltage	200-240 VAC
Rated Output Current	16/32/40/48A
AC Power Frequency	60 Hz
Input Protection	UVP, OVP, RCD, SPD, Ground Fault Protection
Output Protection	OCP, OTP, Control Pilot Fault Protection
Output Interface	SAE J1772 AC Charging Connector
Storage Temperature	-40°F to 158°F
Operation Temperature	-22°F to 122°F
Relative Operation Humidity	95% RH Maximum
Relative Storage Humidity	95% RH Maximum
Protection Level	Type 3
Installation Type	Wall-Mounted
Altitude	≤ 6561ft
Status Indication	Red, Green, Blue LED



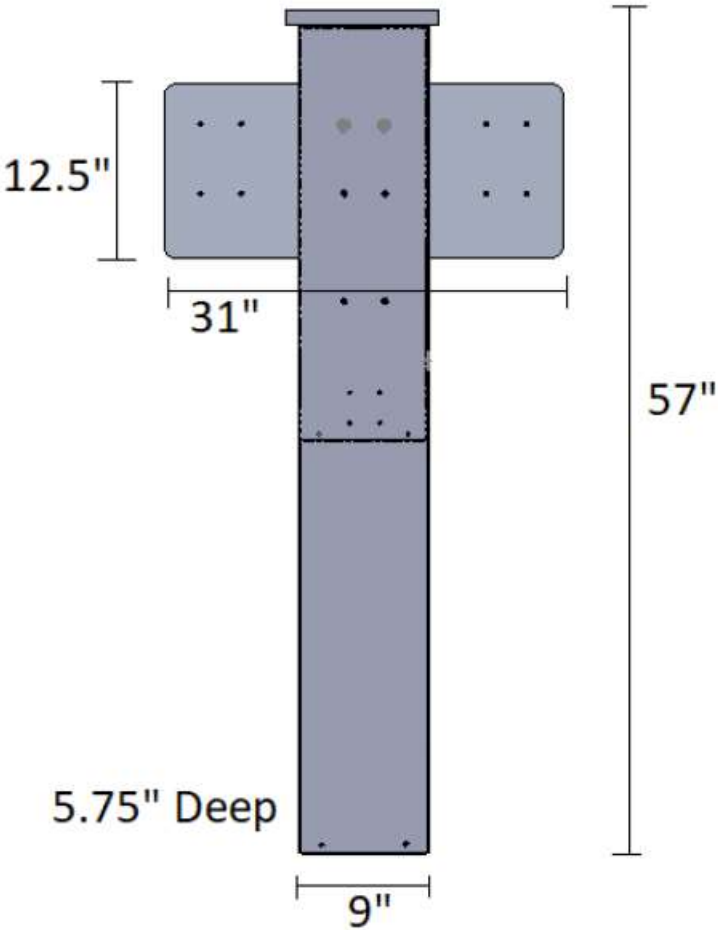
DIMENSIONS

CHARGER



NON-CABLE MANGAGEMENT PEDESTAL

Pedestal, No Cable Management, Either single or double back-to-back shown with optional side by side bracket
 EVC-L2-ACC-BB-NM
 EVC-L2-ACC-SSB-CM1



Notes: Pedestal is made of black textured powder coated steel with black hardware. Base plate is made of stainless or galvanized steel. Pedestal includes integral UL Listed enclosure with terminal block which accepts 1 input power feed and splits to 1,2,3 or 4 chargers.

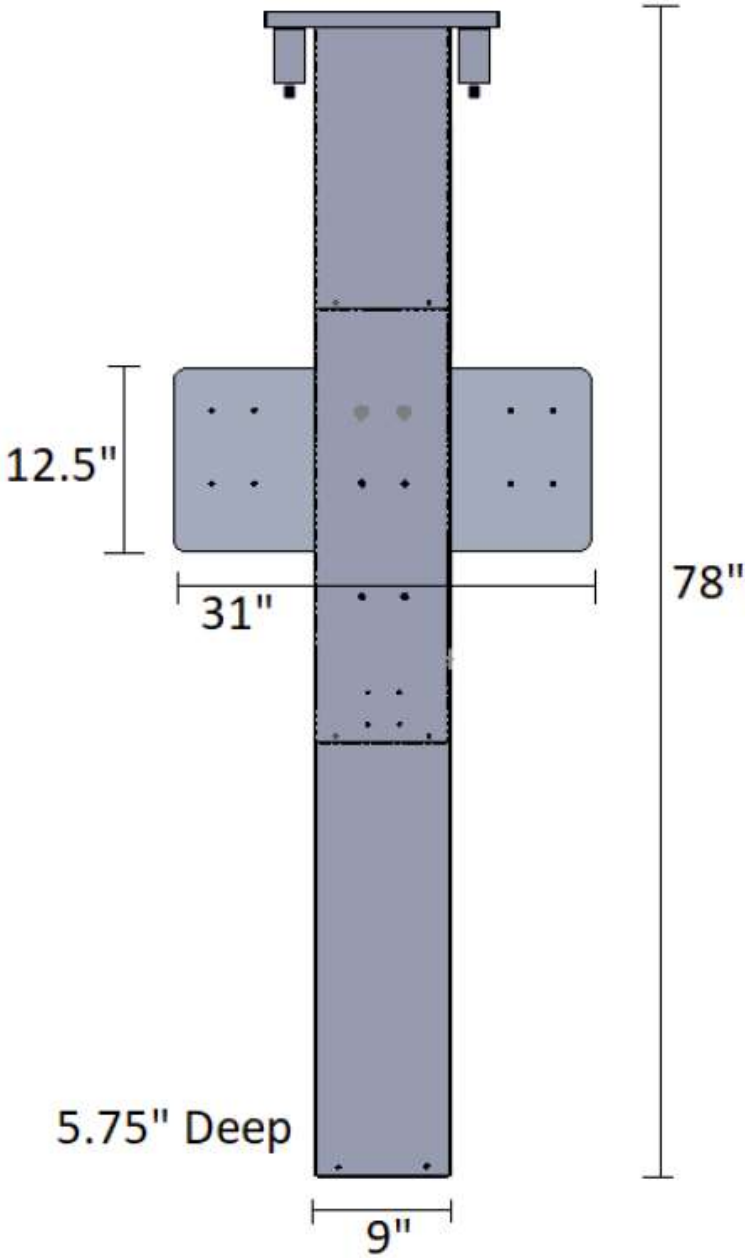


CABLE MANGAGEMENT PEDESTAL

Pedestal, Cable Management, Either single or double back-to-back shown with optional side by side bracket

EVC-L2-ACC-BB-CM1

EVC-L2-ACC-SSB-CM1



Notes: Pedestal is made of black textured powder coated steel with black hardware. Base plate is made of stainless or galvanized steel. Pedestal includes integral UL Listed enclosure with terminal block which accepts 1 input power feed and splits to 1,2,3 or 4 chargers.

WIRING DIAGRAM & REQUIREMENTS

Key Requirements

1. EV charging stations shall be on a dedicated electrical circuit.
2. Each station shall be protected with a 2-pole common trip circuit breaker (non-GFCI type) as indicated by the below table:

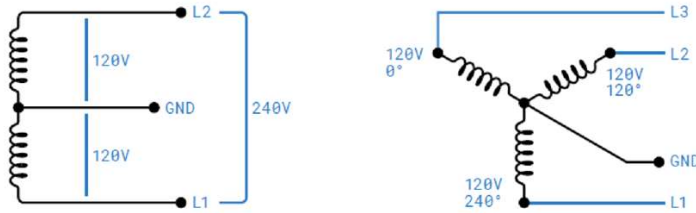
Circuit Breaker Options table				
Output Amperage (A)	16A	32A	40A	48A
Circuit Breaker Options (A)	20A	40A	50A	60A

3. If a pedestal with 2 chargers is installed with a single feed, the circuit breaker must be rated at 2X the options listed in the table above.
4. Each station is designed to draw a maximum of 48 amps.
5. Each station can operate on either a 240V or 208V circuit.
6. Each station requires three electrical supply wires (two hot, one ground, no neutral).

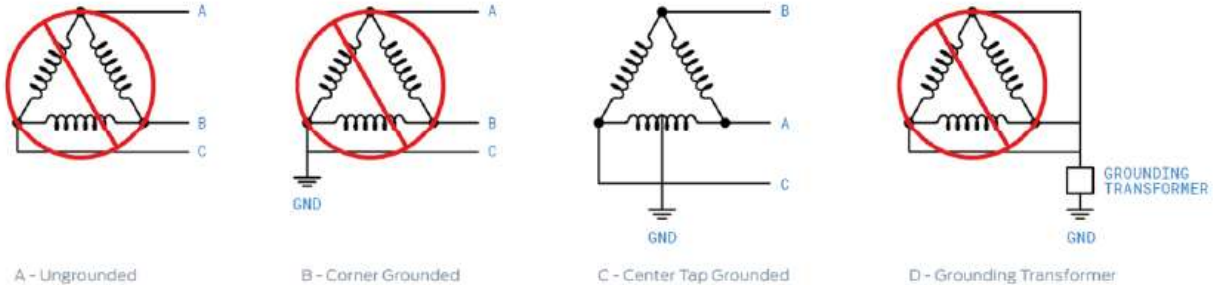
Wiring Diagram

Connect breezeEV stations to any one of the power sources as shown:

1. 208 VAC three phase, Delta system, Center tap grounded (use only two phases)
2. 208 VAC three phase, Wye system (use only two phases)
3. 240 VAC single phase



In a delta system, connect the breezeEV station only to a center-tapped grounded transformer only as shown below. Connect the station to the side where ground is bonded (in figure C line A and C). This allows voltages to remain constant regardless of other loads that may be using the lines. Please do not connect to other type of power sources shown below.





TOOLS REQUIRED

The following tools are required:

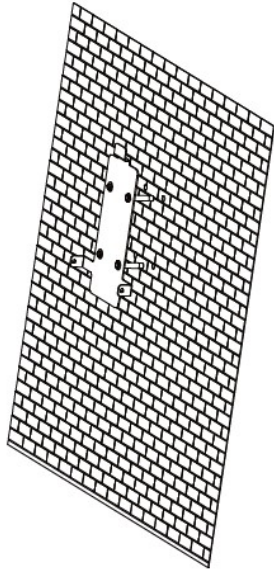
1. Wire strippers
2. Phillips screwdriver/Torq screwdrivers/Allen head screwdrivers
3. Adjustable pliers and/or wrenches
4. Multimeter
5. Tape measurer and level
6. Pencil
7. Drill

WALL-MOUNT INSTALLATION

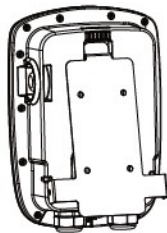
Mechanical Installation

Step 1:

- Set the positions of the 4 screw holes and drill them, with a diameter 3/8" and a depth of 2".
- Use 4 sets expansion screw and M6 screw to fix the wall-mounted bracket on the wall.

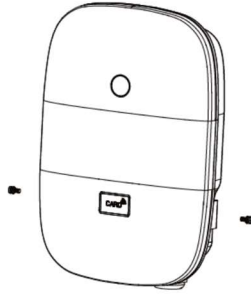


Step 2: Align the rear notch of charger into the wall-mounted bracket and fit the screw holes of the right and left side.





Step 3: Fix two M5 screws to complete the installation.



Electrical Connections

GROUNDING INSTRUCTIONS

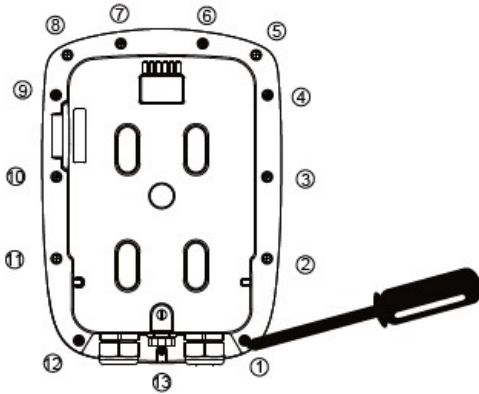
This product must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into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

WARNING – Improper connection of the equipment-grounding conductor could result in the risk of electric shock. Check with a qualified electrician if you are in doubt as to whether the product is properly grounded.

AVERTISSEMENT - Une mauvaise connexion du conducteur de mise à la terre de l'équipement peut entraîner un risque de choc électrique. Vérifiez auprès d'un électricien ou d'un technicien qualifié si vous n'êtes pas sûr que le produit soit correctement mis à la terre. Ne modifiez pas la fiche fournie avec le produit - si elle ne rentre pas dans la prise, faites installer une prise appropriée par un électricien qualifié.

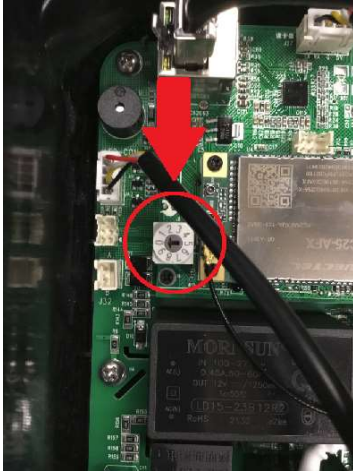
WIRING INSTRUCTIONS

1. Open front cover of charger by unscrewing the 13 fixed screws on the rear of the charger.





- Adjust the adjustable amperage dial switch for the proper desired setting based on the power feed available. **The factory default setting of this switch is the slowest charge speed of 16A.**
IMPORTANT: We offer both 40A and 48A cable sets. Ensure that the dial switch is set no higher than 40A for a 40A cable set. Only the 48A cable set can handle the full 48A. Overheating and/or permanent damage can occur if this direction is not followed.



Dial Position	Amperage
0	16A
1	32A
2	40A
3	48A

- Install the liquid tight cable gland fitting for the incoming power wires and liquid tight. Make sure to properly tighten down the fitting with pliers so that the gasket is compressed and there is no risk of water entering.



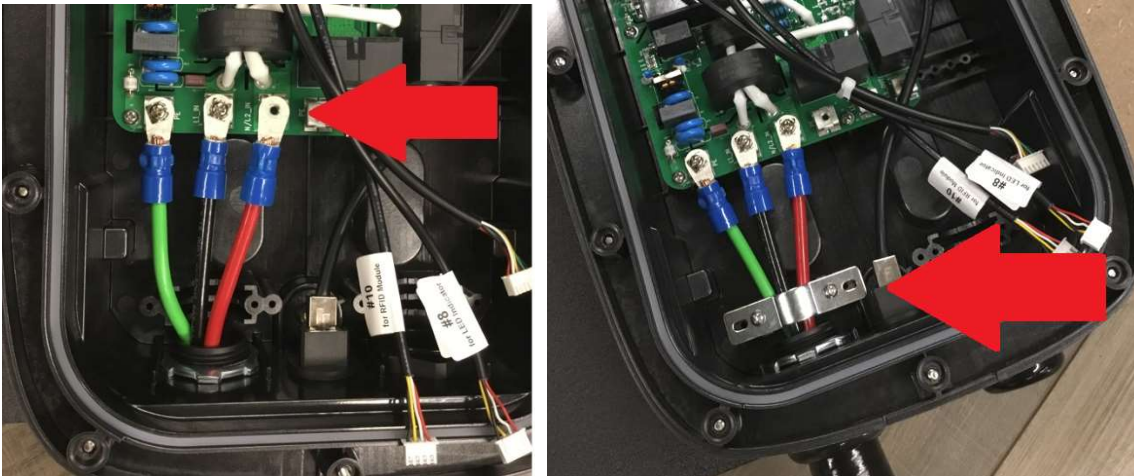
- Install the cable gland fitting for the charging cable set. Make sure to properly tighten down the fitting with pliers so that the gasket is compressed and there is no risk of water entering. You will notice there are various sized rubber gland included with the kit. Use the smaller gland for the 40A cable and larger gland for the 48A cable.



5. Pass the incoming power wires through the liquid tight and into the charger housing.



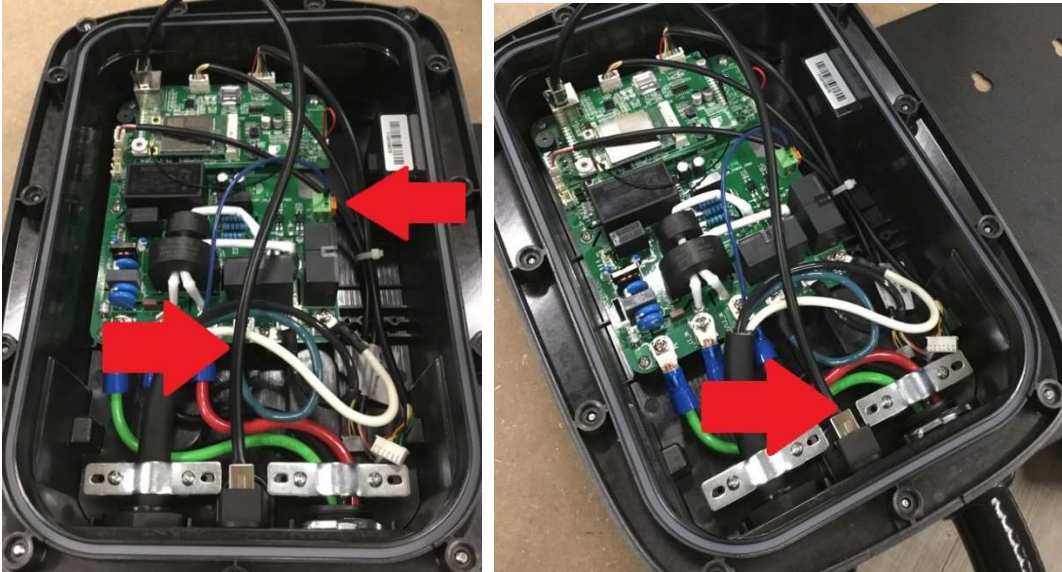
6. Attach the 3 incoming power wires like shown to the terminal block inside the charger housing using the provided screws. Tighten down to 10lbf/in. Install the wire strain relief clamp to ensure that the wires cannot be pulled out of the charger.



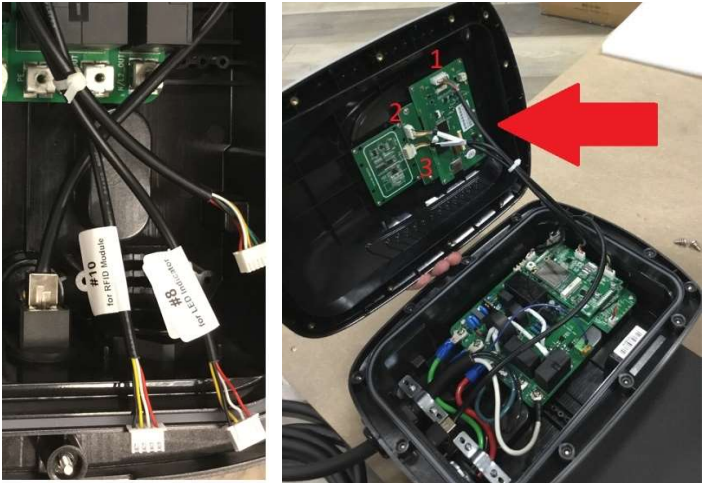
7. Slide the other end of the cable gland onto the charging cable and slide the cable through the cable gland already mounted on the charger housing. Tighten down the gland with pliers or wrenches.



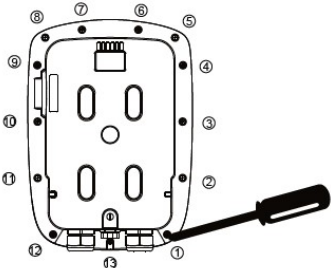
8. Connect the white, green, and black wires to the terminal block as shown with provided screws. Tighten down to 10lbf/in. Plug the blue communication wire into the green communication terminal as shown. Install the wire strain relief clamp to ensure that the wires cannot be pulled out of the charger.



9. Before closing the charger housing, plug the 3 white connectors into the front cover connection receptacles as labeled on each connector.



10. Close the front cover and tighten the 13 fixed screws onto the back casing. Recommended screw torque to ensure that the gasket is properly compressed is 10lbf/in.

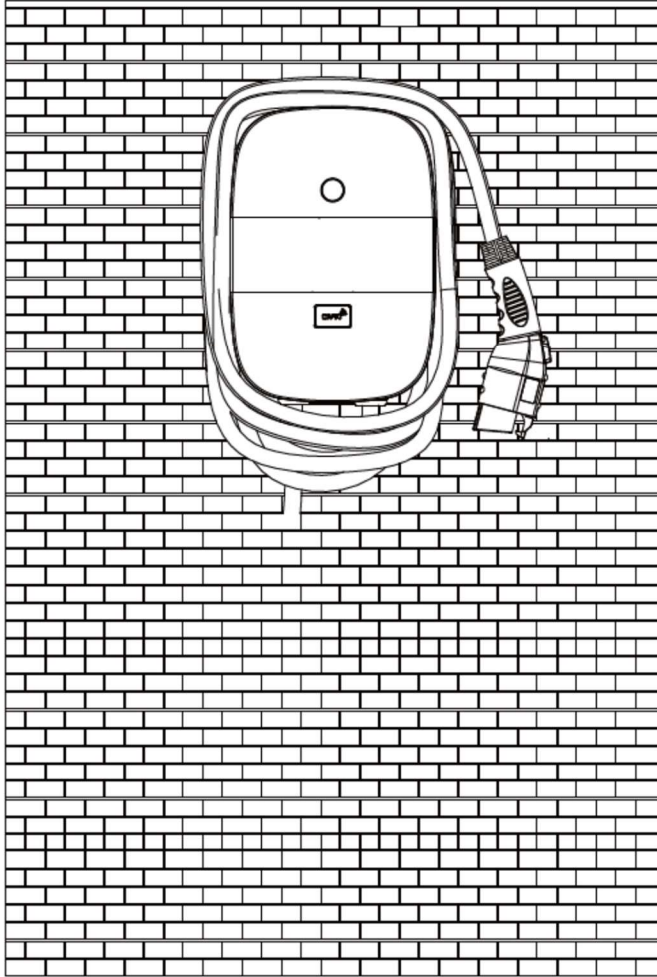




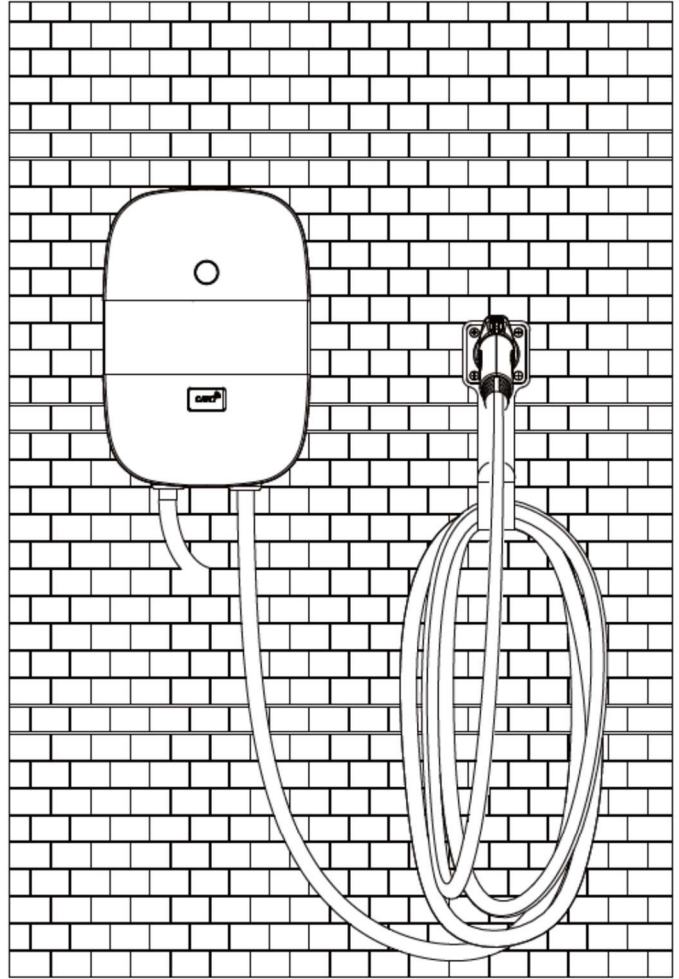
11. Attach charger to wall-mount bracket.

Example appearance after wall-mount installation is complete:

Wall-mounted cable winding



Optional cable hanging (optional accessory)



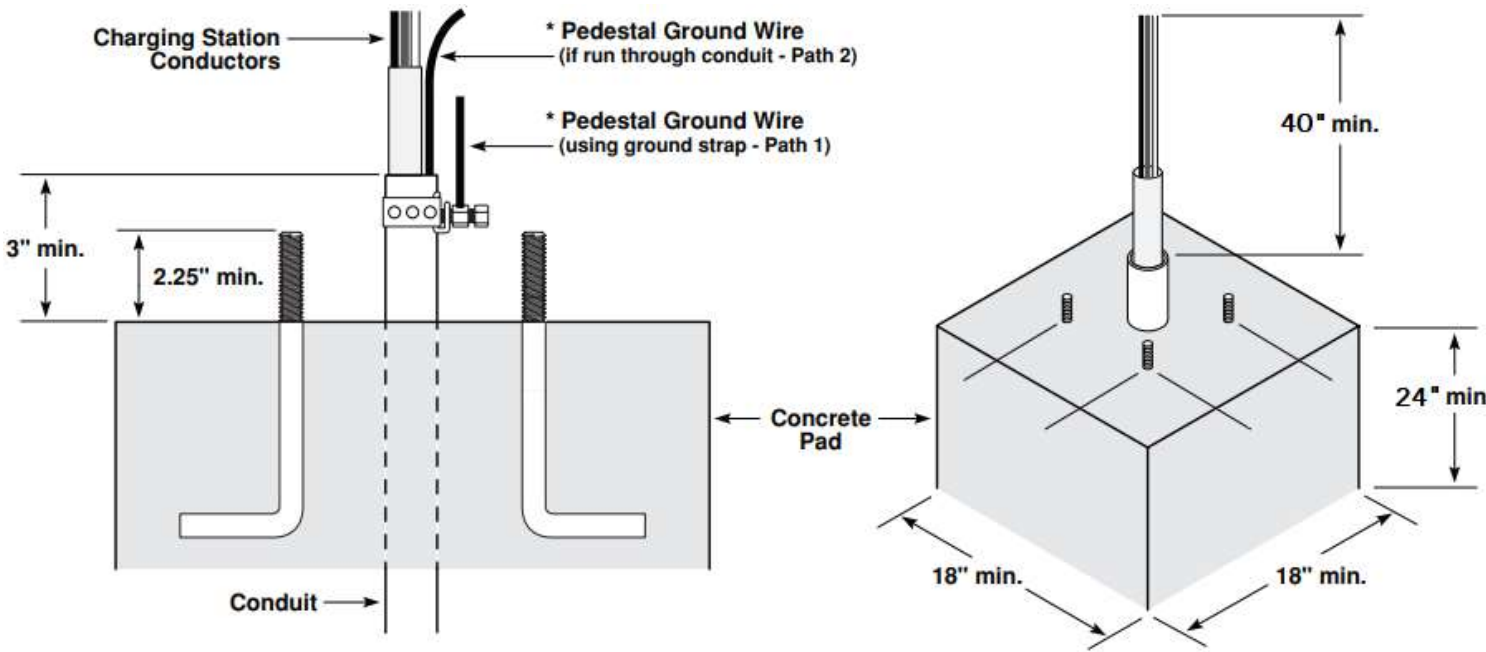
LOWER PEDESTAL INSTALLATION (either non-cable management or cable management styles)

Concrete Pad Requirements

NOTE: The requirements below are the manufacturers minimum recommendations only. The location, dimensions, and composition of the concrete pad for supporting the pedestal should always adhere to local building codes.

- The pad must be a minimum of 18 in. square.
- The pad must be a minimum of 24 in. deep.
- Stub-up must be a minimum of 3 in. above the concrete pad.
- Anchor J-bolts must be a minimum of 2.25 in. above the concrete pad.
- If there is not a wheel stop, the center of the pedestal must be placed at least 36 in. behind the curb.
- If there is a wheel stop, the center of the pedestal must be placed 12 in. behind the curb

Leveling - Hex nuts and washers can be placed on the anchor bolts below the pedestal to adjust the vertical alignment of the pedestal should the concrete pad not be level. When leveling nuts are used, a gap will be present between the concrete pad and pedestal base. This gap should be filled with silicone sealant. Apply silicone per manufacturers recommendations.



(Anchor J-bolts shown for new concrete pours. Use mounting hardware that comes with pedestal kit for existing concrete or pre-set concrete pad installs).

Stainless Steel Base Plate Installation

Follow the same procedure for both non-cable management and cable-management pedestals.

When pouring new concrete, purchase a breezeEV Wet Concrete Pedestal Anchor Kit (EVC-L2-ACC-ANCHOR KIT WET)

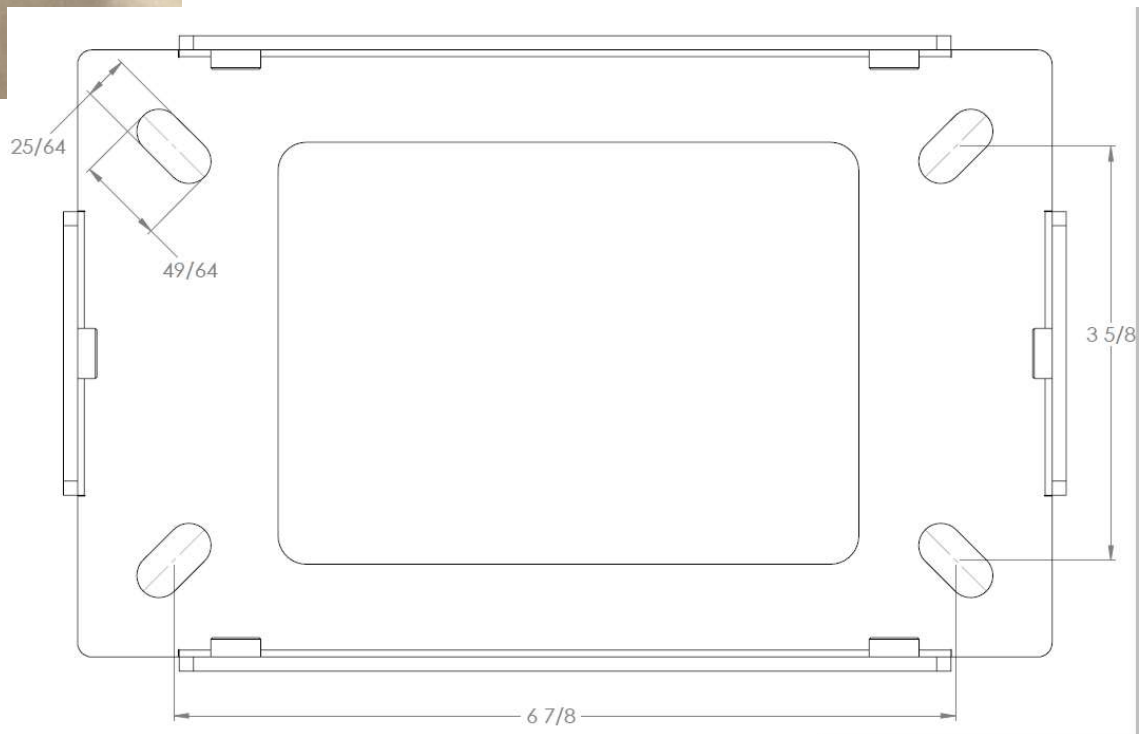
1. Using the provided template, set the 4 J-bolts in place (see below for template).
2. Ensure that at least 40in of wire extends out of the conduit.
3. Let concrete set.

When installing on existing concrete, hardware is provided.

1. Using the provided template, mark the position of the 4 bolts (see below for template).
2. Ensure that at least 40in of wire extends out of the conduit.
3. Drill the 4 holes in the concrete, each minimum 2.2" deep.
4. Install the anchor bolts, through the base plate, with washers. Bolts must be a minimum of 2.25" above the concrete pad.

Attaching the Pedestal Lower Section to the base plate.

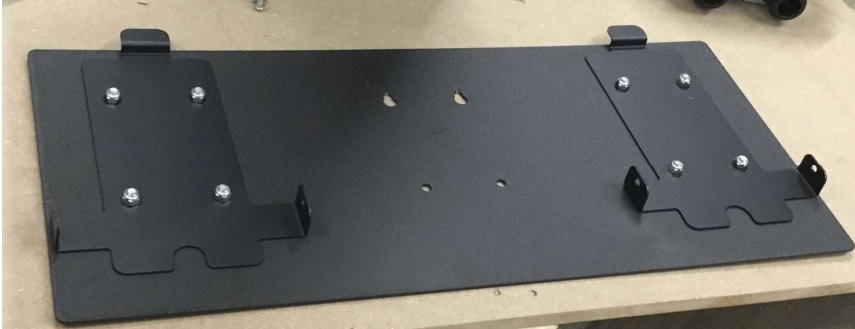
1. Attach 3-sided sheet metal to the base plate using 8 x T27 screws with washers





Installation of Chargers to the Pedestal

1. Remove the front cover of the charger housing following the directions shown on p14.
2. Remove mounting bracket from the back of the charger housing and install to pedestal using provided hardware, or in the case of a side-by-side install, install to the side-by-side mounting bracket.



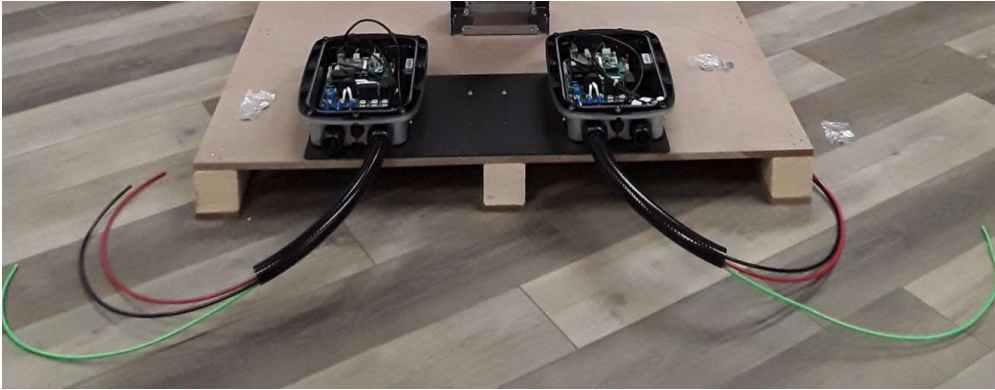
3. Install the back of the charger housing to the mounting brackets on the ground, to help hold them in place during the following steps.



4. Install the incoming power wire liquid tight fittings and liquid tight as described on p15. **IMPORTANT NOTE:** If you are performing a side-by-side install, we recommend that you use the 2 inside positions for the incoming power wires and the 2 outer sides for the charging cable sets. This will result in a more symmetrical and cleaner install appearance. This means that the wires will be crisscrossed inside 1 of the chargers, this is acceptable.



5. Install the incoming power wires as described on p15-17.



6. Install the charging cable set as described on p15-17.



7. Remove the screws holding the charger housing to the wall mount bracket (either attached to the pedestal or to the side-by-side mounting bracket). Properly attach the front charger cover to the back cover following the steps described on p17. Re-attach the now completed charger housing assembly to the bracket.





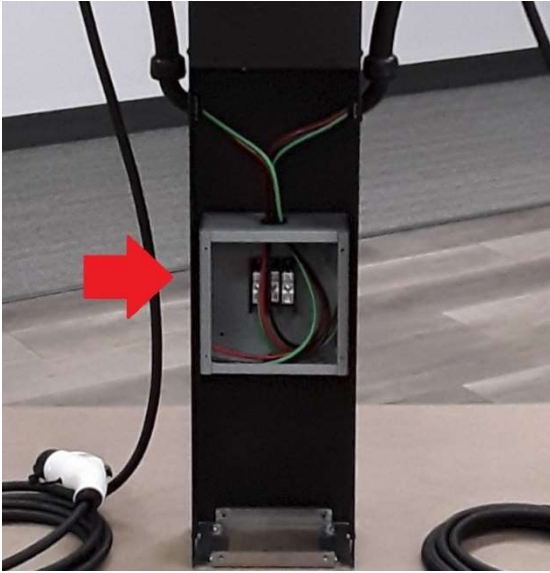
8. Attach the single or dual charger to either side of the pedestal, or as shown below attach the side-by-side mounting plate to the lower pedestal section.



9. Install the straight or right-angle liquid tight fittings to the proper knockouts on the pedestal base.



10. Install the UL listed junction box with terminal block inside of the lower pedestal (skip this step if it is factory installed). Pull the incoming power wires into the UL listed box and properly terminate them to the terminal block.



11. Bring incoming power feed wires into the UL listed box, terminate them to the terminal block, attach cover to UL listed box and attach front cover to lower pedestal. Attach J1772 holsters in proper locations (depending on single, dual, or side by side install). Install non-cable management rain cover to the top of the pedestal. Install provided black plastic hole covers to fill any unused holes in the pedestal for a clean appearance.



12. Wrap charging cables around the chargers for clean appearance.

CABLE MANGEMENT PEDESTAL INSTALLATION

Follow all installation steps above to properly mount the base plate, mount the lower pedestal section and complete all electrical wiring.

Once the above steps are complete, continue to add the Upper Cable Management Pedestal section:

1. If the cable management section has not yet been assembled, see photos below for assembly. Note that in the image on the right below, you can see 2 cable tensioners are mounted, both facing the same direction (Scenario A). While 2 cable tensioners are provided, if only 1 charger is going to be installed to the pedestal (Scenario B), the 2nd tensioner does NOT need to be installed, it can simply be disposed of. In an installation with back-to-back chargers on either side of the pedestal, you would flip the orientation of 1 one of the cable tensioners so that they are facing opposite directions (Scenario C).



Scenario A: 2 chargers side-by-side

Scenario B: 1 charger

Scenario C: 2 chargers back-to-back

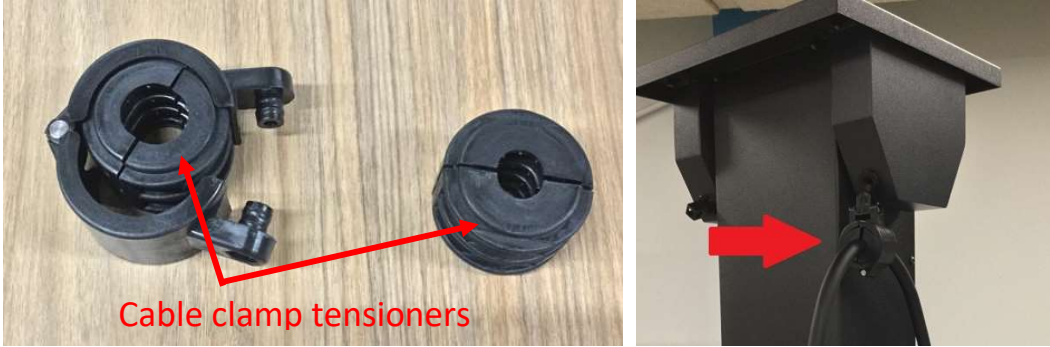
2. Once the cable management section has been completely assembled with cable tensioners installed, lift it on top of the lower pedestal section and secure with bolts to at location shown in red arrow below.





3. Attach charging cables to cable tensioners using the cable clamps. Note that there are different sized inserts provided for the cable clamps designed for either the 40A or 48A cable sets. Ensure that the proper insert is being utilized.

Recommendation: the cable should not touch the ground when properly hung from the cable tensioner. Slide cable through the cable clamp until the cable does not touch the ground. On longer 25ft lengths, some portion of cable may touch the ground, and this is acceptable.



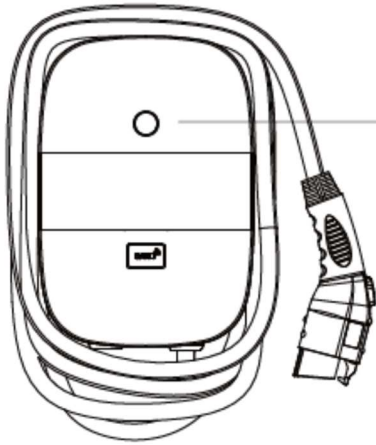
4. Ensure proper appearance as shown below.





STATUS DESCRIPTIONS ON CHARGER

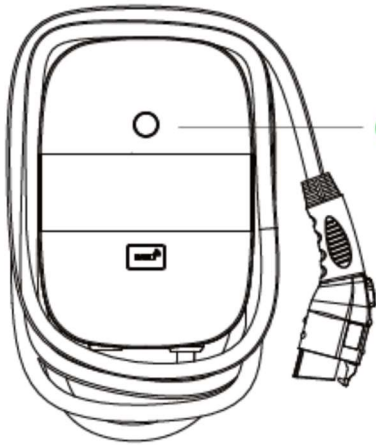
Normal:



● **READY**

Solid Blue Light

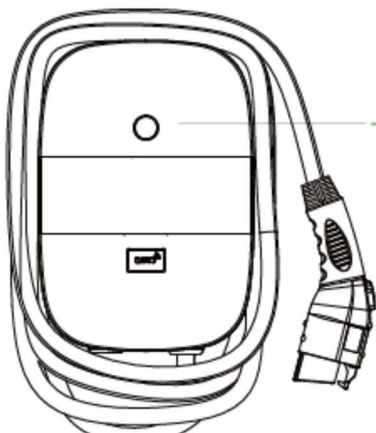
Charger has power and is in standby mode.



● **CONNECTED / CHARGED**

Solid Green Light

- **Connector not plugged into vehicle:** RFID card has been used to activate charger and it is ready to be plugged into a vehicle and begin charging.
- **Connector plugged into vehicle:** Vehicle is fully charged, or RFID needs to be used to activate charging.



● **CHARGING**

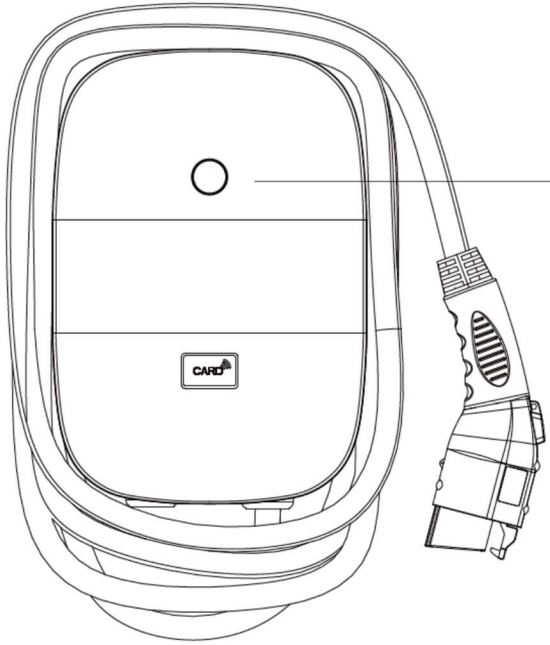
Blinking Green Light

Vehicle is being charged.



STATUS DESCRIPTIONS ON CHARGER

Abnormal/Troubleshooting



● **FAULT**

Errors and warning messages:

Status	Red	Remark
Input OVP	1 flashes followed by 3 sec pause	Auto Recover
Input UVP	2 flashes followed by 3 sec pause	Auto Recover
Output OCP	3 flashes followed by 3 sec pause	Auto Recover
OTP	4 flashes followed by 3 sec pause	Auto Recover
RCD Abnormal	5 flashes followed by 3 sec pause	Auto Recover
Ground Fault	6 flashes followed by 3 sec pause	Auto Recover
Control Pilot Fault	Flicker	Auto Recover
Needs Service	Constantly Lit	Contact Customer Service