POWER INNOVATIONS INTERNATIONAL

LITEON GROUP

Indoor Mobile EV Quick Charger Models: EVQC0xx-MxRx and EVQC0xx-MxBx

Installation and Operation Manual

MNL217

READ THIS MANUAL CAREFULLY

SAVE ALL INSTRUCTIONS

INSTRUCTIONS IMPORTANTESCONCERNANT LA SÉCURITÉ

CONSERVER CES INSTRUCTIONS

This manual contains important information regarding Power Innovations International products or processes listed on the title page. Please read all instructions carefully before assembling, installing, or operating equipment. Keep this manual handy for easy reference.

This manual may accompany other instructional guides or manuals for standard installation and operations of the supported products. Please contact Power Innovations if you need additional guides or manuals and have not received them.

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Contents

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1—Product Overview

This section provides product overview to Power Innovations International Mobile EV Quick Charger models--those with RFID only (EVQC0xx-MxRx series) and those with both RFID and Modem (EVQC0xx-MxBx series).

1.1 Introduction

This EV quick charger is an electric vehicle (EV) power supply that is on swivel casters with locks so it can be easily moved to different locations within a facility. After it's initially installed and made operational in one location within a facility, an operator can plug the EV charging cable into their electric vehicle and start a charging session. Later, when charger is needed in a new location, an operator can relocate it by powering it down and unplugging it before moving it, and then plugging it in and powering it up again in the new location before starting next charging session.

Although some assembly is initially required, each mobile quick charger ships with all parts required for installation except the input cabling and wire, which is provided by the installer or end user.

Use this document to help you:

1. Safely prepare installation site
2. Install power modules and shelf controllers
3. Configure cellular modem and register charger on network
4. Configure and wire AC input power to quick charger
5. Operate EV quick charger (Charge an electric vehicle)
6. Maintain EV quick charger

1.2 Highlighted Features of Mobile EV Quick Chargers

Feature	**Description**
AC Input Power Options	240V single-phase 208/240V 3-phase Delta (3-wire + PE) 480V 3-phase Wye (3-wire + Neutral + PE)
DC Output Power	Up to 60 kW
Communication	RJ45 Bulkhead Connector (Optional Cellular 4G LTE Network, Wi-Fi)
User Interface	Emergency Stop Button LCD Screen RFID Tap authorization Power Up button Power Down button

1.3 Charger Features Identified

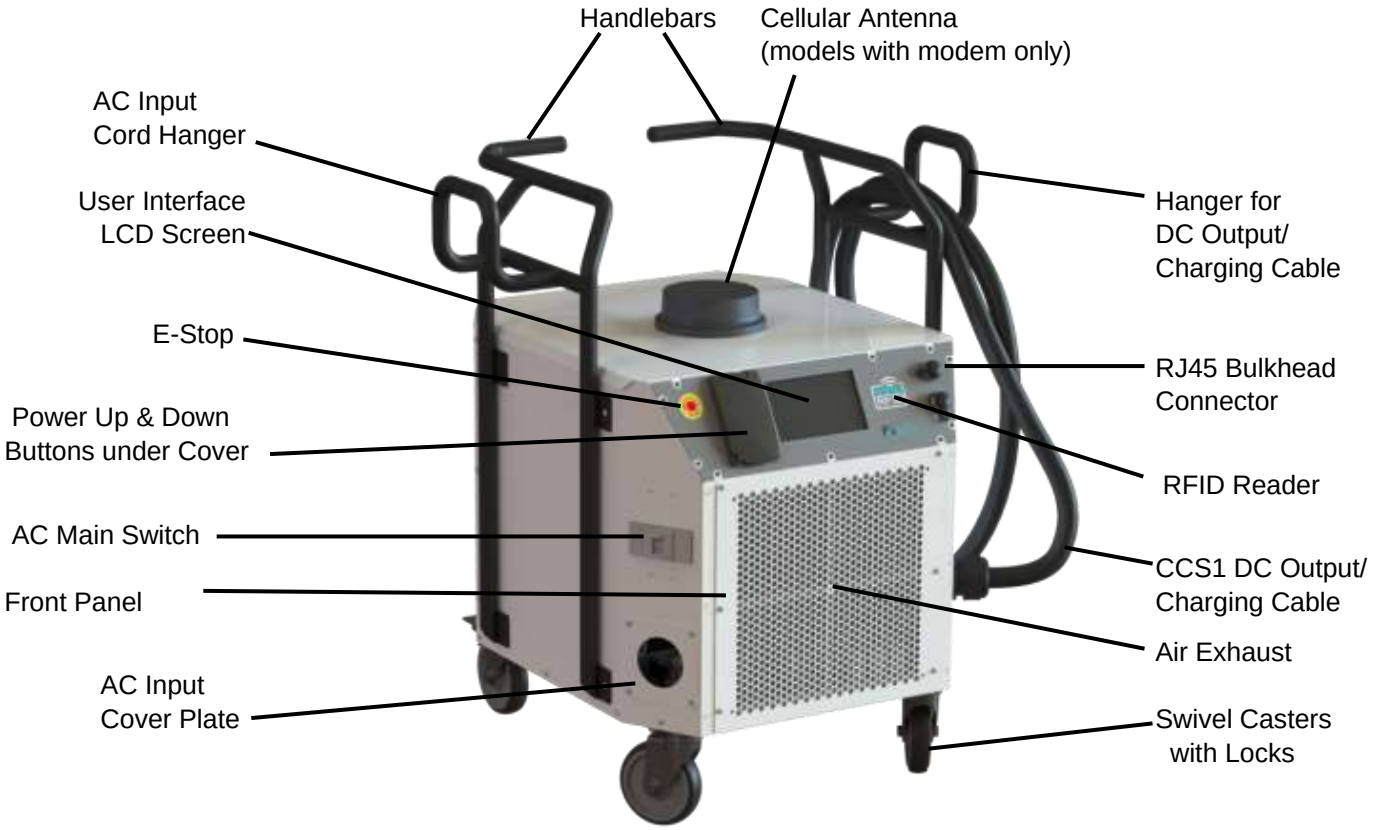


Figure 1—Front View of Mobile EV Quick Charger Model EVQC060-MxBx

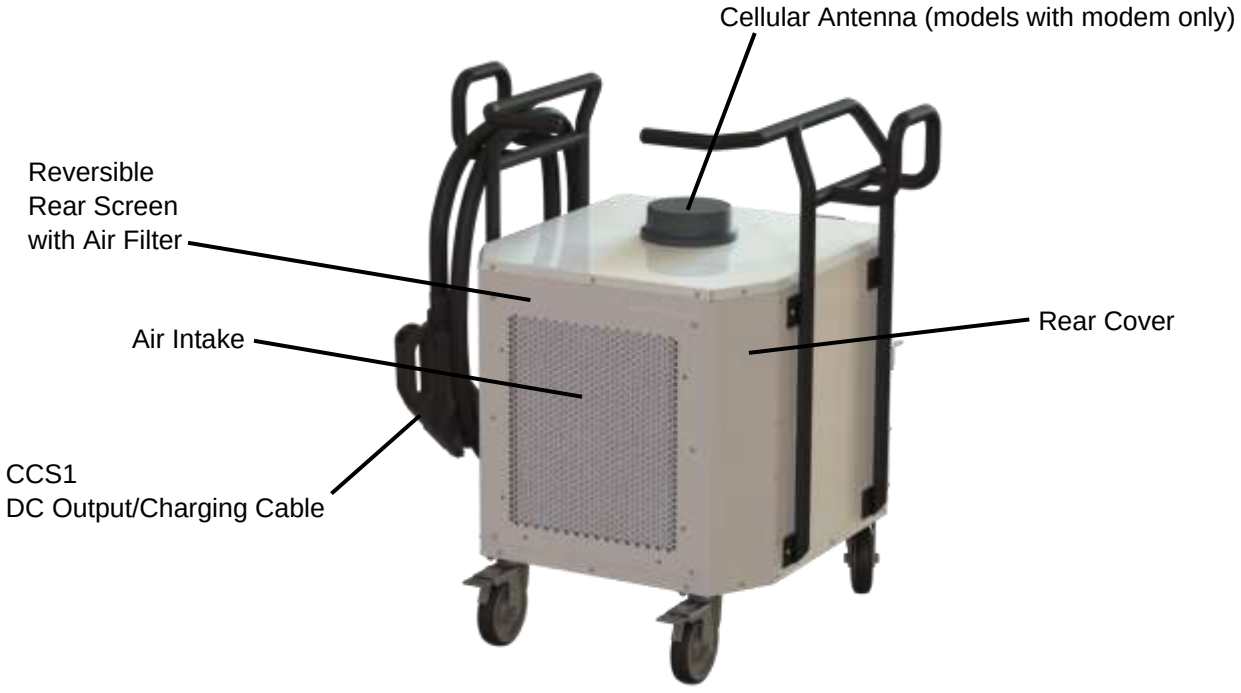


Figure 2—Back View of Mobile EV Quick Charger Model EVQC060-MxBx

1.4 Symbols Used in this Manual

Icons or symbols are occasionally used throughout this manual to help identify safety warnings and other pertinent content contained here. These icons are described in the table below.

Icon	Type of Warning	Description
	**ELECTRICAL WARNINGS**	**WARNING! RISK OF ELECTRIC SHOCK!** ADDITIONAL TEXT THAT FOLLOWS THIS SYMBOL PROVIDES MORE INFORMATION ABOUT THE SPECIFIC WARNING.
	**WARNINGS**	**WARNING! RISK OF ELECTRIC SHOCK!** ADDITIONAL TEXT THAT FOLLOWS THIS SYMBOL PROVIDES MORE INFORMATION ABOUT THE SPECIFIC WARNING.
	**CAUTION!**	**CAUTION!** Indicates a potentially hazardous situation which, if not avoided, can result in minor to moderate injury, or serious damage to the equipment. Important safety measures may also be described in Cautions.
	**Note**	**Note** Offers practical advice that may be helpful but can be disregarded.

1.5 Acronyms Used in this Manual

Acronym	Explanation
AC	Alternating Current
DC	Direct Current
EV	Electric Vehicle

2—Safety and Specifications

The following safety instructions apply throughout the EV Charger installation process. Be familiar with them before moving on to the next section to complete the installation.

2.1 IMPORTANT SAFETY INSTRUCTIONS – SAVE THESE INSTRUCTIONS

INSTRUCTIONS IMPORTANTESCONCERNANT LA SÉCURITÉ
CONSERVER CES INSTRUCTIONS

ELECTRICAL WARNINGS – WARNING! RISK OF ELECTRIC SHOCK!

WARNING! RISK OF ELECTRIC SHOCK!
ONLY QUALIFIED ELECTRICAL PERSONNEL FAMILIAR WITH THE CONSTUCTION AND OPERATION OF THIS TYPE OF EQUIPMENT AND THE HAZARDS INVOLVED SHOULD ADJUST, MODIFY, AND SERVICE THIS EQUIPMENT. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE INJURY OR DEATH.

WARNING! RISK OF ELECTRIC SHOCK!
READ THIS MANUAL THOROUGHLY PRIOR TO INSTALLING AND ENERGIZING THE EQUIPMENT. INSPECTION AND MAINTENENACE OF THIS EQUIPMENT SHOULD BE PERFORMED IN ACCORDANCE WITH THE PROCEDURES DETAILED IN THIS MANUAL.

WARNING! RISK OF ELECTRIC SHOCK!
THIS UNIT CONTAINS NO INTERIOR PARTS THAT CAN BE SERVICED WITHOUT QUALIFIED PERSONNEL. IF MAINTENANCE PROCESSES SPECIFIED IN THIS MANUAL FAIL TO SOLVE THE PROBLEM, QUALIFIED PERSONNEL MUST SERVICE THE UNIT.

WARNING! RISK OF ELECTRIC SHOCK!
THE PURPOSE OF THIS MANUAL IS TO PROVIDE YOU WITH INFORMATION NECESSARY TO SAFELY INSTALL, OPERATE, AND MAINTAIN THIS EQUIPMENT. KEEP THIS MANUAL FOR FUTURE REFERENCE.

WARNING! RISK OF ELECTRIC SHOCK!
SHUT OFF POWER SUPPLY BEFORE BEGINNING INSTALLATION ACTIVITIES OR MAINTENANCE WORK. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE INJURY OR DEATH.

WARNING! RISK OF ELECTRIC SHOCK!
THIS EV QUICK CHARGER CONTAINS HIGH VOLTAGE POWER THAT IS POTENTIALLY DANGEROUS IF NOT HANDLED PROPERLY.

CAUTION! The installer is responsible for conforming to all local and national electrical codes and standards applicable in the jurisdiction this equipment is installed in, including providing suitable wire sizes per NEC for the input configuration.

2.2 Specifications – Mobile EV Quick Charger Models EVQC0xx-Mxxx

Electrical Specifications	
AC Input	
AC Input Power Options (Field configuration patent pending)	240V single-phase 208/240V 3-phase Delta (3-wire + PE) 480V 3-phase Wye (3-wire + Neutral + PE)
AC Input Voltage Operating Range and Current	240V single phase: 216V to 252V, 225A max, 60 Hz 208V/240V 3 phase Delta:190V to 252V, 195A max, 60 Hz 480V 3 phase Wye: 432V to 504V, 85A max, 60 Hz
Recommended upstream overcurrent protection device rating	240V single phase: 400A 208V/240V 3 phase Delta: 250A 480V 3 phase Wye: 125A
Power factor	> 0.98
Efficiency	> 95% @ full load
DC Output	
Maximum DC Output Power	Up to 60 kW
DC Output Voltage Range	250V – 920V
Maximum DC Output Current	150A with DC output < 450V 75A with DC output > 450V
DC Connector	CCS1
DC Charging Cable Length	5 m (16.4 ft.) standard
Dimensions and Weights	
Dimensions for Charger with Handlebar-Hangers and Wheels (H x W x D)	843 x 820 x 610 mm (33.2 x 32.2 x 24 in.)
Dimension Charger with Wheels only (H x W x D)	615 x 559 x 610 mm (24.2 x 22 x 24 in.)
Weight – 60 kW Mobile EV Quick Charger	Up to 125 kg (275 lbs.)
Environment Specification	
Operating Temperature Range	-30°C to +50°C
Storage Temperature Range	-40°C to +60°C
Ingression Protection of Enclosure	IP20, NEMA 1
Humidity	95%
Altitude - Operation	2000 m (6560 ft.)
Certificate/Compliance	
Complies with UL Standards for Safety	(pending)

3—Installing EV Charger

ELECTRICAL WARNINGS – WARNING! RISK OF ELECTRIC SHOCK!

WARNING! RISK OF ELECTRIC SHOCK! SHUT OFF POWER SUPPLY BEFORE BEGINNING INSTALLATION ACTIVITIES AND BEFORE REMOVING EV QUICK CHARGER'S AC SERVICE PANEL FOR ANY INSTALLATION OR MAINTENANCE WORK. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE INJURY OR DEATH.

WARNING! RISK OF ELECTRIC SHOCK! ONLY QUALIFIED ELECTRICAL PERSONNEL FAMILIAR WITH THE CONSTUCTION AND OPERATION OF THIS TYPE OF EQUIPMENT AND THE HAZARDS INVOLVED SHOULD ADJUST, MODIFY, AND SERVICE THIS EQUIPMENT. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE INJURY OR DEATH.

WARNING! RISK OF ELECTRIC SHOCK! DO NOT CONNECT POWER SUPPLY TO THE EV QUICK CHARGER UNTIL THE WIRING AND BUS BAR CONFIGURATION IS COMPLETE AND THE AC SERVICE PANEL IS IN PLACE AND SECURE.

3.1 What's Provided with Charger

EVQC0xx-MxRx or EVQC0xx-MxBx	Description
 or 	1 Mobile EV Quick Charger model (with or without modem and cellular antenna), for up to DC 60kW output, fully assembled exterior
	Up to 6 Shelf Controllers (SCs)
	Up to 18 Power Supply Units (PSUs)
	3 Configuration Bus Bars, each uniquely configured (ship anchored in storage location inside charger)
	4 cable plates (1.5", 2", 2.5", 3" diameter hole)
	4 cable glands/cord grips, thread diameters include: 38.1 mm, 50 mm, 63.5 mm, 75 mm (1.5", 2", 2.5", 3")
	1 manual, MNL217 (this document): *Mobile EV Quick Charger* *Models: EVQC0xx-MxRx and EVQC0xx-MxBx* *Installation and Operation Manual*

3.2 Additional Tools and Supplies Required

- Metric Allen wrench set
- T25 Torx T-handle screwdriver
- Philips Screwdriver
- Electrical AC Input Cable
- Ring Terminals (Lugs) - suitable for accepting cables of the required input current per NEC and Cu or Al wires

3.3 Prepare Installation Site

Become familiar with basic dimensions of the Mobile EV Quick Charger and Installation Site warning and best practice(s).

1. Basic dimensions of Mobile EV Quick Charger, models EVQC0xx-MxRx and EVQC060-MxBx, with hangers and swivel casters are shown in Figure 3.

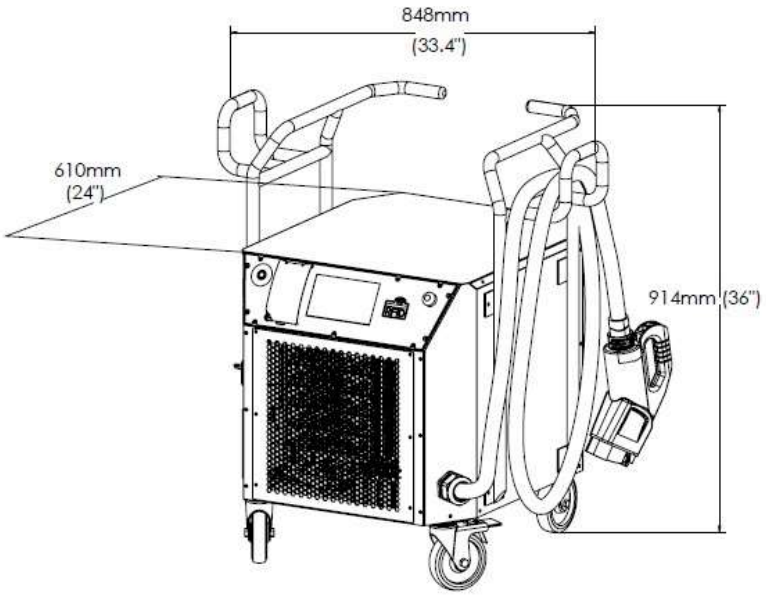


Figure 3—Depth, Width, and Height of Mobile Charger (includes Handles and Wheels)

2. Select storage and operation locations that are not hazardous.

ELECTRICAL WARNINGS – WARNING! RISK OF ELECTRIC SHOCK!
DO NOT STORE OR OPERATE CHARGER IN A HAZARDOUS LOCATION.

3. Best practice for mobile EV Quick Charger installation locations:
Select indoor storage location where charger will not be in direct sunlight or exposed to precipitation.

3.4 Install Power Supply Units and Shelf Controllers

ELECTRICAL WARNINGS – WARNING! RISK OF ELECTRIC SHOCK!

WARNING! RISK OF ELECTRIC SHOCK!
ENSURE POWER SUPPLY IS SHUT OFF BEFORE STARTING OR CONTINUING INSTALLATION ACTIVITIES AND BEFORE OPENING EV QUICK CHARGER'S PANELS. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE INJURY OR DEATH.

This EV Quick Charger ships with many of its components pre-installed, such as CCS1 charging cable and empty power shelves. Essential charger components that do not ship preinstalled are shelf controllers (SCs) and power supply units (PSUs). These can be installed anytime and in any order prior to powering the charger on.

To install shelf controllers and power supply units:

1. Ensure AC power to mobile quick charger is turned OFF at charger's AC main switch.

Figure 4—AC main power switch in the OFF position

2. (Optional) Removing the reversible screen from the rear cover is not required, but it does make removing and re-installing the rear cover easier. You may also want to flip the screen over before re-attaching it to the rear cover to make its air filter accessible on the outside of the charger for cleaning. If you choose to remove the screen from the rear cover, use a T25 Torx t-handle screwdriver to remove 6 buttonhead screws securing the screen to the rear cover; then set screen and screws aside (Figure 5).

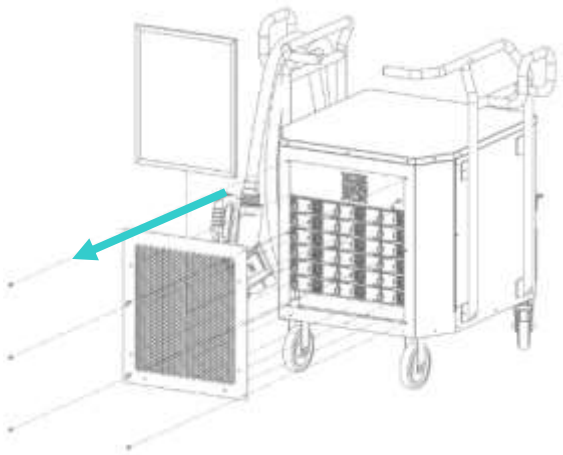


***Figure 5—Optional* Removal of Screen**

3. Using a T25 Torx t-handle screwdriver, remove 16 buttonhead screws around perimeter of rear cover securing charger's rear cover (Figure 6) to charger, then lift cover slightly and pull bottom end out first to then lower and remove cover from charger.

***Figure 6*—Removal of Rear Cover with Screen still attached**

4. Insert up to 6 Shelf Controllers (SCs), 1 on each shelf (Figure 7) and secure with built-in screw (Figure 8). Load the shelves from the bottom up so that any open slots for SCs end up on the top shelves.

   For example: If you ordered a 30 kW Mobile EV charger, load the 3 SCs provided into the 3 lowest SC slots and leave the 3 highest SCs slots empty.

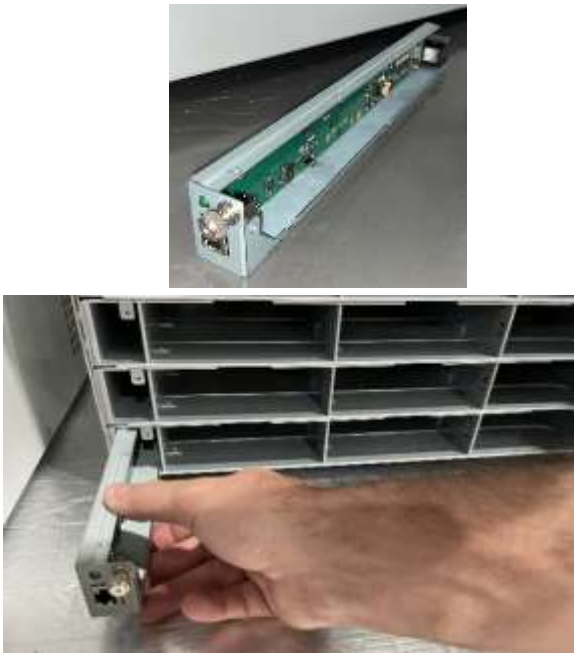


***Figure 7*—Install Shelf Controllers**

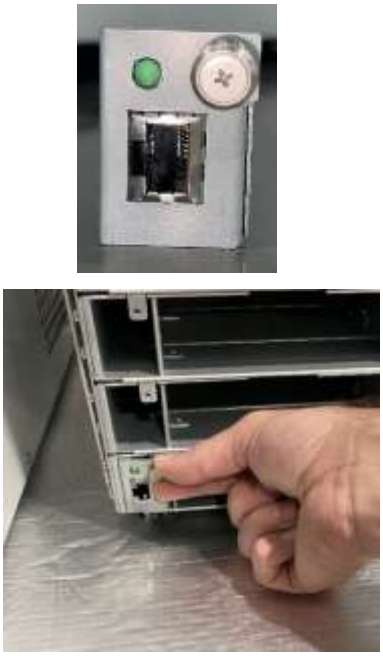


***Figure 8*—Secure Shelf Controllers**

5. Insert up to 18 power supply units (PSUs), 3 on each shelf (Figure 9) and ensure each PSU release lever clicks into the locked position. Load the shelves from the bottom up so that any open slots for PSUs end up on the top shelves.

   For example, if you ordered a 30 kW Mobile EV charger, load the 9 PSUs provided into the 9 PSU slots available on the 3 lowest shelves and leave the 9 PSU slots on the 3 highest shelves empty.

   Note: When a 30 kW Mobile EV charger is loaded with the SCs and PSUs required, every slot in the 3 bottom shelves is filled and every slot in 3 top shelves is empty.

   Note: When a 60 kW Mobile EV charger is loaded with the SCs and PSUs required, every slot in all 6 shelves is filled.

6. (Conditional) If unit has cellular modem installed, leave rear cover open and skip to next section to configure cellular modem now.

7. Secure rear cover to back of the mobile charger, with or without its reversible screen attached.

8. If screen is not attached to rear cover, secure it to rear cover now in its original shipping position or flipped over to make air filter accessible on the outside of the charger.

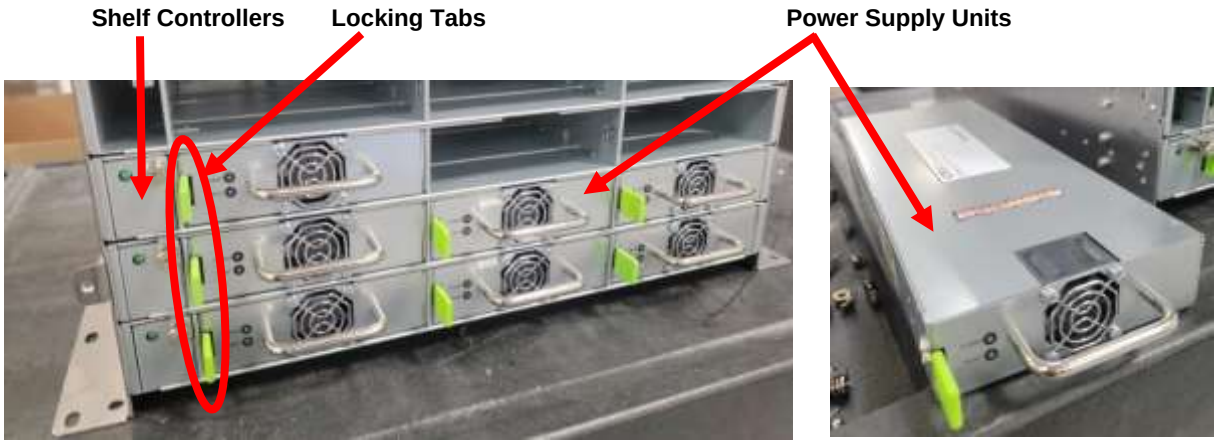


***Figure 9*—Install Power Supply Units**

3.5 Configure Cellular Modem (if available on Unit) and Register on Network

If a cellular modem is not installed on your mobile charger, skip to Section 3.6.

WARNING! RISK OF ELECTRIC SHOCK!
DO NOT CONNECT POWER SUPPLY TO EV QUICK CHARGER UNTIL PHYSICAL SIM CARDS ARE INSERTED INTO CELLULAR MODEM AND TOP PANEL COVER AND SCREWS ARE REINSTATED.

Note: Physical SIM cards for cellular modem must be provided by product owner or administrator.

To configure cellular modem with physical SIM card and register the charger on the backend network:

1. Ensure AC power to EV Quick charger is turned OFF at site's AC breaker or charger's AC main switch.
2. If EV charger's rear cover is closed, open it by removing 16 buttonhead screws from the perimeter of the rear cover, lift and pull cover forward to remove it, and then set rear cover and screws aside (Figure 10).

Figure 10—Remove Rear Cover to access cellular modem

3. Inside open rear of charger, locate the attached cellular modem and then remove one or two screws from face of cellular modem as indicated in Figures 11 and 12 (depends on the brand of modem included), and then remove slot cover to expose modem's expansion slots.

Figure 11— For Amit Modem, remove 2 screws and slot cover to expose SIM card slots

Figure 12 – For Peplink Modem, remove 1 screw and small slot cover to expose SIM card slots A and B

4. Insert a SIM card in slot A only.
5. Return slot cover to its original position on modem and secure it with original screw(s).

6. Register this EV charger as one of the supported devices on the owner's backend network. Later when you configure and wire the AC power input and you apply power to the charger, the modem will find the cellular network and attempt to automatically connect.

7. If you're ready to configure and wire AC input power, leave the rear cover off and skip to next section.

8. If you're not ready to configure and wire AC input power at this time, then return rear cover to back of charger and secure with its original screws.

3.6 Configure and Wire AC Input Power

ELECTRICAL WARNINGS – WARNING! RISK OF ELECTRIC SHOCK!

WARNING! SHUT OFF POWER SUPPLY BEFORE BEGINNING INSTALLATION ACTIVITIES. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE INJURY OR DEATH.

WARNING! RISK OF ELECTRIC SHOCK! DO NOT PROVIDE LIVE POWER TO THE EV QUICK CHARGER UNTIL BUS BAR CONFIGURATION AND AC WIRING IS COMPLETE AND THE AC SERVICE PANEL IS IN PLACE AND SECURE.

WARNING! RISK OF ELECTRIC SHOCK! ONLY QUALIFIED ELECTRICAL PERSONNEL FAMILIAR WITH THE CONSTUCTION AND OPERATION OF THIS TYPE OF EQUIPMENT AND THE HAZARDS INVOLVED SHOULD ADJUST, MODIFY, AND SERVICE THIS EQUIPMENT. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE INJURY OR DEATH.

CAUTION! The installer is responsible for conforming to all local and national electrical codes and standards applicable in the jurisdiction this equipment is installed in, including providing suitable wire sizes per NEC for the input configuration.

1. Ensure AC power to EV quick charger is turned OFF at site's upstream AC breaker.

2. Determine which of the three supported configurations is required for this installation.
   240V (single phase): *Line 1, Line 3, Ground*
   208V/240V 3-phase Delta (3-wire + PE): *Line 1, Line 2, Line 3, Ground*
   480V 3-phase Wye (3-wire + Neutral + PE): *Line 1, Line 2, Line 3, Neutral, Ground*

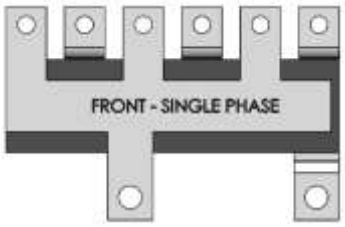
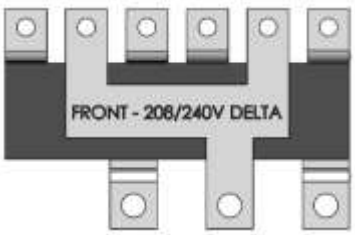
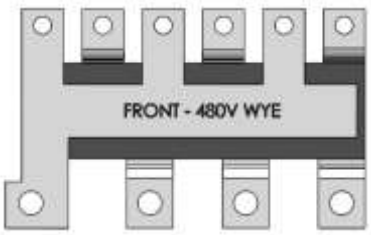
240 V (single phase)	208/240 V 3-phase Delta (3-wire + PE)	480 V 3-phase Wye (3-wire + Neutral + PE)
		
	CAUTION! DO NOT USE this Delta bus bar for a 480V 3-phase (3-wire + Neutral + PE) source, which requires a neutral.	**CAUTION! This source requires the Neutral line to be supplied and connected to prevent damage to equipment.**

Figure 13—Configuration Bus Bar to install for each supported AC Input Power Configuration

3. If charger's rear cover is on, use a T25 Torx t-handle screwdriver to remove the 16 buttonhead screws around rear cover's perimeter, then lift cover slightly and pull bottom end out first to then lower and remove cover from charger; then set cover and screws aside (see Figure 14).

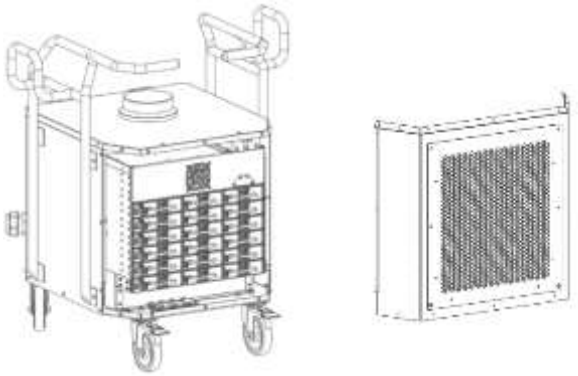


Figure 14— Opening Rear Cover by removing 16 screws around perimeter of rear cover

4. In the opened-rear charger, locate shipping/storage location of the stack of three Configuration Bus Bars anchored with nuts in the bottom (like Figure 15).

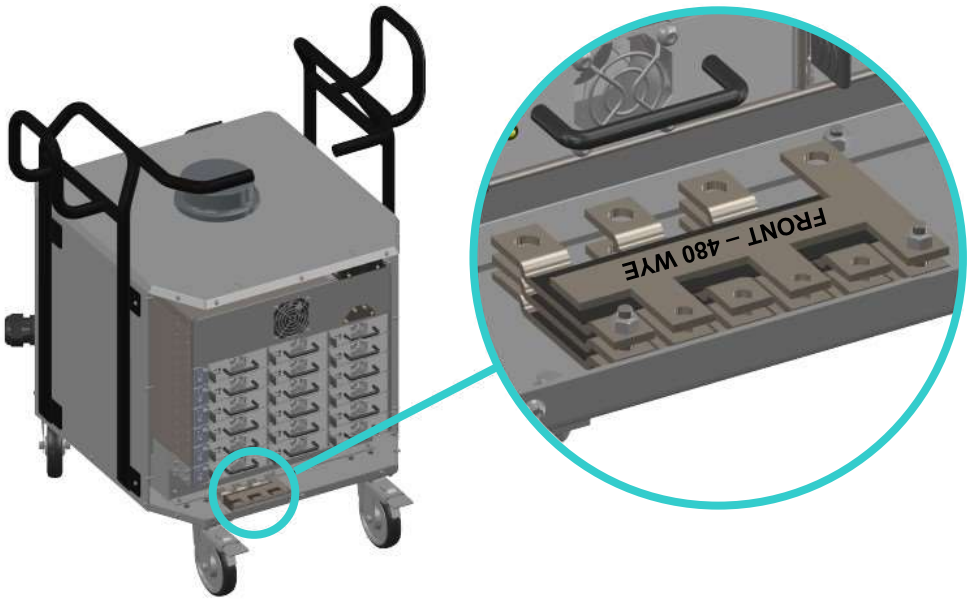


Figure 15—Shipping state of 3 Configuration Bus Bars, stacked and anchored in storage area in rear of charger

5. Remove nuts anchoring configuration bus bars together in the bottom of charger, select the one needed for this installation (refer to Step 2 and Figure 13), and then re-anchor the two spare configuration bus bars in their original shipping/storage position.

6. Return rear cover to back of charger and secure with its original screws.

7. Do not store or operate this mobile quick charger in a hazardous location.

WARNING! RISK OF ELECTRIC SHOCK!
DO NOT STORE OR OPERATE CHARGER IN A HAZARDOUS LOCATION!

8. Open front panel of charger using a T25 Torx t-handle screwdriver to remove 6 buttonhead screws around the perimeter of the front panel, then set panel and screws aside (see **Figure 16**).

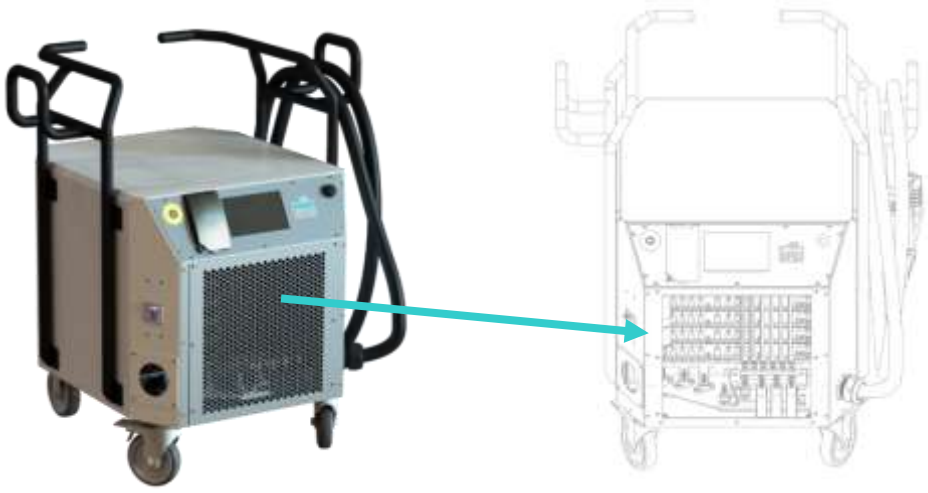


Figure 16— Opening Front Panel by removing screws around panel's perimeter

9. Remove the six M6 and four M8 socket head cap screws that secure plastic spacer plate to Bus Bar (Figure 17), remove spacer plate from Bus Bar, and discard spacer plate.

Figure 17— M6 and M8 socket head cap screws must be removed to remove plastic spacer plate

10. Install the Configuration Bus Bar required for this charger's AC input power as follows:

a. Place selected Configuration Bus Bar on the Bus Bar with its "FRONT" stamp facing out (such as the "FRONT – 480 WYE" example shown in Figure 18).
b. Secure 6 upper socket head cap screws, hand tight only and not over 177 in-lbs (48 N-m).
c. Secure 4 lower socket head cap screws, hand tight only and not over 424 in-lbs (20 N-m).

CAUTION! Configuration Bus Bar must be loaded and secured on Bus Bar with the "FRONT" stamp facing out, as shown in Figure 18.

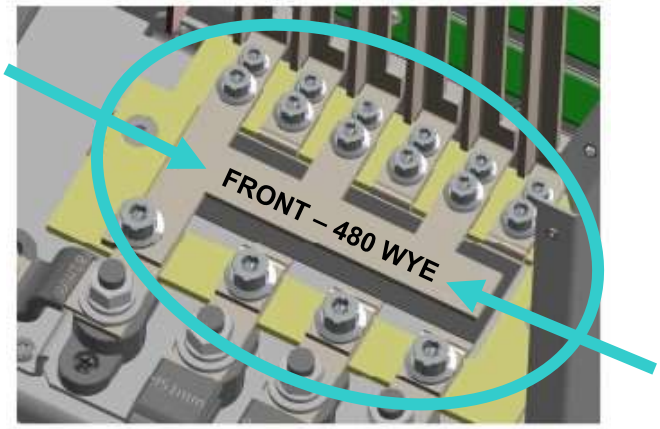


Figure 18— Shown: "FRONT – 480 WYE" configuration bus bar secured on Bus Bar; Not shown: Spare configuration bus bars, Delta and Single, anchored together in storage area

11. Using the voltage and current intended to be supplied to charger (selected in Step 3), select the proper cable type needed for this charger and this installation per NFPA 70 (NEC) Code Requirements.

12. Based on cable type needed and outer diameter of selected cable, use the following table to select the AC Input cover plate (Figure 19) and the cord grip/cable gland (Figure 20) suitable for your AC input power cord/cable.

Cable OD (mm)	18 - 25 mm	31 - 41 mm	44 - 51 mm	56 - 66 mm
Cable Gland Thread Diameter (mm)	38.1 mm	50 mm	63.5 mm	75 mm
Cable Gland Thread Diameter (in.)	1.5 in.	2 in.	2.5 in.	3 in.

***Figure 19—AC Input Cover Plates** included*

Figure 20—Four sizes of Cord Grip/Cable Glands included

13. Feed AC Input power cord through cord grip/cable gland and conduit plate and secure to the mobile charger.

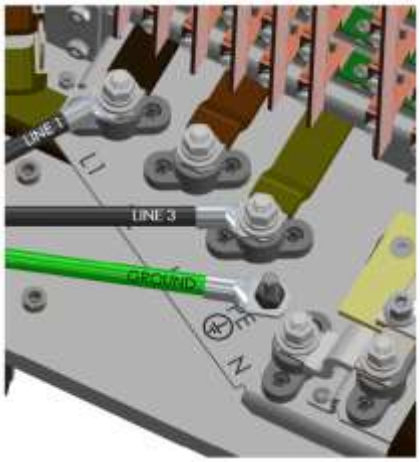
14. Notice the three AC input power wiring configurations shown in Figure 21, then select the wiring configuration and ring terminals needed for this charger.

- Ring terminal (ring lug) for Neutral or a Line wire must fit 3/8-inch diameter junction block stud.
- Ring terminal (ring lug) for Earth Ground must fit M8 (5/16-inch) diameter stud.

15. Using properly-sized ring terminals (as described above), wire AC Input Power to charger's AC Main landing stud per Figure 21 and local and national regulations, then tighten the nuts on all 5 studs (L1, L2, L3, PE, N) to 17 N-m (150 in-lb.).

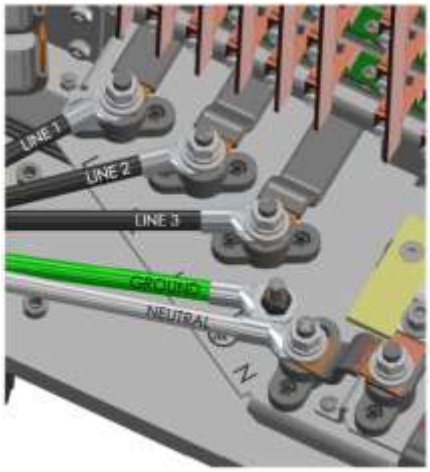
- **Reminder: The installer is responsible for conforming to all local and national electrical codes and standards applicable in the jurisdiction this equipment is installed in, including providing suitable wire sizes (Figure 21) and ring lugs (Step 14) per NEC for the input configuration.**
- **This charger can accept Copper (Cu) and Aluminum (Al) input cables suitable for the current rating per NEC by using the installer-provided ring terminals (or ring lugs) rated to accept the Cu or Al input cables.**

AC Input Power: 240V Single 225A max, 60 Hz



AC Input Power: 208V/240V Delta 195A max, 60 Hz

AC Input Power: 480V Wye 85A max, 60 Hz



CAUTION! This 480V Wye source requires the Neutral line to be supplied and connected to prevent damage to equipment.

Figure 21—AC Input Wiring for different AC Input Power Configuration

16. After all input power wires have been secured to AC Main landing stud connectors:
At site's AC circuit breaker, turn on breaker and check voltage input.
If voltage input is OK, turn ON charger's AC Main Switch.
If voltage is not OK, turn OFF site's circuit breaker before troubleshooting.

17. Reinstall Front Panel and secure with original screws using the T25 Torx t-handle screwdriver to 142±10 in-lbs (16±5 N-m).

18. Continue to the next section to power the charger On, set up power levels, and operate the charger.

4—Setting Up Power Level and Operating EV Quick Charger

4.1 Set Power Level for Desired Operating Location

4.1.1 Do not store or operate this mobile quick charger in a hazardous location.

WARNING! RISK OF ELECTRIC SHOCK!
DO NOT STORE OR OPERATE CHARGER IN A HAZARDOUS LOCATION!

4.1.2 Calculate Maximum Charger Power Level allowed for current location using configuration information and this table (also found on a label provided). This will help you avoid tripping sites AC circuit breaker due to overload.

POWER INNOVATIONS INTERNATIONAL	Maximum Charger Power Setting* (kW)					
Upstream Circuit Breaker Rating	Single Phase Panel			Three Phase Panel		
	208V	220V	240V	208V	240V	480V
50A	8	8	9	14	16	33
75A	12	13	14	21	24	49
100A	16	17	19	28	33	60
125A	20	22	24	36	41	60
150A	25	26	28	43	49	60
175A	29	30	33	50	58	60
200A	33	35	38	57	60	60
225A	37	39	43	60	60	60
250A	41	44	48	60	60	60
300A	49	52	57	60	60	60
*Set by user based on input voltage and upstream breaker						GL000xx

Figure 22—Maximum Charger Power Rating (kW) set by user based on input voltage and upstream break

4.1.3 Switch Main Power Switch to ON, see LCD screen light and then see current power level setting display.

Figure 23—AC main power switch in ON position and LCD display of current power level

4.1.4 Set Maximum Charging Power setting at or below your calculation in step 1 as follows:

Figure 24—Lift button cover and press top and bottom button simultaneously to enter Configuration Mode

4.1.5 Lift button cover on front of charger, then press top and bottom buttons at same time (Figure 24) to enter Configuration Mode. For confirmation of entering Configuration Mode, ensure the - and + signs in the Power Limit displayed on the screen have brightened (Figure 25).

Figure 25—On-screen display of Maximum Power Level – and + buttons will brighten when charger enters Configuration Mode

4.1.6 Press top or bottom button to increase or decrease maximum power level respectively in increments of 5 kW to set maximum setting at or below the maximum charger power setting allowed for current location (refer to Figure 22 for assistance).

For example, using the chart in Figure 22, if your Upstream Circuit Breaker Rating was 100A and you were using a 240 V three-phase panel, then the maximum charger power setting allowed for the configuration would be 33 kW. However, because this charger's maximum power settings are set in increments of 5 kW, you would need to lower the setting to 30 kW—rounding down to the nearest 5 kW without going over the maximum allowed for your configuration.

4.1.7 New setting will display on screen. After a few seconds of inactivity, the charger will exit Configuration Mode (- and + are gray again) and your new setting is automatically saved.

4.1.8 Close button cover.

4.1.9 (Optional) Padlock the cover with ¼ inch padlock to ensure charger maintains Maximum Charging Power Setting and setting is changed only by trained personnel given access.

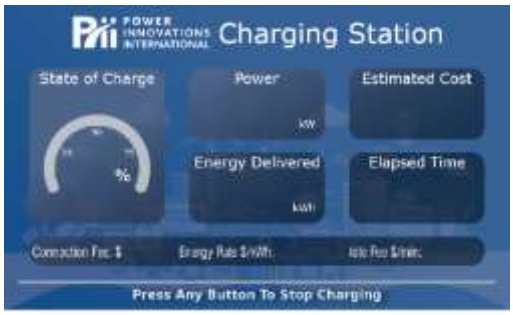
4.2 Operate EV Quick Charger

4.2.1 Click to release EV cable plug from docking station and plug into EV.

4.2.2 Use one of the payment methods your charger supports to initiate a charging session. For example, if using an RFID card provided for this charger, tap the card on the charger's RFID Reader.

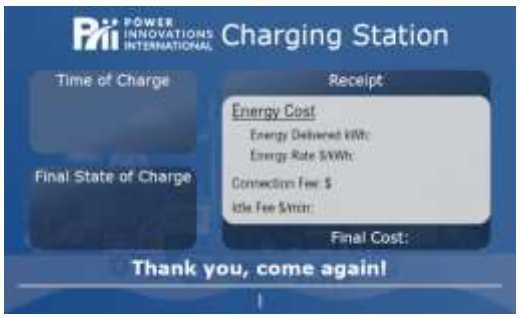
4.2.3 Watch display for payment authorization:
If payment method was accepted, the message "Authorized" displays and you can continue.
If payment method was not accepted, leave EV cable plugged into EV and try payment method again.

4.2.4 Follow on-screen displays to ensure charger connects to vehicle and the charging cycle begins. Once charging cycle successfully starts, the charging progress displays.



4.2.5 The charger will automatically complete the charging cycle if left undisturbed. If you wish to stop charging cycle early, press any button. When the charging cycle ends or is stopped, the following prompt displays.

4.2.6 Click to release EV cable plug (gun) from EV and return it to docking station. An on-screen receipt displays.



5—Maintaining EV Charger

ELECTRICAL WARNING! -
WARNING! RISK OF ELECTRIC SHOCK!

WARNING! RISK OF ELECTRIC SHOCK! SHUT OFF POWER SUPPLY AT AC BREAKER BEFORE BEGINNING MAINTENANCE ACTIVITIES AND BEFORE REMOVING EV QUICK CHARGER'S AC SERVICE PANEL FOR ANY MAINTENANCE WORK. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE INJURY OR DEATH.

WARNING! RISK OF ELECTRIC SHOCK! THIS EV CHARGER AND CHARGING CABLE ARE ENERGIZED. BEFORE SERVICING THE CHARGER OR CABLE, SHUT OFF POWER SUPPLY TO CHARGER, CLICK HANDLE TO RELEASE CABLE PLUG FROM EV, AND RETURN CABLE PLUG TO THE DOCKING STATION.

CAUTION! Maintenance tasks should only be completed as directed in this section. When in doubt, contact Power Innovations on how to proceed.

AVERTISSEMENT ÉLECTRIQUE ! -
AVERTISSEMENT ! RISQUE DE CHOC ÉLECTRIQUE !

ATTENTION ! RISQUE DE CHOC ÉLECTRIQUE ! ÉTEIGNEZ L'ALIMENTATION ÉLECTRIQUE AU DISJONCTEUR À COURANT ALTERNATIF AVANT DE COMMENCER LES ACTIVITÉS DE MAINTENANCE ET AVANT DE RETIRER LE PANNEAU D'ENTRETIEN CA DU CHARGEUR RAPIDE POUR VE POUR TOUT TRAVAIL DE MAINTENANCE. LE NON-RESPECT DE CETTE PRÉCAUTION POURRAIT ENTRAÎNER DES BLESSURES GRAVES OU LA MORT.

ATTENTION ! RISQUE DE CHOC ÉLECTRIQUE ! CE CHARGEUR DE VE ET CE CÂBLE DE CHARGE SONT SOUS TENSION. AVANT D'ENTRETENIR LE CHARGEUR OU LE CÂBLE, COUPEZ L'ALIMENTATION DU CHARGEUR, CLIQUEZ SUR POIGNÉE POUR LIBÉRER LA PRISE DE CÂBLE DE L'EV ET RETOURNEZ LA PRISE DE CÂBLE À LA STATION D'ACCUEIL.

ATTENTION ! Les tâches d'entretien ne doivent être effectuées que conformément aux directives de la présente section. En cas de doute, contactez Power Innovations sur la façon de procéder.

5.1 Clean Air Vents and Filter

To help maintain the life of your cooling fans, clean the filter as needed. There are two options for how the filter can be installed in the charger, which is based on operator preference: Internal to charger or External to charger:

5.1.1 If Filter is installed Externally

5.1.1.1 Remove filter by pulling up on filter frame.

5.1.1.2 Wash filter with clean water and let air dry.

5.1.1.3 Reinstall filter in same slot.

5.1.2 If Filter is installed Internally

5.1.2.1 Turn AC Main Switch on front of charger to OFF.

5.1.2.2 Remove screen from rear cover.

5.1.2.3 Remove filter from screen.

5.1.2.4 Wash filter with clean water and let air dry.

5.1.2.5 Reinstall filter in same slot.

5.1.2.6 Reattach screen to rear cover with filter on the inside (to secure the filter) or on the outside (to make filter easier to access for future cleaning).

5.1.2.7 Turn AC Main Switch on front of charger to On.

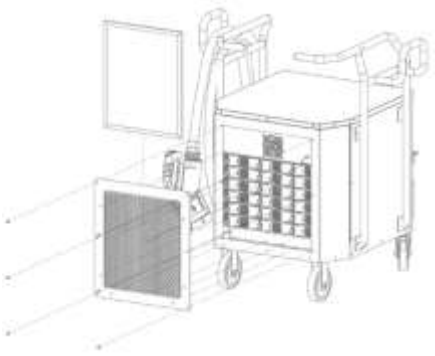


Figure 26—Rear screen is reversible so filter is accessible after rear screen is once again secured to rear cover

5.2 Replace Air Filter

The chargers filter can be replaced. Please contact Power Innovations for replacement part or order from McMaster Carr: Part Number 2150K17.

5.3 Restart after Emergency Stop

This Emergency Stop button is an emergency ON/OFF operator button for the quick charger's charging sessions. Any time the Emergency Stop button has been pressed and is recessed, it is in the OFF position. To reset the button, press it once to make it flush again and put it in the ON position. With the Emergency button flush, the charger is ready for the next charging session to be started.

Figure 27—Emergency Stop Button is ON/OFF operator button: Recessed is OFF and Flush is ON

If the Emergency Stop button is pressed during a charging session, charging is stopped, an Error Message displays in LCD (see Figure 28), and the button stays recessed.

Figure 28—Error Message displays in LCD screen when Emergency Stop Button is depressed

Before a new charging session can be started following this Error Message:

1. Charging cable must be unplugged from EV and returned to Docking Station.
2. *Emergency Stop button must be reset to the flush/ON position by pressing it once.*

   Note: Resetting the button does not start a new charging session, but it prepares the charger to support the next charging session started.

6—Regulatory

UL & CSA

This product and its documentation comply with the following UL and CSA Standards:

- UL 2202 Standard for Safety: Electric Vehicle (EV) Charging System Equipment
- UL 2231-1 Standard for Safety: Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits; Part 1: General Requirements
- CSA C22.2 346 (Canadian Standards Association) – DC Charging Equipment for Electric Vehicles
- CSA C22.2 281.1 – Personnel Protection Systems for Electric Vehicle Supply Circuits

7—Warranty

Power Innovations International warrants that products purchased hereunder are free and clear of all liens and encumbrances.

Power Innovations International warrants that products are to be free from material or workmanship defect under normal use for a period of two (2) years from the invoice date.

In the event that any defect is found under normal usage conditions during the above warranty period, Power Innovations International will be responsible for repair or replacement at its sole discretion and subject to the replacement may be refurbished products.

All repair covered by this warranty must be done at Power Innovations International factory, or other repair facilities as designated by Power Innovations International unless Power Innovations International specifically directs that this service be performed at another location or service provider.

Customer shall, at its own costs, be responsible for shipping the defective products to the designated repair facilities subject to a RMA issued by Power Innovations International.

Power Innovations International will be responsible for shipping the repaired or refurbished unit back to the customer.

Power Innovations International shall not have any warranty obligations for claims: (i) caused by the misuse or abuse of products by end users; (ii) caused by modifications or repairs made to the products or disassembly of products by any person other than Power Innovations International, unless receiving Power Innovations International authorization; (iii) in relation to the appearance damage.

This Warranty Term states the exclusive liability of Power Innovations International and the exclusive remedy of buyer/customer with respect to any claim or defects of the products.

8—Contact Information

If there are any questions or comments about this product, please feel free to contact us.

Power Innovations International, Inc.

Web: www.powerinnovations.com/support

Phone: 801-785-4123

Mailing Address: 1305 South 630 East, American Fork, UT 84003