

Charging Cable Replacement on Installed Outdoor Mobile Models



Figure 1: Total CCS1 charging cable



Figure 2: Charging nozzle (CCS1)

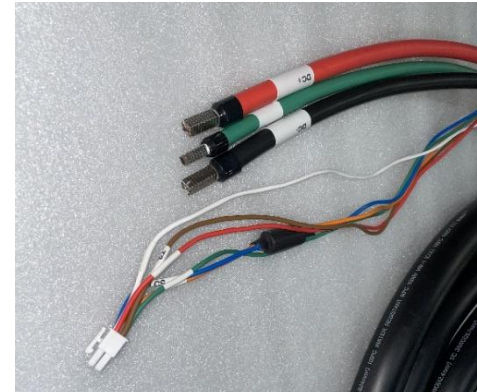


Figure 3: Cables's Factory-terminated wires

Introduction

The charging cables installed in Power Innovations International (Pii) EV Quick Chargers can be replaced if the charging cable or charging nozzle becomes damaged or if another cable length is needed. This document lists supported replacement part numbers for each quick charger's charging cable and describes how to install them. To maintain the charger's Intertek listing, you must purchase the charging cable replacement parts from Pii only and installers must be qualified and trained electricians who install the parts according to these instructions.



Figure 4: Outdoor Mobile EV Quick Charger

Note: If you need additional help completing this charging cable replacement, contact Pii Customer Service through our website or directly:
 Web <https://powerinnovations.com/contact/>;
 Email customer-service@power-innovations.com; Call # 801-785-4123.

Supported Replacement Charging Cables



CAUTION! Replacement parts used must be purchased from Pii to maintain the charger's Intertek listing.

Replacement Cable Kit #	Description	Supported Quick Charger
SP-WI00484-LTN	<ul style="list-style-type: none"> EV Charging Cable—Type CCS1, length 5.5 m, config. for up to 60kW Spare neoprene adhesive-backed strips 	<ul style="list-style-type: none"> EVQC030-ExBx (30 kW Outdoor Mobile) EVQC040-ExBx (40 kW Outdoor Mobile) EVQC050-ExBx (50 kW Outdoor Mobile)

Tools Needed

- 64 mm (2.5") cable gland wrench
- 10 mm socket and wrench
- short 10 mm box wrench
- long 3/16 Allen wrench
- hook tool
- ¼" impact drill
- compact 90-degree ratcheting screwdriver with ¼ drive socket
- T20 and T25 Torx bits
- Hex bits sizes 4, 5 & 6
- size 2 Phillips bit
- 4-inch bit extension

IMPORTANT SAFETY INSTRUCTIONS – SAVE THESE INSTRUCTIONS



ELECTRICAL WARNINGS – WARNING! RISK OF ELECTRIC SHOCK!

WARNING! RISK OF ELECTRIC SHOCK! ONLY QUALIFIED ELECTRICAL PERSONNEL FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THIS TYPE OF EQUIPMENT AND THE HAZARDS INVOLVED SHOULD ADJUST, MODIFY, AND SERVICE THIS EQUIPMENT, WHICH IS REQUIRED TO MAINTAIN THE CHARGER'S INTERTEK LISTING. FAILURE TO OBSERVE THIS PRECAUTION COULD RESULT IN SEVERE INJURY OR DEATH.

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.

Replace CCS1 Charging Cable on Installed EV Quick Charger



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.

1. Disconnect the charger from upstream power.
2. Open front door (under the screen) using designated barrel key provided.
3. Turn OFF chargers AC main switch inside the door, on the upper left.

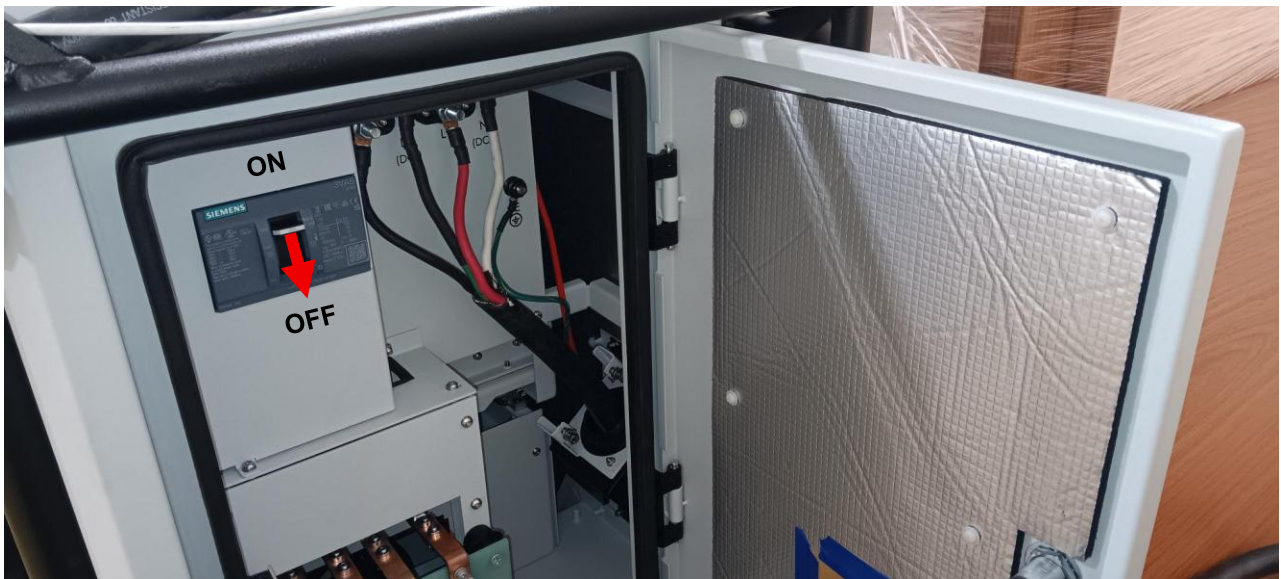


Figure 5: Outdoor Mobile with front door opened

4. Unscrew three button head hex-drive screws (Figure 6) securing the acrylic plate over the configuration bus bar and copper conductors, then set plate and screws aside.
5. Remove the 10 socket head cap screws securing configuration bus bar in place (see Figure 7, red box) and set configuration bus bar and screws aside.

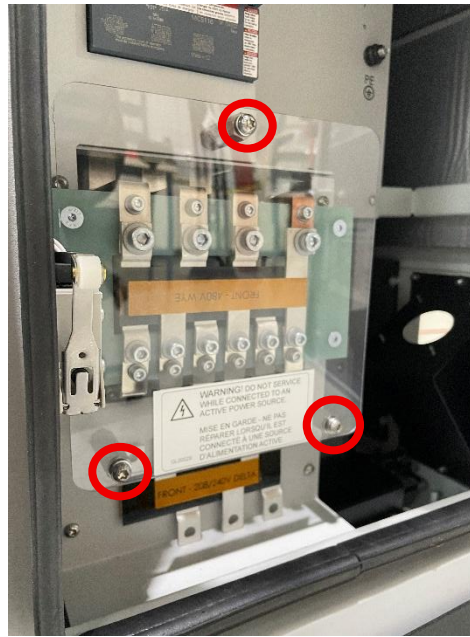


Figure 6

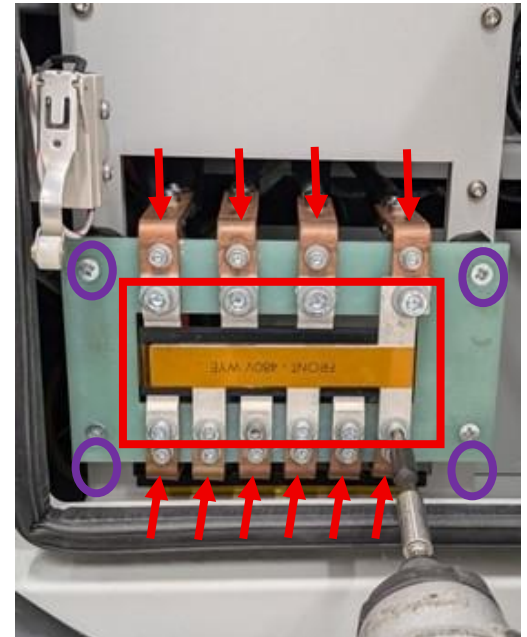


Figure 7

6. To restore order later, label 10 copper conductors' (Figure 7, red arrows) per order of attachment to the blue-tinted insulator plate; then unfasten the 10 copper conductors' socket head cap screws and set screws aside.
7. Unscrew the four Phillips screws securing the insulator plate to the four black standoffs (Figure 7, purple highlights), then set insulator plate and screws aside.

8. Using different Torx tools as needed, remove the six T25 Torx screws (Figure 8) from metal plate with four black standoffs attached, then set plate aside.

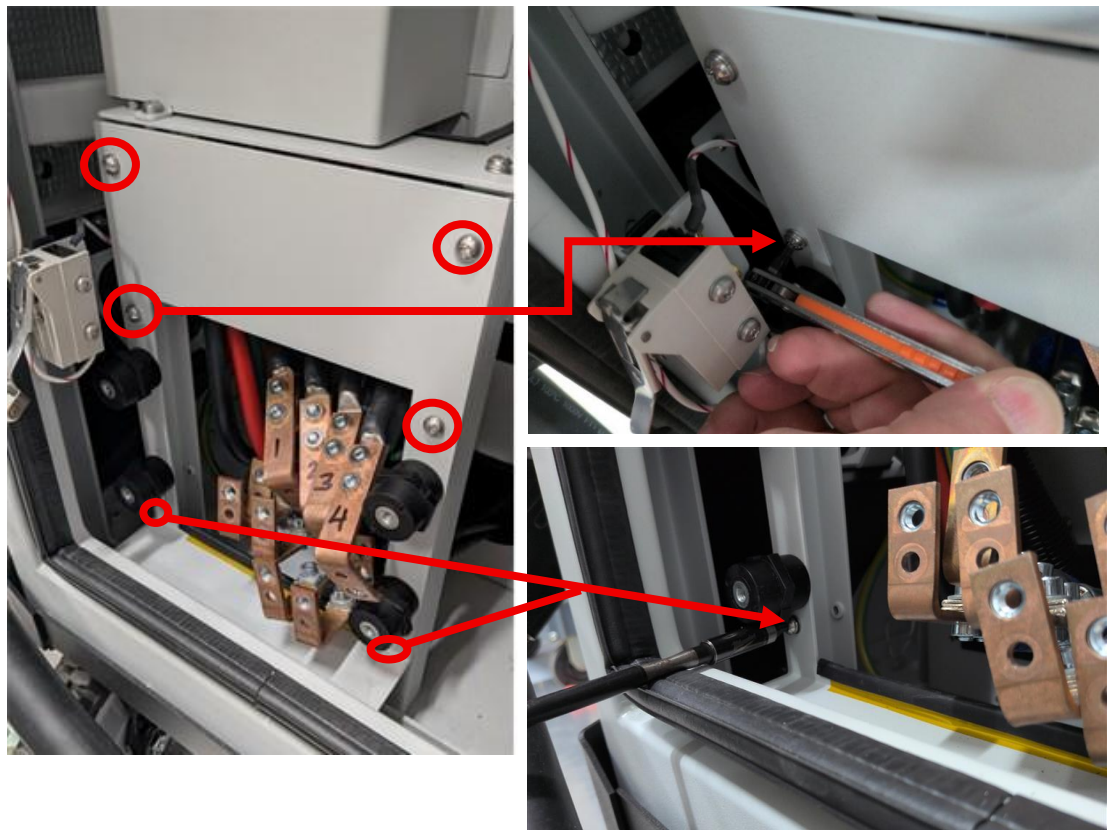


Figure 8

9. Tuck the top four terminals and their 8 wires out of the way, to open the area for steps to follow.



Figure 9

10. Use the 10 mm box wrench to remove the right-side bolt from the charging cable clamp.

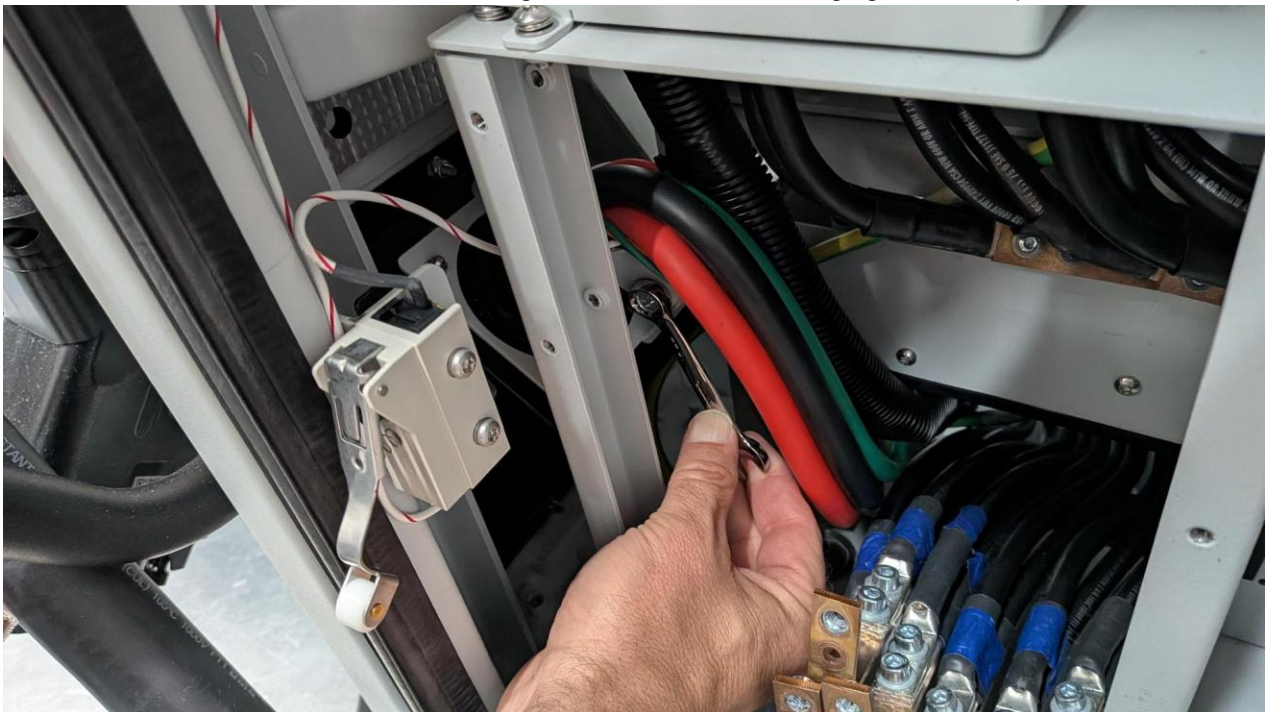


Figure 10

11. Use the ratchet and 10 mm socket to remove the left side bolt from the charge cable clamp.

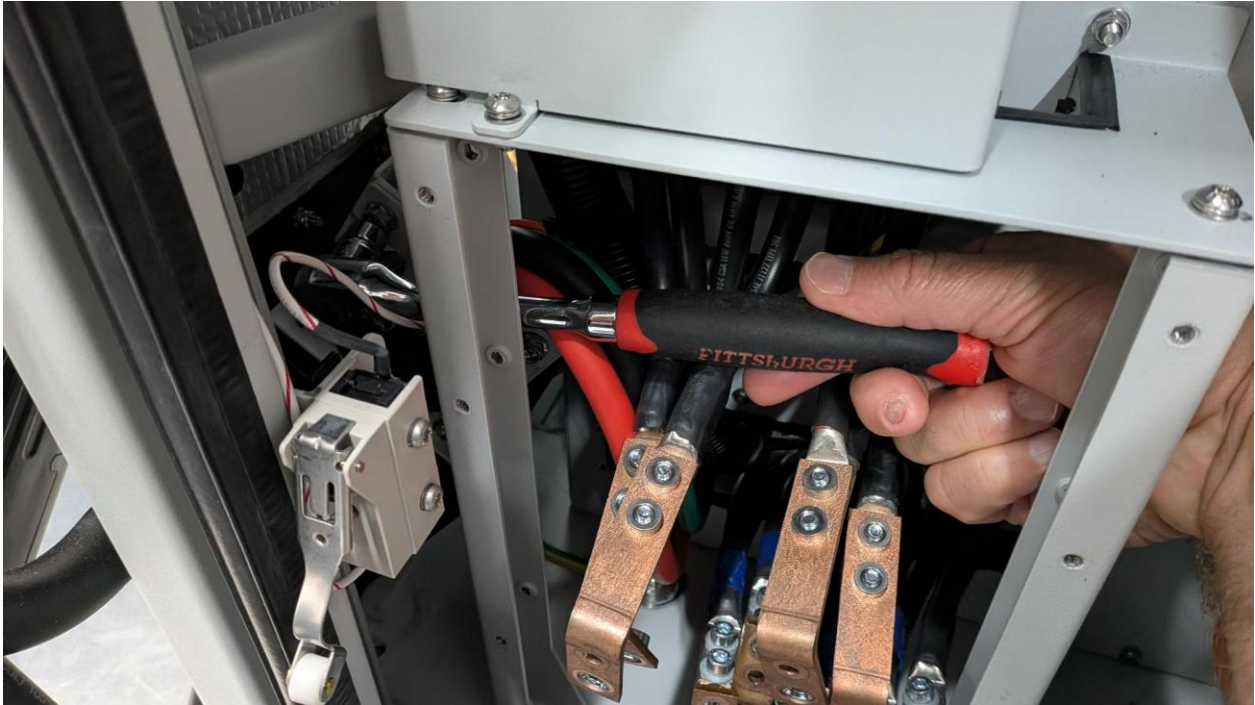


Figure 11

12. Open the left door and remove the roller/lever mechanism (Figure 12) and take care to retain its back plate when loosened (Figure 13).

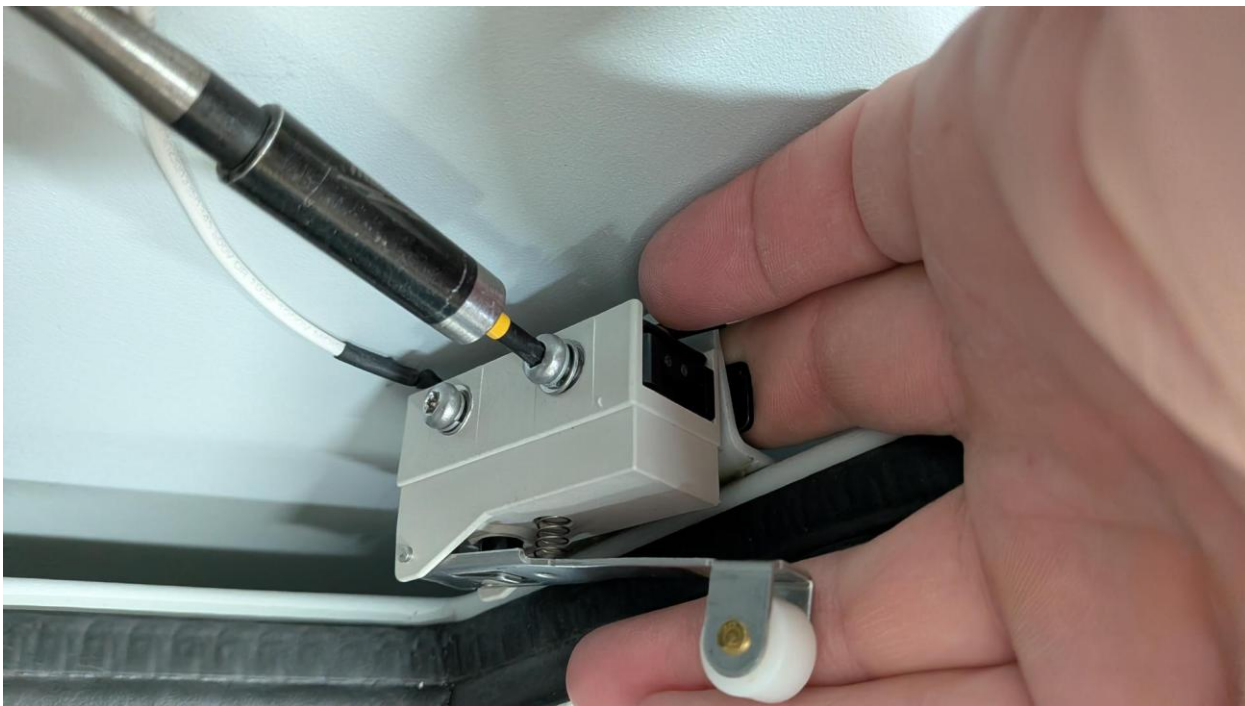


Figure 12

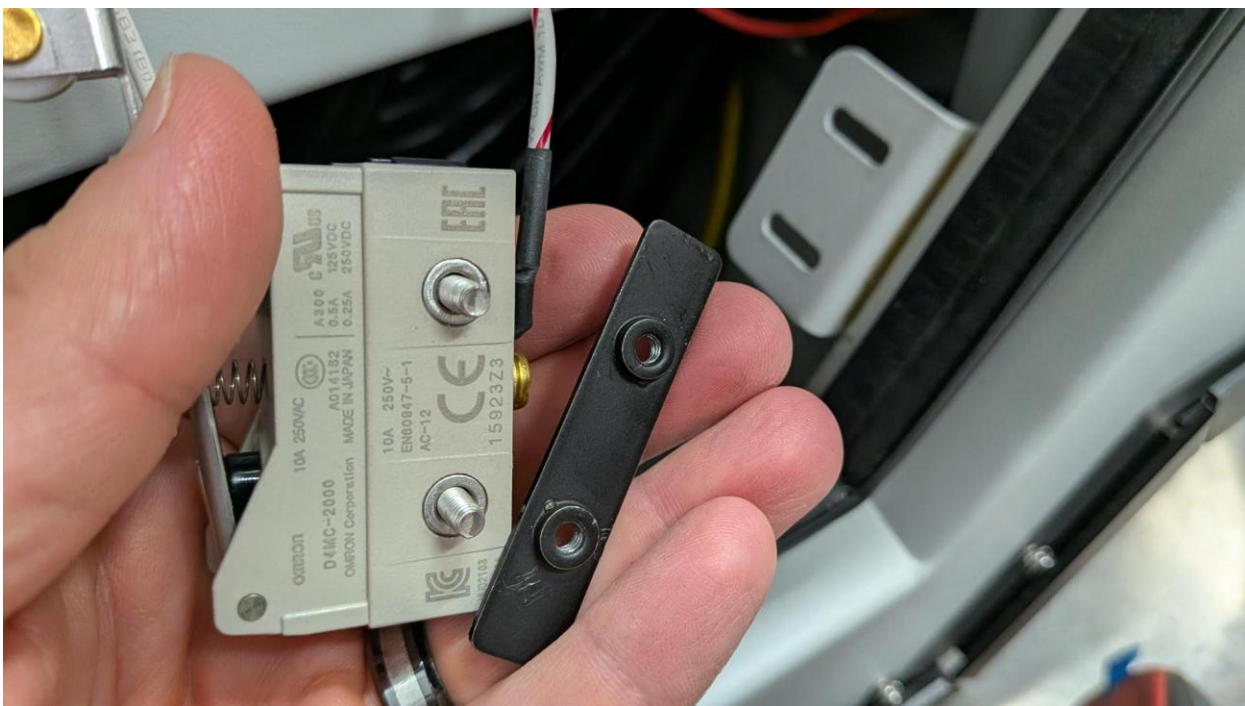


Figure 13

13. Remove fasteners from lower panel and use hook tool to lift the right side above roller/lever bracket.



Figure 14



Figure 15

14. Notice the access slot for output power terminals in Figure 16. Observe their order as shown in Figure 17, then remove wires with 3/16 Allen.

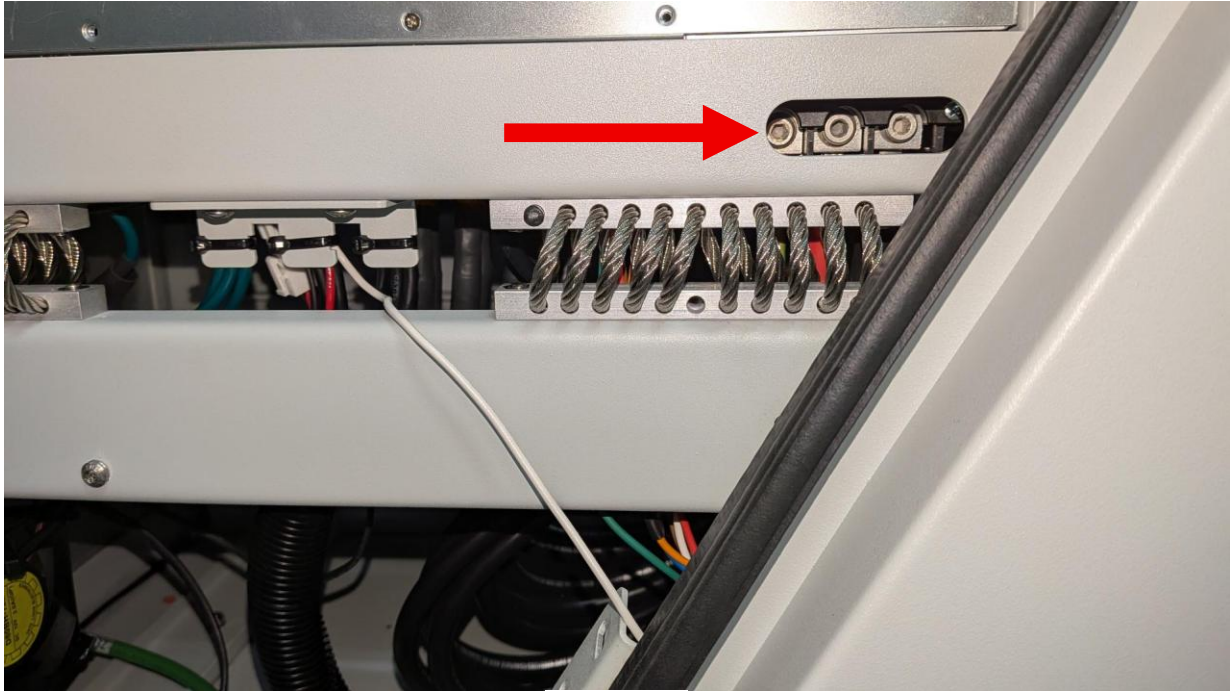


Figure 16

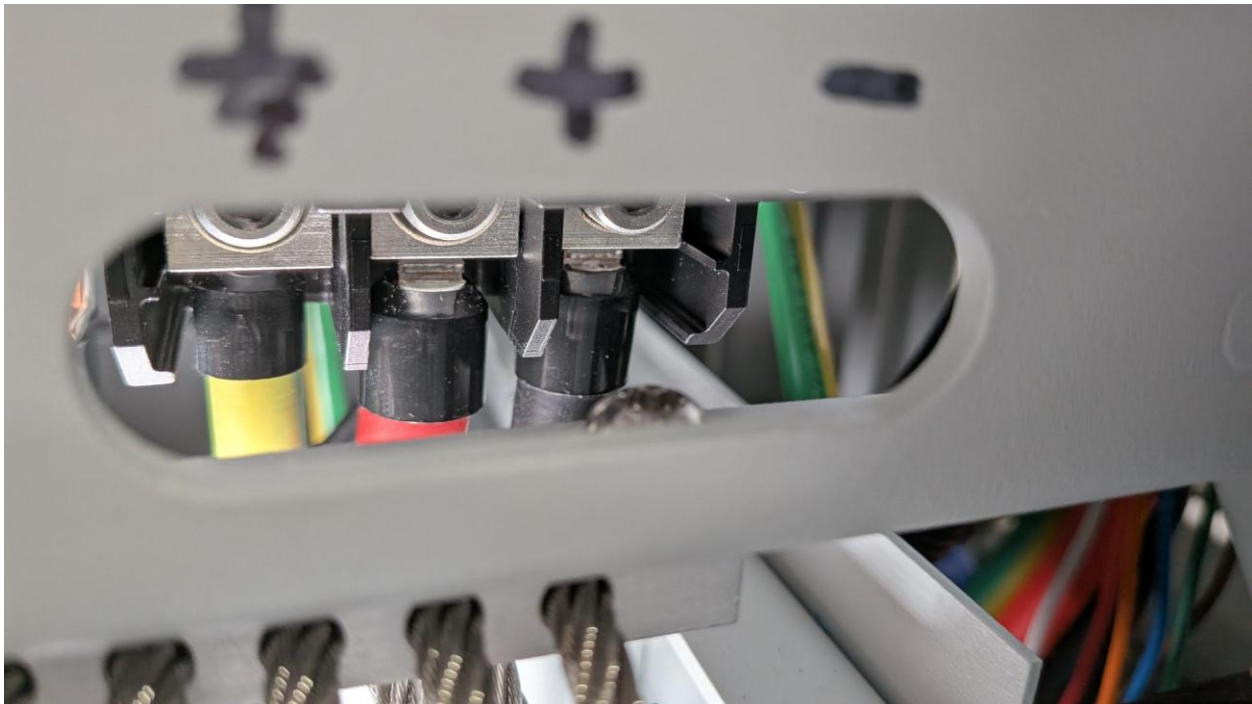


Figure 17

15. Just to the left of the output power terminal is a white Molex connector, which is visible through the slit shown in Figure 18.

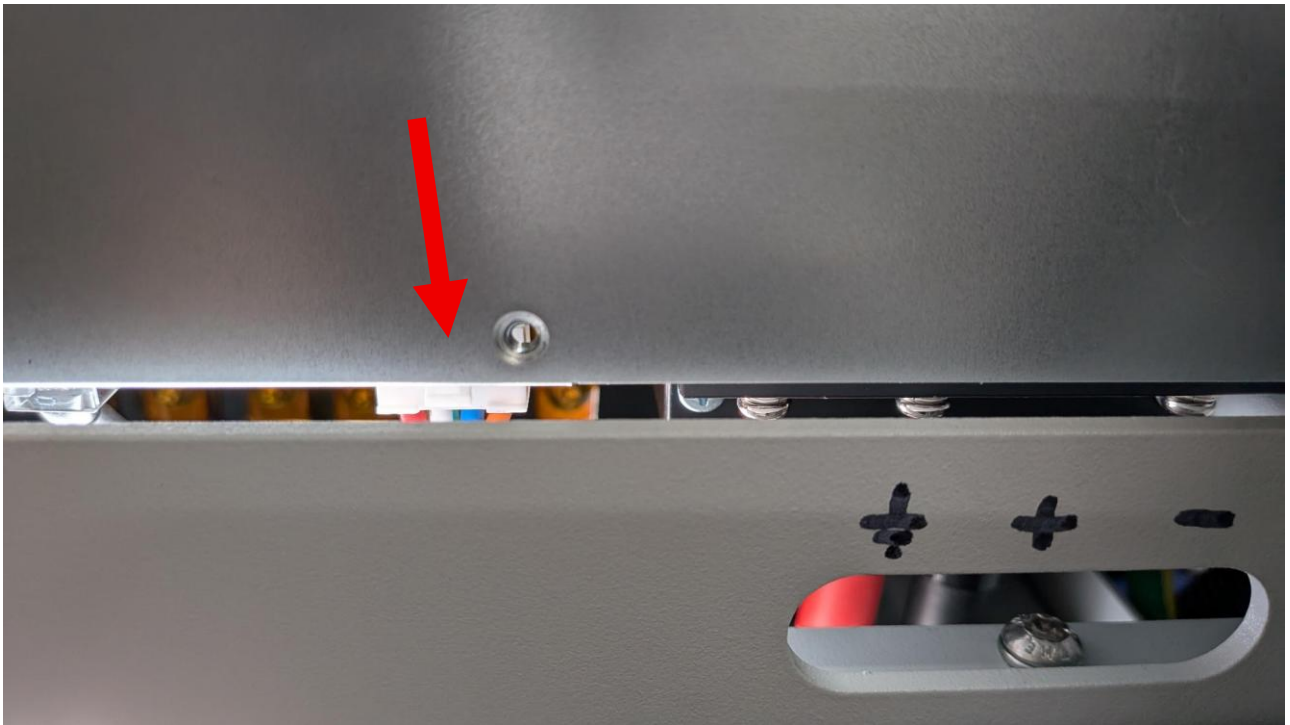


Figure 18

Figure 19 shows the position of the Molex connector as viewed by a camera from underneath.

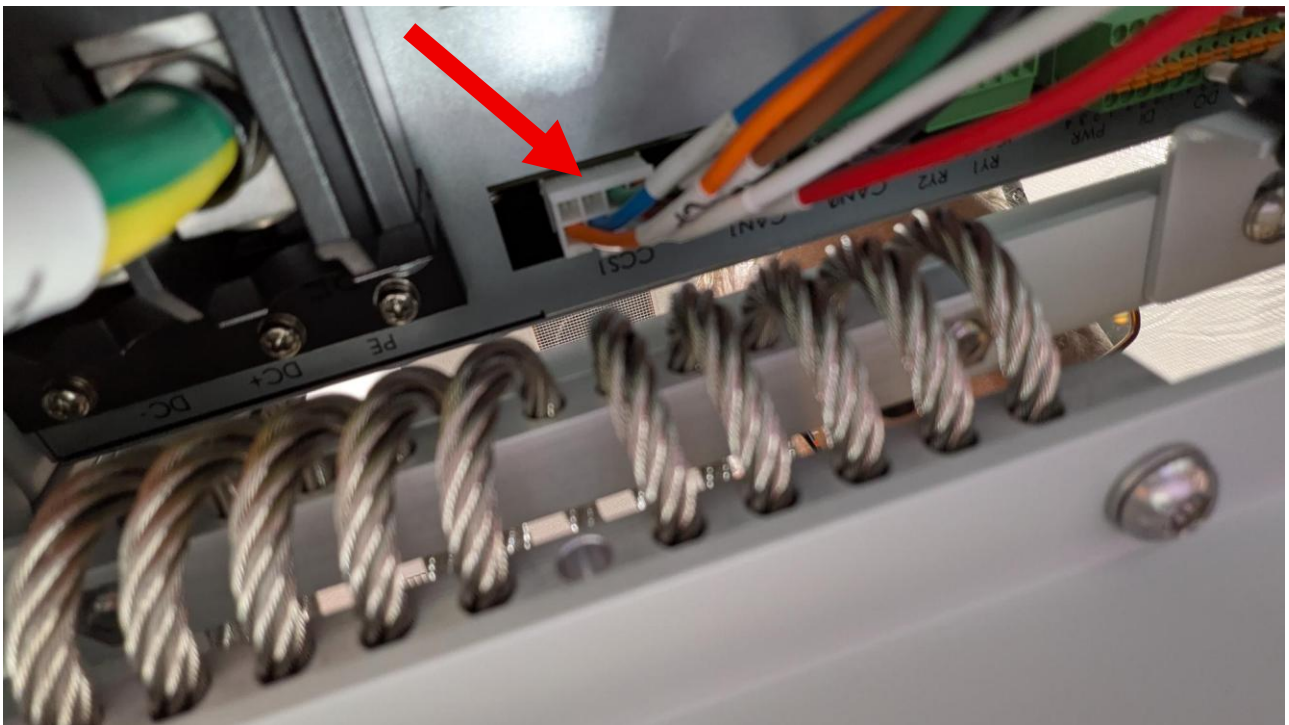


Figure 19

16. Reach under and pull the Molex connector out with left hand, while releasing it with a tool in your right hand. (See simulation in Figure 20.)

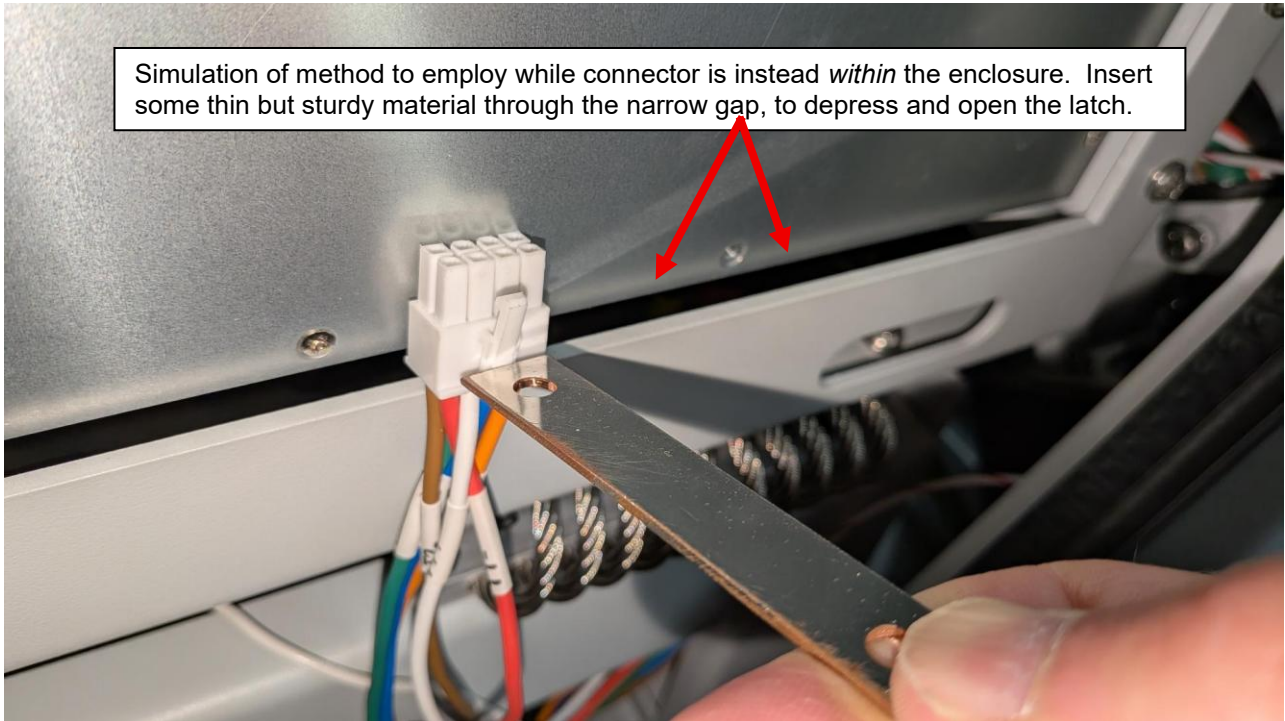


Figure 20

17. Remove the cable gland nut (Figure 21).



Figure 21

18. Feed the wires out through the gland.

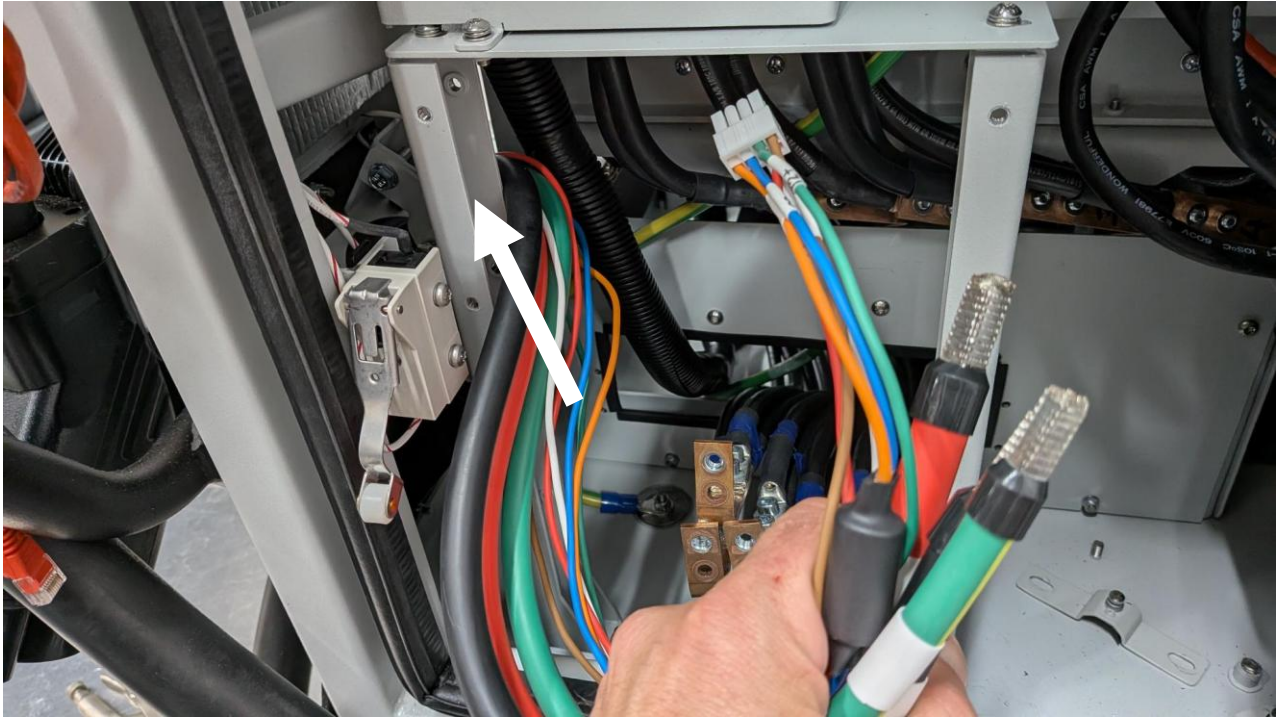


Figure 22

19. Note the length of wire extending beyond the black outer sheath and cut back the new one to match.
20. Orient cable gland nut in proper position on new charge cable.
21. Feed new cable through the cable gland until outer covering passes its clamping bracket by one inch.
22. Tighten cable gland nut.
23. Re-attach and tighten clamping bracket.

- 24.** Feed the wire ends into left side of opening shown in Figure 23 for termination.

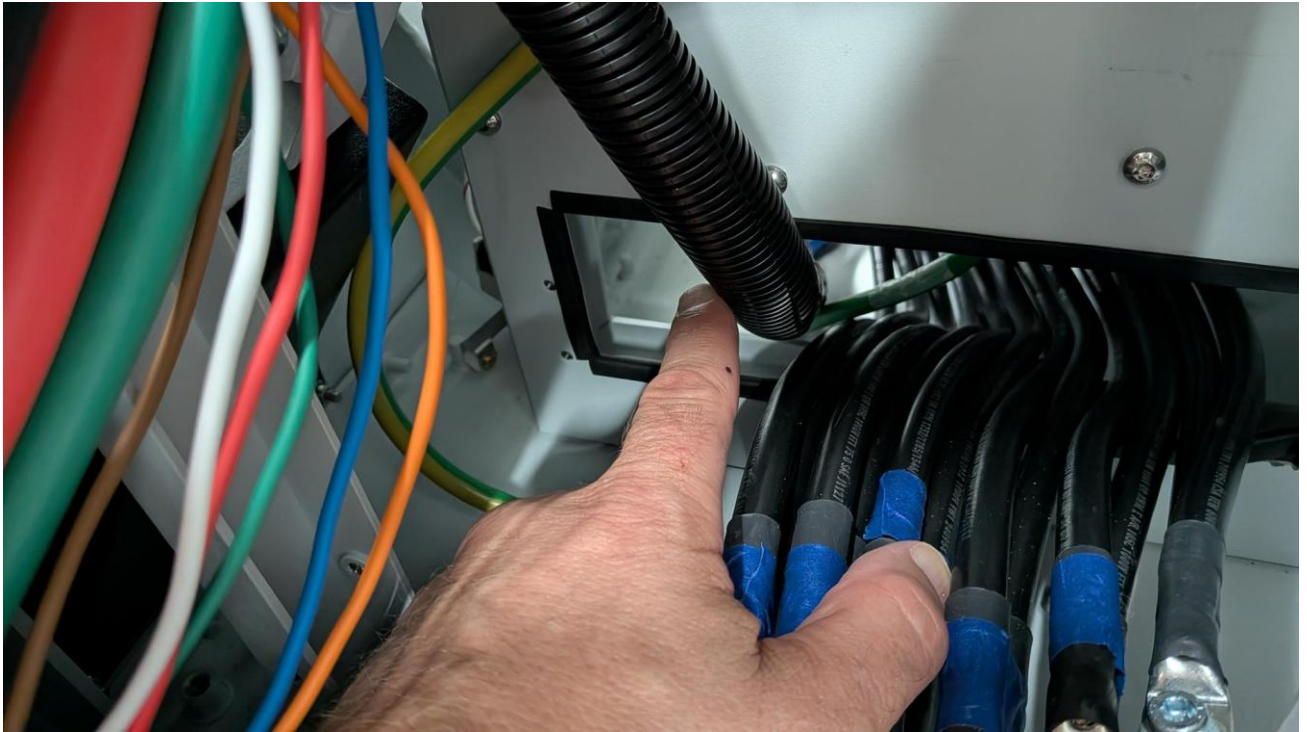


Figure 23

- 25.** With Allen wrench, terminate (1) first the negative output wire, (2) then the positive and (3) then the ground.



Figure 24

- 26.** Click the Molex connector into its receptacle (feel for it) with lock lever facing forward (facing front slit).

27. Re-install the lower panel, left side first, and fasten it into position.



Figure 25

28. Fasten roller/lever mechanism in outer-most position (closest to door, Figure 26).

29. Close the left door and lock it with the barrel key provided.



Figure 26

30. Inside the front door and using the 6 original T25 Torx screws, reinstall the powder-coated plate with 4 black standoffs attached (shown in Figure 27).
31. Loosely fasten the 6 lower-copper conductors to the bottom of the insulator plate (Figure 28).
32. Loosely fasten the 4 upper-copper conductors to the top of the insulator plate.

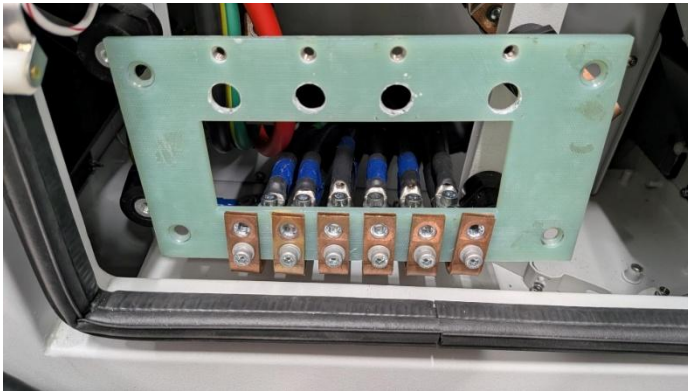


Figure 28

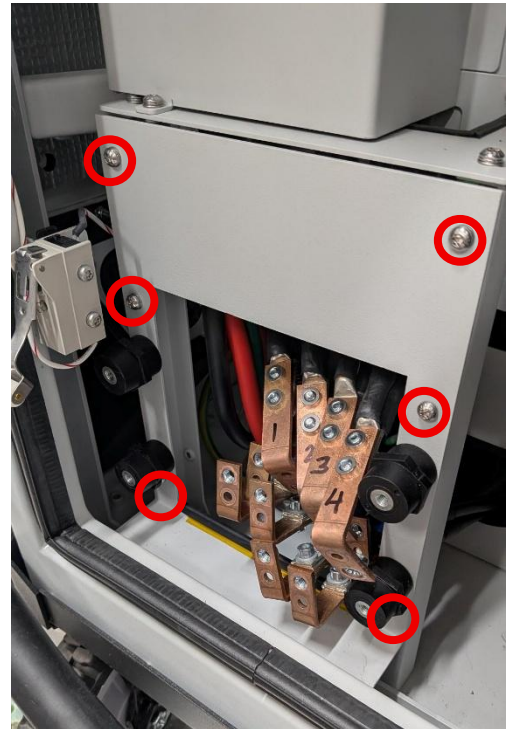


Figure 27

33. Fasten the insulator plate to the 4 black standoffs using a Phillips driver and the 4 original screws.
34. Securely tighten the 10 copper conductors that were loosely fastened to the insulator plate.
35. Re-install configuration bus bar onto copper conductors (Figure 29).
 - a. Secure 4 upper socket head cap screws, hand tight only and not over 424 in-lbs (48 N-m).
 - b. Secure 6 lower socket head cap screws, hand tight only and not over 177 in-lbs (20 N-m).

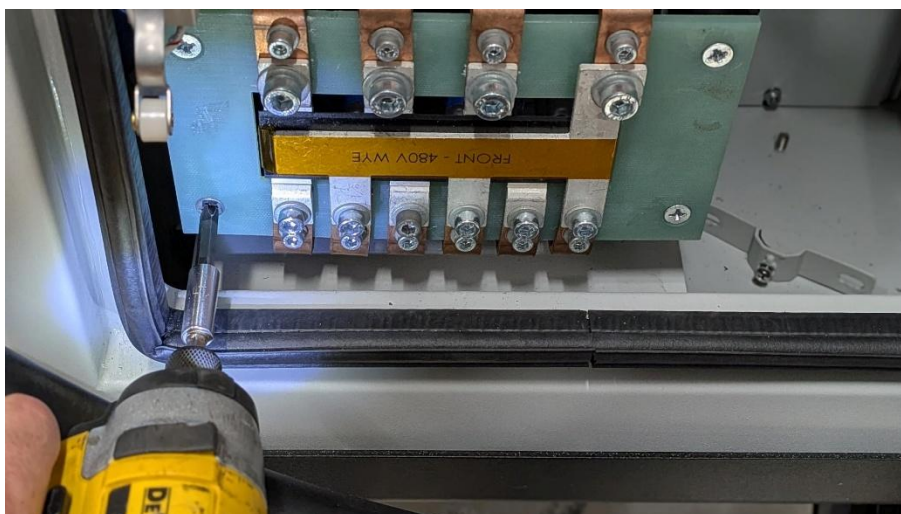


Figure 29

36. Re-attach the acrylic plate to the charger using a hex wrench and the three original screws.

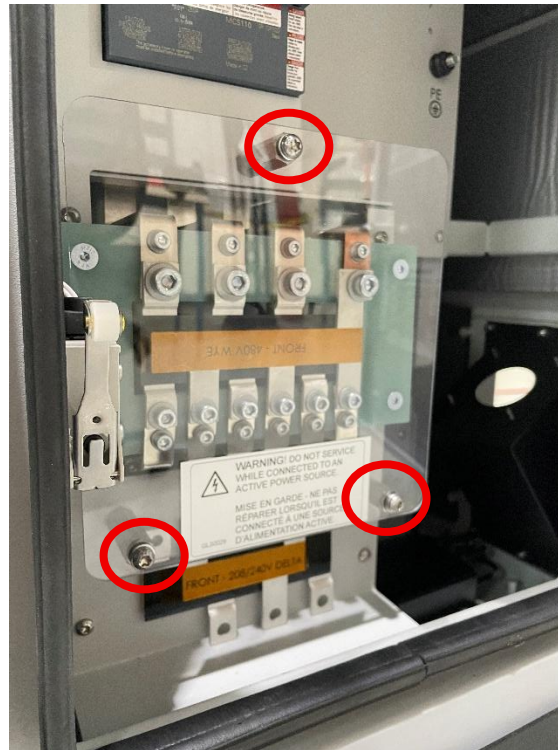


Figure 30

37. Restore upstream power (reconnect charger to upstream power).
38. Turn outdoor mobile charger's AC main switch (Figures 31-32) to the ON position.

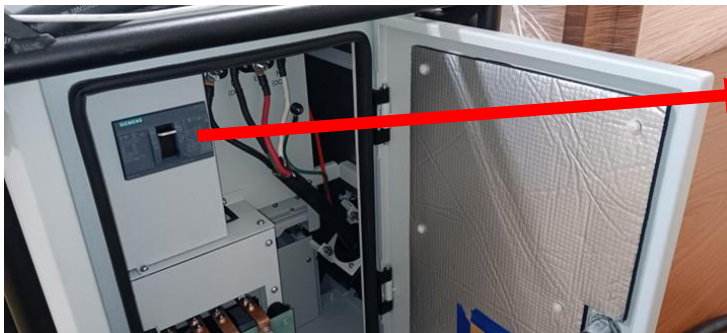


Figure 31: Outdoor Mobile Charger's AC Main Switch inside charger's front door in ON position

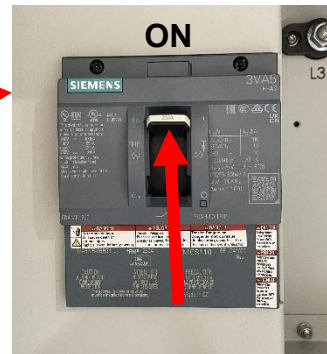


Figure 32: Outdoor Mobile Charger's AC Main Switch in ON position

- 39. Close Outdoor Mobiles front door and lock it with the door key provided.

Figure 33: Outdoor Mobile EV Quick Charger front door, closed and locked with door key



- 40. If possible, verify the new cable's functionality by following on-screen prompts to start a charging session. For more information on starting a charging session, refer to your EV Quick Charger's installation/operation manual.



Figure 34: Sample EV charger interface screens