

Express 250

Surface Conduit Entry Kit



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IMPORTANT SAFETY INSTRUCTIONS: SAVE THESE INSTRUCTIONS



WARNING:

- 1. Read and follow all warnings and instructions before installing and operating the ChargePoint® Charging Station.** Install and operate only as instructed. Failure to do so may lead to death, injury, or property damage, and will void the Limited Warranty.
- 2. Only use licensed professionals to install your ChargePoint charging station and adhere to all national and local building codes and standards.** Before installing the ChargePoint® charging station, consult with a licensed contractor, such as a licensed electrician, and use a trained installation expert to ensure compliance with local building and electrical codes and standards, climate conditions, safety standards, and all applicable codes and ordinances. Inspect the charging station for proper installation before use.
- 3. Always ground the ChargePoint charging station.** Failure to ground the charging station can lead to risk of electrocution or fire. The charging station must be connected to a grounded, metal, permanent wiring system, or an equipment grounding conductor shall be run with circuit conductors and connected to the equipment grounding terminal or lead on the Electric Vehicle Supply Equipment (EVSE). Connections to the EVSE shall comply with all applicable codes and ordinances.
- 4. Install the ChargePoint charging station on a concrete pad using a ChargePoint approved method.** Failure to install on a surface that can support the full weight of the charging station can result in death, personal injury, or property damage. Inspect the charging station for proper installation before use.
- 5. This charging station is not suitable for use in or around hazardous locations, such as near flammable, explosive, or combustible materials.**
- 6. Do not use this product if the enclosure, EV cable, or the EV connector is broken, cracked, open, or shows any other indication of damage.**
- 7. Do not put fingers into the electric vehicle connector.**
- 8. This device should be supervised when used around children.**



Important: Under no circumstances will compliance with the information in this manual relieve the user of his/her responsibility to comply with all applicable codes or safety standards. This document describes the most commonly-used installation and mounting scenarios. If situations arise in which it is not possible to perform an installation following the procedures provided in this document, contact ChargePoint, Inc. **ChargePoint, Inc. is not responsible for any damages that may result from custom installations that are not described in this document or for any failure to adhere to installation recommendations.**

Product Disposal

To comply with Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE), devices marked with this symbol may not be disposed of as part of unsorted domestic waste inside the European Union. Enquire with local authorities regarding proper disposal. Product materials are recyclable as marked.



No Accuracy Guarantee

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

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Symbols Used in This Document

This guide and product use the following symbols:



DANGER: Risk of electric shock.



WARNING: Risk of personal harm or death.



CAUTION: Risk of equipment or property damage.



Important: Crucial step for installation success.

Introduction

This document describes how to install an Express 250 DC fast charging station in situations where the site cannot pour a new concrete pad or run conductors underground. The Surface Conduit Entry (SCE) kit allows surface drilling and epoxy installation of anchor bolts, as well as a rear conduit entry box for conductors to enter the station through surface wireways. The SCE kit supports both Standalone and Paired installations. The SCE kit also supports adding above-ground conduit to pair an already-installed Standalone station with another Express 250 for shared DC output.

Installing an Express 250 using the SCE kit requires one ChargePoint Certified Installer and about 2.5 to 3 hours to complete (not including epoxy cure time). This time estimate includes the full charging station installation, including the applicable steps described in the *Express 250 Installation Guide*. If this is a Paired installation, allow an additional hour. This time estimate does not include the time needed to pull cables.

Note: This document is a supplement to the normal charging station installation described in the *Express 250 Installation Guide* that ships with the station. Ensure all installation instructions from that guide are followed except where this guide deviates.

Note: Shunt trip wiring is normally a feature of the Express 250, but is not required for operation. If shunt trip wiring will be used, run a wireway for the low voltage shunt trip wires that is separate from the AC conductor wireway.

Before You Begin



DANGER: RISK OF SHOCK. Before performing this procedure, follow standard practice and local code to de-energize the circuit designated for each Express 250 at the service panel and lock out/tag out the disconnect before proceeding. Use a multimeter to test that power is off. Keep power off for this circuit until all cover panels are correctly reinstalled and the work scope is completed. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR LOSS OF LIFE.



Important: You must be a licensed electrician and complete an online training course to become a ChargePoint certified installer, and to get a login for ChargePoint. If you do not complete this training, you will be unable to complete the installation process. Go to: chargepoint.com/installers or chargepoint.com/eu/installers



CAUTION: Do not use power tools during installation or servicing. Over-torquing can damage the equipment.



CAUTION: Do not install the charging station in inclement weather. If you must complete the installation in rain or wind, you must use a weather-proof shelter that covers all boxes and components.

Note: For assistance, go to chargepoint.com/support and find your region's technical support number.

Tools and Materials

For an SCE installation, the installer must bring:

- All tools and materials mentioned in the *Express 250 Charging Station Installation Guide* (if installing a new station) or *Express 250 Pairing Retrofit Guide* (if upgrading a Standalone station to be Paired). Online copies of both are available at chargepoint.com/installers or chargepoint.com/eu/installers
- Surface wireways:
 - 2 in trade size for AC cable
 - 3 in trade size for DC cable (if Paired)
 - 3/4 in trade size for Ethernet Cat5 (if Paired)
 - 3/4 in trade size for shunt trip (if used)
- Conduit elbows sized to each size wireway
- Tools for cutting, assembling, and securing wireways
- Sheet metal drill with drill bits for wireway sizes listed above, as needed (pilot holes provided)
- Concrete drill, level feature recommended
- 25 mm (1 in) and 6 mm (1/4 in) concrete bits
- 25 mm (1 in) rebar bit if needed
- 24 mm (15/16 in) open ended wrench
- Flathead screwdriver
- 750 ml of epoxy with bonding strength of 11.7 MPa minimum, compressive strength of 82.7 MPa minimum, and tensile strength of 49.3 MPa minimum, such as Hilti HIT-RE 500 V3 (normal cure time), Hilti HY-200 (fast curing), or similar

Note: Different epoxy types have different cure times at various temperatures. Check local temperatures for the site in advance to help choose an appropriate epoxy.

- Cable puller or fish tape
- Vacuum and/or brush
- Marker
- Isopropyl wipes
- Paper towels



Important: Read the *Express 250 Charging Station Installation Guide*, *Express 250 Charging Station Site Design Guide*, and site drawings to source and bring the correct AC conductors (required), shunt trip wiring (optional), DC conductors and lugs (Paired installations only), and Ethernet wiring (Paired installations only).



Important: If the Express 250 will be paired, check the serial number on the rear surface just under the cable swing arms. For North America stations with SNs prior to 1929xxxx, or EU/UK SNs prior to 2003xxxx, the station also requires a Pairing Upgrade Kit. Contact ChargePoint for the kit and the installation guide for that configuration.

Note: This product is compatible with the Express 250 Adapter. If the station has a slightly raised black or silver base below the cover panels, as shown on this image, break off the two front tabs on the SCE box base along their scored edges.

Note: SCE installations require a larger rear clearance than a normal Express 250 installation, to allow room for the SCE and wireways. Wireways must enter the SCE on its rear face. Conductor bend radius does not allow wireways to enter the SCE from its sides.



Check Site Readiness

Before beginning work, check that the site meets the basic requirements outlined below, as illustrated in the following image. Measurements are listed in mm (in).

- The panel breaker serving the charging station matches the site drawing requirements depending on local code and the type of installation: 62.5 kW Standalone, 125 kW Paired, or 50 kW de-rated (when replacing a previous, lower-amperage system).
- The smooth, level concrete has been approved by a structural engineer for the Express 250 dimensions and weight, OR conforms to these general specifications*:
 - At least 305 mm (12 in) deep (or deep enough to be 305 mm (12 in) below the frost line)
 - At least 1296 mm (51 in) on each side
 - Contains #4 rebar top and bottom 305 mm (12 in) on center
 - Concrete 2500 PSI minimum

** These pad specifications are applicable in most conditions, as described in the Express 250 Site Design Guide. In some extreme conditions, a larger pad would be required.*

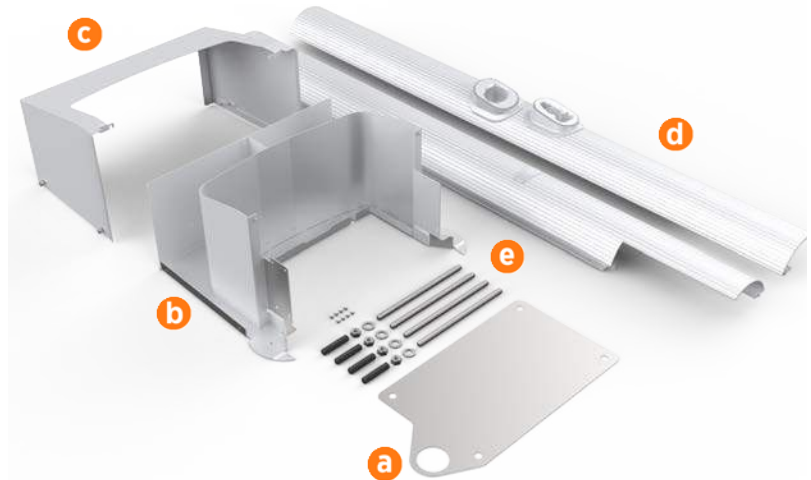
- Charging station sites are positioned so that each station is centered on a parking space (unless curbside), with the front of the station facing the vehicle. (This maximizes cable reach.)
- The cellular signal strength at the station location has been tested and is consistently strong. If RSRQ is measured at -10 dB or better, then RSRP can be -90 dBm or better. If RSRQ cannot be measured or is not adequate, RSRP must be -85 dBm or better.
- The service clearance of open space (not necessarily at system grade) extends a minimum of 610 mm (24 in) beyond the station in front, 2156 mm (84.8 in) side to side centered on the station, and 305 mm (12 in) above the station (image callout a, below). See the images below for rear clearance depending on configuration.
- The front of the station has 352 mm (14 in) of space at grade from the front right anchor, extending 1700 mm (67 in) to the left, without any permanent obstructions (bollards, wheel stops, etc.) (image callout b).

If the site does not meet these basic requirements, contact ChargePoint before continuing.

Check the SCE Kit Contents

Check the contents of the SCE Kit before beginning work. The SCE Kit might arrive in multiple boxes. The full kit includes:

- a. Surface mount plate
- b. Box base
- c. Box cover
- d. Left and right side extrusions with SCE cutouts (x2)
- e. Fasteners:
 - Box base screws (x8)
 - M16 x 300 Hilti anchor bolts, 304.8 mm (12 in) long (x4)
 - M16x13x2 hex nuts (x8)
 - 5/8 in ASTM F436 washers (x8)



Prepare the Express 250

Determine whether you are installing a new Express 250 station to be completely surface mounted, or you are adding above-ground conduit to pair a Standalone station with another Express 250 for shared DC output.

If you are installing a NEW station:

1. Receive the Express 250 station and its Power Modules at the site.
2. Follow the directions in section 1 of the *Express 250 Charging Station Installation Guide* to familiarize yourself with the process, crate contents, and required tools and materials.
3. Begin installation with the next section, "Install Surface Mount Anchor Bolts" on page 9.

If you are UPDATING a station:

1. Receive the Express 250 Pairing Kit at the site.
2. Follow the directions in section 1 of the *Express 250 Pairing Retrofit Guide* to familiarize yourself with the process, crate contents, and required tools and materials.
3. Power off the station and remove all cover panels as described in the *Express 250 Pairing Retrofit Guide*.

Note: Earlier stations had grounding straps on the Power Modules and their holders. If you are pairing an existing station, you must replace these with the EMI shields included in your Pairing Kit. The straps are not sufficient for paired stations.

4. Begin work in this guide with the section "Install the SCE Box Base and Box Cover" on page 11.

Install Surface Mount Anchor Bolts

1. Follow standard practice and local code to de-energize the applicable circuit and lock out/tag out the disconnect before proceeding. Use a multimeter to test that power is off.
2. Place the surface mount plate at the proposed location. Align the large left hole with AC conduit if present (for example, when replacing an older station). Check that the station placement on the pad meets site requirements.



Important: Ensure the rear clearance leaves room for the conduit runs and for service clearance.



3. Use a marker to mark the locations for the Express 250 anchor bolts. Remove the surface mount plate.
4. Use the 6 mm (1/4 in) concrete drill bit to drill each pilot hole about 51 mm (2 in) deep. The holes must be parallel to each other and perpendicular to grade.
5. Use a vacuum or brush to clean the dust from the holes.
6. Use the 25 mm (1 in) concrete drill bit to drill each anchor hole a minimum of 229 mm (9 in) deep. Anchor bolts must have 127 mm +/- 12.7 mm (5 in +/- 1/2 in) above grade.
7. Place the surface mount plate on the ground again. Verify that the new holes for the Express 250 align with the holes in the surface mount plate.
8. Thread a washer and a nut onto each anchor bolt, so that the measurement from the top of the nut to the top of the bolt is 76 mm (3 in).
9. Put a piece of tape above each nut to prevent it from floating upward when rotating the bolt into the epoxy later.
10. Prepare the epoxy. Ensure the applicator is dispensing correctly mixed epoxy before beginning work (for example, the Hilti epoxy is white when unmixed and grey when mixed).



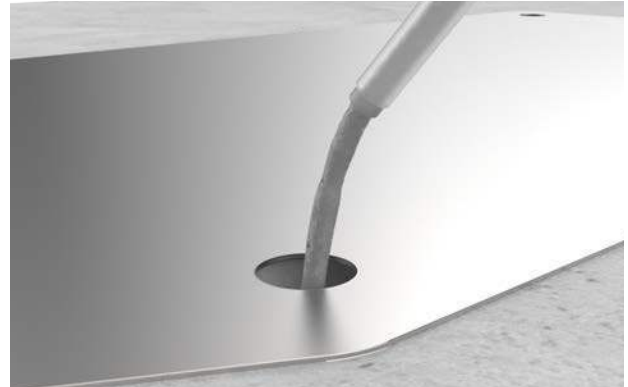
76 mm
(3 in)



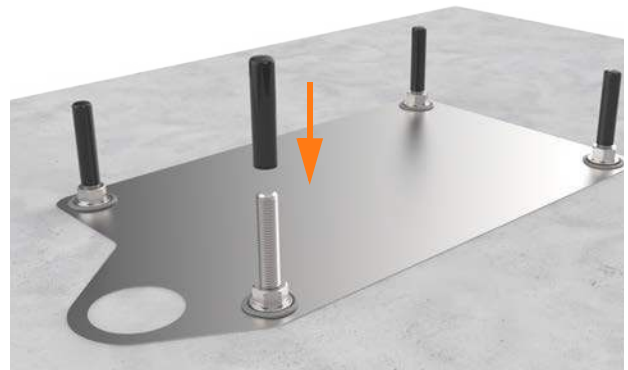
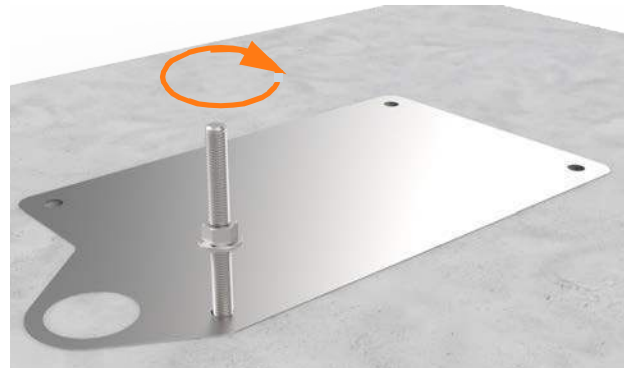
11. Fill the first anchor bolt hole with epoxy until the epoxy is about 44.5 mm (1.75 in) from the top of the hole.



Important: Continue immediately to the next step because the epoxy sets within about eight minutes.



12. Insert the mounting bolt into the hole. Rotate the mounting bolt as you insert it to draw epoxy into the threads. Lift the anchor bolt again to see how close to the surface the epoxy has filled. If the epoxy is below grade level, add enough to fill the hole to grade level. Use paper towels to wipe up any excess.
13. Measure the nut distance from the top of each bolt again and adjust if needed. These nuts help secure the surface mounting plate to the concrete and should be flush against the base when installed.
14. If the Express 250 station will not be immediately installed, insert a protective plastic cap over the bolt.
15. Use a level to check that each anchor bolt is plumb. If needed, adjust while the epoxy is still setting.



16. Repeat the above epoxy steps for each of the other three anchor bolts.
17. **Stop.** Allow the epoxy to cure for the initial cure time listed on the epoxy, before beginning to install the Express 250.

Note: If desired, use this time for measuring, cutting, and fastening wireways to run conductors to the rear of the station.



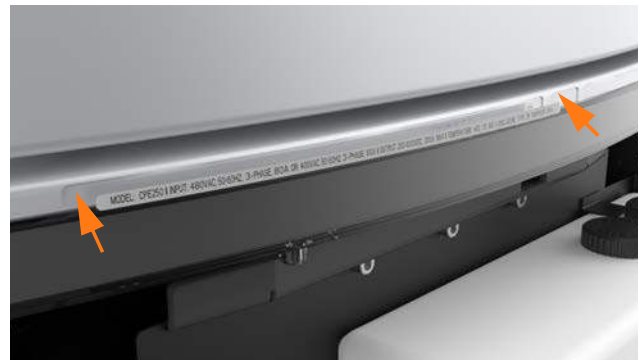
Anchor and Label the Station

1. Check that the epoxy has set completely.
2. Torque all four nuts to 94.9 Nm (70 ft-lbs).
3. Follow the instructions in the *Express 250 Installation Guide* from the beginning of the guide to the end of the section “Mount and Secure the Express 250”. The station should now be mounted on the anchor bolts, leveled, and secured with the anchor washers and nuts.



Important: The station should rest on the leveling nuts, not on the surface mount plate.

4. Stop before connecting the AC wiring.
5. If required, adjust the ratings with a new label over the existing ratings line, just below the swing arms in the back:
 - a. If the Express 250 is being connected to wiring and a breaker of 80 A, affix the 50 kW ratings label to the station
 - b. If the Express 250 is being paired, affix the 125 kW label to the station



Install the SCE Box Base and Box Cover

1. Use a T25 Torx to remove the rodent guard L-brackets on each side of the station, below the AC and DC wiring terminals.



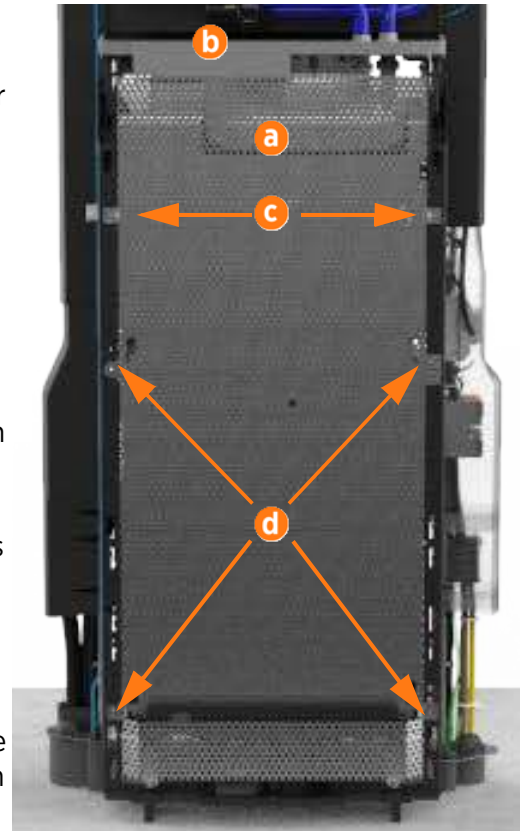
2. Install the rear EMI shield:

- a. Position the rear EMI shield (a) over the closed Power Module holder, the drain hose, and the cooling controller cover (b). Ensure the cutout on the long edge is on the right side, leaving the sensor wire clear.

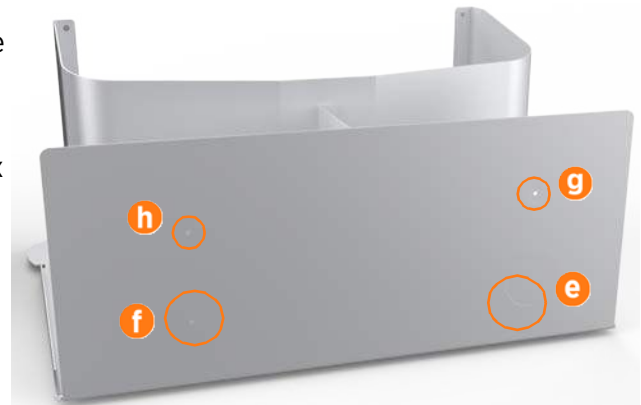


CAUTION: If the top edge of the EMI shield risks contact with the wiring below the cooling controller or the drain hose, pad the edge of the shield with electrical or duct tape to prevent abrasion.

- b. Use a T20 Torx to remove the two screws (c) that align with the top EMI shield tabs. Discard the star washers beneath them, if present.
- c. Use isopropyl wipes to clean the frame grounding locations and both sides of the rear EMI shield tabs.
- d. Use a T20 Torx to reinstall the top screws with an M5 flat washer from the installation kit to secure the top tabs of the shield on each side.
- e. Use a T25 Torx, an M5 screw, and an M5 washer to attach the rear EMI shield to each middle and bottom grounding location on the rear of the frame (d). Torque to 4 Nm (35 in-lbs).



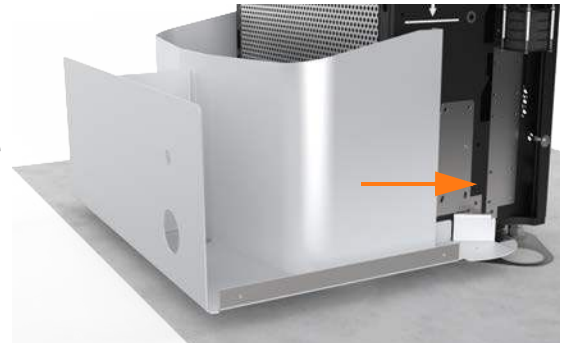
3. Loosen the captive screws along the bottom edges of the SCE to release the cover from the base. Set the cover aside.
4. Based on the provided pilot holes, use a sheet metal drill bit to create the circle in the rear face of the box base for AC (e). Drill out the circle for DC only if the station will be paired (f).
5. If the station will have shunt trip wiring (g) or Ethernet (h), use a 45 mm (12/16 in) core bit to drill the hole(s) based on the provided pilot holes.



Important: Ensure the locations of the shunt trip and Ethernet holes do not interfere with routing wireway elbows and conduit. Calculate height clearance for all wireways.

6. Position the SCE box base around the back of the station. Be careful not to slide the bottom edge of the box base underneath the surface mount plate.

Note: The box base cannot be installed on the station if the lower rear cover panel is already installed.



7. Install the lower rear cover panel inside the gap between the box base and the station:

- a. Using two hands, one on each side of the lower rear panel, align the guide tabs on the lower rear panel to the matching slots on the Express 250.
- b. Squeeze the sides of the panel inward to fit the tabs into place in the C-channel, inside the watertight gasket. Carefully push the panel down.



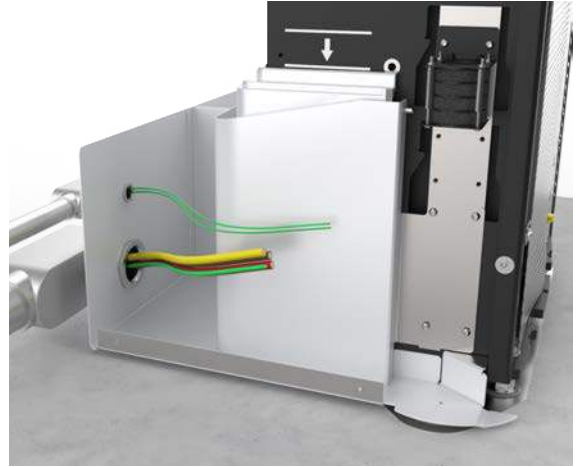
Note: The charging station has guide marks on the frame, to show initial and final cover locations.



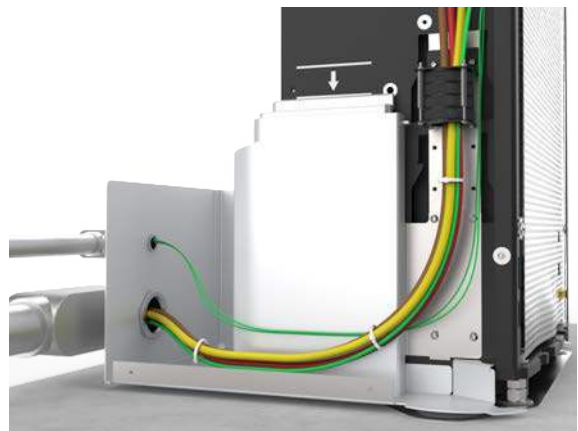
8. Use a T25 Torx to fasten the box base to the station with 4 screws on each side (8 total, included in the SCE Kit). Torque to 4 Nm (35 in-lbs).
9. Install surface wireways between the service panel and the Express 250 box base.
10. Fasten elbows to the Express 250 box base and to the wireway using a code-approved sealing method.



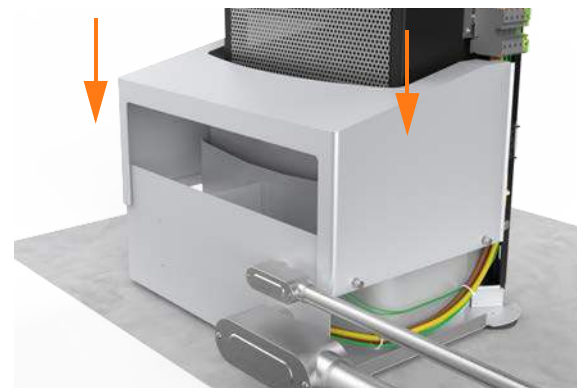
- 11.** Pull all wiring through the wireways into the box base.



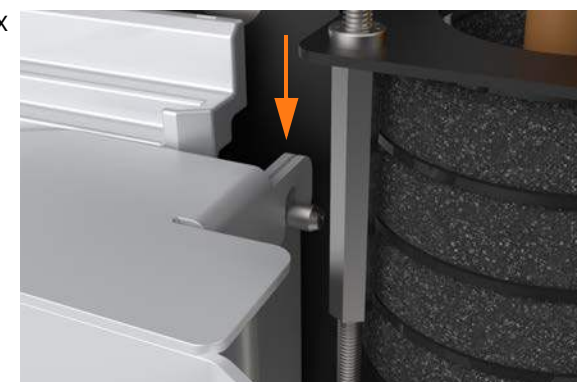
- 12.** Go to the sections in the *Express 250 Installation Guide* for wiring the AC conductors (and DC if pairing the station). Land all applicable wires (AC, shunt trip, DC, and Ethernet) per the installation instructions.



- 13.** Slide the box cover over the box base.



- 14.** Ensure the top corners of the box cover slide over the box base guide pegs.

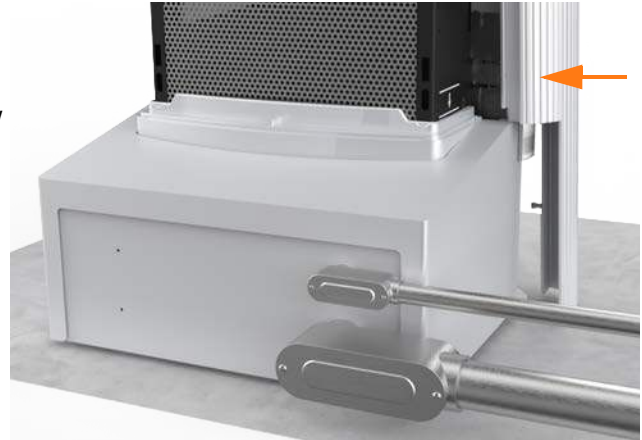
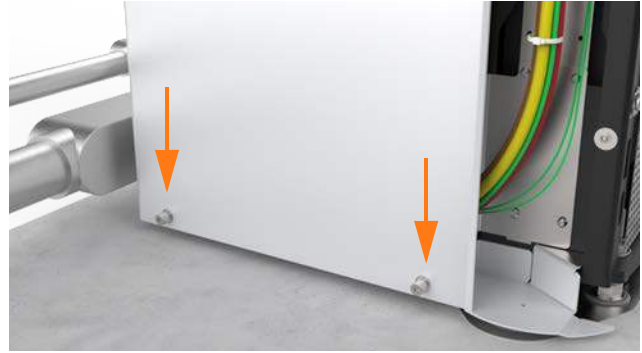


15. By hand, tighten the two captive screws on each bottom side edge that fasten the cover to the base. Torque to 4 Nm (35.4 in-lbs).

16. Open the Power Module holders.

17. Install the right and left extrusions, aligning the cutouts over the edges of the SCE box cover. SCE extrusions have five captive screws each (one bottom, two middle, two top). The bottom rear screw is not present. Fasten these captive screws as mentioned in the Installation Guide.

Note: For installation or servicing, SCE extrusions can be removed without removing the SCE or rear bottom panel. However, if the rear bottom panel must be removed, first remove the SCE cover and loosen the box base side screws.



Continue Normal Installation

1. Continue following the *Express 250 Installation Guide* to complete the rest of the station installation: install Power Modules, the front EMI shield, and all other cover panels
2. When on-screen configuration prompts for either “replacement” or “new installation”, choose New.
3. Complete normal Express 250 pinpointing procedures through the end of the manual.

Warranty Information and Disclaimer

The Warranty you received with your Charging Station is subject to certain exceptions and exclusions. For example, your use of, or modification to, the ChargePoint® Charging Station in a manner in which the ChargePoint® Charging Station is not intended to be used or modified will void the limited warranty. You should review your warranty and become familiar with the terms thereof. Other than any such limited warranty, the ChargePoint products are provided "AS IS," and ChargePoint, Inc. and its distributors expressly disclaim all implied warranties, including any warranty of design, merchantability, fitness for a particular purposes and non-infringement, to the maximum extent permitted by law.

Limitation of Liability

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FCC Compliance Statement

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 manufacturer's instruction manual, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, you will be required to correct the interference at your own expense.

Important: Changes or modifications to this product not authorized by ChargePoint, Inc., could affect the EMC compliance and revoke your authority to operate this product.

Exposure to Radio Frequency Energy: The radiated power output of the 802.11 b/g/n radio and cellular modem (optional) in this device is below the FCC radio frequency exposure limits for uncontrolled equipment. The antenna of this product, used under normal conditions, is at least 20 cm away from the body of the user. This device must not be co-located or operated with any other antenna or transmitter by the manufacturer, subject to the conditions of the FCC Grant.

FCC/IC Compliance Labels:

Visit chargepoint.com/labels/



chargepoint.com/support

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