

Express 250

ChargePoint® Networked Charging Station

Advanced FRU Guide: Repairing Hall Sensors



DANGER: RISK OF SHOCK. Some Express 250 stations share DC power (“paired” configuration). Pairing should be marked on the AC disconnect or breaker panel. Before performing this procedure, check for pairing and, if present, disconnect the power to BOTH Express 250 stations at the service panel. Whether Standalone or Paired, follow standard practice and local regulations to de-energise the applicable circuit and lock out/tag out the disconnect before proceeding. Use a multimeter to test that power is off. Keep power off for the circuit(s) 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 online training to become a ChargePoint approved 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 weatherproof shelter that covers all boxes and components.

Note: When replacing a part, ChargePoint recommends taking a photo before removing each part so you can refer to the photo when reassembling.

Do not discard the part you are replacing. Use the new Field Replaceable Unit (FRU) packaging to return all removed parts to ChargePoint.

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

You Will Need:

- FRU kit, Hall sensors
 - Hall sensor, magnetic south pole (x2)
 - Insulation displacement connectors (x4)
 - Extra black nylon barbed mounting rivets
 - Extra wire
- Headlamp
- Gloves
- Step ladder
- T10 Torx driver
- T20 Torx driver
- T25 Torx security driver
- Screwdriver
- Wire cutter
- Pliers

This repair takes one technician about 1 – 2 hours to complete.

About Panels

All Express 250 panels have guide tabs that align with corresponding slots on the Express 250's frame. When removing a panel, lift the panel upwards to release these tabs from their slots. When installing a panel, align these tabs above their corresponding slots and press the panel downwards.

Panels overlap from the bottom to the top. To remove any panel, first remove all panels above it on that side.



Diagnose Broken Sensor Location(s)

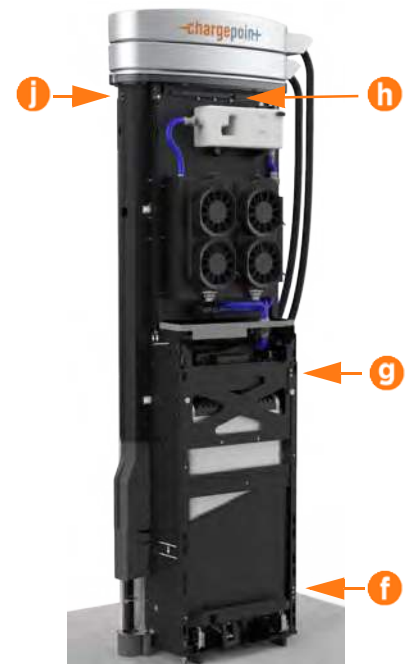
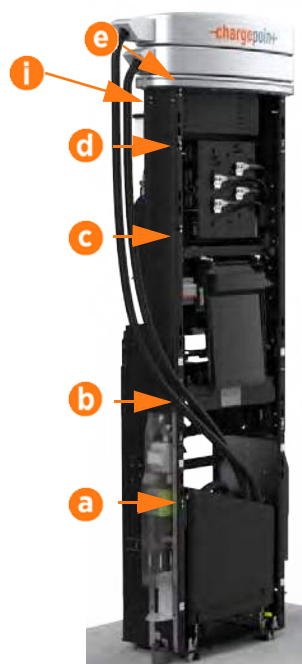
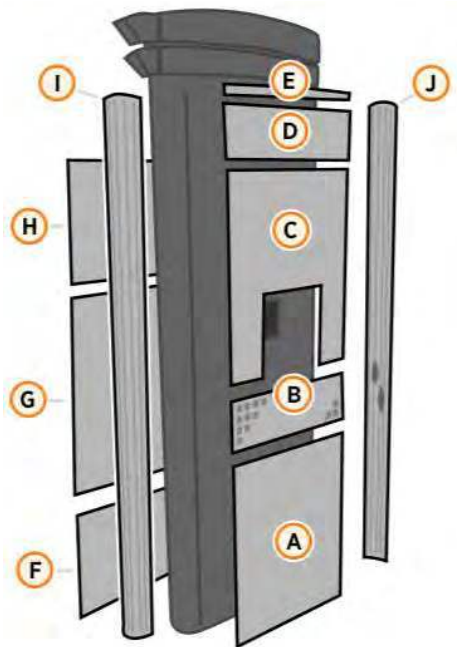
1. Before powering off the station, note which panel errors are displayed on the touchscreen. The station uses Hall sensors to detect correct installation of all cover panels. An automatic system test checks all Hall sensors, to prevent water ingress or shock risk from touching internal components.

2. Power off any existing station at the breaker panel and lock out/tag out before continuing work.



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3. Ensure that all panels are fully installed and seated to rule out panel misalignment as the error reason.
4. Power on the station and check the lower right corner of the touchscreen for error messages. If panel errors still appear, match the panel letters on the left illustration to sensor locations on the right:



Error	Associated Panel	Remove These Panels for Sensor Access
A	Front bottom panel	A - E
B	Middle vent panel	B - E
C	Front top panel	C - E
D	Secondary display	D - E
E	Area light bar	E
F	Rear bottom panel	F - H
G	Rear middle panel	G - H
H	Rear top panel	H
I	Left extrusion	A - I
J	Right extrusion	A - H, J

Note: If additional access to wiring is needed, remove the nearest side extrusion as well. Removing either extrusion requires removing all front and rear panels first.

Remove Cover Panels for Access

According to the table above, use these procedures to remove only as many cover panels as are needed to access the broken sensor:

- “Remove the Area Light Bar and LED Display” on page 4
- “Remove the Front Panels” on page 5
- “Remove the Rear Panels” on page 7
- “Open the Power Module Holders” on page 8
- “Remove the Right Extrusion” on page 11
- “Remove the Left Extrusion” on page 14

Once all required panels are removed, proceed to “Replace the Hall Sensor” on page 15.

Remove the Area Light Bar and LED Display

1. Power off any existing station at the breaker panel and lock out/tag out before continuing work.



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2. Using a T25 Torx driver, loosen the two captive screws on the area light bar.



3. Disconnect the power cable that connects the area light bar to the LED display assembly. Remove the area light bar.



4. Push the LED display upwards to release its guide tabs from their corresponding slots on the Express 250's frame.
5. When the LED display assembly is released, disconnect the five cables from the back.



Important: Do not allow the LED display to hang from its cables.

Remove the Front Panels

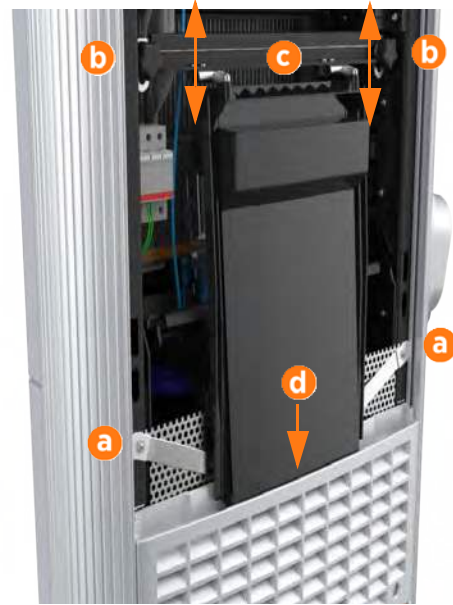
1. Using two hands, pull the top panel upwards to release its guide tabs from their corresponding slots on the Express 250's frame.
2. Place a protective cover, such as a lint-free cloth, over the touchscreen to prevent damage during installation.



3. Use a T25 Torx driver to remove the M5 screw and washer (a) that are attaching each touchscreen ground strap to the frame. Keep the screws and washers for reuse.
4. Loosen both retention knobs (b), allowing the touchscreen beam (c) to slide up vertically and the touchscreen's bottom edge to clear the middle vent panel's slot (d).
5. With hand pressure, tilt the touchscreen upwards at a 45 degree angle.
6. Allow the touchscreen to return to its lowest position vertically.



Important: The bottom edge and corners of the touchscreen are sharp. Take care when moving underneath the raised screen.



7. Remove all wires from the wire management rings on the bottom face of the touchscreen. Disconnect all wires from the connectors on the touchscreen. Move the proximity wires (shown) to hang in front of the middle vent panel.
8. Loosen both retention knobs enough to remove the touchscreen completely from the station. Carefully set it aside in a safe place for reinstallation.



9. Using two hands, one on each side of the middle vent panel, remove the panel by firmly pulling it upwards to release the guide tabs from the corresponding slots on the Express 250's frame.



CAUTION: The fins on the back surface of the middle vent panel are sharp. Take care when handling the panel.



10. Remove the bottom front panel by lifting upwards from the bottom of the panel to release the guide tabs from their corresponding slots on the Express 250's frame.



Remove the Rear Panels

1. Using a T25 Torx driver (or a Phillips #2 screwdriver for early charging stations), loosen the two hidden captive screws located in the top rear panel's vents, inset from each bottom corner.
2. Using a T25 Torx driver, loosen the two captive screws located at the top of the top rear panel.
3. Using two hands, hold the top rear cover at an angle to remove, leading with the bottom edge.



4. Using two hands, lift the middle rear panel straight up and out to disengage the guide tabs.



5. Using two hands, one on each side of the lower rear panel, carefully pull the panel upwards to release the panel's guide tabs from their corresponding slots on the Express 250's frame.



Open the Power Module Holders

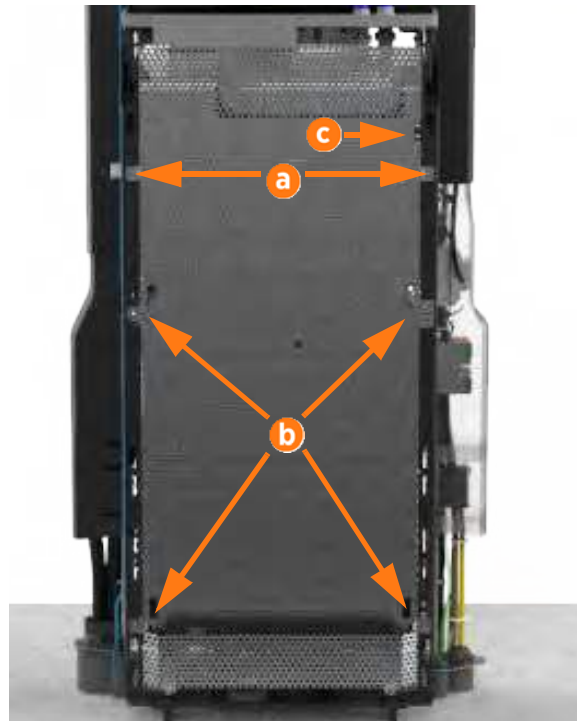
If more room is needed to access the Hall sensor or remove side extrusions, remove grounding protections and open the Power Module holders. This procedure is optional.

Depending on the station version, Power Modules are protected by either EMI shields or by ground straps on the Power Module holders. An Express 250 only needs one of the two protection types. Directions for

both are included below.

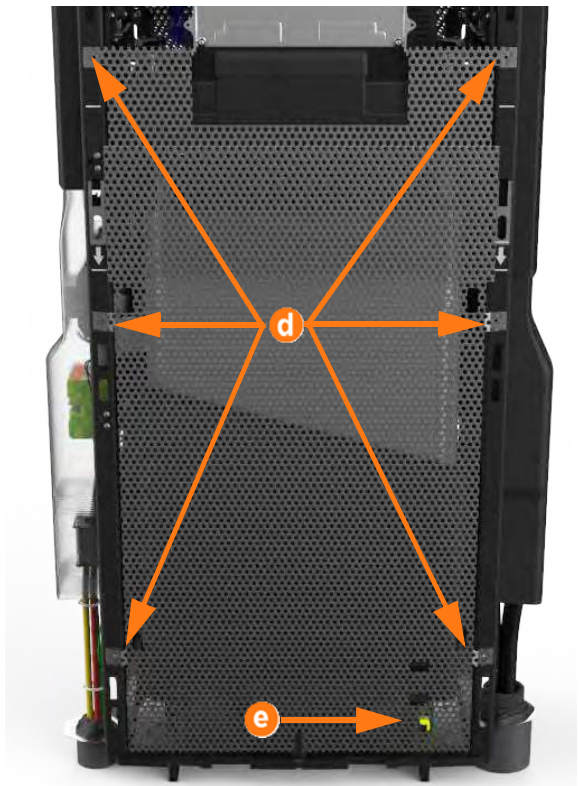
1. If EMI shields are present:
 - a. Use a T20 Torx to remove the top two screws and washers from the rear EMI shield (a).
 - b. Use a T25 Torx to remove the four middle and lower screws and washers from the rear EMI shield (b). The rear shield might be in one or two sections. Save all screws and washers for later reuse.

Note: When reinstalling, ensure that the cutout on the long edge is on the right side (c), leaving the sensor wire clear.



- c. Use a T25 Torx to remove the six T25 screws and washers from the front EMI shield (d).

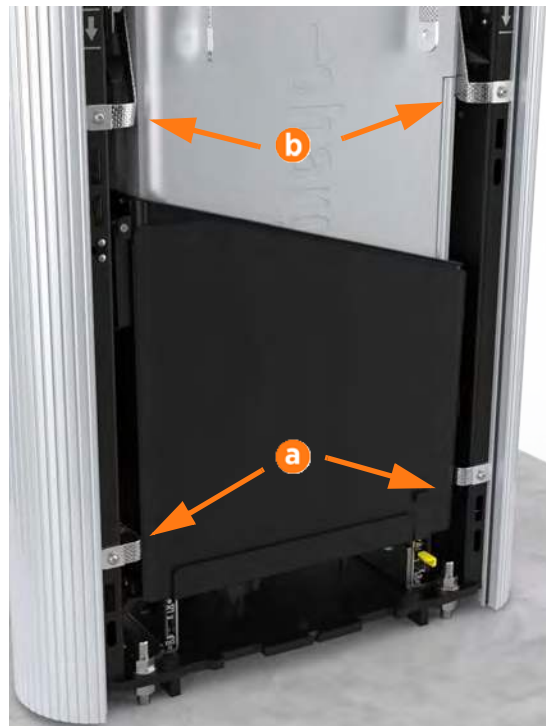
Note: When reinstalling, position the bottom cutout over the yellow release latch (e).



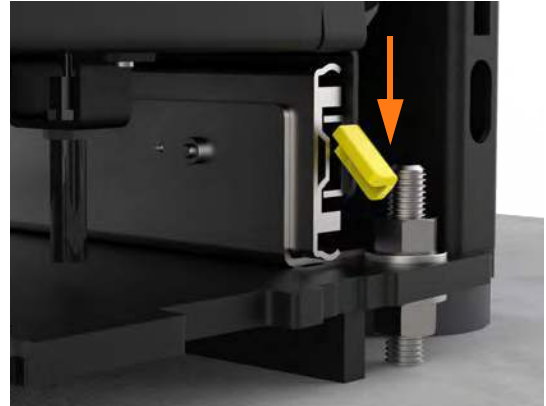
2. Using two hands, squeeze the Power Module mechanism's release bar against the flange. Raise the bar to fully rotate the Power Module mechanism upwards to the lock position. Ensure that the mechanism has fully cleared the ports and guide posts on the Power Module(s).



3. If present, use a T25 Torx to remove the front and rear M5 screws and washers attaching the Power Module holder (a) and Power Module (b) ground straps to the Express 250 frame (eight screws in total). Keep the screws and washers for use in a later step.

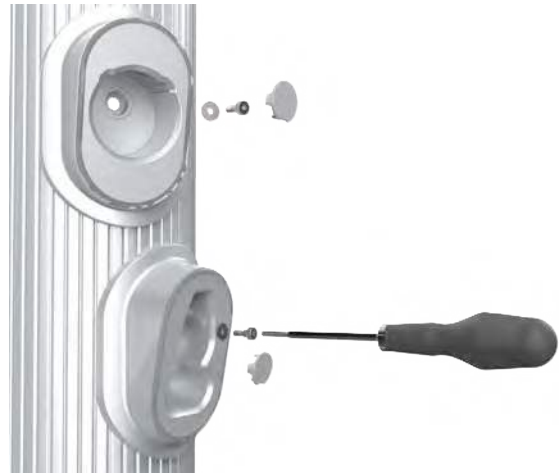


4. At the bottom right of the Express 250, press and hold the yellow release latch while pulling the Power Module tray out of the station.
5. Pull the Power Module tray out completely.



Remove the Right Extrusion

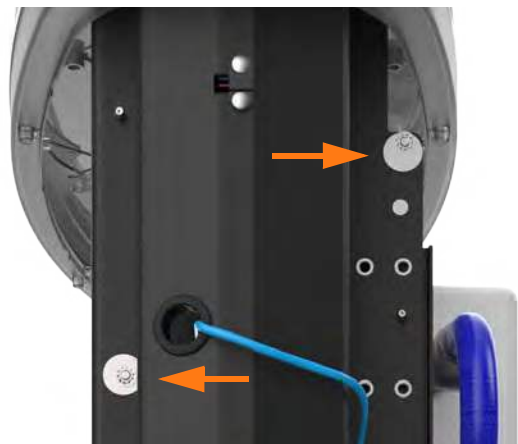
1. Remove the charging cables from their holsters and rest them gently on a padded surface out of the way.
2. Insert a small flat head screwdriver into the notch on each plastic cap to remove it from the holster screw opening.
3. Use a T25 Torx to remove the rubberised washer and M5 shoulder screw. Set them aside for reuse.



4. Using one hand, hold the extrusion and loosen the top two captive screws using the supplied T25 Torx driver. (The blue Ethernet wire in the image might or might not be installed depending on the site. It does not affect this procedure.)

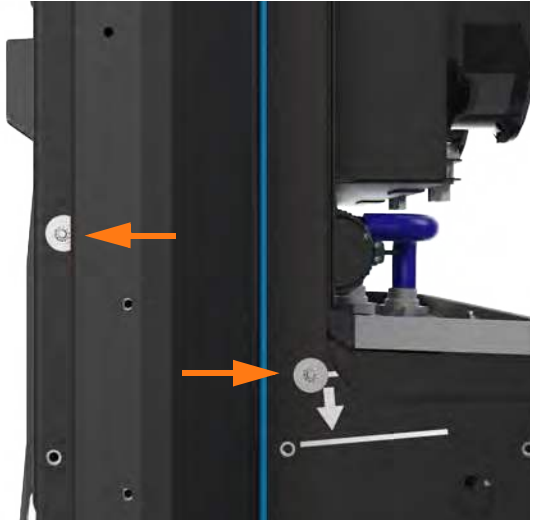
Note: Use a step ladder to reach the top screws.

Note: The top screws are asymmetrical.



5. Use a T25 Torx driver to loosen the middle two screws, just above the Power Module mechanism.

Note: Access to the middle screws is easier with the Power Module mechanism handle in the closed (down) position.



6. Loosen the bottom two captive screws on the extrusion. (Cables might or might not be installed depending on the site. It does not affect this procedure.)



7. Slightly tilt the bottom of the extrusion out to extract its top edge from under the bottom edge of the area light bar. Lift the extrusion off the guide pins on each side of the frame that hold the extrusion in place.

Note: Keep the extrusion close to the station until its cables are disconnected.



8. Disconnect the shortest cable from the top holster.
9. Disconnect the next-longest cable from the bottom holster.

Note: If there is a third, longer cable, bundle it to avoid pinch points during installation. The third cable is not currently used.



Important: When reinstalling, check that these connections are correctly seated, or the system will not operate.



10. Depending on the generation of holster, use either a T25 Torx driver or an 8 mm nut driver to remove the P-clip hardware stack (a) from the lower holster of the extrusion. Carefully note the order of the components.
11. Remove the shielded holster cable from the opening in the P-clip (b).
12. Remove the extrusion from the station. Lay it aside on a padded surface for reuse.



Remove the Left Extrusion

13. Using one hand, hold the extrusion and loosen the top two captive screws using the supplied T25 Torx driver. (The blue Ethernet wire in the image might or might not be installed depending on the site. It does not affect this procedure.)

Note: Use a step ladder to reach the top screws.

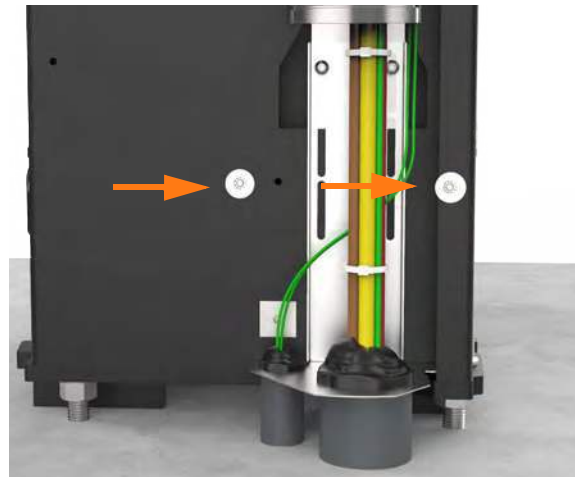
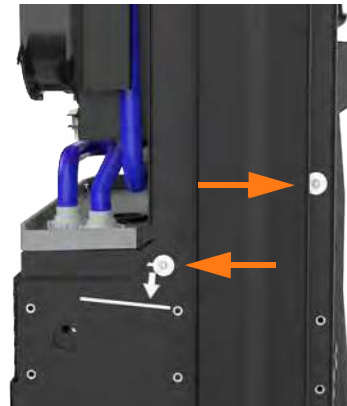
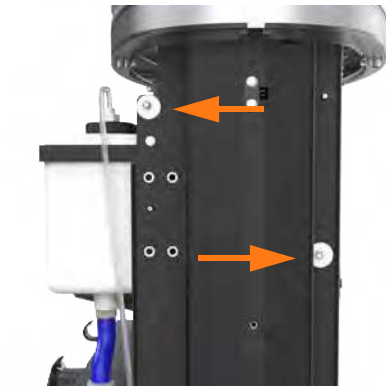
Note: The top screws are asymmetrical.

14. Use a T25 Torx driver to loosen the middle two screws, just above the Power Module mechanism.

Note: Access to the middle screws is easier with the Power Module mechanism handle in the closed (down) position.

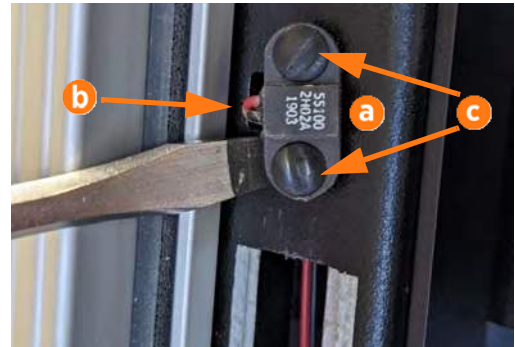
15. Loosen the bottom two captive screws on the extrusion. (Cables might or might not be installed depending on the site. It does not affect this procedure.)

16. Slightly tilt the bottom of the extrusion out to extract its top edge from under the bottom edge of the area light bar. Lift the extrusion off the guide pins on each side of the frame that hold the extrusion in place.



Replace the Hall Sensor

1. Inspect the Hall sensor (a) for the location of the wire damage.
2. Note which direction the sensor wires (b) are oriented for later reinstallation.
3. Use a screwdriver to pry out the two barbed rivets (c) holding the sensor to the metal frame.



4. Gently pull the wire further out of the frame. Some service loop exists in the wiring harness to allow room for repair. If needed, cut off the nearest wiring zip tie for better access.
5. Cleanly cut the old sensor and rivets off the wiring harness and discard them.
6. Trim the new sensor's wires to length, allowing working room but not allowing excess wire to get caught by cover panels.



Note: You must cut or pull off any labels on the wiring. The connector does not cut through labels.

7. Slide the new red wire and station red wire side-by-side into the displacement connector. The wires do not have to be stripped. Look through the clear plastic on the bottom to ensure that both wires are fully seated.



8. Use pliers to press the connector's button completely closed.



9. Ensure that the button is now flush with the housing. Some dielectric grease might be squeezed out as the button is pressed. If so, clean it away.



10. Check the back of the connector to ensure that both wires are still fully seated (d) and did not move when the connector closed (e). If either wire is outside the terminal area, cut off the connector and repeat with a new one.
11. Repeat the above steps for the two black wires.

Note: Twisting the sensor's red and black wires loosely together before installation can help to prevent the wires from catching on other components.



12. Carefully feed the wiring harness back into the frame. Route and straighten it so that it cannot get caught by cover panels when they hook onto the frame openings in a later step.
13. Use two new barbed rivets from the kit to secure the new sensor onto the frame in the correct location.

REVERSE THE ABOVE STEPS TO REPLACE ALL REMOVED COMPONENTS: SIDE EXTRUSIONS, POWER MODULE HOLDERS, GROUND STRAPS OR EMI SHIELDS, REAR PANELS, FRONT PANELS, LED DISPLAY, AND AREA LIGHT BAR.

Power the System

Once all cover panels have been installed, power on the Express 250. The on-screen Installation Wizard walks you through any required tasks to set up the Express 250 and verify that it can operate properly.

An Installation Wizard test checks that all cover panels have been correctly installed and fully seated. Ensure that the new sensor's location no longer displays an error message on the screen.



DANGER: RISK OF SHOCK. If a fault exists, turn the power off during work and keep it off until all panels are reinstalled. Internal components can present a shock hazard. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY OR LOSS OF LIFE.

If any panel needs reinstallation, review the procedures above to double-check that all panels have been fully seated and that the edges of all signs are captured fully by the panels around them. For further details, refer to the *Express 250 Installation Guide*.



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