ChargePoint®
by Coulomb Technologies

CT2100 Family
ChargePoint® Networked Charging Stations

CT2101 Bollard Mount

CT2102 Pole Mount

CT2103 Wall Mount

Installation Guide

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Part Number: 75-001020 Revision: 1.1

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

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

Grounding instructions

The ChargePoint® Charging Station must be connected to a grounded, metal, permanent wiring system; or an equipment-grounding conductor is to 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 local codes and ordinances.

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 Coulomb Technologies, 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 Zigbee radio and cellular modem (optional) in this device is below the FCC radio frequency exposure limits for uncontrolled equipment. This device should be operated with a minimum distance of at least 20 cm between the Zigbee and Cellular antennas and a person's body and must not be co-located or operated with any other antenna or transmitter by the manufacturer, subject to the conditions of the FCC Grant.

Safety and compliance

This document provides instructions to install the ChargePoint® Charging Station and should not be used for any other product. Before installing the ChargePoint® Charging Station, you should review this manual carefully and consult with a licensed contractor, licensed electrician and trained installation expert to ensure compliance with local building practices, climate conditions, safety standards, and state and local codes. The ChargePoint® Charging Station should be installed only by a licensed contractor and a licensed electrician and in accordance with all local and national codes and standards. The ChargePoint® Charging Station should be inspected by a qualified installer prior to the initial use. 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 Coulomb Technologies. Coulomb Technologies is not responsible for any damages that may occur resulting from custom installations that are not described in this document.

No accuracy guarantee

Reasonable effort was 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.

Warranty information and disclaimer

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. Other than any such limited warranty, the Coulomb products are provided "AS IS," and Coulomb 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

IN NO EVENT SHALL COULOMB TECHNOLOGIES, INC. OR ITS AUTHORIZED DISTRIBUTORS BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST PROFITS, LOST DATA, LOSS OF USE, COST OF COVER, OR LOSS OR DAMAGE TO THE CHARGEPOINT® CHARGING STATION, ARISING OUT OF OR RELATING TO THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF COULOMB TECHNOLOGIES, INC. OR ITS AUTHORIZED DISTRIBUTORS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

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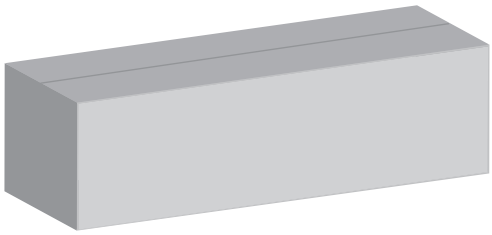
Contents

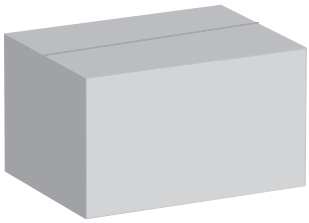
Introduction 1

This document provides step-by-step instructions on how to install any ChargePoint® Charging Station in the CT2100 family. Each model ships in three boxes:



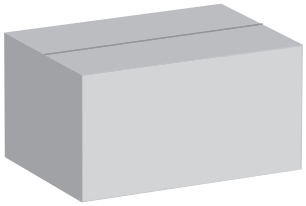
"Body"
Install this first

CT2101 Bollard Mount - see Chapter 2
CT2102 Pole Mount - see Chapter 3
CT2103 Wall Mount - see Chapter 4



"Cable Assembly"
Install this second

See Chapter 5



"Head"
Install this last

See Chapter 6

Before installing stations

The instructions provided in this guide assume that the appropriate wiring, circuit protection, and metering is in place at the installation location. Before you install, you must also ensure that the type of modem in each station you are installing is compatible with the type of modem coverage available at the installation site (CDMA or GPRS).

To assist in the process of preparing the installation site, thoroughly review the following documents:

- wiring diagrams (provided on page 1-3 of this document)
- CT2100 Charging Stations Data Sheet (available at www.coulombtech.com by clicking the "Products" link, then the "Library" link)
- Mounting Template for Bollard Mount and Wall Mount stations (provided in this document and in the box containing the station's body)

  IMPORTANT: If you are printing the PDF version of the Mounting Template, be sure to print at full scale using 11" x 17" paper.

  Note: If you are installing a Bollard Mount charging station, prepare the site according to the instructions provided in "Step 4 - Install J-Bolts and conduit" on page 2-5 of this document.

It is also recommended that before you begin installing charging stations, you thoroughly review the contents of this document to familiarize yourself with the required installation steps.

Specifications

Charging connection - Level 1: NEMA 5-20R receptacle

Charging connection - Level 2: SAEJ1772™ EV connector on 18’ (5m) cable

AC maximum charging power output - Level 1: 1.9kW 120V @ 16A

AC maximum charging power output - Level 2: 7.2kW 240V @ 30A

AC power input: 208/240V 30A (Line 1 and Line 2) and 120V 16A (Line, Neutral, and Earth) - 5 wire

Recommended service panel breaker: 40A double pole breaker (non-GFCI type) and 20A single pole breaker (non-GFCI type) on dedicated circuits

Integrated hardware GFCI: 20mA, CCID with self-test and auto retry (15 minute delay, 3 tries), Level 1: 5 mA, Level 2: 20 mA

EMI compliance: FCC Part 15 Class A

Operating temperature: -22°F to 131°F (-30°C to +55°C)

Operating humidity: Up to 95% non-condensing

Terminal block temperature rating: 212°F (100°C)

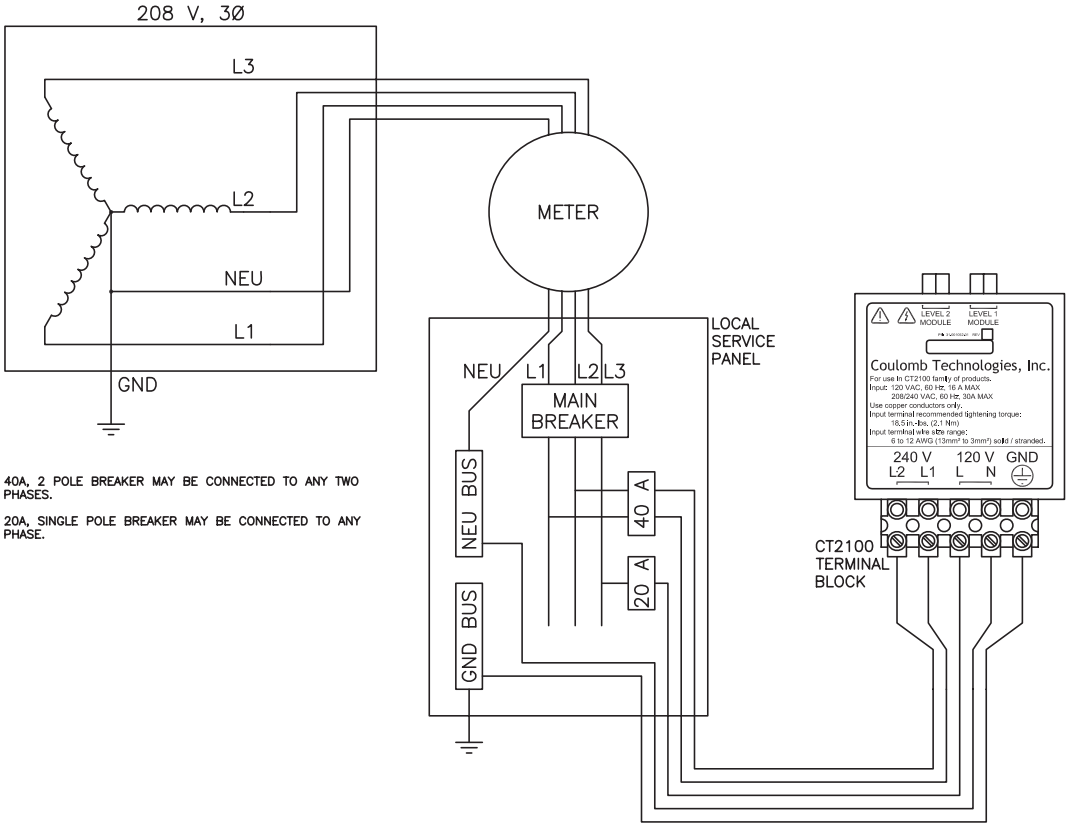
Approximate shipping weight: Bollard Mount - 65 lbs (29 kg), Pole Mount - 49 lbs (22 kg), Wall Mount - 51 lbs (23 kg).

Outdoor rated: NEMA 3R per NEMA250-1997

Safety compliance: UL Listed per UL 2231-1, 2231-2, 2594, 1998 and 991; NEC Article 625 compliant

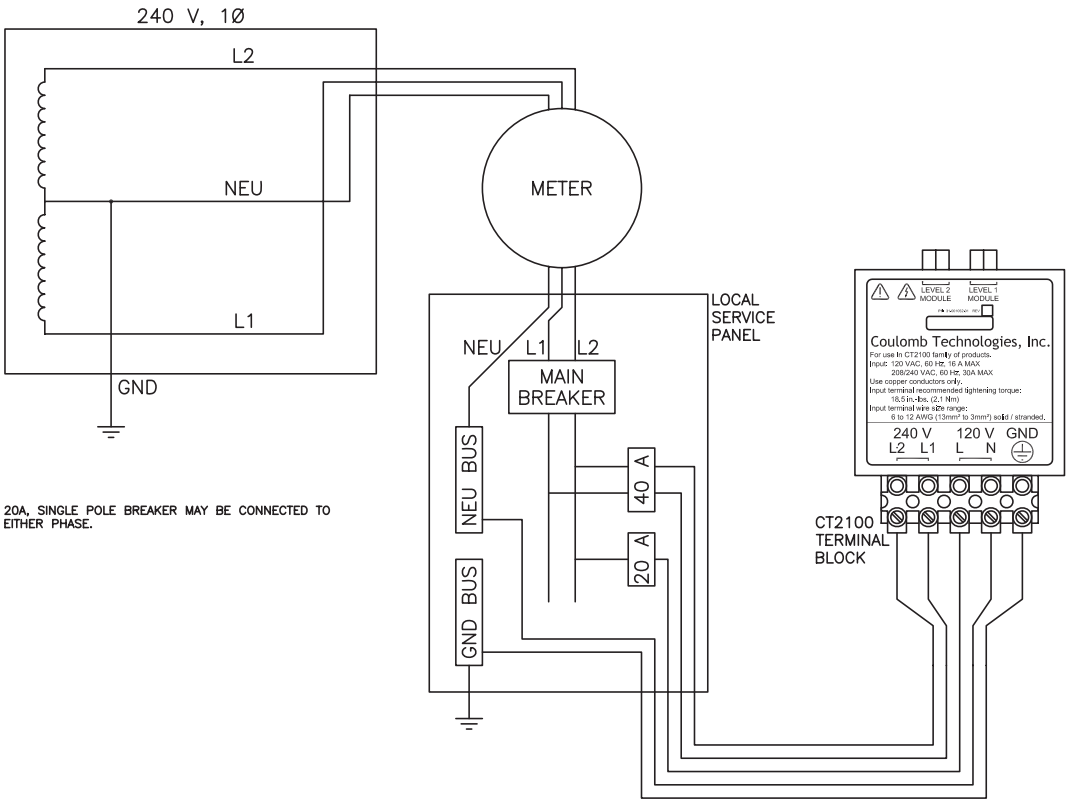
Surge protection: 6kV @ 3000A. In geographic areas subject to frequent thunder storms, supplemental surge protection at the service panel is recommended.

Wiring information



40A, 2 POLE BREAKER MAY BE CONNECTED TO ANY TWO PHASES.

20A, SINGLE POLE BREAKER MAY BE CONNECTED TO ANY PHASE.



20A, SINGLE POLE BREAKER MAY BE CONNECTED TO EITHER PHASE.

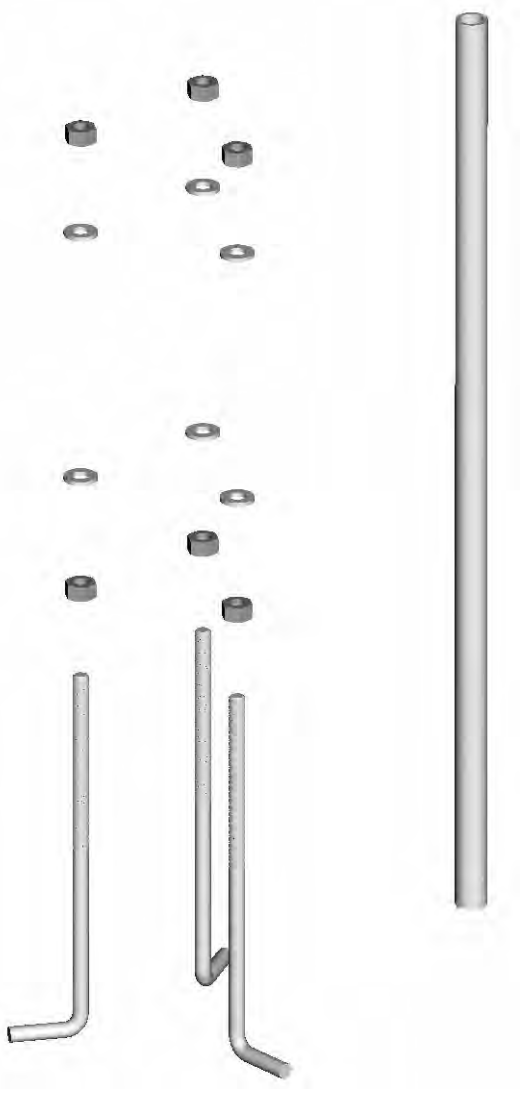
Installing a Bollard Mount 2

Before you start

You will need:

- CT2101 ChargePoint® Charging Station body assembly
- 3 J-Bolts with matching nuts and washers: up to ½" (12.7 mm) thread diameter, length must comply with local codes
- 1 ½" (38 mm) conduit
- #2 Phillips screwdriver
- #2 Slotted screwdriver

Installer-supplied components:



Overview of steps

Installing the CT2101 ChargePoint® Charging Station's body assembly involves a few simple steps:

1. Check box for correct contents *(see page 2-2)*
2. Remove front panel *(see page 2-3)*
3. Remove mounting pole and base plate from body *(see page 2-4)*
4. Install J-Bolts and conduit *(see page 2-5)*
5. Mount base plate/pole assembly *(see page 2-6)*
6. Install body *(see page 2-7)*
7. Connect wires to wiring terminals *(see page 2-8)*
8. Replace front panel *(see page 2-9)*

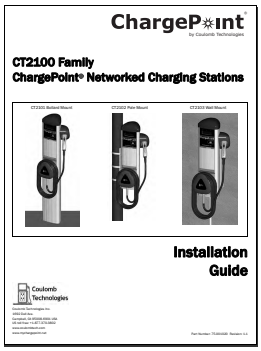
These steps are detailed in the remainder of this chapter. When you have completed these steps, you will be ready to install the holster and cable assembly as described in Chapter 5.

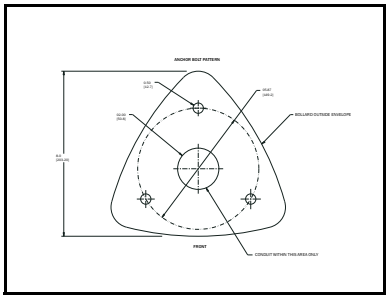
Step 1 - Check box for correct contents

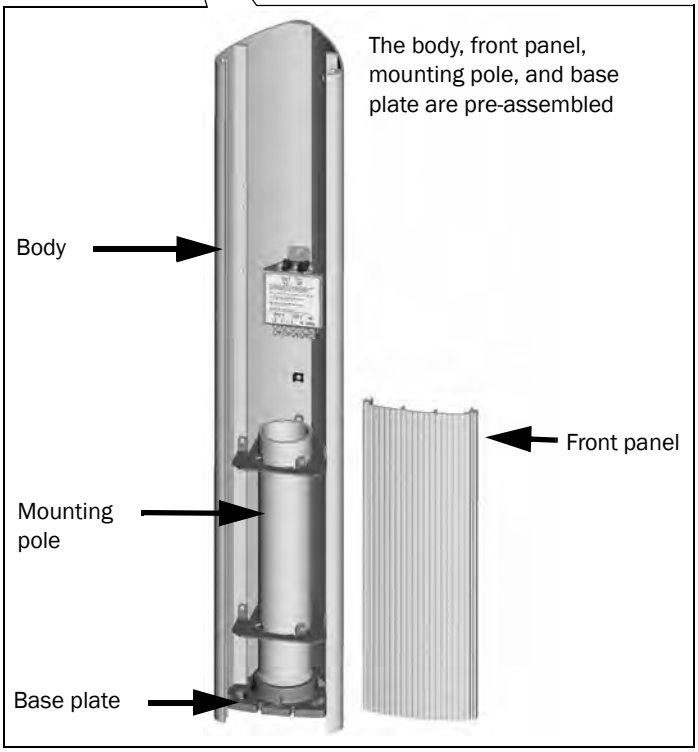
Bollard Mount Assembly

The CT2101 ChargePoint® Charging Station's body assembly ships in a box containing:

- Main body assembly (including body, front panel, mounting pole, and base plate)
- Base plate template
- Installation Guide
- 3/32" allen wrench







Step 2 - Remove front panel

To remove the front panel:

- Use the supplied allen wrench to loosen the 2 screws that fasten the panel to the body.
- Remove the ground wire connector from its tab.

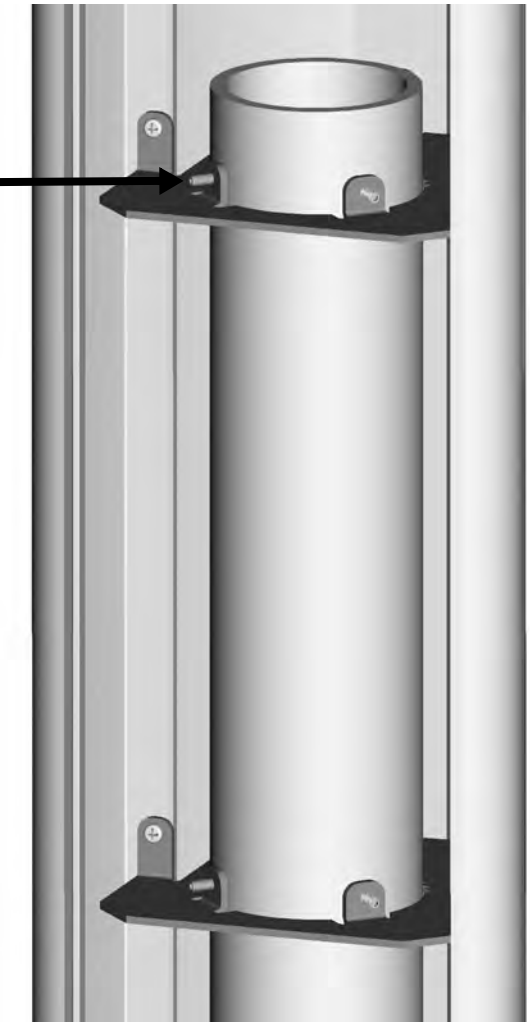
Slide the front panel upward to remove.

Step 3 - Remove mounting pole and base plate from body

To remove the body:

- Use the supplied allen wrench to loosen the 4 set screws (2 on each bracket).
- Lift the body upward.

Loosen the four set screws to remove the pole.

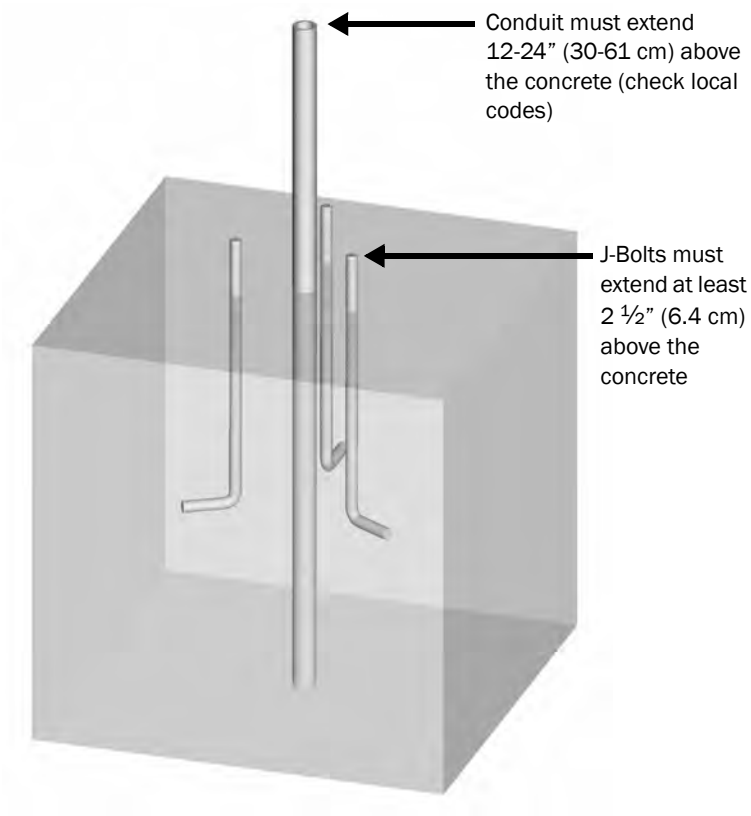


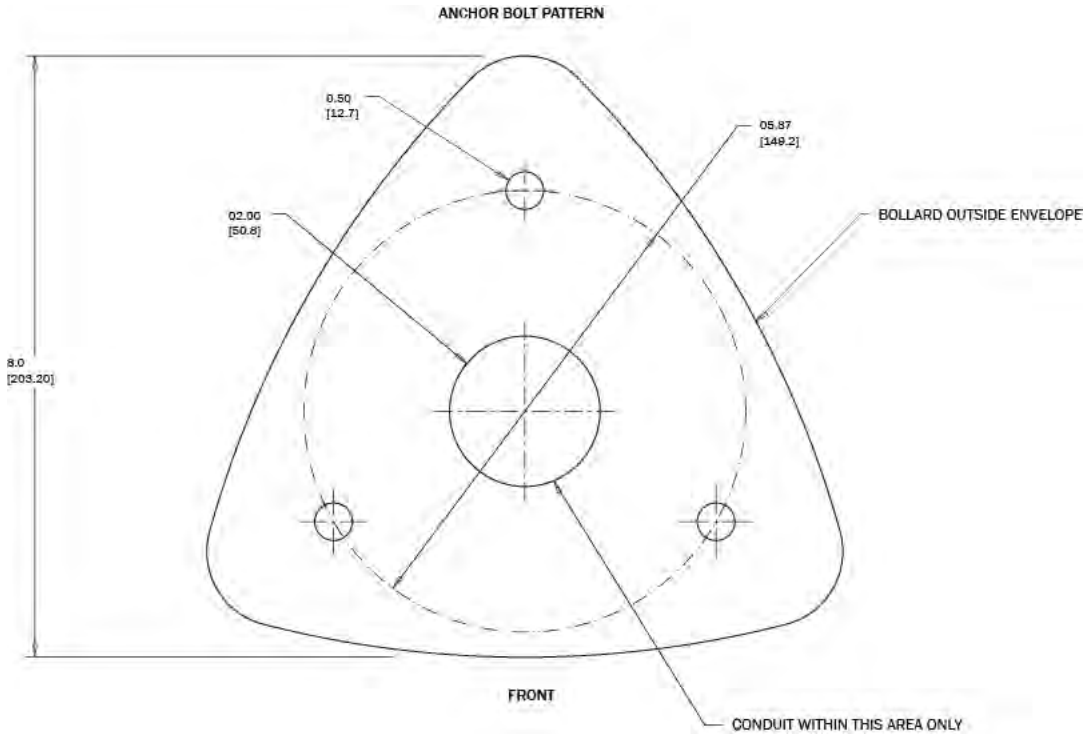
Step 4 - Install J-Bolts and conduit

Install J-Bolts and conduit into concrete as illustrated. Use the supplied base plate template to ensure correct alignment.

IMPORTANT:

- The concrete block must measure at least 18” (46 cm) on all sides. Check local codes to ensure compliance.
- The J-Bolts must extend at least 2 ½” (6.4 cm) above the concrete.
- The conduit must extend 12” to 24” (30 to 61 cm) above the concrete, or according to local codes.





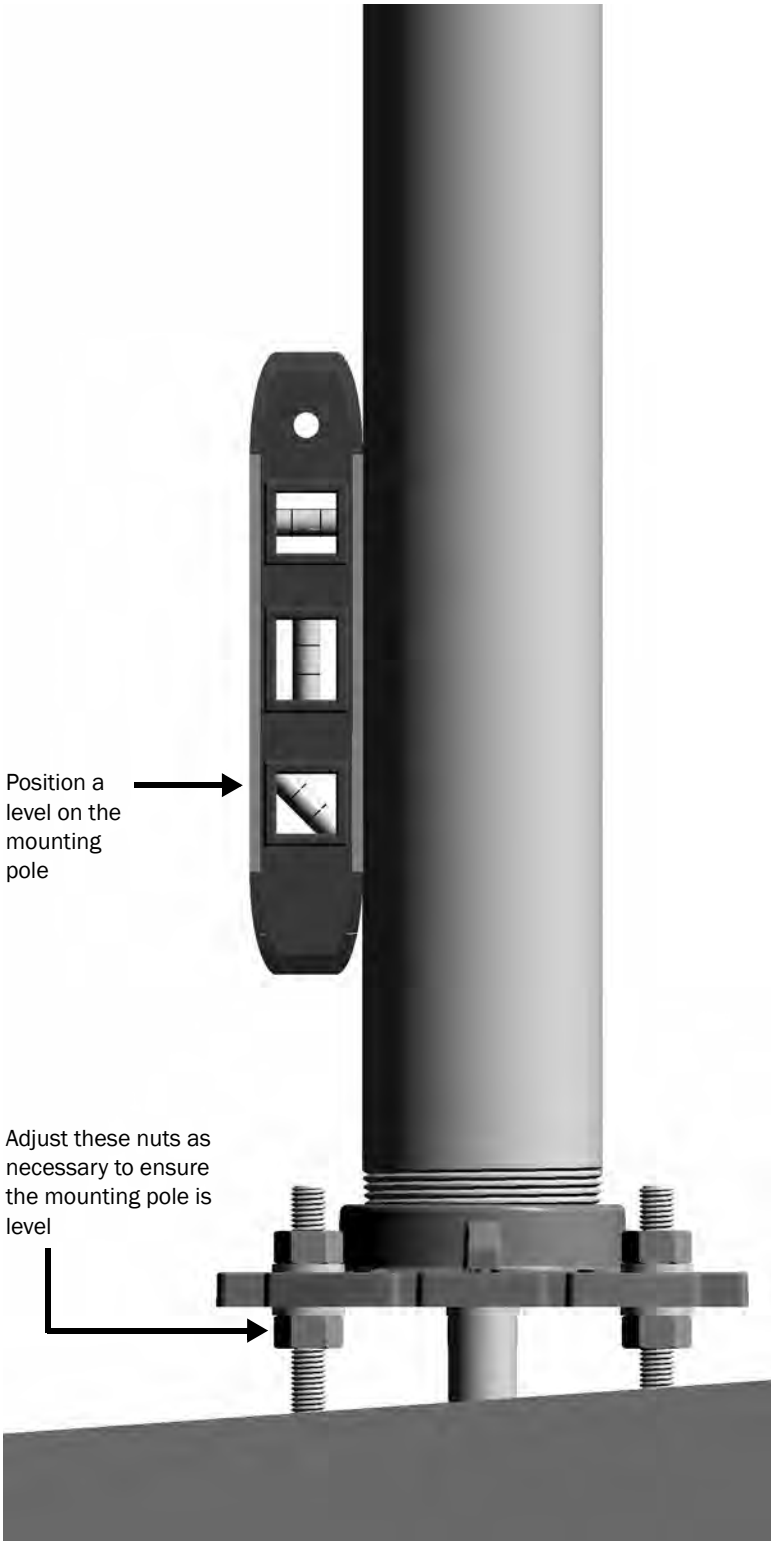
Step 5 - Mount base plate/pole assembly

Pull all five wires up through the conduit and the mounting pole.

Place the base plate/mounting pole assembly over the wiring conduit and attach the base plate to the J-Bolts using the installer-supplied nuts and washers as shown.

Adjust the nuts as necessary to ensure the mounting pole is level. When level, tighten the nuts.

⚠ **IMPORTANT:** Ensure the base plate/pole assembly is level by adjusting the nuts underneath the base plate.



Step 6 - Install body

Slide the body over the mounting pole and base plate.

Ensure the body is level.

Secure the body to the mounting pole by tightening the four set screws using the supplied allen wrench.

⚠ **IMPORTANT:** Ensure the body is firmly aligned to the bottom surface and that no movement (rocking) can take place, even when significant pressure is applied.

When level, tighten all 4 set screws

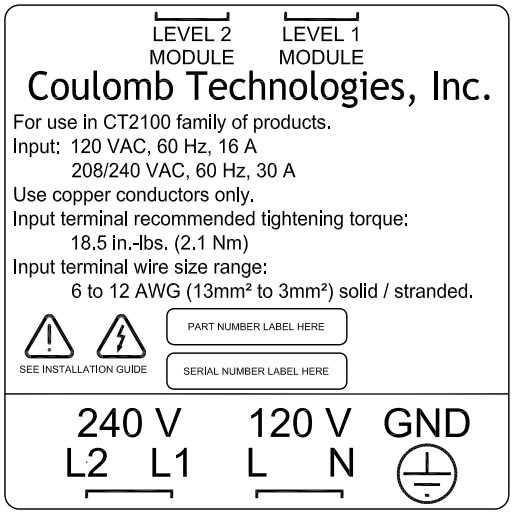
Step 7 - Connect wires to wiring terminals

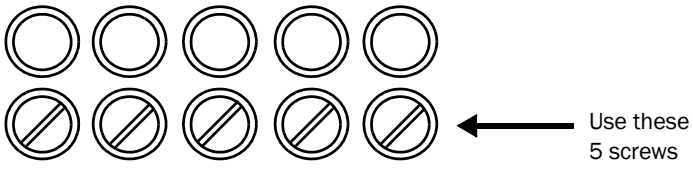
Pull the 240V L2 (blue) and L1 (red) and the 120V Line (black), Neutral (white), and Ground (green) wires into body assembly and connect to wiring terminals.

Strip wires ¼" (6 mm), insert in terminal block, and tighten screws to 18 ½ inch-lbs (2.1 Nm).

IMPORTANT:

- Requires dedicated 20A breaker for 120V and 40A breaker for 208/240V.
- Use copper conductors only.
- Do NOT provide GFCI protection at panel. The CT2101 has built-in GFCI protection.
- In areas with frequent thunder storms, add surge protection at the service panel for all circuits.



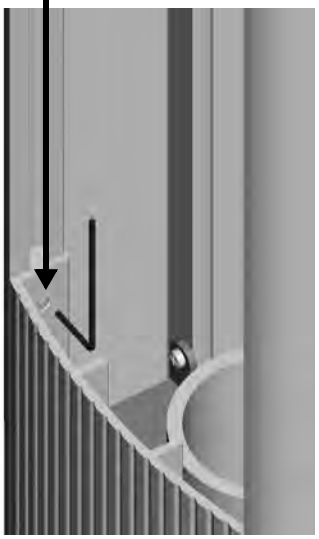


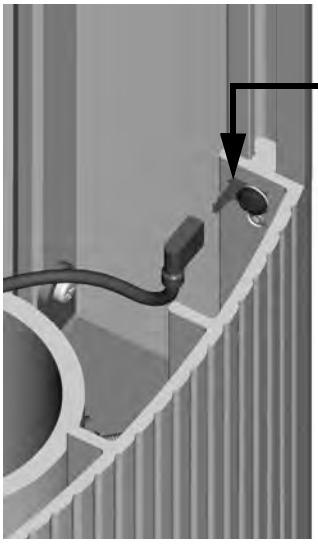
Step 8 - Replace front panel

Slide the front panel into place. Use the supplied allen wrench to tighten the two set screws.

Re-attach the ground wire by pushing it onto its tab.

Tighten both set screws to secure the front panel





You have now finished installing the body assembly for the CT2101 ChargePoint® Charging Station's body assembly. You are ready to install the holster and cable assembly. See Chapter 5.

Installing a Pole Mount 3

Before you start

You will need:

- CT2102 ChargePoint® Charging Station body assembly
- ¾" (20 mm) 0.030" (.76 mm) stainless steel banding
- Banding tool(s)
- #2 Phillips screwdriver
- #2 Slotted screwdriver

Overview of steps

Installing the CT2102 ChargePoint® Charging Station's body assembly involves a few simple steps:

1. Check box for correct contents *(see page 3-2)*
2. Drill hole in pole *(see page 3-3)*
3. Mount bracket to pole *(see page 3-4)*
4. Prepare body assembly for mounting *(see page 3-5)*
5. Mount body to bracket *(see page 3-6)*
6. Connect wires to wiring terminals *(see page 3-7)*

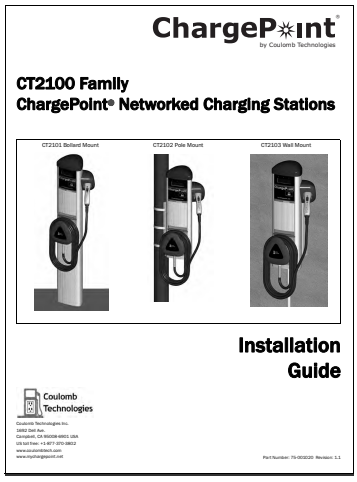
These steps are detailed in the remainder of this chapter. When you have completed these steps, you will be ready to install the holster and cable assembly as described in Chapter 5.

Step 1 - Check box for correct contents

Pole Mount Assembly

The CT2102 ChargePoint® Charging Station's body assembly ships in a box containing:

- Main body
- Pole bracket
- Screws (4) and washers (4)
- Pole conduit with gasket
- Pole conduit nuts (2)
- Installation Guide
- 3/32" allen wrench



Step 2 - Drill hole in pole

Drill a 1 ½“ (38 mm) hole in the pole to accommodate the 1 ¼” (32 mm) OD coupling.

The maximum height above the surface must be 30” (76 cm) to comply with the Americans with Disabilities Act (ADA).

Step 3 - Mount bracket to pole

Align the bracket to the pole, ensuring the coupler opening in the bracket is centered over the hole in the pole.

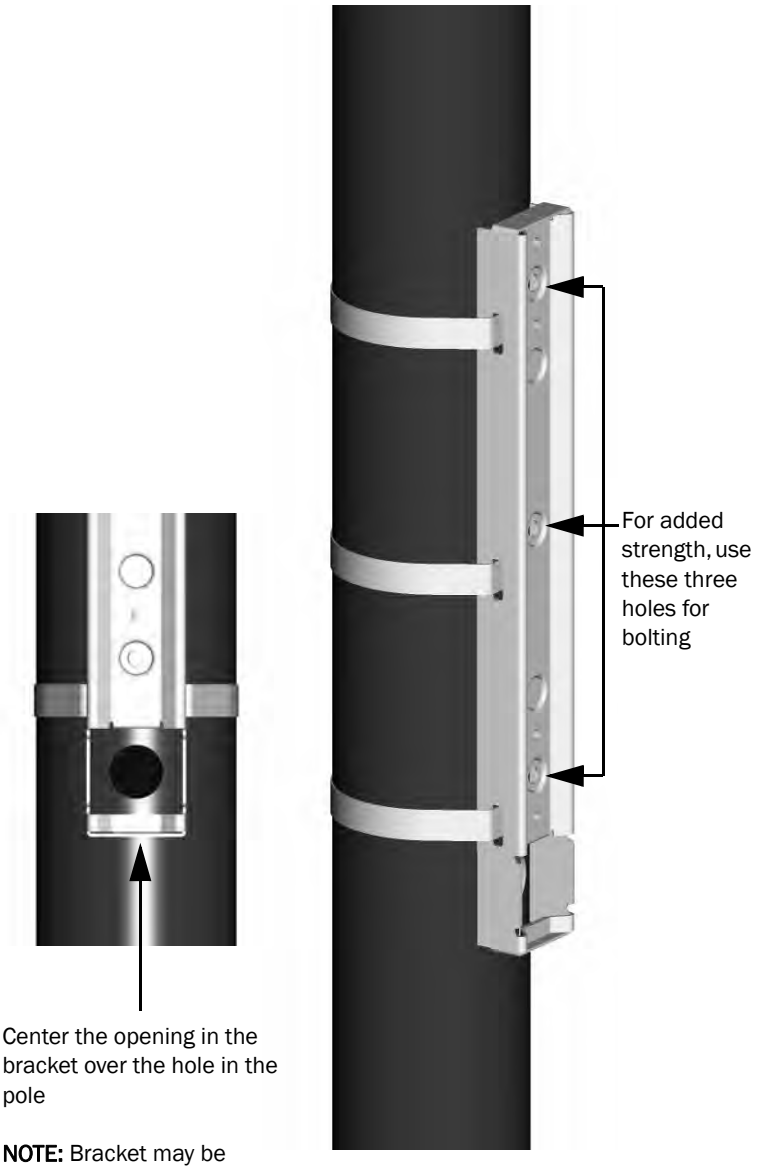
Strap the bracket to the pole using three ¾" (20 mm) by 0.030" (.76 mm) stainless steel bands capable of supporting at least 300 pounds.

Note: These instructions apply only when mounting to a round metal pole. To mount to other types of poles, the bracket must be mounted directly to the pole using three 3/8" (10 mm) fasteners appropriate for the pole's material.

⚠ **CAUTION:** Never use hose clamps in place of bands.

⚠ **IMPORTANT:** You must use a high tension banding tool to install bands.

TIP: For added strength and security, secure the bracket with both bolts and straps. Using the mounting bracket as a template, drill and tap 3/8"- 16 tpi (10 mm x 1.5) holes into the pole.



Center the opening in the bracket over the hole in the pole

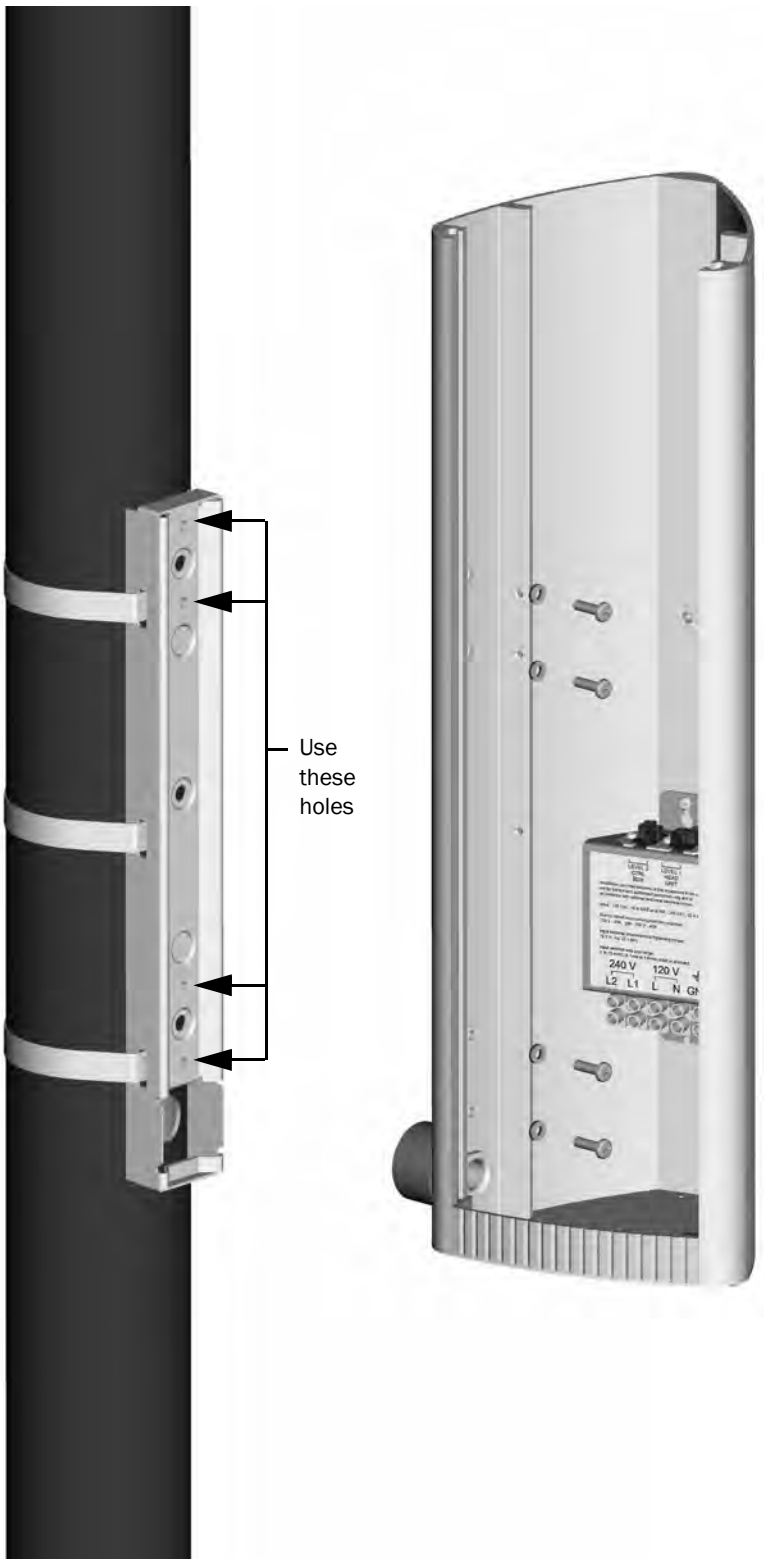
NOTE: Bracket may be temporarily held in place during strapping using tape, cable tie, or other means.

Step 4 - Prepare body assembly for mounting

Attach the pole conduit coupler to the body assembly as shown.

Step 5 - Mount body to bracket

Insert the coupler into the hole and hold the body assembly to the pole bracket using the four supplied screws and washers.



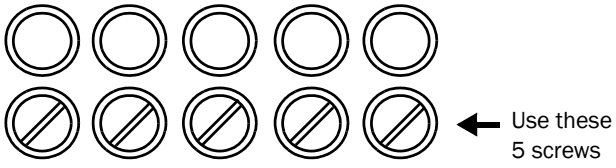
Step 6 - Connect wires to wiring terminals

Pull the 240V L2 (blue) and L1 (red) and the 120V Line (black), Neutral (white), and Ground (green) wires into body assembly and connect to wiring terminals.

Strip wires ¼" (6 mm), insert in terminal block, and tighten screws to 18.5 inch-lbs (2.1 Nm).

IMPORTANT:

- Requires a dedicated 20A breaker for 120V and 40A breaker for 208/240V.
- Use copper conductors only.
- Do NOT provide GFCI protection at panel. The CT2102 has built-in GFCI protection.
- In areas with frequent thunder storms, add surge protection at the service panel for all circuits.



You have now finished installing the body assembly for the CT2102 ChargePoint® Charging Station. You are ready to install the holster and cable assembly. See Chapter 5.

Installing a Wall Mount

4

Before you start

You will need:

- CT2103 ChargePoint® Charging Station body assembly
- ¾” (20 mm) coupling
- conduit
- ¼” x 1 ½” (6 mm x 39 mm) lag screws (6), McMaster P/N 95526A125
- lag screw anchors (6), McMaster P/N 97039A029
- Torx Driver T15 - Tamper-Resistant
- #2 Phillips screwdriver
- #2 Slotted screwdriver
- drill and drill bits: one to drill ¼” (6 mm) hole into aluminum and another to drill into masonry

Overview of steps

Installing the CT2103 ChargePoint® Charging Station’s body assembly involves a few simple steps:

1. Check box for correct contents *(see page 4-2)*
2. Attach bracket to wall *(see page 4-3)*
3. Remove terminal block from main body *(see page 4-5)*
4. Drill holes in body assembly *(see page 4-6)*
5. Attach body assembly to wall bracket *(see page 4-7)*
6. Attach coupler and connect conduit *(see page 4-8)*
7. Re-attach terminal block to main body *(see page 4-9)*
8. Connect wires to wiring terminals *(see page 4-10)*

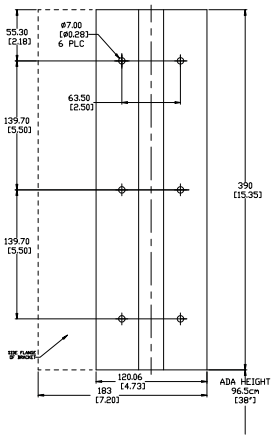
These steps are detailed in the remainder of this chapter. When you have completed these steps, you will be ready to install the holster and cable assembly as described in Chapter 5.

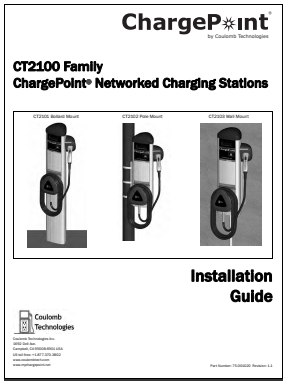
Step 1 - Check box for correct contents

Wall Mount assembly

The CT2103 ChargePoint® Charging Station's body assembly ships in a box containing:

- Main body
- Wall mount bracket
- Screws and washers (6)
- Template for drilling wall holes
- Installation Guide
- 3/32" allen wrench





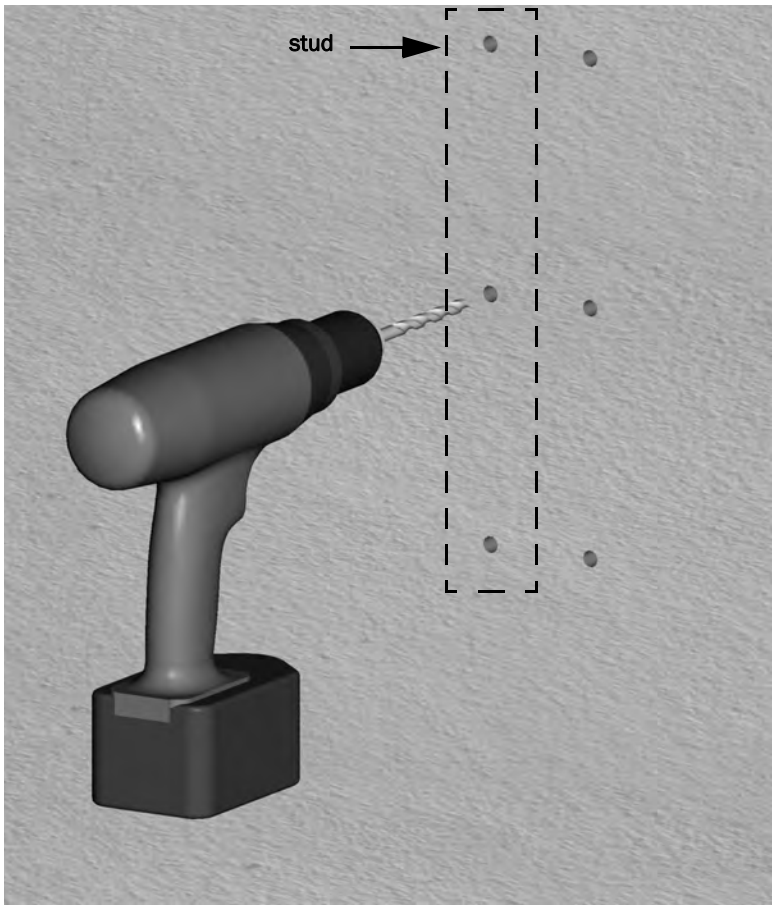
Step 2 - Attach bracket to wall

Drill 6 holes in the wall, as illustrated. Use the supplied template to ensure correct alignment.

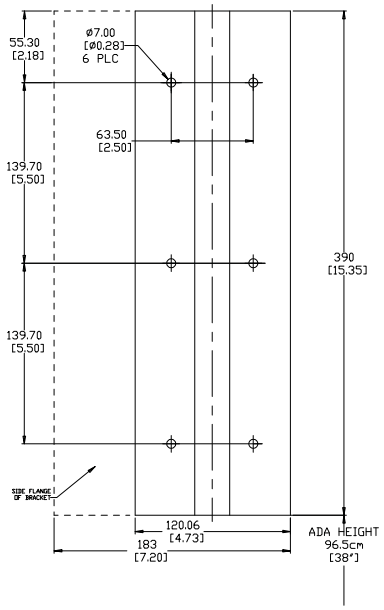
Note:

- If mounting to a hollow wall, mount the holes on the left to a stud using ¼" (6 mm) x 3 ½" (90 mm) lag bolts, and use wall anchors for the holes on the right.
- If mounting to a masonry wall, use six ¼" (6 mm) expanding masonry fasteners.
- If mounting to a wood wall, use six ¼" (6 mm) x 1 ¼" (32 mm) lag bolts.

IMPORTANT: The bottom of the bracket must be mounted at a maximum height of 31" (79 cm) above the surface to comply with the Americans with Disabilities Act (ADA).

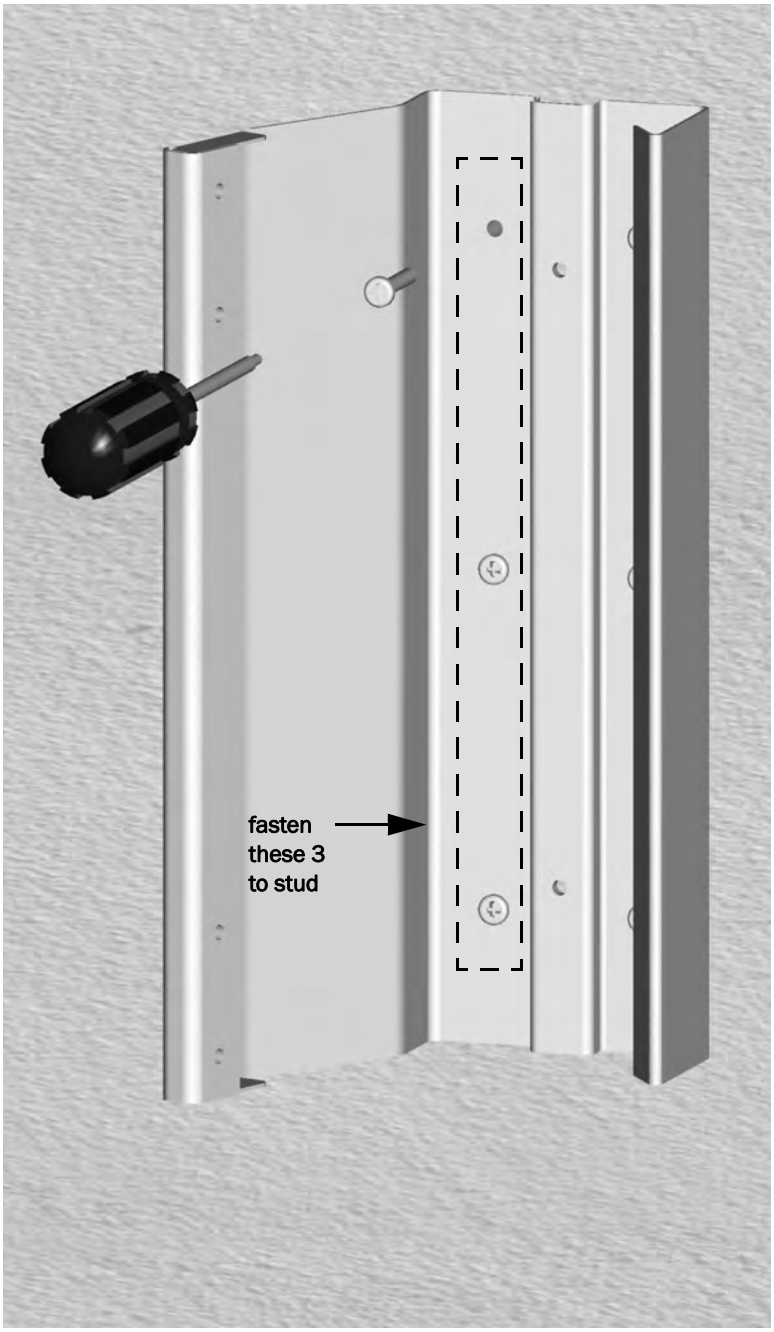


Template (example only - actual template is included in both the shipping box and in this manual)



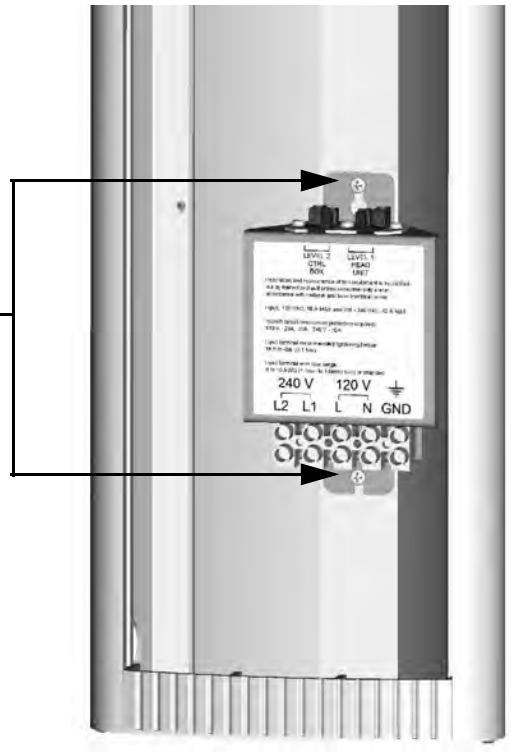
Step 2 cont'd

Using the fasteners appropriate for the type of wall material (see previous page), fasten the wall bracket to the wall.



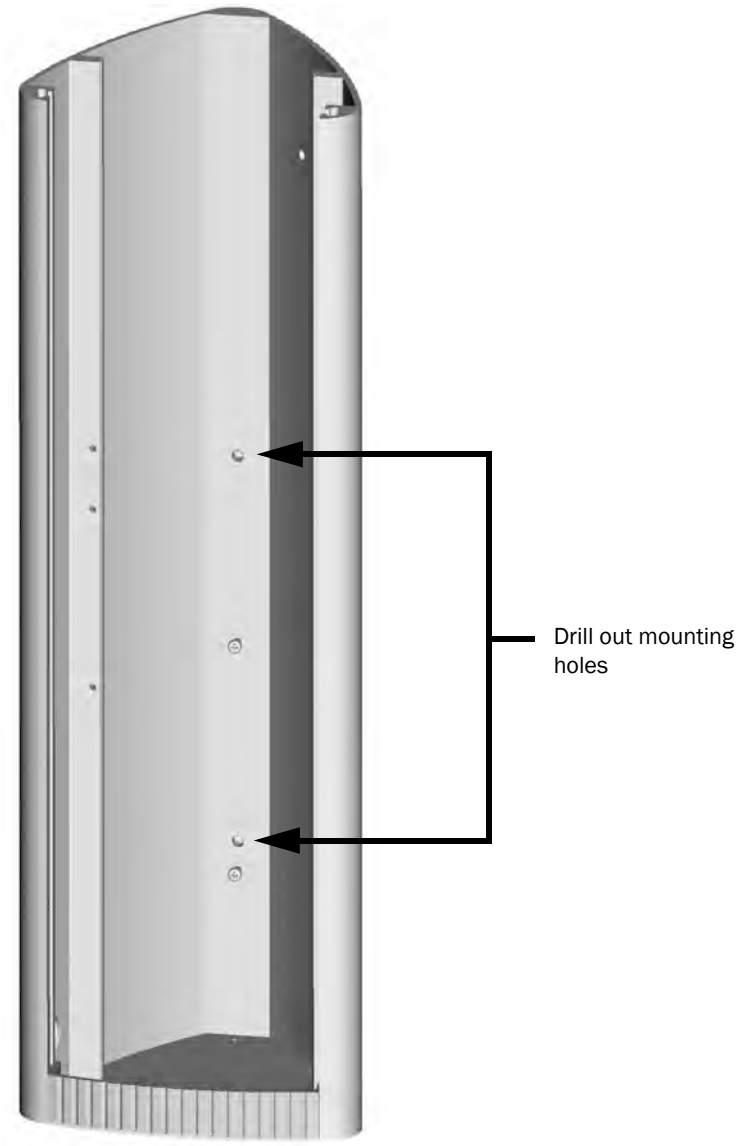
Step 3 - Remove terminal block from main body

Loosen the two fastening screws enough to slide the terminal block upward and remove.



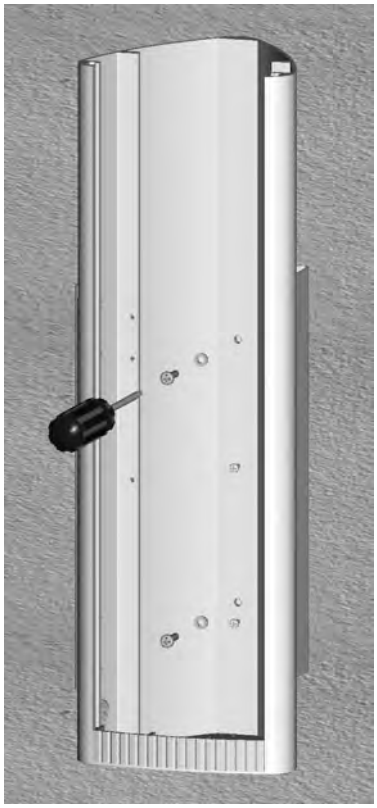
Step 4 - Drill holes in body assembly

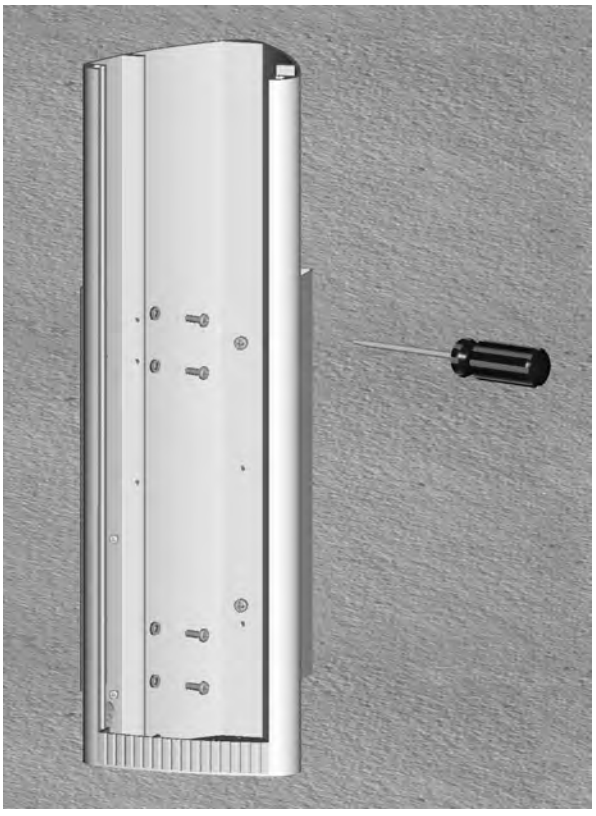
Use a ¼" (6 mm) drill to drill out the 2 mounting holes in the back of the body assembly. These holes are partially pre-drilled.



Step 5 - Attach body assembly to wall bracket

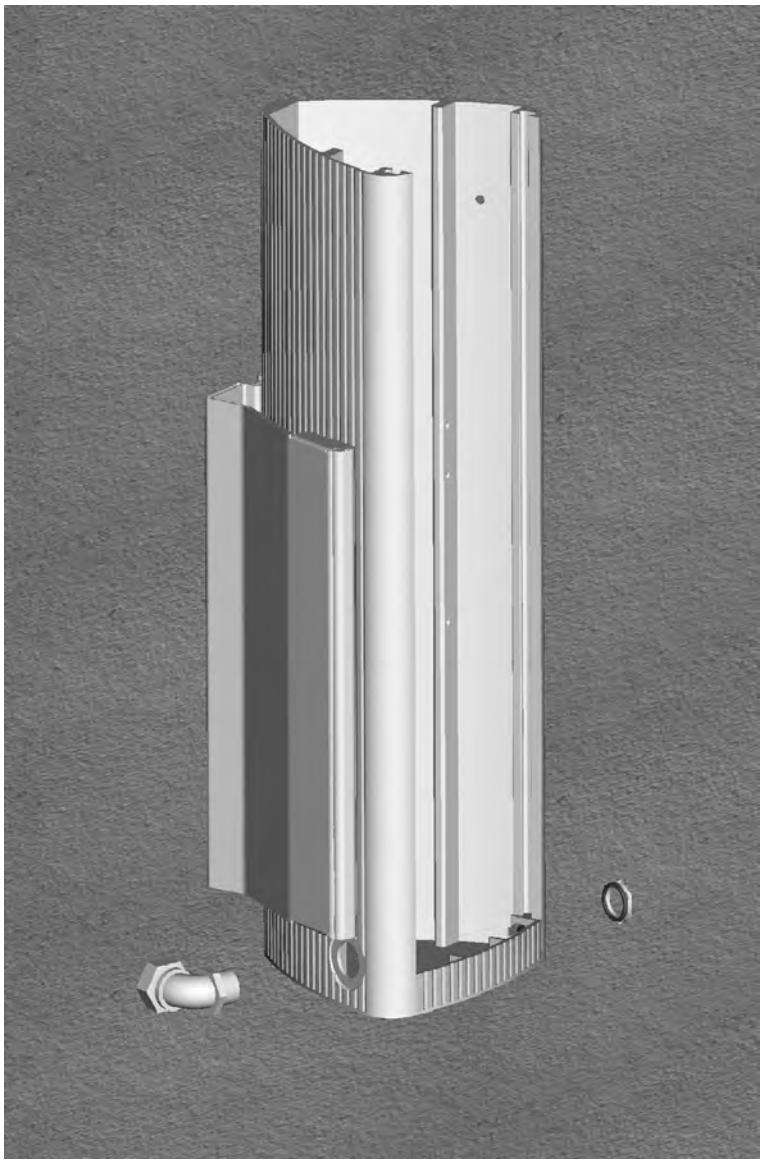
Attach the body assembly to the wall bracket using the 6 supplied screws and washers.





Step 6 - Attach coupler and connect conduit

Attach ¾”(20 mm) installer-supplied coupler to the body assembly, as shown, and connect the conduit.



Step 7 - Re-attach terminal block to main body

Slide the terminal block onto the two fastening screws then tighten the screws.

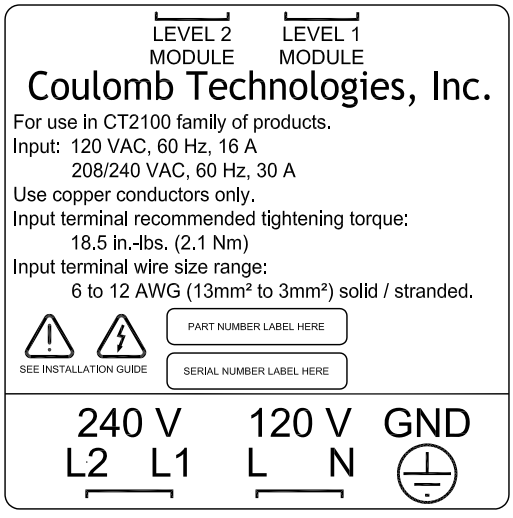
Step 8 - Connect wires to wiring terminals

Pull the 240V L2 (blue) and L1 (red) and the 120V Line (black), Neutral (white), and Ground (green) wires into body assembly and connect to wiring terminals.

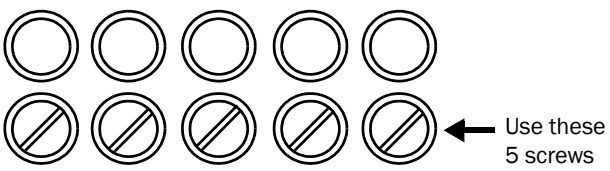
Strip wires ¼" (6 mm), insert in terminal block, and tighten screws to 18 ½ inch-lbs (2.1 Nm).

IMPORTANT:

- Requires a dedicated 20A breaker for 120V and 40A breaker for 208/240V.
- Use copper conductors only.
- Do NOT provide GFCI protection at panel. The CT2103 has built-in GFCI protection.
- In areas with frequent thunder storms, add surge protection at the service panel for all circuits.



You have now finished installing the body assembly for the CT2103 ChargePoint® Charging Station. You are ready to install the holster and cable assembly. See Chapter 5.



Installing the holster and cable assembly 5

Before you start

You will need:

- holster (with 3 bolts and washer)
- cable assembly
- 5/32” allen wrench (provided)

In addition, the installation of the body assembly must be completed following the procedure described in a previous chapter.

Overview of steps

Installing the ChargePoint® Charging Station’s holster and cable assembly involves a few simple steps:

1. Check box for correct contents *(see page 5-2)*
2. Attach holster to body assembly *(see page 5-3)*
3. Install the cable assembly *(see page 5-4)*

These steps are detailed in the remainder of this chapter. When you have completed these steps, you will be ready to install the head assembly, as described in Chapter 6.

Step 1 - Check box for correct contents

Holster and cable assembly

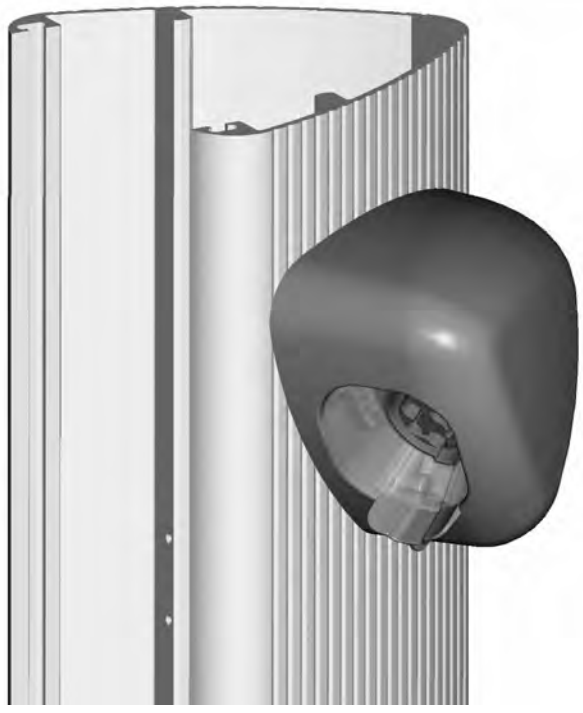
The ChargePoint® Charging Station's holster and cable assembly ships in a box containing:

- holster
- bolts and washers (3)
- cable assembly
- 5/32" allen wrench

Step 2 - Attach holster to body assembly

Attach the holster to the body assembly using the four supplied bolts and washers. Use the supplied allen wrench to tighten.

TIP: Retain the supplied 5/32” allen wrench in case you need to replace the holster in the future.



Step 3 - Install the cable assembly

Slide the cable assembly into the body all the way until it is flush with the top of the front panel.

Note: The CT2101 is used for illustration purposes. The procedure is identical for the CT2102 and CT2103.

Step 3 - Install the cable assembly cont'd

Plug the cable assembly's pigtail connector into the body assembly's terminal block.

Plug the vehicle connector into the holster.

You have now finished installing the ChargePoint® Charging Station's holster and cable assembly and are ready to install the head assembly. See Chapter 6.

Installing the head assembly 6

Before you start

You will need:

- head assembly
- Torx Driver T15 - Tamper-Resistant

In addition, the installation of the body assembly, the holster, and the cable assembly, must be completed following the procedures described in the previous chapters.

Overview of steps

Installing the ChargePoint® Charging Station's head assembly involves a few simple steps:

1. Check box for correct contents *(see page 6-2)*
2. Slide head assembly into body *(see page 6-3)*
3. Secure head assembly *(see page 6-3)*

Step 1 - Check box for correct contents

Head assembly

The ChargePoint® Charging Station's head assembly ships in a box containing:

- head assembly
- Security screws (4)
- Rubber plugs (4)
- Spare label (keep this label for future reference—it contains important MAC address and serial number information that is needed for system provisioning)

Step 2 - Slide head assembly into body

Slide the head assembly into body far enough to connect the wiring, then:

- Connect the pigtail connector to the terminal block, ensuring it is fully seated.

  If the circuit is live, the head assembly will power-up.

- Connect the circular connector to the pilot module and turn its outer ring clockwise until snug.

  Note: The circular connector is keyed and must be properly aligned. When properly aligned, press firmly to ensure it is fully seated. If the connector is not fully seated, the outer ring will not tighten.

- Firmly slide head module all the way into body.
- Open door and check alignment of security screw holes.
- If necessary, press down on head assembly to seat gaskets.

TIP: The door remains unlocked for 30-60 seconds after you plug in the pigtail connector. By holding it open, you can proceed with the next step without having to open it with a smart card.

IMPORTANT: Before securing the head assembly (described next), ensure that it powers up. When the circuit is live and the head assembly is plugged in, a sequence of power-up messages will be displayed. If this is not the case, check that the head assembly's connectors are properly seated onto the terminal block.

When the head assembly is connected (and the circuit is live), you should see a sequence of power-up message on the charging station's display.

Step 3 - Secure head assembly

If necessary, open the door using a smart card.

Using a Torx driver, secure the head assembly with the 4 supplied tamper-resistant security screws.

⚠ **IMPORTANT:** Do NOT overtighten. Snug fit only.

Insert the 4 supplied rubber plugs and push firmly into place using the Allen wrench until they are flush with the surrounding surface.

⚠ **IMPORTANT:** It is *critical* that all 4 plugs are flush with the surface. If they protrude even slightly, the door will not close properly.

You have now finished installing the ChargePoint® Charging Station.

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