CPF50

Networked Charging Station

Site Design Guide

IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

WARNING:

1. **Read and follow all warnings and instructions before servicing, installing, or 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 certified by ChargePoint for installation and service, adhere to all national and local building codes and standards, and 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 Class 1 hazardous locations, such as near flammable, explosive, or combustible vapors or gases.**
6. **Supervise children near this device.**
7. **Do not put fingers into the electric vehicle connector.**
8. **Do not use this product if any cable is frayed, has broken insulation, or shows any other signs of damage.**
9. **Do not use this product if the enclosure or the electric vehicle connector is broken, cracked, open, or shows any other signs of damage.**
10. **Use only copper conductor wire rated for 90 °C (194 °F).**

IMPORTANT: Under no circumstances will compliance with the information in a ChargePoint guide such as this one relieve the user of the responsibility to comply with all applicable codes and safety standards. This document describes approved procedures. If it is not possible to perform the procedures as indicated, contact ChargePoint. **ChargePoint is not responsible for any damages that may result from custom installations or procedures not described in this document or that fail to adhere to ChargePoint recommendations.**

Product Disposal

Do not dispose of as part of unsorted domestic waste. Inquire with local authorities regarding proper disposal. Product materials are recyclable as marked.

Document Accuracy

The specifications and other information in this document were verified to be accurate and complete at the time of its publication. However, due to ongoing product improvement, this information is subject to change at any time without prior notice. For the latest information, see our documentation online at chargepoint.com/guides.

Copyright and Trademarks

Symbols

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

Read the manual for instructions

Ground/protective earth

Illustrations Used in This Document

The illustrations used in this document are for demonstration purposes only and may not be an exact representation of the product. However, unless otherwise specified, the underlying instructions are accurate for the product.

Contents

Site Design Guidelines 2

This document describes how to design a project site for the ChargePoint® CPF50 charging station for electric vehicles. This includes guidelines and best practices for electrical infrastructure and capacity planning, construction and concrete work required prior to installation of charging stations, and cellular signal requirements.

For full specifications and certifications for CPF50 charging stations, refer to the CPF50 Datasheet found online at: chargepoint.com/guides.

Initial Site Guidelines

ChargePoint recommends the CPF50 charging station solution for fleet/depot installations and multi-family residential properties. A networked CPF50 charging station installation allows property managers to have complete control of the charging station policies, including who can use the stations and how much drivers pay to use the stations.

An onsite evaluation is needed to determine conduit and wiring requirements from the panel to the proposed parking spaces, construction and concrete requirements for mounting the charging stations, as well as to measure cellular signal levels for the Gateway (if required) and identify suitable locations for any necessary cellular signal booster equipment.

Electrical Requirements

Review the CPF50 Datasheet at chargepoint.com/guides. Each Level 2 charging station requires:

- A dedicated single phase electrical circuit.
- A new dual pole breaker circuit breaker at the electrical panel.
- Conductor wiring sized in accordance with the National Electric Code requirement for 125% capacity for continuous load for all branch circuits from panel to stations via raceway or conduit.

  The CPF50 delivers up to 50 A per charging station. Determine the amperage rating of the circuit to install based on the desired amperage to be delivered:

Circuit Rating	Charging Current
70 A	50 A
60 A	48 A
50 A	40 A

Circuit Rating	Charging Current
40 A	32 A
30 A	24 A
20 A	16 A

If power capacity is limited at a site or to reduce costs for electrical infrastructure, consider ChargePoint Power Management options for power sharing at the circuit level, panel level, transformer, or site level.

Cellular Connectivity

The CPF50 charging station has its own cellular connection. Earlier models of CPF50 require that the ChargePoint Gateway is installed for cellular connection. In order to determine whether the CPF50 model has its own cellular connection, look for the label at the bottom of the station, which indicates the model name. A model name with CPF50-K will have a cellular modem, while a model name with CPF50 will require the ChargePoint Gateway for cellular connection. If the ChargePoint Gateway is required, each CPF50 must be installed within 45 m (150 ft) of the Gateway within line of sight.

A strong cellular connectivity is required to allow ChargePoint to communicate with the station. A connection is needed for station owners and operators to access these features:

- User authentication, access control, and billing
- Energy usage reporting
- Charging station utilization and charging session details for analytical reporting
- Automatic power management
- Real-time charging status to drivers using the ChargePoint mobile app or web portal
- Ability for drivers to use the ChargePoint mobile app and Tap to Charge, Apple Pay, or Android Pay on their smartphone to start and stop sessions
- Notifications to drivers when vehicle battery is full or stops charging
- Notifications to drivers regarding waitlist position
- Notifications to drivers prior to pricing increases for overstay of parking at EV spots
- Station fault alarms and remote diagnostic capability
- Over-the-air software upgrades for new station features or enhancements

If you have preexisting infrastructure or are using your own preferred electrical contractor to prepare your site, a Site Validation by a ChargePoint Operations and Maintenance (O&M) partner is required to certify compliance with electrical specification requirements, and to ensure everything was prepared to ChargePoint specifications.

IMPORTANT: Always check local codes or consult an engineer to ensure the site is prepared in compliance with all applicable regulations. Local authorities might not allow a unit to operate if it is not installed to code.

Charging Station Placement

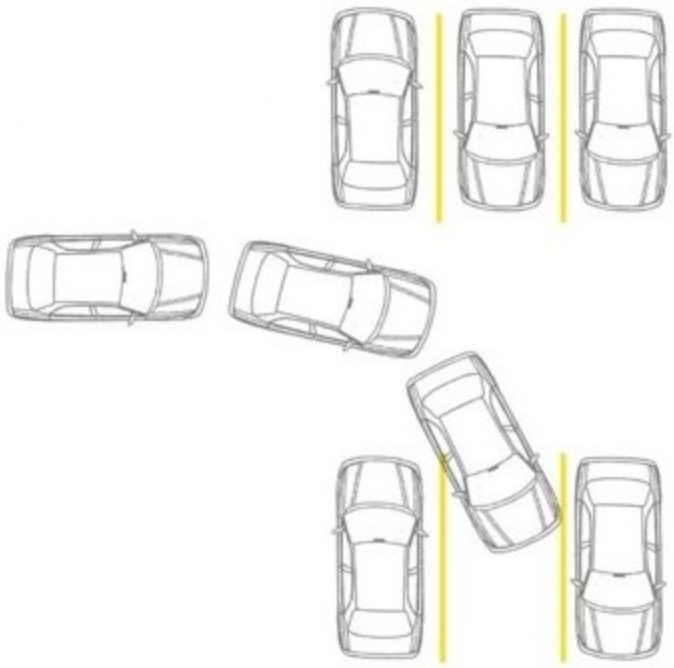
WARNING: The ChargePoint charging station must be installed on a level concrete base or a flat wall rated for the weight of the station. Asphalt cannot support the full weight of the station. Failure to install the station on a suitable surface may cause the station to tip over, resulting in death, personal injury, or property damage.

Layout Considerations

- Identify station locations for EV charging spots.
- To help minimize costs, choose station locations that are as close as possible to the available electrical infrastructure.
- Determine raceway or conduit runs for electrical wiring from the electrical panel and consider a layout to minimize linear conduit costs to all proposed EV parking spaces.
- If possible, avoid or minimize trenching requirements, especially more costly trenching to run conduit under asphalt surfaces.
- Consider locations where it will be easy to add future stations.
- Identify suitable locations with smooth, plumb surfaces for wall mount stations or suitable floor surfaces for pedestal mount stations.
- Consider ADA compliance. The charging station must not block ramps or pathways, and cables should not extend across ramps or pathways when connected to a vehicle.
- Choose adjacent parking spaces in an area with adequate lighting.

- For stall parking, ChargePoint prefers using perpendicular parking stalls to better accommodate vehicles with front and rear charge ports.

  Note: While ChargePoint tests charging stations with a majority of upcoming vehicles, ChargePoint cannot guarantee the port locations of future vehicles and cannot warrant the configurations proposed will work for all vehicles.



- Consider how easily drivers can find the stations they need to access.
- Use dual-port pedestal mount stations where possible in open areas for adjacent parking or adjoining parking spaces.
- Consider protective bollards and wheel blocks where appropriate, especially for open tandem parking spaces.

Electrical Considerations

- Evaluate existing electrical infrastructure to determine if the existing utility service and electrical panel capacity is sufficient.
- Ensure the electrical wiring, overcurrent circuit protection, and metering (if required) is in place by reviewing the datasheet, as well as the wiring diagram and grounding requirements in this document.
- Ensure that you use 16 mm^2 (6 AWG) or 10 mm^2 (8 AWG) wire to the station. If you will be feeding the station with larger wire like 25 mm^2 (4 AWG), you will need to splice the wire for 16 mm^2 (6 AWG) or 10 mm^2 (8 AWG). For each charging station, only three wires are required: L1, L2, and Ground.

  Note: Neutral must be bonded to Ground upstream at the transformer or panel for each separately derived system.

- Identify costs for any necessary upgrades and/or a new dedicated electrical panel. Size all conduit and electrical wiring in accordance with the National Electric Code requirements. ChargePoint recommends using a certified electrician to evaluate available capacity and identify any upgrades that may be required.
- If a dedicated EV electrical panel is required, choose a panel location in close proximity to the existing electrical supply.

Power Management

Using ChargePoint Power Management technology, sites can install more stations than otherwise would be supported by the available electrical service. A maximum aggregate load is defined for a group of charging stations, and ChargePoint cloud-based services manage the individual power output of each station (or port) to ensure the maximum load is never exceeded.

As shipped, a CPF50 charging station provides up to 50 A of output current to each charging station.

For more information on ChargePoint Power Management considerations, see the ChargePoint Power Management Reference Guide.

Additional Considerations

- Determine appropriate mounting type: wall mount vs. pedestal mount.
- Use dual-port pedestal mount stations where possible in open areas for adjacent or tandem parking spots. Establish the quantity of each type of charging station in the initial order.
- Measure cellular signal levels using professional cellular test equipment to ensure adequate cellular coverage at the Gateway installation location, if required.
- To ensure adequate cellular signal strength in underground or enclosed parking structures, cellular repeaters may be required. Use an indoor antenna located near EV parking spaces and an outdoor antenna typically located at the garage entrance ceiling or on the rooftop where cellular signals are best.
- Determine cost budget options for electrical infrastructure to satisfy current needs and future needs. Prioritize charging stations locations based upon immediate and future needs, construction timelines, and costs.

Plan for the Future

Keep in mind not only current EV charging needs, but future needs as EV adoption grows.

- Consider running raceway or conduit to all planned EV parking spots, but pulling electrical wiring from the panel to meet current needs.
- Consider installing a dedicated electrical panel for EV charging, then leverage ChargePoint Power Management to efficiently use available power at a site to support more EV charging ports than would otherwise be possible without power management.

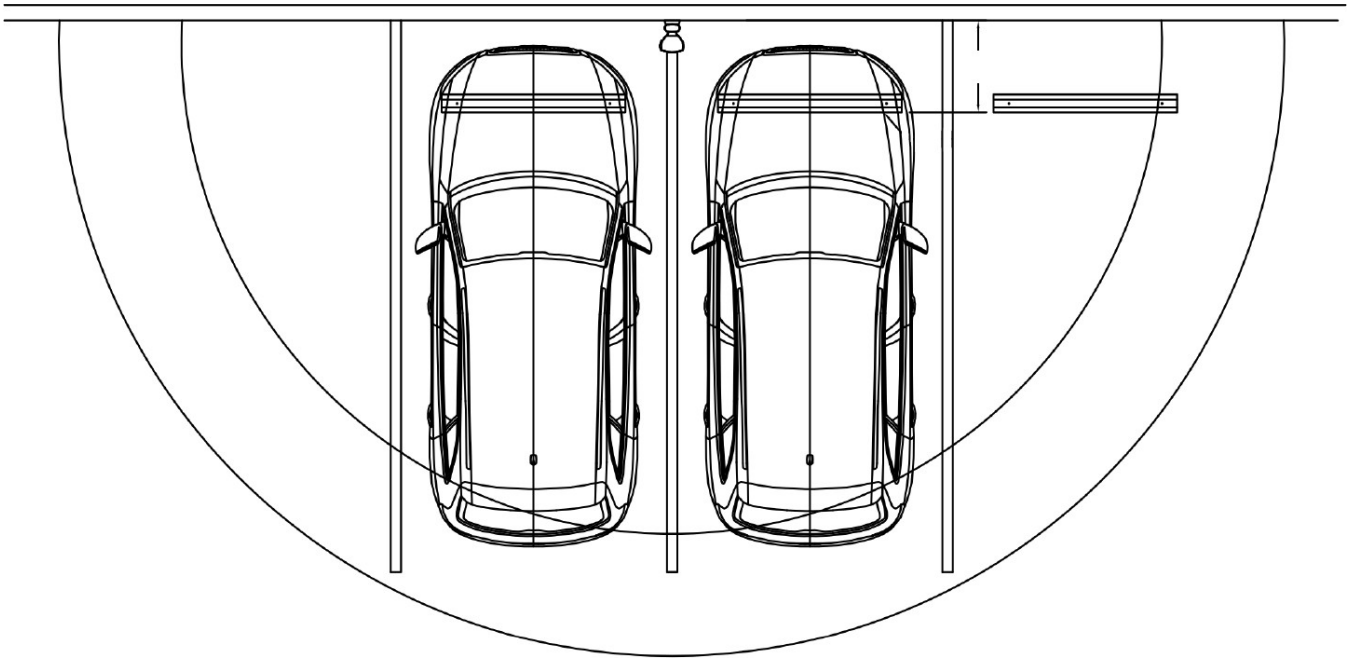
Civil and Mechanical Design 3

Use the guidance below to design the civil and mechanical aspects of the site.

The station can be installed attached to a wall, or on a concrete pedestal. The pedestal can be a newly poured pad or an existing concrete surface.

Wall Mount Stations

For wall mounted stations, the wall must be smooth, stable, and plumb. The minimum height of the wall must be 1250 mm (49 in). Place wheel stops (a) 900 mm (3ft) from the wall. The arc shows the usable reach of the two charging cable lengths available, 5.5 m (18 ft) (b) and 7 m (23 ft) (c).



IMPORTANT: Ensure the wall supports the station. If mounting to a hollow wall, bridge at least two studs using a 41 mm (1 5/8 in) channel strut.

WARNING: If not installed correctly, the ChargePoint charging station may pose a fall hazard, leading to death, personal injury, or property damage. Always use the provided Concrete Mounting Template shown preinstalled here, or a ChargePoint-approved surface mounting solution, to install the ChargePoint charging station. Always install in accordance with applicable codes and standards using licensed professionals. Non approved installation methods are performed at the risk of the contractor and void the Limited One-Year Parts Exchange Warranty.

Pedestal Mount Stations

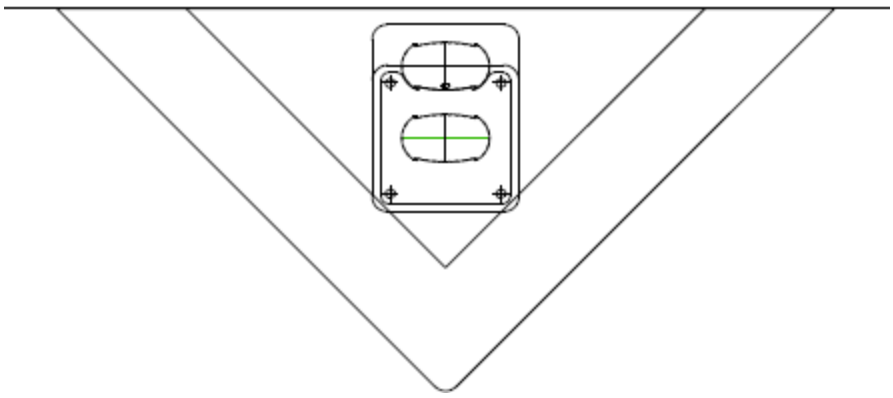
For newly poured pedestal mounted installations, the mounting surface must be smooth and cannot exceed a slope of 6 mm per 300 mm (0.25 in per ft). The concrete base must measure at least 600 mm (2 ft) on all sides. For installations in existing concrete, epoxy anchors can be used. Consult a civil engineer to ensure sufficient volume and strength of concrete.

There are three basic pedestal base designs:

- In front of a curb (a) 900 mm (3 ft) x 2 (b)

  Area: 0.42 m^2 (4.5 ft^2)

  Volume: 0.26 m^3 (9 ft^3)

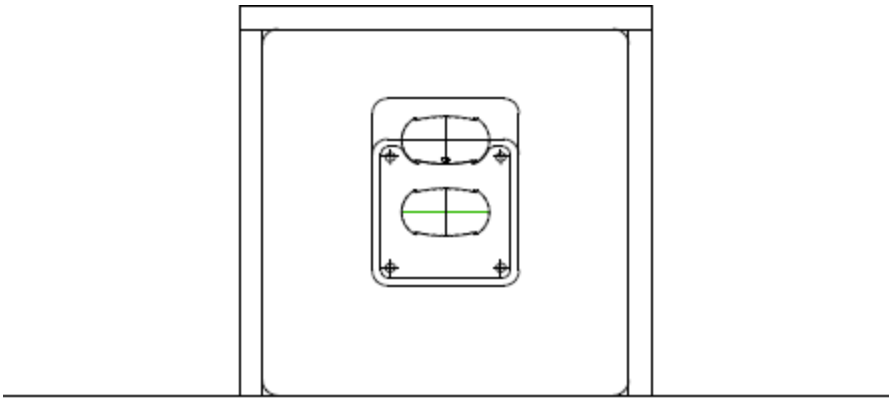


- Behind a curb (a) in a planter or berm 600 mm (2 ft) on each side

  Area: 0.37 m^2 (4 ft^2)

  Volume: 0.23 m^3 (8 ft^3)

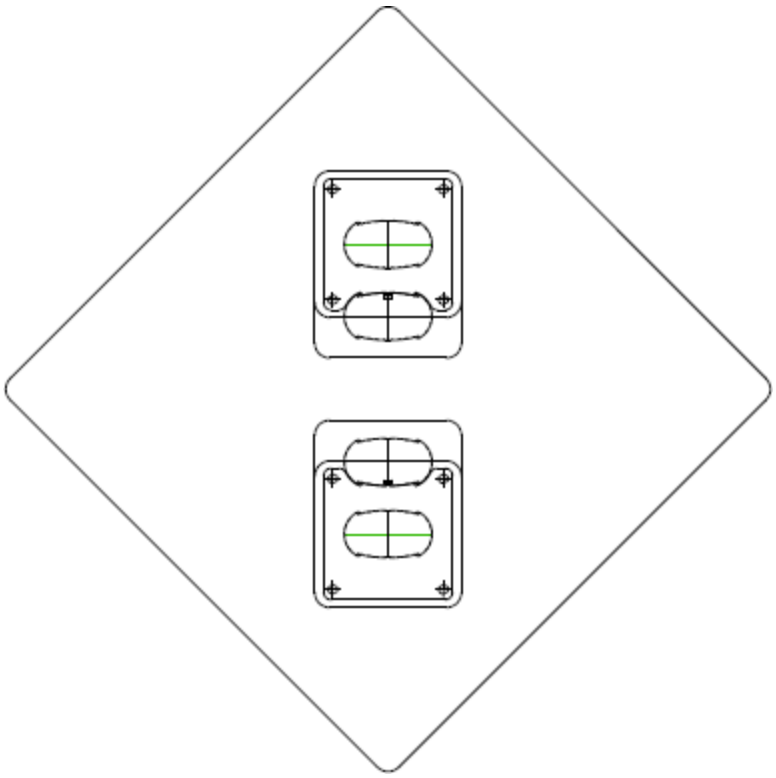
  Note: Use a retaining wall as needed to prevent dirt from accumulating on the pad.



- Two stations back to back, centered between four spaces 900 mm (3 ft) on each side

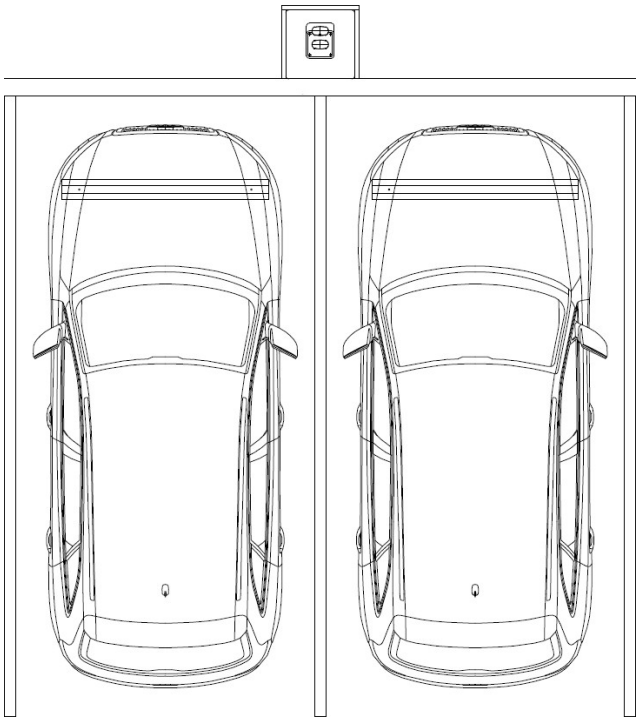
  Area: 0.84 m^2 (9 ft^2)

  Volume: 0.51 m3 (18 ft3)

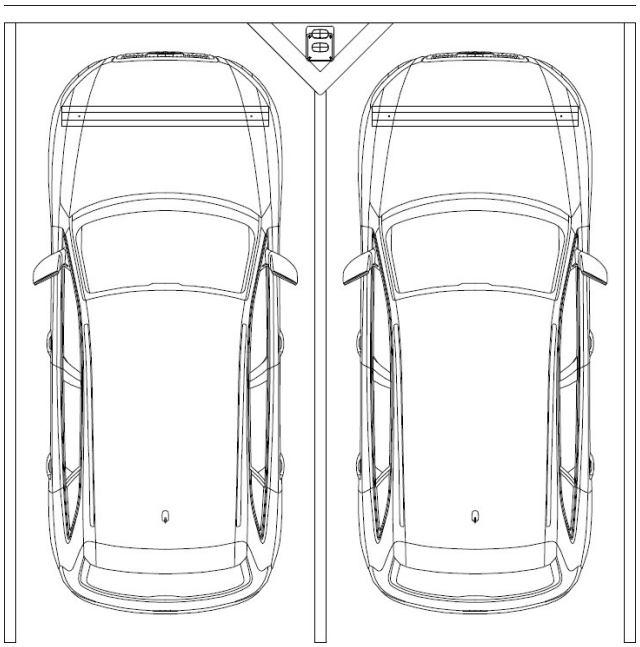


The pedestal base design can be configured in a variety of ways to serve different parking arrangements. Ensure a sufficient volume of concrete to provide anchoring for the charging station.

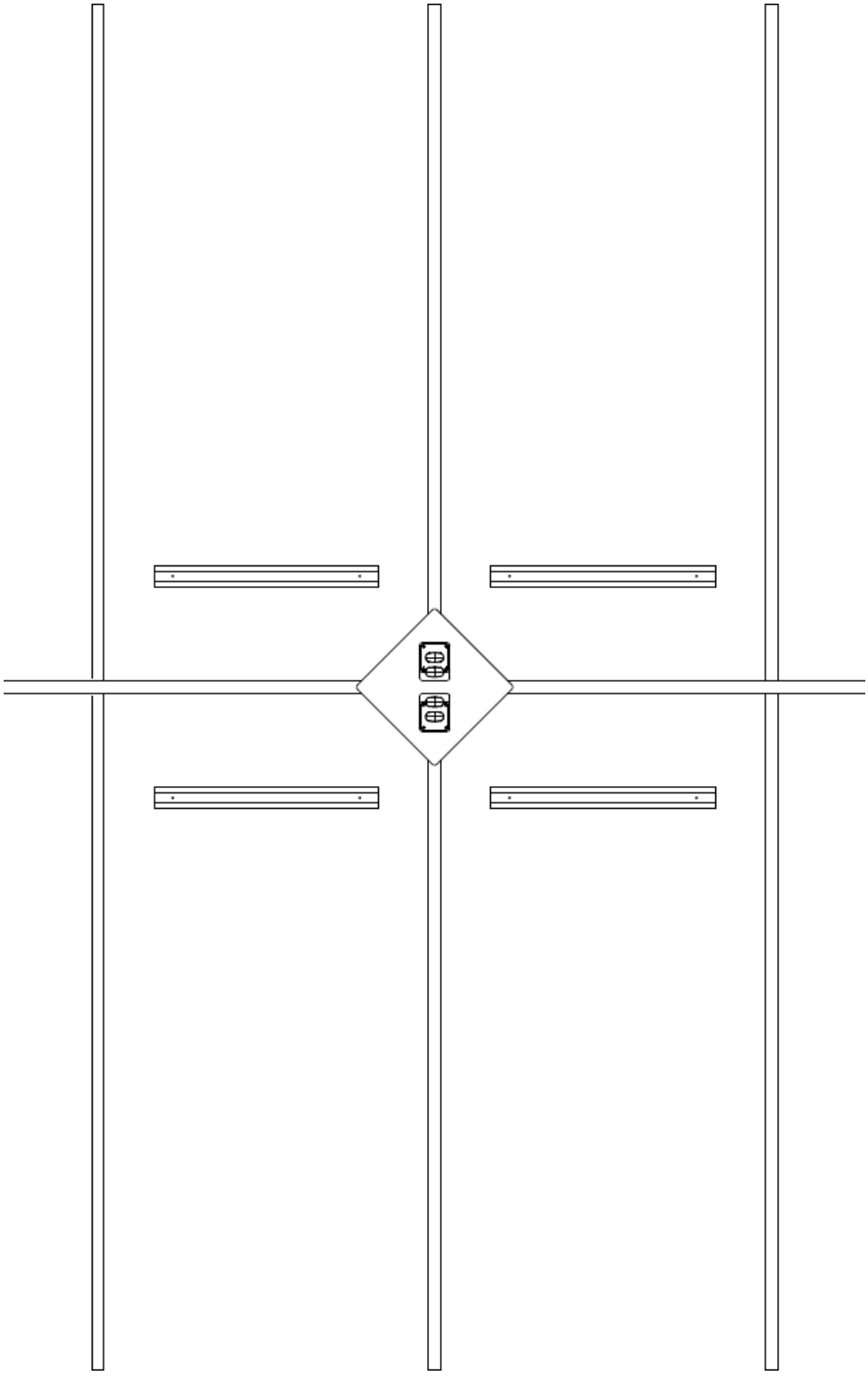
- Place the station behind the curb in a planter or berm between spaces with wheel stops 900 mm (3 ft) from the front of each stall.



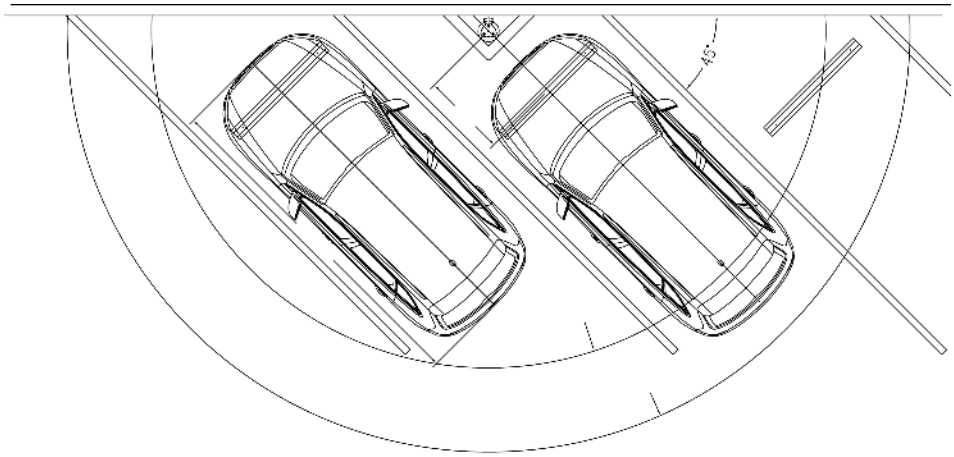
- Place the station in front of the curb between spaces with wheel stops 900 mm (3 ft) from the front of each stall. The base of the charging station can be flush with the parking spaces or at curb level.



- Place two stations back to back centered on four spaces with wheel stops 900 mm (3 ft) from the front of each stall. The base of the charging station can be flush with the parking spaces or at curb level.

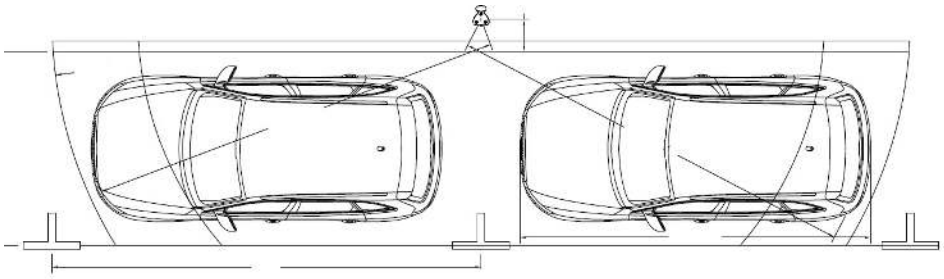


- Place a dual port station centered on the right space. The charging cables reach two vehicles. Place a wheel stop 1220 mm (48 in) from the center of the charging station. The arc shows the usable reach of the two charging cable lengths available: 5.5 m (18 ft) and 7 m (23 ft) (c). The 7m (23 ft) cord option is recommended for this configuration. The base of the charging station can be flush with the parking spaces or at curb level. Be sure to install EV Charging Station signage on both spaces.

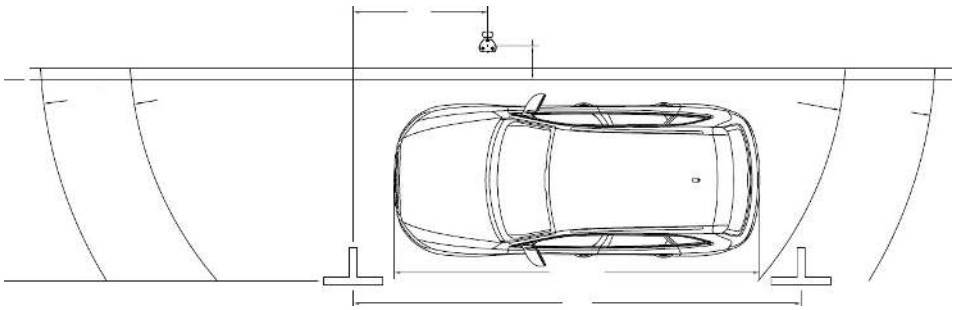


- Place a dual port station centered between two parallel parking spaces (a), each 6 m (20 ft) long. Place the station

  (b) 450 mm (18 in) from the curb. A 7 m (23 ft) charging cable is recommended.



- Place a single port station for a single parallel parking space 6 m (20 ft) long. Place the station (a) 450 mm (18 in) from the curb, and 1.8 m (6 ft) from the front of the parking space (b).



Ensure any site slopes, walls, or fencing do not trap water around the charging station installation site. The system is only built to withstand water to the height of the conduit stub-up.

WARNING: Exposing the ChargePoint® charging station to water above the height of the conduit stub-up could create an electrocution, shock, or fire hazard. Cut power to the charging station if it has been exposed to standing water and contact ChargePoint before the charging station is powered on.

For pedestal installations, the conduit stub-up must be a minimum of 230 mm from any obstructions to the rear. This includes other charging stations. Check applicable codes for any additional clearance requirements.

Accessibility

To meet the accessibility requirements, the CPF50 charging cables are no more than 1220 mm (48 in) above ground and no more than 254 mm (10 in) away.

This complies with American Disability Act (ADA) requirements, if the station is installed at grade. If your installation must comply with ADA standards, or the disability access regulations for other regions, consider this when designing the height of the pad or when planning a wall-mounted installation.

Also consider site design factors such as placement of bollards, wheel stops, or other vehicle obstacles when planning charging station access for disabled parking stalls. Check disability access regulations for guidance on the clearances needed for wheelchair access to charging cables and user interfaces.

Electrical Design 4

The wall mount CPF50 installation uses surface mount wiring. The pedestal mount CPF50 installation requires service wiring installed underground. (If a pedestal mount installation requires surface run conduit, contact ChargePoint before beginning work to obtain an approved installation method.) Conduit and wire size are determined based on the length of runs from the electrical panel to the station location. Service wiring must be run through conduit to comply with local electrical codes. Consult national and local codes or a project engineer to determine the grade, quality, and size of the conduit or cable. The CPF50 Concrete Mount Kit accommodates service wiring through the flare, conduit, or locally appropriate wiring method.

Note: All wiring and conduit is supplied by the contractor unless otherwise indicated.

Upstream Wiring

Charging stations are considered continuous load devices (EVs draw maximum load for long durations); therefore, electrical branch circuits must be sized at 125% of the load for North American installations, in accordance with National Electric Code (NEC) requirements. (For other regions, refer to local code.) This means that for a maximum 50 A load at 208/240 V output to an electric vehicle, 65 or 70 A breakers are required.

Wiring must be sized in accordance with NEC code for continuous load devices. Typically, 16 mm^2 or 10 mm^2 (6 AWG or 8 AWG) insulated electrical wire is used, depending upon the rating of the circuit and the distance between the electrical panel and the charging station. The terminal block accepts a maximum of 16 mm^2 (6 AWG).

IMPORTANT: The AC terminal blocks on the CPF50 accept a maximum size of 16 mm^2 (6 AWG) solid or stranded wires. If using a larger gauge wire to accommodate a long run, reduce the wire size at the disconnect.

When planning multiple EV charging stations, it is best practice to separate non-continuous from continuous loads, with all branch circuits for EV charging on a dedicated electrical panel assembly with adequate circuit breakers. When sizing new electrical panels dedicated for EV charging, all branch circuits must support continuous load, and the panel rating must be sized for at least 125% of the total load on each leg of a 3-phase panel.

CAUTION: The CPF50 charging station is tested to IEC 61000-4-5, Level 5 (6 kV @ 3000 A) standards. In geographic areas that experience frequent thunderstorms, appropriate supplemental surge protection is recommended to guard against product damage.

IMPORTANT: ChargePoint stations are UL 916 listed as Energy Management devices and are networked for real time communication to ensure they operate within the provisioned load allowance.

Conduit

The outside diameter of conduit must not exceed the sizes called out in the conduit layout drawing: 45 mm (1.8 in). Conduit stub-ups must not extend higher than 660 mm (26 in) above grade.

For wall mounted stations, flex conduit must be used to bring the wire to the station.

Wiring Requirements

For full product specifications, refer to the CPF50 Datasheet. Using that data, ensure that the installation location is equipped with service wiring that supports the CPF50's power requirements:

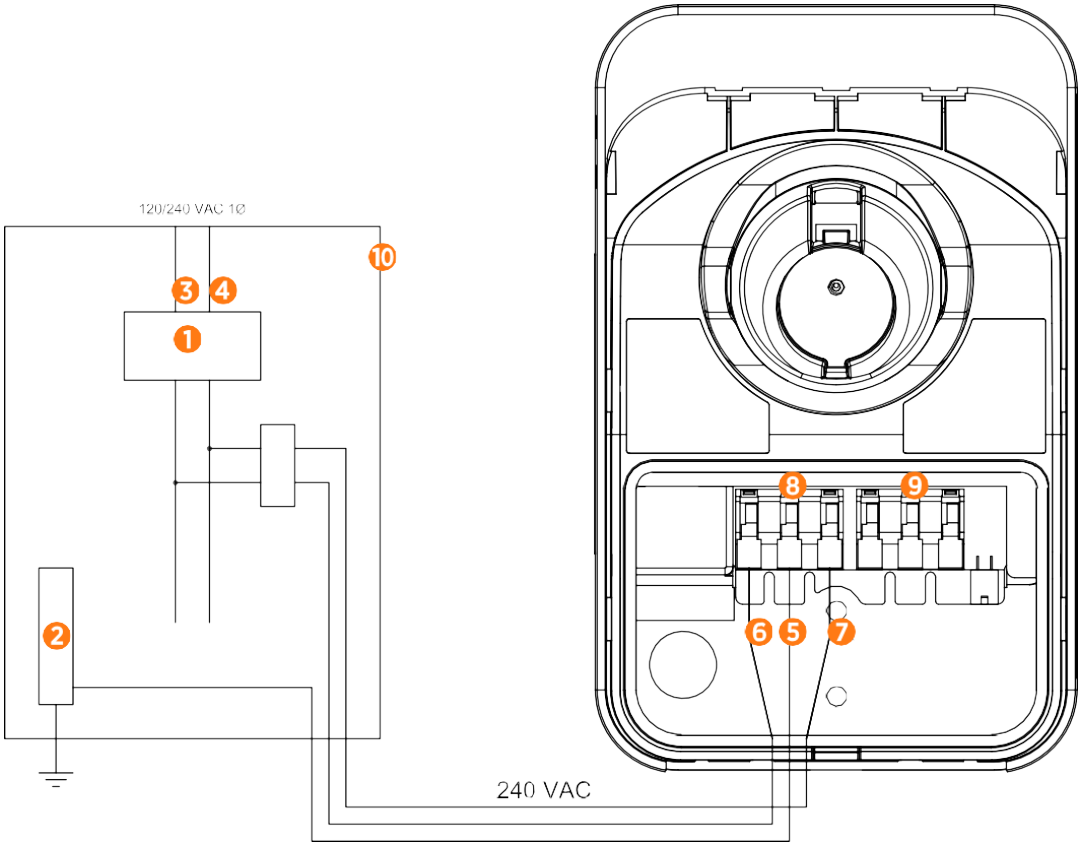
- AC conductors (L1, L2)
- Ground conductor

When pulling electrical wiring for CPF50 pedestal mount, ensure at least 1.5 m (5 ft) of wire remains above grade.

When pulling electrical for wall mounted stations, the conduit and wire must be brought to the location where the stations will be mounted. Flex conduit may be used to bring the wire to the station. Wiring is usually brought in via the bottom of the CPF50. The CPF50 has a 21 mm (3/4 in trade size) knock-out in the bottom and the rear of the charging station.

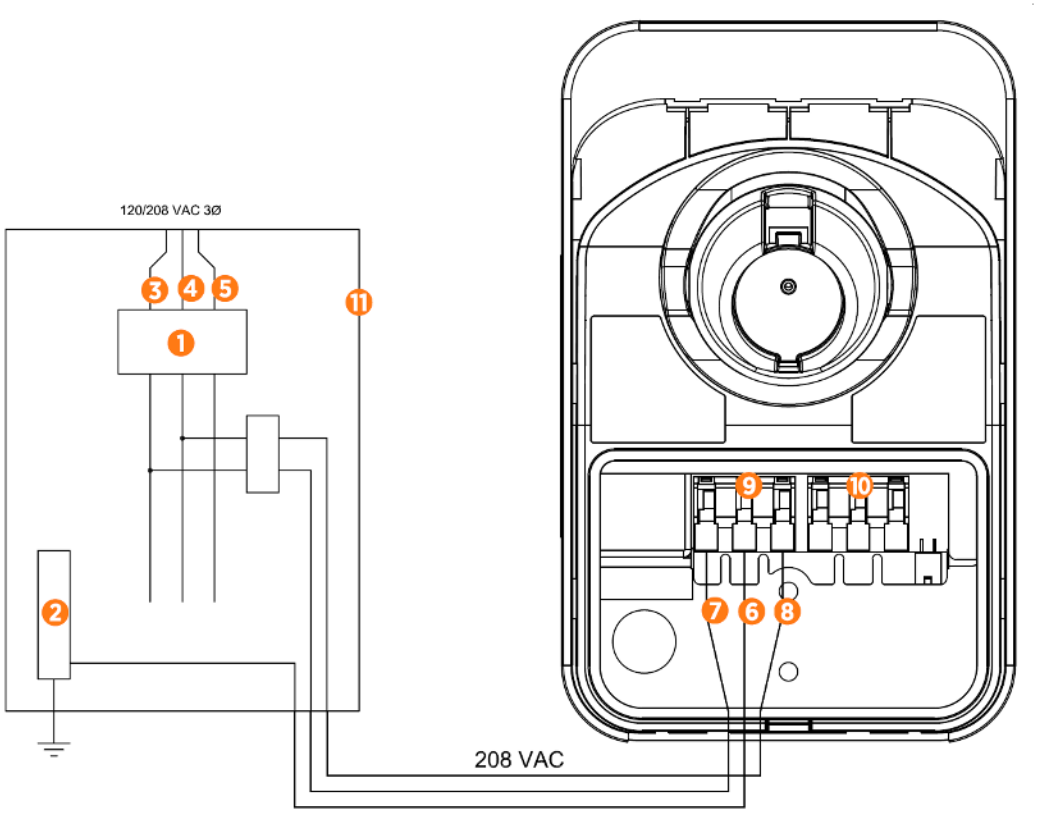
Wiring Diagram

240 VAC Single Phase Panel



1. Main Breaker
2. Ground Bus
3. L1
4. L2
5. Ground
6. L1
7. L2
8. Input Terminal Block
9. Output Terminal Block
10. Local Service or Sub Panel

208 VAC Three Phase Panel



1. Main Breaker
2. Ground Bus
3. L1
4. L2
5. L3
6. Ground
7. L1
8. L2/N
9. Input Terminal Block
10. Output Terminal Block
11. Local Service or Sub Panel

Grounding Requirements

The CPF50 must be connected to a grounded, metal, permanent wiring system. An equipment- grounding conductor must be run with circuit conductors and connected to an equipment- grounding terminal or lead on the CPF50.

A grounding conductor that complies with applicable codes must be grounded to earth at the service equipment or, when supplied by a separate system, at the supply transformer.

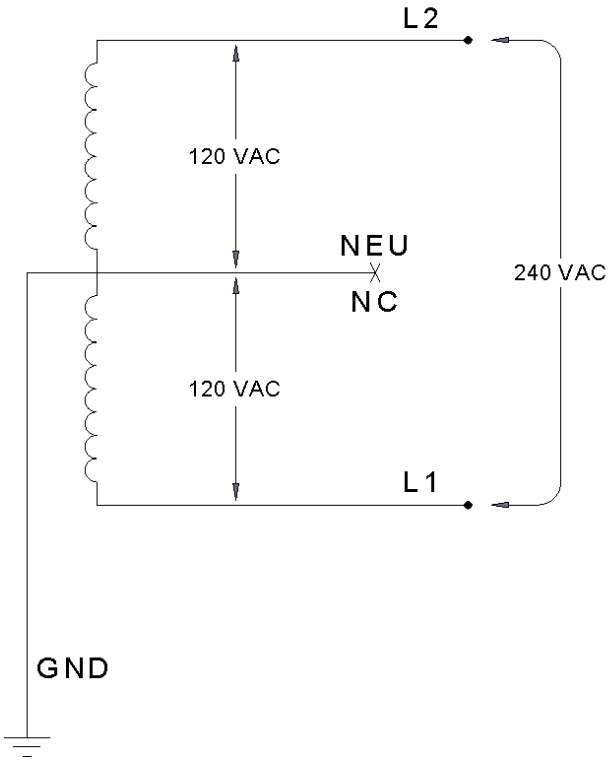
Ensure that a grounding conductor that complies with all applicable codes is properly grounded to earth at the service equipment or, when supplied by a separate system, at the supply transformer.

Neutral is not used to power the station but must be properly connected to ground, at the panel or transformer, to provide the necessary voltage reference relative to ground.

- In a Wye system, connect the station to any two lines, as shown.
- In a Delta system, connect the station to a center-tapped secondary only, where the center tap is bonded and the station is connected to the L1 and L3. This allows voltages to remain constant regardless of other loads that may be using the lines.

Connect To These Systems

- 120/240 VAC, 10 Bonded Neutral Station is connected to L1 and L2 Neutral is not used

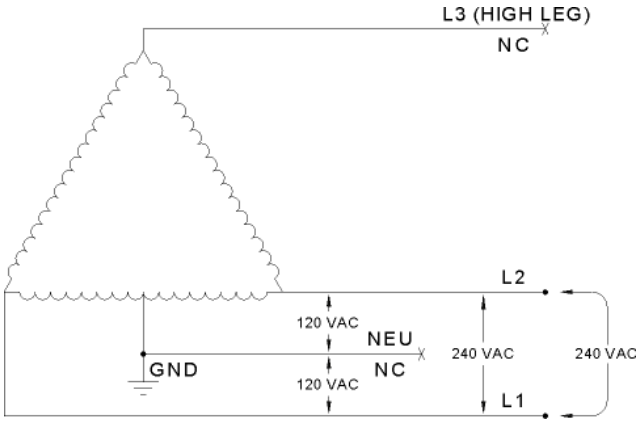


- 120/208 VAC, 30 Wye Bonded Neutral Station may be connected to any two lines Neutral is not used

- 120/240 VAC, 30 Delta Center tap grounded Bonded neutral

  Station must be connected to L1 and L2 only Do not connect any part of the system to L3 Neutral is not used

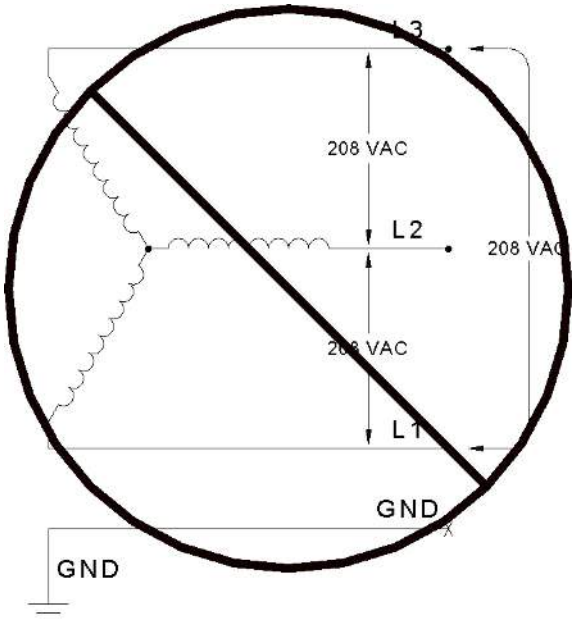
  Not recommended for new construction



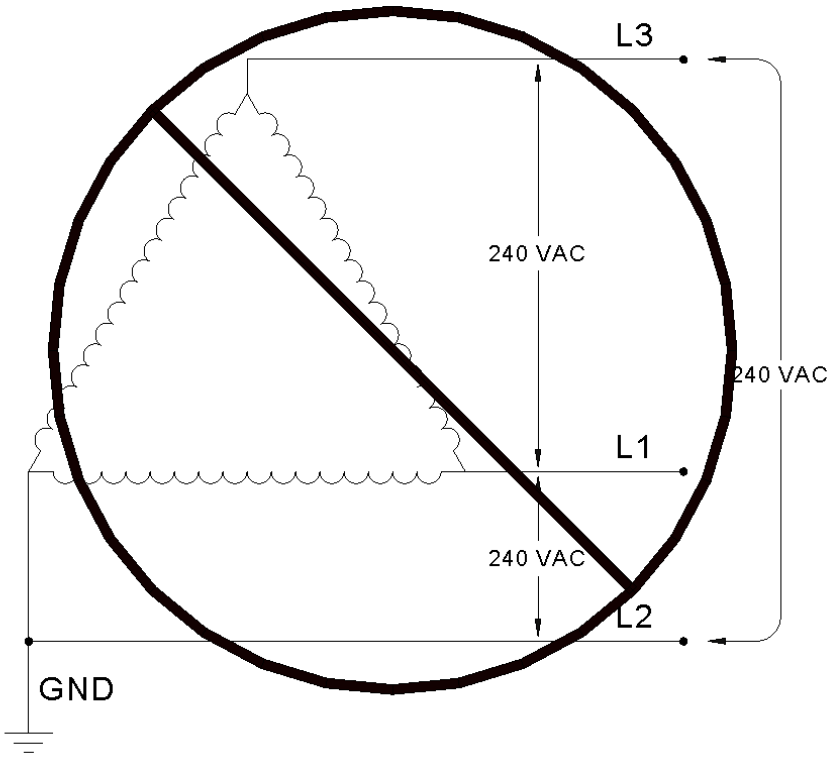
Do Not Connect to These Systems

- 120/208 VAC 3 phase Wye, ungrounded Floating neutral

  Voltage of either line to ground is undetermined Neutral is not grounded



- 120/240 VAC 3 phase Delta, corner-grounded Voltage of any line is not 120 V nominal relative to ground



- Any system where the center point of the AC power source is not grounded.

Plan for the Gateway (if required)

The CPF50 charging station has its own cellular connection. Earlier models of CPF50 require that the ChargePoint Gateway is installed for cellular connection. In order to determine whether the CPF50 model has its own cellular connection, look for the label at the bottom of the station, which indicates the model name. A model name with CPF50-K will have a cellular modem, while a model name with CPF50 will require the ChargePoint Gateway for cellular connection. If the ChargePoint Gateway is required, each CPF50 must be installed within 45 m (150 ft) of the Gateway within line of sight.

The ChargePoint Gateway consists of a cellular modem for wide area networking and built-in WiFi for local communications to and from the CPF50 charging stations. The Gateway should be located where cellular signal levels are optimal for LTE. Each Gateway must be located within 150 feet line-of-sight to as many as nine (9) CPF50 charging stations. Each CPF50 charging station has built-in WiFi capability to communicate via the Gateway for ChargePoint network services.

The Gateway is a UL Class 2 device and requires less than four watts power (33 mA@120 V or 19 mA@208 V). ChargePoint recommends hardwire electrical termination to the power source for the Gateway.

The Gateway dimensions are 280 mm (11 in) wide by 340 mm (13 3/8 in) long by 137 mm (5 3/8 in) deep. The datasheet, installation guide, and mounting template are available at chargepoint.com/guides.

Cellular Connectivity

A consistently strong cellular signal is needed before installers can activate the station. Do not rely on cell phone applications to measure cellular signals when conducting site surveys. Take cellular readings at the exact location of each proposed charging station location.

Ensure the Reference Signal Receive Power (RSRP) is -100dBm or better. (Note that these numbers are all negative, so -80 dBm is stronger than -100 dBm, and -120 dBm is weaker.) Use a cellular signal detection device (such as an OctopusTM or Snyper-LTE GraphyteTM (USA) by Siretta) to take signal strength readings at the exact proposed charging station location. If the test tool is capable of measuring the RSRQ value, ensure the value is higher than -10. (Again, where this is measured in negative numbers, so that -9 is higher than -10).

If the RSRP signal is below -100 dBm or the RSRQ value is below -10, take cellular readings at location where a cellular signal booster outdoor antenna will be installed to ensure enough signal exists to be boosted. Install repeaters to boost the strength of the cellular signals. Repeaters are often required when installing the charging station in an underground garage or enclosed parking structure. We recommend using a multi-carrier cellular repeater system. Here are some options for cellular signal boosters:

- WeBoost 4G-X for all carriers in North America, supports voice, 3G and 4G, max gain of 70 dB for up to 10,000 square feet of coverage area
- SureCall Fusion 5 for all carriers in North America, supports voice, 3G and 4G, average gain of 65 dB & max 72 db for up to 6,000 square feet of coverage area
- SureCall Force 5 for all carriers in North America for up to 20,000 square feet of coverage inside parking structure

Consult an expert in the cellular repeater industry for additional guidance. ChargePoint O&M partners can validate acceptable cellular signal strength at the site using a cellular strength reader.

CPF50 Pedestal Mount Concrete Preparation 5

The CPF50's pedestal mount can be installed either:

- Into the ground by casting into new concrete
- Onto an existing concrete surface
- Onto a stacked parking platform

WARNING:
Do not use expanding anchor bolts.
Do not install the CPF50 on an asphalt surface.

The required kit components, required tools, and installation steps vary depending on the type of installation. This section provides basic guidelines for all approved installation types.

Installation Overview

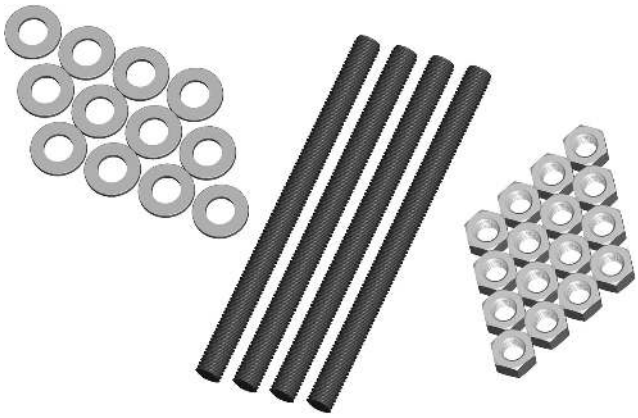
To install the CPF50 pedestal mount into the ground, you need the components shown below.

- 5/8" - 11 X 9" grade 55 bolts (4)
- 5/8" - 11 hex nuts (16)
- 5/8" washers (12)
- Bolt Pattern Template 75-001163-01

- Mount Placement Guide 75-001162-01

  These components be purchased from ChargePoint by ordering a CPF50 Pedestal Mount Kit.

  When installing onto an existing concrete surface, you only need 8 galvanized hex nuts and 8 galvanized washers. Additionally, required consumables are described below.



Installation on New Concrete

Before casting new concrete, review the site for suitability to install a CPF50. The CPF50 requires space behind the conduit stub-up for the Cable Management Kit (CMK), if applicable. To ensure adequate clearance, refer to the illustrations below and to the CPF50 Installation Template (75- 001163-01) and the Mount Placement Guide (75-001162-01) included in the Concrete Mount Kit.

Note: If the original copy of the installation template is lost, a new one can be printed at:

https://chargepoint.box.com/v/cpf-bpt-en-fr-es. Ensure the PDF version of the mounting template is accurate by printing at 100% scale on 11x17 paper and verifying at least one dimension.

IMPORTANT: Always check local codes to ensure compliance. You may need to adjust these instructions to comply with codes that apply at your installation location.

- The concrete block must measure at least 500 mm (20 in) on all sides.
- The bolt threads must extend 60 mm (2.5 in) above the concrete.
- The conduit must not exceed a maximum of 45 mm (1.8 in) in diameter and extend 660 mm (26 in) above the concrete.
- The service wiring must extend 1.5 m (5 ft) above the concrete surface.
- Refer to Section 4 of the CPF50 Installation Guide for detailed instructions on how to install the pedestal mount.

Preparation

1. Dig a hole with the minimum measurements of 600 mm (2 ft) x 600 mm (2 ft) x 600 mm (2 ft).

> **IMPORTANT:** The concrete block you create must be at least 600 mm on all sides.

2. Ensure that electrical cable and conduit has been installed in the correct location and that the appropriate circuit protection and metering is in place, following all local codes and regulations.
3. Ensure that enough power cable (approximately 1.8 m (3 ft)) is above the planned ground level to create a service loop. It can be trimmed back during installation as needed.
4. Create a base for the concrete as required by local codes and regulations.
5. Create a wooden version of the template.
6. Build a temporary frame to support the wooden template over the hole.
7. Before pouring the concrete pad, make sure that all pedestal mounting components are readily available at the installation site.
8. Install two nuts, with two washers captured between them, onto each of the three bolts, as illustrated. Lock them together so the lower end of the upper nut is located 165 mm from the bottom of the bolt. This sets the length of the exposed threads.

9. Insert the four bolts through the wooden template. This ensures the relative position of the bolts, and ensures that the flange of the pedestal fits over the bolts.

10. On the bottom end of each bolt, install a nut, a washer, and a nut. Lock the two nuts together so that the lower nut aligns to the bottom of the bolt. This provides retention for the bolt in the concrete.

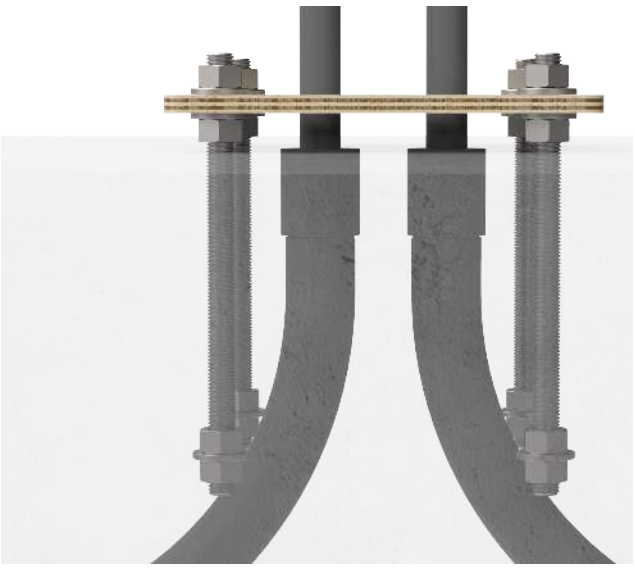
Installation Instructions

1. Pour the concrete into the hole you prepared.
2. Immediately after pouring the concrete, push the bolts into the concrete 165 mm (6.5 in) deep. You may need to slightly loosen the hexagon nuts to rotate the mounting bolts. Ensure correct alignment and that the top 60 mm (2.3 in) of the bolts remain exposed.

> **IMPORTANT:** Rotate the bolts as you insert them. This allows the concrete to fully coat the threads of the bolts, reducing the amount of trapped air.

3. Retighten the hexagon nuts to the template.

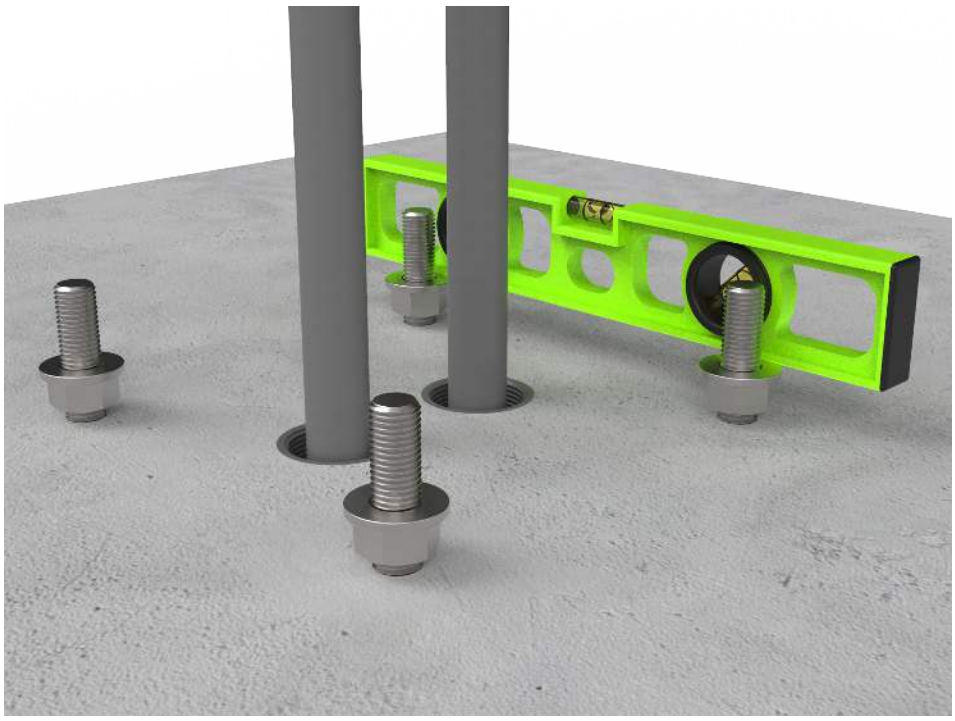
4. Remove any boards or shims supporting the mounting template. Leave the mounting template in place until the concrete is fully cured.



Complete After Concrete Cures

1. When the concrete is fully cured, remove the upper nut and the washer.
2. Adjust the remaining nuts and washers until about 35 mm (1.4 in) of bolt is exposed above each washer.

3. Use a spirit level and adjust the height of the nuts as required to ensure the four washers are completely level with each other.



4. When the concrete is fully set, remove the upper nuts and the washers to install the pedestal's mounting post.

   You are now ready to install the CPF50 pedestal mount charging station.

Installing on Existing Concrete

If installing on existing concrete, review the site for suitability to install a CPF50. The CPF50 requires space behind the power stub-up for the pedestal and (optional) CMK. To ensure adequate space, refer to the CPF50 Installation Template included in the Concrete Mounting kit.

IMPORTANT: Always check local codes to ensure compliance. You may need to adjust these instructions to comply with codes that apply at your installation location.

- Review the dimensions of the existing concrete slab. To safely mount a CPF50 charging station, the concrete must be at least 200 mm (8 in) thick. At this thickness, all CPF50 mounting bolts must be positioned at least 380 mm (15 in) from the front edge, at least 305 mm (12 in) from the side edges, and at least 150 mm (6 in) from the rear edge of the concrete slab.
- If an existing charging station is already in place at the installation site, turn off all power to the station and disassemble according to the original manufacturer's instructions. Cut away any existing bolts or non-power conduit stub-ups to ground level. Seal cut-away conduits at the slab end, and disconnect wiring at the other end.

- Ensure you have adequate wiring. Service wiring for the CPF50 must extend 1.5 m (5 ft) above the platform's surface.
- ChargePoint recommends creating a rigid template based on the paper template to position the bolts.

Tools and Consumables Required

Electric drill or hammer drill (12 mm/ 1/2 in chuck may be required depending on drill bits used)

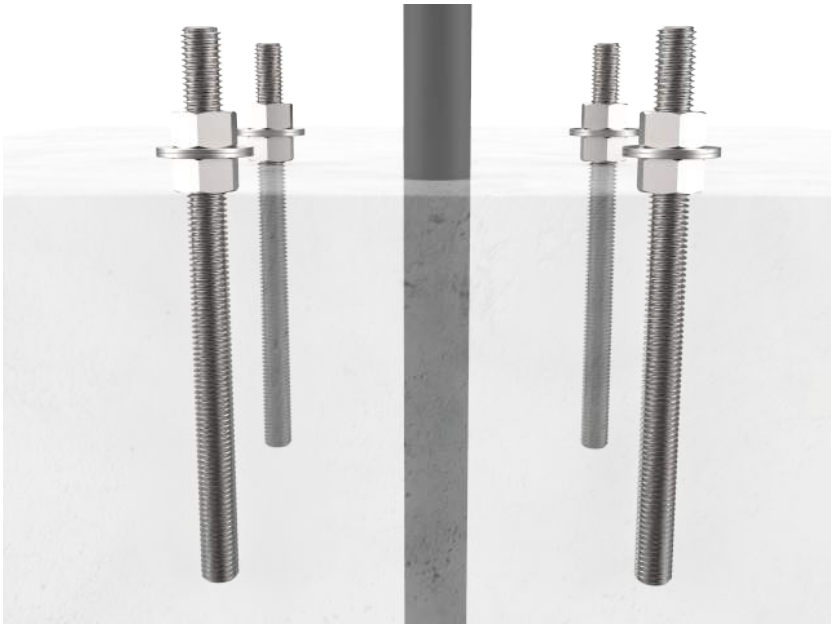
Quantity	Description	Purpose
1	Epoxy adhesive for concrete such as Hilti RE-500.	Fill drilled holes and secure anchor bolts.
1	Electrical cleaning and maintenance aerosol, any angle spray duster, 235 ml (8 oz), such as McMaster #7437K35	Clean drilled holes. Note: Compressed air will work.
1	Slow spiral round-shank masonry drill bit, 25 mm (1 in) diameter, 12.5 mm (1/2 in) shank, 254 mm (10 in) drill depth, 305 mm (12 in) length overall, such as McMaster #2960A22	Drill 25 mm (1 in) holes in concrete. Note: The holes must be at least 150 mm (6 in) deep.
1	Drill bit for concrete embedded rebar, round 25 mm (1 in) bit size, 12.5 mm (1/2 in) shank diameter, 305 mm (12 in) length overall, such as McMaster #28655A25	Drill 25 mm (1 in) hole through rebar.
1	Nylon loop handle brush, 25 mm (1 in) brush diameter, 76 mm (3 in) length brush, 216 mm (8-1/2 in) length overall, such as McMaster #7221T13	Clean drilled holes.
1	Push-on round cap, fits 16 mm (5/8 in) - 17.5 mm (11/16 in) OD, 1/2 in inside height, pack of 100, such as McMaster #9753K47	Keeps the epoxy inside the drilled holes in situations where the slab is only 150 mm (6 in) deep.

Installation Instructions

1. Install two nuts with two washers captured between them. Lock them together so the lower end of the nut is located 165 mm (6.5 in) from the bottom of the bolt. This sets the length of the exposed threads.

2. Use the Installation Template to mark the hole locations.
3. Remove the template and drill four 25 mm (1 in) diameter holes 165 mm (6.5 in) deep into the concrete. When locating the template, consider the station's total footprint. For reference, a template is included in the Concrete Mounting kit.
    - Bolts must be parallel after installation. Therefore, ensure drill holes are plumb by using a bubble level to check the angle of the drill after drilling 25-38 mm (1 - 1.5 in).
    - If installing over existing buried conduit, position the center of the template around the conduit stub-up.

- You may need two drill bits - one for the concrete (with the pilot) and another for the rebar (without the pilot). Always start the hole using the standard drill bit, then switch to the rebar drill bit only if drilling through rebar.



4. Remove all dust from inside the drilled holes using compressed air, a vacuum, and/or a brush.
5. If the concrete slab is only 165 mm (6.5 in) deep, insert a plug in each hole to keep the epoxy in place until it hardens. Place the plug over the long end of a bolt and use the bolt to push the plug to the bottom of the hole.
6. Fill each hole with epoxy to about 64-76 mm (2.5-3 in) below the top. Continue immediately to the next step because the epoxy sets within about eight minutes.
7. Inserting the threaded bolts displaces the epoxy, causing it to fill the holes to grade level. If the epoxy is below grade level, you can add more after the next step.
8. Place the Installation Template over the holes. This ensures the relative position of the bolts and that the flange of the pedestal fits over the bolts.
9. If needed, top up the holes with epoxy to grade level.

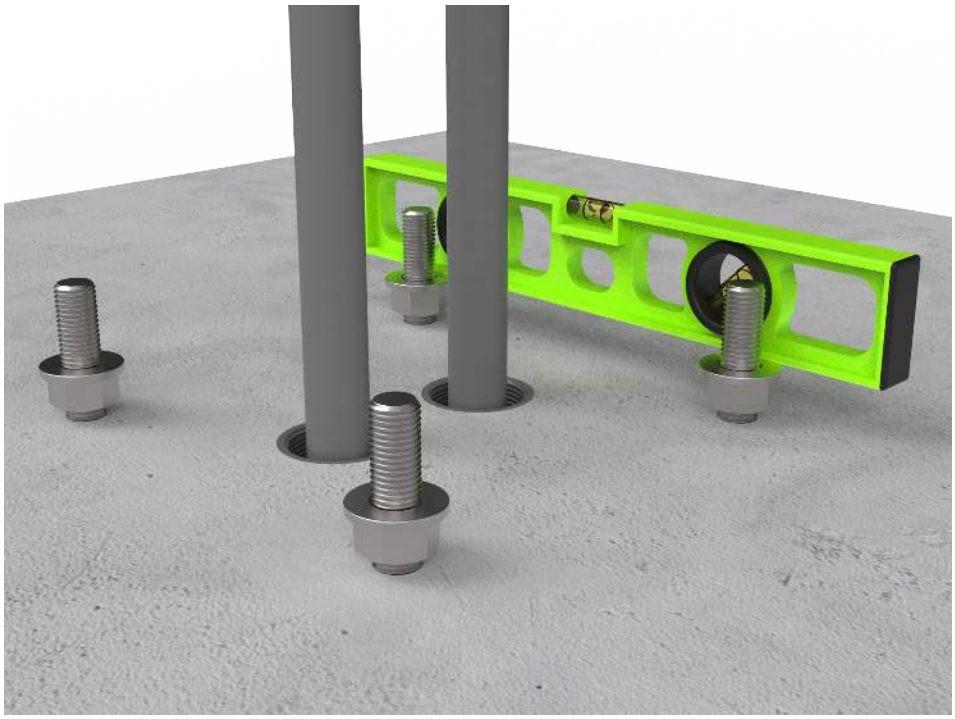
IMPORTANT: Rotate the bolts as you insert them. This allows the epoxy to fully coat the threads of the bolts, reducing the amount of trapped air.

10. Allow the epoxy to cure according to manufacturer's instructions before removing the top nuts and washer and before applying torque to the nuts.

    Note: Epoxy cure times may vary depending on the type of epoxy. Refer to the cure times provided with the epoxy.

Complete After Concrete Cures

1. When the concrete is fully cured, remove the upper nut and the washer.
2. Adjust the remaining nuts and washers until about 35 mm (1.4 in) of bolt is exposed above each washer.
3. Use a spirit level and adjust the height of the nuts as required to ensure the four washers are completely level with each other.



4. When the concrete is fully set, remove the upper nuts and the washers to install the pedestal's mounting post.

   You are now ready to install the CPF50 pedestal mount.

Installing onto a Stacked Parking Platform

Before installing the CPF50 onto a stacked parking platform, ensure that the site is suitable. Every stacked parking platform is different. Therefore, instead of step-by-step instructions, ChargePoint provides the following guidelines:

- The CPF50's requires at least 70 mm (2 3/4 in) between the rear edge of the mounting plate and the wall to allow adequate clearance for the CMK. Refer to the CPF50 Mount Placement Guide (75-001162-01) for details.
- Before installing on the stacked parking platform, make sure that all pedestal mount components are readily available at the installation site.
- Always check local codes to ensure compliance.

- Ensure you have adequate wiring. Service wiring for the CPF50 must extend 1.5 m (5 ft) above the platform's surface, like any other type of CPF50 installation.
- Refer to Section 4 of the Installation Guide for detailed instructions on how to install the pedestal mount. For stacked parking installations, it is acceptable to use a service cord (i.e. jacketed cable) without conduit inside the ChargePoint pedestal, provided the wiring is protected with appropriate bushings as it enters the pedestal.
- Ensure the pedestal is stable and does not move when the station is in use or when the platform is in motion.

Limited Warranty Information and Disclaimer

The Limited Warranty you received with your charging station is subject to certain exceptions and exclusions. For example, your use of, installation 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 limited 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

CHARGEPOINT IS NOT LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION LOST PROFITS, LOST BUSINESS, LOST DATA, LOSS OF USE, OR COST OF COVER INCURRED BY YOU ARISING OUT OF OR RELATED TO YOUR PURCHASE OR USE OF, OR INABILITY TO USE, THE CHARGING STATION, UNDER ANY THEORY OF LIABILITY, WHETHER IN AN ACTION IN CONTRACT, STRICT LIABILITY, TORT (INCLUDING NEGLIGENCE) OR OTHER LEGAL OR EQUITABLE THEORY, EVEN IF CHARGEPOINT KNEW OR SHOULD HAVE KNOWN OF THE POSSIBILITY OF SUCH DAMAGES. IN ANY EVENT, THE CUMULATIVE LIABILITY OF CHARGEPOINT FOR ALL CLAIMS WHATSOEVER RELATED TO THE CHARGING STATION WILL NOT EXCEED THE PRICE YOU PAID FOR THE CHARGING STATION. THE LIMITATIONS SET FORTH HEREIN ARE INTENDED TO LIMIT THE LIABILITY OF CHARGEPOINT AND SHALL APPLY NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY LIMITED REMEDY.

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.

ISED (formerly Industry Canada)

This device complies with the licence-exempt RSS standard(s) of Innovation, Science and Economic Development Canada (ISED). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil est conforme aux flux RSS exemptés de licence d'Innovation, Sciences et Développement économique Canada (ISDE). L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter.

Radiation Exposure Statement: This equipment complies with the IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

Énoncé d'exposition aux rayonnements: Cet équipement est conforme aux limites d'exposition aux rayonnements ioniques RSS-102 Pour un environnement incontrôlé. Cet équipement doit être installé et utilisé avec un Distance minimale de 20 cm entre le radiateur et votre corps.

FCC/IC Compliance Labels

Visit chargepoint.com/labels

chargepoint.com/support

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