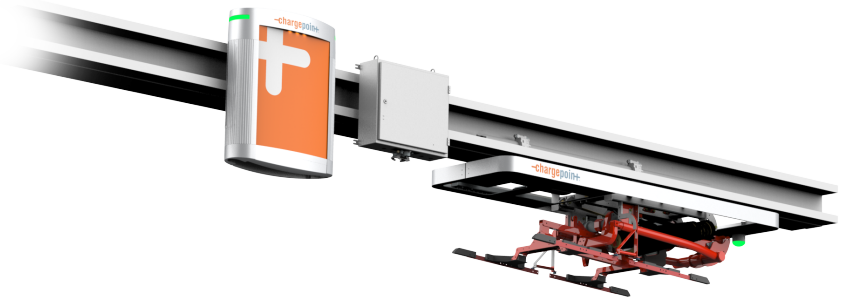
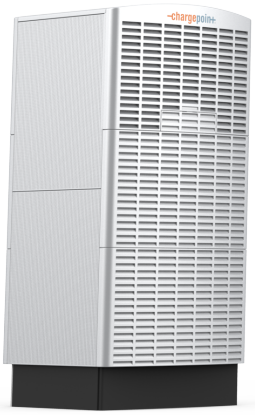
Pantograph Down 2000

Express Plus DC Fast Charging Platform for Electric Buses

Site Design Guide

75-001747-01 R1





IMPORTANT SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS

This manual contains important instructions for ChargePoint® products that shall be followed during installation, operation, and maintenance of each product.

WARNING:

1. **Read and follow all warnings and instructions before servicing, installing, or operating the ChargePoint® product.** Install and operate only as instructed. Failure to do so may lead to death, injury, or property damage, and will void the Limited Warranty.
2. **Only use licensed professionals to install your ChargePoint product and adhere to all national and local building codes and standards.** Before installing the ChargePoint product, consult with a licensed contractor, such as a licensed electrician, and use a trained installation expert to ensure compliance with local building and electrical codes and standards, climate conditions, safety standards, and all applicable codes and ordinances. Inspect the product for proper installation before use.
3. **Always ground the ChargePoint product.** A touch currrent of >3.5 mA AC RMS is possible in case of a fault condition of loss of electrical continuity of the earthing conductor. Failure to ground the product can lead to risk of electrocution or fire. The product 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 product using a ChargePoint-approved method.** Failure to install on a surface that can support the full weight of the product can result in death, personal injury, or property damage. Inspect the product for proper installation before use.
5. **The product 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 or connector adapter. Do not touch fingers to charging rails.**
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, the flexible output cable, the vehicle inlet, the electric vehicle connector, or the electric vehicle connector adapter is broken, cracked, open, or shows any other signs of damage. Do not use this product if internal parts are accessible, including wiring.**
10. **Wire and wire terminal information are provided in the ChargePoint product Site Design Guide and Installation Guide.**
11. **Torques for installation of wire terminals are provided in the ChargePoint product Installation Guide.**

12. **The ChargePoint product maximum operating temperature is 50 °C (122 °F).**
13. **Do not use an electric vehicle connector adapter with any charger or EV that is capable of exceeding the adapter's rated voltage of current capacity. Some EVs and EVSE combinations are capable of multiple voltages or limited durations of current overloading designed for normal EVSE-to-EV connections. Use of an electric vehicle connector adapter in these situations could result in unsafe conditions such as fire, burns, or exposure of high voltage.**
14. **Site operator is responsible for making sure that no mechanical damage occurs and the installation is done in a location that doesn't present a safety risk. If used carelessly, the equipment could critically injure someone just from the extension force.**

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

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

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

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 Product Reference Documentation.

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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

NOTE: Helpful information to facilitate 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.

Revision History

This page provides a summary of revisions made, listing the month and year of each update along with a brief description of the changes made.

Month & Year	Version Number	Description
November, 2025	v3	In section Overhead-mount enclosure, changed the structural capacity requirement.
September, 2025	v2	In section Electrical Design, added information related to auto transformers and neutral-to-ground bonding.
September, 2025	v1	In section Civil and Mechanical Design, added a caution that recommends customers to install a height clearance bar or barrier to prevent vehicles from colliding with the Pantograph in the idle position.

Contents

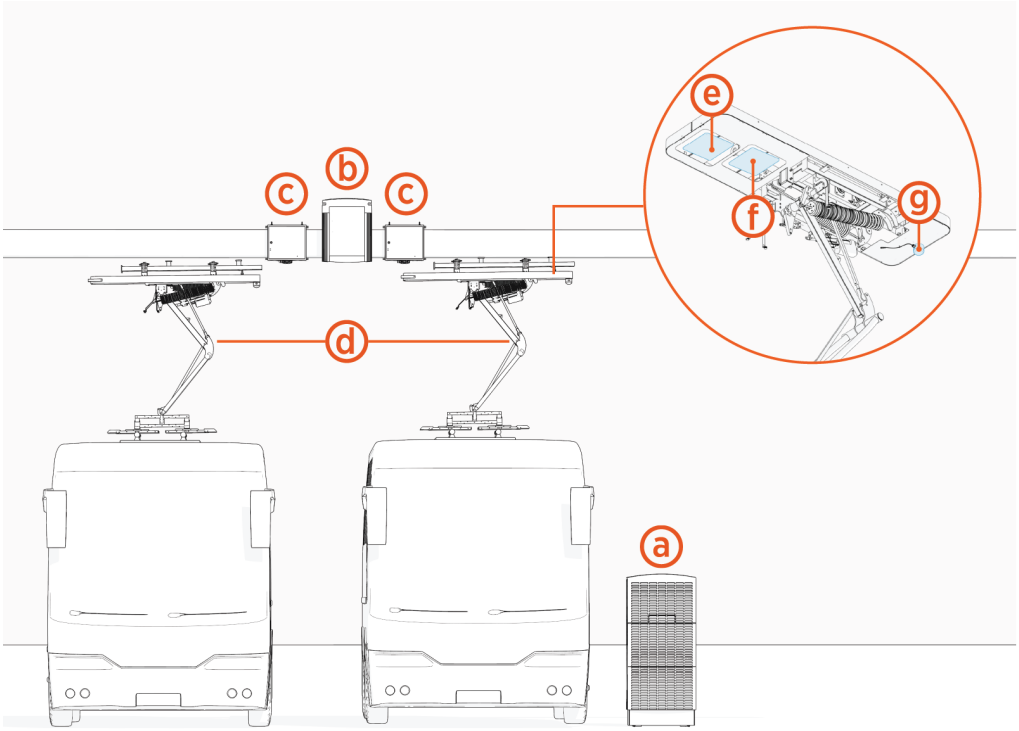
Introduction 1

This document describes how to design a project site for the ChargePoint® Express Plus Pantograph Down 2000 DC fast charging solution for electric buses. This includes guidelines and best practices for electrical infrastructure and capacity planning, construction, and concrete work required prior to installation of distribution cabinets.

IMPORTANT: ChargePoint recommends consulting with an engineer to create site specific drawings. Ensure the installation complies with all applicable codes and ordinances.

Pantograph Down 2000 Components

Express Plus Pantograph Down 2000 is a modular solution for scalable fast charging of electric buses in the depot or on-route. The solution comprises the following product components:



(a) Power Block: Power cabinet that houses AC to DC power converters called Power Modules. Supplies DC output power to Power Link 2000s. Each Power Block can output up to 200 kW of power.

(b) Power Link 2000: Dispenser that communicates with the bus during charging, connects to the ChargePoint Platform, and dispenses high voltage DC power to the bus through a pantograph connector.

(c) PD Controller: Smart interface that enables a Power Link 2000 to control a pantograph and to monitor the control pilot. Also hosts the Wi-Fi access point and RFID reader that enables wireless charging communication with the bus.

(d) Pantograph: Electromechanical connector that lowers onto bus charging rails and delivers high voltage DC charge power to the bus. Raises out of the way when not in use.

(e) Wi-Fi antenna: Antenna for wireless communication between the bus and the Pantograph Down 2000 system.

(f) RFID antenna: Antenna for bus RFID tag identification.

(g) Status LED: LED status indicator for the Power Link 2000 charging port.

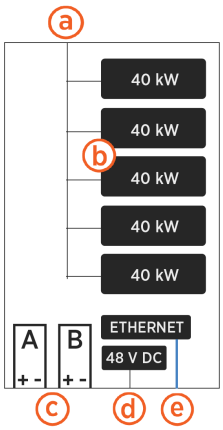
NOTE: The Wi-Fi antenna, RFID antenna, and status LED are collectively referred to as *auxiliary components*.

Contact ChargePoint if a pantograph mast is needed for your application.

System Overview

Power Block

Power Block block diagram:



(a) Three phase AC power input

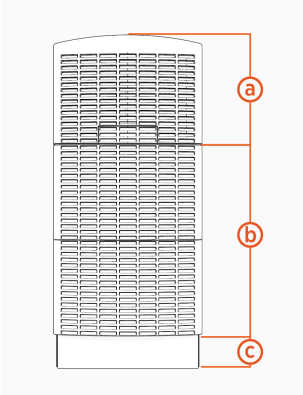
(b) Configurable with up to five 40 kW Power Modules for a maximum total output of 200 kW

(c) Two available HV DC power outputs (A and B)

(d) 48 V DC power output

(e) Ethernet output

The Power Block is a ground-mounted enclosure with the following structure:



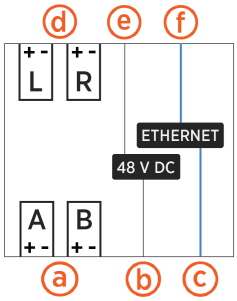
(a) Upper enclosure: Auxiliary power supply and temperature management components

(b) Lower enclosure: Bay for Power Modules and bus bars to land all input and output cables

(c) Pedestal: Secures the Power Block and provides access for either stub-up or surface mount installations on a concrete pad

Power Link 2000

Power Link 2000 block diagram:



(a) Single or dual HV DC input power paths (A and B)

(b) 48 V DC power input

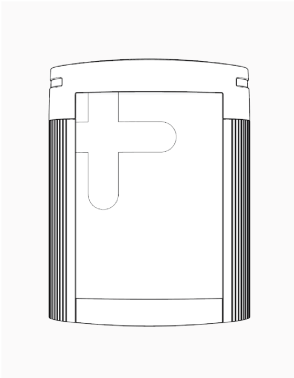
(c) Ethernet input

(d) Single or dual HV DC outputs (L and R)

(e) 48 V DC power output

(f) Ethernet output

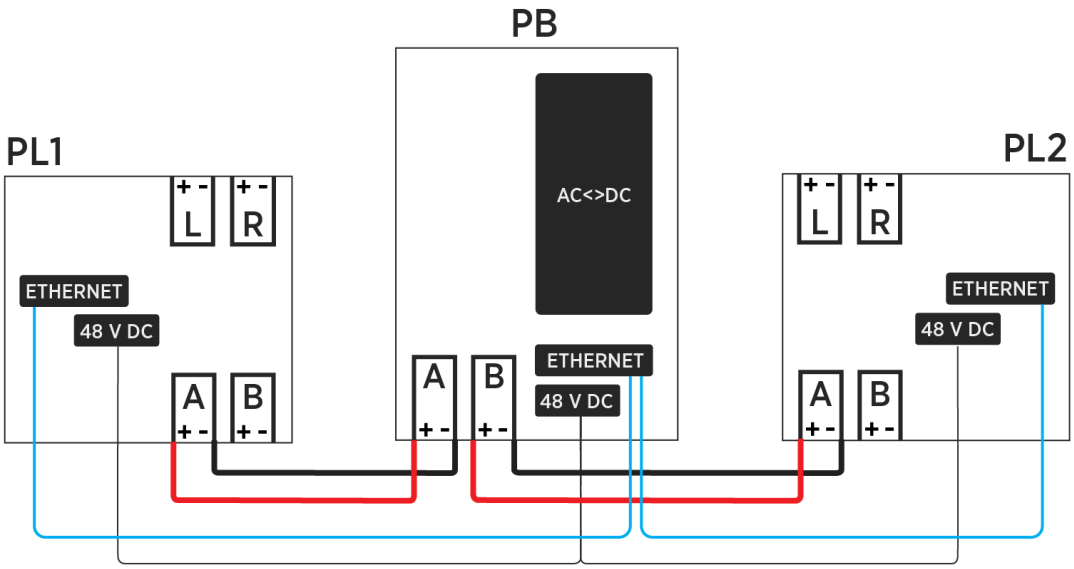
Designed for gantry, ceiling, or wall mount, the Power Link 2000 used in the Pantograph Down 2000 system is referred to as the *overhead-mount Power Link 2000*.



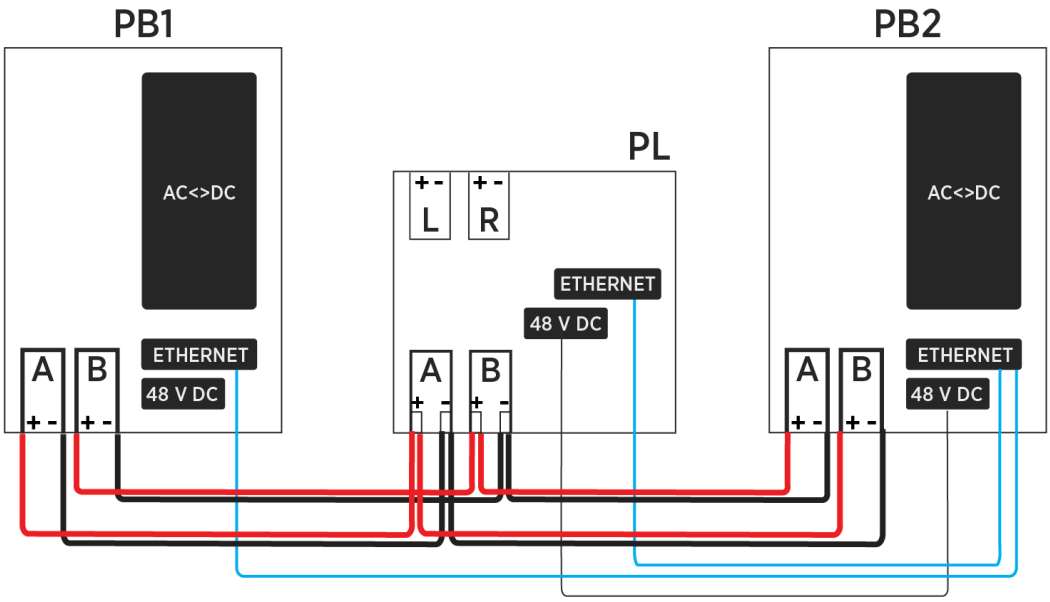
Overhead-mount Power Link 2000:
The enclosure is clad with external cosmetic covers. It is available with single or dual outputs, supporting one pantograph per output. Dual output Power Link 2000s support both simultaneous and sequential charging.

Power Block to Power Link 2000 Configurations

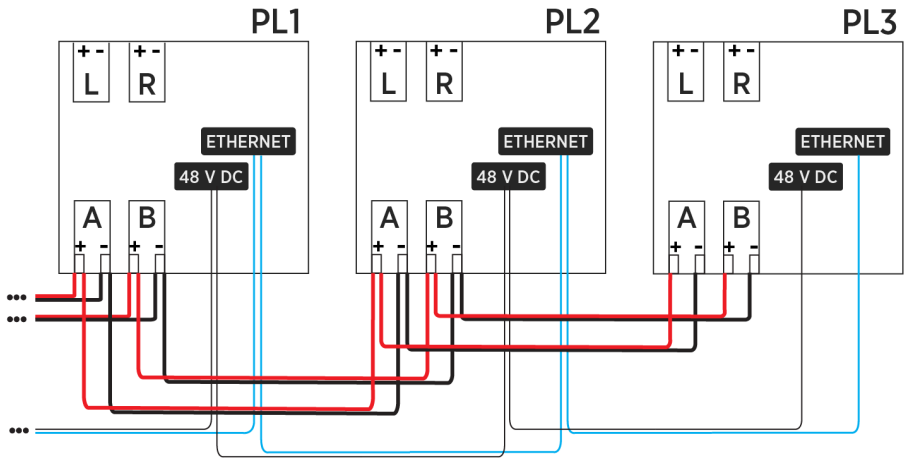
The DC output of the Power Block is the DC input of the Power Link 2000. Each Power Block has two HV DC outputs that can be fed to a single Power Link 2000 or to two different Power Link 2000s. A simplified block diagram of a single Power Block connected to two Power Link 2000s is shown below. The Power Block also feeds 48 V DC power and Ethernet connectivity to the Power Link 2000s.



In turn, for Pantograph Down 2000 applications, the Power Link 2000 can accept high voltage DC input from multiple Power Blocks, as shown in the example below.



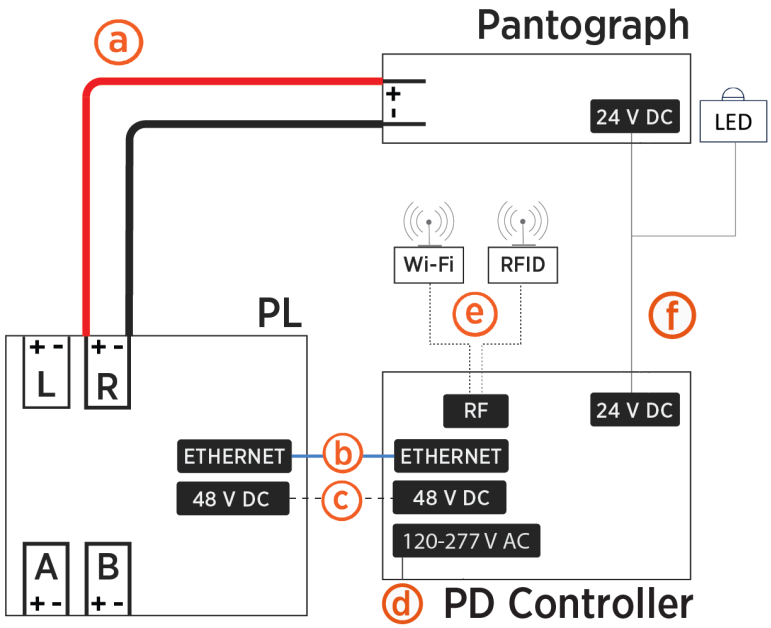
The high voltage DC output, Ethernet, and 48 V DC power output from Power Block(s) can be connected from Power Link 2000 to Power Link 2000, enabling higher port counts in specific sequential charging configurations.



IMPORTANT: The architectures shown above demonstrate only a few of the many supported by Express Plus. The actual architecture for each site will vary depending on the number of stations, the charging capacity required at each charging station, simultaneous or sequential charging requirements, and other criteria. Contact a ChargePoint representative for the ChargePoint-approved wiring architecture for your specific project. Non-approved wiring between Power Blocks and Power Link 2000s may not enable Express Plus to function as expected.

Power Link 2000 to Pantograph Configuration

Each Power Link 2000 HV DC output connects to one pantograph. One PD Controller is required for each pantograph. The PD Controller requires 48 V DC and Ethernet connectivity from the Power Link 2000 as well as single-phase AC power from the site. The PD Controller connects to the status LED, Wi-Fi antenna, and RFID antenna. The PD Controller also connects to the pantograph for control pilot, actuation commands, and other pantograph functions. The block diagram below illustrates the connectivity between a Power Link 2000 and a pantograph/PD Controller pair.



(a) Power Link 2000 HV DC output to pantograph

(b) Ethernet connection between Power Link 2000 and PD Controller

(c) Power Link 2000 48 V DC output to PD Controller

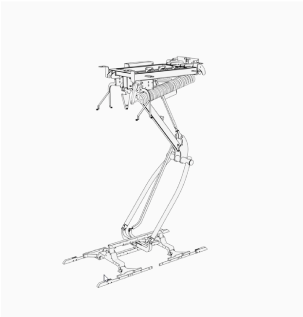
(d) PD Controller 120–277 V AC power input

(e) RF connection from PD Controller to Wi-Fi antenna and RFID antenna

(f) 24 V DC connection from PD Controller to pantograph and status LED

Pantographs

Pantograph Down 2000 integrates with the following pantographs:



Schunk SLS 201.102 - High power charging, fast actuation pantograph. Suitable for mount from a ceiling, gantry, or mast.

Safety Warning

WARNING: Danger of crushing, pinching, and mechanical damage. Site Operator Responsibilities:

- Ensure the pantograph is installed in a location free from safety hazards and restrict access to the movement area with appropriate safety measures.
- Inspect the equipment regularly for mechanical damage and address any issues promptly.

Operator and Bystander Safety:

- The pantograph moves quickly and has pinch points.
- To avoid serious injury, keep clear of the moving pantograph and ensure bystanders maintain a safe distance.
- Never reach into the mechanism or touch the moving pantograph.
- No one is allowed underneath the equipment during operation.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN SERIOUS INJURY, LOSS OF LIFE OR PROPERTY DAMAGE.

Express Plus Guides

Pantograph Down 2000 is a part of the Express Plus product family.

Access documents at ChargePoint Product Reference Documentation.

Document	Content	Primary Audiences
Datasheet	Full station specifications	Site designer, installer, and station owner
Site Design Guide	Civil, mechanical, and electrical guidelines to scope and construct the site	Site designer or engineer of record
Concrete Mounting Template Guide	Instructions to embed the charging station template in a concrete pad with anchor bolts and conduit placement (these may also be included in the Site Design Guide)	Site construction contractor
Surface Conduit Entry Kit Guide	Instructions for sites where conduit cannot be run underground	Installer
Construction Signoff Form	Checklists used by contractors to ensure the site is correctly completed and ready for product installation	Site construction contractor
Installation Guide	Anchoring, wiring, and powering on	Installer
Operation and Maintenance Guide	Operation and preventive maintenance information	Station owner, facility manager, and technician
Service Guide	Component replacement procedures, including optional components	Service technician
Declaration of Conformity	Statement of conformity with directives	Purchasers and public

Questions

For assistance, go to chargepoint.com/support and contact technical support using the appropriate region-specific number.

Site Design Guidelines 2

Initial Site Guidelines

An onsite evaluation is needed to determine conduit and wiring requirements from the panel to the proposed bus charging locations, as well as to measure cellular signal levels and identify suitable locations for any necessary cellular signal booster equipment.

If you have pre-existing infrastructure or are using your own preferred electrical contractor to prepare your site, a Pantograph Down 2000 Construction Signoff Form completed by a ChargePoint Operations and Maintenance (O&M) partner is required to certify compliance with electrical code and to ensure everything was prepared to ChargePoint specifications.

IMPORTANT: You must be a licensed electrician and complete online training to become a ChargePoint certified installer. If you do not complete training, you cannot access the ChargePoint network to complete installation. Find online training at: chargepoint.com/installers. If the charging station is not installed by a ChargePoint certified installer, using a ChargePoint approved method, it is not covered under warranty and ChargePoint is not responsible for any malfunctions.

Plan for Future Charging Capacity

Designing electrical infrastructure to support current and future needs for EV charging helps avoid costly upgrades later as demand for EV charging grows.

Consider these methods to prepare a site for future charging stations in a later phase of work:

- Add extra capacity if electrical panels are being upgraded now.
- Use sub-panels as a way to shorten electrical paths.
- Maximize the conduit and conductor sizes (to product specifications) between the main electrical panel and future stations, to prevent needing to re-pull wire later.
- Below-ground wiring can be pre-staged if the correct site construction is performed in advance. Allowed terminations include a distribution unit, junction box, or plugged conduit. This eases cable pulls for future stations.
- Consider locations and spaces where it will be easy to add future stations.

System Placement

The placement of the Pantograph Down 2000 solution must meet the following requirements:

- Do not install Pantograph Down 2000 in a Class 1 hazardous location, as classified by NEC or local codes.
- Site conditions must be compatible with the following specifications listed in the Pantograph Down 2000 datasheet:
  - Operational altitude
  - Operating temperature
  - Operating humidity
  - Enclosure rating
- The maximum wind speed under which the Schunk 201.102 pantograph can operate is 74 mph (11.6 Bft).
- Pantograph Down 2000 components must be installed on a surface rated for the weight of the component:
  - A level concrete base for Power Blocks
  - An overhead structure or wall, supported by a concrete base for Power Link 2000s and PD Controllers
  - An overhead structure supported by a concrete base for pantographs

WARNING: Do not install components on asphalt. Asphalt cannot support the full weight of the enclosures. Failure to install the enclosure on a suitable surface may cause it to tip over, resulting in death, personal injury, or property damage.

Determine component installation locations where concrete exists or can be installed (no asphalt surfaces).

- The ground beneath the pantograph must not exceed a 10 degree grade.
- The utility service and electrical panel capacity must be sufficient for the site. Evaluate the existing service and infrastructure, and identify costs for any necessary upgrades and/or a new dedicated electrical panel. 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 located close to the existing electrical supply.
- Measure cellular signal levels at the installation site to ensure adequate cellular coverage at the Power Link 2000. To ensure adequate signal strength in underground or enclosed parking structures, cellular repeaters may be required. For more information, see Connectivity (NA) or Connectivity (EU).
- Component placement must comply with regional regulations and ordinances. Do not block ramps or pathways.
- For any pantograph installed outdoors, a roof shield (overhead covering) is required to protect the pantograph from UV exposure. In regions that experience snow or ice conditions, the roof shield also prevents build up of snow or ice on the pantograph. In regions that experience freezing rain or horizontal snow fall, equipping the pantograph with side shields is recommended.
- Maximum distances between system components is defined by the maximum specified wire run lengths. See Wire Run Lengths.

The following practices are recommended:

- To minimize costs, choose station locations that are as close as possible to the available electrical infrastructure. Selecting nearby locations helps minimize long wire runs as well as any conduit or trenching work if the site uses underground service wiring.
- Determine the best conduit layout to minimize linear conduit costs to multiple parking spaces. If possible, avoid or minimize trenching requirements, especially more costly trenching to run conduit under asphalt surfaces.
- Avoid installing Pantograph Down 2000 components near trees where falling sap, pollen, or leaves would increase station maintenance workload.

There are additional considerations if placing Power Link 2000 inside an enclosed structure. See Appendix: Enclosed Power Link 2000 Considerations.

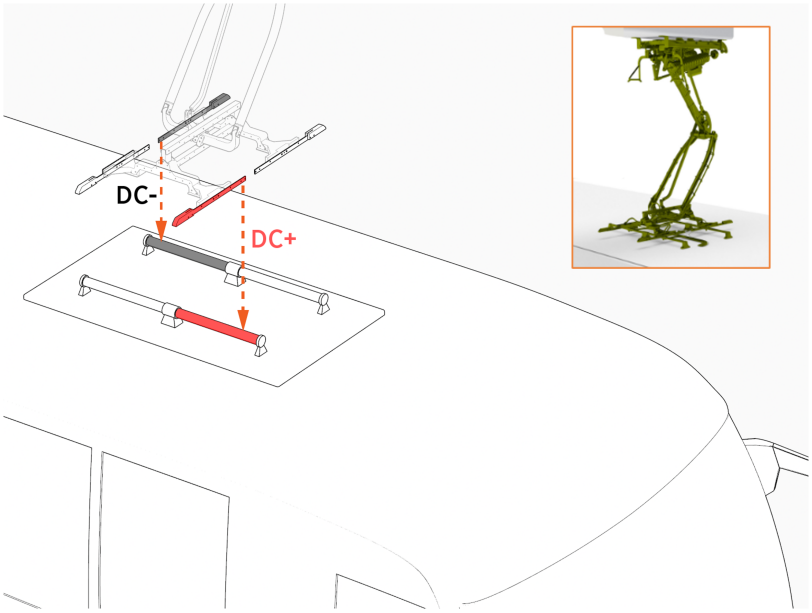
Pantograph Placement Relative to Bus

Pantograph Down 2000 requires correct alignment between charging system components and the bus per the SAE International J3105-1 standard. This standard specifies the dimensions of the bus contact rails and the position of the contact rails on top of the bus. See www.sae.org for more information.

Pantograph Position and Orientation

The pantograph must be positioned such that its conductor rails lower directly onto the bus contact rails, perpendicular to the bus rails, and centered over the bus rails. The pantograph must install in the correct orientation, such that:

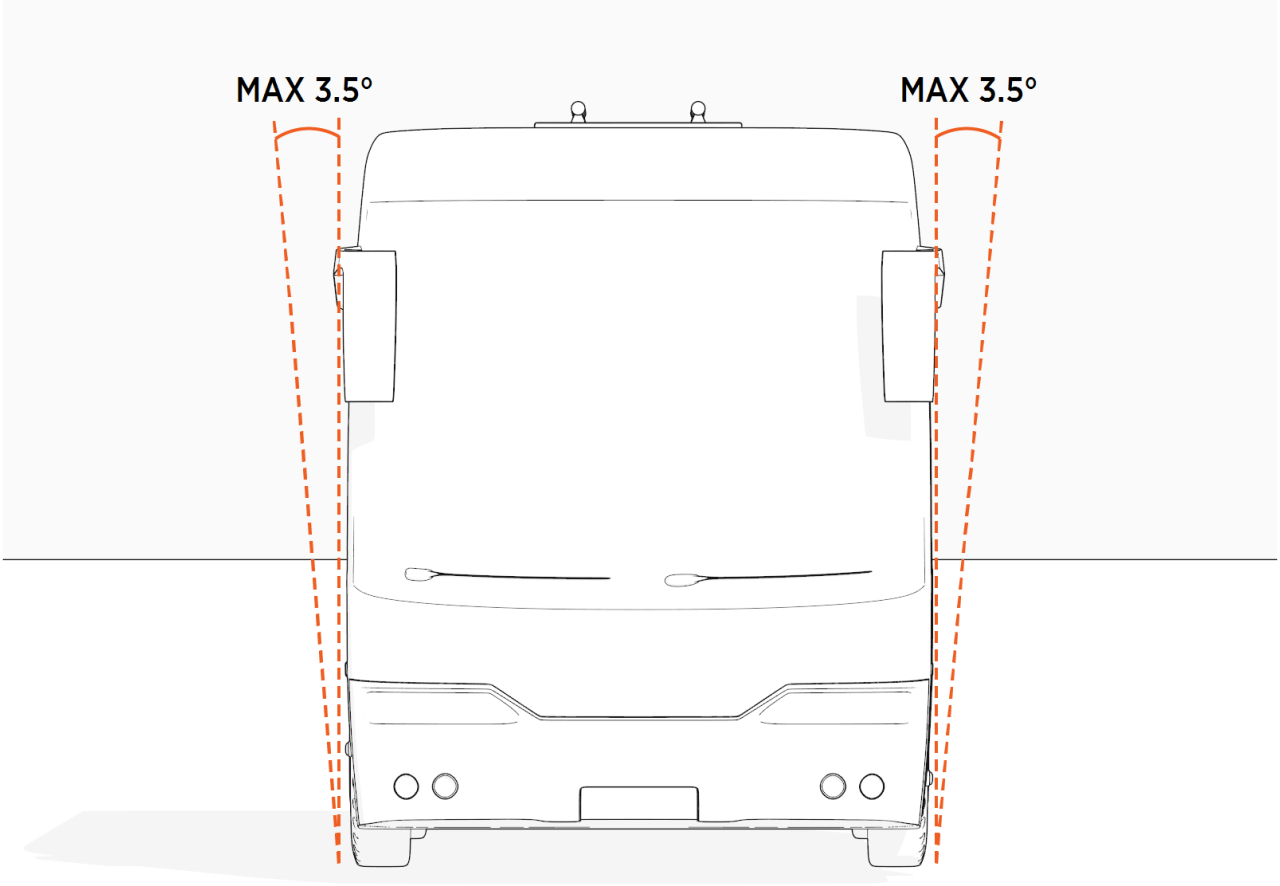
- The pantograph DC+ conductor rail aligns to the bus DC+ contact rail.
- The pantograph DC- conductor rail aligns to the bus DC- contact rail.



For pantograph height relative to the charging rails, refer to manufacturer product datasheets at schunk-group.com.

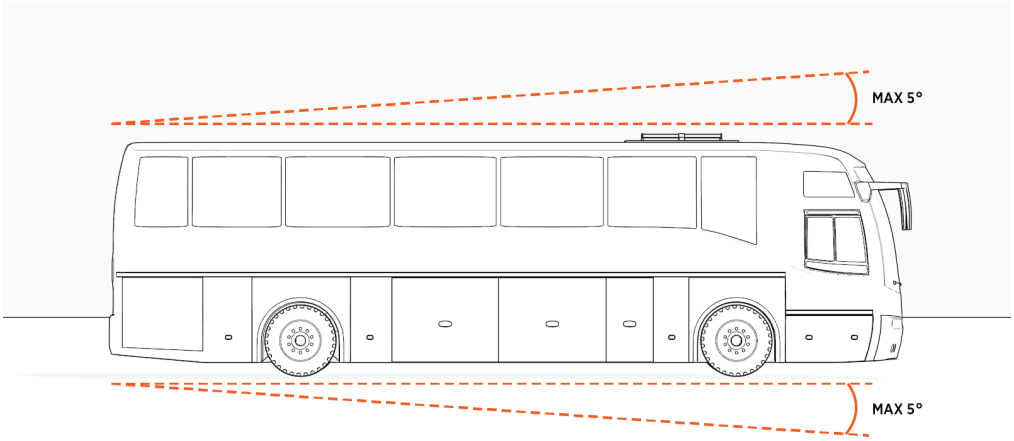
Maximum Slope in Transverse Direction

The transverse direction is the direction in the plane of the road and perpendicular to the bus driving direction. The maximum angle the bus may tilt in the transverse direction is 3.5 degrees, whether due to a tilt in part of the parking surface beneath the bus or due to the bus kneeling. A transverse tilt of the bus will shift the top of the bus relative to the center axis of the bus and should be taken into account when calculating placement of the pantograph. In general, the plane of the pantograph rails should be as parallel as possible to the bus parking surface.



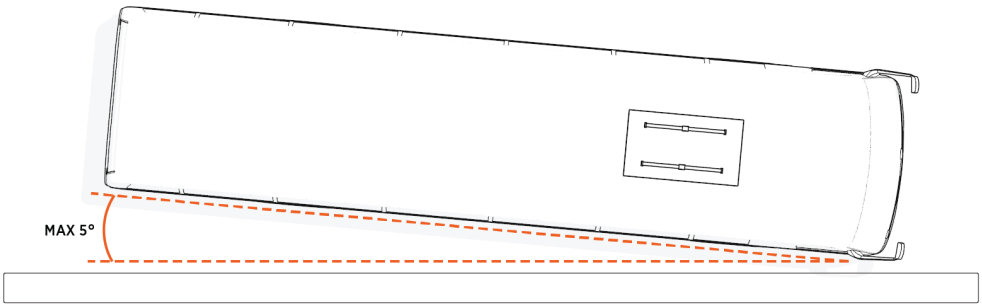
Maximum Slope in Longitudinal Direction

The maximum ramp angle of the bus in the longitudinal direction (driving direction of bus) is 5 degrees. A longitudinal tilt of the bus will shift the top of the bus relative to the center axis of the bus and should be taken into account when calculating placement of the pantograph. In general, the plane of the pantograph rails should be as parallel as possible to the bus parking surface.



Maximum Offset Angle Relative to Curb

Pantograph Down 2000 accommodates a maximum angle for vehicle offset from the curb of 5 degrees.



Parking Guides

Consider adding guides to the site to indicate to the bus driver when they are parked in the correct position underneath the pantograph for charging. Options include painting the road surface, installing a visual marker, and modifying the road surface for tactile feedback.

Civil and Mechanical Design 3

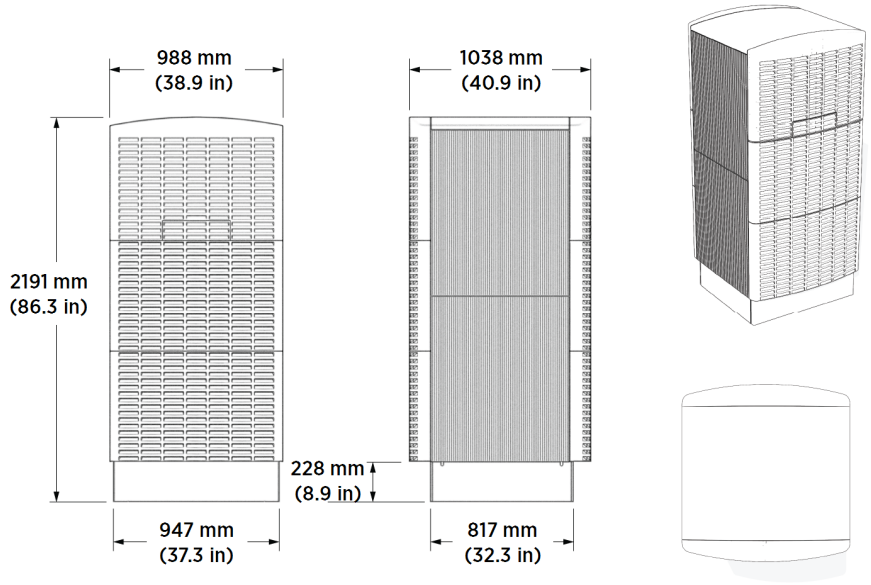
Weights

Component	Variant or Note	Weight
Power Module	—	45 kg (99.2 lb)
Power Block	Equipped with (x5) Power Modules	680 kg (1500 lb)
Power Link 2000	Overhead-mount enclosure	130 kg (287 lb)
PD Controller	—	32.2 kg (71 lb)
Pantographs	Schunk SLS 201.102	Refer to manufacturer datasheets at schunk-group.com
Auxiliary components assembly (Wi-Fi antenna, RFID antenna, and status LED with mounting frame and cables)	For use with Schunk SLS 201 pantographs	52.2 kg (115 lb)

Dimensions

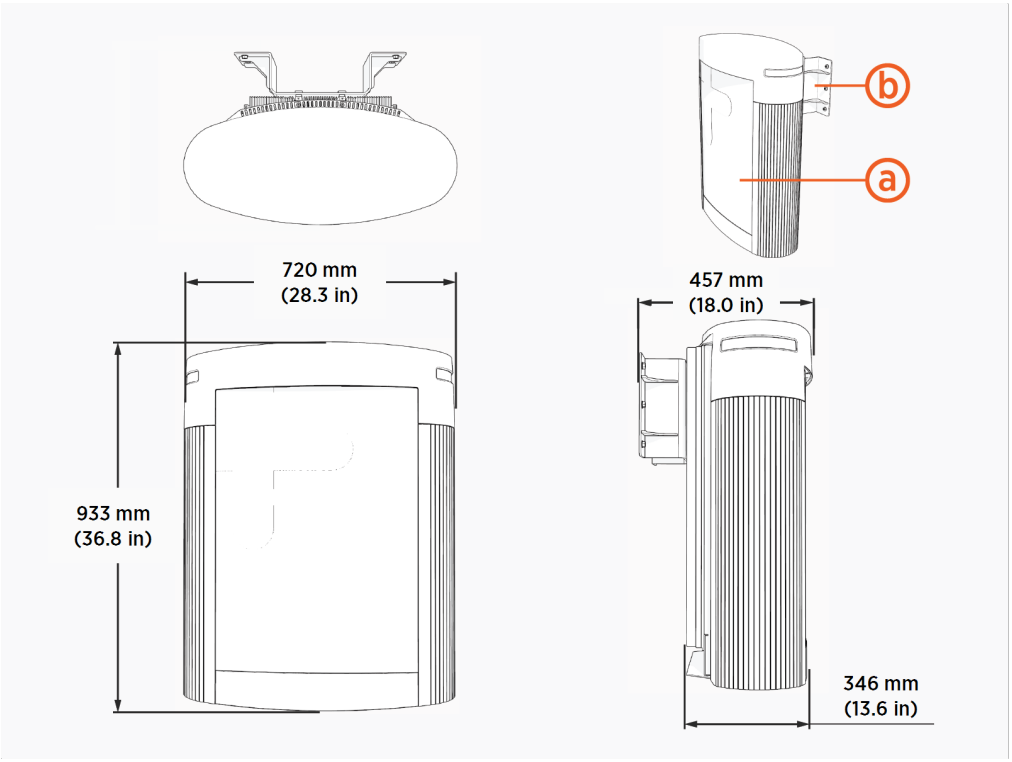
NOTE: Images given in this section are not to scale.

Power Block



Power Link 2000

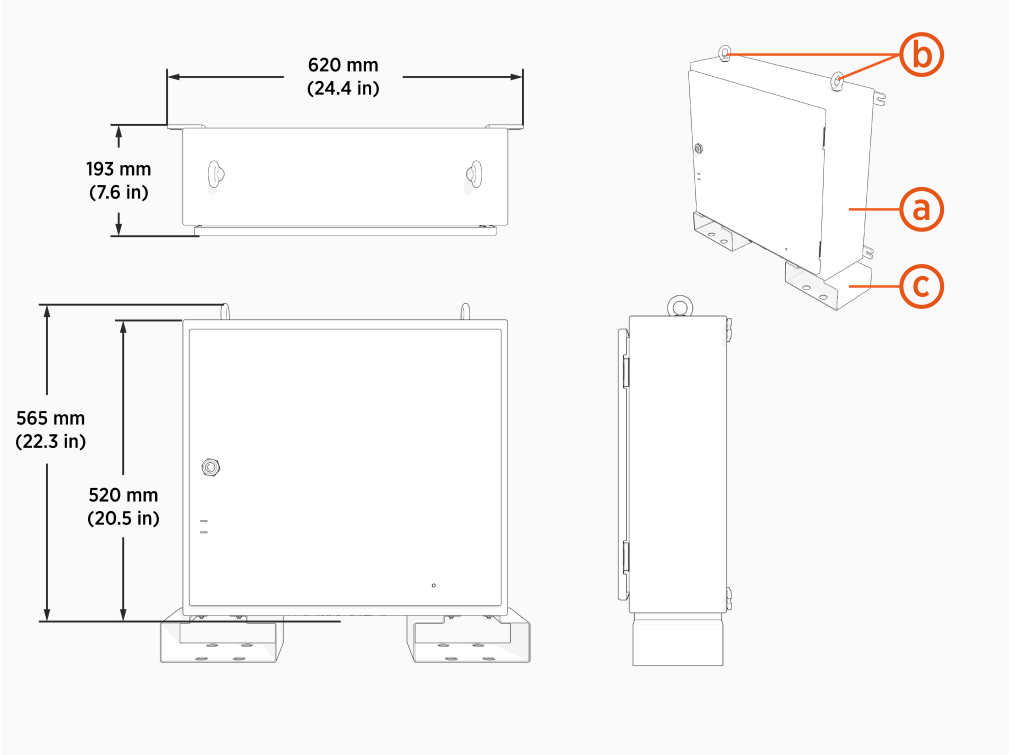
Overhead-Mount Enclosure



(a) Enclosure

(b) Mounting bracket

PD Controller



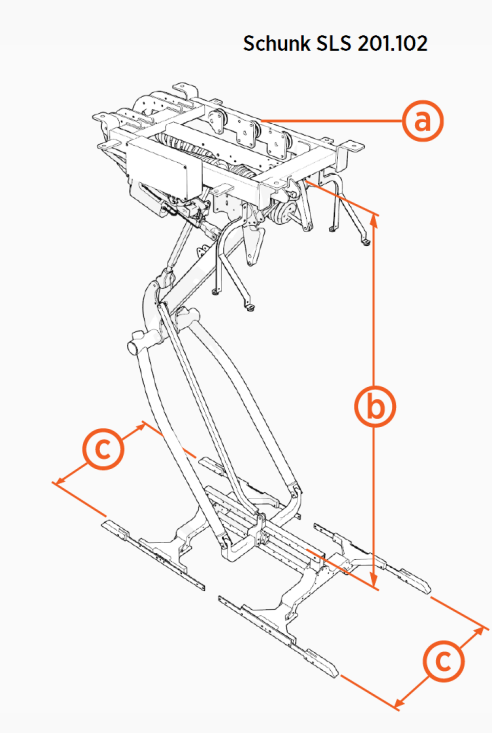
(a) Enclosure

(b) Lifting eye bolts (optional removal after enclosure mount)

(c) Lifting brackets (mandatory removal after enclosure mount)

Pantographs

For pantograph dimensions, refer to the manufacturer's product datasheets at schunk-group.com.

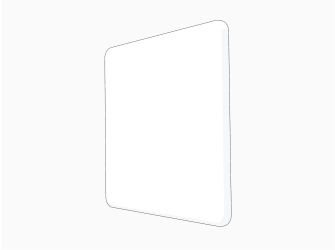


(a) Base frame

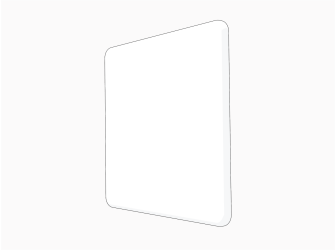
(b) Actuation frame and drive mechanism

(c) Pan head with conductor rails

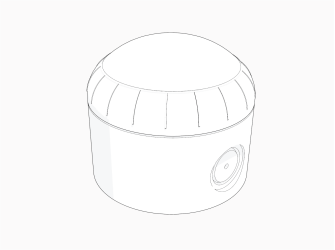
Auxiliary Components



Wi-Fi Antenna



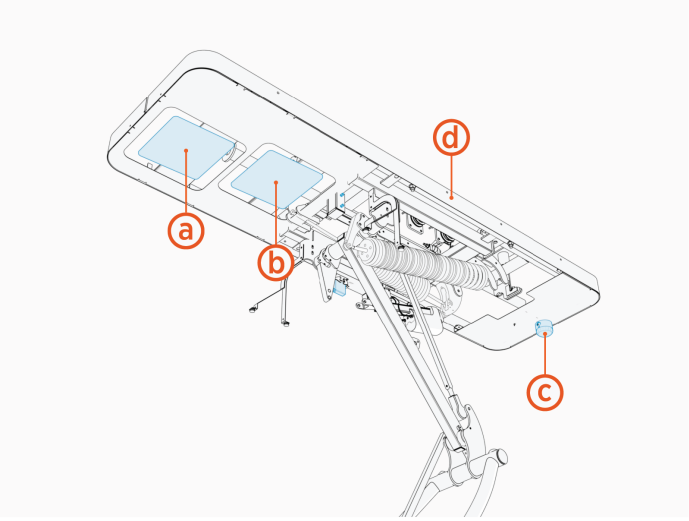
RFID Antenna



Status LED

The Wi-Fi antenna, RFID antenna, and status LED are collectively referred to as auxiliary components.

For use with the Schunk SLS 201.102 pantograph, these components attach to a mounting frame, which in turn attaches to the pantograph. For dimensions of the entire assembly, see Auxiliary Component Mount.



(a) Wi-Fi antenna

(b) RFID antenna

(c) Status LED

(d) Mounting frame

Dimensions of the Wi-Fi antenna and RFID antenna alone can be found on their manufacturer product datasheets:

Antenna	Manufacturer	Model Name	Part Number	Website
Wi-Fi	HUBER+SUHNER	SENCITY® Spot-L Wi-Fi Antenna	1354.17.0001	hubersuhner.com
RFID	RFMAX Antennas	R9029WHPRTF Circularly Polarized RFID Antenna	R9029-WHP-RTF	rfmax.com

Mount Specifications

Mount and wire entry specifications

Component	Mount Surface
Power Block	Concrete pad (new or existing)
Power Link 2000	Overhead structure, wall, or within a mast structure
PD Controller	Overhead structure, wall, or within a mast structure
Pantograph	Overhead structure, including suspension from a mast structure

Additional mount specifications for each component are provided in the following sections.

WARNING: If not installed correctly, ChargePoint charging components may pose a crushing hazard, leading to death, personal injury, or property damage. Always use a ChargePoint-approved mounting method to install the ChargePoint charging components, as described in this section. 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.

Power Block Mount

Concrete Pad Specifications

The Power Block must be installed on a concrete pad. The concrete pad may be either newly poured or it may be an existing concrete surface.

IMPORTANT: The concrete surface must be smooth and cannot exceed a slope of 20 mm per meter (1/4 in per foot). If an existing concrete surface does not meet the slope requirement, a localized concrete pad must be poured and leveled to meet the slope requirement.

The concrete pad must either be designed to be site-specific or must meet the one of the specifications provided below. In some extreme conditions, a larger pad may be required. For sites with less stringent seismic, soil, or wind conditions, a smaller pad might be possible.

Conservative concrete stability specifications for the Power Block are listed below for the following design scenarios:

1. 170 mph wind, high seismic, Class 3 Soil
2. 170 mph wind, high seismic, Class 4 Soil
3. 170 mph wind, high seismic, Class 5 Soil
4. 140 mph wind, lower seismic, Class 3 Soil
5. 140 mph wind, lower seismic, Class 4 Soil
6. 140 mph wind, lower seismic, Class 5 Soil

All scenarios assume:

- Minimum concrete rating of 2500 PSI.
- All-threaded M16 anchor bolts are embedded 229 mm (9 in) into concrete pad, are made of ASTM F1554 Grade 55 carbon steel, and are hot dip galvanized.
- The anchor bolt pattern is centered within the designed stability area.

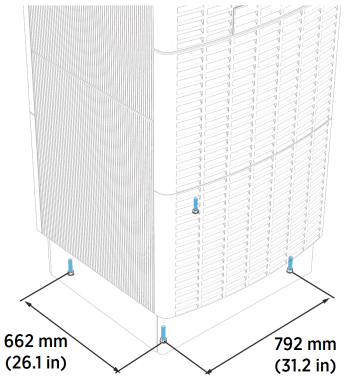
Design Scenario #	B1, Width	B2, Width	T, Thickness	#N1 @ S1" O.C. Top Rebar	#N2 @ S2" O.C. Bottom Rebar
1	1753 mm (69 in)	1753 mm (69 in)	457 mm (18 in)	#4 @ 305 mm (12 in) O.C.	#4 @ 305 mm (12 in) O.C.
2	1753 mm (69 in)	1753 mm (69 in)	686 mm (27 in)	#4 @ 152 mm (6 in) O.C.	#4 @ 152 mm (6 in) O.C.
3	1524 mm (60 in)	1524 mm (60 in)	457 mm (18 in)	#4 @ 305 mm (12 in) O.C.	#4 @ 305 mm (12 in) O.C
4	1524 mm (60 in)	1524 mm (60 in)	457 mm (18 in)	#4 @ 305 mm (12 in) O.C.	#4 @ 305 mm (12 in) O.C.
5	1524 mm (60 in)	1524 mm (60 in)	457 mm (18 in)	#4 @ 305 mm (12 in) O.C.	#4 @ 305 mm (12 in) O.C.
6	1524 mm (60 in)	1524 mm (60 in)	457 mm (18 in)	#4 @ 305 mm (12 in) O.C.	#4 @ 305 mm (12 in) O.C.

IMPORTANT: In the case of using an existing pad, the pad must either meet one of the above specifications, or it must be inspected and approved by a structural engineer for the specifications given below.

Specification	Details
Weight	680 kg (1500 lb)
Height x width	2191 mm (86.3 in) x 1000 mm (39.4 in)
Frontal area	Height * Width
CG height	1000 mm (39.4 in)
Anchor bolts size and quantity	M16 (x4)
Anchor bolts embedment	229 mm (9 in)
Anchor bolts placement	See Anchor Bolt Placement

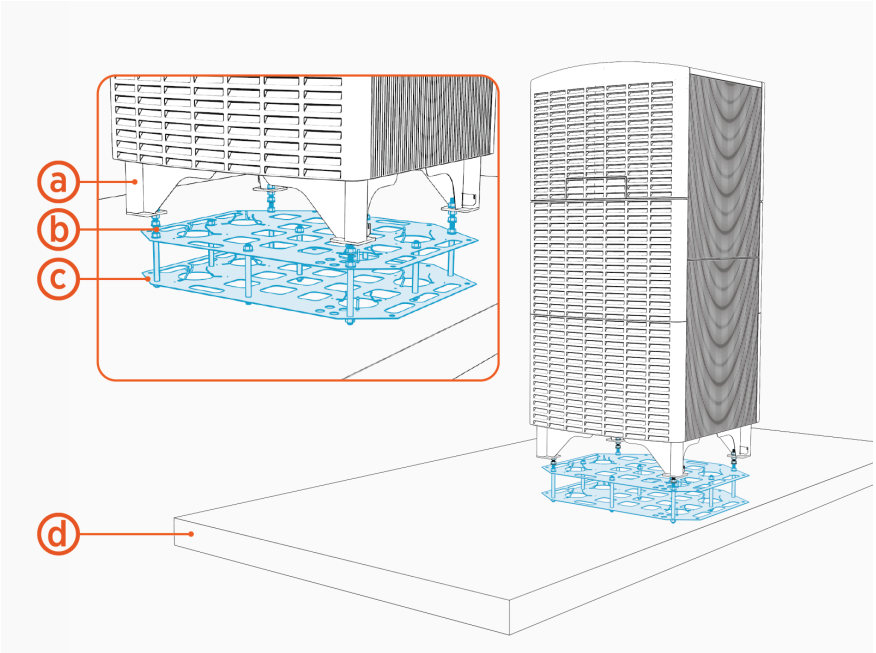
Anchor Bolt Placement

The Power Block mounts over four anchor bolts embedded in a concrete pad with the anchor bolt pattern shown here.



Standard Mount

The most common mounting method for the Power Block is a new pad installation using a Concrete Mounting Template (CMT) and conduit stub-up wire entry:



- The Power Block pedestal **(a)** mounts onto four M16 anchor bolts **(b)** exposed 76 mm (3 in) above the concrete pad.

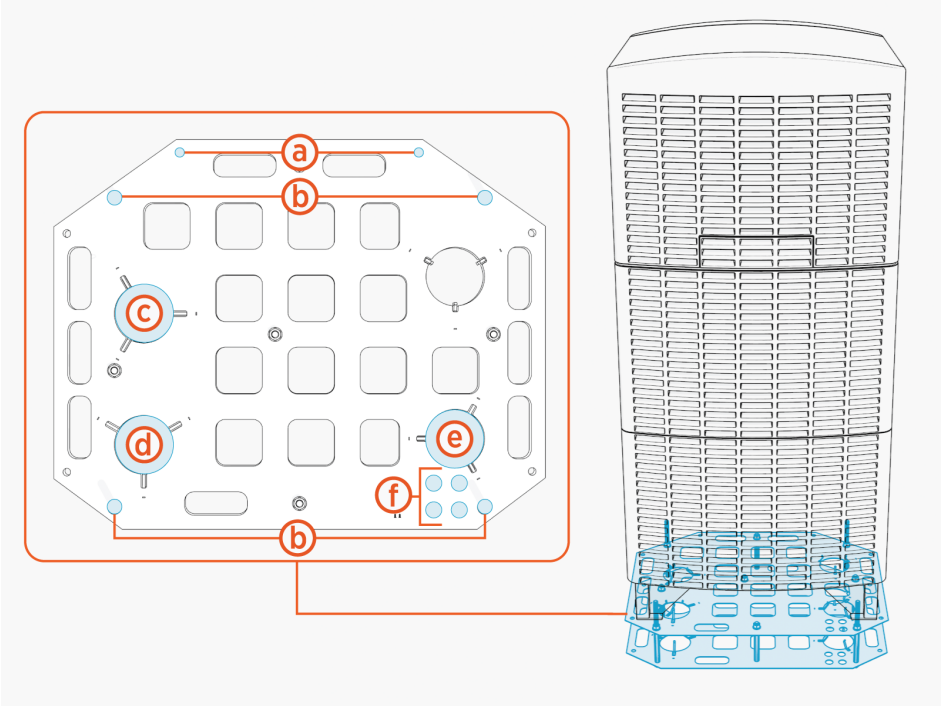
- The CMT **(c)** is embedded into a newly poured concrete pad **(d)** to align anchor bolts and underground stub-up wiring conduits. (Conduits are not shown in illustration.)

> **NOTE:** The CMT is shipped separately and must be assembled onsite before pouring the concrete pad. The CMT must be embedded with its top panel positioned 51 mm (2 in) below the concrete surface. Refer to the *Concrete Mounting Template Guide* for more information.

- In regions that use conduits, the conduits must not have bell ends. Conduits with bell ends may interfere with tolerances inside the Power Block.
- Conduits must stub up 559–914 mm (22–36 in) above the concrete pad surface.

Power Block CMT

The Power Block CMT positions the anchor bolts and wire entry as shown below.



(a) M16 anchor bolt (x2) locations for mounting SCE gland plate (applicable only for surface conduit entry).

(b) M16 anchor bolt (x4) locations for mounting Power Block (see Anchor Bolt Placement).

(c) HV DC output B wires exit.

(d) HV DC output A wires exit.

> **NOTE:** The DC output of Power Block is the DC input for Power Link 2000.

(e) AC input wires entry.

(f) LV DC output wires, shunt trip wires, and Ethernet cable exit.

- One for shunt trip (if used).
- Three for LV DC and Ethernet.

Surface Mount

The Power Block may be installed on an existing concrete surface in accordance with the following guidelines:

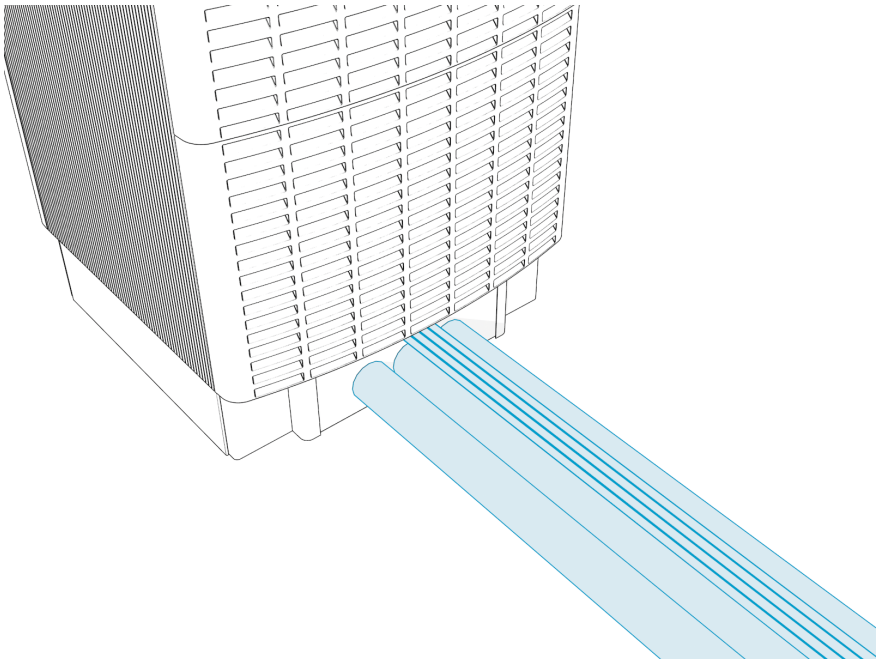
- The concrete surface must be inspected and approved by a structural engineer, as described in Concrete Pad Specifications.
- The anchor bolts must be installed in the concrete surface as follows:
  - Anchor holes are drilled into the concrete using the anchor bolt pattern given in Anchor Bolt Placement. The holes are drilled to a depth so that 76 mm (3 in) of each anchor bolt is exposed above the concrete pad.
  - Anchor bolts are epoxied into the holes. Use an epoxy with a minimum bonding strength of 11.7 MPa, compressive strength of 82.7 MPa minimum, and tensile strength of 49.3 MPa minimum. Examples include Hilti HIT-RE 500 V3 (normal cure) or Hilti HIT-HY 200-A (fast cure).

> **NOTE:** Epoxy is required only if embedding anchor bolts into an existing concrete pad. It is not applicable for a new concrete pour with CMT. Different epoxy types have different cure times at various temperatures. Check local temperatures for the site in advance to help choose an appropriate epoxy.

- The anchor bolts must be hot dip galvanized.

Power Block Surface Conduit Entry Kit

Power Block supports wiring that is run above ground in protected wireways, for locations where no underground wiring access exists (parking garages, etc.) or where underground junction boxes are not permitted. The Power Block Surface Conduit Entry (SCE) Kit provides a sturdy pedestal cover panel onto which surface conduits or armored cables may be fastened to the rear side of the Power Block.



Use the Power Block SCE Kit for the following benefits:

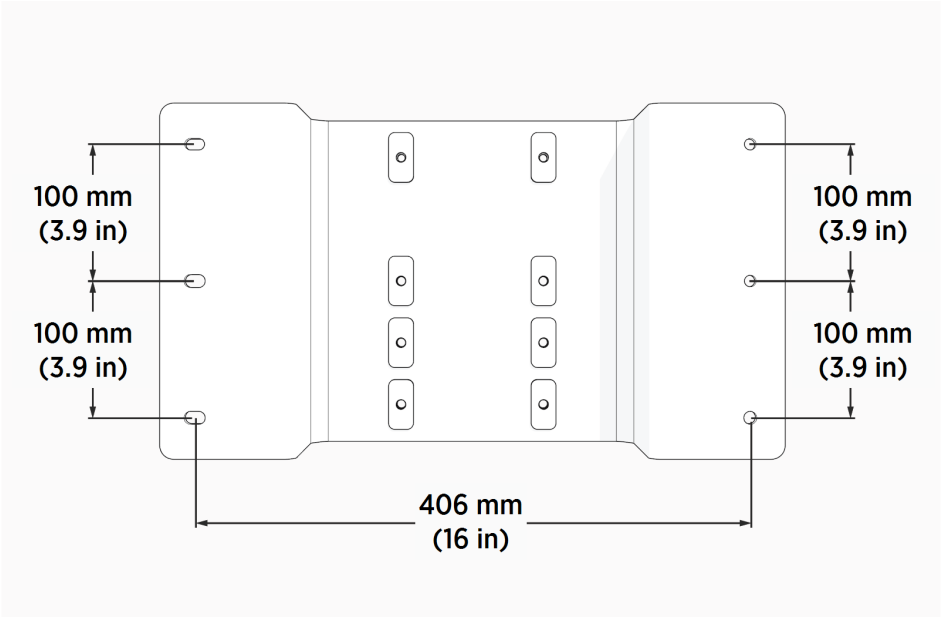
- Supports the weight of conduits and components without compromising cover panel integrity
- Ensures all terminations meet ingress requirements where they meet the component
- Ensures no obstructions to ventilation required for operation

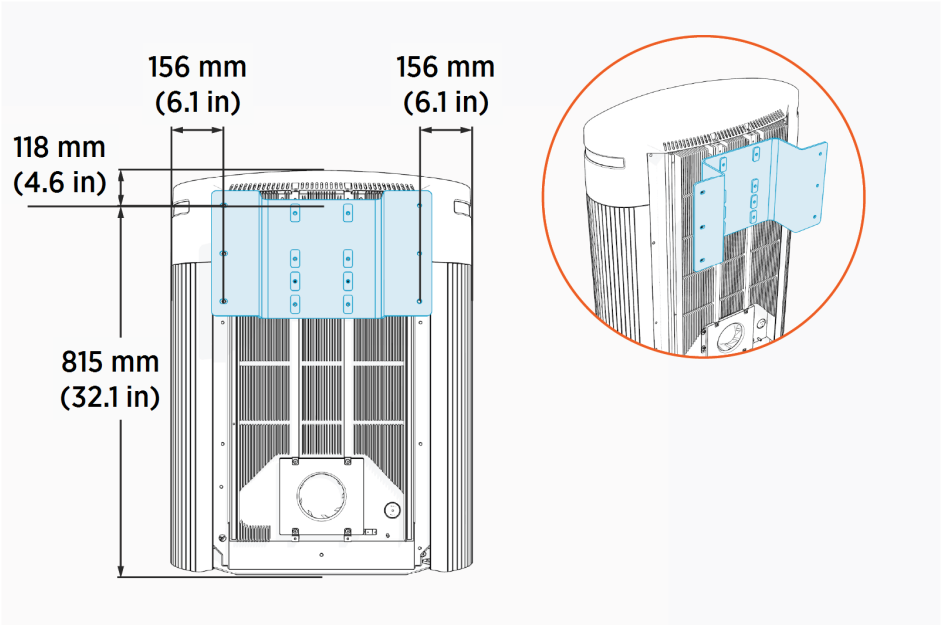
IMPORTANT: Stub-up entry of wires laid underground is the most common installation method. Surface entry of wires laid above ground is allowed only at sites where the wires cannot be laid underground such as in a parking garage. Contact ChargePoint for the Power Block SCE Kit, which includes the hardware needed to install on an existing concrete surface. See also the Power Block Surface Conduit Entry Kit Guide.

Power Link 2000 Mount

Overhead-mount enclosure

The Power Link 2000 mounts onto a wall or an overhead structure (such as a gantry) using a bracket that attaches to the back of the Power Link 2000. The bracket has six mounting holes sized for M8 bolts.



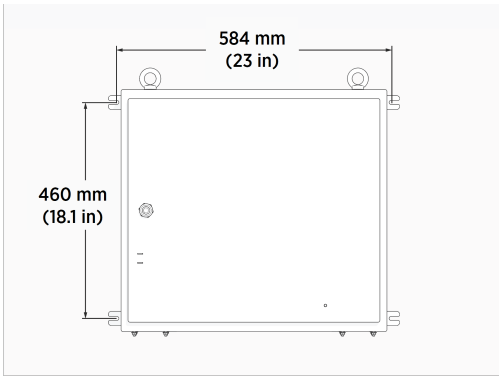


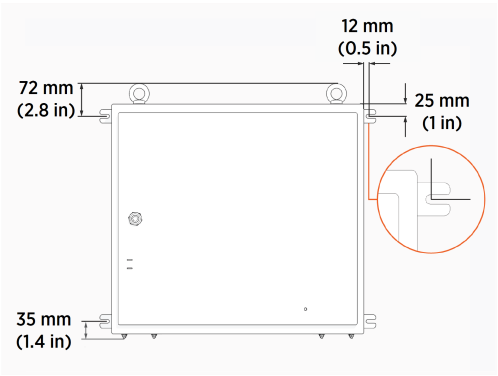
Ensure the following mounting requirements are met:

- The Power Link 2000 must be mounted upright. Do not mount it in any other orientation.
- The mounting surface must be smooth and plumb.
- The mounting surface or structure must be designed or verified for the weight of the Power Link 2000 by a structural engineer per local codes. See Weights.

PD Controller Mount

The PD Controller enclosure mounts using four mounting tabs on the back edge of the enclosure. The tabs are sized to accept M8 bolts.





Ensure the following mounting requirements are met:

- The PD Controller must be mounted upright. Do not mount it in any other orientation.
- The mounting surface must be smooth and plumb.
- The mounting surface or structure must be designed or verified for the weight of the PD Controller by a structural engineer per local codes. See Weights.

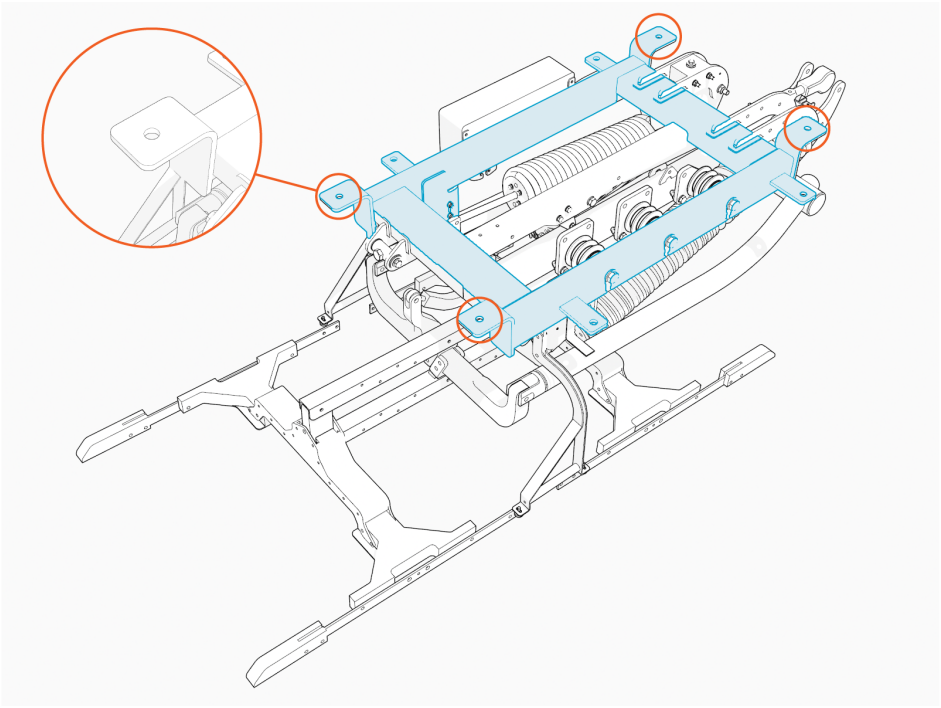
Pantograph Mount

The pantograph mounts to an overhead surface or structure:

- The mounting surface must be smooth and parallel to the ground beneath it, within tolerances specified by Component Placement Relative to Bus.
- The mounting surface or structure must be designed or verified for the weight of the pantograph by a structural engineer per local codes. See Weights.

Schunk SLS 201.102 mount

The Schunk SLS 201.102 pantograph mounts using four mounting supports located on its base frame, with mounting holes sized for M16 hardware. Refer to Schunk product documentation for full details and dimensions.

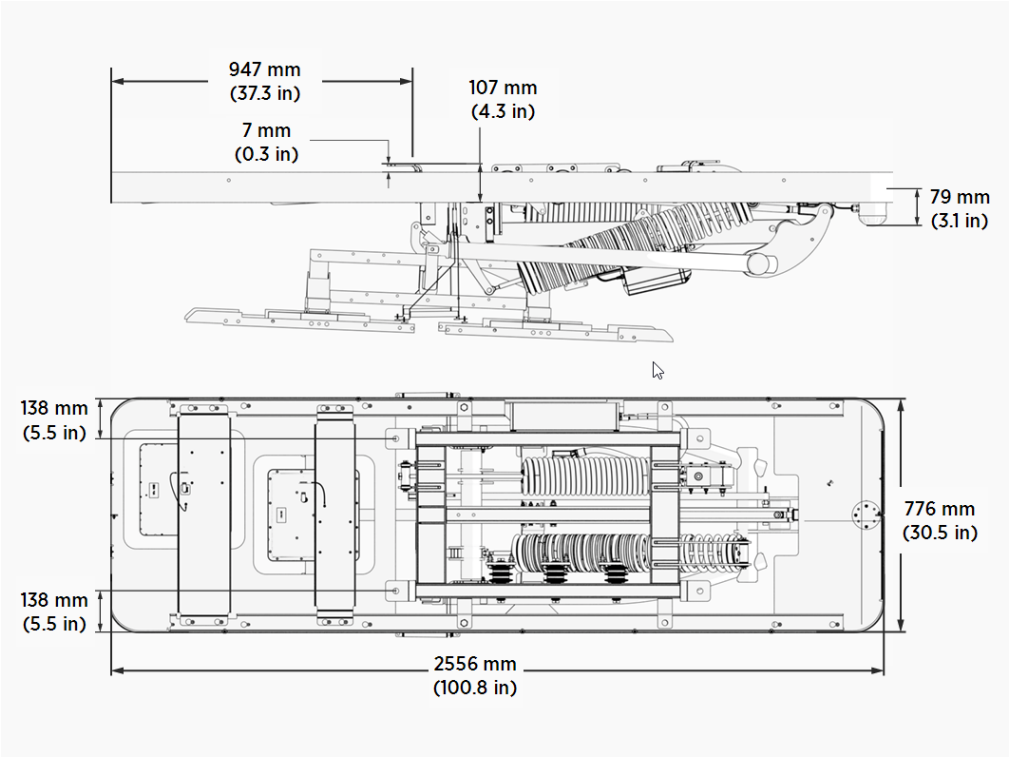


DANGER: For overhead mount of the pantograph, be aware the SAE International J3105 standard specifies a minimum height clearance between the charging rails and the ground beneath it. Ensure the pantograph is installed in such a way that its charging rails cannot be touched by persons standing below or next to the pantograph through its working range.

Auxiliary Component Mount

Schunk SLS 201.102

The Wi-Fi antenna, RFID antenna, and status LED mount to the Schunk SLS 201.102 pantograph through the use of a mounting frame. The mounting frame positions the antennas relative to the pantograph connector (and top of the bus) as required by the SAE International J3105 standard.



Drainage

Ensure any site slopes, walls, or fencing do not trap water around the installation site.

Flood Plane

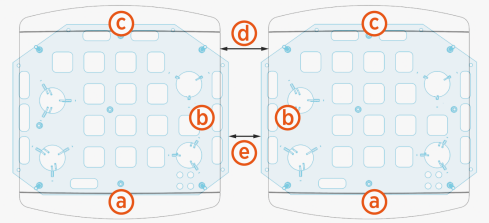
Power Block is designed for a 457 mm (18 in) flood plane. If the site has a flood plane greater than 457 mm (18 in) for a 100-year flood event, consider installing the Power Block on a raised concrete pad.

WARNING: Exposing the Power Block to over 457 mm (18 in) of standing water could create an electrocution, shock, or fire hazard. If a Power Block has been exposed to standing water, cut power to the component and contact ChargePoint before the component is powered on.

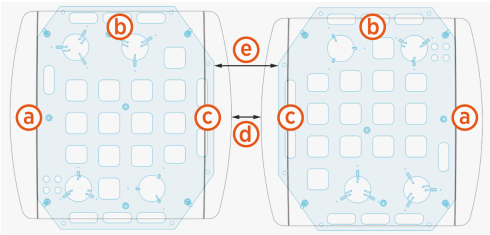
Clearances

Power Block

Two Power Blocks laid side-to-side



Two Power Blocks laid back-to-back



The following table provides the clearances required for service and ventilation around the Power Block (PB):

Side	PBs Layout	Clearance		
(a) Front	—	—		Min. 1000 mm (39.4 in)
(b) Sides	PBs laid side-to-side	Minimum	**(d)** PB to PB	51 mm (2 in)
			(e) CMT to CMT	CMTs overlap by 15 mm (0.6 in)
		Recommended	**(d)** PB to PB	152-203 mm (6–8 in)
			(e) CMT to CMT	116-167 mm (4.6–6.6 in)
(c) Rear	PBs laid back-to-back		**(d)** PB to PB	457–609 mm (18–24 in)
			(e) CMT to CMT	609–761 mm (24–30 in)

NOTE: If placing two Power Blocks back-to-back using surface conduit entry, there must be at least 609 mm (24 in) of shared rear clearance.

Additionally, follow the clearance guidelines below:

- Front and rear clearances must be at grade level +/- 13 mm (0.5 in).
- The interior of the Power Block is accessed from both the front and rear cover panels, which lift off. No separate door swing clearance is required.
- Fencing, bollards, or wheel stops must not encroach upon the clearances listed above, if present. These barriers are not explicitly required by ChargePoint.
- Power Blocks can be laid side-to-side with minimal spacing for service and ventilation. If laid side-to-side, wiring can enter using either stub-up entry (recommended) or using surface entry at the rear side. When laid side-to-side, wiring for the row cannot pass through one Power Block into another.
- Side clearances can be shared between Power Blocks as long as:
  - At least 51 mm (2 in) of clearance is maintained between each Power Block.
  - Required service clearance is maintained at the front and rear sides.

- At least 457 mm (18 in) of clearance is available at each end of a row of Power Blocks.

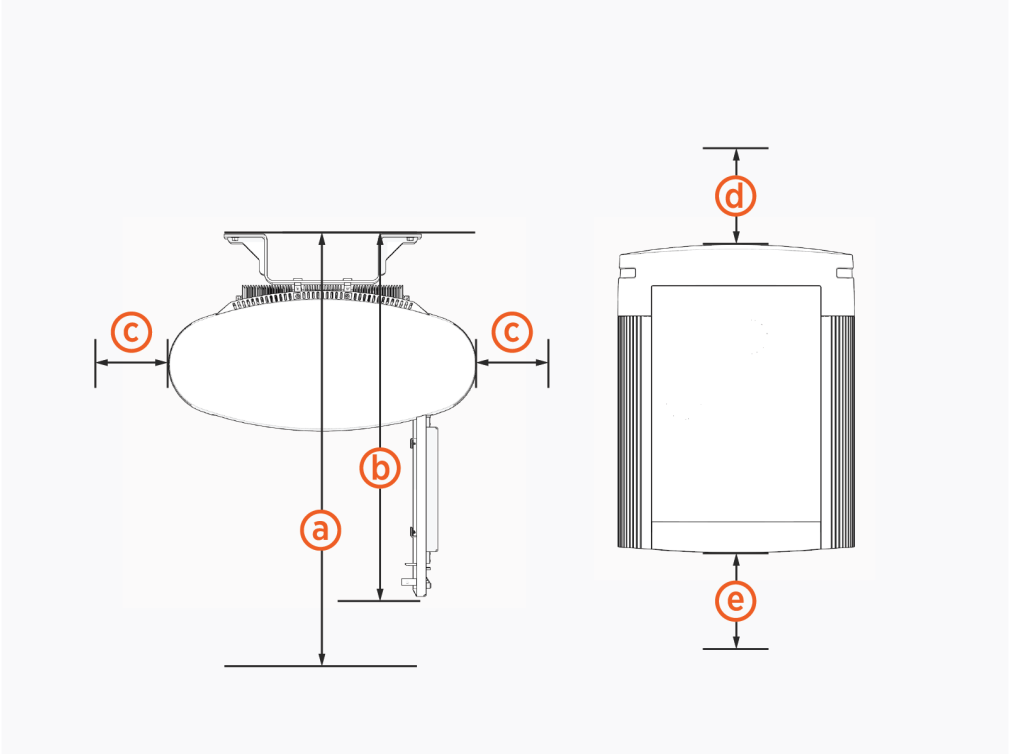
NOTE: For any questions about allowable layouts, contact ChargePoint.

CAUTION: Each Power Module weighs 45 kg (98.5 lbs). At least two people are required to replace a Power Module. The front clearance must be spacious enough to accommodate at least two people.

IMPORTANT: Check local and regional codes for any additional clearance requirements regarding safety, high voltage equipment, and accessibility requirements.

Power Link 2000

The overhead-mount Power Link 2000 requires the minimum site and service clearances listed below.

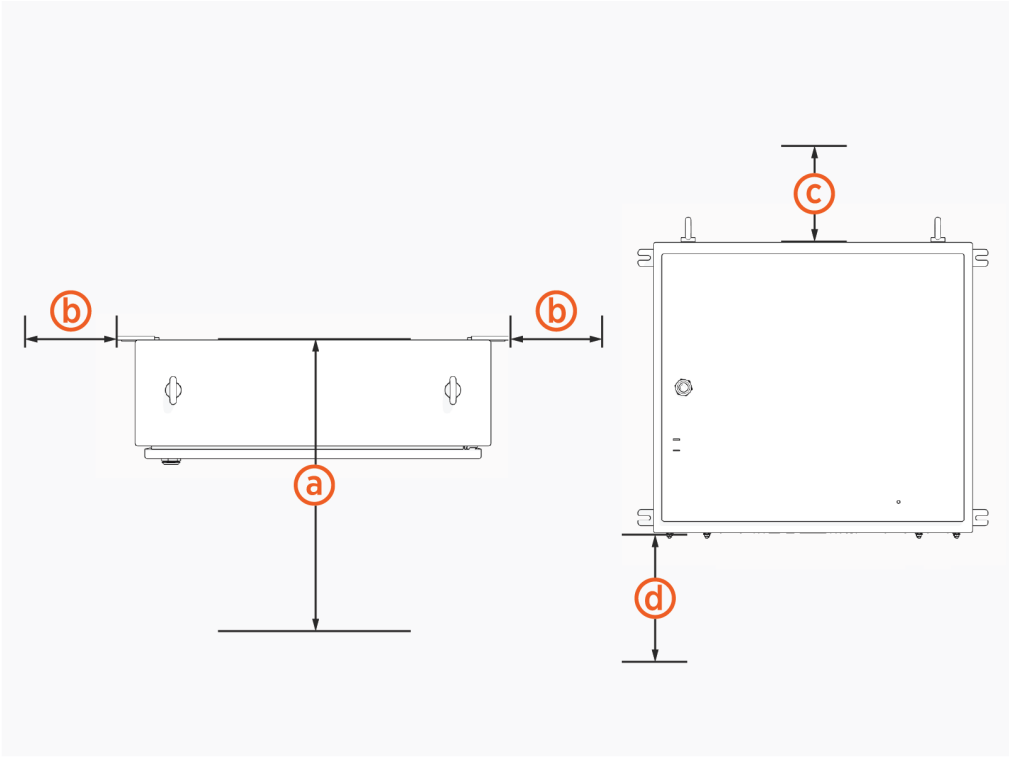


Overhead-mount Power Link 2000 clearances

Location	Clearance
(a) Front - Minimum Open Space	1062 mm (41.8 in)
(b) Front - Door Swing + Unit Depth	849 mm (33.5 in)
(c) Sides	305 mm (12 in)
(d) Top	305 mm (12 in)
(e) Bottom	610 mm (24 in)

PD Controller

The PD Controller requires the minimum site and service clearances listed below.

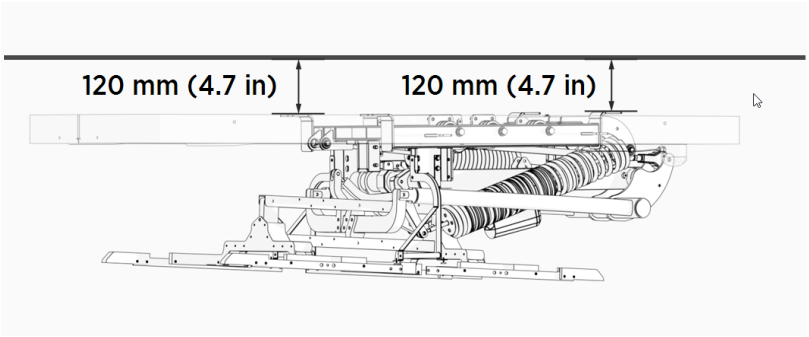


PD Controller clearances

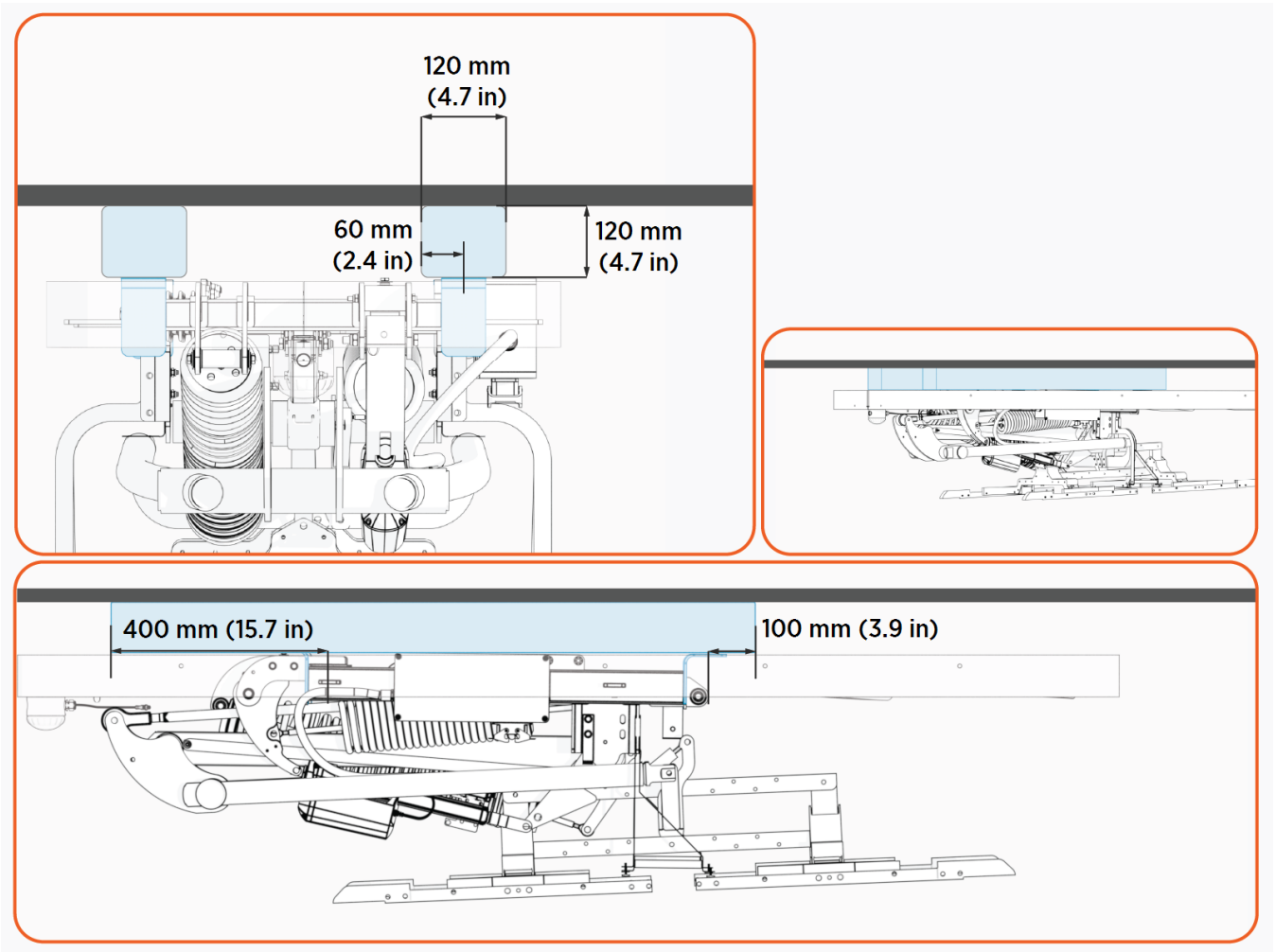
Location	Clearance
(a) Front	737 mm (29 in)
(b) Sides	102 mm (4 in)
(c) Top	102 mm (4 in)
(d) Bottom	250 mm (9.8 in)

Pantograph

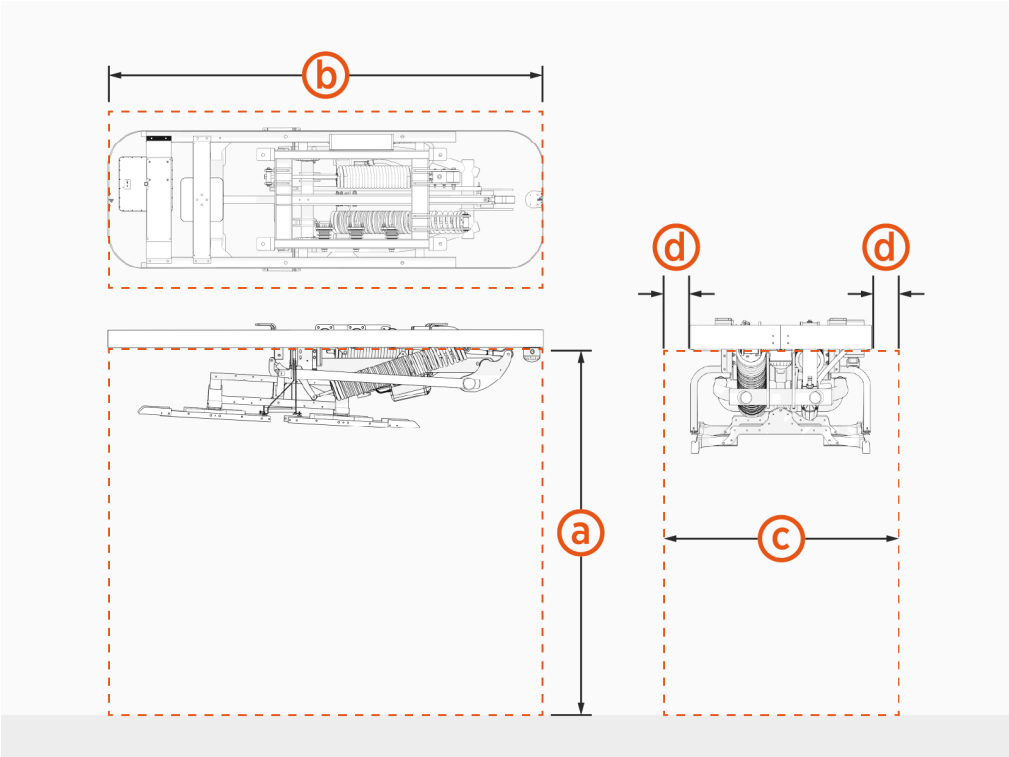
To accommodate installation and serviceability of pantograph wiring connections, the Schunk SLS 201.102 pantograph requires a top clearance of 120 mm (4.7 in) from the mounting tabs with the below exception.



Within the top clearance zone, any mounting solution (such as mounting rods) must exist within the area specified below.



The Schunk SLS 201.102 pantograph requires a keep out zone beneath it. The site plan should keep the zone clear of all objects except for the displayed ChargePoint-provided components.



Dimension	Keep Out Zone Description	Value
(a) Height	The height of keep out zone starts from the bottom of auxiliary component mounting frame and extends towards the ground.	2350 mm (92.5 in)
(b) Length	The length of keep out zone spans the total length of the auxiliary component mounting frame.	2556 mm (100.8 in)
(c) Width	The width of the keep out zone extends 100 mm (4 in) **(d)** beyond the sides of auxiliary component mounting frame.	976 mm (38.3 in)

CAUTION: ChargePoint strongly recommends installing a height clearance bar or barrier to prevent vehicles from colliding with the Pantograph in the idle position.

Bollards

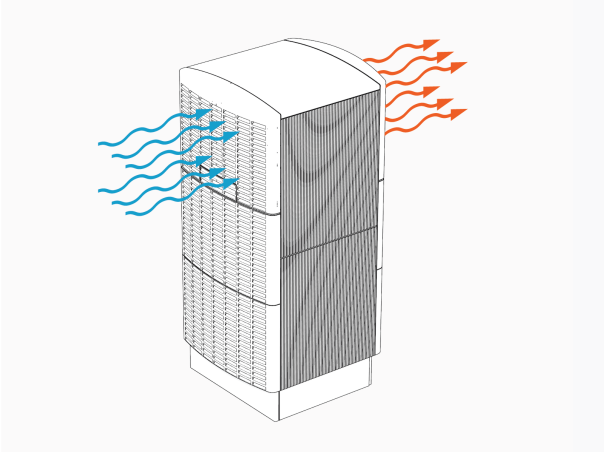
Bollards are not explicitly required by ChargePoint. If applicable, ChargePoint recommends these best practices and considerations when designing bollards for the site:

- Permanent bollards must not encroach upon the clearance areas described in Clearances.
- Removable bollards are allowed if service personnel have the ability to move them as needed.

Ventilation

Power Block

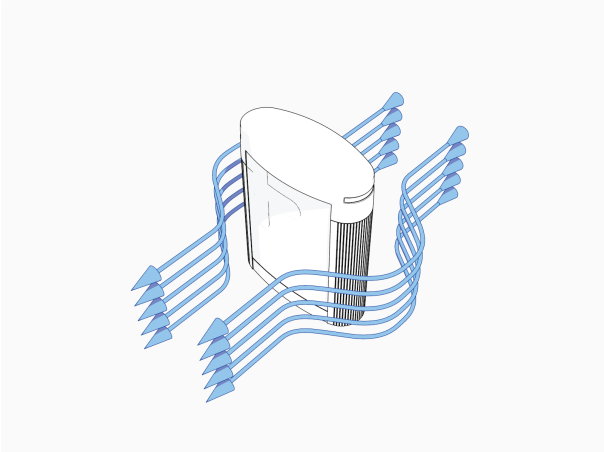
Intake vents are positioned at the front of the Power Block (blue arrows) and exhaust vents are at the rear (orange arrows). When positioning multiple Power Blocks, orient intake and exhaust to avoid recirculation.



NOTE: Power Block requires 10 kW (34,000 BTU/hr) of heat rejection.

Power Link 2000

Ensure that any installation, especially an indoor installation, has adequate airflow to dissipate heat from the station. The station location must allow fresh ambient airflow and must be free of any objects that might restrict airflow to the station. A station experiencing temperatures in excess of the maximum allowed operating temperature may deliver reduced maximum performance.



NOTE: Power Link 2000s require 500 W (1,700 BTU/hr) of heat rejection per output.

Accessibility

Comply with regional accessibility laws, regulations, and ordinances. Pantograph Down 2000 components, such as the Power Block and the Power Link 2000, must not block ramps or pathways.

Signage

Refer to local and regional code to design the following elements for the site:

- Any required re-striping of parking spaces
- EV or Accessible EV signs
- EV or Accessible EV paint markings on and around the parking spaces

ChargePoint recommends posting signage indicating the maximum drive-through height for vehicles passing beneath the chargers.

Electrical Design 4

Conduit and wire size are determined based on current. Service wiring in conduit or armored cable must be run as required 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 Power Block is available in 200, 250, 350, and 500 A versions, each with its own rating labels.

The Power Link 2000 in the Pantograph Down 2000 system can be configured to 200, 250, 350, 400, and 500 A. The corresponding rating label is applied on-site.

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

Power Block Electrical Supply Requirements

Charging stations are considered continuous load devices (EVs draw maximum load for long durations). Therefore, electrical branch circuits to EV chargers must be sized at 125% of the load on each leg of a 3-phase panel for North American installations, in accordance with National Electric Code requirements. For other regions, refer to local code.

When planning multiple EV charging stations, it is best practice to segment non-continuous and 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.

Each Power Block requires its own circuit breaker as follows:

Nominal Voltage	Max. AC Input Current	Continuous Load (125%)	Breaker Size
480 V	260 A	325 A	350 A and 400 A

NOTE: The Power Block has a short circuit current rating of 65 kA.

The Power Link 2000 charging station is tested to IEC 61000-4-5, Level 5 (6 kV @ 3000 A) standards.

AC Disconnect Switch (optional)

ChargePoint recommends installing a local AC disconnect switch, separate from the shunt trip wiring, between each Power Block and the electrical panel. This is especially important if the main electrical panel or utility room is distant, out of line of sight, or has restricted access. For North America installations, refer to

disconnect switch requirements per NEC Article 625, “Electric Vehicle Charging and Supply Equipment Systems”.

Transformer Configuration

Refer to the following table for the transformer configuration.

	North America
Input rating	480 V AC, 3-phase, 260 A, 60 Hz
Electrical service configuration	277/480 V AC 3-phase grounded WYE (Y) configuration
Product connection	Power Block must be connected to L1, L2, and L3 (neutral not required)

NOTE: Delta (floating or grounded) is not supported.

Neutral-to-ground bonding is required at the Main Distribution Panel (MDP) supplying the charging station.

IMPORTANT: This requirement applies to Canadian installations. Whether using a step-up or step-down autotransformer, refer to the "*Hydro-Québec bulletin - Choosing the right one 600/480 V transformer*" for specific guidance.

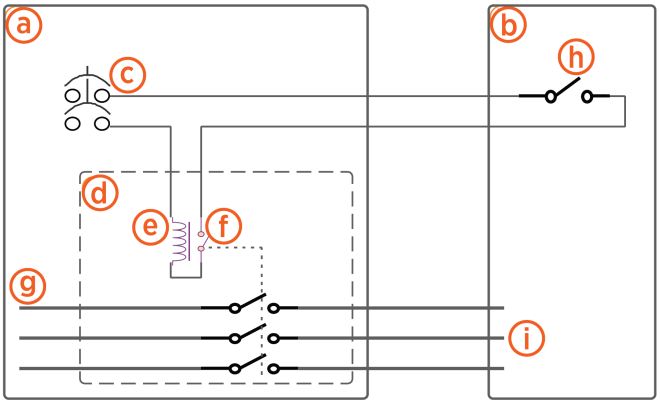
Shunt Trip Wiring (optional)

The Power Block provides a set of unpowered (dry) contacts to connect to an optional shunt trip device. These contacts are rated to 240 VAC and 6 amps.

Wiring sections to and from the Power Block are deactivated when unsafe conditions are detected, such as unintended cover panel removal. A breaker reset is required any time the shunt trip is activated.

If installed, each Power Block must be wired to the shunt trip unit of its own upstream circuit breaker. Upstream AC power must be shut off at the panel to remove shock risk inside the Power Block. All shunt trip behavior is already hard-coded into the Power Block and has no programmable variables.

Emergency stop devices are governed by local and regional codes and may be required in some sites. If one is required by code or by the site, confirm specifications with your ChargePoint representative.



(a) Electrical panel

(b) Power Block

(c) Control voltage supply, maximum 240 VAC

(d) Shunt trip circuit breaker

(e) Shunt trip coil

(f) Auxiliary contacts (closed when main contacts are closed)

(g) 3-phase AC main

(h) Power Block shunt trip contacts, Normally Open (inside the auxiliary power supply, accessible on field wiring terminal block)

(i) 3-phase Power Block AC input

PD Controller Electrical Supply Requirements

The PD Controller AC power input can range from single-phase 60 Hz 120 V AC to 277 V AC. See the peak current ratings below for the different supply voltages.

- 120 V AC, 60 Hz, 4 A
- 208-277 V AC, 60 Hz, 2 A

Ensure upstream wiring and protection circuitry is suitable and code-compliant.

Grounding Requirements

- The Power Link 2000 must be connected to a grounded, metal, permanent wiring system.
    - A service ground conductor must be run with circuit conductors and connected to an equipment-grounding terminal on the Power Block.

> **NOTE:** The leakage current from Power Block to protective earth conductor can reach up to 200 mA.

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

- The Power Block 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 Power Link 2000.
- Some regions also require a grounding rod to be installed adjacent to each component. Check local code to ensure compliance.
- All charging components must be ground bonded to one another, as follows:
    - For an installation without Power Hub:
        - Power Block to Power Link 2000 (or Power Link 2000 to Power Link 2000)
        - Power Link 2000 to pantograph PE rail
        - Power Link 2000 to pantograph frame
    - For an installation with Power Hub:
        - Power Block to Power Hub
        - Power Hub to Power Link 2000
        - Power Link 2000 to pantograph PE rail
        - Power Link 2000 to pantograph frame

NOTE: If Power Link 2000 shall be installed within a conductive enclosure, see additional grounding requirements in Appendix: Enclosed Power Link 2000 Considerations.

Power Link 2000 Site Considerations

Power Link 2000 Soft Shutdown

The soft shutdown function is an optional feature that can be installed as a way to stop a charge session on that Power Link 2000. It is not meant to safely service the Power Link 2000 or take the place of a HV disconnect switch.

To use this feature, the installer must select and mount a physical soft shutdown switch (one per Power Link 2000) with the following specifications:

- 2.5 mm^2 (14 AWG) THHN insulation building wire rated to 600 V
- Normally Open (NO) configuration
- Switch current of 2 ma
- Switch voltage of 48 V
- Gold contacts suggested

When creating the site drawings, consider where any soft shutdown switches should be positioned. If applicable, consider disability and accessibility regulations for your region when choosing switch locations.

NOTE: Soft shutdown switch requires a dedicated conduit. For more information, refer to Power Link 2000 Wiring Specifications.

To wire the soft shutdown switch to the Power Link 2000:

1. Run the wiring in a dedicated LV conduit into the Power Link 2000.
2. Route the wire away from other conductors carrying large currents.
3. Twist the two wires together, using a minimum of five twists per foot.
4. Connect the two terminals of the switch to the terminal block inside the Power Link 2000 labeled “Soft_Shutdown”, next to the 48 VDC terminals. The terminals do not have fixed polarity.

When the switch is closed, the Power Link 2000 software ends the current charging session with a normal stop, then opens DC contactors in the Power Link 2000. The station stays in this state regardless of station power, not allowing operation. Only a service technician can place the Power Link 2000 back into service after the switch is reset to Open.

WARNING: The HV DC wires from the Power Block could still be energized with the switch closed.

Smart Antenna

The Power Link 2000 is equipped with an internal cellular modem for connectivity with ChargePoint, as described in Connectivity (NA) or Connectivity (EU). Additionally, each Power Link 2000 can be equipped with a Smart Antenna for increased strength of connection to the cellular network.

The Smart Antenna is ordered separately as needed and is field-installed within the Power Link 2000.

Sequential Charging Kit

Dual output Power Link 2000s may be configured for sequential charging by field installing a Sequential Charging Kit. This kit allows Power Link 2000 to take a single power input and feed the power to either output in a sequential manner. The Sequential Charging Kit is ordered separately and is field installed.

Ethernet to USB Kit

The Ethernet to USB Kit is an option that can be installed within a single Power Link 2000 within a connected Pantograph Down 2000 cluster. It allows Power Link 2000 to have a hardwired Ethernet connection with an external network server. The installation requires a conduit for the Ethernet cable, which must be run from the customer server or network equipment directly to the Power Link 2000. Only one Ethernet to USB Kit is required per Pantograph Down 2000 cluster. This kit is ordered separately and is field installed.

Wiring Requirements

For full product specifications, refer to the *Express Plus Pantograph Down 2000 Datasheet*. Ensure the installation location is equipped with service wiring that supports the Express Plus Pantograph Down 2000 site’s power requirements.

IMPORTANT:

- For AC and DC high voltage (HV), high current wiring, use copper or aluminum wires rated for 90 °C (194 °F).
  - AC high current wires can be THHN/THHW/THW-2/THWN-2 based on site condition (dry or wet) and rated for 600 V.
  - DC HV wires can be XHHW/XHHW-2 based on site condition (dry or wet) and rated for 1000 V.
- For low voltage (LV) DC wiring, use only copper wires (XHHW/XHHW-2 based on site condition, dry or wet) rated for 1000 V and 75 °C (167 °F).
- For PD Controller 120–277 V AC input wires, use only copper wires rated for 600 V AC and 75 °C (167 °F).
- Use copper lugs for copper wires and aluminum lugs for aluminum wires. The lugs must be nickel, tin, or silver plated compression (not mechanical) lugs. Nickel-plated lugs installed with dielectric grease is recommended.

All AC and DC high voltage wires must undergo insulation testing as outlined in the High Voltage Wire Insulation Resistance Test Field Guide.

Notes For All Regions

Wire run lengths

- The maximum total HV DC wire run length from any Power Block to any connected pantograph must not exceed 200 m (656 ft). Refer to the cluster configuration provided by ChargePoint for interconnect details.
- The maximum wire run length between a Power Link 2000 and each connected pantograph is 30 m (98 ft).
- The maximum wire run length between a PD Controller and connected pantograph is 5 m (16.4 ft).
- For LV DC wire and Ethernet runs between nodes (Power Block and Power Link 2000):
  - If Power Link 2000s are connected in a chain (daisy-chained), the maximum total wire run length from the Power Block to the furthest Power Link 2000 is 160 m (525 ft). Contact ChargePoint for options if greater lengths are needed.
  - If Power Link 2000 are not daisy-chained, the 48 V and Ethernet wire run length between Power Block and Power Link 2000 can be up to 200 m (656 ft).
- The maximum wire run length between a Power Link 2000 and an external network connection is 200 m (656 ft).

Ethernet requirements

- For Ethernet communications between any two nodes (Power Link 2000 or Power Block) or to an external network connection:
  - Distances up to 100 m (328 ft) must use outdoor-rated Cat6 Shielded Twisted Pair (STP) cable. Lesser grades of cable do not provide the required noise immunity.
  - Distances between 100 m (328 ft) and 200 m (656 ft) must use Paige OSP Shielded GameChanger cable. See paigedatacom.com/gamechanger.
- An Ethernet cable connecting a Power Block to another Power Block must have the shield terminated at only one end; either end can be terminated.

- An Ethernet cable connecting a Power Block and a Power Link 2000 must have the shield terminated at the Power Block end.
- An Ethernet cable connecting two Power Link 2000s must have the shield terminated at the end nearer to the Power Block.
- An Ethernet cable connecting a Power Link 2000 and a PD Controller must have the shield terminated at the Power Link 2000 end.
- An Ethernet cable connecting a Power Link 2000 to a network server must have the shield terminated at the network server end.

Power Block Wiring Specifications

The Power Block takes AC input from the site and provides DC and Ethernet output to Power Link 2000(s). Use one AC input feed per Power Block.

Power Block standard wire entry

In regions that use conduits, wire conduits enter the Power Block through a Concrete Mounting Template (CMT) via conduit stub-ups. In regions that do not use conduits and/or use armored cables, the cables may be laid per the conduit layout defined by the CMT.

If using conduits:

- Conduits must be sealed to maintain a Pollution Degree 2 environment.
- Conduits must not have bell ends. Conduits with bell ends may interfere with tolerances inside the Power Block.
- Conduits must stub-up 559–914 mm (22–36 in) above the concrete pad surface.

IMPORTANT: The following table provides the maximum size and quantity of conduits that can be installed on Power Block configured for standard wire entry. The actual conduit size and quantity must be chosen based on site specific wiring requirements. The outer diameter of the conduits must not exceed the maximum trade size specifications listed below.

The following table provides the maximum size and quantity of conduits that can be installed on Power Block:

Conduits For	Conduit Quantity x Trade Size	
	North America	Europe
HV DC output wires	2 x 4 inch max.	2 x 110 mm max.
AC input wires	1 x 4 inch max.	1 x 110 mm max.
LV DC, shunt trip, and Ethernet output wires	4 x 1 inch max.	4 x 25 mm max.

Power Block surface wire entry

If Power Block wires or cables are run above ground:

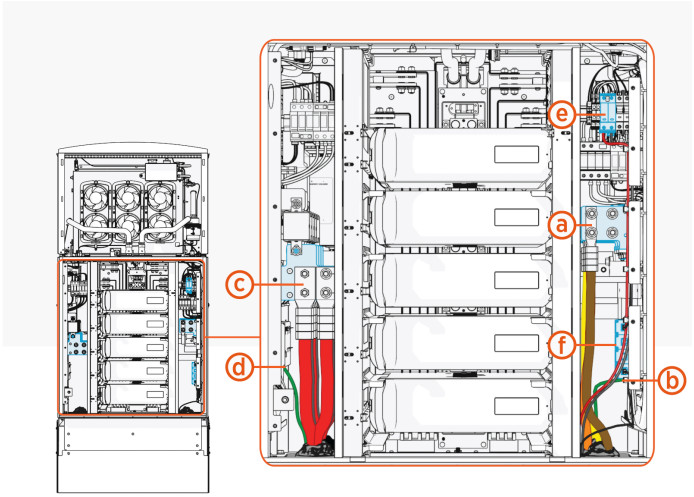
- They must be housed in wireways that conform to national and local codes.
- Use flexible wires.
- Use liquid-tight flexible conduit. Conduit must have an inside bend radius of 279 mm (11 in) or less.

- Use suitable conduit fittings to secure and seal the conduits and/or conduit bodies. Conduits must be sealed to maintain a Pollution Degree 2 environment.
- Wires must enter the Power Block via the Power Block Surface Conduit Entry (SCE) Kit.

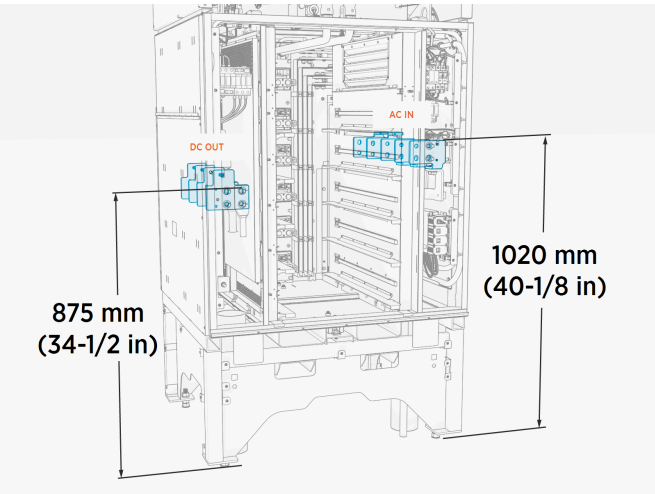
IMPORTANT: The following table provides the maximum size and quantity of conduits that can be installed on Power Block configured for surface wire entry via the Power Block SCE Kit. The actual conduit size and quantity must be chosen based on site specific wiring requirements.

Conduits For	Conduit Quantity x Trade Size	
	North America	Europe
AC input wires	1 x 4 inch max.	1 x 110 mm max.
HV DC output wires	2 x 4 inch max.	2 x 110 mm max.
LV DC, shunt trip, and Ethernet output wires	4 x 1 inch max.	4 x 25 mm max.

Power Block wire landing



(a) AC input
(b) Ground input
(c) HV DC output
(d) Ground output
(e) LV DC output
(f) Ethernet output



Consider the height of bus bars above the concrete pad when determining required wire lengths.

Power Block input wire quantity, size, and termination

IMPORTANT: Following are wire specifications for the Power Block, including the maximum quantity and size that the wire terminals can accommodate. All sizing assumes a maximum ambient temperature of 50 °C (122 °F). Where the maximum wire size is listed, the actual wire quantity and size must be chosen based on site-specific wiring requirements and in accordance with the maximum allowed conduit filling rate per local code.

Input Wire	Quantity	Size	Termination
AC	Max. 12 wires (four per pole)	Max. 400 mm^2 (750 MCM)	Lug: Long barrel and tongue with two holes spaced 44.5 mm (1.75 in) apart and sized for M12 (0.5 in) studs. Max. tongue width: 47.5 mm (1.88 in).
Ground	1 wire	Refer to local code for size	Lug: Short barrel and tongue with single hole sized for M12 (0.5 in) stud.

Power Block output wire quantity, size, and termination

IMPORTANT: Following are wire specifications for the Power Block, including the maximum quantity and size that the wire terminals can accommodate. All sizing assumes a maximum ambient temperature of 50 °C (122 °F). Where the maximum wire size is listed, the actual wire quantity and size must be chosen based on site-specific wiring requirements and in accordance with the maximum allowed conduit filling rate per local code.

Output Wire	Quantity	Size	Termination
HV DC A and B*	Max. 12 wires (six per output, three per pole)	See Power Link 2000 input wire specifications	Lug: Long barrel and tongue with two holes spaced 44.5 mm (1.75 in) apart and sized for M12 (0.5 in) studs. Max. tongue width: 49 mm (1.93 in).
Ground	Max. 2 wires (one per Power Link 2000)	See Power Link 2000 input wire specifications	Lug: Short barrel and tongue with single hole sized for M12 (0.5 in) stud.
LV DC	See Power Link 2000 input wire specifications		Stripped wire end
Ethernet	See Power Link 2000 input wire specifications		RJ45 connector, shielded

NOTE: * Power Block has two DC outputs (A and B). Each DC output can accept maximum of six HV DC wires (three per pole).

Power Link 2000 Wiring Specifications

The Power Block DC (HV and LV) and Ethernet outputs are the inputs for the Power Link 2000. The Power Link 2000 provides HV DC output to pantograph(s) and provides LV DC and Ethernet output to PD Controller(s). In some Express Plus architectures, Power Link 2000 also provides DC (HV and LV) and/or Ethernet output to another Power Link 2000.

Overhead-mount Power Link 2000 wire entry

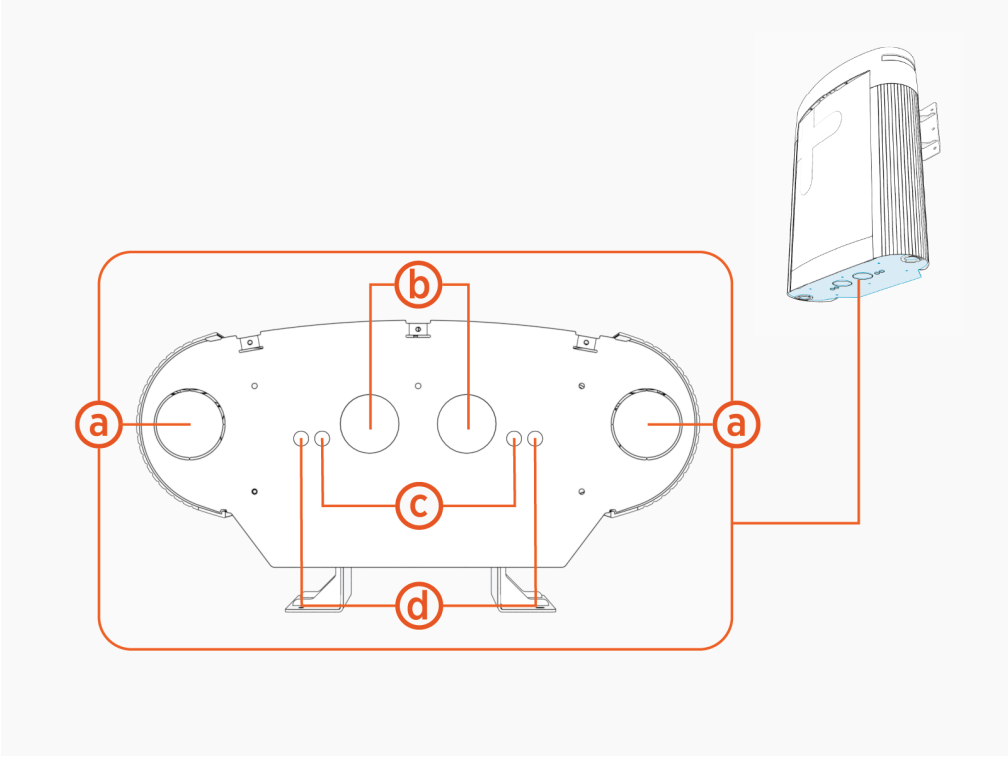
Overhead-mount Power Link 2000 wires and cables are surface run and enter through the Power Link 2000 bottom gland plate by conduit or as armored cable.

Ensure the following for surface run wiring to the overhead-mount Power Link 2000:

- All wires must be housed in wireways that conform to national and local codes.
- Use flexible wires.
- Use suitable fittings to secure and seal conduits or amored cables to the enclosure. Conduits must be sealed must maintain a Pollution Degree 2 environment.

The overhead-mount Power Link 2000 ships with 3 inch (78 mm) conduit knockouts on the bottom gland plate, marked below as **(a)**, for exit of HV DC output wires connecting to pantographs. All remaining wires enter the enclosure through the center area of the bottom gland plate.

IMPORTANT: Wire entries and exits **(b)**, **(c)**, and **(d)** depicted below are for sample illustration purposes only. These holes are punched out in the field, and actual quantity and size of holes must be chosen based on site specific requirements. Each HV DC input wire hole must be punched out on the gland plate at a location that aligns wire entry with their intended power path landings. See Overhead-mount Power Link 2000 input wire landing.



(a) HV DC output wire (to pantographs) exit with knockout cover

(b) HV DC (from Power Blocks or connecting to another Power Link 2000) wire entry/exit

(c) LV DC and Ethernet (from Power Blocks or connecting to another Power Link 2000) wire entry/exit

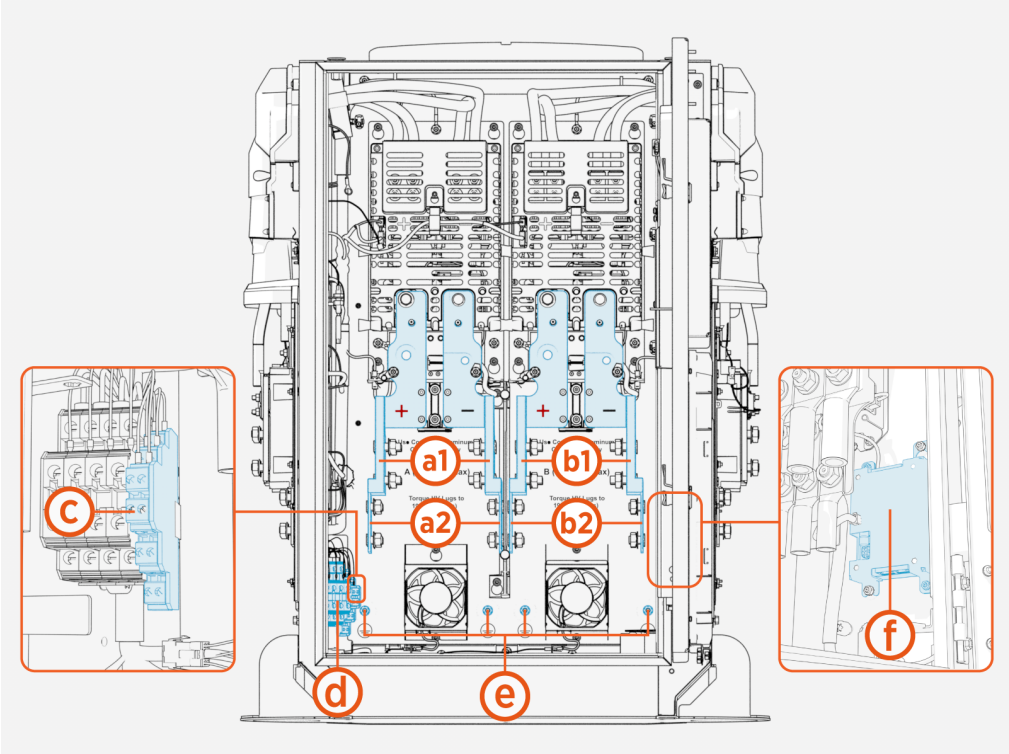
(d) LV DC, Ethernet, and chassis ground (to PD Controllers) wire exit

IMPORTANT: The following table provides the maximum size and quantity of conduits that can be installed on the overhead-mount Power Link 2000. The actual conduit size and quantity must be chosen based on site specific wiring requirements.

Conduits For	Conduit Quantity x Trade Size	
	North America	Europe
HV DC output wires (to pantographs)	2 x 3 inch **NOTE:** 3 inch size conduit is required. The quantity of conduit will depend on the configuration.	2 x 78 mm **NOTE:** 78 mm size conduit is required. The quantity of conduit will depend on the configuration.
HV DC wires (from Power Blocks or connecting to another Power Link 2000)	2 x 4 inch max. or 4 x 3 inch max.	2 x 103 mm max. or 4 x 78 mm max.
LV DC wires and Ethernet cables (from Power Blocks or connecting to another Power Link 2000)	2 x 1 inch **NOTE:** 1 inch size conduit is required. The quantity of conduit will depend on the configuration.	2 x 27 mm **NOTE:** 27 mm size conduit is required. The quantity of conduit will depend on the configuration.
LV DC wires, Ethernet cables, and chassis ground (to PD Controllers)	2 x 3/4 inch **NOTE:** 3/4 inch size conduit is required. The quantity of conduit will depend on the configuration.	2 x 21 mm **NOTE:** 21 mm size conduit is required. The quantity of conduit will depend on the configuration.
Optional features (Ethernet to USB or soft shutdown switch)	2 x 3/4 inch max.	2 x 21 mm max.

Overhead-mount Power Link 2000 input wire landing

NOTE: Depending on configuration, the overhead-mount Pantograph Down 2000 has one or two HV DC input power paths, named A and B. Each power path has two wire landings, an upper landing and a lower landing. Pantograph Down 2000s with a single charging cable are configured with Power Path B landings only.



(a1) HV DC input A, upper landing
(a2) HV DC input A, lower landing
(b1) HV DC input B, upper landing
(b2) HV DC input B, lower landing
(c) Soft shutdown switch
(d) LV DC input
(e) Ground input
(f) Ethernet input

Overhead-mount Power Link 2000 input wire quantity, size, and termination

IMPORTANT: Following are wire specifications for the Power Link 2000, including the maximum quantity and size that the wire terminals can accommodate. All sizing assumes a maximum ambient temperature of 50 °C (122 °F). Where the maximum wire size is listed, the actual wire quantity and size must be chosen based on site-specific wiring requirements and in accordance with the maximum allowed conduit filling rate per local code.

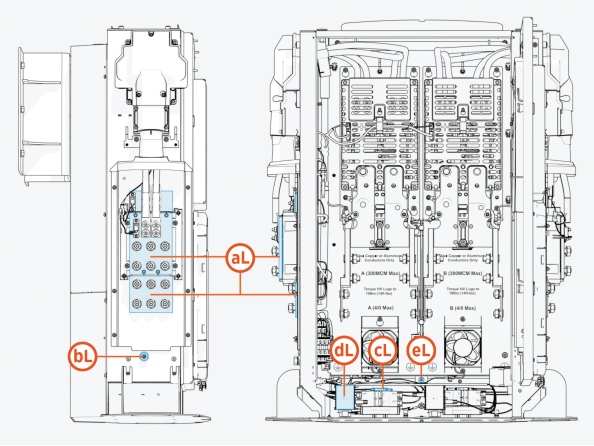
Input Wire	Quantity	Size	Termination
HV DC A and B (Max. 500 A per landing)	Max. 12 wires per Power Path (three per pole on each landing)	Upper landings: Max. 150 mm^2 (300 MCM)(*)	Lug: Long barrel and tongue with two holes spaced 44.5 mm (1.75 in) apart and sized for M12 (0.5 in) studs. Max. tongue width: 31 mm (1.25 in) for upper landings, 25.9 mm (1 in) for lower landings. Aluminum lug max. tongue thickness: 10 mm (0.4 in) for upper landings, 5 mm (0.2 in) for lower landings.
		Lower landings: Max. 120 mm^2 (4/0 AWG)	
Ground	Max. 6 wires (one per Power Block)	Refer to local code for size; Max. 50 mm^2 (1/0 AWG)	Lug: Short barrel and tongue with single hole and sized for M6 (0.25 in) stud.
LV DC (from Power Block or another Power Link 2000)	Max. 4 wires (two wire pairs; each pair has one wire per pole)	16 mm^2 (6 AWG)	Stripped wire end
Ethernet	Max. 4 cables	Cat6 STP cable, outdoor rated or Paige OSP Shielded Gamechanger(**)	RJ45 connector
Soft shutdown switch(***)	2 wires	2.5 mm^2 (14 AWG)	Stripped wire end

NOTE: (*) If utilizing both upper and lower landings, the maximum HV DC wire size is 120 mm^2 (4/0 AWG). (**) The required Ethernet cable type depends upon the cable run length. See Ethernet requirements for details. (***) Soft shutdown switch is an optional feature.

Overhead-mount Power Link 2000 output wire landing

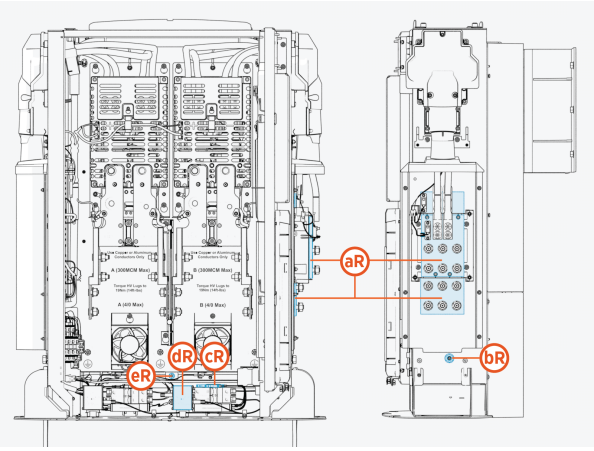
The overhead-mount Power Link 2000 supports up to two HV DC outputs (L and R). Each output is the HV DC input for one pantograph. The pantographs are designated Pantograph L and Pantograph R, accordingly. The Power Link 2000 also outputs LV DC, chassis ground, and Ethernet connection to each PD Controller paired with a pantograph.

The illustration below shows the landing locations for DC output wires connecting to Pantograph L and its paired PD Controller.



(aL) HV DC output L
(bL) High power ground L
(cL) LV DC output L
(dL) Ethernet output L
(eL) Chassis ground output L

The illustration below shows the landing locations for DC output wires connecting to Pantograph R and its paired PD Controller.



(aR) HV DC output R
(bR) High power ground R
(cR) LV DC output R
(dR) Ethernet output R
(eR) Chassis ground output R

NOTE: Single output Power Link 2000 are equipped with right (R) side outputs.

Overhead-mount Power Link 2000 output wire quantity, size, and termination

IMPORTANT: Following are wire specifications for the Power Link 2000, including the maximum quantity and size that the wire terminals can accommodate. All sizing assumes a maximum ambient temperature of 50 °C (122 °F). Where the maximum wire size is listed, the actual wire quantity and size must be chosen based on site-specific wiring requirements and in accordance with the maximum allowed conduit filling rate per local code.

Output Wire	Quantity	Size	Termination
HV DC L and R(*)	Max. 12 wires (six per landing, three per pole)	Max. 120 mm^2 (4/0 AWG)	Lug: Long barrel and tongue with two holes spaced 44.5 mm (1.75 in) apart and sized for M12 (0.5 in) studs. Max. tongue width: 31 mm (1.25 in). Aluminum lug max. tongue thickness: 5 mm (0.2 in).
High power ground (to pantograph PE and pantograph frame)	Max. 4 wires (two per pantograph)	Refer to local code for size; Max. 50 mm^2 (1/0 AWG)	Lug: Short barrel and tongue with single hole sized for M6 (0.25 in) stud.
LV DC (to another Power Link 2000)	Max. 4 wires (two wire pairs; each pair has one wire per pole)	16 mm^2 (6 AWG)	Stripped wire end
LV DC (to PD Controller)	Max. 4 wires (one wire pair per PD Controller; each pair has one wire per pole)	1.5 mm^2 (16 AWG)	Stripped wire end or ferrule
Chassis ground (to PD Controller)	Max. 2 wires (one per PD Controller)	4 mm^2 (12 AWG)	Ring terminal: Sized for M6 (0.25 in) stud.
Ethernet	Max. 2 cables (one per PD Controller)	Cat6 STP cable, outdoor rated	RJ45 connector

NOTE: (*) Each HV DC output (L and R) can have a maximum of six HV DC wires (three per pole).

PD Controller Wiring Specifications

Each PD Controller is configured with AC input from the site as well as LV DC and Ethernet connections from a Power Link 2000.

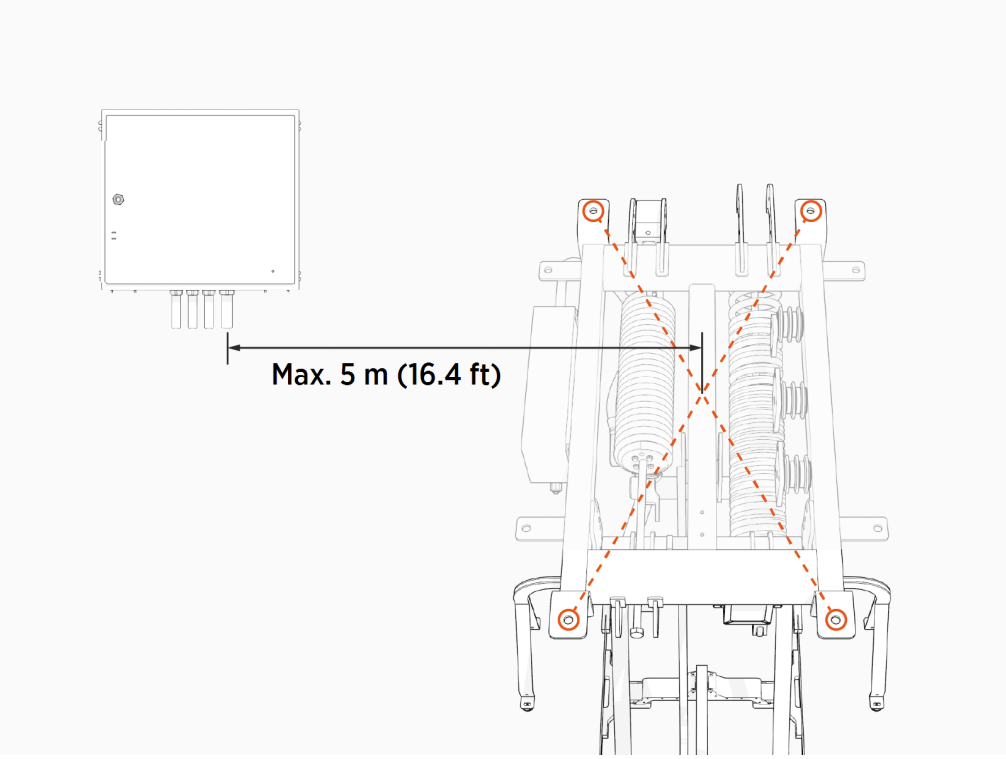
For 120-277 V AC, 48 V DC, and ground wiring:

- All wires must be housed in wireways that conform to national and local codes.
- Use flexible wires.
- Use suitable conduit fittings to secure and seal conduits. Conduits must be sealed to maintain a Pollution Degree 2 environment.

The PD Controller ships with a controller interface cable, a single cable that bundles the following cables for connection to a pantograph and Status LED:

- Pantograph control pilot cable
- Pantograph control cable
- Pantograph rest sensor cable
- Status LED cable

At full length, the controller interface cable allows a maximum distance of 5 m (16.4 ft) between the PD Controller and pantograph. If longer lengths are needed, contact ChargePoint. The controller interface cable may be cut to length.



Pantograph Down 2000 ships with two RF coaxial cables for connection to the Wi-Fi and RFID antennas. Each cable is 5 m (16.4 ft) long and cannot be cut to length. Custom cables of different length may be ordered for the site and must meet the cable specifications listed below. There is no minimum length bound.

Cable	Max. Length	Cable Type	Termination A*	Termination B*
Wi-Fi antenna	10 m (32.8 ft)	LMR-240 or equivalent, 6.1 mm (0.24 in) outer diameter, and low loss operating up to 5.8 GHz or higher.	RP-SMA male	N-type male
RFID antenna	10 m (32.8 ft)	LMR-240 or equivalent, 6.1 mm (0.24 in) outer diameter, and low loss operating up to 1 GHz or higher.	RP-SMA male	N-type male

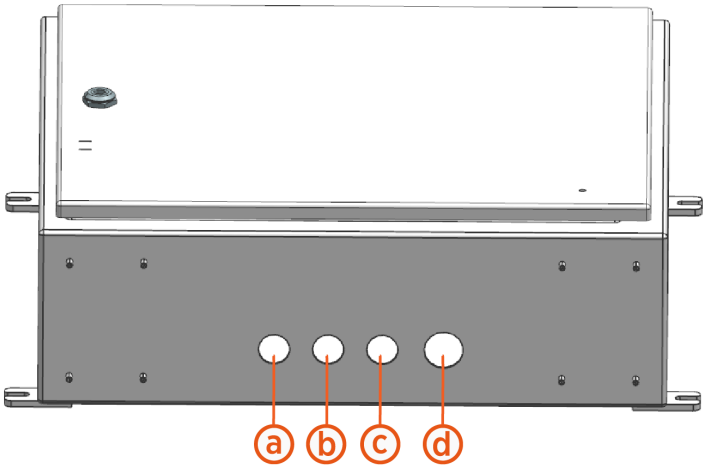
NOTE: (*)Termination A lands at the PD Controller. Termination B lands at the antenna.

IMPORTANT:

- The LMR-240 cable has a one-time bend radius of 19 mm (0.75 in) and repeated bend radius of 63 mm (2.5 in). If these are exceeded, the cable may be damaged and the system may not operate. If using an LMR-240 equivalent, do not violate the bend radius of that cable type.
- The RF coaxial cables may not be coiled within the PD Controller.

PD Controller wire entry

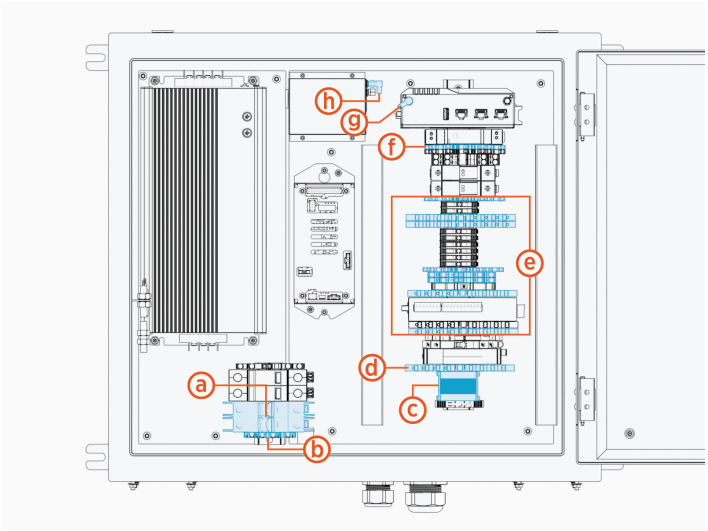
Wires enter at the PD Controller bottom panel by conduit or cable gland, as specified below. The enclosure ships with pre-made wire entry holes.



Wire	Wire Entry Type	Required Size (Conduit Trade Size or Cable Gland)	Required Quantity (Conduit or Cable Gland)
(a) 120-277 V AC input wires from site	Conduit required	3/4 in (21 mm)	1
(b) 48 V DC, Ethernet, chassis ground (from Power Link 2000)	Conduit required	3/4 in (21 mm)	1
(c) RF coaxial cables to RFID and Wi-Fi antennas (one cable to each antenna)	Conduit or cable gland	3/4 in (21 mm)	1
(d) Controller interface cable	Conduit or cable gland	1-1/4 in (35 mm)	1

The PD Controller ships with cable glands for the RF coaxial cables and controller interface cable. These are installed either at the PD Controller or at the end of the conduit run to the pantograph. The cable glands are 1-1/4 in (35 mm) and 3/4 in (21 mm) NPT.

PD Controller wire landing



- **(a)** 120-277 V AC input
- **(b)** AC PE
- **(c)** Ethernet input
- **(d)** LV DC input
- **(e)** Controller interface cable
- **(f)** Chassis ground
- **(g)** Wi-Fi antenna
- **(h)** RFID antenna

PD Controller unfurnished wire quantity, size, and termination

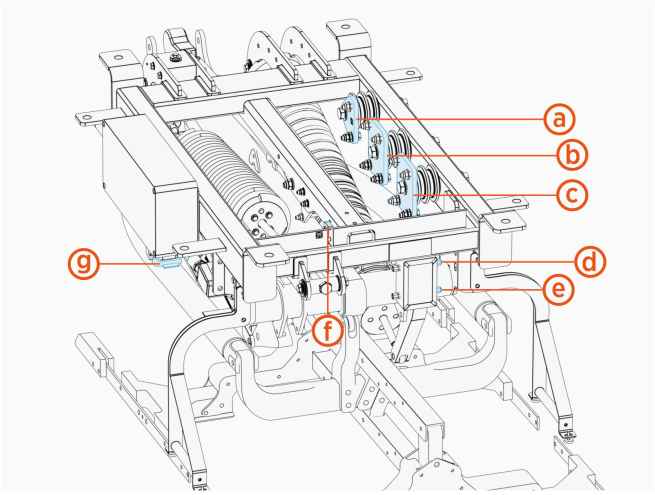
IMPORTANT: Following are wire specifications for the PD Controller, including the maximum quantity and size that the wire terminals can accommodate. All sizing assumes a maximum ambient temperature of 50 °C (122 °F). Where the maximum wire size is listed, the actual wire quantity and size must be chosen based on site-specific wiring requirements and in accordance with the maximum allowed conduit filling rate per local code.

Wire	Quantity	Size	Termination
120-277 V AC input	2 wires (one per pole)	Size based on branch circuit breaker; Max. 16 mm^2 (6 AWG)	Stripped wire end
AC ground	1 wire	Size based on branch circuit breaker; Max. 16 mm^2 (6 AWG)	Stripped wire end
LV DC input	See Power Link 2000 output wire specifications		Stripped wire end
Ethernet input	See Power Link 2000 output wire specifications		RJ45 connector, unshielded
Chassis ground	See Power Link 2000 output wire specifications		Stripped wire end

Schunk SLS 201.102 Pantograph Wiring Specifications

Each pantograph is configured with HV DC and high power ground connection from a Power Link 2000. The pantograph also has controller interface cable connection to the PD Controller and a frame ground connection.

Schunk SLS 201.102 pantograph wire landing



- **(a)** High power ground (PE)
- **(b)** HV DC input, positive (+)
- **(c)** HV DC input, negative (-)
- **(d)** Control pilot
- **(e)** Rest sensor
- **(f)** Pantograph frame ground
- **(g)** Pantograph control

Schunk SLS 201.102 unfurnished wire quantity, size, and termination

IMPORTANT: Following are wire specifications for the Schunk SLS 201.102 pantograph, including the maximum quantity and size that the wire terminals can accommodate. All sizing assumes a maximum ambient temperature of 50 °C (122 °F). Where the maximum wire size is listed, the actual wire quantity and size must be chosen based on site-specific wiring requirements and in accordance with the maximum allowed conduit filling rate per local code.

Wire	Max. Wire Quantity and Size	Termination
HV DC	See Power Link 2000 output wire specifications	Lug: Single hole lug and sized for M10 bolt.
High power ground (PE)	See Power Link 2000 output wire specifications	Lug: Single hole lug and sized for M10 bolt.
Pantograph frame ground	See Power Link 2000 output wire specifications	Ring terminal: Sized for M8 bolt.

North American Wire, Voltage, and Current Ratings

	Inputs to Power Block		Power Block to Each Power Link 2000		
	AC and Ground	Shunt Trip	HV DC Output	48 V DC Output	Ethernet
Circuit Voltage	480 V AC	≤ 240 V	100-1000 V	48 V	--
Max. Current	260 A	6 A	200, 250, 350, or 500 A	32 A	--
Notes	Rated for 600 V L1, L2, L3, Ground		Rated for 1000 V		Outdoor rated Cat6 STP or Paige OSP Shielded GameChanger*

NOTE: * The required Ethernet cable type depends upon the cable run length.
See Ethernet requirements.

	Inputs to PD Controller		Power Link 2000 to Each Pantograph	Power Link 2000 to each PD Controller	
	120-277 V AC Input		HV DC Output	48 V DC Output	Ethernet
Circuit Voltage	120 V AC	208-277 V AC	100-1000 V	48 V	--
Max. Current	4 A	2 A	200, 250, 350, 400, or 500 A	6 mA	--
Notes	Rated for 600 V, 50/60 Hz, single phase			Rated for 1000 V	Outdoor rated Cat6 STP

Connectivity 5

A consistently strong cellular signal is needed at each Power Link 2000 before installers can activate the vehicle charging station. Weak or sporadic signal can affect crucial aspects of the charging station, including:

- Accuracy in reporting
- Ability for customer support to troubleshoot problems
- Support for advanced features such as Power Management

A strong signal is also required for the ChargePoint Assure maintenance and management programs.

ChargePoint stations use cellular data connections to reach ChargePoint Cloud Services. This allows secure, PCI-compliant data connections without requiring any other form of internet connectivity at an install site or imposing additional network management responsibilities on a site host.

Each station has its own cellular connection.

NOTE: Celullar connection is needed only if there is no Ethernet to USB network connection.

Signal Strength and Quality

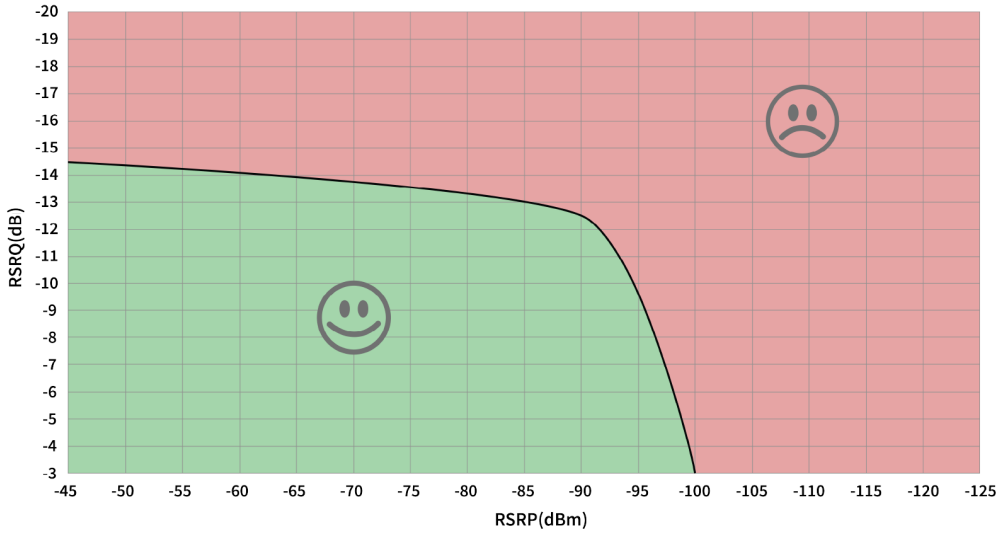
You must use a cellular signal detection device (such as a Siretta Snyper LTE or equivalent) to take signal strength readings at the exact proposed mounting location of the Power Link 2000.

In North America, ChargePoint products all support LTE bands 2, 4, and 5. The most commonly supported carriers to check during site evaluation are:

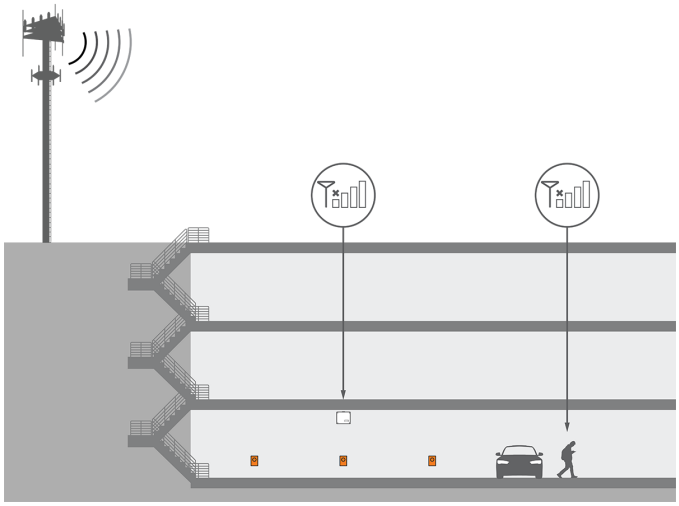
- US: AT&T, T-Mobile, and Verizon
- Canada: Rogers, Telus, and Bell

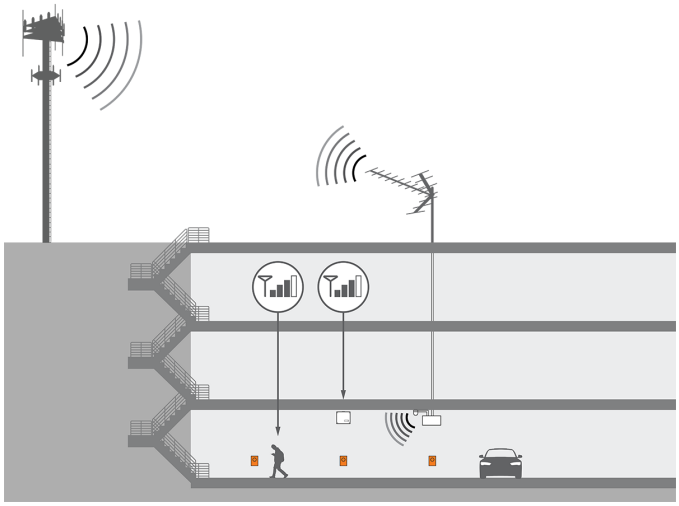
You must test the LTE signal strength at the proposed mounting location of every gateway station and ensure the location meets the minimum RSRQ at -12.5 dB or better, for RSRP measured at -90 dBm or better. Refer to the graph for acceptable combinations.

NOTE: Cellular signal strength is measured in dBm, a logarithmic unit expressed as a negative number. Because dBm values are negative, a value closer to zero indicates a stronger signal. For example, -70 dBm represents a stronger signal than -85 dBm, while -90 dBm indicates a weaker signal than both.



If the signal strength is weaker than this, take cellular readings at the location where any cellular signal booster antennas will be installed. Ensure enough signal exists for that repeater model. Install repeaters to boost the strength of the cellular signals. Repeaters are often required when installing charging stations in an underground garage or enclosed parking structure.





For other regions, or if the site does not have strong signal on these bands, contact your ChargePoint representative for additional solutions.

ChargePoint strongly recommends a consultation with a cellular connectivity specialist before all installations. A consultation can verify:

- Service with a supported carrier on a supported LTE band
- Available signal and local noise levels on applicable bands
- Site changes to correctly meet your needs, both for station bandwidth and other phone coverage for customer or tenant satisfaction

Repeaters

Some sites require repeaters to ensure strong signal to all stations. If a repeater is required, look for a model with these features:

- Specifically LTE-compatible on the listed bands
- Multi-carrier
- Multi-band
- Not already dedicated to FirstNet or other first responder-specific networks
- Auto-gain recommended

NOTE: Do not rely on readings taken with a cell phone when conducting site surveys. Many signal boosters and network extenders may not be compatible with ChargePoint hardware, including certain types of Distributed Antenna Systems (DAS), micro/nano/pico/femto-cells, and carrier- or band-specific signal boosters.

Repeaters are not allowed in France. Contact the French service provider for more information.

Appendix: Enclosed Power Link 2000 Considerations A

Take the following considerations if placing Power Link 2000 inside an enclosed structure:

- Cellular connectivity - Ensure the cellular signal at the Power Link 2000 (in its final configuration) meets the criteria outlined in Connectivity. Note that metal enclosures can block cellular signals. Consider installing the Ethernet to USB Kit to avoid cellular connectivity issues.
- Heat dissipation - Ensure the enclosure allows for sufficient heat dissipation to ambient air. See Power Link 2000 Ventilation Requirements
- Grounding - The enclosed structure must be grounded per national and local codes. If the Power Link 2000 and HV DC wiring are installed within a conductive enclosure, be sure to bond the structure to a grounding point on the Power Link 2000.

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 B 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 residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

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.