Construction Signoff Form

Express Plus Pantograph Down 2000

This form ensures the site for your ChargePoint solution has been prepared as specified, by you or by your chosen contractor, before beginning installation. Submit this completed form and the required photos to installdispatch@chargepoint.com. Detailed datasheets, site design guides, and installation guides defining ChargePoint specifications are available at ChargePoint Product Reference Documents.

IMPORTANT: All installations must comply with local and regional code. ChargePoint provides concrete pad guidance applicable for most sites in the site design; however, pad sizes for a given site might be smaller or larger due to site conditions. Ensure site drawings have been completed and approved by a structural engineer for the site.

Note: If the installer arrives to the installation site and finds any signoff items incomplete, you will incur a separate re-dispatch fee.

Site Information		Contractor Information	
Site address:		Company name:	
		Site lead name:	
Number of stations to be installed:		Site lead job title:	
Contact name:		Site lead email:	
Contact phone:		Site lead phone:	
Contact email:		Date work began:	

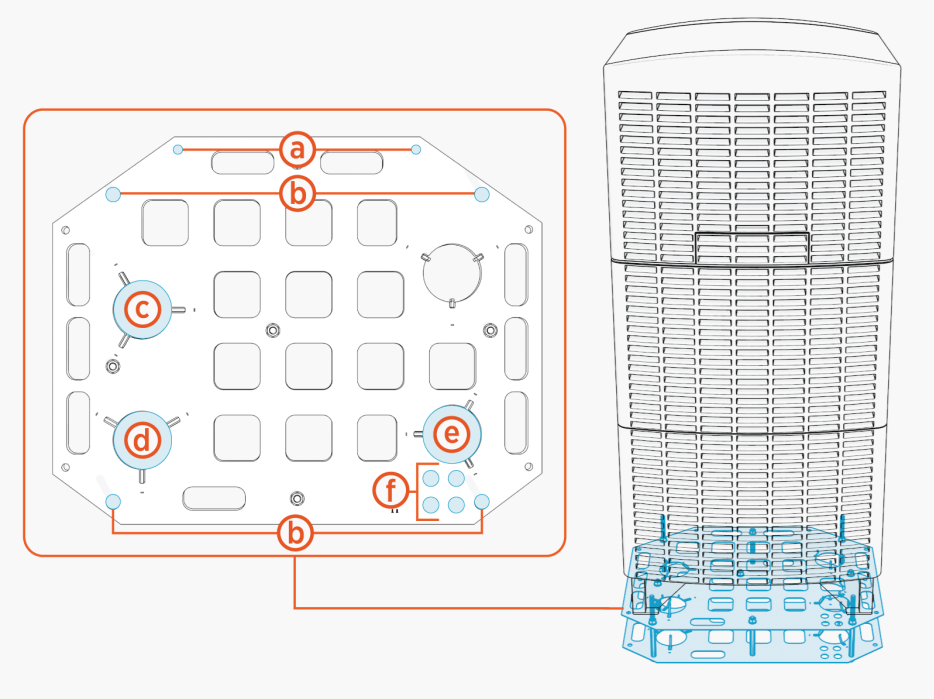
Take the following photos for each location throughout the site construction process:

Required Construction Photos	
	1. Of completed trenching with conduit (or ducting) laid in place (if applicable).
	2. Prior to concrete pour, if a Power Block Concrete Mounting Template (CMT) is used: • Of the CMT in place and held at the proper height to prevent movement during the concrete pour. • Of all anchor bolts correctly inserted into the CMT.

Required Construction Photos	
	• Of conduit stub-ups (if used) correctly inserted into the CMT.
	3. Of completed mount locations (as many of the following that apply): • Completed concrete pad with anchor bolts and conduit stub-ups (if used). • Overhead location with installed anchor bolts and conduit.
	4. Of the overall space around each mounting location, showing all service clearances are available.
	5. Of the specification label on the electrical panel, showing total panel capacity.
	6. Of all signage and parking guides as required by site drawings and local code.
	7. Of the open electrical panel with the dead front panel removed, showing terminations.
	8. Of the open electrical panel with the dead front panel in place, showing breaker amperage ratings and Express Plus connection labels.
	9. Of the mounting location of each Pantograph.
	10. Of the front of each AC disconnect (if applicable).

Verify each of the following at every Power Block location across the site.

Civil Work, Power Block	
☐	1. The concrete pad was designed, installed, and approved as follows: (a) If pad was newly poured: • The pad was designed and installed based on one of the conservative stability specifications listed in the *Express Plus Pantograph Down 2000 Site Design Guide*, in accordance with site-specific wind, seismic, and soil conditions. -or- • The pad was designed by a structural engineer based on site-specific conditions and based on the structural parameters listed in the *Express Plus Pantograph Down 2000 Site Design Guide*. (b) If using existing concrete surface: • The pad was inspected and approved by a structural engineer based on the structural parameters listed in the *Express Plus Pantograph Down 2000 Site Design Guide*.
☐	2. The mounting surface is smooth and doesn't exceed a slope of 20 mm per meter (0.25 inches per foot).
☐	3. If site has a 450 mm (18 in) or greater flood plane for a 100-year flood event, the concrete pad is raised to meet Power Blocks flood plane design.
☐	4. Walls, fences, or slopes do not prevent water from draining from the pad.
☐	5. If using an existing concrete pad with Power Block Surface Conduit Entry Kit (SCEK): • The Power Block anchor bolts are in position per the site design plan and per the anchor bolt pattern specified by the *Express Plus Power Block Surface Conduit Entry Kit Guide*.

Civil Work, Power Block	
	• The Power Block anchor bolts (x4) have been installed using an epoxy with a bonding strength of 11.7 MPa minimum, compressive strength of 82.7 MPa minimum, and tensile strength of 49.3 MPa minimum, such as Hilti HIT-RE 500 V3 (normal cure) or Hilti HIT-HY 200-A (fast cure). • Anchor bolts are embedded 229 mm (9 in) into the concrete pad, have 76 mm (3 in) exposed length above the concrete surface, and are plumb. • The Surface Conduit Entry (SCE) gland plate anchor bolts (x2) are in position per the site design plan and per the anchor bolt pattern specified by the *Express Plus Power Block Surface Conduit Entry Kit Guide*. • The SCE gland plate anchor bolts (x2) have an epoxied embedment of 229 mm (9 in) and are plumb. • The SCE Kit is ready for installation.
☐	6. If Concrete Mount Template (CMT) is used, the Power Block CMT is installed in the pad with the CMT top surface 51 mm (2 in) below the concrete surface and the conduits and anchor bolts are positioned correctly and meet the Power Blocks design specifications:  (a) M16 anchor bolt (x2) locations for mounting SCE gland plate (if applicable). (b) M16 anchor bolt (x4) locations for mounting Power Block [229 mm (9 in) embedment, 76 mm (3 in) exposed length above the concrete surface]. (c) Conduit position for HV DC output B wires exit (maximum trade size is 4 inches or 110 mm). (d) Conduit position for HV DC output A wires exit (maximum trade size is 4 inches or 110 mm). **Note:** The DC output of Power Block is the DC input for *Power Link 2000*. (e) Conduit position for AC input wires entry (maximum trade size is 4 inches or 110 mm).

Civil Work, Power Block

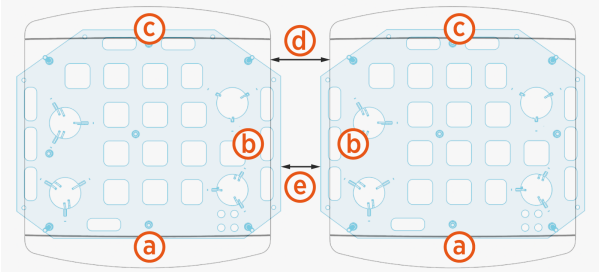
(f) Conduit position for 48 V DC output, shunt trip wires, and Ethernet cable entry (maximum trade size is 1 inch or 25 mm).

- One for shunt trip (if used).
- Three for 48 V DCwires and Ethernet cable (quantity as-needed).

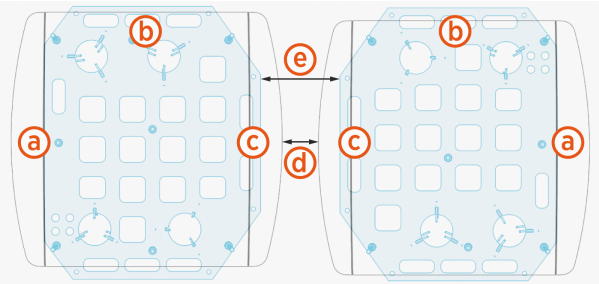
☐ **7.** Conduit stub-ups (if applicable) are cut to a height 559-914 mm (22-36 in) above top of concrete.

8. The open space and service clearance requirements are met:

Two Power Blocks laid side-to-side



Two Power Blocks laid back-to-back



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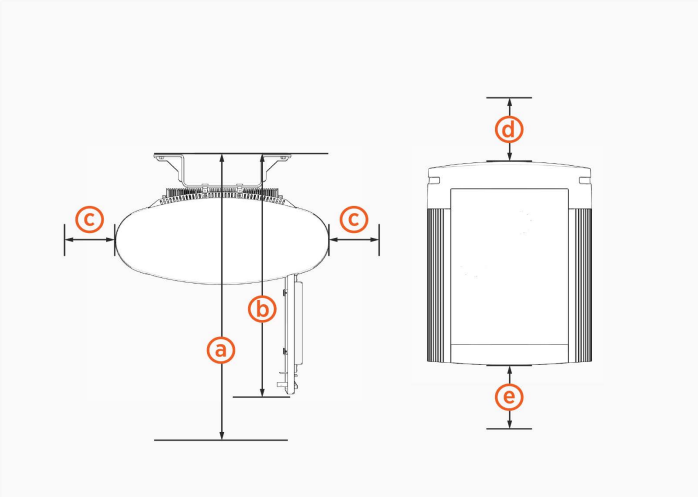
Side	Power Blocks Layout	Clearance		
(a) Front	–	–		Minimum of 1 m (39.4 in)
(b) Sides	Power Blocks laid side-to-side	Minimum	(d) Power Block to Power Block	51 mm (2 in)
			(e) CMT to CMT	CMTs overlap by 15 mm (0.6 in)
		Recommended	(d) Power Block to Power Block	152 - 203 mm (6 - 8 in)
			(e) CMT to CMT	116 - 167 mm (4.6 - 6.6 in)
(c) Rear	Power Blocks laid back-to-back		(d) Power Block to Power Block	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 and using surface conduit entry, there must be at least 609 mm (24 in) of shared rear clearance.

- 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.
- Front and rear clearances must be at grade level +/- 13 mm (0.5 in).

Verify each of the following at every Power Link 2000 location across the site.

Civil Work, Power Link 2000, Overhead Mount	
☐	1. The overhead structure has a structural capacity sufficient for product weight and is designed or verified by a structural engineer per local codes.
☐	2. The mounting surface is smooth and plumb. The Power Link 2000 is mounted upright.
☐	3. The Power Link 2000 overhead anchor bolts (x6) are in position per the site design plan and per the anchor bolt pattern specified by the *Express Plus Pantograph Down 2000 Site Design Guide*.
☐	4. The overhead-mount Power Link 2000 meets the below clearance requirements: 

Power Link 2000 - 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)

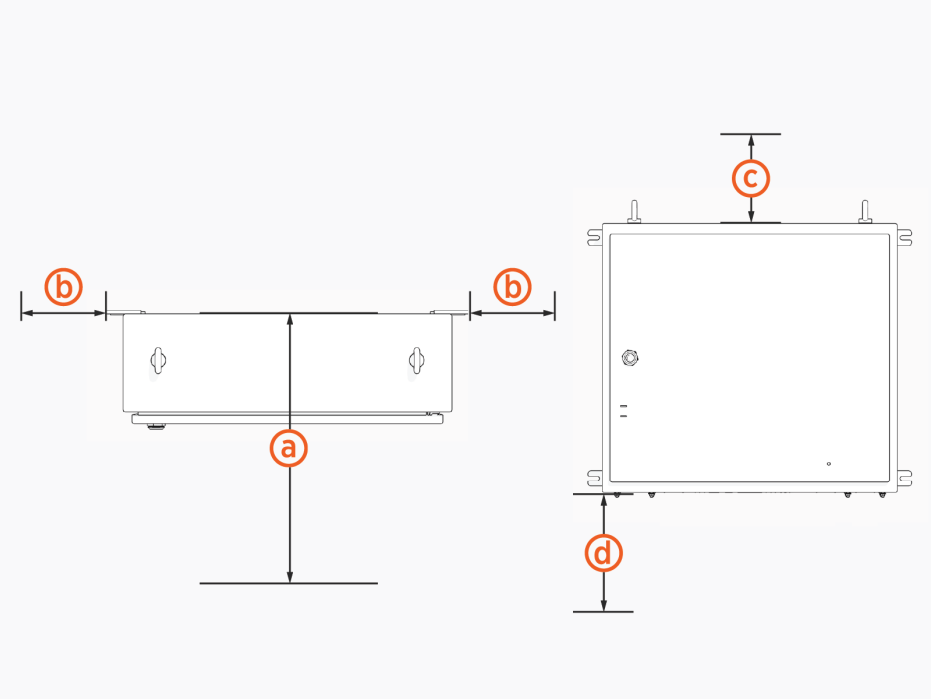
Verify each of the following at every PD Controller location across the site.

Civil Work, PD Controller	
☐	1. The mounting surface or structure must be designed or verified for the weight of the PD Controller by a structural engineer per local codes.
☐	2. The mounting surface is smooth and plumb. The PD Controller is mounted upright.

Civil Work, PD Controller

☐ 3. PD Controller anchor points are sized for M8 bolts and are in position per the bolt pattern specified by the *Express Plus Pantograph Down 2000 Site Design Guide*.

☐ 4. The PD Controller meets the below clearance requirements:



PD Controller - 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)

Verify each of the following at every Pantograph location across the site.

Civil Work, Pantograph

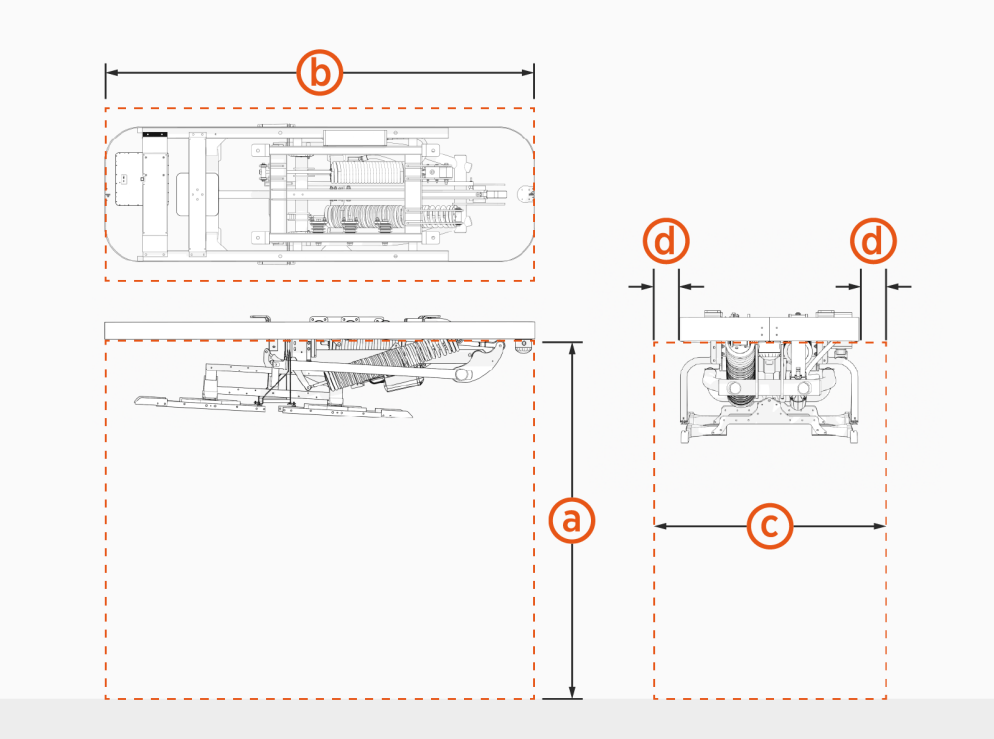
☐ 1. The mounting surface or structure must be designed or verified for the weight of the pantograph by a structural engineer per local codes.

☐ 2. The mounting surface must be smooth and parallel to the ground beneath it, within tolerances specified by the *Express Plus Pantograph Down 2000 Site Design Guide*.

Civil Work, Pantograph

☐ 3. The pantograph mounts (x4) are in position per the site design plan and per the anchor bolt pattern specified by the *Express Plus Pantograph Down 2000 Site Design Guide*.

☐ 4. The Schunk SLS 201.102 pantograph keep out zone requirements are met.



Dimension	Keep Out Zone Description	Clearance
Height	(a)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)
Length	(b)The length of keep out zone spans the total length of the auxiliary component mounting frame.	2556 mm (100.8 in)
Width	(c)The width of the keep out zone extends 100 mm (4 inches), (d) beyond the sides of auxiliary component mounting frame.	976 mm (38.3 in)

Verify each of the following at every location across the site.

Electrical Work

☐ 1. A correctly rated, dedicated breaker is installed for each Power Block per this table:

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

☐ 2. The transformer nameplate shows that wiring is:

- 230/400 3-phase plus Protected Earth (PE) (Europe)
- 277/480 3-phase plus ground (North America)

Electrical Work

- Grounded WYE (Y) connected

Note: Delta (floating or grounded) configuration is not supported.

☐ 3. Breakers have shunt trip capability to each Power Block (if the site drawing calls for shunt trip wiring).

4. All electrical infrastructure has been completed per local codes and ChargePoint specifications, with properly sized copper or aluminum wires as defined in the *Express Plus Pantograph Down 2000 Site Design Guide*.

Note: Neutral is not installed on three-phase power.

Conductor	Conductor Rating	Number of Poles	Insulation Type	Temperature Rating
Power Block AC input	260 A, 600 V AC	3 + ground	THHN/THHW/THW-2/THWN-2 based on site condition (dry or wet)	90°C (194°F)
HV DC	200-500 A, 1000 VDC	2 + ground	XHHW/XHHW-2 based on site condition (dry or wet)	90°C (194°F)
48 V DC	32 A, 48 V circuit voltage, 1000 V insulation rating	2		75°C (167°F) required, 90°C (194°F) recommended

PD Controller Wiring Requirements:

- The PD Controller receives single-phase AC input (120-277V).
- The PD Controller also connects to a Power Link 2000 for 48 V DC and Ethernet input.

Conductor	Conductor Rating	Number of Poles	Insulation Type	Temperature Rating
AC input	2 A (200-270 VAC) / 4 A (100-120 VAC), 600 V AC	2 + ground	THHN/THHW/THW-2/THWN-2 based on site condition (dry or wet)	75°C (167°F)
48 V DC input	6 mA, 1000 V	2 + ground	XHHW/XHHW-2 based on site condition (dry or wet)	75°C (167°F) required, 90°C (194°F) recommended

Electrical Work

Conductor	Size	Voltage Rating	Insulation Type
Power Block AC Input (Three-phase)			
PD Controller AC Input (single phase)			
HV DC Output (from Power Block)			
48 V DC (to PD Controller)			
DC Ground			

	Wiring Size
☐	48 V DC (between Power Block and Power Link 2000s) is 16 mm^2 (6 AWG)
☐	48 V DC (between Power Link 2000 and PD Controller) is 1.5 mm^2 (16 AWG)
☐	Ground (between Power Link 2000 and PD Controller) is 4 mm^2 (12 AWG)

	Distance
Maximum Power Block to service panel conductor length	

☐ 5. If cables are pulled, attach copies of AC, 48 V DC, and HV DC conductor insulation test reports.

☐ 6. Outdoor-rated Ethernet Cat6 STP cables are present and without terminations. Cable lengths must accommodate 2 m (6 ft) of service loop at each end. If Ethernet wire run length is greater than 100 m (328 ft), OSP Shielded GameChanger Cable is used (up to a distance of 200 m (656 ft)).

☐ 7. Cellular signal strength measurements meet requirements per the *Express Plus Pantograph Down 2000 Site Design Guide*.

Site Comments

I, _____ hereby certify that the scope of work in this form has been correctly completed.

Signature	Date