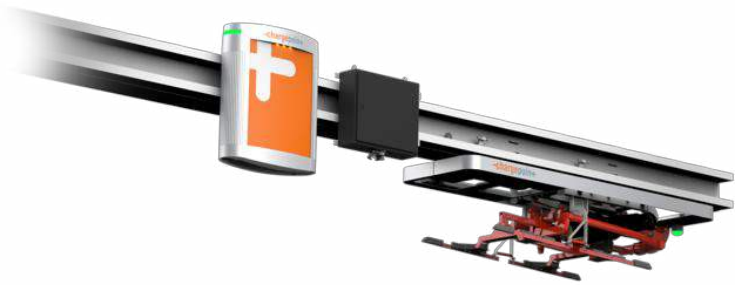
ChargePoint® Express Plus

Pantograph Down 2000

A reliable overhead charging platform that grows with you.



Express Plus Pantograph Down 2000 Specifications

Pantograph Down 2000 Automatic Connection Devices (ACDs)

Automatic Connection Devices	
Pantograph Models	Schunk SLS 201.102 - Up to 600 kW Schunk SLS 301.102 - Up to 250 kW
Pantograph Dimensions	Varies by model. See manufacturer datasheets or contact ChargePoint.
Pantograph Weights	SLS 201.102: 185 kg (408 lb) SLS 301.102: 95 kg (209 lb)
Pantograph Output Current	SLS 201.102: 500A Continuous (600 A for 10 minutes) SLS 301.102: 250 A Continuous
Pantograph Maximum Working Range	SLS 201.102: 1500 mm (4.92 ft) SLS 301.102: 460 mm (18.11 in)
Pantograph Actuation Times	SLS 201.102: 17 seconds (maximum) SLS 301.102: 12 seconds (maximum)
Pantograph Operating Ranges	SLS 201.102: -30 °C to 65 °C (-22 °F to 149 °F) SLS 301.102: -35 °C to 60°C (-31 °F to 140 °F)

Pantograph Down 2000 – Overhead Mount

Overhead Depot Specifications	
Overhead Pantograph Model Compatibility	Schunk SLS 201.102 Schunk SLS 301.102

Pantograph Down 2000 (PD) Controller

PD Controller Specifications	
PD Controller Dimensions	602 mm (H) x 620 mm (W) x 193 mm (L) (2 ft x 2 ft 1 in x 8 in)
PD Controller Weight	32.2 kg (70.9 lb)
PD Controller Communication	Wi-Fi, RFID, Control Pilot, Ethernet
PD Controller Enclosure Rating	NEMA Type 4, IP56
PD Controller Power Input	21 mm (3/4 in) conduit 120 VAC, 60Hz, 4A, 1 phase OR 208-277 VAC, 60 Hz, 2 A, 1 phase
PD Controller Power Link Interface	21 mm (3/4 in) conduit 48 VDC: 3#18 AWG Cat6-STP
PD Controller Pantograph Interfaces (Cables are included with Pantograph Auxiliary Kits)	Cable entering the PD Controller through a 1 inch NPT gland (included) with or without a 25 mm (1 in) conduit Pantograph Control: 24 VDC (included) Pantograph Rest Sensor (SLS 201 only): 24 VDC (included) Control Pilot: 12 VDC (included) Status LED: 24 VDC (included) 5 m (16.4 ft) multi-conductor wiring (included) with the Pantograph-side pre-terminated. Controller-side can be cut down to desired length.

PD Controller Specifications (cont'd)	
PD Controller Wireless Vehicle Communication Interfaces (Cables and Antennas are included with Pantograph Auxiliary Kits)	Cables entering the PD Controller through a 3/4 inch NPT gland (included) with or without a 21 mm (3/4 in) conduit Wi-Fi Antenna: Coax Cable (5 m (16.4 ft) cable gland to antenna; included) RFID Antenna: Coax Cable (5 m (16.4 ft) cable gland to antenna; included)
PD Controller Lift Points	Underneath forklift (brackets included) Overhead straps (25 mm eye bolts included)
PD Controller Mounting Points	See illustration below

Power Link 2000

Power Link 2000 Output	
Max Output Power per Output	Up to 600 kW (dependent on Power Block configuration)
Output Voltage, Charging	100 to 1000 VDC
Max Output Current per Output*	Single Output: Up to 500 A Dual Output: Up to 500 A per output
Power Link 2000 Specifications	
Dispenser Dimensions and Footprint	See diagrams below
Station Weight	Overhead: Approximately 130 kg (287 lb) Refer to Site Design Guide for more details
Number of Ports per Dispenser	Up to 2 pantographs per dispenser. Simultaneous or sequential charging.
Station Enclosure Rating	NEMA Type 3R, IP56, IK10
Mounting Type	Overhead (Structure, Wall, Gantry)

*600 A available upon request

Power Block

Power Block Input	
Input Rating	Standard (200 kW): 3-phase, 480Y VAC, 260 A 60 Hz Optional (160 kW): 3-phase, 480Y VAC, 210 A 60 Hz
Wiring	L1, L2, L3, Earth
Short Circuit Current Rating	65 kA
Power Block Output	
Max Output Power	Standard: 200 kW Optional: 160 kW
Output Voltage, Charging	100 to 1000 VDC
Max Current per Output	Standard (200 kW): 250 A (>= 500 VDC vehicles) 500 A (<= 400 VDC vehicles) Optional (160 kW): 200 A (>=500 VDC vehicles) 400 A (<=400 VDC vehicles)
Number of Stations Served	One Power Block can serve up to 2 Power Link stations. Additional Power Blocks can be added to serve more dispensers or increase power output (up to 600 A / 600 kW)
Max Power Modules per Power Block	5
Power Block Specifications	
Power Block Dimensions	2191 mm (H) x 988 mm (W) x 1039 mm (L) (7 ft 3 in x 3 ft 3 in x 3 ft 5 in)
Power Block Weight	455 kg (1000 lb) without Power Modules
Power Block Enclosure Rating	NEMA Type 3R, IP56, IK10

Power Module

Power Module Output	
Max Output Power	40 kW
Max Output Current	50 A (>=500 VDC batteries) 100 A (<=400 VDC batteries)
Power Conversion Efficiency	Up to 96%
Power Factor	0.99 at full load
Power Module Specifications	
Power Module Dimensions	430 mm (H) x 130 mm (W) x 760 mm (L) (1 ft 5 in x 5 in x 2 ft 6 in)
Power Module Weight	45 kg (98.5 lb)
Power Module Cooling	Liquid cooled technology
Harmonics	iTHD < 5% (complies with IEEE 519)

Pantograph System Specifications

Functional Interfaces	
Indicators	Status LEDs on Power Block, Power Link 2000, and at the Pantograph

Connectivity Features	
Local Area Network	2.4 GHz and 5 GHz WiFi (802.11 b/g/n)
Wide Area Network	4G LTE
Supported Communication Protocols	OCPP 2.0.1
Service and Maintenance	Remote system monitoring, diagnostic, and proactive maintenance

Safety Ratings & Protocol	
Vehicle Communication	ISO 15118-20 SAE J3105:2020 SAE J3105:2023 OppCharge (ISO 15118-2)
Safety Compliance	ETL listed. Complies with UL 2202, UL 2231-1, UL 2231-2 SAE J3105
Surge Protection	Power Block: Tested to IEC 61000-4-5, Level 5 (6 kV @ 3,000 A) PD Controller: Tested to IEC 61000-4-5, Level 5 (6 kV @ 3,000 A)
EMC Compliance	FCC part 15 Class B

Generic Specifications	
Operational Altitude	<3000 m (9800 ft)
Operating Temperature (excludes Pantograph)	-40 °C to 50 °C (-40 °F to 122 °F) with derating
Storage Temperature (excludes Pantograph)	-40 °C to 70 °C (-40 °F to 158 °F)
Operating Humidity	Up to 95 % at 50 °C (122°F) non-condensing
Buy America	Buy America (FTA) options available

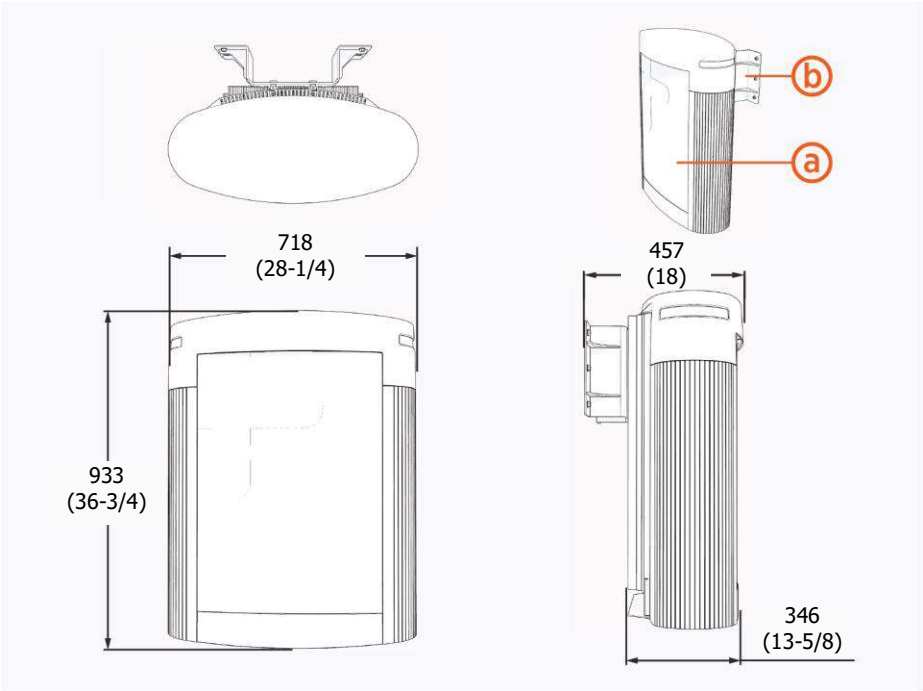
Energy Management Features	
Dynamic Power Management	Allows an equal share of Power Module output per port or the system can dynamically manage the power distribution per port.
Remote Energy Management	Manage output power via the ChargePoint Admin Portal, API, and Open ADR 2.0b VEN.

Architectural Drawings

Note: Images are not to scale. Measurements appear in metric units (mm), followed by imperial equivalents (inches).

Pantograph Down 2000 - Overhead Configuration

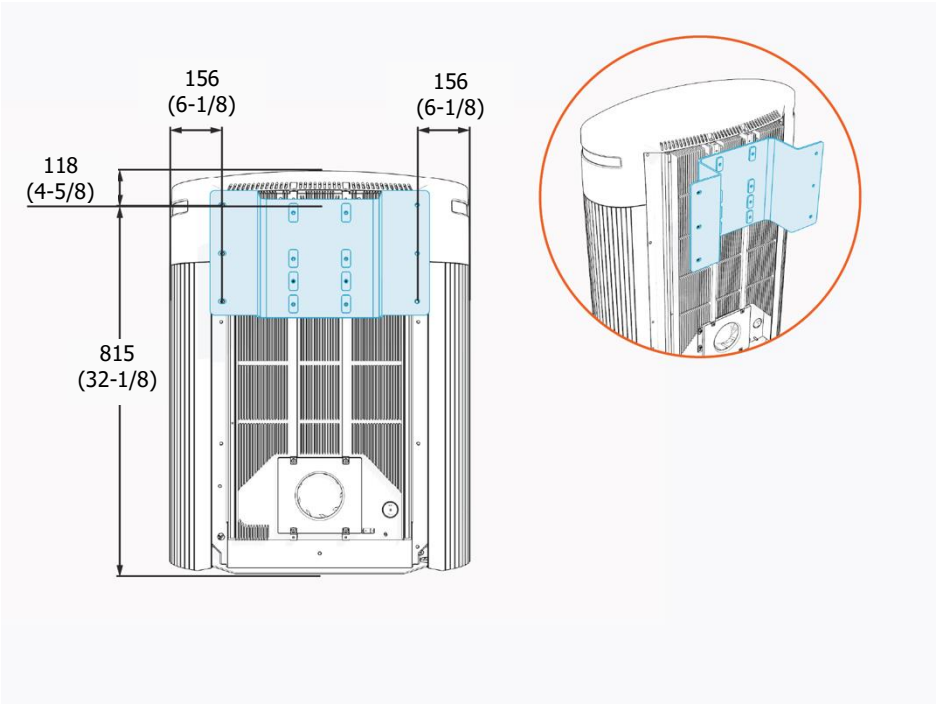
Overhead Power Link 2000 Assembly (with Mount)



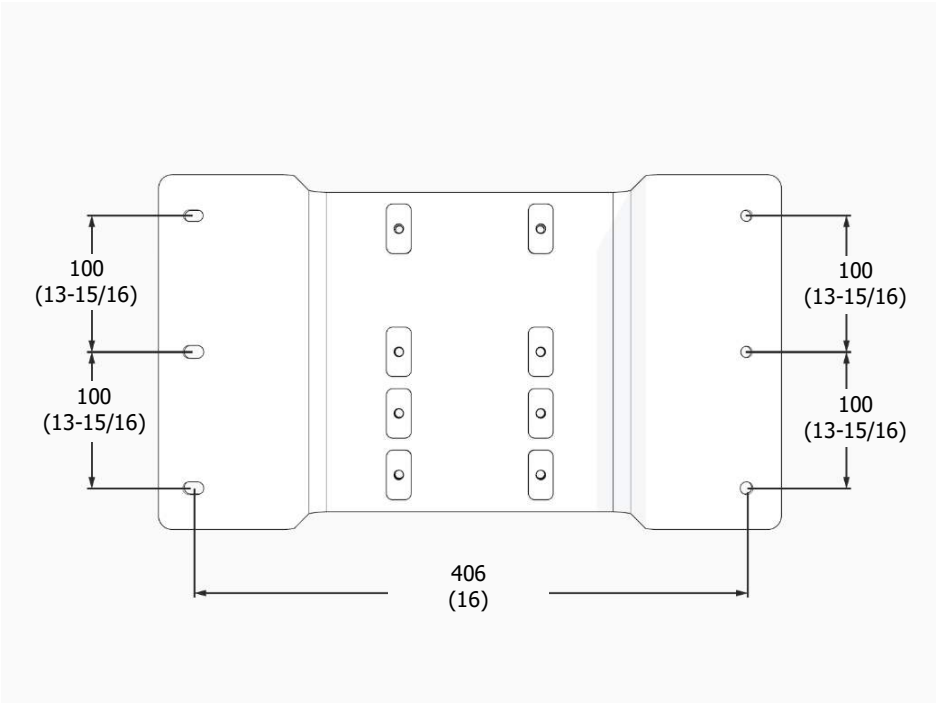
(a) Enclosure

(b) Mounting Bracket

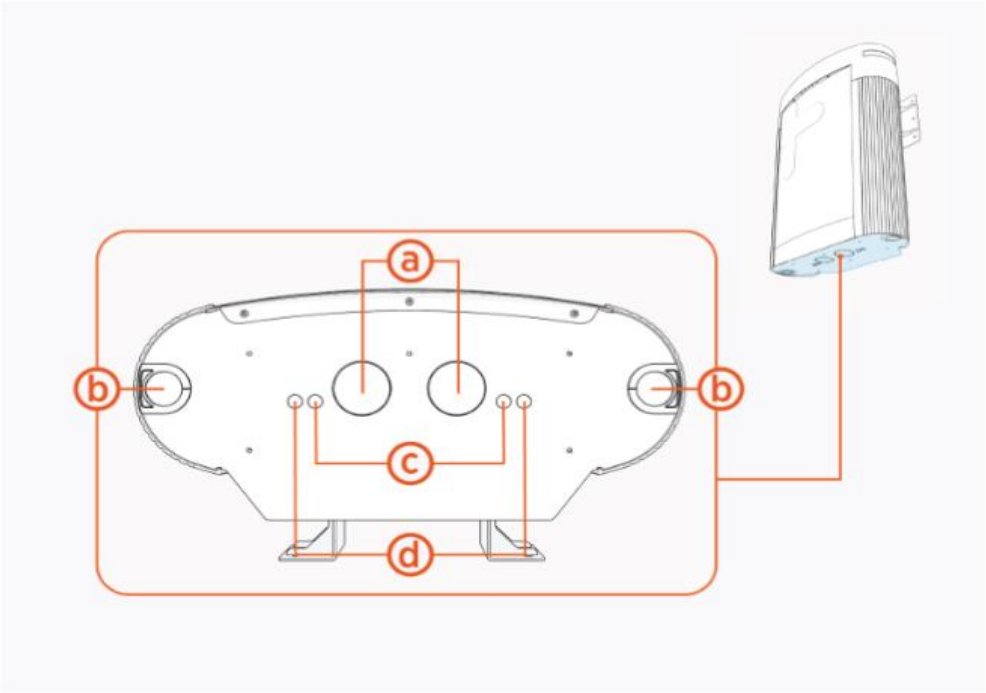
Overhead Power Link 2000 Mount (Rear)



Overhead Power Link 2000 Mount Bracket



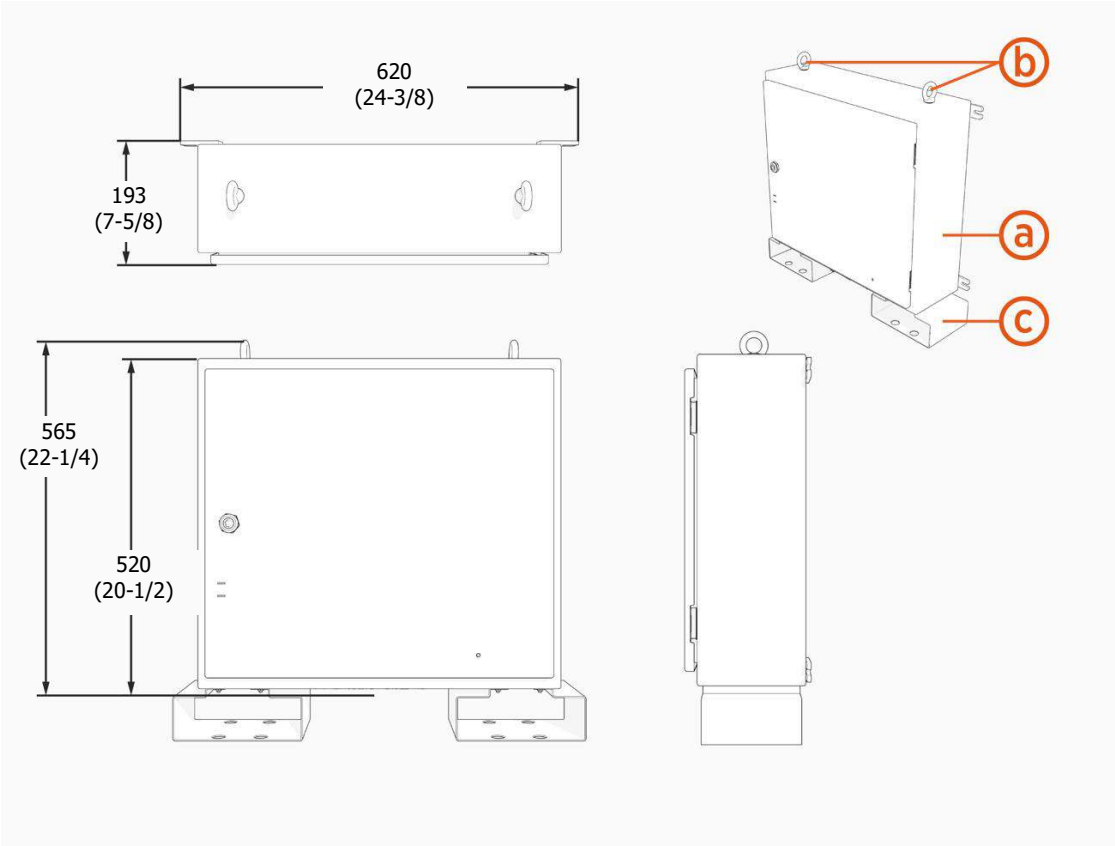
Overhead Power Link 2000 Conduit Entry (Bottom)



Conducts For	Conduit Trade Size	Max. Quantity
(a) HV DC input wires from Power Blocks	Max. 3 in (78 mm)	2
(b) HV DC wires to pantograph(s)	3 in (78 mm)	2
(c) 48 V DC input wires and Ethernet cables from Power Block(s)	Max. 3/4 in (21 mm)	2
(d) 48 V DC wires and Ethernet cables to PD Controller(s)	Max. 3/4 in (21 mm)	2

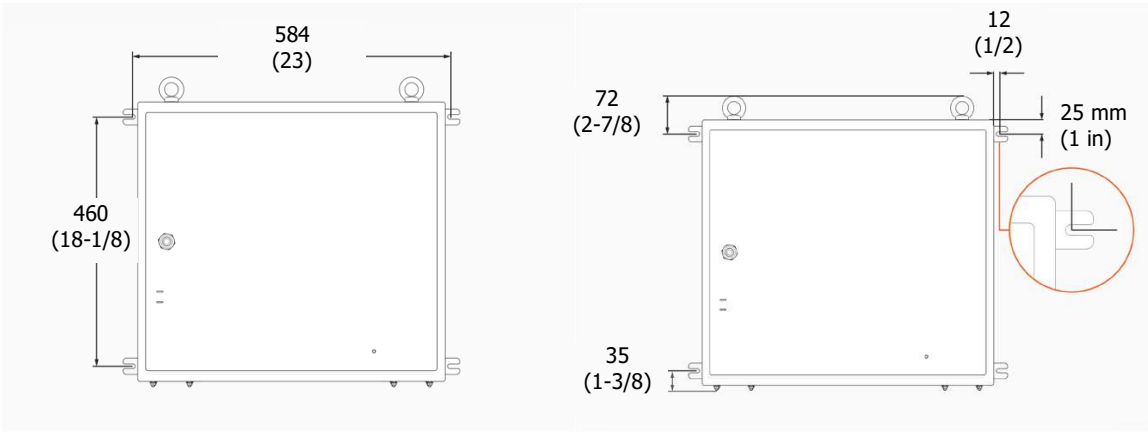
Pantograph Down 2000 Controller

PD Controller (with Mounts)

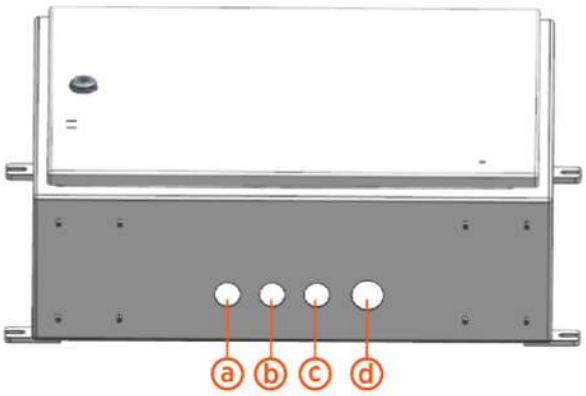


(a) Enclosure
(b) Lifting eye bolts (optional removal after enclosure mount)
(c) Lifting brackets (mandatory removal after enclosure mount)

PD Controller Mounting Points

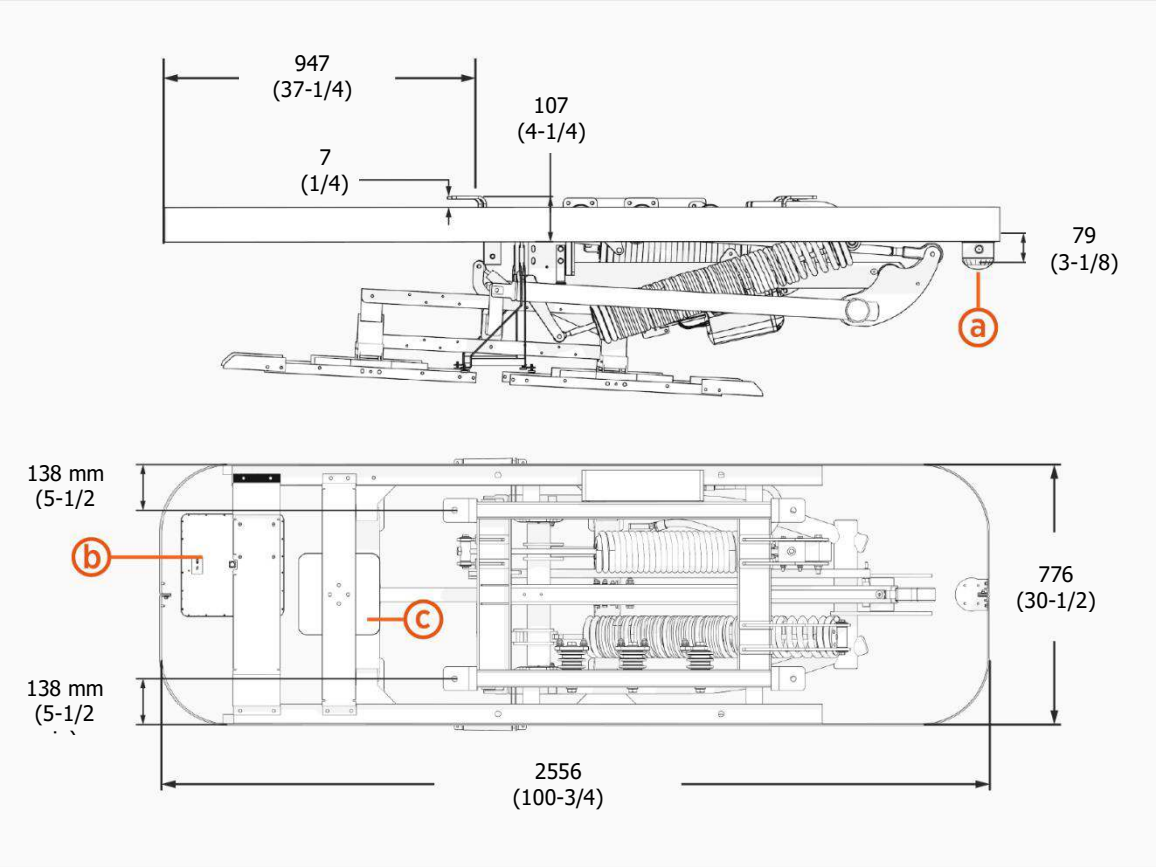


PD Controller Wiring/Conduit Interfaces



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 in (27 mm)	1

Auxiliary Components with Mounting Frame – Schunk 201.102

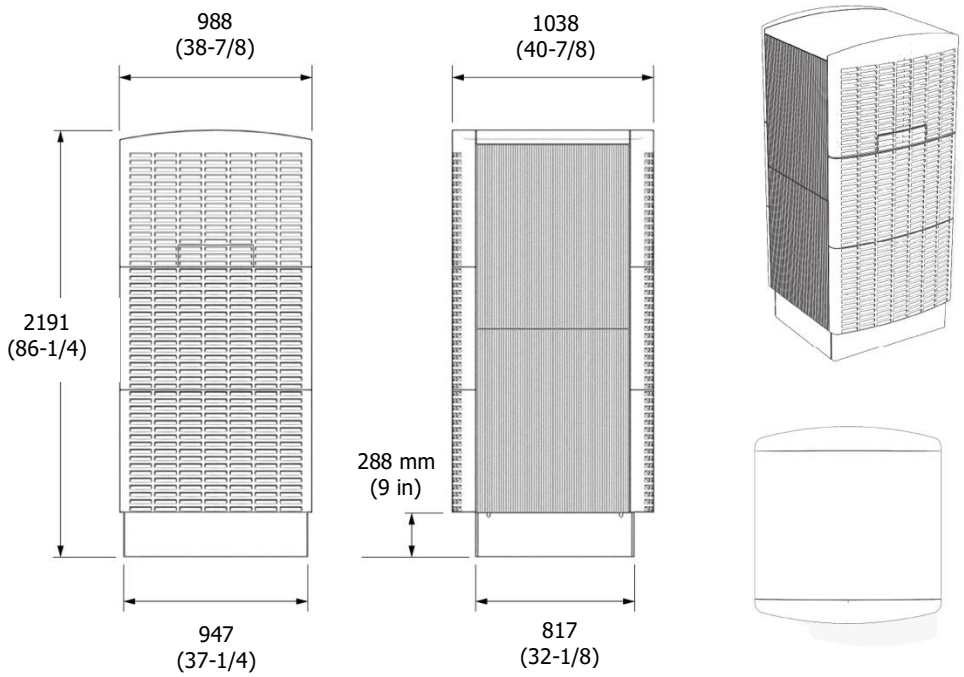


(a) Status LED

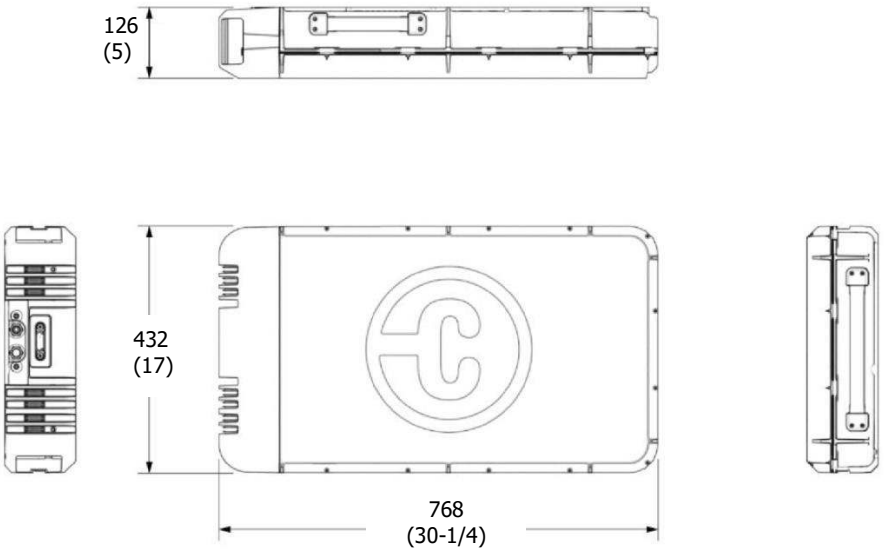
(b) Wi-Fi antenna

(c) RFID antenna

Power Block



Power Module



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